



# Churchill Quarter

## Construction Method and Logistic Plan



## CONTENTS

1. INTRODUCTION
2. HEALTH & SAFETY PLAN
3. CONSTRUCTION METHODOLOGY
4. WASTE MANAGEMENT PLAN
5. EXISTING UNDERGROUND SERVICES
6. PEDESTRIAN SAFETY
7. SEQUENCE OF WORK AND METHODS INCORPORATED
8. SUMMARY
9. APPENDIX

## Construction and Environment Management Plan

### 1.0 Introduction

The London Borough of Bromley have engaged Countryside Properties their Development Partner to deliver a comprehensive development of land at Ethelbert Close and rear of the High Street for a major residential-led scheme. This development will form the next phase of development Opportunity Site G, designated in the Bromley Town Centre Area Action Plan,



Development of this site is central to improving the quality of the residential offer in the town centre as well as creating superb public spaces and access to cultural and leisure areas adjacent to the site. The Council has made it a Corporate Plan priority to secure the development and delivery of this phase of Opportunity Site G scheme.

The development site is located in the heart of Bromley Town Centre in a prominent location overlooking the Ravensbourne Valley to the West and the pedestrian High Street to the East. It is well served by public transport, close to the Glades shopping centre and adjacent to the Churchill Theatre and Central Library. The site overlooks the Church House Gardens Park on the southwestern boundary and benefits from panoramic views across the Ravensbourne Valley. The High Street shops fall within the Bromley Town Centre Conservation Area.

The development site comprises commercial premises fronting the High Street; a church; a commercial [storage] building; 410 residential units, 160 of which are affordable and an underground car park;

The project will be constructed in one phase, with site accommodation being relocated into the newly constructed Block D for the duration of the project. The Construction will start with Blocks G then Block C, B, A and Block F, E, D



**Figure 2** – site elevation

## 2.0 HEALTH AND SAFETY PLAN

The Environmental Health and Safety Plan will be finalised and agreed with all relevant parties prior to any works commencing on site and will include all necessary measures required to minimise the effect of the construction works on the surrounding buildings, roads and the public. These measures will include the following:-

1. A dedicated traffic management system and method statement.
2. Adequate signage on and off site.
3. Specific parking restrictions: - There is no site parking available, all staff and operatives will be encouraged to use the plentiful public transport options that are available.
4. Proposals for phasing of deliveries :- All deliveries will be booked in via our materials controller, any deliveries not booked in shall be turned away and the suppliers told to re-schedule, Countryside are investigating the use of a consolidation centre in an effort to reduce the number of deliveries per day where possible.
5. Proposals for restricting dust and noise. No work shall commence prior to 8.00am and will not go beyond 6.00pm. Noise can be further controlled by using noise reducing measures for certain tasks that create a lot of noise. Dust will be controlled by good housekeeping, damping down where possible and employing dust suppression methods on cutting equipment etc.

Any works required outside those time will have been agreed with the Councils Environmental Department.

The enclosed method statement provides an outline summary of the proposed working systems and sequences and it has been prepared to ensure that the common objectives of safety, quality and the timely completion are achieved. The site management team will prepare furthermore detailed statements, and more detailed programmes at the commencement of the works, and throughout the works as they progress.

## **3.0 CONSTRUCTION METHODOLOGY**

### **3.1 PRE-START INVESTIGATION**

Surveys including soil investigation, service slit trenches and asbestos have been carried out to verify the positions of existing services and any additional surveys that are required will be carried out prior for the main construction works commencing on site. The information will be plotted onto the existing site survey drawing and maintained as a record throughout the contract.

Notification of commencement will be issued to all Statutory Authorities. Drawings of existing services will be obtained and compared to the site survey.

A survey of dilapidations of all surrounding buildings, features, roads, etc. will be carried out before any major works commence. This will consist of a photographic record and all necessary measures required to protect existing features will be put in place.

All findings will be circulated to the necessary parties and these will be used to prepare the Health, Safety and Environmental plans prior to works commencing on site.

### **3.2 LOCAL ENVIRONMENT**

The site is in the centre of the town centre, the main access is from Ethelbert Road and Churchill Way.

Set on a sloping site Churchill Gardens is positioned right on the edge of the Church House Gardens Park. On the Northern boundary sits a landscaped terrace which connects directly with the theatre and library.

The existing surrounding area is predominantly residential formed of several properties, most notable those in Ethelbert Close. It is currently being used as residential dwellings, church, council car park and access to the rear of the retail properties along the High Street.

The site has very good public transport connections, and bus stops are located on the surrounding roads adjacent to the site. Bromley South Rail Station is within walking distance of the development.

### **3.3 DISPLAY OF NOTICES AND WARNING SIGNS**

All signs will be kept clean and at a height where they are easy to read. All statutory requirements regarding posting of notices will be complied with at all times, including: -

- Notification of Project
- Public Liability Insurance Certificate
- Emergency and Contact Details and Telephone Numbers

The project sign is currently planned to be situated adjacent to the main site entrance.

### **3.4 TEMPORARY ACCOMMODATION**

The site accommodation complex will include administration offices, welfare facilities for subcontractors' operatives and specialist subcontractor's office accommodation.

Initially a small set up located near the access road, then moved into the newly constructed Church at Ground Floor / Podium level.

The location of the site accommodation will be determined by the programme as it will need to be placed in a position that is least disruptive to the onsite works. The size of the site establishment will be determined by the number of workers on site at the peak.

2.4m high plywood hoardings will be erected around the working area in line with Countryside corporate colours will be established. We will ensure that hoarding panels are maintained and kept clean for the duration of the project, along with adequate lighting.

### **3.5 SITE HOURS & VEHICLE MOVEMENTS**

The site hours will be as dictated by the planning permission. Construction plant will only be allowed to operate between the following hours:-

8am to 6pm Monday to Friday

8am to 1pm Saturday (Only if the programme dictates necessary)

No working allowed on Sundays or Bank Holidays.

Any works required outside those time will agreed with the Councils environmental Department.

Proposed hours in which vehicles will arrive and depart.

In general the hours in which vehicles will arrive and depart will coincide with site hours which are 8.00am to 6.00pm in the evening. However there will be occasions when heavy/wide loads will need to be delivered and removed from site outside of these hours. Such deliveries would be for piling rigs and tower cranes and a Countryside member of staff would be in attendance at all times. On such occasions the local neighbours will be notified some 6 weeks earlier via a Countryside Newsletter. Any parking bays that may need to be closed off will be carried out by Countryside with full consultation with LBB or appropriate neighbours.

### **3.6 SECURITY**

The site will be made sufficiently secure to deter and prevent entrance to the site by unauthorised persons and to prevent removal of materials or goods from the site.

This will be achieved by installation of timber hoardings and once the project is sufficiently advanced there will be physical security on site during non-working hours and 24 hours a day at weekends and holiday periods, or alternatively there will be monitored CCTV.

### **3.7 DEMOLITION / DUST / NOISE POLLUTION**

Demolition processes give rise to conditions that, unless carefully controlled can have and adverse and direct affect on the general public, other site workers and the surrounding environment. Access during the demolition period will be via Ethelbert Road only.

During the demolition period, the specialist demolition contractor will have overall control of the site, while communication with any additional contractors will be maintained throughout the works.

In the event of a complaint from a neighbour or a member of the public in relation to any site activity, it will be recorded in a designated logbook, stating the nature of the complaint, the cause and, where appropriate, the remedial action taken. Should complaints about odour, noise, dust or vibration be received, they will be addressed directly by the appointed specialist contractor to enable the results at the time of the complaints to be reviewed, and where appropriate immediate actions employed to rectify the problem.

At all times, Countryside Properties Plc will comply with all relevant Environmental Health Legislation and will take a pro-active approach to pollution by way of noise, dust or airborne particles to minimise risk and disturbance to the site operatives and the general public,

Noise and vibration will be minimised by using modern plant and equipment fitted with suitable silencers, by muffling of all breakers and through the use of crushers in-lieu of impact breakers where ever possible.

Where machines are provided with suppression covers these will remain closed whilst the machine is in operation. Where it is impossible to reposition a potentially noisy piece of machinery hoardings and enclosures will be constructed to contain and minimise the potential nuisance.

Concrete breaking where possible will be carried out using a crushing machine rather than cutting or grinding equipment which will reduce the dust and noise levels or removed from site and crushed elsewhere.

Temporary Hard Standing on site will be constructed. This will provide a good surface for traffic to run on, thus reducing the risks of dust and dirt being carried out of the site onto the public highway.

Mud and debris on the road is one of the main environmental nuisance and safety problems arising from construction sites. The project team will make provision to minimise this problem.

In the early stages of the project when demolition and ground works are being carried out, wheel washers will be used to wash down all vehicles that enter / leave the construction site.

The wash bay area will be impermeable and isolated from the surrounding area by a raised kerb or roll over bund to contain solids, with effluent directed to the foul sewer (subject to discharge consent).

Roads will be swept using a road sweeper during site working hours, as and when required, especially during demolition and excavation work periods.

Where the main demolition and ground works are carried out during the summer months, the risk of dust will be more of an issue. During dry spells, the site will be damped down to reduce the risk of dust.

Vehicles' leaving the site with the arising's of the construction activity and those carrying loose loads will not leave site without the load being covered and the wheels cleaned.

Due to the congested nature of the site there will be no stockpiles of loose materials.

Cutting and grinding will be performed by operatives, using machinery preparatory attachments to reduce dust.

There will be no burning of waste on site. All waste material will be placed in a skip and removed from site to a transfer station for recycling off site.

All skips leaving site will be covered.

### **Skips & Bins & Waste recycling:**

The method of waste collection will be via 40 yd<sup>3</sup> skips which would be delivered to and collected from site using roll-on/roll-off lorries.

As the buildings are in the process of being cleared of rubbish and soft stripped, all arisings generated from the works will be separated into their specific waste groups, loaded into bins or skips and transported to a licenced processing facility. A waste disposal log will be generated as an active document.

### **Demolition Plan**

The specialist demolition contractor will provide a detailed demolition plan soon after their appointment. This will be site specific detailing supervision, method, safety, dust & noise control and material recycling.

## **3.8 THE CONSIDERATE 'CONSTRUCTORS' SCHEME**

Countryside Properties recognises the sensitivities associated with the re-development of Churchill Quarter, and will therefore carry out all works in a manner so as to minimise the disruption to the surrounding local environment. All Countryside sites operate under the Considerate Contractors Scheme which is operated by the Construction Industry Board as a voluntary scheme to improve the image of the construction industry.

A Code of practice has been established for contractors to work to. The code of practice requires contractors to:-

Seek to improve the image of the construction industry by striving to promote and achieve best practice under the Code.

### Enhancing the **Appearance**

Countryside Properties will ensure sites appear professional and well managed.

- Ensuring that the external appearance of sites enhances the image of the industry.
- Being organised, clean and tidy.
- Enhancing the appearance of facilities, stored materials, vehicles and plant.
- Raising the image of the workforce by their appearance.

### Respecting the **Community**

Countryside Properties will give utmost consideration to their impact on neighbours and the public.

- Informing, respecting and showing courtesy to those affected by the work.
- Minimising the impact of deliveries, parking and work on the public highway.
- Contributing to and supporting the local community and economy.
- Working to create a positive and enduring impression and promoting the Code.
- Working to create a positive and enduring impression, and promoting the Code

### Protecting the **Environment**

Countryside Properties will protect and enhance the environment.

- Identifying, managing and promoting environmental issues.
- Seeking sustainable solutions, and minimising waste, the carbon footprint and resources.
- Minimising the impact of vibration, and air, light and noise pollution.
- Protecting the ecology, the landscape, wildlife, vegetation and water courses.

### Securing everyone's **Safety**

Countryside Properties will attain the highest levels of safety performance.

- Having systems that care for the safety of the public, visitors and the workforce.
- Minimising security risks to neighbours.
- Having initiatives for continuous safety improvement.
- Embedding attitudes and behaviours that enhance safety performance.

### Caring for the **Workforce**

Countryside Properties will provide a supportive and caring working environment.

- Providing a workplace where everyone is respected, treated fairly, encouraged and supported.
- Identifying personal development needs and promoting training.
- Caring for the health and wellbeing of the workforce.
- Providing and maintaining high standards of welfare.

The project team will have direct responsibility for fostering good community relations with all neighbouring residents and businesses. From the start of this project an individual directly

involved in the management of the site will be identified as being specifically responsible for community relations (Community Liaison Representative).

This single point of contact will be established for all liaison with the general public. We will initiate early and honest communications to establish a good rapport with the community which will help reduce problems that may arise during the construction process. Part of the process will be the inclusion of regular Newsletters keeping our neighbours up to date with what has and will happen on site.

We will ensure that any particularly sensitive works or issues are dealt with in a professional and accountable manner, with the public and local community kept informed at all times. This may include things like out of hour's delivery of large items of plant such as piling rigs etc.

Information boards will be displayed on the site hoarding which will highlight the key personnel on site including their contact details. The regular newsletters will also highlight

the key personnel and their contact details. In the event of a complaint the Community Liaison

Manager will respond by return or as soon as they can. All complaints will be logged, all actions tracked and each item closed out to the satisfactory agreement of all parties.

Prior to any person being allowed on site they have to go through a Health, Safety and Environment Project Induction which, amongst others, will highlight the requirements set out in the Considerate Constructors Scheme and in Countryside's own project procedures.

### **3.9 ACCESS TO SITE**

Industry best practice will be adopted wherever possible to support the construction phase of the development. This will be achieved by ensuring that through the procurement process the main and sub-contractors employed will be members of or signed up to relevant best practice schemes and initiatives including for example:

- a) Considerate Constructors Scheme, which promotes best practice that relates to on-site activities and those near the sites.
- b) Fleet Operators Recognition Scheme (FORS). For suppliers that deliver to, and hauliers that visit the site, we will mandate these businesses to be members of FORS before they could deliver to site.

Separate accesses will be provided for pedestrians and vehicles. Lorries and any delivery vehicles will be offloading from Churchill Way while the pedestrian access will be mainly from Ethelbert Road.

#### **Details of how pedestrian and cyclist safety will be maintained**

Vehicles entering and leaving the site will be supervised by our road marshals. Road marshals / crane banksmen will supervise vehicles unloading on Churchill Way

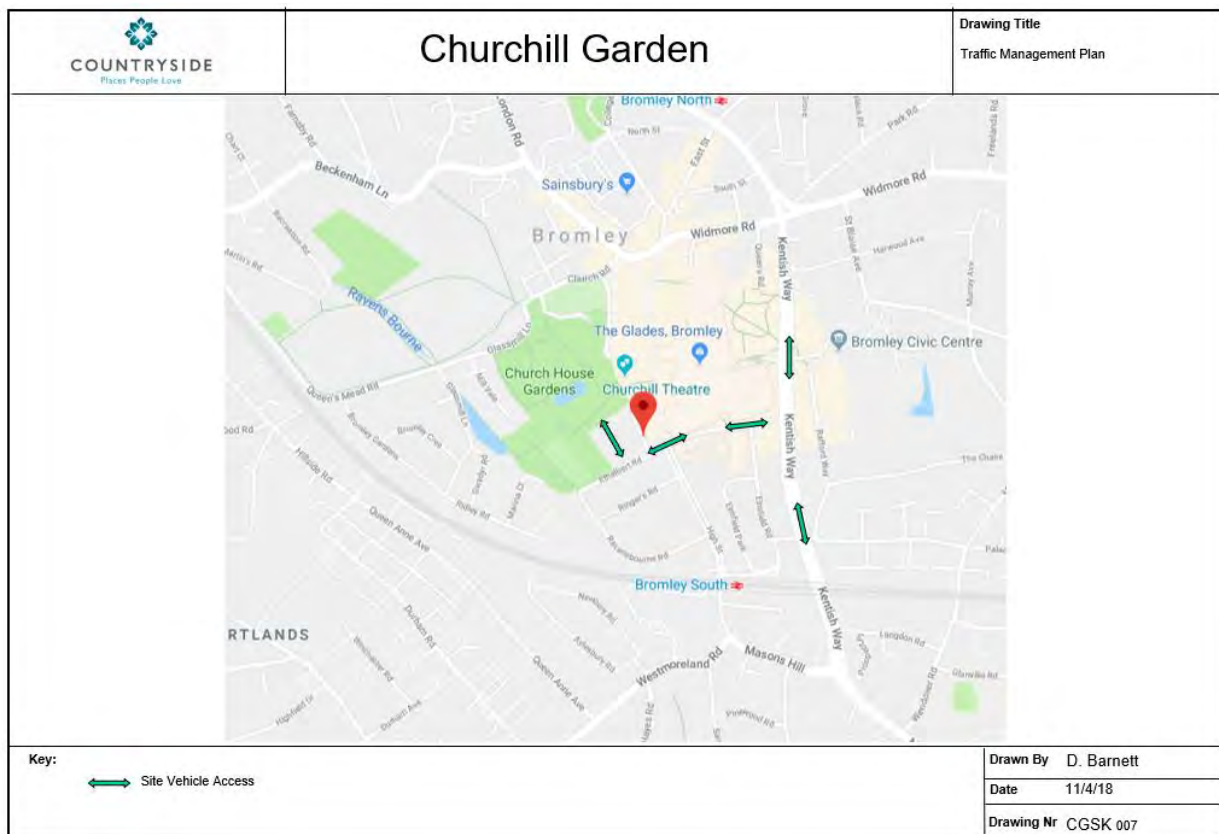
The public/pedestrians will have right of way along the pathways that surround the site. The construction site gates will be kept closed and monitored by site security, only when deliveries are made to the site will they be opened to allow vehicles onto the site, at which

time barriers will be put across the pavement to prevent access by pedestrians.

These barriers will be manned by our site security.

The appointed Logistics' Manager will also ensure that the external perimeter of the site is regularly patrolled to ensure that any debris is kept clear of the pavements.

With regards to cyclist safety any delivery vehicle parked within the loading area will be coned off to direct the cyclist around the lorry.



**Figure 3 - Indicative Traffic Management Plan**

Should there be any complaints arising from the works, residents will be able to call personally to the site offices. Any residents visiting site to raise a complaint will be requested to sign-in and our security guard will escort the visitor to the site offices. Our Community Liaison Manager will deal personally with comments or complaints from the public or neighbours and will ensure that they are resolved swiftly. A record will be kept of all comments and complaints.

At various points there will be gates to allow the road to be crossed and notices will be erected adjacent to the crossing to warn of traffic. The state of the roads will be closely

monitored, and the use of wheel cleaning points and road sweepers will be made to ensure that the impact of this project is kept to a minimum. A wheel cleaning point will be provided adjacent to the site entrance.

All Lorries will be within the confines of the site during loading and off-loading. Once unloaded the Lorries will leave site via the same route they arrived on.

The numbers and types of vehicle will vary daily depending on the type of activity being carried out on site. For instance, when the concrete frame is being erected there will be two rigid lorries a week, there will be days when there will be only one three axel lorry (concrete mixer lorries) a day, but there will be days when this will increase to say 20 three axel lorries a day on days when a large concrete pour is taking place. Table 1 below indicates the anticipated vehicle movements for this project.

<i>Month</i>	<i>week1</i>	<i>week2</i>	<i>week3</i>	<i>week 4</i>	<i>Total</i>
1	5	10	10	10	35
2	12	14	15	13	54
3	21	23	24	20	87
2	12	14	15	13	54
5	54	58	78	49	239
2	12	14	15	13	54
7	65	72	84	79	300
2	12	14	15	13	54
9	69	67	63	74	273
2	12	14	15	13	54
11	81	82	89	87	339
12	94	85	91	97	367
13	92	97	95	89	373
14	87	81	96	91	355
15	86	81	72	76	315
16	81	72	74	73	300
17	69	61	72	59	261
18	51	54	48	53	206

**Table 1 – Anticipated Vehicle Movements**

### Size of Vehicles

Numerous types of delivery vehicles will be used to bring materials to and from the site. These include:

- Skip lorries. These will include roll on/roll off skips for major demolition works (approx. size 7.5m long and 2.4m wide) and standard 8-yard skips for waste (approx. size 7m long and 2.4m wide)
- Ready mix concrete lorries. (approx. size 8.25m long and 2.45m wide).
- Flatbed delivery vehicles for the delivery of various materials including scaffolding, steelwork, reinforcement, bricks/blocks, timber, roofing materials, plaster, joinery etc. (approx. size 8.5m long and 2.45m wide).
- Articulated Lorries, for delivery of pre-cast concrete units and other cladding components.

Signage will be erected to direct deliveries to the required route and all material orders sent out will include specific directions and routes to be taken. This information will also be advised to all subcontractors.

All vehicles will comply with the legal requirements of the highway and therefore will not damage the adjacent streets. There are no planned works outside of the site boundary and therefore no need for tracked vehicle to travel on the surrounding roads.

No vehicles will be allowed to wait on Ethelbert Street, vehicles will be brought straight onto site where they will wait to be offloaded.

### 3.10 PARKING and LOADING ARRANGEMENTS

No parking will be permitted on site during the construction phase.

A strict delivery procedure will be implemented to ensure that Churchill Way and Ethelbert Road are not overrun with site and delivery vehicles. Our road marshals will ensure that traffic flow on both streets is maintained at all times.

All subcontractors and suppliers will be required to give 48 hours' notice of deliveries.

The movement of materials, particularly in the main contract works stage, will also be controlled by our road marshals. He will be responsible for the control and coordination of all aspects of material deliveries and movement.

Vehicles will pull into the site for unloading wherever possible. A tower crane will be provided to facilitate easy and quick unloading of delivery vehicles. The crane will be up to 45m in radius, but the luffing jib will prevent the over sailing of adjacent properties.

Materials will be stored within the boundary of the site. No parking will be permitted on site and all sub-contractors will be informed at the pre order meeting that the surrounding area is for resident parking only. All subcontractors will be encouraged to use public transport.

### **3.11 MATERIALS STORAGE**

Specific method statements will be developed throughout the various stages of the contract to control the delivery, storage and handling of materials. A high priority will be placed on the safe storage and movement of materials around the building footprint.

This is a very limited area and there are few areas for onsite storage. There is no location available for the storage of bulk materials so excavated materials will be loaded into waiting lorries for removal to an appropriate tip. Areas have been allocated for storage of materials and containers and measures will be investigated to ensure the efficient use of the limited area available.

Where practicable materials will be stored off-site but where this is not possible material storage areas will be prepared and located in a suitable location within the site boundary.

Materials will be offloaded and where possible distributed to the place where they are needed for incorporation into the permanent works, this will be done on a just in time basis.

All materials will be stored in an appropriate environment with containers of liquid stored in a bunded area to prevent accidental spills. All materials will be stored in a safe and appropriate condition, i.e. plaster board will be covered to prevent moisture damage and bricks safely stacked and no higher than two pallets high.

The Project management will make adequate provision to avoid accumulation of Bulk materials on the site to prevent inconvenience or disruption and to eliminate the risk of fire, and dust. Both Countryside Properties Plc and Sub-Contractors will also ensure the site is

left in a clean and tidy manner both during and outside working hours. Roads and access ways will be kept clean.

At no time will materials be stored or left unattended outside of the site boundary.

### **3.12 LIGHTING**

Safety lighting and lighting for working will be positioned to provide a safe level of light but will be positioned to prevent the light becoming a nuisance.

Light for working will only be required during the winter months when the days are short and will only be operational during the site working hours. Security lighting will be positioned not to cause a nuisance.

## **4.00 WASTE MANAGEMENT PLAN, RECYCLING AND DISPOSAL**

Countryside Properties are registered under ISO14001: 2004 and have in place detailed environmental management systems upon which we are regularly audited.


We have detailed procedures for the handling and recycling of waste materials and all sub-contractors are required to comply with them. Sub-contractors will deposit waste materials in skips located in specific areas around the site.

All skips will be regularly removed to registered tips as necessary. On site segregation will not be possible due to space limitation; all waste will be segregated at a transfer station.

We are committed to a year on year improvement in our environmental performance and waste control is one of our key performance indicators



Figure 4

Legislation governing the proper disposal of waste, ranging from low risk waste through to hazardous waste . These laws are enforced by the Environment Agency and Local Authorities.

However, all waste produced can also present a real safety hazard to workers on site if it is not properly managed throughout the project. Countryside will need to decide at an early stage:

- **How** - wastes streams produced during building work will be managed in a timely and effective way; and
-

- **Who** - is responsible for collecting and disposal of specific wastes produced on site. Problems often arise when company and individual duties are not made clear before work starts.
- **Flammable materials** - make sure that all flammable waste materials (such as packaging and timber offcuts) are cleared away regularly to reduce fire risks;
- 
- **Work areas** - make clearing waste a priority for all trades. Check that everyone is aware of what is required that it is being done;
- 
- **Skips** - waste materials need storing safely before their removal from the site so make sure that you allow sufficient space for waste skips and bins etc. Plan where the skips can be positioned and how often they will need to be collected;
- 
- **Waste within buildings** - consider waste generated inside the building and whether you need to provide wheeled bins or chutes etc. to enable it to be brought out of the building safely;

## WASTE MANAGEMENT PLAN

It will be proposed to appoint a specialist waste management with their own waste transfer station enabling all site waste to be removed from site in mixed format, which will then be sorted for re-cycling or re use at the waste management company premises.

The project will have the Site Waste Management Plan in place prior to works commencing on site and it will be monitored on a daily basis by the appointed waste champion from the site-based management team.

The site waste management plan will be audited at least monthly by our Regional Environmental Manager.

### 5.00 EXISTING UNDERGROUND SERVICES

Countryside Properties will be carrying out a survey to confirm and locate all services known to exist on the site. Any services found will be plotted on a drawing and issued as an 'As Built' record. It will be necessary for trial holes to be excavated to determine depths.

Countryside Properties operates a Permit to Dig System of Work for all excavations. No excavation works are to commence until the site manager or engineer has issued the Permit to the machine operator or the operative. This system of work ensures that the appropriate

checks have to be made in accordance with the latest regulations and the Health and Safety at Work Act

### **6.0 PEDESTRIAN SAFETY**

The site hoardings will be erected on the back edge of the existing kerb, with signage directing pedestrians to use alternative foot paths. Bulkhead lights will be used to provide a safe environment for pedestrians.

Before any works that affect a public right of way starts, agreements will be obtained from the local council and highways and the appropriate licences put in place.

In addition, the area will be regularly monitored by Site Management for hazards and improvements.

### **7.0 SEQUENCE OF WORK AND METHODS INCORPORATED**

#### **INTRODUCTION**

At this stage, the following is an outline generic guide to the sequence and methods of work and will therefore be liable to change due to specialist input, design and employer's requirement amendments.

A Construction Health and Safety Plan and a Project Execution Plan (PEP) will be prepared for the project ensuring, as far as is reasonably practicable, the health and safety of all persons at work and those who may be affected by the works. All contractors employed on the project will be reminded that this document is not definitive and is a 'live' document and as such it should be treated as a tool for use in the development of procedures required by Law and other safety regulations that may apply to the type of work to be undertaken.

A detailed programme of works will be prepared, and this will sequence both the on and off-site works.

Construction will commence following the removal of the existing foundations & Boundary walls. The hard standings will be installed formed and once an access into the site has been prepared, then the piling mat can be started.

The construction sequence will start from Block G Prior to the relocation of the Substations and, then blocks ABC followed by DEF

A total of 2 Tower cranes will be used for the construction, the size and manufacture of the tower cranes may vary but they will all be of the Luffing Jib variety.

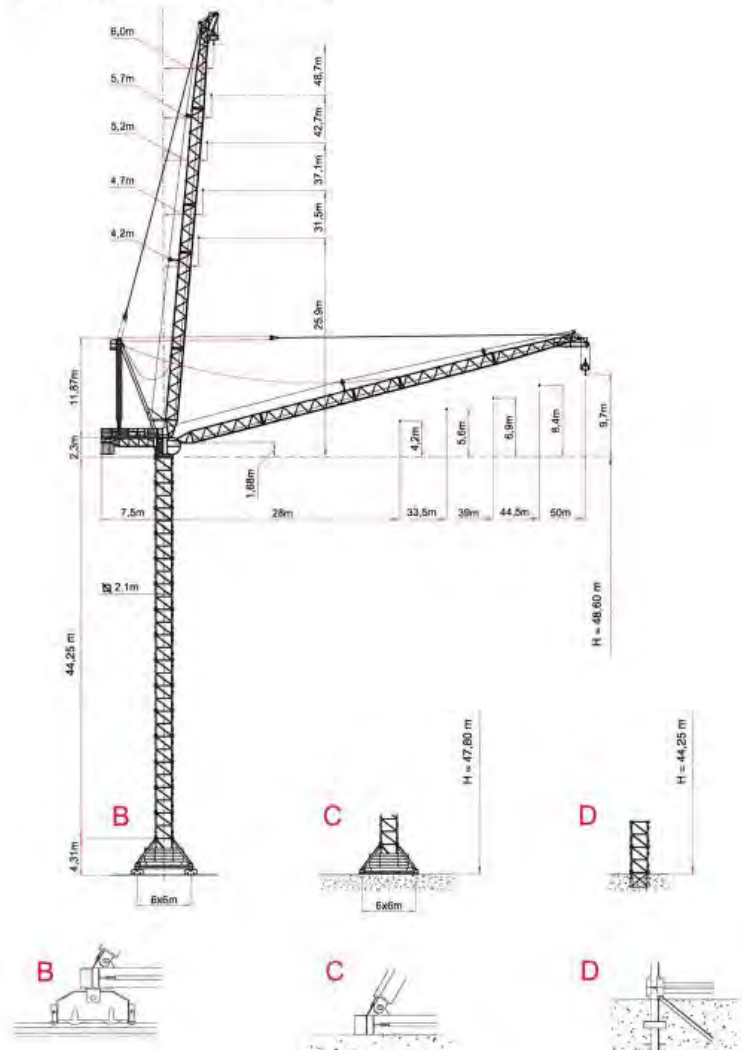
The use of luffing jib tower cranes ensures that there are no over sailing issues and also the crane can be used to give full cover to the concrete framed buildings at all times as this will minimise the programme duration. See figure 5 for an example of a luffing jib tower crane.

The type that will eventually be selected will be chosen for the following:

- Lifting capacity
- Parked radius (to ensure that it does not over sail the boundary when out of service)
- Speed of operation
- Availability

At no time will the crane over sail or lift materials over adjacent properties

## Raimondi LR 120



**Figure 5 – Luffing Jib Tower Crane (For Information Only)**

All lifting equipment and appliances will carry current test certificates and be inspected before use and at regular intervals. A trained banksman will attend the crane at all times to ensure safe lifting and use of the crane is observed, and he will be fully trained and certified as a qualified banksman.

The cranes will be installed with a SMEE or similar system to prevent them lifting outside of the boundary of the site. All legal agreements and insurances will be in place prior to the crane being erected.

### **7.1 PILING MAT**

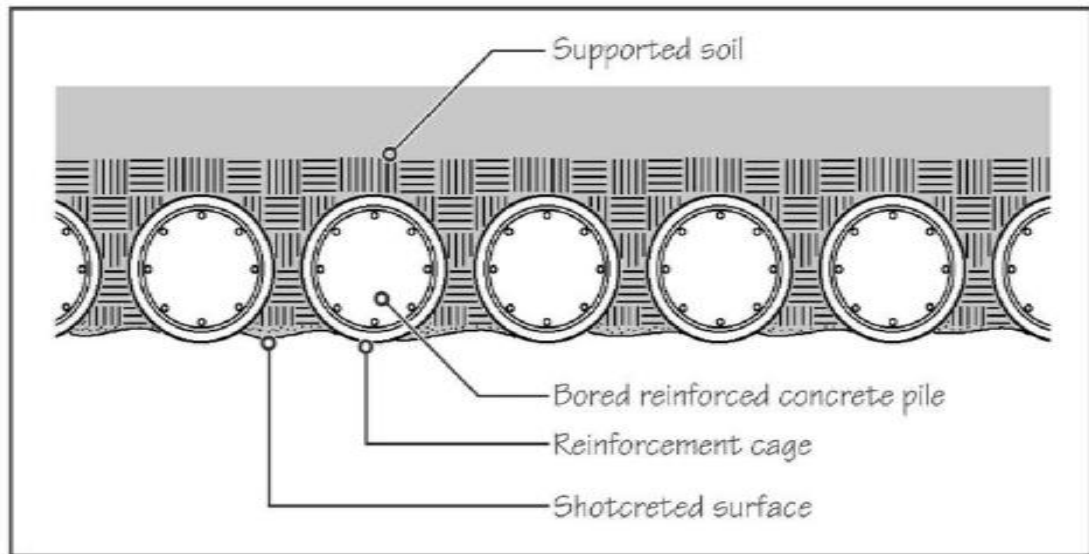
Piling mats will be designed by the structural engineer that Countryside Properties will appoint for this project. The piling mat will be installed by the appointed groundworks contractor to the correct levels and specification for the piling rig.

### **7.2 PILING**

The method of piling chosen for the permanent piling is the CFA piling method, as this produces the least vibration and the minimum of disturbance to the surrounding environment.

The main piling works will commence under the perimeter retaining wall, then the structural load bearing piles beneath the basement construction supporting the residential blocks above.

Contiguous piling will be used for the basement walls.



**Figure 6 – Contiguous piling**

The Countryside Properties Ltd Project Management will be responsible for all aspects of the above operation and will have previously prepared or reviewed a specific Risk Assessment for the task at that location.

The Project management will:

- Ensure that all control measures are in place.
- PPE is issued and being used correctly.
- Ensure competency of all operators'.
- That plant inspection/testing records are in place.
- Satisfy themselves that the piling mat has been properly constructed and is in good order.

The specialist Sub-Contractor will install the piles in accordance with the Engineer's details, to the correct levels, both toe and top level, which will be verified by Countryside Properties Ltd.

The piling contractor will produce a pile a log containing all information relevant to the piles, and shall submit this record for Countryside Properties Ltd.'s information.

All pile arising's shall be removed from the location and stockpiled prior to being taken off site.

### 7.3 FOUNDATIONS

Upon completion of the piling the reinforced concrete pile caps and ground beams can commence.

Foundations will be excavated, and blinding placed as required. Earthworks support will be installed to minimise excavations if required and to provide safe working areas.

Reinforcing cages, as necessary will be pre-fabricated on site and placed in position. Shuttering will be fixed and checked prior to placing concrete.

Concrete will be placed, where possible direct from the concrete truck, and protected until the following day, when shuttering will be struck and removed. Brickwork substructure will then be constructed.

Provision will be made for any drainage and ducts that pass either through or under the foundations. On completion of the foundations, all grid lines and setting out will be marked on the bases to check that they have been cast in the correct positions.

Once the setting out has been completed the installation of the surface water and foul drainage connections will commence, this will allow provision for disposal of ground and surface water during the course of the works. All underground drainage and ducts will be installed at the earliest possible stage and any protection required will be provided, including the re-routing of existing services, and the excavation of the new service trenches.

Job specific method statements will be requested prior to various aspects of the works being carried out.

## 7.4 CONCRETE FRAME

A specialist concrete frame contractor will be appointed for the erection of the concrete frames to all blocks.

The Countryside Properties Ltd Project Management shall be responsible for all aspects of the above operation and will have previously reviewed a specific Risk Assessment for the task at that location.

The Project Management will;

- Ensure that all control measures are in place.
- PPE is issued and being used correctly.
- Check that all operators are competent.
- That plant inspection/testing records are in place.
- Be familiar with the scope of works and the design.
- Undertake the works in accordance with the Programme.

Once an area of ground floor slab is handed over to Countryside Properties Ltd by the ground works contractor the column & concrete wall reinforcement shall be erected as per the design. Suitable access platforms shall be utilised for work over two metres in height above slab.

Formwork shall be lifted into place using a tower crane and fixed into position. The formwork shall be either a proprietary system or a traditional timber and ply item manufactured on site; the choice and design shall be the responsibility of concrete frame contractor.

Following an inspection, concrete shall be placed using a skip or a pump. Operatives shall work from a suitable platform provided at high level on the column, and gain access to this platform using a fixed ladder.

Formwork shall be struck the next day at a time when the specialist Sub-Contractor is confident that sufficient hydration has taken place.

Concrete shall be sampled and tested in accordance with the relevant British Standard.

The slab/beam formwork/ falsework may only be removed when the specialist Sub-Contractor has satisfied him/herself that the slab is of sufficient strength to do so following the testing of concrete cubes.

Once the formwork has been removed it may be necessary for the props to be put back into place until such time and the cube tests indicate that the concrete has reached its full working strength.

### **7.5 BRICK AND BLOCKWORK**

Bricks and blocks will be delivered to site and off loaded where possible duct the areas in which they will be required. Materials will be distributed by the tower crane using the

appropriate lifting equipment. Split packs may be utilised due to the restriction on storage space on site.

The materials will be inspected upon delivery for quality and damage; any sub-standard materials will be rejected.

The materials will be stored on their pallets and protected from the elements by shrink wrapping. The materials will again be inspected for quality and damage before being incorporated into the structure.

Care will be taken to establish the correct setting out the regular checks will be made for line, level and quality as work proceeds.

Risk assessments for manual handling will need to be carried out to alleviate any risk of personal injury. Relevant precautions will be incorporated into method statements.

## 7.6 ROOF STRUCTURE

Upon acceptance and handover of the concrete frame the roof cladding works will commence. Perimeter edge protection and where necessary internal birdcage scaffolding will be installed by specialist subcontractors under the guidance of the roofing contractor.

After installation of the scaffold and acceptance by Countryside Properties the roofing materials will be craned into location using the tower crane or fork lift.

Roofing materials will be loaded out on the scaffold using the crane. Scaffold tower stair cases will be used for access of operatives to the working area. Roof installation will follow the same installation sequence as that of the main concrete frames and the brick and block work.

## 7.7 EXTERNAL WINDOWS / CLADDING

This works will be carried out by specialist subcontractors. Care will be taken upon delivery to ensure that materials are carefully unloaded, stacked and protected ready for use. Prior to acceptance of any components on site, all will be inspected for quality of product and any damage that may have occurred during transportation to site.

All components will be carefully and fully protected during the construction process so as to avoid any resultant damage. Access for the works will from the main elevation scaffold due to the site constraints.

## 7.8 INTERNAL FINISHES

A finishes programme will be produced in conjunction with all trades which will then be closely monitored throughout the duration of the project. This will include works required to the energy centre.

As soon as the building work is sufficiently advanced the first fix installation will proceed. The partitioning/dry lining will be set out in accordance with the agreed Architects details.

During the plumbing first fix period all mains services, such as hot and cold water pipe work and heating, will be installed. Testing will be carried out to an approved standard in stages to suit the progress of the works.

The electrical first fix works will be co-ordinated with the plumbing and will consist of all necessary conduits and trunking to facilitate the wiring of the electrical installations. As soon as containment is sufficiently advanced wiring will commence.

All carpentry 1<sup>st</sup> fix items, i.e. door linings, frames, window boards, grounds etc., and will be fitted prior to the commencement of plastering and finishing. All finished items will be protected from damage during the construction process.

Plastering and dry lining works will progress in line with the progression of the M&E 1<sup>st</sup> fix items. Particular attention will be given to the following: -

- Confirming that all penetrations through walls have been completed made good and fire stopped if required.
- Ensuring that all reasonable shrinkage has taken place within the block work and there are no saturated areas.
- That all pre-finished elements are fully protected.
- That the buildings is sufficiently watertight and protected from the elements and ensure that the temperatures are in the correct range for plastering works to proceed.
- That good level of temporary lighting is provided.
- All areas of work are to be kept clean and tidy; this would be monitored on a day to day basis by the Site Management Team.

All redundant off-cuts of board/studwork will be cleared from the workface on a regular basis to an agreed location for removal from site for recycling.

On satisfactory completion of the dry lining and plastering, second fix activities will commence such as the installation of grilles/diffusers, fixing of sanitary ware and connection

of electrical light fittings and accessories along with the installation of final items of specialist equipment in line with allied building finishes.

Throughout the services installation, routine inspections will be carried out to ensure that the services are being installed to the required standards within the requirements of the specification. Sectional testing will be carried out as the progress of the work

As each area is released and accepted the carpentry 2<sup>nd</sup> fix works will commence and follow the programmed sequence. It is our intention to sample fix final items, i.e. hooks, toilet roll holders etc. remove to safe place and final fit after decorations are complete.

The decorations will naturally follow the carpentry 2<sup>nd</sup> fix and will be sequenced in this way. Prior to decorations commencing all rooms and areas will be thoroughly

inspected for any defects, once areas are cleaned and only then will the decorations commence.

Protection of all joinery items will be maintained until Practical Completion.

Following the completion of the final fix, each unit will be inspected by Countryside Properties and any defects found will be made good. The Unit will then be offered to the client for inspection, and an agreed snagging list will be prepared and the works made good.

Once the final snagging is completed the units will be handed over to the client and locked up until each block is ready to occupy.

## 7.9 EXTERNAL WORKS

Arrangements will be made in advance for the inspection and witnessing of tests by the local authority to ensure that works are carried out in accordance with their requirements and to suit the construction programme.

Works to form hard landscaping features such as planters and paths and roads will commence following the striking of the scaffolding.

Areas will be completed and handed over with the adjacent block. Adjacent areas that have yet to be completed will be fenced off until such time as they are complete and the adjacent block is ready for handover.

It is envisaged that specific method statements for this section will be required and as such will be obtained and agreed prior to commencement.

## 8.0 SUMMARY

In the above text we have explained the sequencing of the works and the methods that will be employed to deliver a successful project in the shortest possible construction time period, also set out to demonstrate our commitment to a well-planned and safely executed project.

The above method statements are of a general nature and indicative to a project of this type. Therefore prior to the commencement of each stage of the construction works, job specific method statements will be produced and agreed with the Countryside Properties Limited Site Management Team and the Principal Designers for inclusion in the Safety Plan.

## 9.0 Appendix

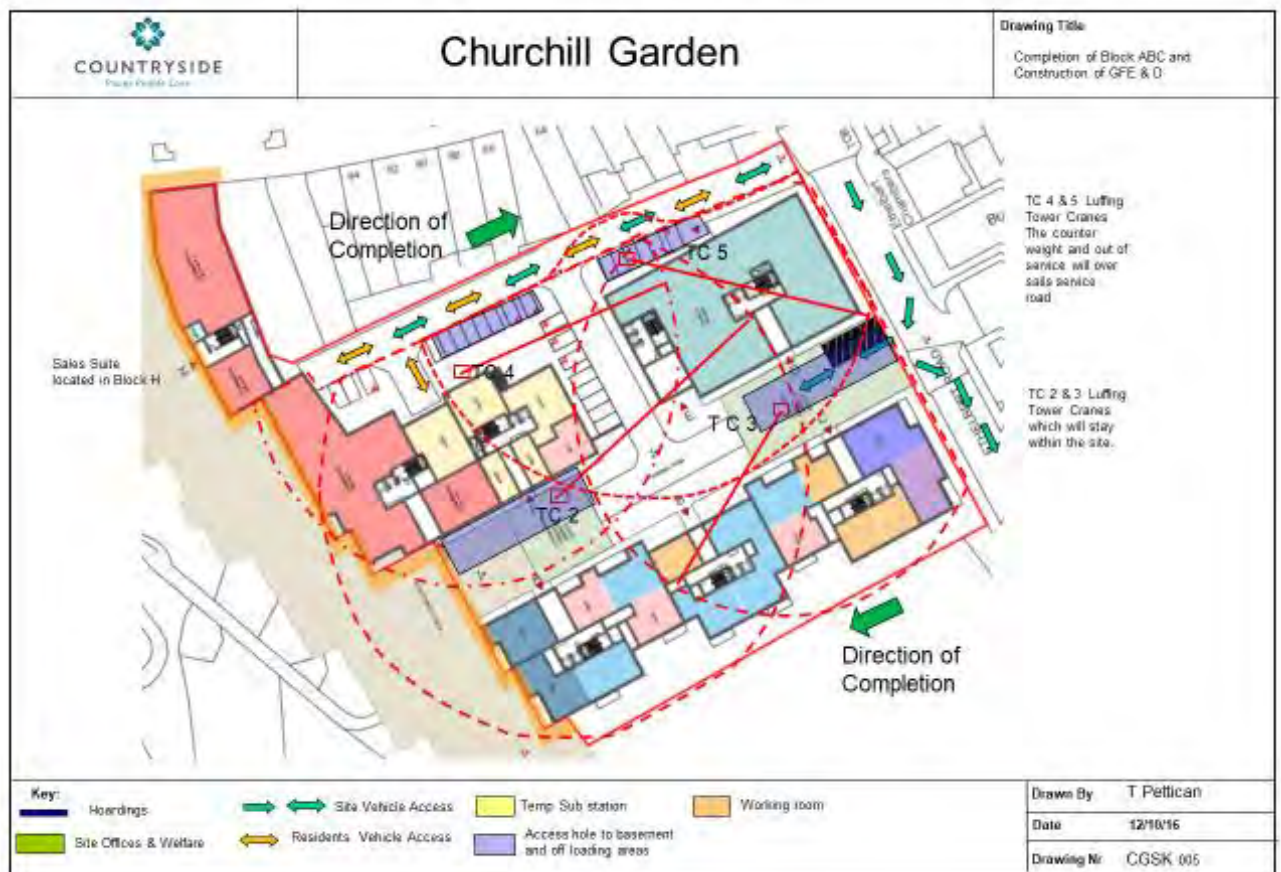
### Appendix A – Site Location Plan



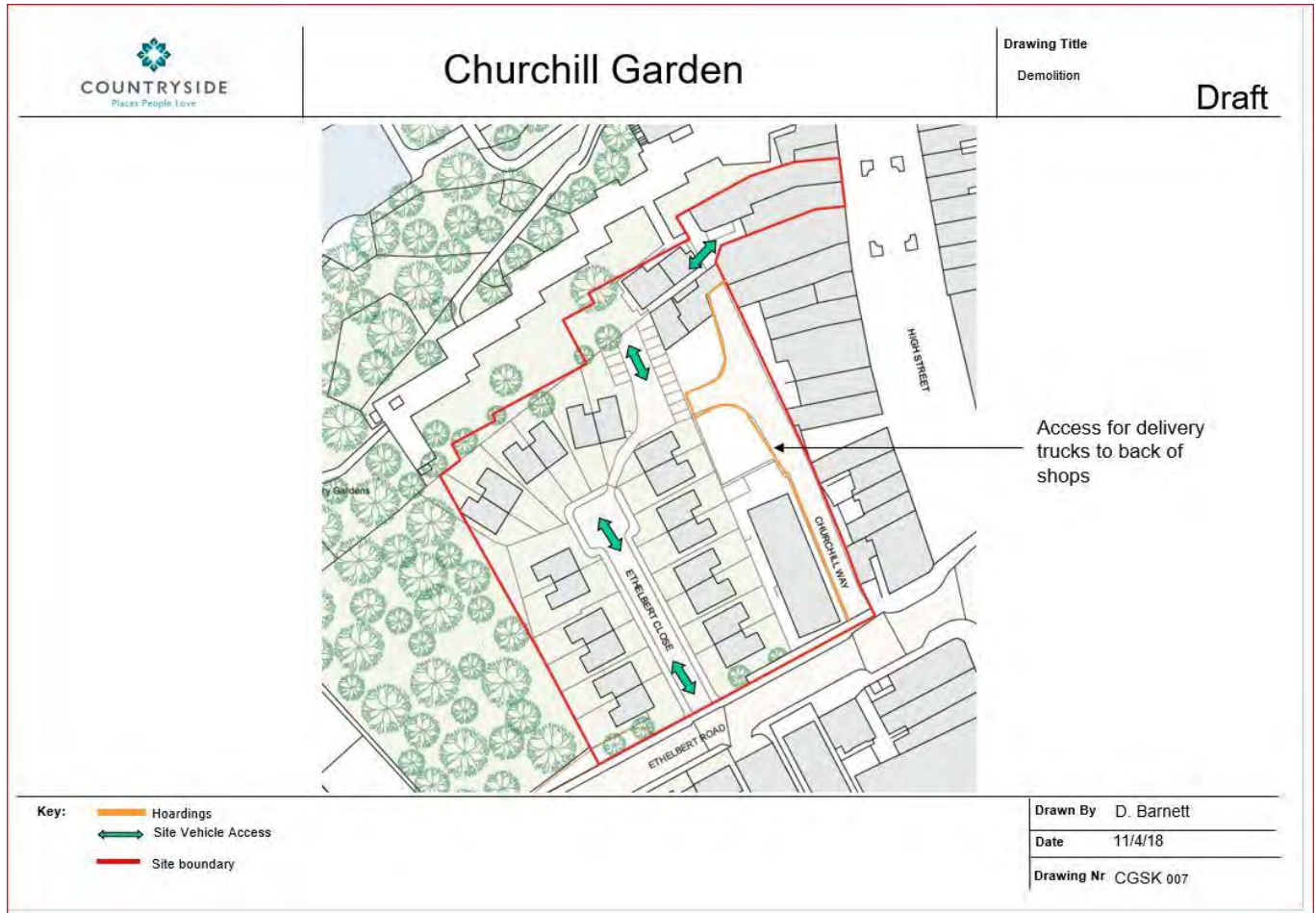
## Appendix B – Access Routes



## Appendix C – Proposed Tower Crane Location

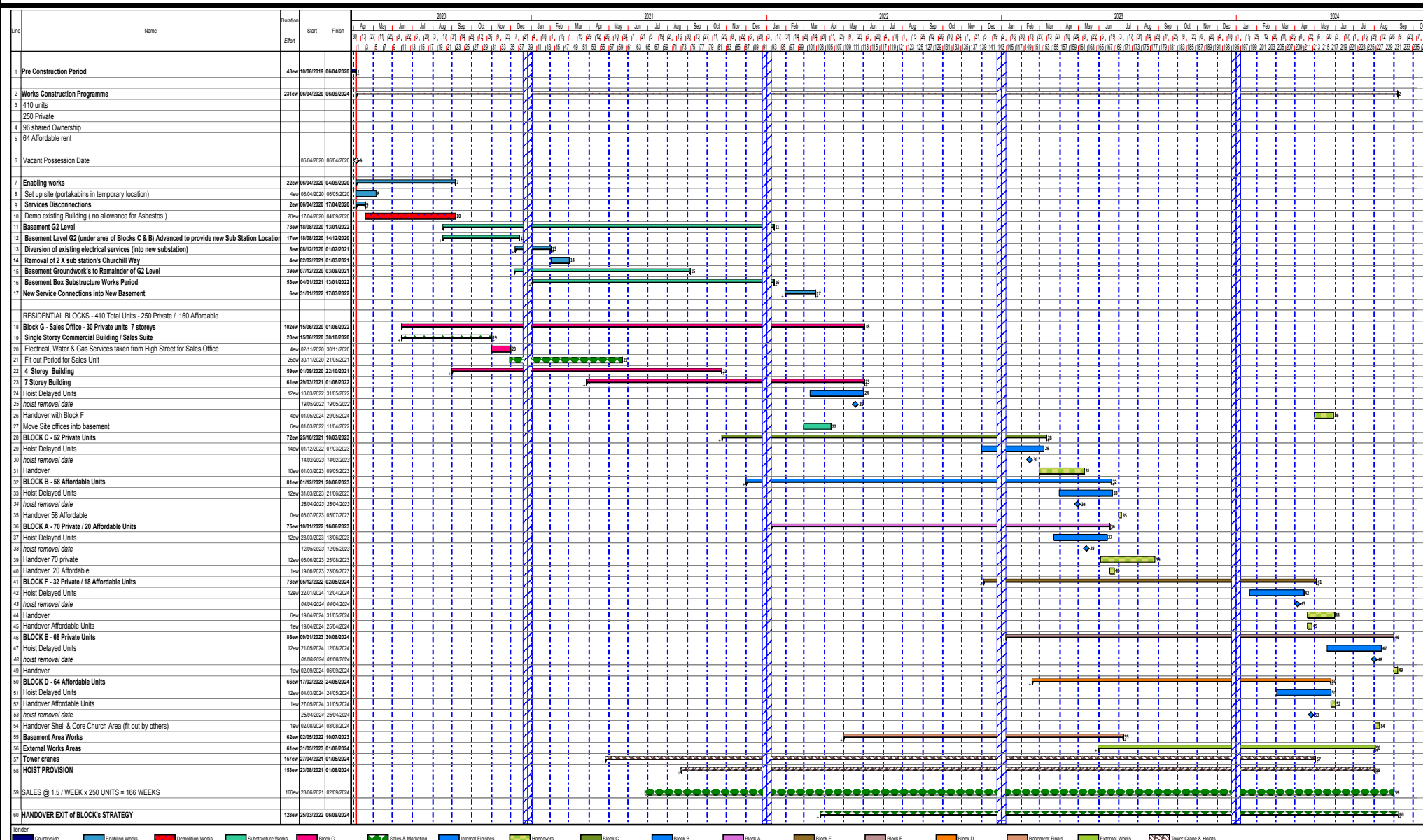


## Appendix D – Demolition Access



# Churchill Quarter

## Construction programme Rev D



**Programme Ref:**  
CH/PH1/410U/bb/001 rev D

**Programme Issue Date:**  
**19/02/2018**  
**Programme Revised:**  
**19/02/2018**

**Revision Notes**  
DRAFT FOR REVIEW - revised scheme 410 total units

**Prepared By:** bb  
**Approved By:**