

Construction Methodology

Site Establishment



The existing building is to be demolished down to ground floor by others. We will need to discuss the temporary site hoardings to be provided by the demolition contractor, as there may be the potential for these to be adopted for the construction works. The hoardings will incorporate viewing windows for ambulant persons and persons using wheelchairs, and will also provide space for graphics and signboards to promote the development for LB Camden.

Other items to discuss and coordinate with the demolition contractor will be:

- Party wall works or protection.
- Isolation of existing services and retention of elements for construction.
- Strategy for vibration and background noise monitoring.
- Opening up and structural investigations.
- Temporary street crossings into the site.
- Asbestos surveys and removal.

Our site layout plan has taken full account of site security, access control, traffic management, welfare, temporary power and water supplies, emergency procedures, deliveries, waste removal, storage and safe access to all work areas. The site office and welfare compound will initially be located within the footprint of the previous buildings and will be mobile as it will need to be relocated as the initial works proceed. Once substructures have been completed the gantry will be erected over the turning circle at the entrance to the new building which will support the main site welfare and office set up whilst enabling site vehicles to turn around off the public highway. The site offices / welfare have been sized to accommodate the anticipated peak workforce of a circa 100 personnel.

A temporary builder's power supply will be organised with the local power supplier sufficient to power the office and welfare accommodation and general site power and lighting. Water for the site will be direct from the local mains with a builders supply agreement with Thames Water. A temporary generator located within an acoustic enclosure will be used should this be necessary in the early stages.

Party Wall Matters

The arrangements for temporary protection, support and monitoring of the Deane House party wall will be implemented as early as possible after site establishment.

Groundworks & Foundations



The first construction operation following the demolition (by others) and site investigation surveys will be the removal of the existing ground floor slab and installation of the piling platform. This will be designed by Kier Professional Services based on the loads imposed from the piling rig and the existing site ground conditions.

Initially sheet piling will be carried out to form the lower ground floor area for the hydrotherapy pool and plantroom at the western end of the site. A silent driven piling method will be employed to minimise noise and vibration on the adjacent structures. Following the sheet piling, rotary bored piling will be carried out to form the foundations for the new building. The piling works will generally commence at the south-west side of the site and work towards the site vehicular entrance off of Greenwood Place. Piled foundations are required due to the anticipated ground conditions, which are expected to comprise several metres of made-ground overlying London Clay. Piling reduces the amount of excavated materials created on site, and hence the amount of vehicles required to remove the material from site.

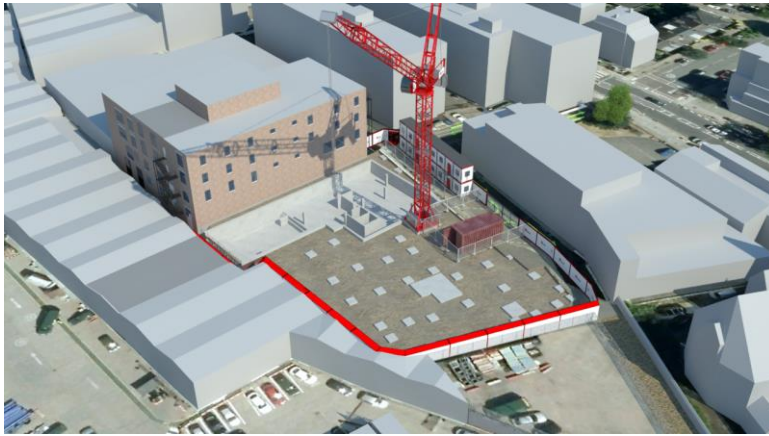


The spoil removed from site during the ground works will be categorised and correctly handled in accordance with environmental waste regulations.

After completion of the piling works the groundworks contractor will commence excavating for lower ground floor area (for the hydrotherapy pool and plantroom), and start forming the pile caps and ground beams, together with the tower crane base. The new underground drainage will also be laid concurrently with the foundations. All excavated material removed from site will again have been tested and properly categorised prior to removal by a licensed haulier.

Tower Crane

A luffing-jib type tower crane will then be erected on the site to facilitate the efficient movement of materials around the site.



Superstructure, Frame and Envelope



The superstructure from ground to roof comprises in-situ concrete slab construction, with in-situ or pre-cast column, wall and stair elements. There is an area of structural steelwork over the hydrotherapy pool. External scaffold is not required at this stage since a proprietary edge protection system will be utilised.

During this phase the Site Team will implement the following controls:

- Permit to load check on the formwork prior to loading with wet concrete.
- Permit to strike check to ensure that the concrete is self-supporting before removing the formwork.

External Envelope



As the concrete works are completed at roof level the proprietary edge protection will have been placed to all slab edges thereby permitting the external envelope works to progress from ground level. The external walls will be constructed working from an external scaffold, with windows and doors following close behind to ensure that the building is made weather-tight as quickly as possible.

Once the superstructure and external envelope works are complete the tower crane will be removed. This will involve the closure of Greenwood Place for 2 days.



The terrace and roof finishes will be completed at this time and permanent edge protection in place, ready for the external scaffold to be dismantled once the external brickwork and windows are complete.



Internal Finishes

The construction of the internal partitions will commence as soon as a floor zone has been cleared of formwork. The intent being to construct as much as possible before the zone is watertight. This approach has numerous benefits:

- Reduced overall programme time.
- Enables the larger and bulkier materials to be delivered to site and distributed while the crane is still available.
- Simpler and more efficient distribution of materials.
- Segregation of trades leading to a safer working environment.
- Early installation of first-fix building services.

The general internal fitting out sequence will be as follows:

1. Internal partitions first-side / blockwork walls and services chases.
2. First-fix building services to walls and ceilings, plus acoustic panel hangers.
3. Second-side partition walls and ceiling where applicable.
4. First-fix carpentry.
5. Second-fix building services.
6. Decorating
7. Floor finishes and protection.
8. Final-fix carpentry and building services (including sanitaryware).
9. Remaining final fix items, furniture etc.

Hydrotherapy Pool

The hydrotherapy pool to be located in the lower ground floor area adjacent to Deane House, for which we will employ pool specialist, FT Leisure (given their proven track record at Five Pancras Square). This will be interfaced and coordinated with the overall construction sequence.

External Works and Landscaping

The completion of the external works within the site perimeter, including hard and soft landscaping, will be undertaken once all scaffolding has been removed.

The highways improvement works and pedestrianisation of part of Greenwood Place will be undertaken in a phased sequence towards the end of the construction works to enable a one-way site access system to be implemented for as long as possible during the construction works. This will also eliminate the risk of damage to the new highways works prior to completion of the development.



A detailed sequence will be agreed with the Local Highways Authority and in consultation with the adjoining properties on Greenwood Place to ensure that safe vehicular and pedestrian access and egress is maintained to all properties whilst the highways improvement are carried out (refer to section 4.7, Consultation with Local Community for further details of our proposed consultation measures).

2.4 Commissioning and Handover

Inspection and commissioning of the new resource centre will be carefully co-ordinated to allow the maximum time to prove the systems and check the building before the systems are put to use. Fundamental to a successful handover is fully understanding the Employer's requirements for testing, witnessing, certification and end-user training. These requirements will be incorporated into a Completion & Handover tracker; the contents and format of which will be agreed as early as possible in the project, and at the latest 6 months in advance of completion.

Kier is committed to handing over the project defect free. Our philosophy is to identify and rectify errors at the earliest point in time, as the works proceed, using our robust Quality Control and Supervision processes. This reduces dramatically the amount of finishing works at handover and allows the site management to concentrate on delivery rather than rectification.

Alongside samples and mock-ups, benchmarking will take place. At the start of each element of work the first section built will be offered for inspection. This accomplishes two key points. Firstly it sets a standard for the actual operatives to achieve and secondly, it prevents repetitive errors in each element constructed. By identifying these early, once again the handover becomes significantly smoother. Once the early benchmarking has been carried out, the installation works will be checked at set intervals. This will involve 'hold points' at critical stages, which will be determined by bespoke Inspection & Test Plans for each element of the works.

A minimum of 3 months prior to completion, handover countdown meetings will commence. Initially monthly, they will reduce to fortnightly and then weekly as handover approaches. The handover tracker will be updated as information is received, and a filing system (both electronic and hard-copy) will be established from the outset to collate the handover information. A member of the project team will be specifically allocated to this task; however our Senior Project Manager, Chris Martin will retain overall responsibility for managing the handover process.

A detailed commissioning programme from the specialist contractors, integrated and co-ordinated with each other, and complementing the main programme will be produced in consultation with our Senior M&E Manager, Alan Sweeney and is crucial to the successful commissioning of the building systems. The requirements for commissioning and witnessing will be established and incorporated into the handover tracker. The specialist building services contractor, who is to be appointed and a design & build basis, will employ an Independent Commissioning Consultant to manage the commissioning process and verify the M&E installations in accordance with CIBSE / BSRIA guidelines.

Kier will engage an independent Building Services Consultant to oversee the building services design, installation, testing and commissioning. The appointment broadly comprises the following duties:

- Provide independent review and advice during the design stage.
- Ensure compliance with the Employers Requirements and applicable legislation.
- Inspection & witnessing of building services installation works on site
- Witnessing and sign-off of building services during commissioning.

End-User Training

Integral to the successful handover of the building is a programme of end-user training and familiarisation workshops. This programme will be agreed with the Employer several months in advance of the planned training. Update / refresher training sessions will also be organised post completion.

Soft Landings

Kier will ensure the Site Management Team has time allocated for attending site after completion, to assist with a smooth transition from construction site to operational facility during the initial period after opening of the centre.

Health & Safety File / Operation & Maintenance Manuals

The format of the H&S File / O&M Manual will be agreed a minimum of 6 months prior to completion. A specialist consultant will be appointed to compile the Operation and Maintenance Manual. As with the handover documentation, compilation of the O&M documentation will start as early as possible during the works, with sub-contractors required to submit their O&M information as they complete their element of the works (ie not waiting until handover of the project).

2.5 Aftercare

Aftercare arrangements will be established in advance of handover, with site familiarisation visits carried out with the KCL Aftercare Manager. An introductory meeting will also be arranged between the KCL Aftercare Manager and the Employer's FM Manager, and a structured handover process from the Project Delivery Team to the Aftercare Team will be implemented in line with the Kier Management System.