



Abbey Primary

Outline Construction Methodology Statement

Project Description

- A new English medium primary school.
- The construction of the new Abbey Primary will allow the amalgamation of the existing Neath Abbey Infant School (currently split over three sites)
- The new school will be located on the site of the former Dwr Y Felin Lower Comprehensive.
- Building area 2780m² in accordance with the schedule of areas provided.
- The following requirements are set out by the brief:
 - o 420 3-11 pupils
 - o 50 nursery pupils
 - o 15-20 pupils for the early years assessment centre
 - o 30 pupils for additional childcare
 - o The construction budget excluding employers' contingency but including contractors' pre-construction fee and preliminaries for the project is £8 million.
- The school is to be constructed in accordance with the BREEAM excellent.
- The school is to achieve secure by design accreditation.

Main Construction Phase

A logistics plan will be developed in cooperation with the exiting school to take into account delivery times and working hours.

Site Set-up

The site will be made secure by way of Heras panel fencing around the boundary. There will be a single set of vehicle gates (with gate man) which will enter the existing school entrance adjacent to a pedestrian walkway. Skips will be set up within the site boundary on level stoned up area with suitable exclusion barriers.

There will be temporary lighting set up around the site accommodation to enable safe walking to and from site. All lighting will be fitted with timers which will stop and nuisance from lighting affecting neighbouring properties.

Through the early works of the project we will use a temporary Oasis until we can forge access road and hard standing for welfare site cabins.

Perimeter fencing

The fencing will predominantly take the form of Heras or existing palisade fencing around the full perimeter.

Where our new fence line meet existing carriageway we will set back fencing to allow clear view, both up and down Heol Penlan.

There will be a separate area of fencing (heras) to the site office/welfare/car park compound. The main site works will be accessed by Biometric turnstile.

The erection of heras fencing will be installed to secure the red line boundary of the site, which will be checked weekly within Project safety managers weekly report and documented. The boundary line will be walked daily as part of normal site activities to make sure no break in secure line has happened.

At the main entrance we will have approx. 10-15m of hoarding with a set of delivery gates installed, as part of this we will have a site notice board outlaying our regulation H&S paperwork as well as a brief narrative of the project and a 3D image of the project.

Site Logistics

Site operatives will arrive at the main site office/welfare compound, park their vehicles. All Construction deliveries will access site through main gate of heol penlan, which will be controlled by a gateman. A one way system will be implemented. Compound and lay down area will be lying on this route. Site waste will be segregated into material specific skips (eg, wood, plasterboard, metal etc) for onward disposal at a recycling centre.

Within the construction zone segregation of personnel and vehicles will be managed by means of pedestrian barriers and Red & white plastic barriers. Defined crossing points will be established, with

the primary location being by the site entrance gate, allowing the gateman to supervise this intersection.

Unloading of materials

Undertake manual lifting operations as a last resort

Use mechanical means of lifting where possible

Restrict size of load and material distribution travel distances by phasing each area to utilise mechanical means.

Lifting training for operatives undertaking manual handling

Use of trolleys internally to move materials

Storage of Materials

Designated secure storage areas to be provided on site

Sensible stacking/storage methods to be employed

Materials deliveries to be phased to prevent overcrowding on site

Storage away from public where possible

Storage area to be kept away from hoarding

Storage of plant

Vehicle security, Obtain certification for plant and equipment prior to use on site.

All plant to be locked when un-attended within lay down area.

Position plant and equipment away from site offices and new building.

Oil, Fuel and Liquid Chemical Storage⁵

The storage of all BAM and Subcontractor oil containers with a capacity of 200ltrs or more will comply with the requirements of the Control of Pollution (Oil Storage) regulations as follows:

Oil drums are to be stored on proprietary secondary containment systems that will contain 110% of the contents of the largest container, or 25% of the total, whichever is greater. These are to be protected so as to minimise the ingress of rainwater, and secured against unauthorised discharge.

All bulk storage tanks are to be integrally bunded proprietary tanks. The tanks are to be located within the compound area of the site, away from general traffic movements and surface water drains, and secured against unauthorised discharge.

The filling of BAM bulk storage tanks will be supervised by an authorised person who will be issued with a key to the bulk storage tanks for refuelling (Huw Jones). Only authorised personnel will be issued with a key to the bulk storage tanks for refuelling plant. When refuelling, the operator is to remain in attendance at all times.

All personnel are to make themselves aware of the Site Incidence Response Plan (SIRP) (*bam/ep/construction/5.8*) which will be attached to all storage containers. The Site Manager is to be notified of all spillages, however minor.

A spill kit will be available on site, at the location detailed on the SIRP.

Oils and other chemicals, in containers with a capacity of less than 200ltrs, will be stored within a locked store on drip trays. Again, only authorised personnel will be issued with a key to this store.

The location of Subcontractors' oil storage areas and procedures must be agreed with BAM Site Management prior to any deliveries. No storage will be permitted within 10m of the

stream or surface water drains. An Oil Storage Checklist (*bam/ep/construction/5.11*) is to be completed for all oil storage locations.

Recycling

1. Site will be registered with the Considerate Constructors Scheme and target minimum score of final score of 40 (*BREEAM exemplary level performance, Man 03*) out of 50 with a minimum of 7 in each category.
2. Target zero pollution incidents by following this plan.
3. Monitoring of construction site impacts (BREEAM Man03) Measure Energy use as follows:
 - BAM Fuel use (in litres) and bottled Gas/LPG (in Kg) to be recorded on BAM SMaRT from delivery tickets.
 - Subcontractors to copy their delivery tickets for fuel oil, bottled gas, etc. to BAM for inclusion on BAM SMaRT.
 - Energy supply details to be logged on BAM SMaRT indicating ownership of supply (BAM/Client), Supplier, MPAN, MPRN and account details where relevant.
 - Automatic Meter Reading (AMR) Electricity (and where relevant Gas) meter(s) to be installed at main supply point/entry point to site, with usage (obtained from AMR report) recorded monthly (in kWh) on BAM SMaRT.
 - Target maximum CO₂ emissions of less than 12,125 Kg /£1 million.
4. Monitoring of construction site impacts (BREEAM Man03) Water use readings (in m³) from the meter installed at the entry point to the site are also to be recorded on BAM SMaRT.
 - Target maximum water use of less than 90m³ /£1 million.
5. Waste production, and percentage of waste diverted from landfill, is to be monitored on BAM SMaRT.
 - Log all BAM Waste Transfer Notes (WTN) and waste destinations.
 - Subcontractors to copy all WTN to BAM. BAM to record on BAM SMaRT.
 - Target maximum Construction (skip) waste production of less than 112m³ /£1 million.
6. The Resource Management Plan includes details of the waste to be segregated for recycling on site.
 - Target to divert at least 95 % of all waste removed from site away from landfill.
7. All Timber is to be from FSC or PEFC Chain of Custody sources. Details of all deliveries will be recorded on BAM SMaRT.
8. BREEAM Man 03 Responsible Construction Practices. All timber and timber-based products used on the project shall be legally harvested and traded timber.
9. Environmental Toolbox Talks are to be carried out at least once a month, and be recorded on the BAM SMaRT Toolbox Talk Record. All environmental risks are to be included in site induction.
10. The Project Environmental Management Plan and Project Resource Management Plan (RMP) are to be reviewed on a quarterly basis.
11. Monitoring of construction site impacts (BREEAM Man03) Measure transport movements and impact resulting from delivery of construction materials to site and construction waste from site.
12. In addition to the project BAM waste targets stated above and in the RMP, the project is subject to a BREEAM assessment therefore there are additional waste targets to be met:
 - Construction waste production (excluding demolition and excavation waste) of less than 13.3 m³/100m² or 11.1 tonnes/100m²
 - At least 70% by volume (80% by tonnage) of non-hazardous construction waste (excludes demolition and excavation waste) generated by the project will be diverted from landfill.
 - There is no demolition activity/waste on this project.

Earthworks

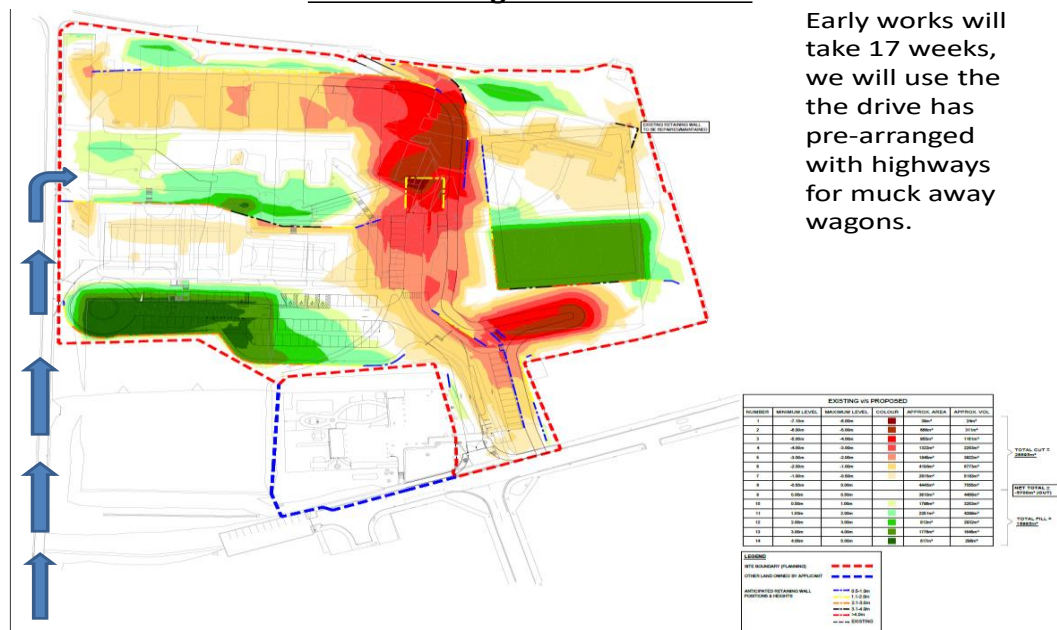
The initial operation of the Earthworks will be to construct a hard-standing route into the site. From where we will complete the reduce level dig & muck away.

The initial route is to establish an area in front of the proposed site entrance/exit with an access road in-between.

The strip foundation will be excavated to the required depths, and we are looking vibro pile under the building footprint to stabilise ground. There is a retaining wall structure which will be constructed in parallel with the foundations, allowing completion of the final stone infill across the site.

Principal drainage runs and storm cell storage tanks may be excavated at this stage, along with any adjacent ducts. The area between the site entrance and egress gates will be fully constructed, including tarmac (less wearing course), in order to provide a clean area for deliveries/site logistics and a stable platform. It will also simplify any wheel washing requirements (a road sweeper is predicted to be utilised supplied by the ground worker). The area will be constructed to a road standard in order to withstand the vehicle loads predicted. A jet wash will be site at the main gate, with the gateman responsible for ensuring all vehicles are clean. The dirty water run-off will be collected via a temporary site drainage run and discharged into the permanent foul sewer via a proprietary Silt-buster unit. A licence for discharge will be obtained via Welsh Water. The earthworks will be planned and carried out to minimise surface water runoff, off site.

Phase showing Cut & Fill element



Use of the Drive

As discussed with Highways, highways have granted temporary access using the drive which is an alternative access to the school site. This entrance will only be used as a temporary access point while we complete the reduce level dig & muck away. This will enable us time to complete service diversion works at the new school entrance (entrance of heol penlan) and completing all associated bell mouth 278 works.

Due to 'the drive' being a single lane road, we are going to impose traffic controlling measures in place as follows to mitigate any disruptions to residents while maintain safety at all times,

- We are going to plan all wagon movements to be carried out outside peak school times i.e. from 8AM-9AM -2.30-30PM. Subject to any change if school wish so. This has been asked by NPT Highways.
- All wagon movements will abide by the timing schedule we give them. I.e. stick to their time slots.
- If there are any timing issues this will be picked up before site and wagons will be stored in lay bays not parked up in residential areas.
- Wagons will be greeted at the lower junction as they join 'the drive' then banksman will escort them up the road until site entrance.
- A letter drop will be carried out approx. 4 weeks before these activities will start to neighbouring residents as asked by NPT highways

Noise and Dust Control

We are aware of the sensitive nature of working around a busy environment. Inevitably, some activities involved in a construction project of this type will generate both noise and dust. To mitigate potential problems we will adopt the following procedures:

Before commencing work on-site we will investigate the current levels of background noise in the area, this will involve undertaking a noise survey at various times and locations around the site. As they are developed our detailed Method Statements and Risk Assessments will identify those activities where noise and dust may be a particular point of concern.

When selecting subcontractors their ability to conform to the environmental standards that we have set, this will be an important part of the bid analysis process.

Our site teams, including our subcontractors will be aware of the requirements to comply with the agreed conditions and working methods. Regular checks will be carried out throughout the project to monitor the general level of site noise and dust.

It will be the responsibility of Rhys Lewis and his site team to manage, coordinate and control the activities as listed above; this will be communicated through notifications, points of contact, weekly Liaison and review meetings so to avoid disruption. At these meetings, we will also discuss the overall methodology of our construction activities.

Having identified in this Method Statement activities likely to give rise to dust and noise, we will then decide on the best approach to minimise these problems. The following is a list of actions and procedures that we could take in the appropriate circumstance to mitigate the effects of noise and dust created by site operations:

- Construction plant fitted with the appropriate attachments to reduce noise and dust

- Regular damping down of areas identified to give rise to dust
- Creation of buffer zones around problem areas
- Controlled handling and removal of materials
- Enclosed skips to be covered where appropriate
- A strict road-cleaning regime, use jet washing facilities at exits onto public highway

For prolonged activities likely to give rise to high levels of noise, we will restrict the hours when these activities take place and will allow for regular “noise free” periods during the day, these periods shall be co-ordinated with neighbouring building occupiers via the liaison process.

All our site operatives will be issued with appropriate personal protection equipment.

Ancillary works at this time will include a temporary drainage connection for site toilets (located in welfare compound set up).

Site wide drainage and trenching for ducts can commence there-after, but not within 5m of the building foot-print as the area is to be used for MEWPS and the mat cannot be disturbed at this time.

On completion of the upper levels of the envelope final drainage/services trenching to the buildings can be undertaken, followed by landscaping and the perimeter fencing.

Mitigate soil and silt run off by cleaning and maintaining haul roads, existing tarmac, storage areas and designated waste areas

Structural Steel Frame

The beam and stick steel frame will be installed by firstly installing concrete pads which will have holding down bolts cast in situ, which then the steel columns will then get installed form. The steel frame will get installed in grid format from end to end, within section completed it will then be aligned levelled and grouted install to base to sure up frame.

The structural steel frame will be installed using mobile crane, the operatives installing the steelwork will be using MEWP, more than likely it will be a cherry picker which offers more easily and versatile bit of complete to complete the bolting up.

Envelope

The envelope will commence towards the end of the frame construction:

- 1) Metsec installation –The perceived method of installation is via large external MEWPS, though an internal installation would be considered subject to a satisfactory safe method being agreed. Entire elevations are required to be completed before moving onto others. Note where the building is two storeys there will be suitable edge protection installed on first floor slab.

External insulated cladding – this element will be the completed via MEWPS, or scaffold birdcage where necessary.

The External windows will follow the cladding installation, with sufficient co-ordination with the cladding sub-contractor to ensure any EPDM installation is captured at the appropriate time. Installation of the windows may be made from the inside, subject to an agreed safe system of work. Mastic type seals between window and cladding are predicted to be undertaken from outside using large MEWPS. Glass installation is predicted to be from inside, except to the large curtain wall areas, where access may need to be external from Large MEWPS. Any heavy glass units will be installed using glass robots as BAM minimum standards.

- 2) Brickwork/Blockwork – this activity will follow behind the cladding/window works to the majority of elevations.
- 3) Scaffolding – primary means of access is to be by external MEWPS run off the stone mat. However, there are a number of areas requiring scaffold which are inaccessible. These include:-
 - a) Block/brick walls; external brickwork walls not practical off a MEWP.
 - b) Roof stair cores
 - c) Roof light well perimeter upstands
 - d) Birdcage scaffold to light wells for internal finishing's and roof light glass platform
 - e) Lift shaft doors
 - f) Guard-rail to stairs
 - g) Haki-stairs
 - h) Access platforms within stairs
 - i) Proprietary scaffold loading bay gates

Internal Works

1. Internal partitions – these will commence when the building is sufficiently water tight commencing at the upper floor and sequencing down to the ground. The logistic route will primarily be via loading bay points established on each floor for Telehandler supply.
2. MEP – First fix installation to commence in line with partition installation, top down, including the primary routes at ceiling level and within partitions. MEP install at slab level will commence when all adjacent partitions are complete and the risk of damage has been mitigated with the establishment of pedestrian 'crossing points' to the service routes.
3. Internal finishes – doors/ceilings/floors/decoration: to follow same sequence. The raised access floor will be fitted as soon as adequate MEP install has been achieved. A forklift will be available during initial period, giving way to beneficial use of the permanent lift towards the latter stages, though larger items will not fit into the permanent lift and will need to be delivered early enough for hoist use, or broken down to manageable size for permanent lift use.

Site Clearance / Crane Mat

The site will be stripped, reduced in level and a crane mat installed.

Hard standing existing foundations to be removed.

Trees and vegetation are to be removed as part of the new building.

Phase showing Cut & Fill element (Ariel)



Ariel,
Showing access
through the
Drive instead of
main entrance.

Groundworks

One of the first tasks will be to construct a new entrance into the site.

Trenches for the below ground drainage and service ducts will then be excavated and pipework and ducting installed. The below ground drainage will include installation of gullies, man holes, attenuation tank. The drainage will be connected into manhole. WAC testing will be carried out throughout any excavation works.

Once below ground works are complete, the top 100mm of the working platform will be scraped off and re-graded as required. A Type 1 sub base will then be installed and compacted to form the final formation to level across the site.

Stairs

The main stair will be manufactured off site and delivered to site to enable quick assembly and installation by mobile crane. Once complete the internal fit-out will commence and will include items such as stair nosing's, wall rail, and balustrade.

Mechanical and Electrical Installations

BAM SE will install a main MCCB panel board which will supply sub distribution boards for lighting and power throughout the new school.

Containment will then be installed to the underside of the suspended floor decks. LED light fittings and controllers will be installed and wired. Light/CCTV columns will be erected externally.

A fire alarm system will be installed and connected to the plant/server room.

External lighting will be installed to the perimeter of the car park through light fittings fixed back to the main school structure and lighting columns.

Further power supplies will be provided to the lift, roller shutters and vehicle barriers. Small power points will also be installed into the stair core.

Lightning protection, earthing and bonding will then be completed.

All services will be terminated in the plant/server room for connections going on through the school.

The electrical system will be subject to a rigorous testing and commissioning process once complete.

Demolition

Prerequisite activities

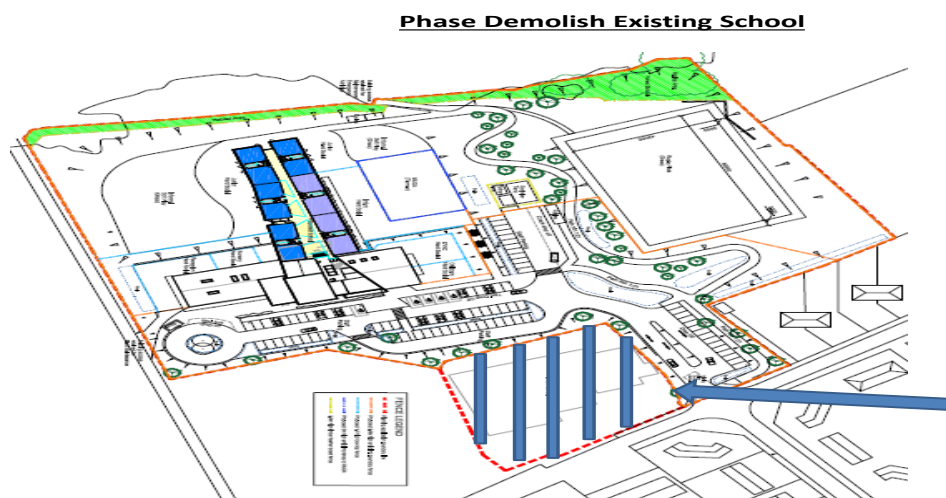
Prior to carrying out the demolition works a full structural survey is required to ascertain its current condition. To complete this investigation works it will be necessary to undertake small amounts of intrusive works to enable full understanding of the integrity of the building before demolition.

At this point we will review the requirements of any temporary works required to maintain the stability of the structure of the retained portion.

Sequence of works

The sequence of works will be as follows;

- Intrusive Investigation.
- Asbestos removal- Following the completion of the updated R&D asbestos survey all asbestos containing materials (ACM's) will be removed from the building for disposal at a licensed facility in accordance with the Control of Asbestos Regulations 2012
- Western power etc. will need to undertake decommissioning of plant both M&E.
- After plant decommissioned the removal of any asbestos material within the fuses will be removed by licensed contractors.
- M&E- Removal of existing substation transformers and incoming gas main by approved sub-contractor
- Working top down and from west to east the structure will be removed in pretty much one go. The extent of the demolition is shown above.
- The material will be stockpiled on site and removed.
- The existing ground bearing floor slab will then be removed and any foundations and drainage will be grubbed out.



This element of 13 weeks work of demolishing existing school will carry out after main school completed & the decant of existing school complete.

Quality Control

The Bim 360 system will be utilised throughout to log, manage, rectify and close out and defects arising from the works. Bam proprietary check sheets will be the primary means of ensuring element

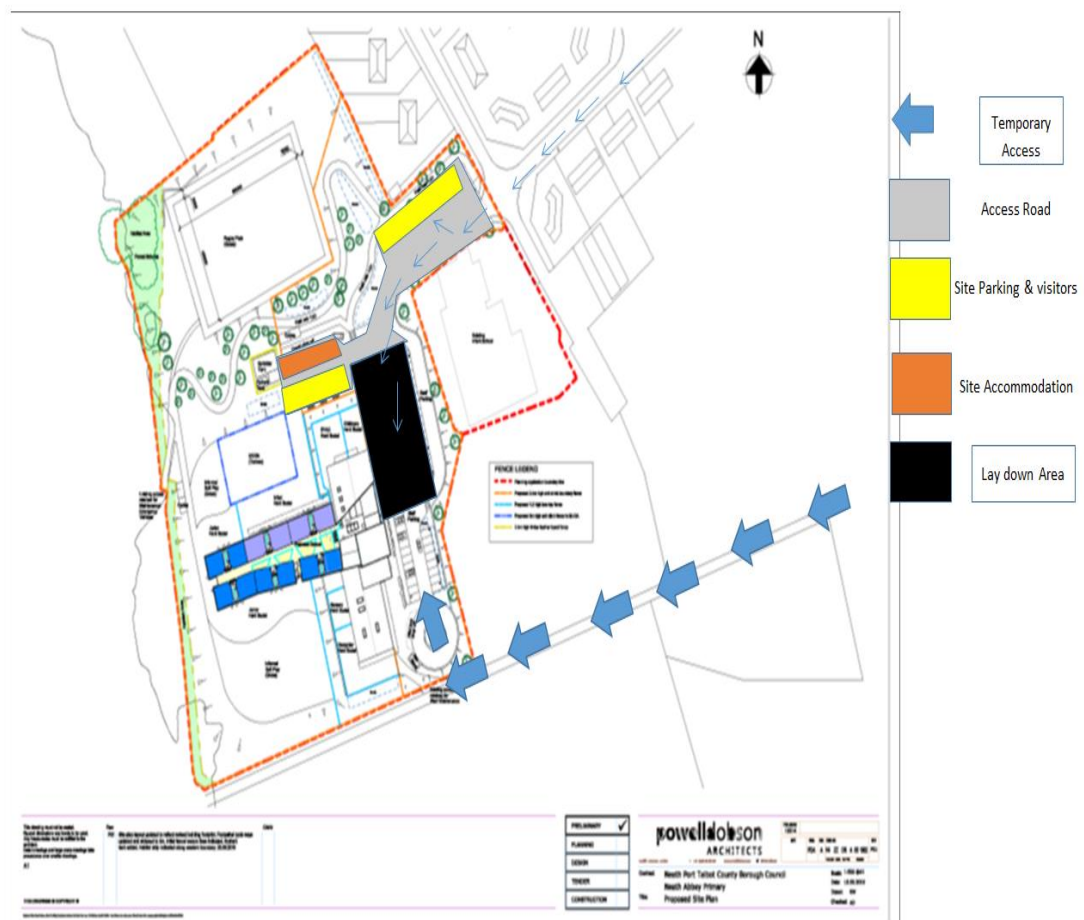
Are thoroughly reviewed at each relevant stage. A formal stage of snagging will be determined within the programme, though constant monitoring throughout will mitigate the scale of works required.

Commissioning

A formal period of time is to be allowed for the systematic commissioning of the building. Pre-commissioning checks will be undertaken at the earliest practical opportunity. The design is to be sense checked prior to install to ensure sufficient access points and commissioning valves are in place.

Site parking

Limited staff and contractor car parking will be available on site. We will produce a site green travel for all visitors to site identifying parking and alternative transport routes to site, where applicable however there will be some parking as highlighted below in yellow.



Complaints Register

Compliments & complaints register will be located on site at both signing into office locations and signing into site.

Also a phone number linked to site will be posted on relevant health and safety posters in welfare and site giving an option for anonymous feedback.



Compliments, Comments and Complaints Register

Site: _____

Contract No.: _____

No.	Date compliment or complaint received	Time	Manager receiving compliment or complaint	Compliment or complaint made by (name)	Address and telephone number of individual complimenting or complaining	Details of the compliment or complaint (written/telephone/verbal/in person)	Details of action taken	Date Closed Out
E.g	07/01/17	15.30	John Smith	Penelope Accrington	15 Belgravia Terrace, London. 020 7200 7070	Telephone call received from Penelope complaining about a loud droning noise emanating from the site at 7.15am this morning, possibly from one of the machines.	Groundworks company contacted, and admitted they had started the machine early to warm it up. Improvement notice issued instructing them not to start machines before 8.00 am.	07/01/2017
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