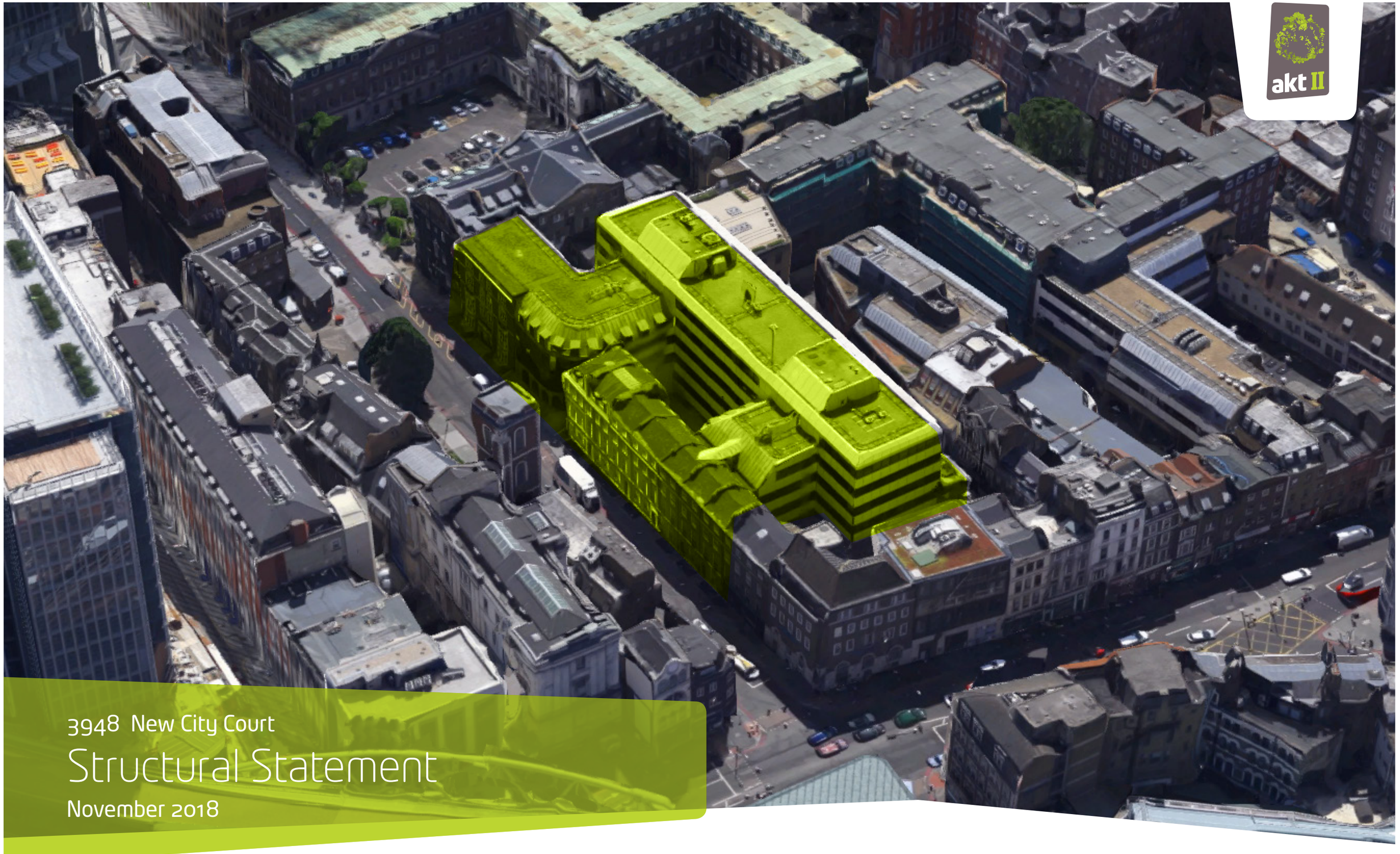
NEW CITY COURT

Structural Statement
AKT II



3948 New City Court
Structural Statement
November 2018

Consulting Structural and Civil Engineers

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Contents

Appendices

Revision	Date	Status
B	27.11.2018	Comments included
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1 Introduction

The following report provides a summary of the work undertaken to date in assessing the impact of the proposed redevelopment scheme of New City Court. The report refers mainly to the superstructure since the impact of the new basement is outlined in the 'Basement Impact Assessment' report.

The report sets out the preferred strategy based on the information currently available. It is noted that site specific geotechnical and fabric investigations with detailed information will be available at later design stages. As such, the proposals outlined here are preliminary and based upon recorded information for this and adjacent sites obtained following a comprehensive desk study.

This information has been provided is be read in conjunction with, and forms part of, the planning application and responds to the requirements outlined by Southwark Council. Detailed construction drawings and supporting calculations will be prepared during subsequent design stages.

Figure 1.1 Architectural rendering of main Tower. (Borough High Street view)

2 The Project

The site to be redeveloped is located in the borough of Southwark in the London Bridge area. The site boundary lies directly along the south side of St. Thomas Street, between the cross roads of London Bridge Street to the east; and Borough High Street to the west. It is located adjacent to the Guy's Hospital accommodation and King's College Guy's Campus buildings. The Site is bordered by Kings Head Yard, south.

The project comprises the construction of a 37 storey tower on the south side, adjacent to King's Head Yard, after demolishing the existing New City Court office building.

Keats House, a smaller building located in the northeast corner, will be reconstructed with a new internal structure intended to reflect the Venetian style of its facade. The front facade is to be carefully deconstructed and rebuilt 3 to 4m away to the west side, to allow for space for a servicing area.

Expansion of the existing level of basement and also the construction of a second level across the whole site is proposed to accommodate extensive cycle parking and gym facilities, in addition to servicing and plantrooms.

Additionally the scheme will create a new public space at the ground floor as part of the redevelopment project, providing an enhanced entrance from St. Thomas Street to New City Court. A direct passage from Borough High Street to New City Court through the London Bridge Underground station is also part of the project.

Finally, the project proposes to retain and refurbish the existing Georgian terrace houses located along St. Thomas Street (no. 4 to 16), following special requirements for listed buildings (Grade II).

This report provides reference to the preliminary findings from the desk study; an outline of the site constraints; a description of the proposed superstructure and substructure works.

Please note that this report is to be read in conjunction with all relevant documents supporting the planning application and in particular with the Basement Impact Assessment.

Figure 2.1 New City Court exit (AHMM render)

Figure 2.2 King's Head Yard (AHMM render)

Figure 2.3 Georgian Houses shop front (AHMM render)

Figure 2.4 St. Thomas Street (AHMM render)

Figure 2.5 New City Court towards the pub (AHMM render)

3 The Site

3.1 Site Location

The Site is currently occupied by office blocks with pedestrian access from St. Thomas Street and vehicular access to the building from the carpark located on the SW corner, plus a loading bay on St. Thomas Street.

The wider contextual location (Fig 3.2) shows the site located South of the River Thames.

Among the buildings along Borough High Street there is London Bridge Underground station which serves the Jubilee and Northern Lines.

On the south east corner the existing building is bounded adjacent with the nurses' accommodation on the East elevation.

Figure 3.1 Aerial image of the site

3.2 Surrounding Land Use

The New City Court Site is surrounded by a series of low rise buildings and several buildings of interest in relation to it.

Borough High Street is lined by shops and limited residential units above. There is also one of the entrances to London Bridge Underground Station, with the access platforms to the trains cutting across the North-West boundary of the site. On the western edge of the site a large ventilation grill enclosure can be seen.

Directly west of the St. Thomas Street properties is a public house called 'Bunch of Grapes', which was built in 1819.

To the east of Keats House are the Guy's and St. Thomas Hospital accommodation buildings and Kings College Guy's campus. Also adjacent is the Guy's Chapel, which was completed in 1780. The Chapel borders the existing site boundary and has had an extension added, although it is not believed to be part of the chapel building itself. Existing record drawings show this to be a computer suite for the college campus with a basement bar and an art store above. The extent of the site boundary of the proposed development here is uncertain due to the extent of the extension, existing chapel and constraints of the party walls, as much of this area was previously connected and changed over time.

On King's Head Yard, there is another public house, 'Old King's Head' which burnt down in the borough fire of 1676 and was later rebuilt. The pub itself has a cellar located on the King's Head Yard cobbled street and close to the Borough High Street egress point.

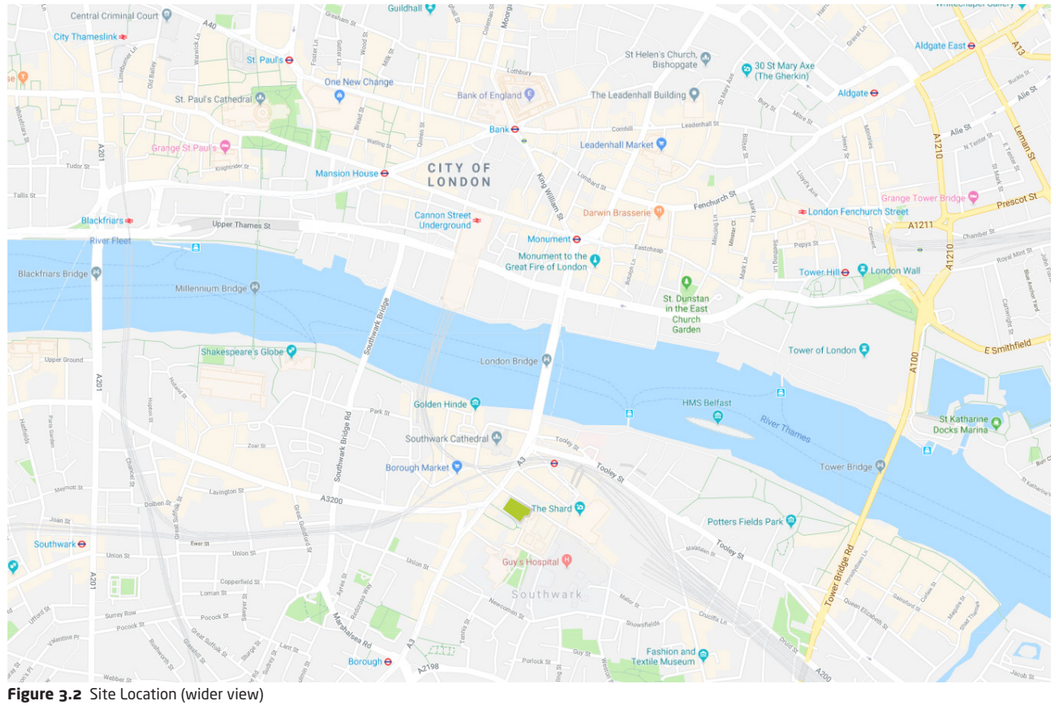


Figure 3.2 Site Location (wider view)

3.3 Site History

Historical Background

The history of the site and its surrounding area has been assessed using extracts of historical Ordnance Survey (OS) maps dating from 1875 to the present day. Note that the maps only indicate information on the date the survey was carried out, they do not give a continuous record of the development. Other sources used include archive information from the London Metropolitan archives and from reports commissioned for the local area and research online.

It is suggested that the area was first occupied as part of the Roman settlement. During this time the area was actually an islet sitting within the course of the Thames. During its peak, in around the 2nd century, it is estimated as many as 3000 people may have lived in this area.

The area's history is intrinsically connected with that of Guy's Hospital which was built on the site in the 18th century. During this time, the area to the east of Borough High Street from St Thomas Street in the north, down to Newcomen Street in the south and across to the Maze was within the demise of the Archbishop of Canterbury's manor.

Site history

The earliest map showing the site dates from 1878-79 and shows St Thomas Street and King's Head Yard both flanked by rows of houses. This arrangement had not changed to any great extent by 1973. However, by 1991 the buildings along King's Head Yard had been demolished and replaced with the current building that occupies the site, the New City Court office development.

The historical map shown in Figure 3.3 shows a graveyard to the south of numbers 4-16 St Thomas Street which was used by St Thomas Church (on the north side of St Thomas Street) and was accessed via a narrow lane between the houses.

Historic information collated as part of this desk study indicates that terraces 2-14 along St Thomas Street were constructed in 1819 at a cost of £7,000. No. 2 St Thomas Street which is now 'Bunch of Grapes' public house was formerly two houses that were combined, now adjacent to the site boundary.

The terraces, along with Keats House were built at the request of Guy's Hospital. The terraces were originally used as lodgings for students although converted to offices when the New City Court development in the 1980's was built.

The office development was completed by 1984 as a 6 storey office building. Drawings from the architects at the time (The Halpern Partnership) have been used to assess the existing building.

London Bridge Area

Of all the bridges along the Thames in London, London bridge has the longest history. The earliest bridge dates back to Roman founders of London and until Putney Bridge opened in 1729, London Bridge was the only road crossing on the Thames downstream of Kingston upon Thames. The current bridge crossing, which opened to traffic in 1974, is a box girder bridge built from concrete and steel, designed by Lord Holford which took 5 years to complete. This replaced a 19th century stone arched bridge and previously a 600 year old medieval structure. During the tudor period there were 200 buildings on London bridge, some more than 6 storeys.

By the 19th century ships from around the world came to trade in the area bringing great prosperity. The trading benefitted from the fact that London Bridge Station was also Central London's first railway terminus.

In the 1960s the area started to lose importance as an international port. The warehouse and port buildings not destroyed in the blitz fell into disrepair.

The 1980's property boom later meant St. Martins Property Corporation Ltd developed what is known as London Bridge area today, recognising the need for central London to grow and converting the wharf buildings into housing, offices and retail units.

During the mid 1990's local landowners became increasingly concerned with the poor environment of the area and three local authorities formed to become the Pool of London Partnership (PLP), recognising the potential of the area and the need to capitalise on the decision to extend the Jubilee Line in time for the millennium.

In 2006 the Business improvement district (BID) was founded to manage and continue to improve the area when PLP ended activities in March 2007.

The BID, which includes Guy's and St. Thomas' Hospital, is an area of commercial and historic interest today. Also known as the pool of London, stretching from London bridge to Tower Bridge, it includes: London Dungeons; Borough Market (the oldest food market in London); the oldest gothic church, Southwark Cathedral; and more recently the Shard, the tallest building in western Europe. Fig. 3.4 shows the new construction sites in and around this BID which borders the New City Court site:

- The News Building: 600,000 sq ft office and retail (1)
- The Shard, 72 storey tower over 300m tall (2)
- London Bridge Station and Thameslink (5)
- The Quill: home to 450 students from Kings College London's Guy's (6)
- Vinegar Yard, planning due to be submitted (7)

Guy's & St. Thomas' Hospital

Guy's hospital along with St. Thomas' and Kings College Hospital are all part of Guy's and St. Thomas' NHS Foundation Trust. It is the largest teaching hospital in London and the location of Kings College London School of Medicine.

The Tower Wing (formerly known as Guy's tower) is the World's tallest hospital building, standing 148.65m with 34 floors, which was added in 1974 to the hospital.

The hospital was founded in 1721 by Thomas Guy, a publisher of unlicensed bibles, originally established as a hospital to treat 'incurables'.

Guy's has expanded over the centuries. Despite substantial bomb damage during World War II, the original 18th Century chapel remains intact including the tomb of Thomas Guy.

Now over 13,650 staff work in the hospital and the site consists of 19 buildings.

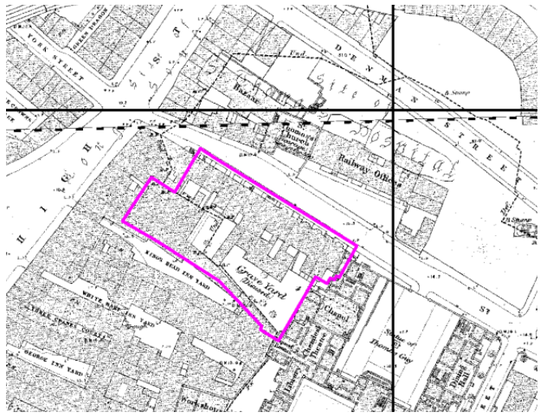


Figure 3.3 Site historical map (1975-76)

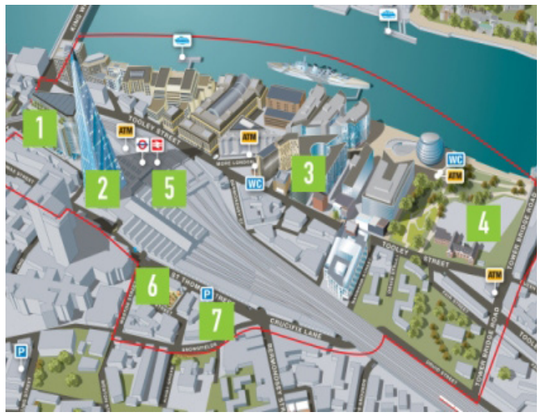


Figure 3.4 BID area including new constructtion sites of interest

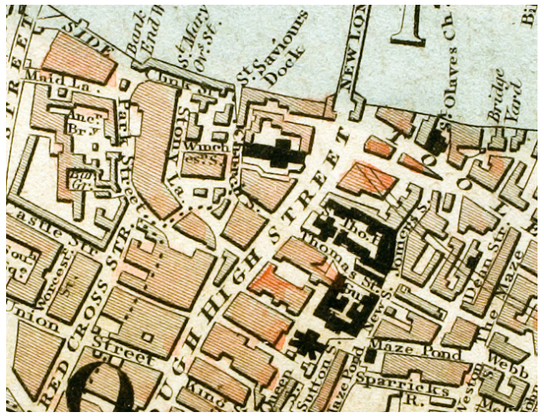


Figure 3.5 Map of site from 1883 showing Guy's & St. Thomas Hospital extent

Figure 3.6 lLondon Bridge today

4 Ground Conditions

4.1 Typical Geology

Alluvium

Alluvium consists of a variety of materials ranging from soft compressible variable clays to silts, sands, gravels and also commonly contain organic material in the form of peat and vegetation remains. It may have previously been removed during excavations of the existing site and replaced by Made Ground, therefore it is only likely to be anticipated of a thickness of 0.5m to 1m.

Terrace Gravels

Terrace Gravels are a mixture of quartz sand, comminuted quartz and mainly brown flint and chert gravel. The proportions of sand and gravel vary considerably in short lateral and vertical distances, depending on the local conditions at deposition. There are also frequent zones of finer-grained material, such as clay and silty sand and even occasional organic deposits. The Terrace Gravel is typically medium dense to dense orange brown, very sandy (medium to coarse) sub-angular to sub-rounded, fine to coarse, flint gravel.

It is anticipated that it is likely to encounter Terrace Gravels at thickness of approximately 1.5-5.5m underlying the site.

London Clay

London Clay is well documented locally and is generally weathered with silty sandy bands and Limestone nodules, becoming firm grey fissured silty clay with depth. It is generally characterised by a high plasticity, high shrinkage potential, low to very low compressibility and low hydraulic conductivity.

It is anticipated that it is likely to encounter London Clay at thicknesses of approximately 20-25m underlain the site.

Lambeth Group

Lambeth Group is well documented throughout the London and Hampshire basins, comprising of a variable series of clay, loam, sand and pebble beds which are locally cemented into sandstone or conglomerate. It consists of three formations

The Reading Formation is a series of lenticular mottled clays and masses of fine sands converted into quartzite.

The Woolwich Formation consists of grey clays and pale sands, often full of estuarine shells with pebble beds located at the base.

The Upnor formation consists of light coloured false bedded sands. Where it overlies Thanet Sands, it is formed of an argillaceous greensand with rounded flint pebbles. Where it directly overlies chalk, it is more clayey and the flints are less rounded and are green-coated.

It is anticipated that it is likely to encounter the Lambeth Group at thicknesses of approximately 15-17m underlying the clay.

Thanet Beds

The Thanet Sand formation is the oldest deposit from the Palaeogene. At the base, the "Bullhead bed" comprising a conglomerate of rounded flint pebbles and almost unworn nodular flints "Bullhead". The flints are typically coated with dark green glauconite and lie within a matrix of glauconitic sandy clay. The bulk of the Thanet Sand comprises of silty, fine-grained sand. The colour varies between greenish and brownish grey. At the surface, the sands weather to a pale yellowish grey.

It is anticipated that it is likely to encounter Thanet Sands at thicknesses of approximately 10-11m.

Upper Chalk

The Upper Chalk band is softer than the Middle Chalk. Flints are abundant as a general rule. The base of the division is a hard band called the Chalk Rock, which in the area north of the Thames, is the most prominent horizon in the Chalk. It consists of one or more beds of hard, creamy limestone each approximately 1 foot thick, usually with scattered green grains of glauconite. Between the creamy limestone bands are layers of hard nodular chalk formed in a softer matrix.

Observations

Although the boreholes purchased from BGS provide a good indication of the likely conditions on the site, it is recommended that a full site investigation is carried out in order to investigate the ground conditions specific to the site.

Preliminary geotechnical design parameters are advised in this report. This data is based on referenced material and AKT II's experience of the geology local to the site and will be confirmed by a comprehensive, site specific investigation.

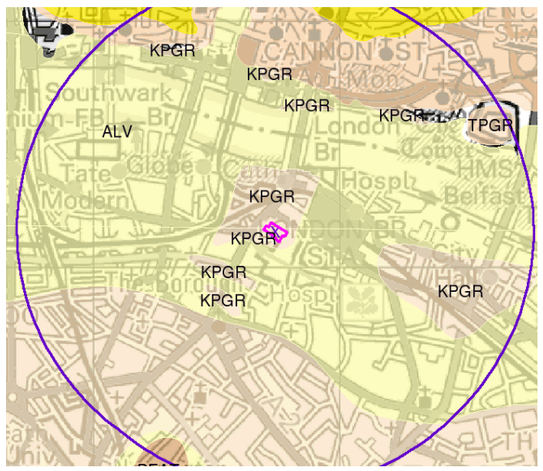


Figure 4.1 Superficial geology

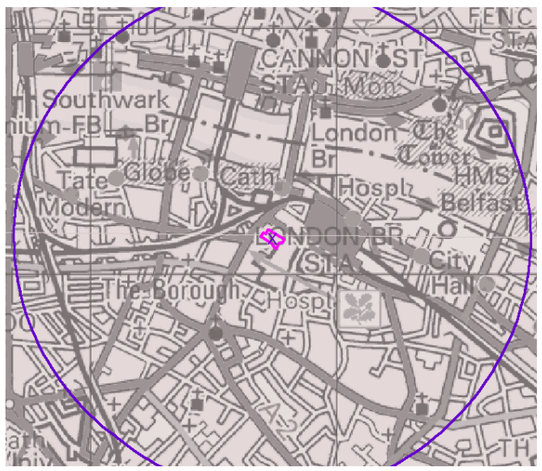


Figure 4.2 Underlaying geology

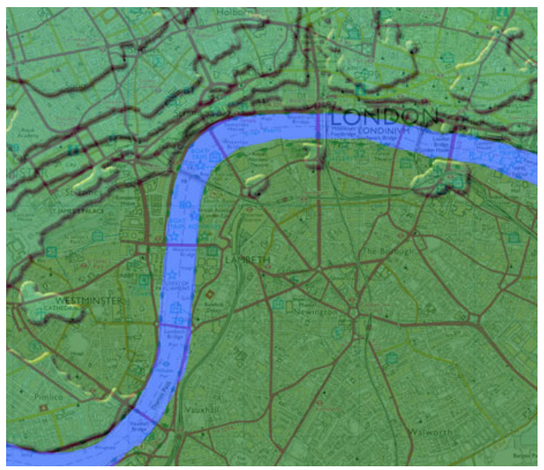


Figure 4.3 Topography 3D Map

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay and Silt	Flandrian - Pleistocene
	KPGR	Kempton Park Gravel Formation	Sand and Gravel	Devensian - Ipswichian
	LASI	Langley Silt Member	Silt	Devensian - Ipswichian
	TPGR	Taplow Gravel Formation	Sand and Gravel	Wolstonian - Chokierian
	HAGR	Hackney Gravel Member	Sand and Gravel	Wolstonian - Chokierian
	PEAT	Peat	Peat [Unlithified Deposits Coding Scheme]	Quaternary - Ryazanian

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	LC	London Clay Formation	Clay	Eocene - Eocene
	LMBE	Lambeth Group	Clay, Silt, Sand and Gravel	Paleocene - Paleocene

Figure 4.4 Geology strata

4.2 Anticipated Ground Conditions

The results from the Envirocheck report form the outline description of the ground conditions and borehole information taken within close vicinity to the site.

This allows an initial picture to be developed of the underlying geology and depth of the key layers outlined in section 4.1 although none of the boreholes have been taken directly on the site of the proposed development.

Whilst no boreholes are available for the actual site the borehole records that are available from the wider area (Figure 4.5) indicate the site to be highly consistent in terms of the depth of each layer of strata below the surface.

The deep borehole logs show that the London Clay extends only to a depth of approximately 27 m, and sits on the Lambeth group layer.

The superficial geology and borehole logs showed the site to be underlaid by 4 main layers:

Made ground

Made ground is a layer of fill material considered to have little or no bearing capacity, usually consisting of a variety of materials, often sands and gravels but in some cases concrete and brick among other substances. The thickness of the made ground, and its composition, vary accross the borehole logs. On the Eastern side within the site of Guy's & St. Thomas' a larger thickness of made ground is found ranging from 9m to 12.5m (Boreholes 4 & 5). The investigations have found the made ground to consist of topsoil, coarse gravel sized brick, concrete, flint and some coal fragments.

Alluvium

The alluvium layer is found in three out of the 5 chosen borehole logs (1,2 &3) which range from 40-110mm in thickness, therefore it is possible that alluvium will be found on site. The alluvium consists of a 'soft bluish-grey mottled grey and black sandy clay'. The stiffness range in laboratory tests range from very soft to stiff in nature.

Kempton Park Gravels

Kempton Park Gravels are a form of terrace gravels, a layer of material deposited by the river and are a mixture of quartz sand, comminuted quartz and mainly brown flint and chert gravel. From the borehole logs it is assumed that the site may experience terrace gravels from om to -6m (AOD).

London Clay

London Clay is well documented locally and the clay located can be expected to be approximately 20m in depth. Formation is described to consist of stiff to very stiff grey-brown clay with occasional pockets of light grey silt.

During the construction of the Shard, located close to the proposed New city Court site, a fault was discovered below the site running north-to-south direction, with a downthrow of about 6m to the SE. This is documented in Pile test reported by Byrne Looby partners in 2012. To the West another fault of similar displacement and orientation was encountered during the JLE construction. Along these two geological faults, the ground forms a minor horst feature, with marginally elevated London clay.

Lambeth Group

Lambeth group is expected to be in between 30m and 35m below ground level and consists of a very stiff clay matrix, either grey or multicoloured fissured clay, with gravel, green gravelly sand or green shelly gravelly clay pebbles.

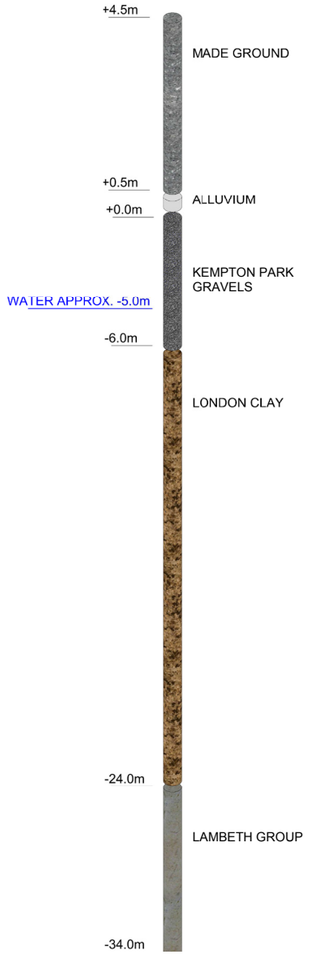


Figure 4.5 Predicted borehole diagram

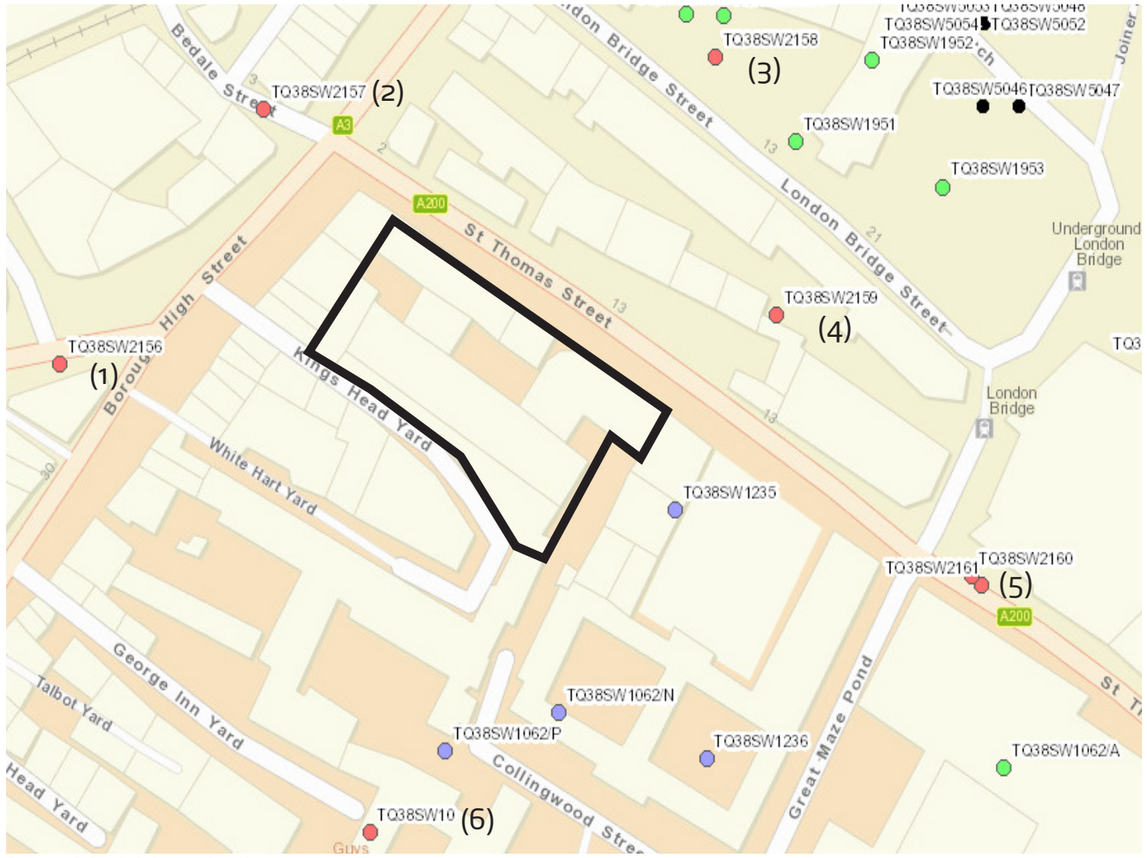


Figure 4.6 Borehole location key plan map

4.3 Hydrogeology and hydrology

4.3.1 Environmental Agency Classification

A Principal Aquifer is defined by the Environment Agency as layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale.

A Secondary A Aquifer is defined by the environment Agency as permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.

A Secondary B Aquifer is defined by the Environment Agency as predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering.

A Secondary Undifferentiated (U) Aquifer is defined by the Environment Agency as has been assigned in cases where it has not been possible to attribute either category A or B to a rock type.

According to the Envirocheck Superficial Aquifer Map in Fig 4.7, the site is underlain by a Secondary A Aquifer with surrounding areas of A secondary Undifferentiated Aquifer.

According to the Bedrock Aquifer Map in Fig 4.8, the bedrock underlying the site is defined as unproductive Strata. Unproductive Strata have negligible permeability and are generally regarded as not containing groundwater in exploitable quantities. In this stratum, the groundwater flows imperceptibly and requires consideration for the risk of slow degrading pollutants.

London Clay and Lambeth Group are classified as non-aquifers and should provide a natural barrier to prevent contaminants migrating to the deep Thanet Sands and Chalk Aquifers. A summary of the hydrogeological properties of the main geological units that are anticipated to underlie the site is shown in Fig 4.9.

The superficial geology is designated as a Secondary A Aquifer with a potential for groundwater flooding owing to its close proximity with the River Thames.

4.3.2 Groundwater Level

Indications from the available boreholes suggests that the water table is generally 5m below ground level (0.00m AOD). A few boreholes show higher water which could be a result of some rain water retained in a less permeable made ground layer.

This information will be confirmed in subsequent stages further to ground investigations.

4.3.3 Source Protection zone

The EA have defined Source Protection Zones (SPZ's) for groundwater sources such as wells, boreholes and springs used for public drinking water supply. The zones are defined by the EA as outline below:

- The Inner Protection Zone is the distance travelled by groundwater from any point below the water table to the abstraction in 50 days for a particular area. It has a minimum radius of 50m.
- The Outer Protection Zone is the distance travelled by groundwater from any point below the water table to the abstraction in 400 days for a particular area. It has a minimum radius of 250m.
- The Total Catchment Zone is the area around the abstraction within which all groundwater recharge is presumed to be discharged to the source.

The SPZ Map from Envirocheck indicates that the site is not located within a Protection Zone. It is likely that the ground water abstractions are from the Chalk Aquifer. This means that there is no risk of pollutants or contaminants from the site making their way into a source of drinking water.

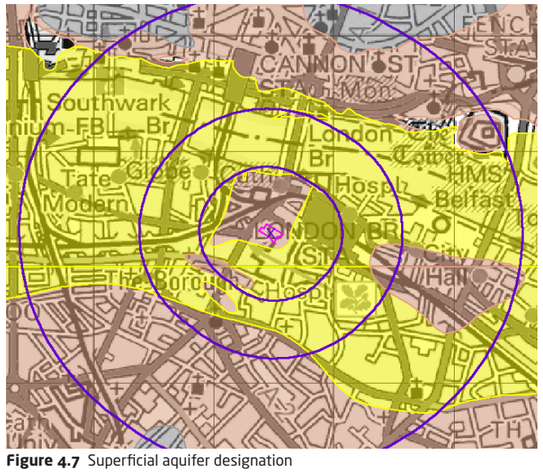


Figure 4.7 Superficial aquifer designation

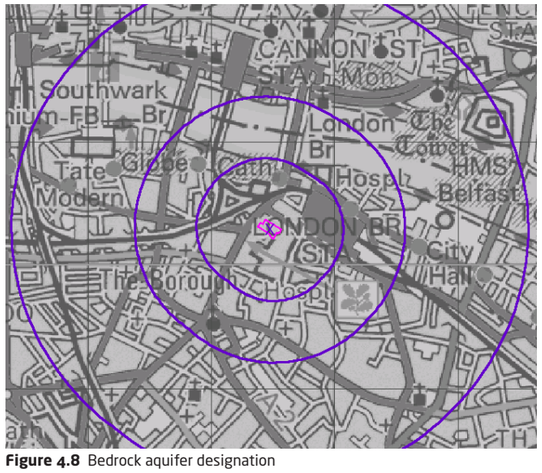


Figure 4.8 Bedrock aquifer designation

4.4 Construction within archaeological remains

Due to the location and previous history of the site and surrounding area, it is believed that there is a low potential for archaeological remains to be present at the site. However if archaeological remains were to be found, the presence of the existing building on the site means that they are likely to have been partially truncated by basement, foundation or service trench excavations. If archaeological remains are to be found, there are engineering principles to reduce the impact of construction on the archaeological heritage:

- Minimise the extent of excavation required for the construction
- Minimise the number of vertical penetrations
- Minimise the extent of excavation required for the foundations

Activities such as level reduction, new basement and foundation construction, new service trenches or demolition works for example will raise archaeological issues.

4.5 Risks associated with Geology

Unknown geology is often one of the biggest risks facing a project due to the difficulty in knowing the exact profile of the soil across the entire site.

The existing piled structure and the extensive works carried out in the area as part of the Jubilee line extension would suggest that the risk is low. However, issues to be aware of include:

Inclusions of weak or strong layers which can affect capacity of piles and ability to bore

- Perched water tables
- Local fissures
- Variable properties
- Existing Thames Water Sewer

Whilst this list is not exhaustive it gives a background to elements that might be encountered.

Strata	Hydrogeological significance	Classification (Environment Agency)
Alluvium	Has potential to transmit relatively small quantities of water. The site is located in close vicinity of the River Thames, so it is likely to contain significant quantities of groundwater.	Secondary (U)
Terrace Gravel	Has potential to transmit significant quantities of water. The site is located in close vicinity of the River Thames and the Terrace Gravel is underlain by relatively impermeable Clay, so it is likely to contain significant quantities of groundwater.	Secondary (A)
London Clay	The London Clay is an aquitard and therefore will not contain significantly large quantities of groundwater.	Unproductive Stratum
Lambeth Group	The Lambeth Group is unlikely to contain significantly large quantities of groundwater, however the lower part of the stratum where the material has less clay content may be in hydraulic continuity with the lower layers.	Unproductive Stratum
Thanet sands	This strata is highly permeable and is often in hydraulic continuity with the underlying Chalk.	Principal Aquifer

Figure 4.9 Summary of Environmental Agency aquifer classification of the anticipated geology

5 Environmental assessment

5.1 Introduction

The aim of this part of the report is to provide an initial assessment of the environmental conditions of the site as well as the potential contamination of the site.

Additionally, the objective is to characterise the contaminants, their pathways and potential receptors for the purpose of a risk assessment. This aims to provide relevant information to protect the health and safety of future site users and construction workers and protection to the environment.

Information on the potential contaminants that could be present within the ground can come from many sources (historical maps, Environment Agency, Envirocheck Report, previous contamination tests, etc.).

Contamination may arise from a wide range of activities on the site or off-site. This may include:

- Heavy industry
- Electric substations, power stations, gas works, etc.
- Chemical plants
- Landfill sites, recycling or disposal sites
- Railway sidings
- Works including finishing processes (plating, painting, etc.)
- Fuel storage facilities, garages, etc.
- Former mining sites
- Ministry of Defence sites
- Timber treatment works
- Sewer farms or sewage treatment plants

We note an Envirocheck site sensitivity search showed a registered radioactive site present, however on investigating this it was found that Guy's & St. Thomas' NHS Foundation Trust contract procurement department was previously located on the 2nd floor of the New City Court Office building. Therefore this meant it was a registered address for the contract of radio pharmaceuticals and radioactive materials and no radioactive substances would be found in the ground.

During a site walkover, suspect soils usually are identified by sight and olfactory observations. Some obvious signs of contamination include, but are not limited to:

- Soil discolouration
- Unusual or different soil texture
- Unusual odour
- Standing water or trench with hydrocarbon sheen
- Abandoned industrial waste such as drums or asbestos sheeting

5.2 Statutory information

AKT II instructed Envirocheck to carry out a search of their records and report on the following aspects:

Water:

- Abstractions and discharge consents
- Red list discharge consents
- Pollution incidents and prosecutions relating to controlled water
- Groundwater vulnerability and river quality

Waste:

- Landfill sites (historical and current)
- Waste water treatment or disposal and transfer sites
- IPC registered waste sites

Statutory controls:

- Integrated pollution and air pollution controls
- Prosecutions relating to authorised processes
- Enforcement and probation notices
- Planning hazardous substance consents and enforcements
- COMAH, NIHHS and explosive sites

The following is a factual summary of the information obtained from the Envirocheck search.

Contaminant	Level
Chromium	Moderate
Lead	Moderate
Nickel	Moderate
Arsenic	Low
Cadmium	Low

5.3 Preliminary Contamination Assessment

Potential site specific contamination risks are assessed and presented below. A conceptual model includes possible sources, pathways and receptors, which are defined below.

A source is a substance which is in, on or under the land and which has the potential to cause harm or to cause pollution of controlled waters.

A pathway is a route or means by which a receptor can be exposed to or affected by a contaminant.

A receptor is something that could be adversely affected by a contaminant. It can be a living organism, group of organisms, an ecological system or human controlled waters. It can also be a property which is in a listed category or could be harmed by a contaminant.

5.3.1 Potential contamination sources

Potential contamination may arise from the different sources on site. Presence of boilers and associated fuel leakages may be responsible for hydrocarbon presence within the ground. Electricity plant rooms may be responsible for PCB (Polychlorinated biphenyl) pollution.

Historical uses of the site or surrounding area may provide contamination sources. Typical historical use of the site and surrounding area which may cause contamination issues include railway lines, gasworks, industrial use, breweries and chemical works.

Many bombs that were dropped during the Second World War blitz did not explode on impact. Bomb detonators don't deteriorate and the explosives do not become inert with time. The Ministry of Defence has published maps indicating the extent of damage to buildings during the raids and the possible locations of Unexploded Ordnance (UXO) in Central London. A detailed UXO risk assessment was undertaken by 1st Line Defence (DA3587-00) and there is no evidence to suggest that UXO's are present at the site but if present they would consequently present a health and safety risk and also a contamination risk, as described as follows:

- Heavy metal (Copper, Zinc etc.) Contamination from the bomb's casing.
- Organic aromatics (Toluene, Nitrosamine, daughter products etc.) Contamination from the degradation of the explosive charge.
- Heavy metal (Lead, Mercury) contamination from the degradation of the detonator charge.

Bombs during the wars were also responsible for heavy contamination as they broke several pipes and conduits when exploding. A Second World War bomb damage map indicates that the row of terraces along St Thomas Street suffered minor damage but that the row of buildings in King's Head Yard suffered slightly more damage, although not structural. The buildings along King's Head Yard were demolished and replaced by New City Court. The CCTV survey carried out in 2017 didn't evidence damages of the pipes and conduits in the site.

The site is not located within a radon affected area, as less than 1% of homes are above the action level. No radon protective measures are necessary for the proposed development.

Asbestos surveys have been completed by:

- John F. Hunt Associates for Contrakt Ltd on 2017/07/11 report no 140137. The survey included first to fourth floor of New City Court office building. The surveyed areas were assessed to be between Risk Rating E (No asbestos detected) and Risk Rating C (Low Risk Material). However there were areas which were not possible to be inspected and they should be considered to contain asbestos unless proven otherwise.
- Bureau Veritas UK Limited. The survey was carried out on 2010/01/27 for the lift shafts of New City Court. From the summary of the findings the report states 'All available areas of the lift shaft and pit were surveyed but there were material or voids encountered that could not be inspected. No Items were sampled or presumed.
- Bureau Veritas UK Limited on 2008/06/25 report no ZGAX712. In the marked up plans the survey shows the areas which were inspected and reveals where the asbestos was identified in the basement and on the 5th floor in the pipe flange gaskets.
- Quantum Compliance on the 2018/03/26. The survey, carried out in specific areas only, didn't identify any asbestos containing material.

5.3.2 Contamination migration

If potentially polluting activities have taken place historically at a site, the hazard to human and/or environmental receptors will be increased if significant pathways are, or were historically present on or beneath the site along which contaminants can preferentially migrate. Pathways can be anthropogenic (artificial) or natural.

Other sources of contamination are outlined by the results Envirocheck Search, contained in Section 5.2.

5.3.3 Receptors

The potential receptors identified could be one of the following categories:

Humans : Construction site workers, future site users, visitors and maintenance staff.

Property : Foundations, basement structure and services

Controlled Waters :

- Principle Aquifer : Upper Chalk and Thanet Sands
- River Thames and Docks (located close to the site)

5.3.4 Potential natural pathways

The Envirocheck Superficial Aquifer map in Figure 5.1 indicates that the site is underlain by Secondary A Aquifer, which is likely to be associated with near surface river terrace deposits.

The potential for significant contamination migration through the terrace deposits is considered to be moderate. This may provide a possible pathway for contaminants to reach the River Thames.

The underlying London Clay and Lambeth Group should act as an impermeable barrier below the site to prevent the deeper penetration of contaminants into the Chalk and Thanet Sands Aquifers.

Any waterproofed basements and the surrounding hard standing areas surrounding the development can be used to demonstrate a breakage in the pollutant linkages. This can limit contact with non-organic pollutants that do not readily volatise such as arsenic, lead, copper, nickel and some polycyclic aromatic hydrocarbons (PAH).

5.3.5 Potential Anthropogenic Pathways

Anthropogenic pathways for contaminant migration can be present in the form of soakaways, land drains, etc. Leaking surface water or foul drainage pipes and permeable backfill to the trenches containing services could also act as preferential pathways for potential contaminant migration.

Given the age of the existing building on site and the drainage systems used at the time, it is unlikely that soakaways and other ground infiltration systems will be present at the site. Also the nature of the site (comprising solely of buildings) and surrounding area (comprising of buildings or either tarmac or paved areas), also suggests ground infiltration systems are not present.

Surface water and foul water are carried from the site in the public sewage and highway drainage systems. A CCTV was carried to survey in 2017 and includes all the sewers within the site up to the public sewers.

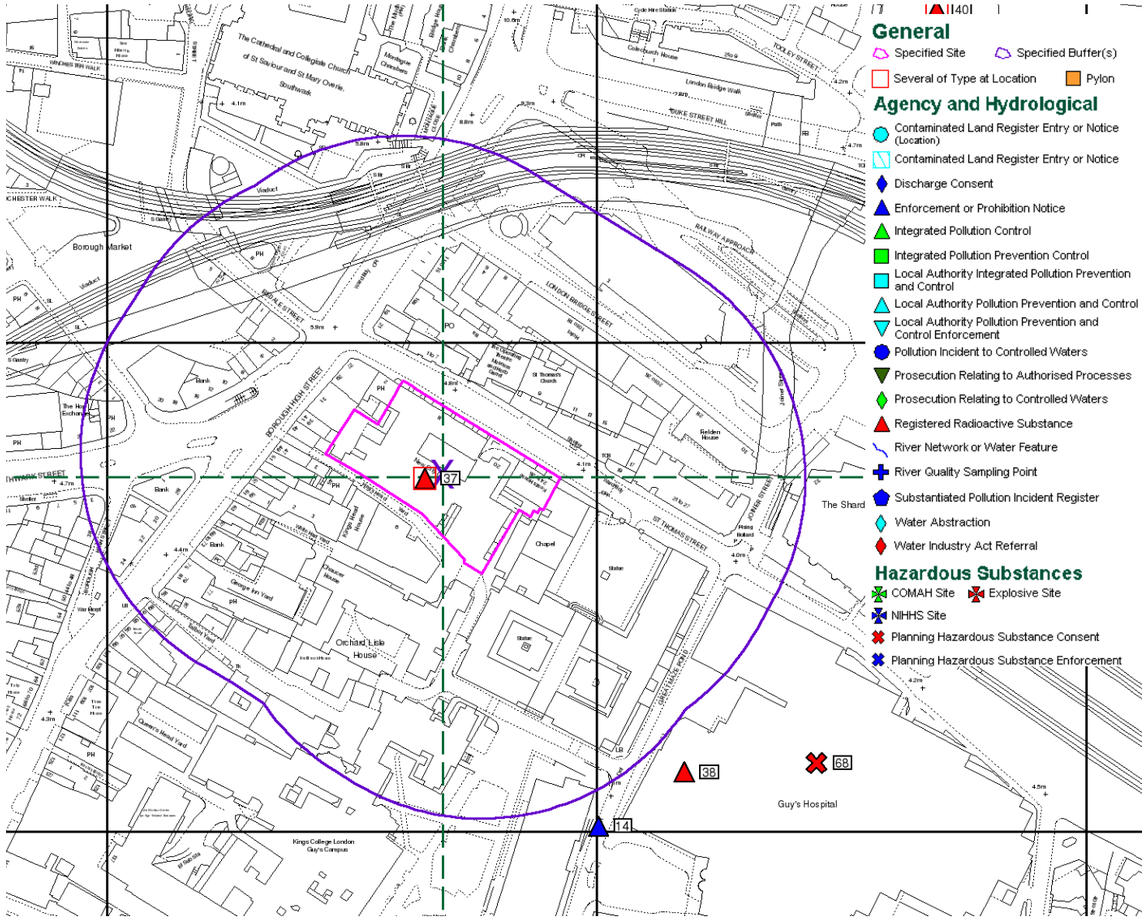


Figure 5.1 Site sensitivity Map

6 Site Constraints

6.1 Statutory Services Searches

Numerous services are known to be present on the site and in the surrounding roads and pavements. The statutory services search was carried out as part of the desk study to locate potential underground obstructions and surrounding utility assets. Based on this information, a site constraints drawing was produced and can be found in Appendix 1. It is noted that the information provided by the relevant statutory bodies is approximate and more detailed investigations involving GPR targeted trial trenches may be undertaken prior to commencing ground works, to verify locations where critical.

6.2 Thames Water Assets

The Thames Water Asset Map in Fig. 6.1 shows the existing public sewers in the vicinity of the site. Running along King's Head Yard, on the southern boundary of the site, there is a sewer connecting to a combined Borough High Street sewer, which may lie in close proximity to the proposed development. On the northern boundary along St. Thomas Street there is a main public sewer believed to be in concrete. Finally, on the east side, running from south to north, under the existing basement of Keats House there is a 300mm cast iron sewer. The existing 250mm RC basement slab is suspended between pile caps, notched to allow for the sewer to run underneath. The sewer runs from a manhole located on the south side (manhole 39) underneath the building, goes through the manhole situated in the lightwell in front of the building on the north side and discharges into the sewer along St Thomas Street.

A CCTV survey has been carried out for all pipes running across the site. The survey shows that the pipe underneath the basement is currently in use.

The east sewer is proposed to be diverted under a section 185 agreement from manhole 39 (upstream manhole) closer to Coneybeare House, running along the party wall, and then will be reconnected to the existing manhole located in the lightwell. Please refer to Appendix 6 for the proposal of sewer diversion.

6.3 TfL Structures (LUL Tunnels and Station)

There are several TfL constraints below ground and around the site, as noted below:

- Westbound Jubilee Line Tunnel and London Bridge Station
- Northbound Line Tunnel
- Compensation Grouting
- Ventilation shaft located at the entrance of the London Underground.

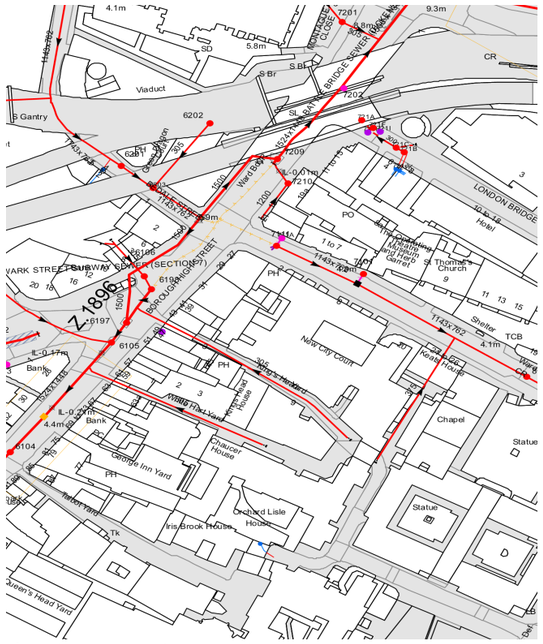


Figure 6.1 Thames Water sewer network

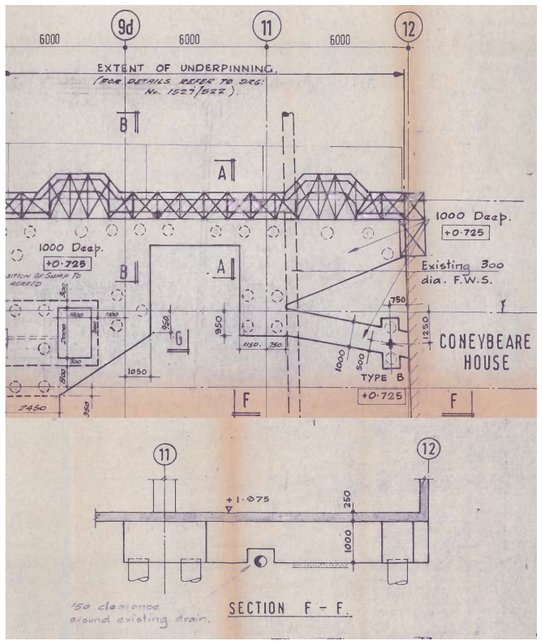


Figure 6.2 Sewer location below Keats House as shown on Engineer's plan section F-F

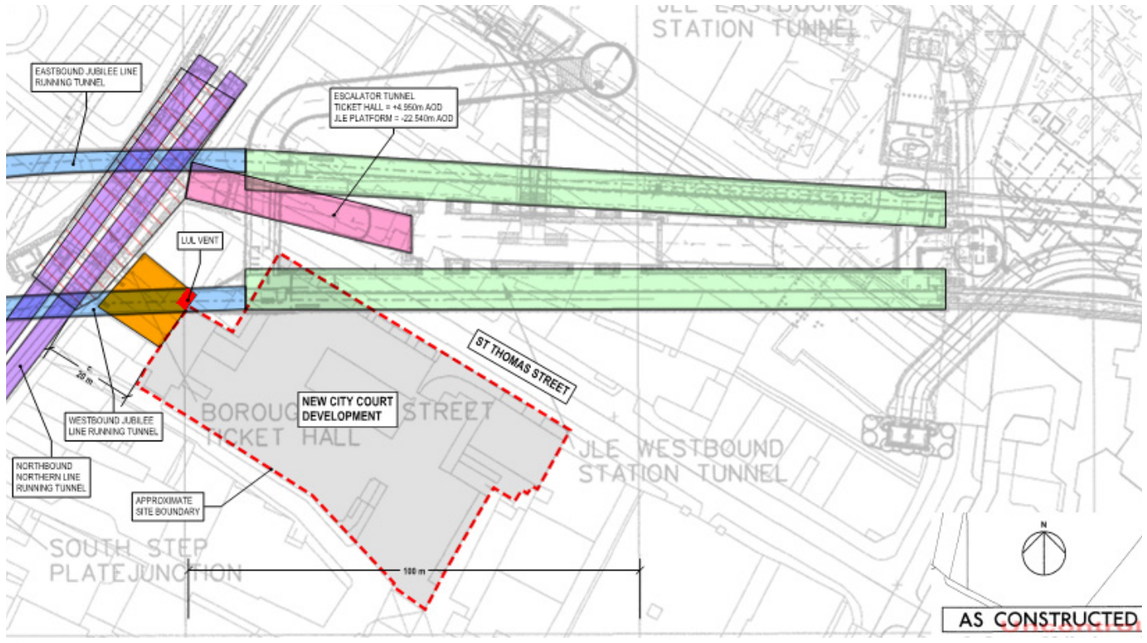


Figure 6.3 TfL assets information

Westbound Jubilee Line Tunnel and London Bridge Station

Passing underneath the Northwest corner of the site is the westbound tunnel of the Jubilee Line. The diameter of the tunnel is approximately 8.7 m (outer diameter) and it sits 27 m below the surface of St Thomas Street (to centre of tunnel). The tunnel sits within the London clay layer.

The Jubilee Line Extension (JLE) was one of London's biggest engineering projects to date and cost over 3.5 billion, constructed in 1994. At London Bridge, the JLE underground station forms part of a complex transport interchange, which includes the existing Northern Line of the underground, the national/suburban rail network and local bus terminals. The station consists of the enlarged tunnel and includes numerous shafts and connecting adits. The tunnel extension created 6 new stations and 5 existing stations were enlarged or rebuilt. There are currently 63 7-car trains servicing the Jubilee line, with a capacity able to seat 100+ seated and standing. The maximum speed is 62mph (100Km/hr), with 630 vault electrification. The new tunnels were built with a diameter of 4.35m , whereas the existing tunnels were previously 3.85m.

The JLE joins central and east London and crosses the Thames river four times. It consists of a 16km extension including 12km of 4.5m diameter twin tunnels. The tunnel was bored using the New Austrian Tunnelling Method (NATM) as well as precast segmental linings in cast iron and concrete. The tunnel was constructed using a sprayed concrete lining (SCL) technique. As with excavation geometry, the thickness of the shotcrete temporary lining was dictated by the tunnel diameter. It varied between 150mm and 400mm. All shotcrete sections were reinforced with mesh reinforcement and lattice girder arches, comprising 12mm to 16mm reinforcing bars. A volume of approximately 100000m³ of ground was removed during tunnelling and innovative settlement prevention methods, such as compensation grouting, were specified for use in the conjunction with the tunnel excavation. The tunnel was bored around 1994 and completed in December 1999 in time for the millennium and associated celebrations.

A correlation survey was done by Plowman Craven to verify the location of the Westbound Jubilee line tunnel. The survey was included in the relevant drawings and analysis.

Northbound Northern Line Tunnel

Passing 20m away from the west boundary of the development is the Northbound Northern Line tunnel.

As per archive information the tunnel is believed to be in a segmental cast iron with an assumed external diameter of 4.0m, running at roughly 22m below ground.

Compensation Grouting

As part of the strategy to control ground movements below the surrounding buildings whilst the Jubilee Line tunnel was bored compensation grouting was installed and performance limits were specified for this when it was installed in the gravel and London clay layers during the extension.

A plan layout showing the extent of installation of Tube a Manchette (TAMs) is shown in Fig 6.5. The system basically consists of a length of pipe with small holes drilled around the circumference and at equal intervals along the length of the pipe.

The TAMs are located primarily below the terraces on St Thomas Street, therefore, they are unlikely to have any bearing on the foundations for the main development, however the effect of the TAMs on the local distribution of the Tower and settlements should be taken into consideration. The TAMs below New City Court were installed at a level of approximately 6m below the interface between terrace gravels and London clay.

When installing the TAMs at London Bridge station, disused tunnels were used to gain access to the desired elevation between the tunnels and the foundations of the overlying structures. The elevations of these existing tunnels determined the level of the grouting horizon and the TAMs were installed as deep as 7m below the top of the London clay, although the preferred elevation was 3-5m higher. The installation of TAMs from tunnels allowed parallel arrays and a constant spacing of 2m was adopted under major landmarks such as Big Ben. Along St. Thomas street a service tunnel below the road, lined with precast concrete bolted segments, was used to distribute a parallel array beneath the existing terrace houses approximately 50m long. The grouting to be implemented was decided on a day- to-day basis and uniform injection quantities and spacings were adopted. The JLE contract required real time monitoring of both the ground and structure movements in all areas where there was compensation grouting and electrolevels were used, however traditional survey methods were preferred which meant a high frequency of readings were recorded, every two hours at critical stages of the construction.

Over London Bridge station covering an area approximately 12100m², 163 TAMs were installed at a length of 4700m. One of the main areas of concern for settlements was the Chapter House chapel on the north side of St. Thomas street. Settlements in excess of 110mm were recorded in the middle of the chapel. the monitoring below the St. Thomas street terraces included precision levelling and crack monitoring. The compensation grouting protective measures controlled ground settlements such that the maximum building movements recorded were less than 35mm in this area.

The southern extent of the TAMs will need to be determined as they may affect the potential for piling in this area. The proposed site does therefore highlight a potential risk that must be considered.

The proposed pile foundation suggests piling through the layers of grouting which are thought to be 200mm thick.

LUL Vent

On the West site boundary there is a large vent which has been confrimed by LUL to be the back of the London Bridge Area managers office over the Borough High Street Entrance.

The louvres on the vent are the escalator extract outlets and inlet grilles to and from the Borough High Street ticket hall that had to be fire separated from the rest of the structure.

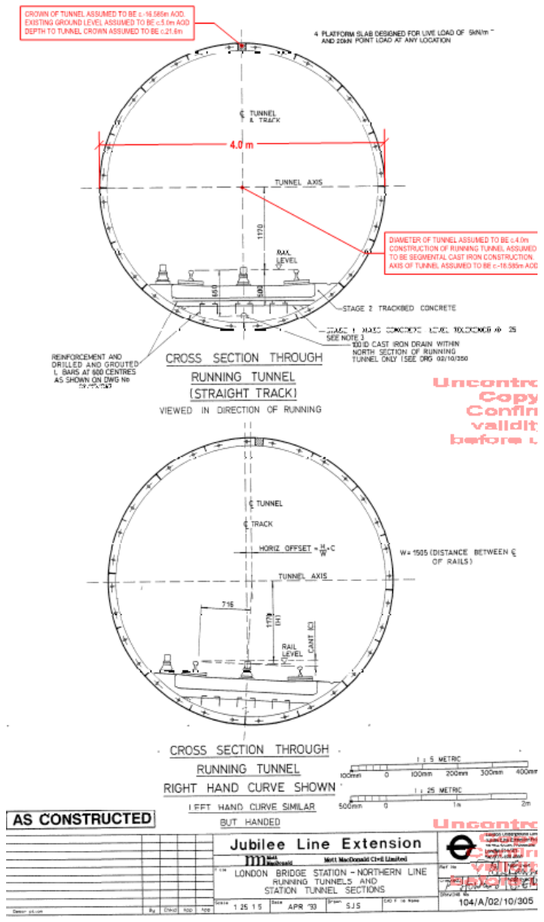


Figure 6.4 Northern Line Tunnel

Figure 6.6 LUL Vent

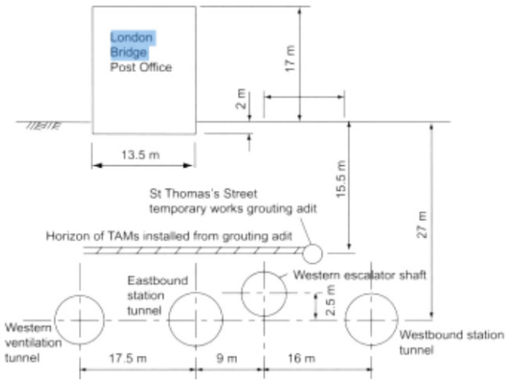


Figure 6.7 Compensation grouting - section through St. Thomas street

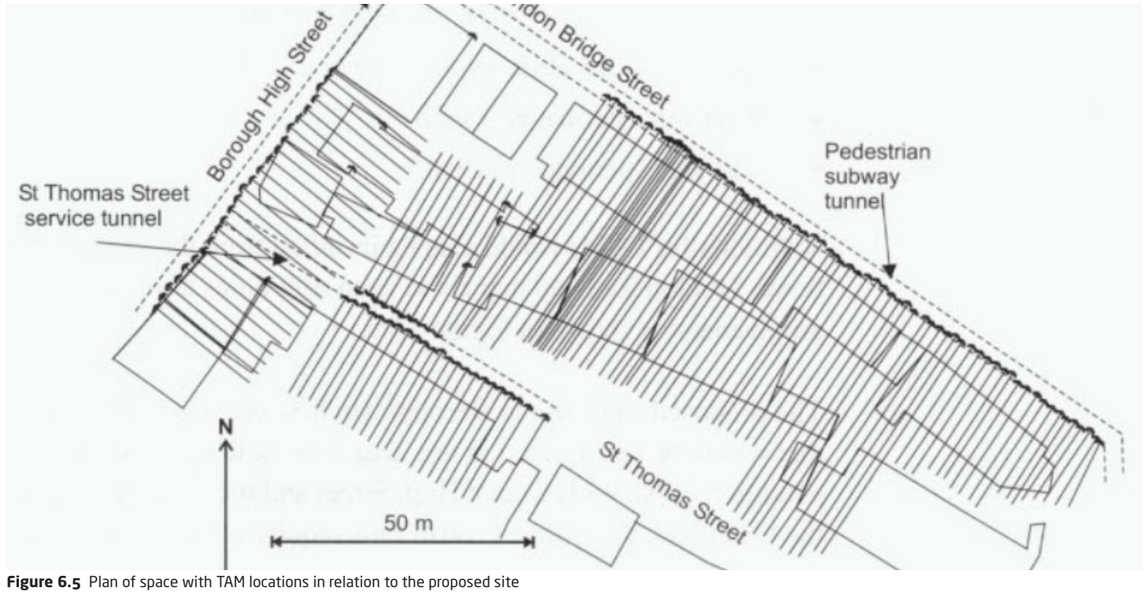


Figure 6.5 Plan of space with TAM locations in relation to the proposed site

6.4 Highways

The proximity of the proposed basement to the adjacent highways on the south side in the interface with King's Head Yard, will require an Approval in Principle (AIP) document for the permanent support of the highways in the following stages. Our analysis for the basement construction and the foundations follow the guidances provided.

6.5 Utilities

A utility report obtained from Landmark Envirocheck provides useful information concerning statutory utilities in and adjacent to the site.

Given the previous and current site uses, it is unlikely that there will be any major utilities crossing the site, unless reported within this report.

An electrical substation is located in the south-west corner of the site. This is positioned over two floors from basement to ground.

6.6 Underground Structures

Existing foundations and services are likely to be have been installed relating to the site's historical use but it is likely that they have been removed during previous excavations of the existing basement.

It is necessary that previous and existing building plans are studied in detail to assess the extent of the existing buried foundations. From archival information it can be seen that the New City Court is founded on a series of pile caps with 450mm diameter piles each with a capacity of load of approximately 70 tonnes. From a preliminary design assessment the piles are approximately 15-20m deep and founded on the London clay.

The record drawings show that mass concrete was used in the temporary works strategy for the building built in the 1980's. Mass concrete pads was also used for the facade retention scheme and on visiting the vaults .Some of those pads could be found left inside the masonry vaults in front of Keats House. This would suggest that the mass concrete blocks, which are large in size, are likely to have been left in the ground and would need to be removed when excavating the proposed basement.

There is also a cellar along King's Head Yard belonging to 'The King's Head' public house which can be seen in the Site constraints drawing, in Appendix 1.

6.7 Unexploded Bombs

London was heavily bombed during World War II and therefore the risk of finding unexploded bombs is relatively high. Extensive maps of London are available which highlight areas where bomb hits occurred. From the map indicated in Fig 6.9 the proposed site for this development has not suffered any direct bomb strikes. This would appear to be corroborated by the historic maps which show no extensive new buildings post World War II and that there is currently an existing new building occupying the site.

A detailed UXO Risk assessment Report ; DA3587-00 highlights the site to be at low risk, with a small area of medium risk in the western section of the site area, which is adjacent to the St. Thomas Street buildings and the NCC courtyard.

6.8 Archaeology

LLondon, as a Roman city, has a rich and illustrious archaeological history. The area falls within Southwark Council's designation of an archaeological priority zone suggesting that there are possibilities of archaeological finds in the area. During the Roman times the course of the Thames was markedly different from its current constrained channel. As the map shown in Figure 6.10 indicates, during Roman times the site was actually on an islet, with the river running a course around this islet. The map indicates that during this time, the west end of the site was approximately 1 m above ordnance datum and the east end of the site was just 0.5 m above ordnance datum.

In 1982-3, an archaeological 'rescue' excavation took place on the site prior to construction of the existing New City Court building after which the area was machined down to formation level for the construction of the existing basement. Significant multi-period remains were recorded including pits with Iron Age pottery, and evidence of at least seven Roman buildings. A possible medieval chapel likely to have been associated with St Thomas' Hospital was recorded, along with post-medieval buildings, and human remains associated with the burial ground of the Hospital which extended across 30-40% of the south-east of the site. The burials were removed – without archaeological recording – by a graveyard clearance contractor, although it is possible that occasional disarticulated bone is still present, especially around the south-eastern edges of the site. However, given the depth of the basement, except for beneath the terrace of listed buildings and the facade of Keats House, is it unlikely that there is any surviving archaeology in the site other than very deeply cut features such as timber piles or wells.

It is recommended that any geotechnical pits that are excavated for engineering purposes should be closely monitored by a competent archaeological organisation. This will likely involve exploratory works during the geotechnical investigations. Based on the findings, further invstigation may be required during the initial phases of construction.

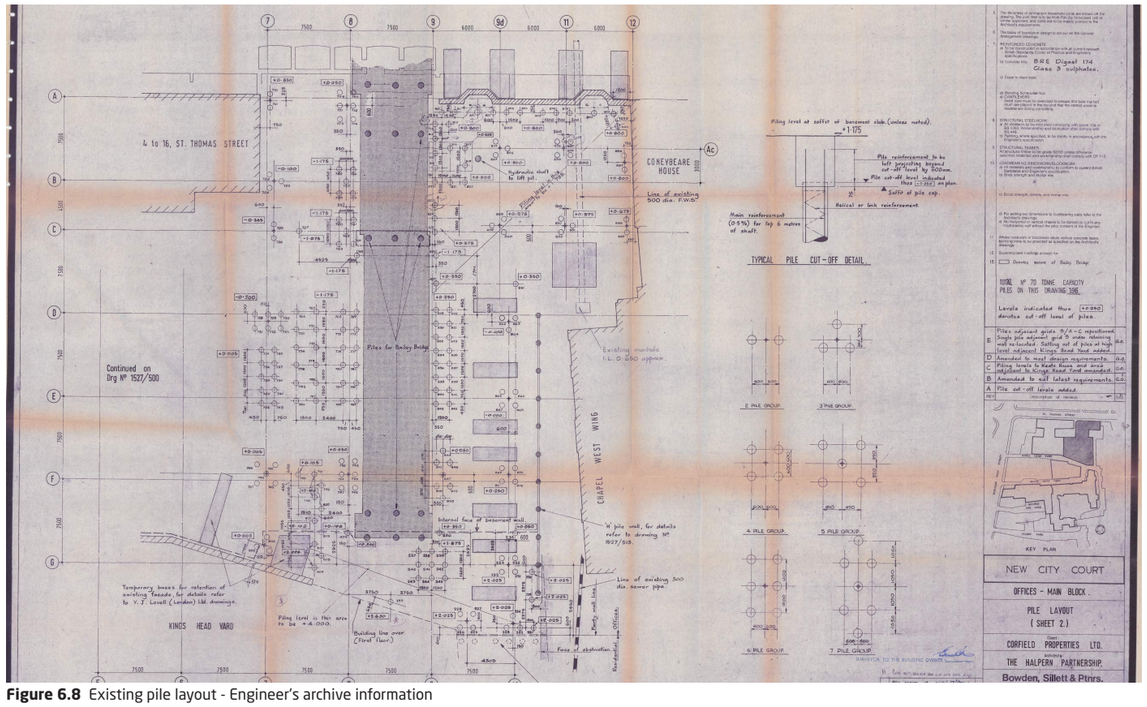


Figure 6.8 Existing pile layout - Engineer's archive information

Figure 6.9 Unexploded ordnance bombs

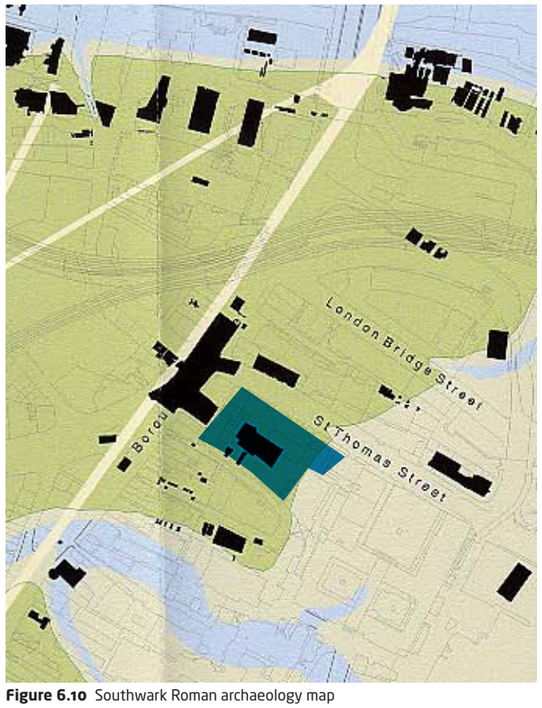


Figure 6.10 Southwark Roman archaeology map

7 Form and Condition of the Existing Structure

7.1 Introduction

The following section is based on the available recorded information and has been corroborated where possible by site inspections and limited fabric survey. As the building is still operational, it has not been possible to gain access to all areas during site visits.

The site is occupied by different buildings constructed during different periods and now all connected to form one larger building mass (Fig 7.1). The northern part of the site includes numbers 4-16 St Thomas street. To the northeast is Keats House and at number 20 St Thomas Street is the existing New City Court office buidling, which extends behind 4-16 St Thomas Street to the southern extent of the site. Much of the information presented focuses around the construction of the office building in around 1984. As part of this work, a new structural frame was placed within Keats House with the existing facade retained. The facade facing King's Head Yard was partialy retained but most of it was rebuilt with some alterations. Along the St. Thomas Street boundary there are underlying masonry constructed vaults beneath the pavement.

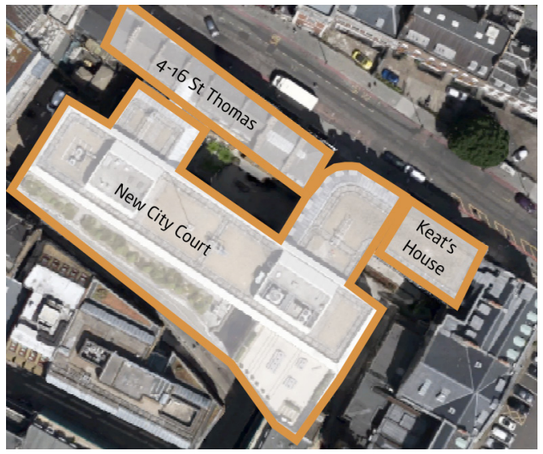


Figure 7.1 Aerial view of site showing designation of the buildings

7.2 St Thomas Street

Numbers 4-16 St Thomas Street are a row of 5-storey masonry brick terraces. Built in early the 19th century as housing, they have since been converted to offices as part of the redevelopment of the adjacent New City Court office building. The buildings and attached railings located on the pavement secluding the lower ground floor access are grade II listed. For this reason these are to be retained as part of the new development. The current buildings are approximately 12m in height, 42m long by 10m wide.

Since the early 19th Century, the buildings have experienced several alterations, except for the front facade to St. Thomas street which has remained almost unchanged. These alterations were mainly done in the 1980's together with the construction of NCC office building, and comprised of new floor joists and a basement slab, an extension of the back face towards NCC from level B1 to level 2, installation of steel and RC lintels to allow for openings in spine walls and the construction of a new 200mm blockwork wall with brick facade to the rear of these terraces, as well as other minor alterations. Previously, 2 storeys were added to no. 16 and, in the 1930's the gap between no. 8 and 10 was filled in.

Superstructure

From historic records and archive information from the Architects, 'The Halpern Partnership', it can be determined that the existing facade consists of loadbearing yellow brick masonry and stone. The internal structure of the main walls are also mainly load bearing masonry, supporting the 4 storey upper floors. The floors consist of timber on joists supported off the main wall supports. There are areas of the terraces which during the 1980's were demolished and re-constructed with new masonry/ blockwork walls. Existing drawings show the rear facade/supporting wall of the terraces to have been re-built, which included new internal partitions and possibly new floors.

Figure 7.2 St. Thomas Street Facade - 1930's gap infilled between no. 8 and 10

Foundations

Drawings available from the time of the office construction from the Engineers, 'Bowden, Sillet & Partners', indicate the foundations to be corbelled brickwork strip footings. The rear footings were underpinned using various combinations of brickwork and mass concrete. The depth could not be determined from the existing drawings and a survey will be required to obtain this information.

Strengthening of the foundations was performed during the construction of the office building, as noted in the archive structural drawings.

Vaults

The vaults within the terrace house section appear to be made of masonry bricks which are vaulted beneath the pavement, extending approximately 1.6m in front og No. 4 St. Thomas Street and 2.6m infront of no.s 6-16. This could perhaps suggest there was an obstruction or sewer within the road limiting the depth in this location. However there is no recorded evidence to support this.

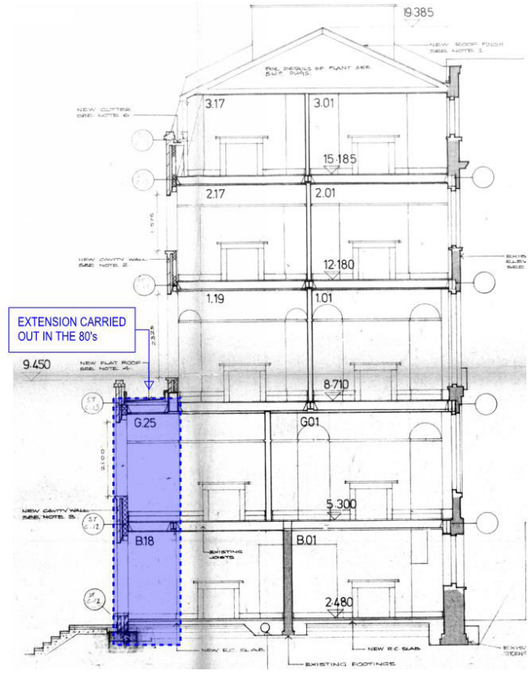


Figure 7.3 St Thomas street section

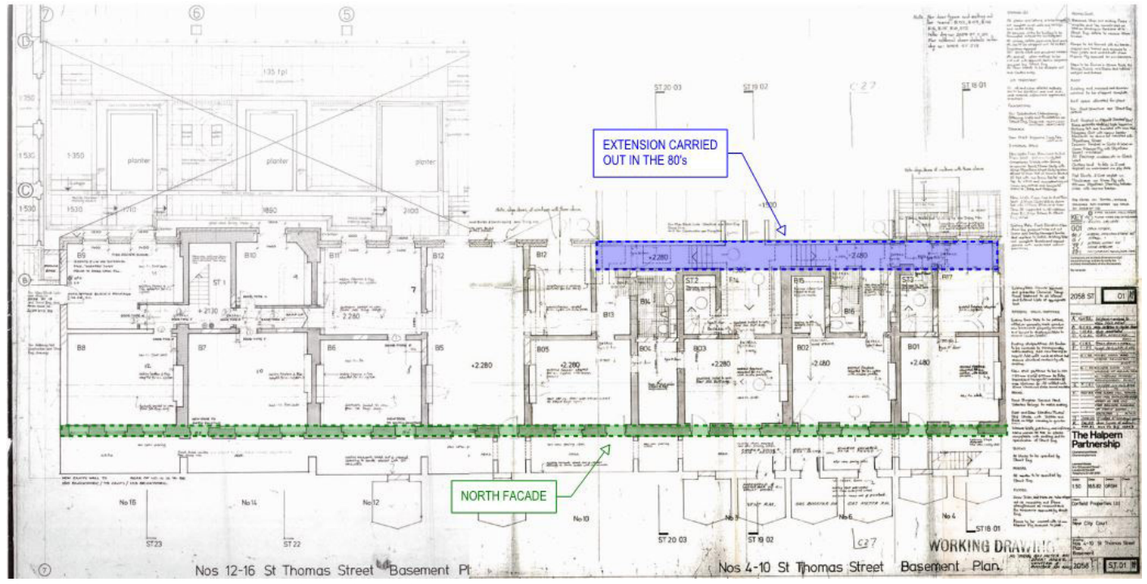


Figure 7.4 St. Thomas street building existing archive drawing

7.3 Keats House

Keats House is located to the east of 4-16 St Thomas Street. The imposing 4-storey red brick building, built in 1863 at the request of Guy's Hospital, has no listed status. The building is named after the late poet John Keats, who although did not live there, lodged for a short while at 8 St Thomas Street where a commemorative London Heritage blue plaque is located.

Facade Strategy

The facade is deemed a positive contribution to the Borough High Street Conservation Area and will therefore be dismantled and rebuild as part of the new development. Refer to Appendix 2 for PAYE's report on the viability of Keats House facade dismantling and rebuild.

Today, all that is left of the original building is the retained facade behind which sits a reinforced concrete frame constructed as part of the existing NCC office building development.

Due to the existing stonework and construction of the facade it is believed to be loadbearing at basement level.

Superstructure

The building has 4-storeys and 1 level of basement/ lowered ground accessed from the street level and internally.

The main frame is reinforced concrete constructed as part of the existing NCC office building. The superstructure consists of 500mm square reinforced concrete columns supporting 250mm flat RC slabs. The eastern party wall of Keats House is also shown to be constructed from reinforced concrete.

Vaults

There are 6 vaults believed to be located in front of Keats House. The central smaller vault has access to it, however the larger vaults had been previously closed up with a masonry skin and they were only able to be inspected through a small vent opening. On visiting it was found that 4 of the 6 vaults contained large entities of mass concrete. These are believed to have been used as part of the 1980's facade retention scheme when the office building was previously built and have been left there and closed within the vaults.

Foundations

The foundations to the main superstructure are approximately 450mm diameter piles as part of the main existing development. The facade foundations appear to have been underpinned as noted on the architectural archive drawing 1527-503 (Fig 7.6). Drawing 1527-522 is not available however on drawing 1527-501, it is shown that 4 large mass concrete blocks as mentioned in vaults above have been used to underpin the facade retention in the 1980's.

7.4 Existing NCC Office Building

The existing development is a reinforced concrete frame building completed in the 1980s. The building is 5-storeys above ground including the additional middle part of the building that is higher. There is also a partial single storey basement. The architects of the project were The Halpern Partnership, now known as Formation Architects. The consulting engineer was James R. Briggs and Associates, who appear to have been renamed in 1994 as DIS Industrial Consultants Limited.

Superstructure

The archive structural and architectural drawings available show that the building is constructed from reinforced concrete columns and flat slabs. The columns are generally 500 mm x 500 mm square and flat slabs 250 mm thick concrete and finished with 75 mm of screed. Structural walls are shown to be 200 mm thick. Whilst the grid varies it is generally between 7-8m. There appears to be RC upstands of 130mm thick x 950mm high approximately surrounding the perimeter.

Retained facades

The portion of the building facing King's Head Yard includes two different retained facades. Most of the retained facade is made of stone extending along King's Head Yard. The remaining retained facade is made of brick and is located in the southeast corner, adjacent to Guy's Hospital masonry arch entrance.The new framing for the New City Court development is installed adjacent to the retained facades. The retained facade extending along King's Head Yard is supported by corbels projecting out of the basement wall. The remaining retained facade is on pad foundations below ground floor on the southeast corner where there is no existing basement.

In addition to the complete retention of the terraces along St Thomas Street, two facades were retained as part of the office development: Keats House (section 7.3) and along the boundary of New City Court to King's Head Yard on the south of the site. This also shows that there were existing lightwells along Kings Head Yard previously, which are now filled in.

Foundations

The building sits on a series of piles and pile caps. The pile caps vary from 900mm to 1200mm thick with 450mm diameter piles located in groups of six below the columns and 16 approximately below the Core walls. From preliminary calculations the piles are approximately 15-20m deep, extending into the london clay, terminating about 3m above the crown of the westbound station tunnel of the Jubilee line. There are mass concrete blocks differing in length and size along the Kings Head Yard perimeter, as part of the facade retention strategy. However, the depth of these are unknown at this stage.

Figure 7.5 Keats House facade

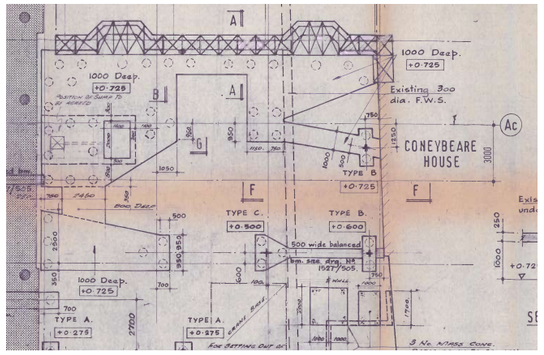


Figure 7.6 Record drawing showing existing foundations

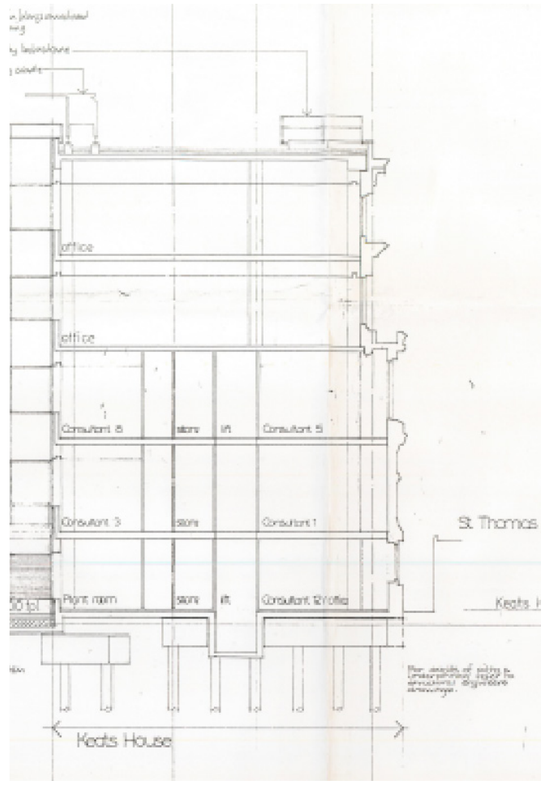


Figure 7.7 Keats House section

Figure 7.8 New City Court facade to St. Thomas street

8 Proposed Super- Structure

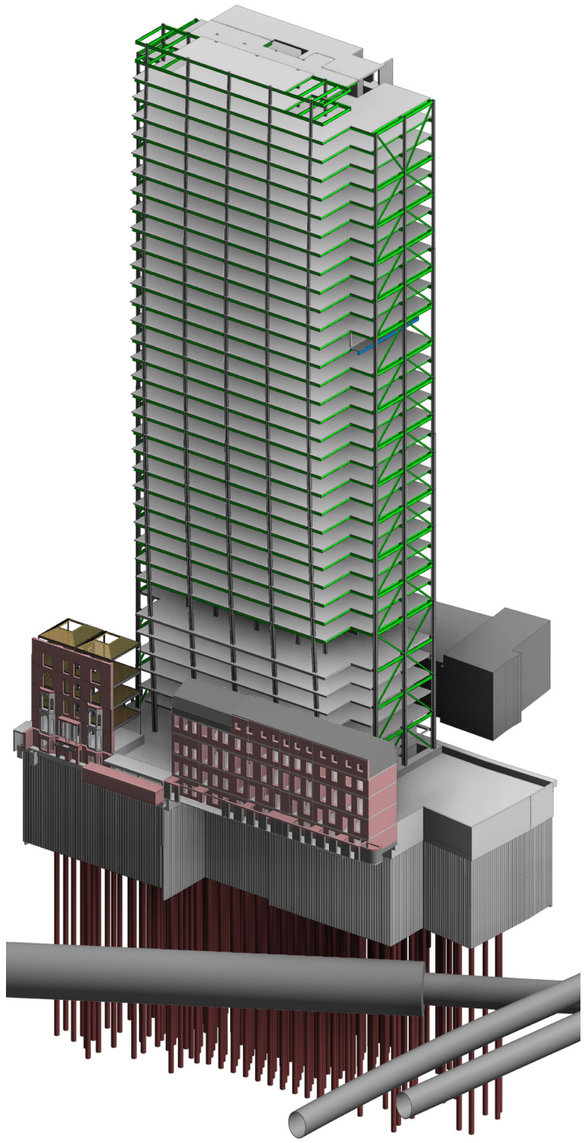


Figure 8.1 New City Court proposed scheme

8.1 New City Court

This is the main building of the developments. It is 37 storey high tower, approximately 140 meters from the proposed ground floor.

The proposed frame is a steel frame supporting 140mm thick precast slab.

The structure is characterized by two exo-skeletons located along the east and west side of the building and composed by three steel columns, cross bracing and horizontal beams.

The typical floors start from level 8 up to level 33. The structural arrangement at levels 21 and 22 differ slightly from the typical layout to host the terrace on the west hand side and the auditoriaum on the north-west corner.

Levels 34 and 35 iareoccupied by the mechanical plants and cooling towers while the roof is designed as blue roof to slow the release of rainwater into the drainage system in combination with the landscape areas in the public realm at the ground floor.

Levels 1 to 7 have been considered as PT slab supported by steel columns provided with steel heads. This design has allowed an increase to the floor to ceiling height in those floors. Generally the slabs are 250mm thick however the thickness increases to 350mm at level 5 to allow for the high loads to the public garden.

The core is designed as reinforced concrete and provides most of the resistance to the lateral loads aided by the exo-skeleton in the north to south direction.

Figure 8.2 Typical floor beam layout

8.1.1 Typical floors

The central bays are 9m wide and 9m long. The steel columns located on the north edge follow the bow profile of the facade and are rake outwards from the ground to the maximum apex set level 23. They then they rake back towards the core to align their position with the position of the columns at ground floor.

The bays located on the side are slightly bigger since the primary beams are approximately 10.5 m long. The corner bays located on the north of the plan cantilever almost 3m towards east and west.

The slab has been considered to be 130mm thick reinforced concrete on metal decking. It acts compositely with the steel beams. The secondary beams are then set to a maximum span of 3m.

The choice of metal decking has been dictated to remove the need of temporary propping. However the steel frame has been designed to support 150mm thick precast panels to allow for a visual concrete soffit.

8.1.2 Lower floors

The bottom floors have been designed as PT slab supported by steel columns which are provided with steel head to avoid the use of shear links. This choice has allowed a reduction of the structural zone, maximising the floor to ceiling height.

For office use the thickness of the slabs is 250mm. The compression on the slab edge is set between 1 and 2 MPa to balance the self weight of the slabs.

At level 7 where the public garden is, the slab thickness increases to 350mm to allow for higher loads due to the landscape. The compression on the slab edge increases to 3 MPa to balance part of the landscape load together with the weight of the slab itself.

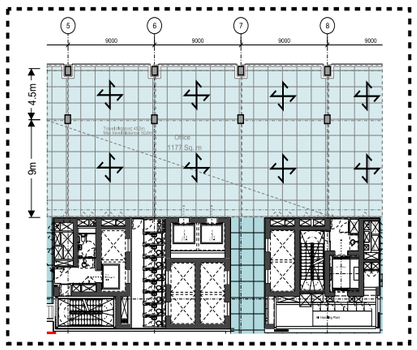


Figure 8.3 Lower floor structural arrangement

8.1.3 Levels 21 and 22

The arrangements of these two floors differ slightly from the typical floors for two reasons.

On the North West corner the space is used for a two storey high auditorium. Along the north side on the 22nd floor the internal floor steps back by one bay to allow for the installation of the terrace which cantilevers out by approximately 2 meters from the edge beam. The steel frame to support the terrace is connected to edge beams through an end plate connection provided with thermal breaks.

8.1.4 Levels 34 and 35

These levels are occupied mainly by mechanical plants and cooling towers. The bays on the west and on the east sides are dedicated for an internal space, double storey high called terrace.

Over the areas for the plant rooms the slab forming the roof is a metal decking concrete slab supporting by a steel frame acting compositely. This part of the roof supports the photovoltaic cells and contributes to the drainage attenuations system acting as blueroof.

The areas for the cooling towers are open to allow for ventilation. The columns are tied back to the main frame with steel beams which are connected together with horizontal moment junctions in the horizontal plane to allow for the distribution of horizontal forces into the core.

The roof over the terraces is constituted of glazed panels supported by secondary members at 3m centre-to-centre which are then supported by the primary beams. The steel beams are fully fixed in the horizontal plane to replace the diaphragm action and to distribute the loads to the stability system.

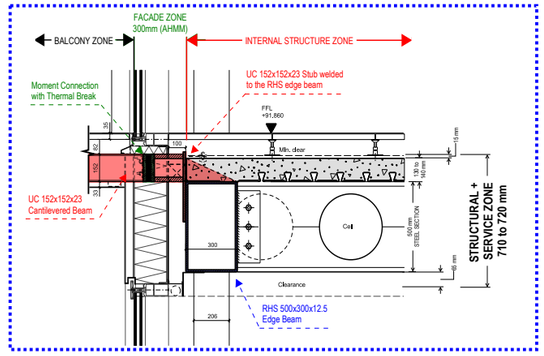


Figure 8.4 HUB balcony strategy

8.1.5 Core and Stability

The core is located on the south side of the building to maximise the office area. Its layout has gone under a detailed iteration process to achieve optimal vertical transportation. The current design allows for low rise public access lifts, medium and high rise lifts together with a goods lift and a cycle facilities lift.

The configuration of the core changes at level 14 and level 25 where the low-rise and the medium-rise lifts stop respectively.

The core other than supporting the vertical loads is part to the stability system together with the exo-skeleton. Its contribution to the stability is more than 80%.

The core is subjected to other moments and shear forces due to:

- Wind loads
- Equivalent horizontal loads
- Eccentricity of the vertical loads
- The push and pull effects due to the raking columns on the north facade

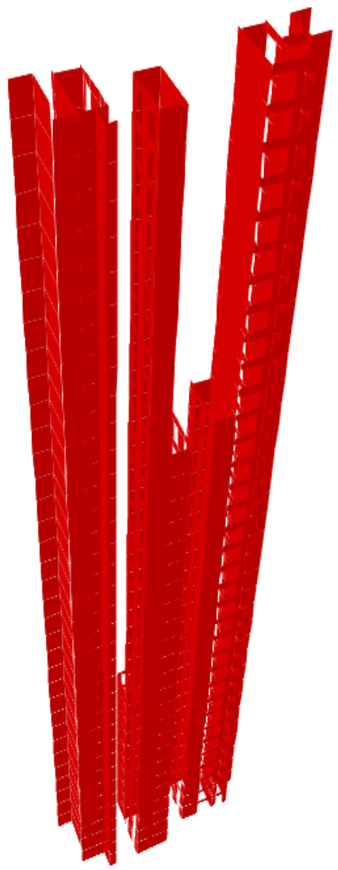


Figure 8.5 FE model of the core

The core has been designed as a propped cantilever restrained between the two levels B1 and B2. The basement box is confined by the secant piles which are generally installed from B1 level which are restrained by a capping beam. The two slabs are under push and pull effects due to the overturning moments and act as diaphragm to dissipate the horizontal loads. Level B1 is designed to transmit the force to the secant piles along the west and east side restrained by the skin friction with the soil. Level B2 spreads the horizontal load to the bearing piles which are designed for the shear force coming from the overturning moments.

The critical axis of the core is the North-South due to the smaller inertia, bigger loads due the wind and the effects of the eccentricity due to vertical loads and to the bow profile of the edge columns.

The core is therefore under permanent and temporary deflections. The former are due to the vertical loads and are limited to the height of building over 500. The shafts of the core have been oversized to allow for those movements. The latter deflections are due to the wind and are limit to the height of building over 750 to avoid high peak accelerations which would lead to discomfort.

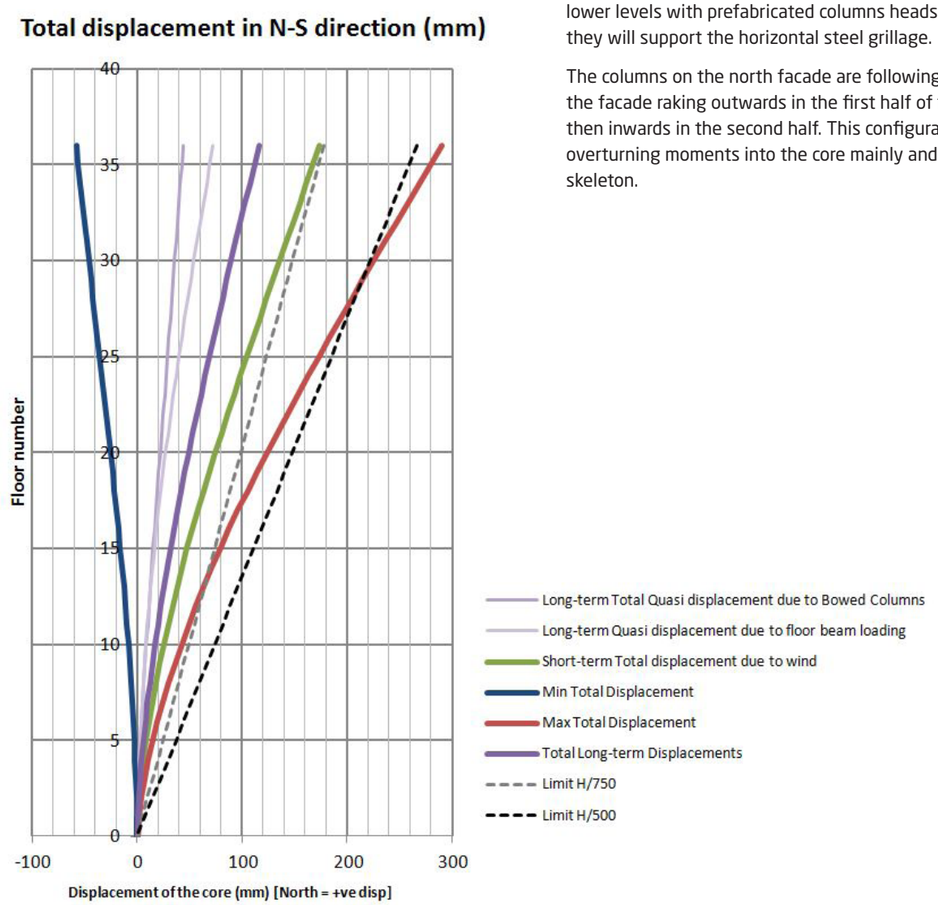


Figure 8.6 Lateral movements of the core

8.1.6 Exo-Skeletons

On the west and east side of the footprint the columns are located outside the internal floor area and they are braced with diagonal beams and restrained by horizontal beams.

The exo-skeleton together with the core forms the stability system of the tower as well as than being part of the vertical supports.

The connection between internal and external frames is achieved with stub beams which are joined together through end plates with thermal breaks placed between them.

The exo-skeleton will experience vertical movements resulting from the thermal effects on an external steel structure. They will be more significant than the horizontal movements, due to the height of the building.

8.1.7 Columns

As mentioned, the steel columns are supporting the PT floors at lower levels with prefabricated columns heads, while from level 8 they will support the horizontal steel grillage.

The columns on the north facade are following the bow profile of the facade raking outwards in the first half of the building and then inwards in the second half. This configuration will induce overturning moments into the core mainly and into the exo-skeleton.

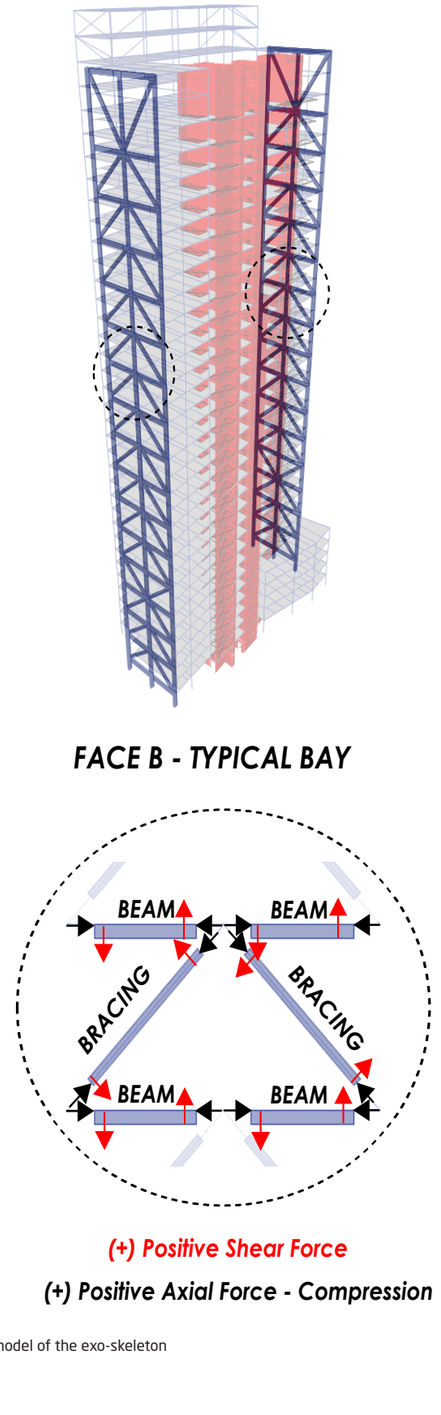


Figure 8.7 FE model of the exo-skeleton

8.2 Keats House

Keats House is located to the east of the entrance to the existing New City Court office building. The imposing 4 storey red brick building was built in 1863. The building has 4 storeys and 1 level of basement/ lowered ground accessed from the street level and internally. The main frame is reinforced concrete constructed as part of the existing New City Court office building.

The building is not listed. However the facade is deemed a positive contribution to the Borough High Street Conservation Area.

The current scheme suggests dismantling the facade and its reconstruction approximately 4m to the west and demolition of the building behind which was built in early 1980's and replaced by a new structure. PAYE Stonework and Restoration prepared a report on the viability of dismantling and rebuild the Keats House facade. This report is part of the documents for planning submission

The design team looked also at the option of moving the facade without being dismantled with the aid of flat jacks mounted on skids able to roll along tracks installed on both sides of the facade. This option, although feasible, would face issues due to the logistics of the site, since St. Thomas Street is the only access route for trucks and would worsen the traffic along that road.

The new frame consists of steel columns and steel beams which support the timber floors made of timber joists and timber panels.

The roof structure is made of perimeter steel beams and timber rafters which are supporting a skylight.

The stressed-skin panels running on top of the raft and the secondary timber joists are providing stability to the roof in the horizontal plane. The connections of the panels to both the timber beams at the top which are supporting the skylight and the perimeter steel beams at the bottom are critical to the stability system of the roof.

Generally the steel core and the retained load bearing facade are providing stability to the building.

8.3 4-16 St Thomas Street

4-16 st Thomas Street comprises a row of 5 storey masonry brick terraces provided with a lower ground floor which were built in 1819. The buildings are grade II listed. However the rear of the buildings went through structural alterations which involved a partial extension during the construction on New City Court in the 1980s.

The main structural alterations are related to the back of the building. The proposal is to bring the building back to the original extension and therefore demolish the extension carried out in the 1980's.

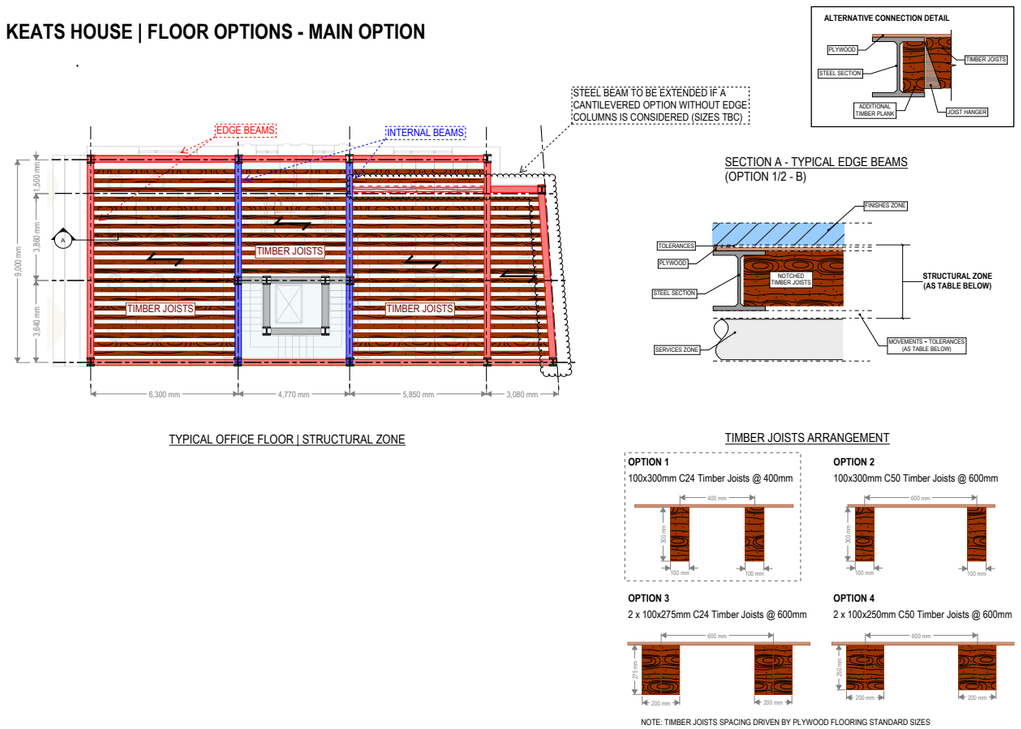


Figure 8.8 Keats House typical floor

The southern facade will then need to go through alterations works to match the northern elevation. The proposal aims in most of the cases to replace the outer skin except between 6 and 10 where the facade will be fully replaced. In this way a consistent outer line will be achieved between 4 and 12 St Thomas Street and from 14 to 16 St Thomas Street. At ground floor on the south side shop fronts will be installed.

A passage connecting north to south will be formed at ground floor between 8 and 10 of St Thomas Street.

At roof level of 14 and 16 St Thomas Street the structure currently finishes with a flat top, which will be modified to match the monopitch roofs of the other terraced houses.

The foundations facing New City Court site will need RC underpinning to allow for the construction of the basement for the new development.

The list of works which will be carried out for the Georgian Terrace is set out in the Appendix 2.

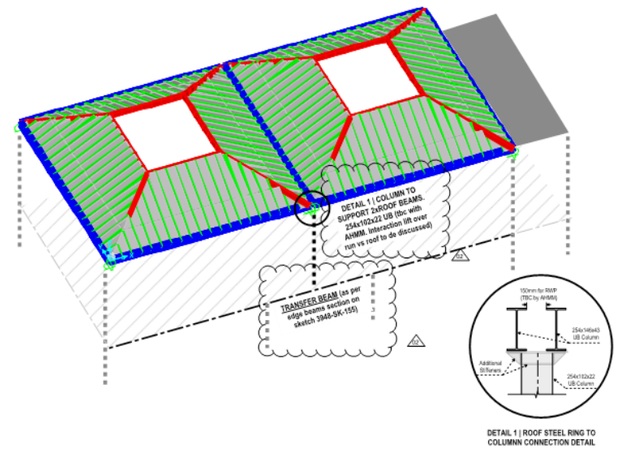
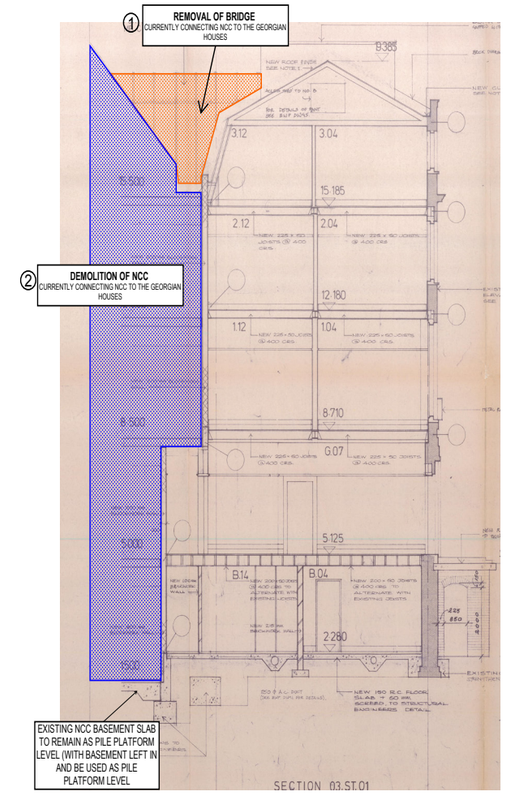


Figure 8.9 Keats House roof layout



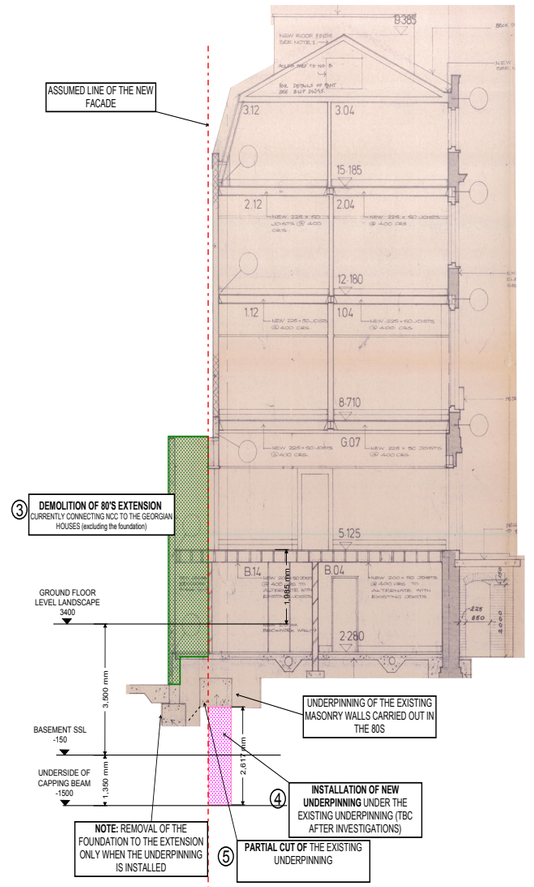


Figure 8.10 4-16 St. Thomas street initial demolition sequence

9 Proposed Substructure

9.1 Basement overview

The proposed basement is two storeys deep confined by a secant piled retaining wall .It occupies all the futureprint of the development with the exception of the Georgian Terrace.

Beneath Keats House there is currently a sewer crossing the fooprint of the building from south to north. The current proposal consists of diverting the sewer closer to Coneybare House on the east side mainly to maximise the basement area at B2, but also to avoid damaging the existing sewer in the demolition works.

All surrounding buildings seem to have at least one level of basement, albeit with different heights/levels, that allows the outline of the first level of basement to generally be pushed up against the site boundary.

However when the construction methodology of the new basement walls is also considered, their location on plan is generally driven by the existing foundations: where possible piling is proposed to be done from the existing B1 level, thus using the existing walls as part of the temporary works. However, the existing 1980's foundations seem to have been installed from the existing B1 level, inside the masonry retaining walls from the previous building, and for that reason the first row of existing piles is set 1-1.5m inside the existing basement volume. This means that along the south and east perimeters of the basement, where there is a greater density of existing piles, in order not reduce significantly the basement area by going inside these, it has been assumed that the piling of the secant wall will be from ground level.

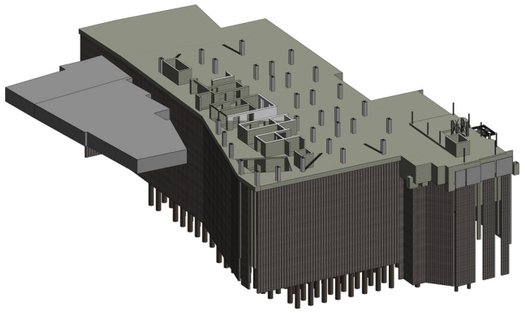


Figure 9.1 Proposed basement 3D view

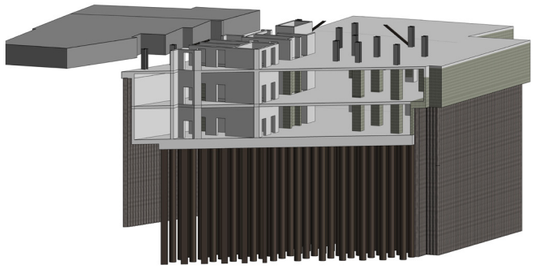


Figure 9.2 Porposed basement section

9.2 Foundation

Given the magnitude of the vertical loads applied, together with the anticipated ground conditions, the most cost-effective solution appears to be a piled raft right below the main tower with a 1350mm thick raft spreading the load onto 900mm diameter CFA piles through London clay until the Lambeth layer, to achieve the desired bearing capacity/limit settlements of underlying strata. For the remaining area outside the tower footprint the main option is a suspended slab between pile caps that support either the basement or Keats House columns.

The current proposed foundation will be subject to confirmation in the next stages after review of the ground investigation results.

It should be noted that, as referred in chapter 6, there are several existing RC piles (450mm diameter) across the site and further to additional surveys on site to confirm the actual position of these existing piles (taken as per archive drawings to date), it is expected that some of the proposed piles will need to be relocated to avoid clashes.

9.3 Retaining Wall

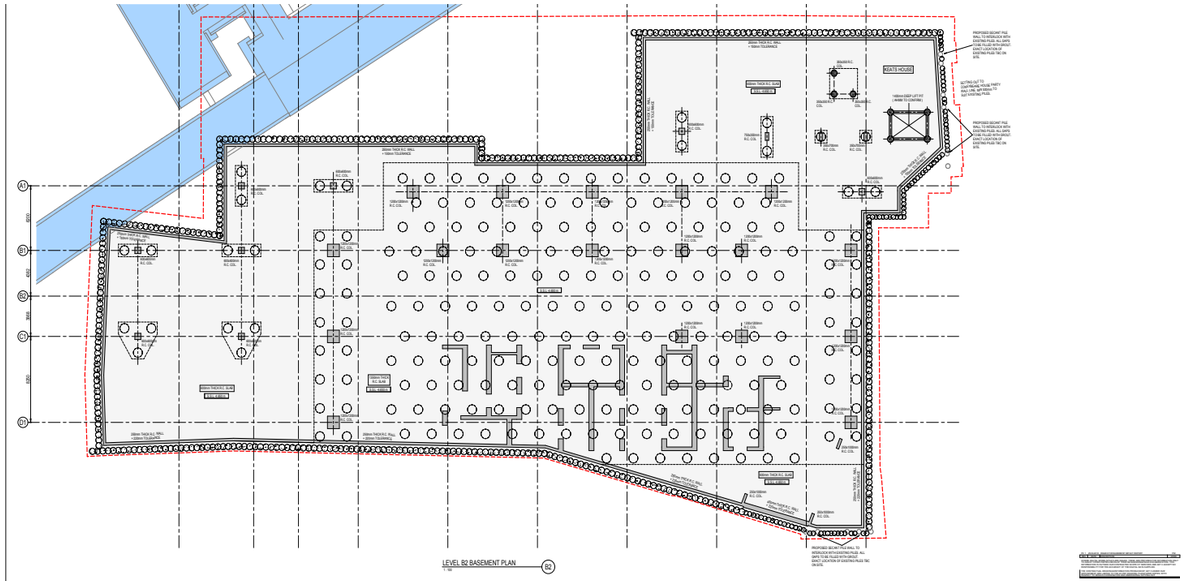
The formation of the new basement will be achieved with the use of a secant piled wall which is the most suitable solution in terms of cost/effective width, construction sequence, adjacent buildings and other site constraints, as well as programme.

This secant piled wall is an inherent stiff construction, conducive to a robust temporary works scheme. The interlocking construction provides resistance to the penetration of water into the excavation during the temporary condition and limits the risk of washing fines from under the adjacent structures. The piling line is set such that adequate clearance to the adjacent structures is maintained with typical minimum clearance of 1200mm from the centre line of the pile to the adjacent high-level obstruction.

In the north-west corner the pile are shorter to avoid the exclusion zone around the platform tunnel as highlighted in drawing 3948-AKT-XX-XX-DR-S-00410 included in appendix 1.

The secant piled wall proposed to date will be designed to support the surcharge load from the adjacent buildings and/or roads, soil surcharge and water pressure.

Generally, a 600mm diameter secant piled wall has been adopted all around the perimeter. There are however some localised areas, on the east side of Keats House and on the southeast corner, where the proposed retaining wall will be a 450mm diameter mini-pile contiguous wall to interlock with existing 450mm diameter piles located in the perimeter.



10 Design Standards

Since March 2010 Eurocodes and their associated National Annexes (providing country-specific design parameters), have superseded British Standards as the principle design codes for structural elements in the United Kingdom. Reference will be made to British Standards and other technical guidance where topics are not adequately addressed in the Eurocodes. It is of note that while no longer current, the superseded British Standards generally remain cited within UK Building Regulations.

The following codes and design guides will be used principally in preparing the structural design for the project. For the sake of brevity National Annexes are not listed:

Eurocode 0: Basis of structural design

BS EN 1990:2002

Eurocode 1: Actions on structures

BS EN 1991-1-1:2002, BS EN 1991-1-2:2002, BS EN 1991-1-3:2003, BS EN 1991-1-4:2005, BS EN 1991-1-5:2003, BS EN 1991-1-6:2005 and BS EN 1991-1-7:2006, (BS EN 1991-3:2006)

Eurocode 2: Design of concrete structures

BS EN 1992-1-1:2004 and BS EN 1992-1-2:2004, (BS EN 1992-3:2006)

Eurocode 3: Design of steel structures

BS EN 1993-1-1:2005, BS EN 1993-1-3:2006, BS EN 1993-1-4:2006, BS EN 1993-1-5:2006, BS EN 1993-1-7:2007, BS EN 1993-1-8:2005, BS EN 1993-1-10:2005, BS EN 1993-1-11:2006, BS EN 1993-5:2007 and BS EN 1993-6:2007

Eurocode 7: Geotechnical design

BS EN 1997-1:2004, BS EN 1997-2:2007

BS8102 2009 Protection of below ground structures against water from the ground

SCI P354 Design of floors for vibration: A new approach

BS6472-1:2008 Evaluation of human exposure to vibration in buildings

The Concrete Centre: A design guide for footfall induced vibration of structures

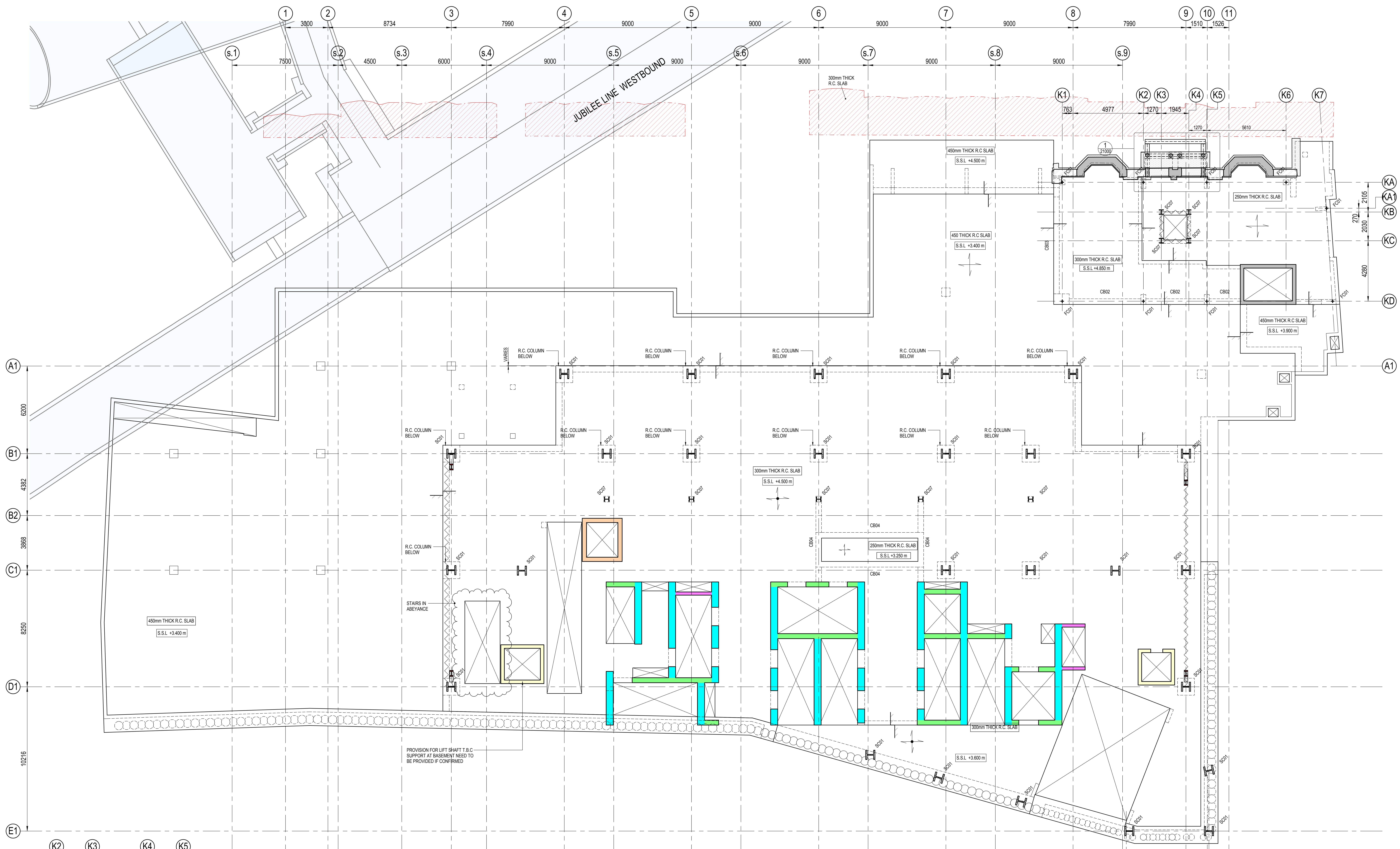
CIRIA C580 Embedded retaining walls – guidance for economic design

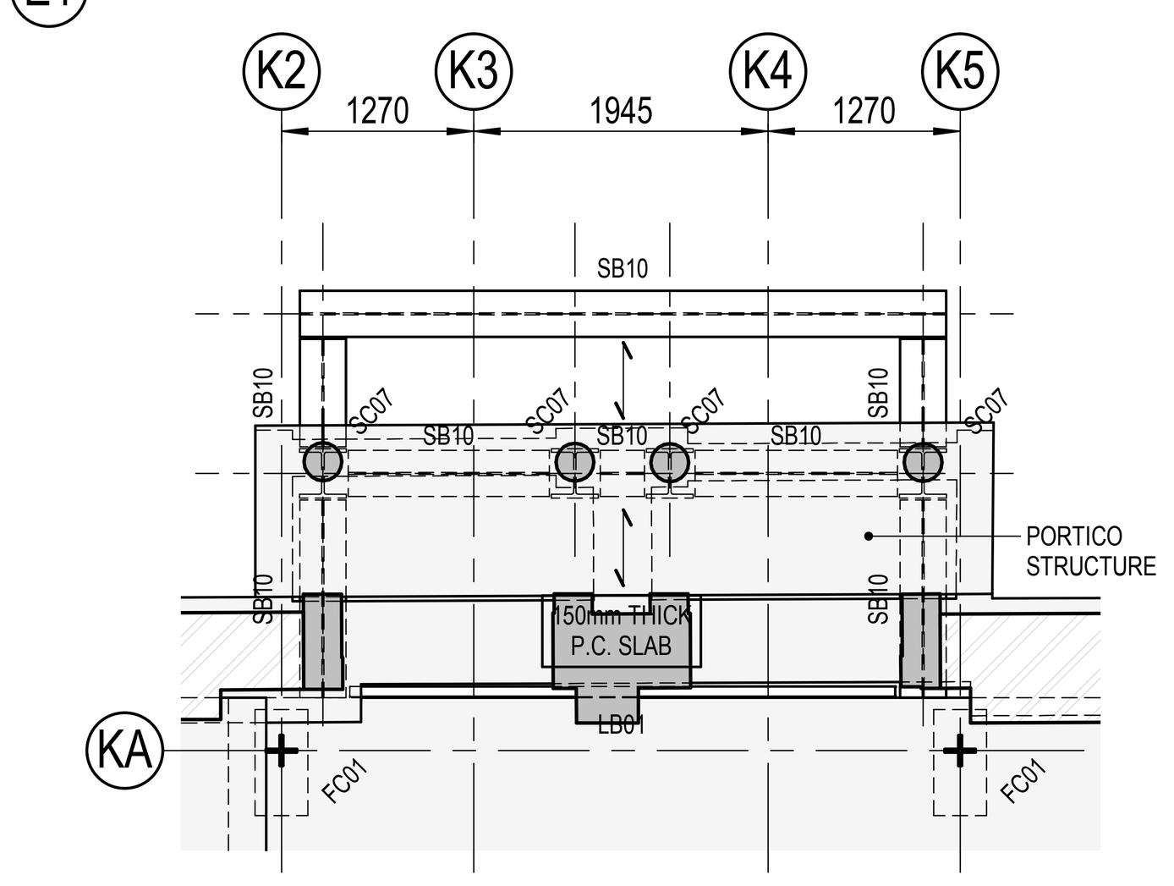
Building Regulations: all relevant sections, including Approved documents A & B concerning structure and fire safety

The assessment of existing structures shall generally follow the principles outlined in the iStructE publication entitled "The Appraisal of Existing Structures".

Appendix 1

Proposed Drawings - Tower & Keats House





DETAIL 1

1 : 50

0 1000 2000 3000 4000 5000 mm

SCALE 1:100

LEVEL SCHEDULE	
Name	Elevation
LEVEL 36	117375 mm
LEVEL 35	114325 mm
LEVEL 34	111275 mm
LEVEL 33	108225 mm
LEVEL 32	105175 mm
LEVEL 31	102125 mm
LEVEL 30	99075 mm
LEVEL 29	96025 mm
LEVEL 28	92975 mm
LEVEL 27	89925 mm
LEVEL 26	86875 mm
LEVEL 25	83825 mm
LEVEL 24	80775 mm
LEVEL 23	77725 mm
LEVEL 22	74675 mm
LEVEL 21	71625 mm
LEVEL 20	68575 mm
LEVEL 19	65525 mm
LEVEL 18	62475 mm
LEVEL 17	59425 mm
LEVEL 16	56375 mm
LEVEL 15	53325 mm
LEVEL 14	50275 mm
LEVEL 13	47225 mm
LEVEL 12	44175 mm
LEVEL 11	41125 mm
LEVEL 10	38075 mm
LEVEL 09	35025 mm
LEVEL 08	31975 mm
LEVEL 07	28925 mm
LEVEL 06	25875 mm
LEVEL 05	22825 mm
KH LEVEL RF (RIDGE)	21109 mm
KH ROOF LEVEL	19875 mm
LEVEL 04	19775 mm
LEVEL 03	16725 mm
KH LEVEL 03	15460 mm
LEVEL 02	13675 mm
KH LEVEL 02	12015 mm
LEVEL 01	10625 mm
KH LEVEL 01	8565 mm
LEVEL 00M	7575 mm
GROUND LEVEL	4500 mm
KH GROUND LEVEL	4500 mm
LEVEL B1M	1250 mm
KH LEVEL B1	150 mm
LEVEL B1	-150 mm
LEVEL B2	-4650 mm
KH LEVEL B2	-4650 mm

NOTES

1. NO DIMENSIONS SHOULD BE SCALED FROM THIS DRAWING.
2. ALL DIMENSIONS IN MILLIMETRES U.N.O.
3. ALL GRID LINES AND SETTING OUT TBC
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS & MEP ENGINEERS DRAWINGS AND SPECIFICATIONS.
5. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE LATEST GENERAL ARRANGEMENT DRAWINGS AND DETAILS, AS WELL AS RELEVANT SKETCHES, REPORTS AND CALCULATIONS.
6. ALL DIMENSIONS IN MILLIMETRES U.N.O
7. GRID SETTING OUT TO ARCHITECT'S DETAILS.
8. RC GRADE:
   RC FOUNDATIONS (RAFT & PILES) C35/45
   RC PILE CAPS C35/45
   RC SLABS C35/45
   RC COLUMNS C50/60
   RC WALLS C80/95 & C60/75, AS NOTED ON DRG
9. STEELWORK GRADE: S355
10. STEEL REINFORCEMENT GRADE: H500
11. ALL ELEMENTS OF EXISTING STRUCTURE ARE INFERRED FROM LIMITED RECORD INFORMATION AND SITE SURVEY.
12. FURTHER COORDINATION REQUIRED FOR ALL SERVICES PENETRATION.
13. OPENINGS IN CORE WALLS IN ABEYANCE – FURTHER COORDINATION REQUIRED.
14. LOCATION OF STEPS IN GROUND FLOOR SLABS IN ABEYANCE.

EXISTING STRUCTURE NOTE

EXISTING STRUCTURE ARE SHOWN INDICATIVELY AND ARE DRAWN ON THE BASIS OF EXISTING AND AVAILABLE RECORD INFORMATION. THE CONTRACTOR REMAINS RESPONSIBLE FOR CONFIRMING ALL THE DETAILS AND EXTENT OF THE EXISTING STRUCTURE AS REQUIRED TO CONSTRUCT THE PROPOSED BUILDING OR WHERE INDICATED TO ALLOW DESIGN OF THE PERMANENT WORKS TO BE COMPLETED IT SHOULD BE NOTED THAT SETTING OUT WHERE RELIANT ON THE CONFIRMED POSITION OR LEVEL OF THE EXISTING STRUCTURE MAY BE SUBJECT TO CHANGE REFER TO ARCHITECTS GRID DRAWINGS FOR FURTHER DETAILS.

LEGEND

- 130mm COMPOSITE SLAB / 140 PRECAST SLAB
- 300mm x 100mm TIMBER JOISTS @ 400mm , 15mm PLYWOOD PANEL ON THE TOP
- 150mm x 100mm TIMBER JOISTS, WITH 15mm PLYWOOD PANEL ON THE TOP
- 250mm THICK P.T. SLAB
- 225mm THICK R.C. SLAB
- 300mm THICK R.C. SLAB
- EXO - SKELETON BRACING
- 500mm R.C THICK WALL
- 400mm R.C THICK WALL
- 350mm R.C THICK WALL
- 300mm R.C THICK WALL
- 250mm R.C THICK WALL
- 225mm R.C THICK WALL

STRUCTURAL COLUMN SCHEDULE	
REF.	SECTION SIZE
	250mm DIA. R.C. COL
CC01	1200x1200mm R.C. COL.
CC02	350x400mm R.C. COL.
CC03	350x700mm R.C. COL.
CC04	600x600mm R.C. COL.
CC05	225x1817mm R.C. COL.-WIDTH T.B.C.
CC07	250x1000mm R.C. COL.
CC08	350x350 R.C. COL.
CC09	750x350mm R.C. COL
CC10	750x1100mm R.C. COL.
CC11	400x400 R.C. COL.
FC01	200x200x20
SC01	650 x 650 - 90tf 60tw
SC02	600 x 600 - 80tf 50tw
SC03	600 x 600 - 70tf 45tw
SC04	500 x 500 - 60tf 40tw
SC05	UKC356x406x467
SC06	UC305x305x97
SC07	UC203x203x86
SC08	UB254x102x22
SC09	UC254x254x107

STRUCTURAL FRAMING SCHEDULE	
REF.	SECTION SIZE
CB01	350WIDE x 700mm DEEP R.C. BEAM
CB02	400 WIDE x 650mm DEEP R.C. BEAM
CB03	400 WIDE x 750mm DEEP R.C. BEAM
CB04	400 WIDE x 1500mm DEEP R.C. BEAM
CB05	300WIDE x 600mm DEEP R.C. BEAM
LB01	L75x75x8
RB01	52mm
SB01	190x500 STEEL BEAM
SB02	315x550 STEEL BEAM
SB03	200x500 STEEL BEAM
SB04	155x500 STEEL BEAM
SB05	250x500 STEEL BEAM
SB06	RHS500x300x12.5
SB07	RHS350x150x16
SB08	250x250 STEEL VERTICAL BRACING
SB09	UC152x152x23
SB10	UC152x152x30
SB11	UKB457x191x106
SB12	UKB457x191x133
SB13	UKC254x254x107 STUB
SB14	UB356x171x67
SB16	UB254x102x22

REV	DATE	DESCRIPTION	CHKD
P0 1	07.11.18	DRAFT STAGE 2 ISSUE	NC

akt II

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GREAT PORTLAND ESTATES PLC

CLIENT

NEW CITY COURT

PROJECT

TOWER GENERAL ARRANGEMENT LEVEL 00

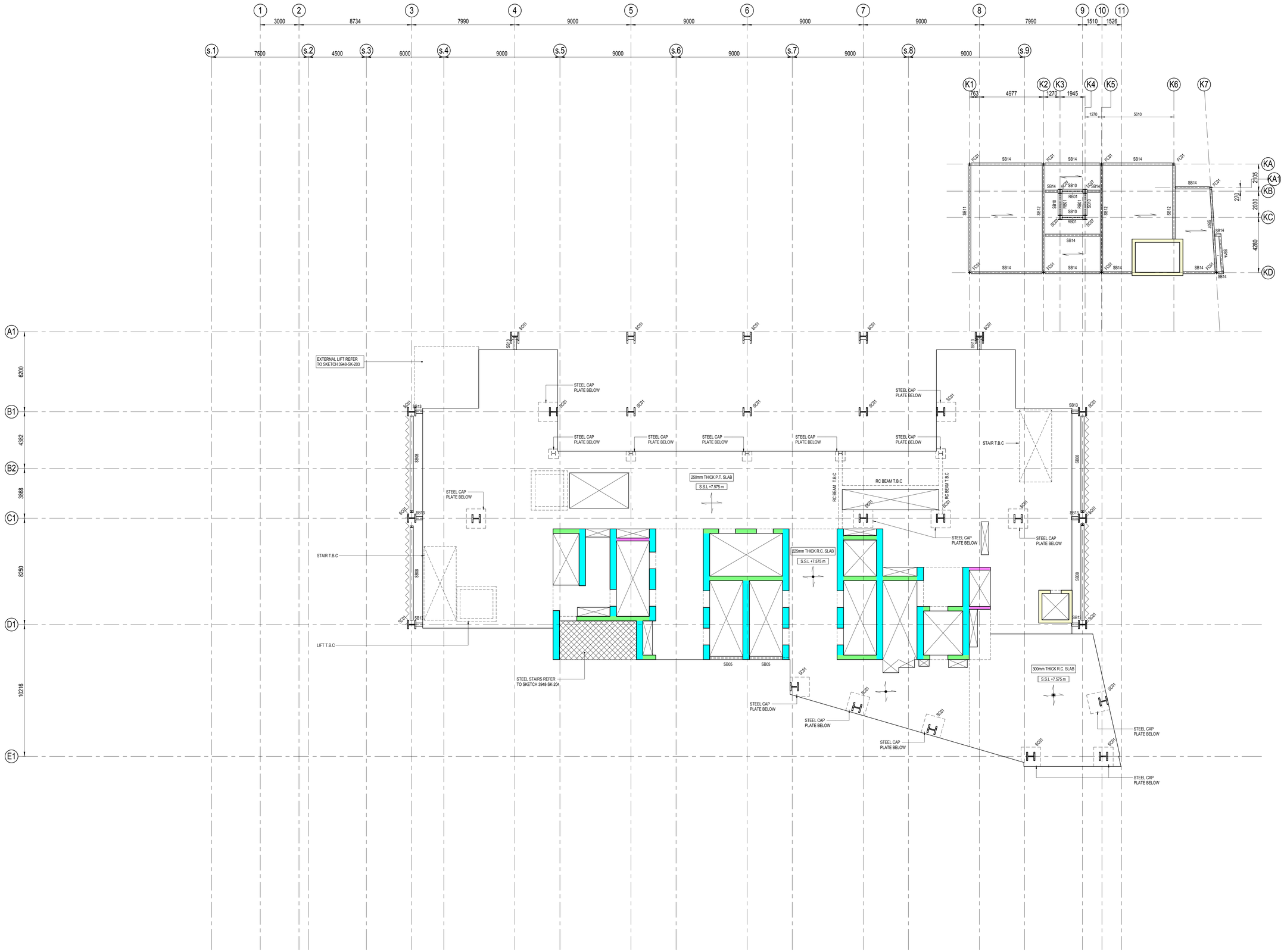
TITLE

SB DRAWN	SEP' 2018 DATE	A0 SHEET SIZE
3948 PROJECT No.	STAGE 2 PROJECT STAGE	S0 SUITABILITY CODE

PROJECT ID ORIGINATOR ZONE LEVEL TYPE ROLE DRAWING No. REVISION

DRAFT

3948-AKT-XX-00-DR-S-21000 P01



LEVEL SCHEDULE	
Name	Elevation
LEVEL 36	117375 mm
LEVEL 35	114325 mm
LEVEL 34	111275 mm
LEVEL 33	108225 mm
LEVEL 32	105175 mm
LEVEL 31	102125 mm
LEVEL 30	99075 mm
LEVEL 29	96025 mm
LEVEL 28	92975 mm
LEVEL 27	89925 mm
LEVEL 26	86875 mm
LEVEL 25	83825 mm
LEVEL 24	80775 mm
LEVEL 23	77725 mm
LEVEL 22	74675 mm
LEVEL 21	71625 mm
LEVEL 20	68575 mm
LEVEL 19	65525 mm
LEVEL 18	62475 mm
LEVEL 17	59425 mm
LEVEL 16	56375 mm
LEVEL 15	53325 mm
LEVEL 14	50275 mm
LEVEL 13	47225 mm
LEVEL 12	44175 mm
LEVEL 11	41125 mm
LEVEL 10	38075 mm
LEVEL 09	35025 mm
LEVEL 08	31975 mm
LEVEL 07	28925 mm
LEVEL 06	25875 mm
LEVEL 05	22825 mm
KH LEVEL RF (RIDGE)	21109 mm
KH ROOF LEVEL	19875 mm
LEVEL 04	19775 mm
LEVEL 03	16725 mm
KH LEVEL 03	15460 mm
LEVEL 02	13675 mm
KH LEVEL 02	12015 mm
LEVEL 01	10625 mm
KH LEVEL 01	8565 mm
LEVEL 00M	7575 mm
GROUND LEVEL	4500 mm
KH GROUND LEVEL	4500 mm
LEVEL B1M	1250 mm
KH LEVEL B1	150 mm
LEVEL B1	-150 mm
LEVEL B2	-4650 mm
KH LEVEL B2	-4650 mm

NOTES

1. NO DIMENSIONS SHOULD BE SCALED FROM THIS DRAWING.
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3. ALL GRID LINES AND SETTING OUT TBC
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7. GRID SETTING OUT TO ARCHITECT'S DETAILS.
8. RC GRADE:
   RC FOUNDATIONS (RAFT & PILES) C35/45
   RC PILE CAPS C35/45
   RC SLABS C35/45
   RC COLUMNS C50/60
   RC WALLS C80/95 & C60/75, AS NOTED ON DRG
9. STEELWORK GRADE: S355
10. STEEL REINFORCEMENT GRADE: H500
11. ALL ELEMENTS OF EXISTING STRUCTURE ARE INFERRED FROM LIMITED RECORD INFORMATION AND SITE SURVEY.
12. FURTHER COORDINATION REQUIRED FOR ALL SERVICES PENETRATION.
13. OPENINGS IN CORE WALLS IN ABEYANCE – FURTHER COORDINATION REQUIRED.
14. LOCATION OF STEPS IN GROUND FLOOR SLABS IN ABEYANCE.

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LEGEND

- 130mm COMPOSITE SLAB / 140 PRECAST SLAB
- 300mm x 100mm TIMBER JOISTS @ 400mm . 15mm PLYWOOD PANEL ON THE TOP
- 150mm x 100mm TIMBER JOISTS, WITH 15mm PLYWOOD PANEL ON THE TOP
- 250mm THICK P.T. SLAB
- 225mm THICK R.C. SLAB
- 300mm THICK R.C. SLAB
- EXO - SKELETON BRACING
- 500mm R.C THICK WALL
- 400mm R.C THICK WALL
- 350mm R.C THICK WALL
- 300mm R.C THICK WALL
- 250mm R.C THICK WALL
- 225mm R.C THICK WALL

STRUCTURAL COLUMN SCHEDULE	
REF.	SECTION SIZE
CC01	1200x1200mm R.C. COL.
CC02	350x400mm R.C. COL.
CC03	350x700mm R.C. COL.
CC04	600x600mm R.C. COL.
CC05	225x1817mm R.C. COL. -WIDTH T.B.C.
CC07	250x1000mm R.C. COL.
CC08	350x350 R.C. COL.
CC09	750x350mm R.C. COL.
CC10	750x1100mm R.C. COL.
CC11	400x400 R.C. COL.
FC01	200x200x20
SC01	650 x 650 - 90tf 60tw
SC02	600 x 600 - 80tf 50tw
SC03	600 x 600 - 70tf 45tw
SC04	500 x 500 - 60tf 40tw
SC05	UKC356x406x467
SC06	UC305x305x97
SC07	UC203x203x86
SC08	UB254x102x22
SC09	UC254x254x107

STRUCTURAL FRAMING SCHEDULE	
REF.	SECTION SIZE
CB01	350WIDE x 700mm DEEP R.C. BEAM
CB02	400 WIDE x 650mm DEEP R.C. BEAM
CB03	400 WIDE x 750mm DEEP R.C. BEAM
CB04	400 WIDE x 1500mm DEEP R.C. BEAM
CB05	300WIDE x 600mm DEEP R.C. BEAM
LB01	L75x75x8
RB01	52mm
SB01	190x500 STEEL BEAM
SB02	315x550 STEEL BEAM
SB03	200x500 STEEL BEAM
SB04	155x500 STEEL BEAM
SB05	250x500 STEEL BEAM
SB06	RHS500x300x12.5
SB07	RHS350x150x16
SB08	250x250 STEEL VERTICAL BRACING
SB09	UC152x152x23
SB10	UC152x152x30
SB11	UKB457x191x106
SB12	UKB457x191x133
SB13	UKC254x254x107 STUB
SB14	UB356x171x57
SB16	UB254x102x22

REV	DATE	DESCRIPTION	CHKD
P0 1	07.11.18	DRAFT STAGE 2 ISSUE	NC

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THE CONTRACTUAL DRAWINGS/INFORMATION PRODUCED BY AKT II UNDER OUR APPOINTMENT ARE LIMITED TO THE 2D PDF DRAWING FILES/PAPER COPIES, WITH RESPECT TO DESIGN COORDINATION AND DIMENSIONAL SETTING OUT.

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GREAT PORTLAND ESTATES PLC

CLIENT

NEW CITY COURT

PROJECT

TOWER
GENERAL ARRANGEMENT
GROUND FLOOR MEZZANINE

TITLE

SB	SEP 2018	A0
DRAWN	DATE	SHEET SIZE
3948	STAGE 2	S0
PROJECT No.	PROJECT STAGE	SUITABILITY CODE

PROJECT ID	ORIGINATOR	ZONE	LEVEL	TYPE	ROLE	DRAWING No.	REVISION
3948-AKT-XX-0M-DR-S-2M000							P01

DRAFT

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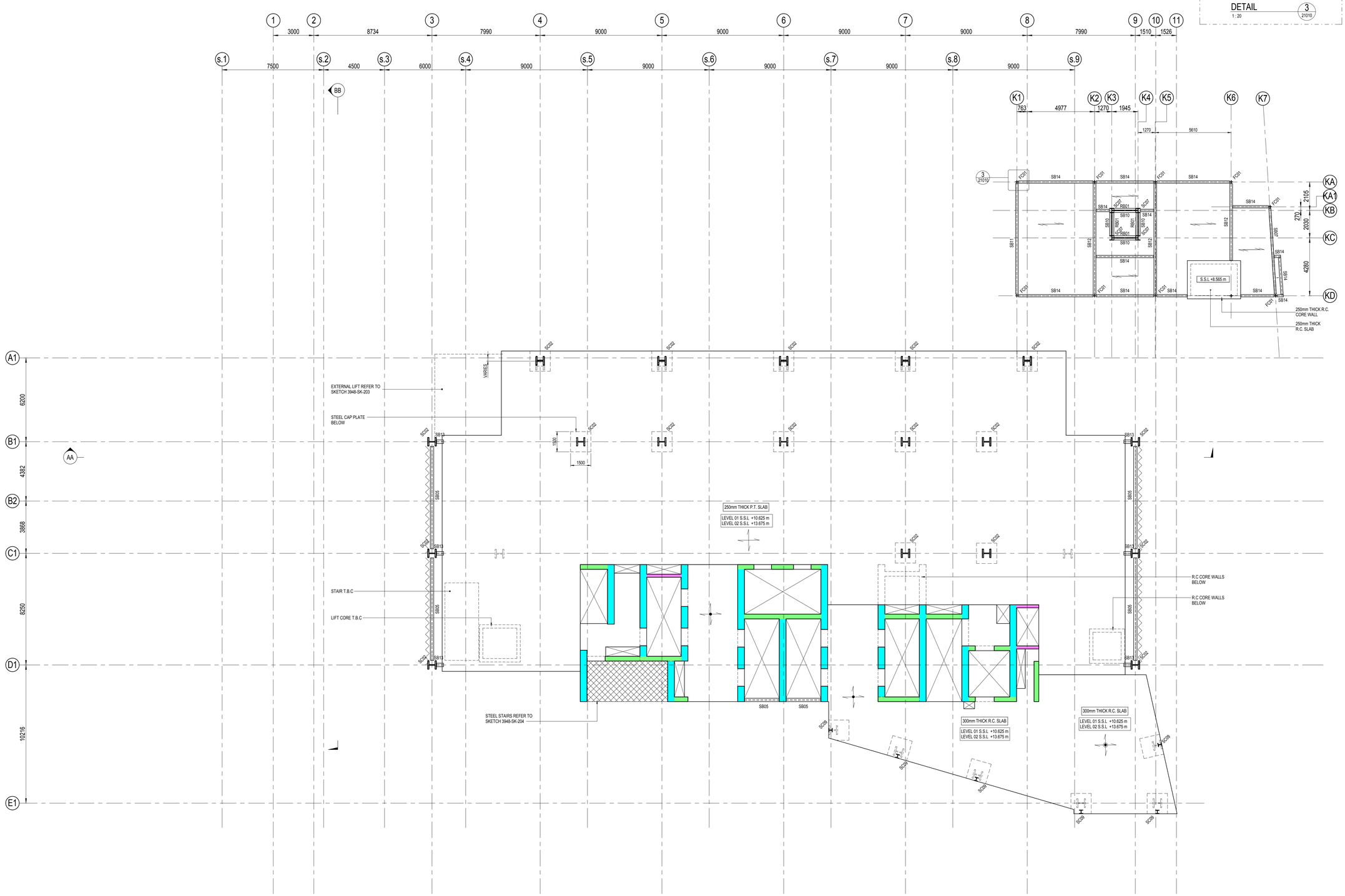
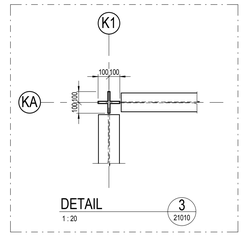
SCALE 1:100





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REV	DATE	DESCRIPTION	CHKD
P0.1	07.11.18	DRAFT STAGE 2 ISSUE	NC

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W www.akt-uk.com

GREAT PORTLAND ESTATES PLC

CLIENT

NEW CITY COURT

PROJECT

TOWER
GENERAL ARRANGEMENT
LEVELS 01 & 02

TITLE

DRAWN	DATE	SHEET SIZE
SB	SEP 2018	A0

PROJECT No.	PROJECT STAGE	SUITABILITY CODE
3948	STAGE 2	S0

PROJECT ID	ORIGINATOR	ZONE	LEVEL	TYPE	ROLE	DRAWING No.	REVISION
3948-AKT-XX-ZZ-DR-S-21010							P01

DRAFT

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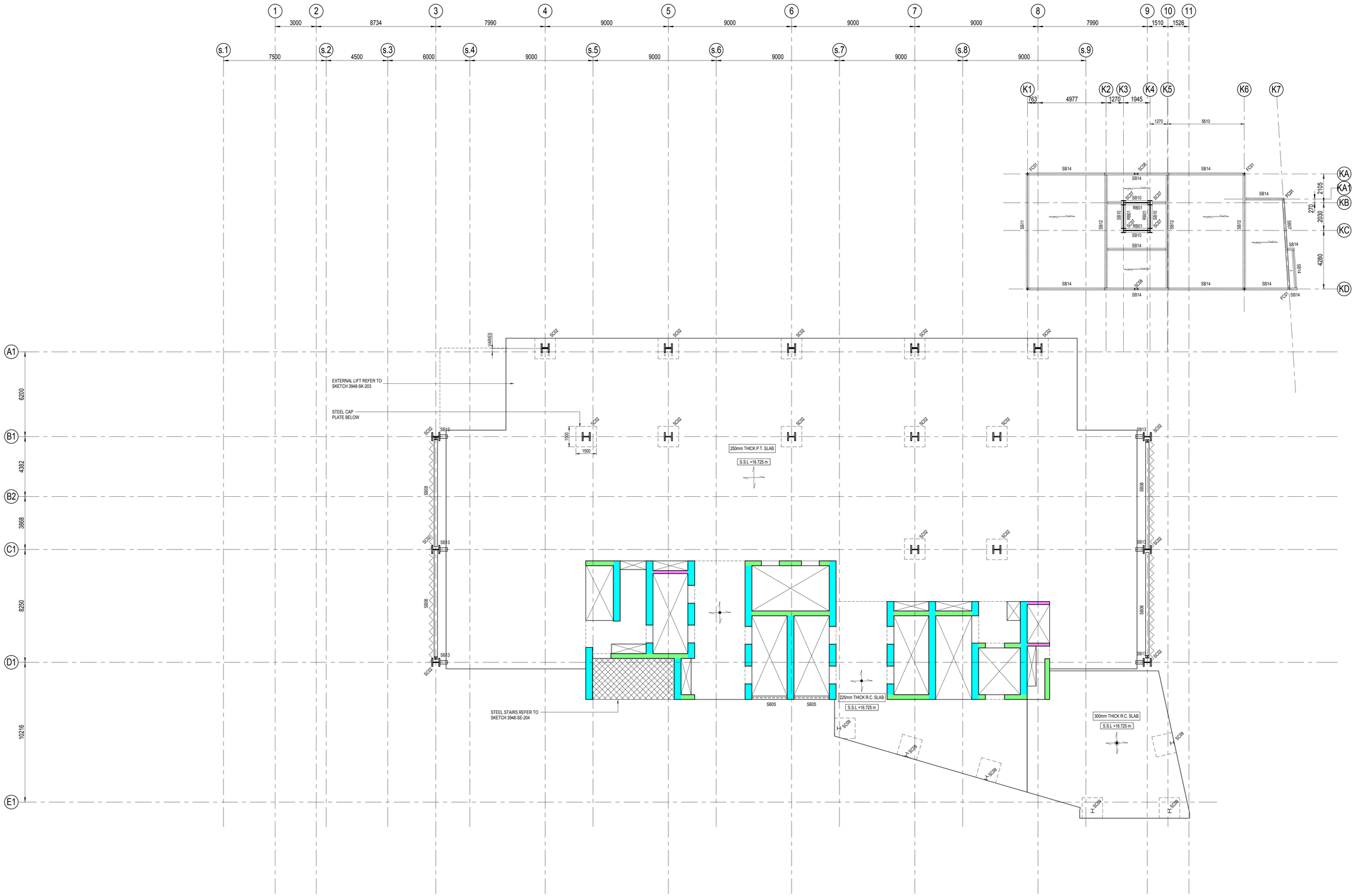
SCALE 1:100



LEVEL SCHEDULE	
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NOTES

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   RC SLABS C35/45
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   RC WALLS C80/95 & C60/75, AS NOTED ON DRG
9. STEELWORK GRADE: S355
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REV	DATE	DESCRIPTION	CHKD
P0.1	07.11.18	DRAFT STAGE 2 ISSUE	NC

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GREAT PORTLAND ESTATES PLC

CLIENT

NEW CITY COURT

PROJECT

TOWER
GENERAL ARRANGEMENT
LEVEL 03

TITLE

SB	SEP 2018	A0
DRAWN	DATE	SHEET SIZE
3948	STAGE 2	S0
PROJECT No.	PROJECT STAGE	SUITABILITY CODE

PROJECT ID ORIGINATOR ZONE LEVEL TYPE ROLE DRAWING No. REVISION

3948-AKT-XX-03-DR-S-21030 P01

DRAFT

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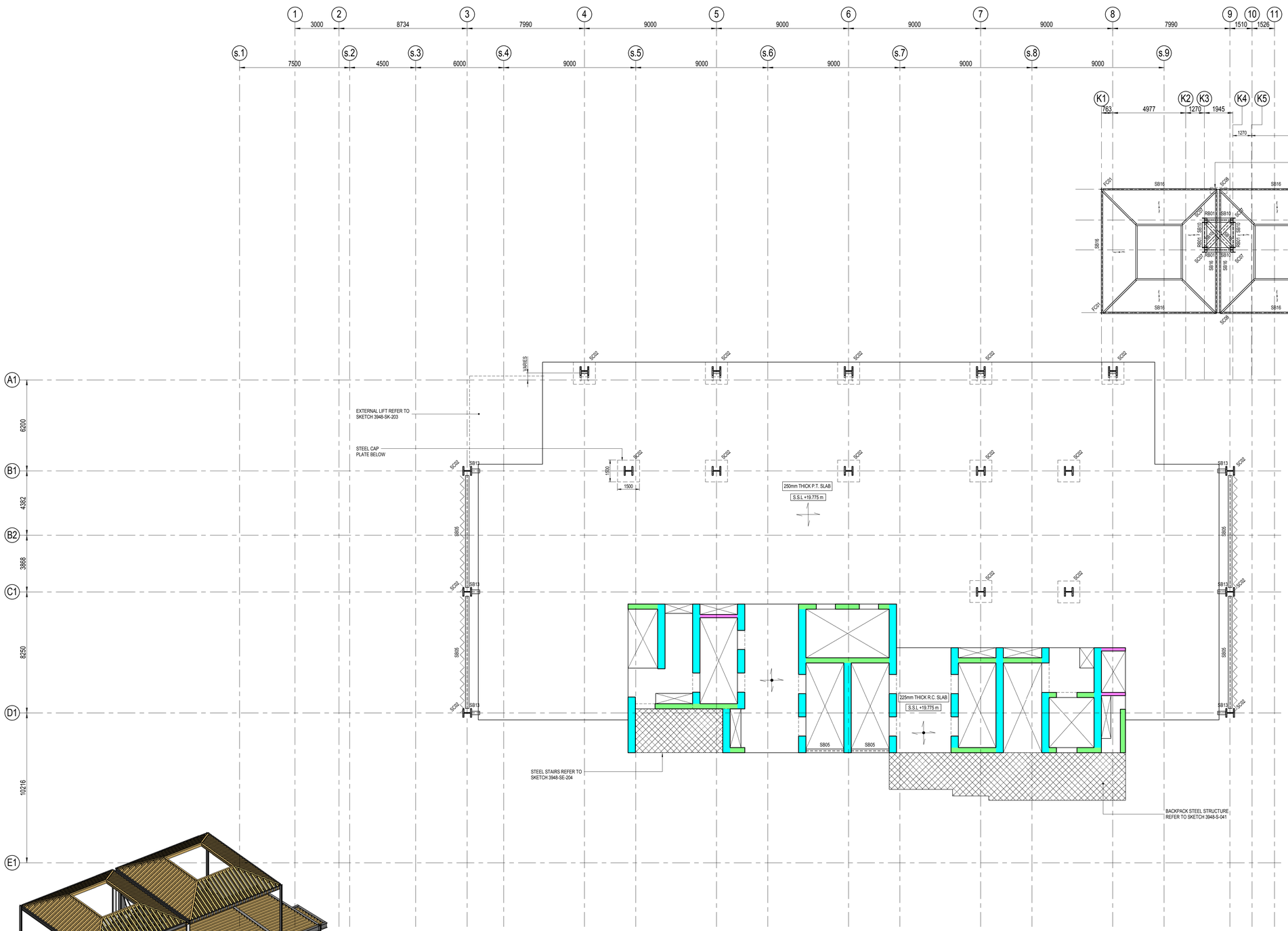

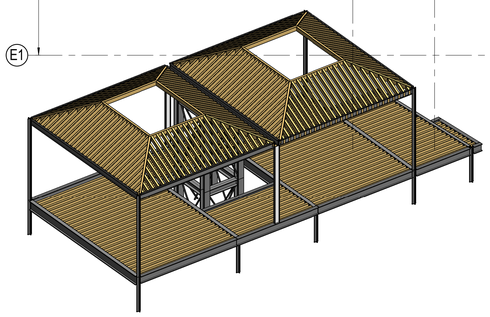

0 1000 2000 3000 4000 5000 mm
SCALE 1:100

KEATS HOUSE

LEVEL SCHEDULE	
Name	Elevation
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11. ALL ELEMENTS OF EXISTING STRUCTURE ARE INFERRED FROM LIMITED RECORD INFORMATION AND SITE SURVEY.
12. FURTHER COORDINATION REQUIRED FOR ALL SERVICES PENETRATION.
13. OPENINGS IN CORE WALLS IN ABEYANCE – FURTHER COORDINATION REQUIRED.
14. LOCATION OF STEPS IN GROUND FLOOR SLABS IN ABEYANCE.

EXISTING STRUCTURE NOTE

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LEGEND

- 130mm COMPOSITE SLAB / 140 PRECAST SLAB
- 300mm x 100mm TIMBER JOISTS @ 400mm , 15mm PLYWOOD PANEL ON THE TOP
- 150mm x 100mm TIMBER JOISTS, WITH 15mm PLYWOOD PANEL ON THE TOP
- 250mm THICK P.T. SLAB
- 225mm THICK R.C. SLAB
- 300mm THICK R.C. SLAB
- EXO - SKELETON BRACING
- 500mm R.C THICK WALL
- 400mm R.C THICK WALL
- 350mm R.C THICK WALL
- 300mm R.C THICK WALL
- 250mm R.C THICK WALL
- 225mm R.C THICK WALL

STRUCTURAL COLUMN SCHEDULE	
REF.	SECTION SIZE
CC01	1200x1200mm R.C. COL.
CC02	350x400mm R.C. COL.
CC03	350x700mm R.C. COL.
CC04	600x600mm R.C. COL.
CC05	225x1817mm R.C. COL.-WIDTH T.B.C.
CC07	250x1000mm R.C. COL.
CC08	350x350 R.C. COL.
CC09	750x350mm R.C. COL
CC10	750x1100mm R.C. COL.
CC11	400x400 R.C. COL.
FC01	200x200x20
SC01	650 x 650 - 90lf 60tw
SC02	600 x 600 - 80lf 50tw
SC03	600 x 600 - 70lf 45tw
SC04	500 x 500 - 60lf 40tw
SC05	UKC356x406x467
SC06	UC305x305x97
SC07	UC203x203x86
SC08	UB254x102x22
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STRUCTURAL FRAMING SCHEDULE	
REF.	SECTION SIZE
CB01	350WIDE x 700mm DEEP R.C. BEAM
CB02	400 WIDE x 650mm DEEP R.C. BEAM
CB03	400 WIDE x 750mm DEEP R.C. BEAM
CB04	400 WIDE x 1500mm DEEP R.C. BEAM
CB05	300WIDE x 600mm DEEP R.C. BEAM
LB01	L75x75x8
RB01	52mm
SB01	190x500 STEEL BEAM
SB02	315x550 STEEL BEAM
SB03	200x500 STEEL BEAM
SB04	155x500 STEEL BEAM
SB05	250x500 STEEL BEAM
SB06	RHS500x300x12.5
SB07	RHS350x150x16
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SB13	UKC254x254x107 STUB
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SB16	UB254x102x22

REV	BY	DATE	DRAFT STAGE 2 ISSUE	NC
REV		DATE	DESCRIPTION	CHKD

WHERE DIGITAL MODELS/FILES ARE ISSUED, THESE ARE PROVIDED FOR INFORMATION ONLY AND AKT II ACCEPTS NO RESPONSIBILITY FOR ANY DISCREPANCIES ARISING FROM THE INFORMATION IS OUTSIDE OUR CONTRACTED SCOPE OF SERVICES AND AKT II ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF THE DIGITAL DATA SUPPLIED.

THE CONTRACTUAL DRAWING/INFORMATION PRODUCED BY AKT II UNDER OUR APPOINTMENT ARE LIMITED TO THE 20 PDF DRAWING FILES/PAPER COPIES, WITH REFERENCE TO ELECTRON CO-ORDINATION AND DIMENSIONAL SETTING OUT.

Consulting Structural and Civil Engineers

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1 Old Street Yard,
London,
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F +44 (0)20 7250 5555

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W www.akt-uk.com

GREAT PORTLAND ESTATES PLC

CLIENT

NEW CITY COURT

PROJECT

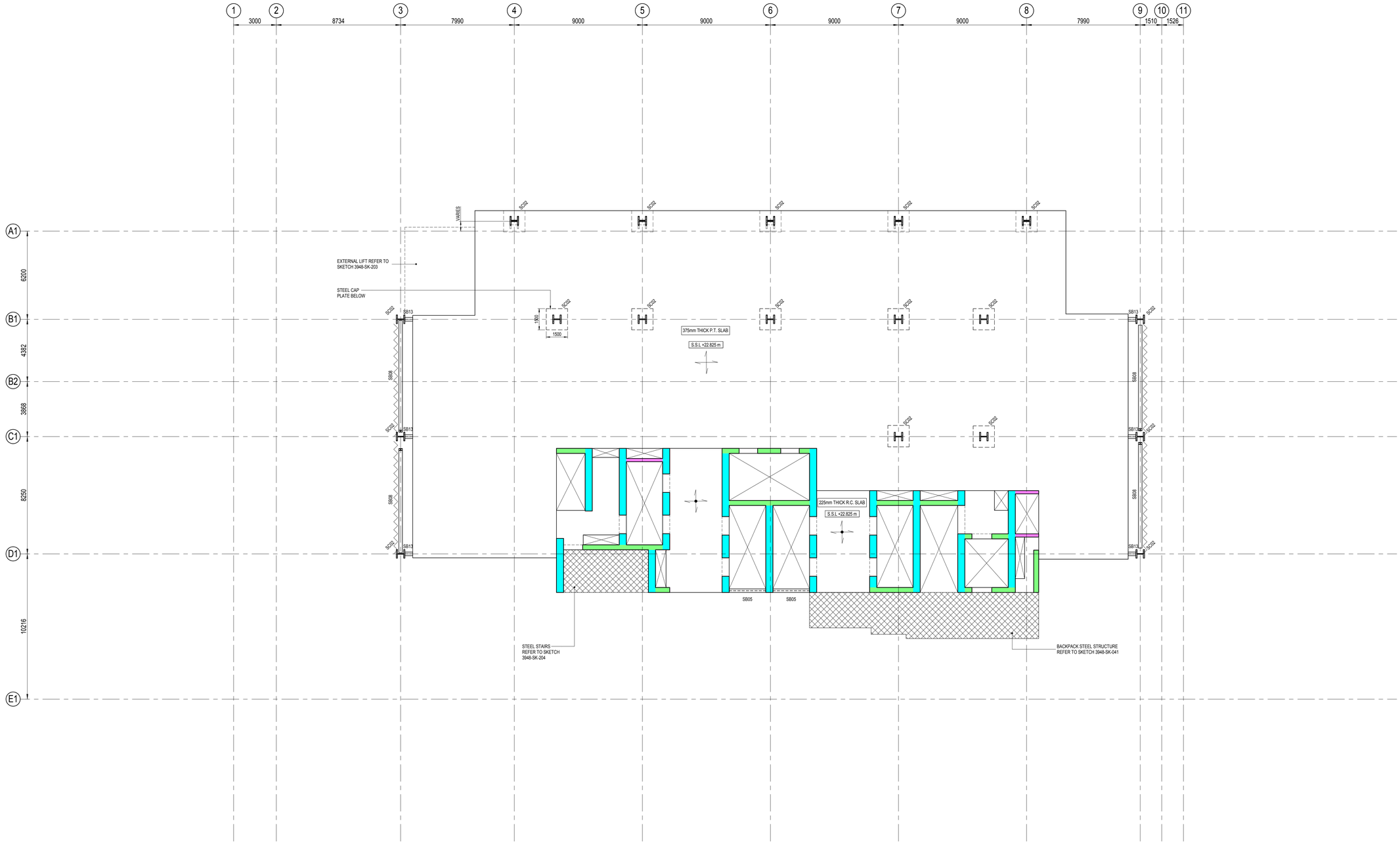
TOWER
GENERAL ARRANGEMENT
LEVEL 04

TITLE

SB	SEP 2018	A0
DRAWN	DATE	SHEET SIZE
3948	STAGE 2	S0
PROJECT No.	PROJECT STAGE	SUITABILITY CODE

PROJECT ID ORIGINATOR ZONE LEVEL TYPE ROLE DRAWING No. REVISION

DRAFT 3948-AKT-XX-04-DR-S-21040 P01



0 1000 2000 3000 4000 5000 mm

SCALE 1:100

LEVEL SCHEDULE	
Name	Elevation
LEVEL 36	117375 mm
LEVEL 35	114325 mm
LEVEL 34	111275 mm
LEVEL 33	108225 mm
LEVEL 32	105175 mm
LEVEL 31	102125 mm
LEVEL 30	99075 mm
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LEVEL 07	28925 mm
LEVEL 06	25875 mm
LEVEL 05	22825 mm
KH LEVEL RF (RIDGE)	21109 mm
KH ROOF LEVEL	19875 mm
LEVEL 04	19775 mm
LEVEL 03	16725 mm
KH LEVEL 03	15460 mm
LEVEL 02	13675 mm
KH LEVEL 02	12015 mm
LEVEL 01	10625 mm
KH LEVEL 01	8565 mm
LEVEL 00M	7575 mm
GROUND LEVEL	4500 mm
KH GROUND LEVEL	4500 mm
LEVEL B1M	1250 mm
KH LEVEL B1	150 mm
LEVEL B1	-150 mm
LEVEL B2	-4650 mm
KH LEVEL B2	-4650 mm

NOTES

1. NO DIMENSIONS SHOULD BE SCALED FROM THIS DRAWING.
2. ALL DIMENSIONS IN MILLIMETRES U.N.O.
3. ALL GRID LINES AND SETTING OUT TBC
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS & MEP ENGINEERS DRAWINGS AND SPECIFICATIONS.
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6. ALL DIMENSIONS IN MILLIMETRES U.N.O
7. GRID SETTING OUT TO ARCHITECT'S DETAILS.
8. RC GRADE:
   RC FOUNDATIONS (RAFT & PILES) C35/45
   RC PILE CAPS C35/45
   RC SLABS C35/45
   RC COLUMNS C50/60
   RC WALLS C80/95 & C60/75, AS NOTED ON DRG
9. STEELWORK GRADE: S355
10. STEEL REINFORCEMENT GRADE: H500
11. ALL ELEMENTS OF EXISTING STRUCTURE ARE INFERRED FROM LIMITED RECORD INFORMATION AND SITE SURVEY.
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CB04	400 WIDE x 1500mm DEEP R.C BEAM
CB05	300WIDE x 600mm DEEP R.C. BEAM
LB01	L75x75x8
RB01	52mm
SB01	190x500 STEEL BEAM
SB02	315x550 STEEL BEAM
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REV	DATE	DESCRIPTION	CHKD
P0.1	07.11.18	DRAFT STAGE 2 ISSUE	NC

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THE CONTRACTUAL DRAWINGS/INFORMATION PRODUCED BY AKT II UNDER OUR APPOINTMENT ARE LIMITED TO THE 2D PDF DRAWING FILES/SHEETS/FORMATS ISSUED, WITH RESPECT TO DESIGN COORDINATION AND DIMENSIONAL SETTING OUT.

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W www.akt-uk.com

GREAT PORTLAND ESTATES PLC

CLIENT

NEW CITY COURT

PROJECT

TOWER
GENERAL ARRANGEMENT
LEVEL 05

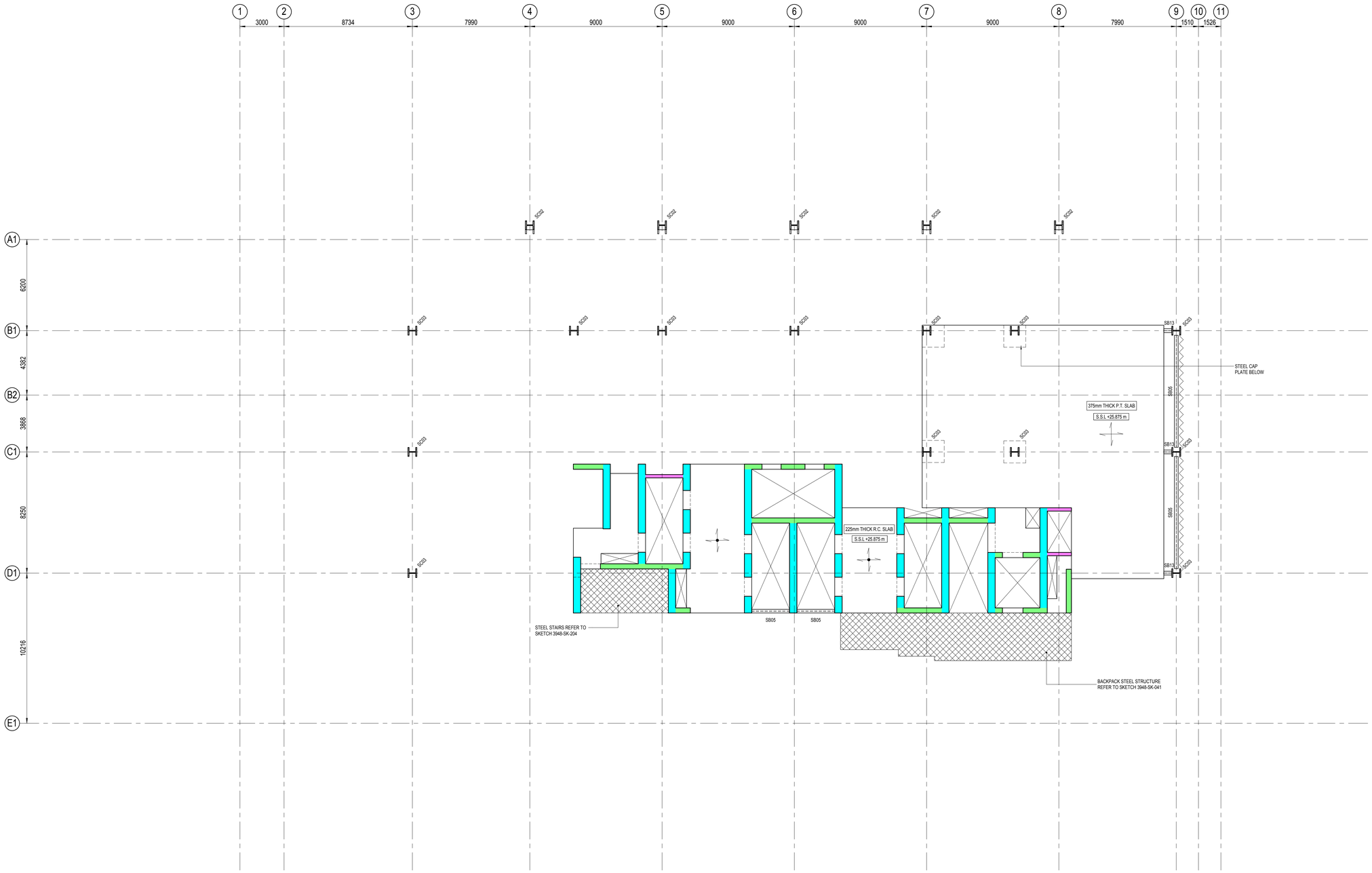
TITLE

SB	SEP 2018	A0
DRAWN	DATE	SHEET SIZE
3948	STAGE 2	S0
PROJECT No.	PROJECT STAGE	SUITABILITY CODE

PROJECT ID ORIGINATOR ZONE LEVEL TYPE ROLE DRAWING No. REVISION

DRAFT

3948-AKT-XX-ZZ-DR-S-21050 P01



LEVEL SCHEDULE	
Name	Elevation
LEVEL 36	117375 mm
LEVEL 35	114325 mm
LEVEL 34	111275 mm
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LEVEL 28	92975 mm
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LEVEL B1	-150 mm
LEVEL B2	-4650 mm
KH LEVEL B2	-4650 mm

NOTES

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8. RC GRADE:
   RC FOUNDATIONS (RAFT & PILES) C35/45
   RC PILE CAPS C35/45
   RC SLABS C35/45
   RC COLUMNS C50/60
   RC WALLS C80/95 & C60/75, AS NOTED ON DRG
9. STEELWORK GRADE: S355
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STRUCTURAL COLUMN SCHEDULE	
REF.	SECTION SIZE
CC01	1200x1200mm R.C. COL.
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CB05	300WIDE x 600mm DEEP R.C. BEAM
LB01	L75x75x8
RB01	50mm
SB01	190x500 STEEL BEAM
SB02	315x550 STEEL BEAM
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P0 1 07.11.18 DRAFT STAGE 2 ISSUE NC
REV T DATE DESCRIPTION CHKD

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GREAT PORTLAND ESTATES PLC

CLIENT

NEW CITY COURT

PROJECT

TOWER
GENERAL ARRANGEMENT
LEVEL 06

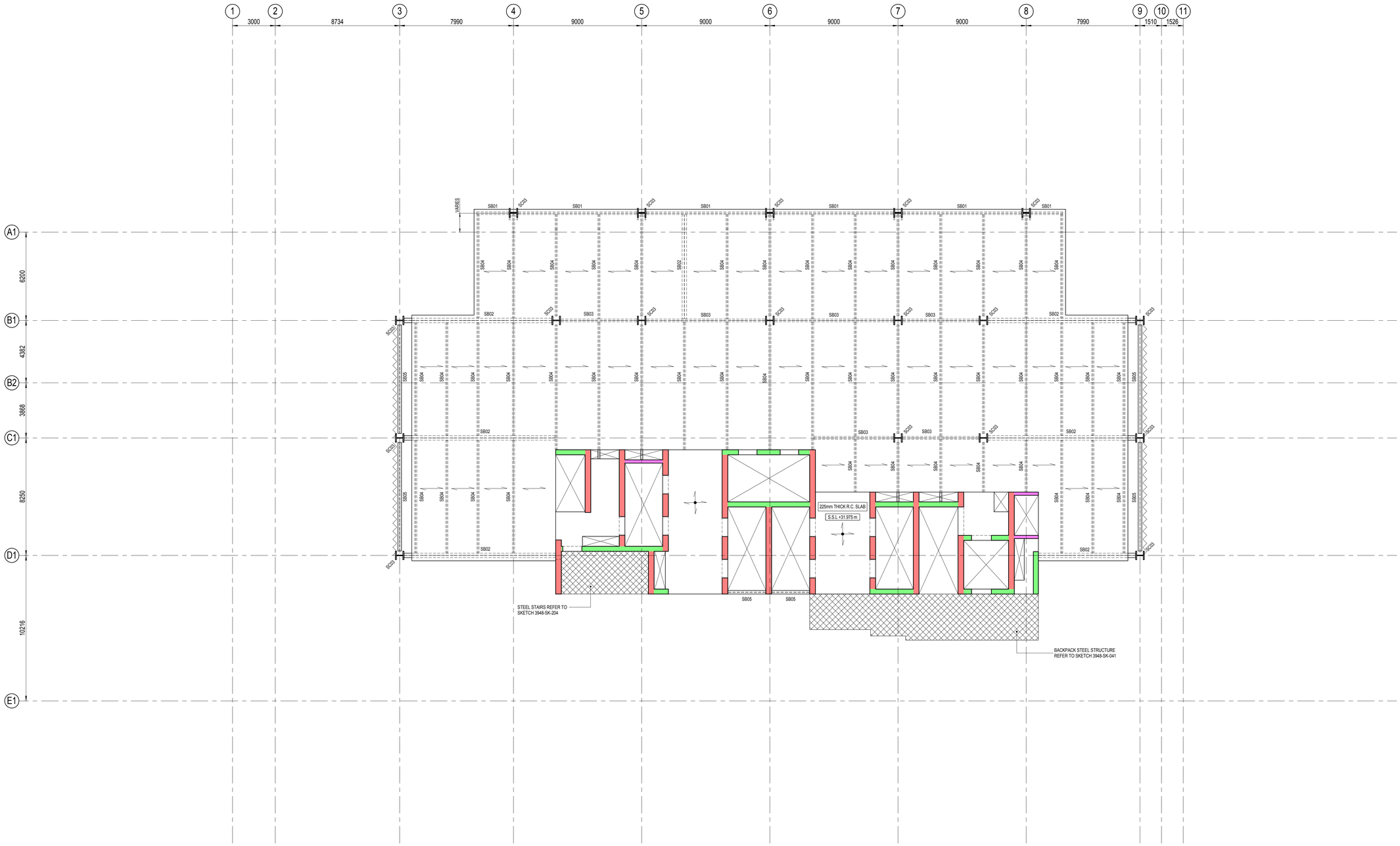
TITLE

SB	SEP 2018	A0
DRAWN	DATE	SHEET SIZE

3948		S0
PROJECT NO.	PROJECT STAGE	SUITABILITY CODE

PROJECT NO ORIGINATOR ZONE LEVEL TYPE ROLE DRAWING No. REVISION

DRAFT 3948-AKT-XX-06-DR-S-21060 P01



LEVEL SCHEDULE	
Name	Elevation
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NOTES

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RC PILE CAPS	C35/45
RC SLABS	C35/45
RC COLUMNS	C50/60
RC WALLS	C80/95 & C60/75. AS NOTED ON DRG

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SB12	UKB457x191x133
SB13	UKC254x254x107 STUB
SB14	UB356x171x67
SB16	UB254x102x22

REV	DATE	DESCRIPTION	CHKD
P0.1	07.11.18	DRAFT STAGE 2 ISSUE	NC

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GREAT PORTLAND ESTATES PLC

CLIENT

NEW CITY COURT

PROJECT

TOWER
GENERAL ARRANGEMENT
LEVEL 07 - 20

TITLE

SB	SEP 2018	A0
DRAWN	DATE	SHEET SIZE
3948	STAGE 2	S0
PROJECT No.	PROJECT STAGE	SUITABILITY CODE

PROJECT ID	ORIGINATOR	ZONE	LEVEL	TYPE	ROLE	DRAWING No.	REVISION
DRAFT	3948-AKT-XX-ZZ-DR-S-21070						P01

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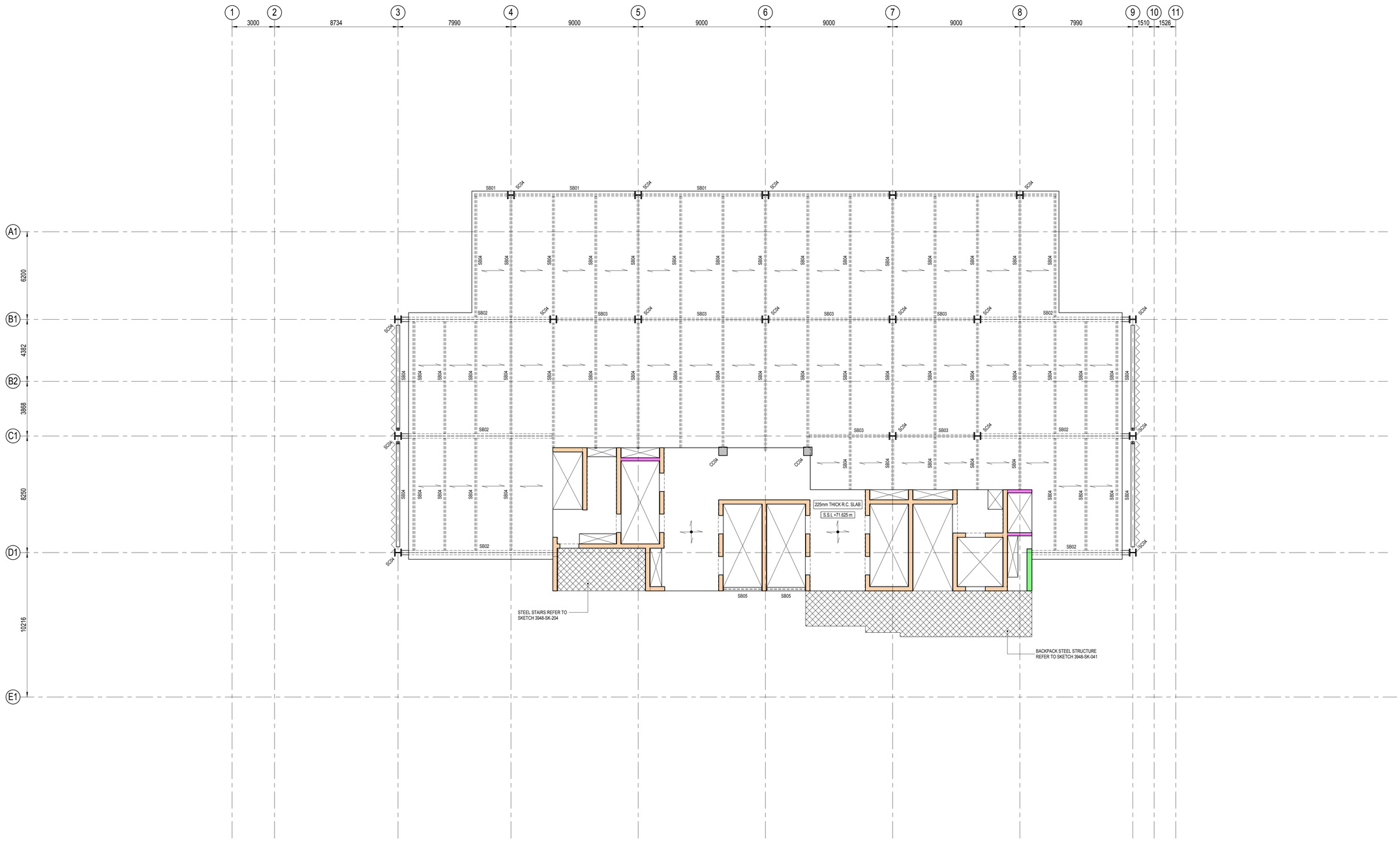
SCALE 1:100



0 1000 2000 3000 4000 5000 mm

SCALE 1:100

LEVEL SCHEDULE	
Name	Elevation
LEVEL 36	117375 mm
LEVEL 35	114325 mm
LEVEL 34	111275 mm
LEVEL 33	108225 mm
LEVEL 32	105175 mm
LEVEL 31	102125 mm
LEVEL 30	99075 mm
LEVEL 29	96025 mm
LEVEL 28	92975 mm
LEVEL 27	89925 mm
LEVEL 26	86875 mm
LEVEL 25	83825 mm
LEVEL 24	80775 mm
LEVEL 23	77725 mm
LEVEL 22	74675 mm
LEVEL 21	71625 mm
LEVEL 20	68575 mm
LEVEL 19	65525 mm
LEVEL 18	62475 mm
LEVEL 17	59425 mm
LEVEL 16	56375 mm
LEVEL 15	53325 mm
LEVEL 14	50275 mm
LEVEL 13	47225 mm
LEVEL 12	44175 mm
LEVEL 11	41125 mm
LEVEL 10	38075 mm
LEVEL 09	35025 mm
LEVEL 08	31975 mm
LEVEL 07	28925 mm
LEVEL 06	25875 mm
LEVEL 05	22825 mm
KH LEVEL RF (RIDGE)	21109 mm
KH ROOF LEVEL	19875 mm
LEVEL 04	19775 mm
LEVEL 03	16725 mm
KH LEVEL 03	15460 mm
LEVEL 02	13675 mm
KH LEVEL 02	12015 mm
LEVEL 01	10625 mm
KH LEVEL 01	8565 mm
LEVEL 00M	7575 mm
GROUND LEVEL	4500 mm
KH GROUND LEVEL	4500 mm
LEVEL B1M	1250 mm
KH LEVEL B1	150 mm
LEVEL B1	-150 mm
LEVEL B2	-4650 mm
KH LEVEL B2	-4650 mm

NOTES

1. NO DIMENSIONS SHOULD BE SCALED FROM THIS DRAWING.
2. ALL DIMENSIONS IN MILLIMETRES U.N.O.
3. ALL GRID LINES AND SETTING OUT TBC
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS & MEP ENGINEERS DRAWINGS AND SPECIFICATIONS.
5. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE LATEST GENERAL ARRANGEMENT DRAWINGS AND DETAILS, AS WELL AS RELEVANT SKETCHES, REPORTS AND CALCULATIONS.
6. ALL DIMENSIONS IN MILLIMETRES U.N.O
7. GRID SETTING OUT TO ARCHITECT'S DETAILS.
8. RC GRADE:
   RC FOUNDATIONS (RAFT & PILES) C35/45
   RC PILE CAPS C35/45
   RC SLABS C35/45
   RC COLUMNS C50/60
   RC WALLS C80/95 & C60/75, AS NOTED ON DRG
9. STEELWORK GRADE: S355
10. STEEL REINFORCEMENT GRADE: H500
11. ALL ELEMENTS OF EXISTING STRUCTURE ARE INFERRED FROM LIMITED RECORD INFORMATION AND SITE SURVEY.
12. FURTHER COORDINATION REQUIRED FOR ALL SERVICES PENETRATION.
13. OPENINGS IN CORE WALLS IN ABEYANCE – FURTHER COORDINATION REQUIRED.
14. LOCATION OF STEPS IN GROUND FLOOR SLABS IN ABEYANCE..

EXISTING STRUCTURE NOTE

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LEGEND

- 130mm COMPOSITE SLAB / 140 PRECAST SLAB
- 300mm x 100mm TIMBER JOISTS @ 400mm , 15mm PLYWOOD PANEL ON THE TOP
- 150mm x 100mm TIMBER JOISTS, WITH 15mm PLYWOOD PANEL ON THE TOP
- 250mm THICK P.T. SLAB
- 225mm THICK R.C. SLAB
- 300mm THICK R.C. SLAB
- EXO - SKELETON BRACING
- 500mm R.C THICK WALL
- 400mm R.C THICK WALL
- 350mm R.C THICK WALL
- 300mm R.C THICK WALL
- 250mm R.C THICK WALL
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STRUCTURAL COLUMN SCHEDULE	
REF.	SECTION SIZE
CC01	1200x1200mm R.C. COL.
CC02	350x400mm R.C. COL.
CC03	350x700mm R.C. COL.
CC04	600x600mm R.C. COL.
CC05	225x1817mm R.C. COL.-WIDTH T.B.C.
CC07	250x1000mm R.C. COL.
CC08	350x350 R.C. COL.
CC09	750x350mm R.C. COL
CC10	750x1100mm R.C. COL.
CC11	400x400 R.C. COL.
FC01	200x200x20
SC01	650 x 650 - 90lf 60tw
SC02	600 x 600 - 80lf 50tw
SC03	600 x 600 - 70lf 45tw
SC04	500 x 500 - 60lf 40tw
SC05	UKC356x406x467
SC06	UC305x305x97
SC07	UC203x203x86
SC08	UB254x102x22
SC09	UC254x254x107

STRUCTURAL FRAMING SCHEDULE	
REF.	SECTION SIZE
CB01	350WIDE x 700mm DEEP R.C. BEAM
CB02	400 WIDE x 650mm DEEP R.C. BEAM
CB03	400 WIDE x 750mm DEEP R.C. BEAM
CB04	400 WIDE x 1500mm DEEP R.C. BEAM
CB05	300WIDE x 600mm DEEP R.C. BEAM
LB01	L75x75x8
RB01	52mm
SB01	190x500 STEEL BEAM
SB02	315x550 STEEL BEAM
SB03	200x500 STEEL BEAM
SB04	155x500 STEEL BEAM
SB05	250x500 STEEL BEAM
SB06	RHS530x300x12.5
SB07	RHS350x150x16
SB08	250x250 STEEL VERTICAL BRACING
SB09	UC152x152x23
SB10	UC152x152x30
SB11	UKB457x191x106
SB12	UKB457x191x133
SB13	UKC254x254x107 STUB
SB14	UB356x171x67
SB16	UB254x102x22

REV	DATE	DESCRIPTION	CHKD
P0 1	07.11.18	DRAFT STAGE 2 ISSUE	NC

akt II

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GREAT PORTLAND ESTATES PLC

CLIENT

NEW CITY COURT

PROJECT

TOWER
GENERAL ARRANGEMENT
LEVEL 21

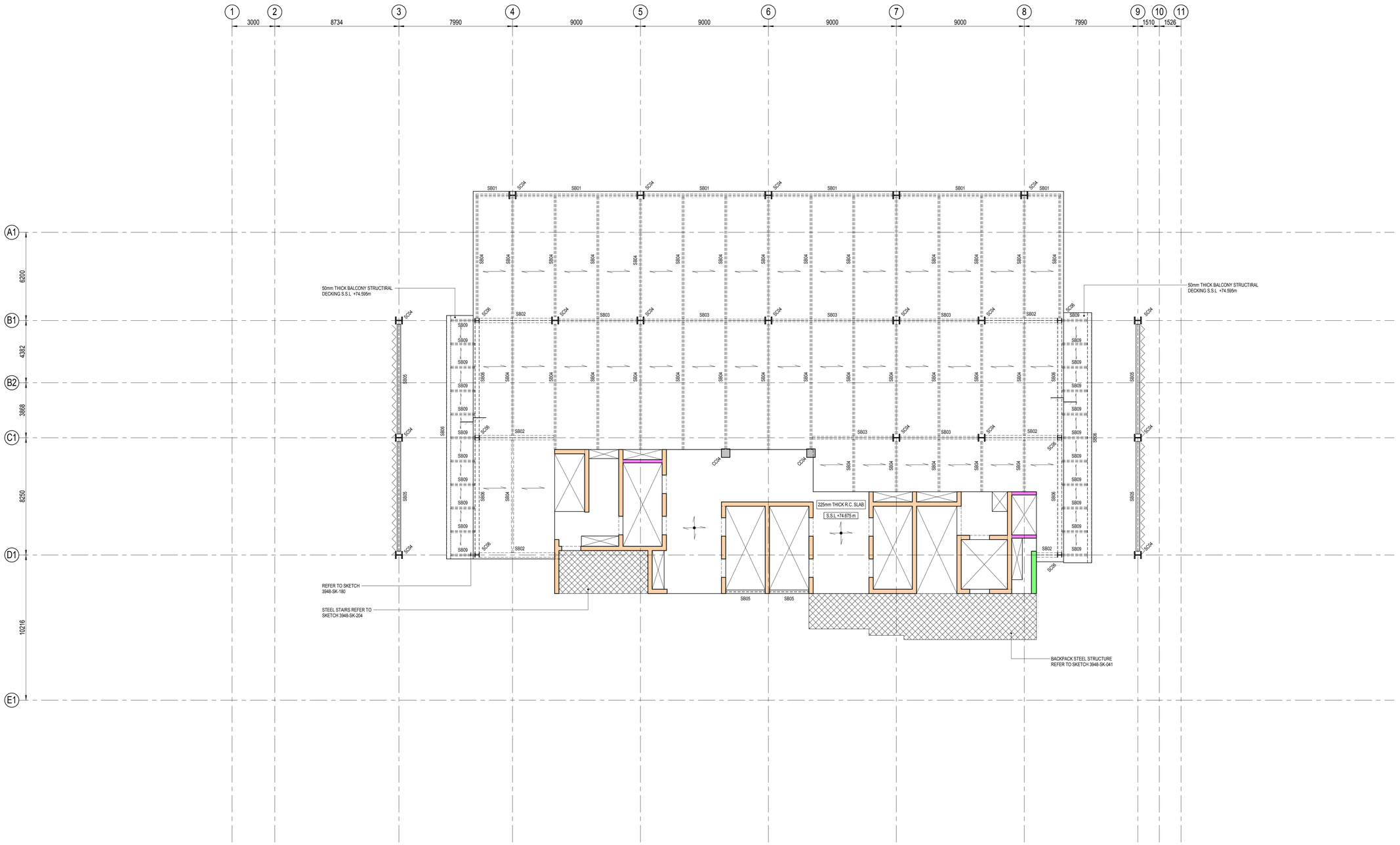
TITLE

SB	SEP 2018	A0
DRAWN	DATE	SHEET SIZE
3948	STAGE 2	S0
PROJECT No.	PROJECT STAGE	SUITABILITY CODE

PROJECT ID ORIGINATOR ZONE LEVEL TYPE ROLE DRAWING No. REVISION

3948-AKT-XX-21-DR-S-21210 P01

DRAFT



0 1000 2000 3000 4000 5000 mm

SCALE 1:100

LEVEL SCHEDULE	
Name	Elevation
LEVEL 36	117375 mm
LEVEL 35	114325 mm
LEVEL 34	111275 mm
LEVEL 33	108225 mm
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LEVEL 31	102125 mm
LEVEL 30	99075 mm
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LEVEL B1	-150 mm
LEVEL B2	-4650 mm
KH LEVEL B2	-4650 mm

NOTES

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   RC PILE CAPS C35/45
   RC SLABS C35/45
   RC COLUMNS C50/60
   RC WALLS C80/95 & C60/75, AS NOTED ON DRG
9. STEELWORK GRADE: S355
10. STEEL REINFORCEMENT GRADE: H500
11. ALL ELEMENTS OF EXISTING STRUCTURE ARE INFERRED FROM LIMITED RECORD INFORMATION AND SITE SURVEY.
12. FURTHER COORDINATION REQUIRED FOR ALL SERVICES PENETRATION.
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STRUCTURAL COLUMN SCHEDULE	
REF.	SECTION SIZE
CC01	1200x1200mm R.C. COL.
CC02	350x400mm R.C. COL.
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CC04	600x600mm R.C. COL.
CC05	225x1817mm R.C. COL.-WIDTH T.B.C.
CC07	250x1000mm R.C. COL.
CC08	350x350 R.C. COL.
CC09	750x350mm R.C. COL
CC10	750x1100mm R.C. COL.
CC11	400x400 R.C. COL.
FC01	200x200x20
SC01	650 x 650 - 90tf 60tw
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SC05	UKC356x406x467
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STRUCTURAL FRAMING SCHEDULE	
REF.	SECTION SIZE
CB01	350WIDE x 700mm DEEP R.C. BEAM
CB02	400 WIDE x 650mm DEEP R.C. BEAM
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CB05	300WIDE x 600mm DEEP R.C. BEAM
LB01	L75x75x8
RB01	52mm
SB01	190x500 STEEL BEAM
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SB04	165x500 STEEL BEAM
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REV	DATE	DESCRIPTION	CHKD
P0.1	07.11.18	DRAFT STAGE 2 ISSUE	NC

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CLIENT: GREAT PORTLAND ESTATES PLC

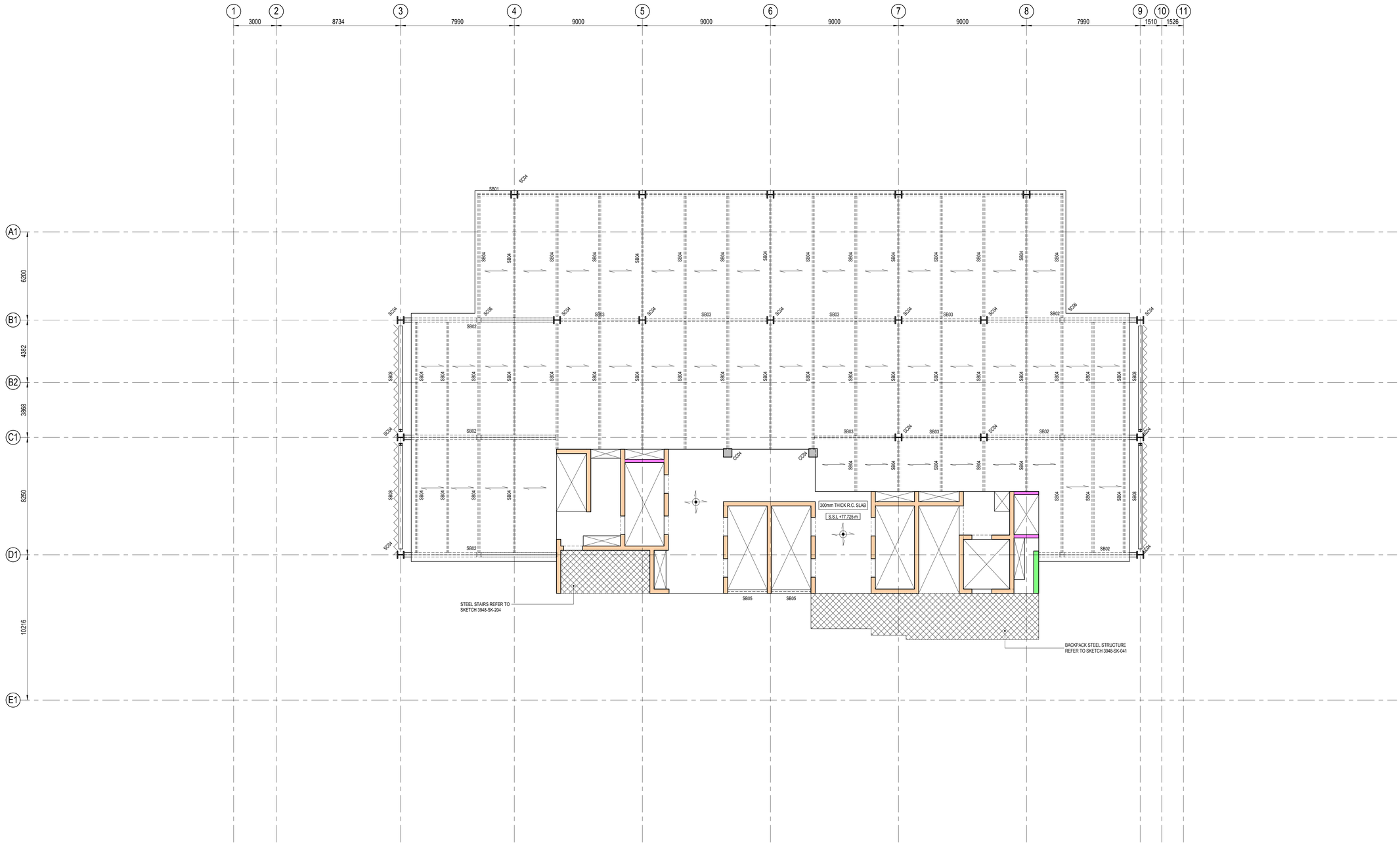
PROJECT: NEW CITY COURT

TITLE: TOWER GENERAL ARRANGEMENT LEVEL 22

SB	SEP 2018	A0
DRAWN	DATE	SHEET SIZE
3948	STAGE 2	S0
PROJECT No	PROJECT STAGE	SUITABILITY CODE

DRAFT

PROJECT ID	ORIGINATOR	ZONE	LEVEL	TYPE	ROLE	DRAWING No	REVISION
3948-AKT-XX-22-DR-S-21220							P01



LEVEL SCHEDULE	
Name	Elevation
LEVEL 36	117375 mm
LEVEL 35	114325 mm
LEVEL 34	111275 mm
LEVEL 33	108225 mm
LEVEL 32	105175 mm
LEVEL 31	102125 mm
LEVEL 30	99075 mm
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KH LEVEL 02	12015 mm
LEVEL 01	10625 mm
KH LEVEL 01	8565 mm
LEVEL 00M	7575 mm
GROUND LEVEL	4500 mm
KH GROUND LEVEL	4500 mm
LEVEL B1M	1250 mm
KH LEVEL B1	150 mm
LEVEL B1	-150 mm
LEVEL B2	-4650 mm
KH LEVEL B2	-4650 mm

NOTES

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7. GRID SETTING OUT TO ARCHITECT'S DETAILS.
8. RC GRADE:
   RC FOUNDATIONS (RAFT & PILES): C35/45
   RC PILE CAPS: C35/45
   RC SLABS: C35/45
   RC COLUMNS: C50/60
   RC WALLS: C80/95 & C60/75, AS NOTED ON DRG
9. STEELWORK GRADE: S355
10. STEEL REINFORCEMENT GRADE: H500
11. ALL ELEMENTS OF EXISTING STRUCTURE ARE INFERRED FROM LIMITED RECORD INFORMATION AND SITE SURVEY.
12. FURTHER COORDINATION REQUIRED FOR ALL SERVICES PENETRATION.
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- 300mm R.C THICK WALL
- 250mm R.C THICK WALL
- 225mm R.C THICK WALL

STRUCTURAL COLUMN SCHEDULE	
REF.	SECTION SIZE
CC01	1200x1200mm R.C. COL.
CC02	350x400mm R.C. COL.
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CC05	225x1817mm R.C. COL.-WIDTH T.B.C.
CC07	250x1000mm R.C. COL.
CC08	350x350 R.C. COL.
CC09	750x350mm R.C. COL
CC10	750x1100mm R.C. COL.
CC11	400x400 R.C. COL.
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STRUCTURAL FRAMING SCHEDULE	
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REV	DATE	DESCRIPTION	CHKD
P0 1	07.11.18	DRAFT STAGE 2 ISSUE	NC

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GREAT PORTLAND ESTATES PLC

CLIENT

NEW CITY COURT

PROJECT

TOWER
GENERAL ARRANGEMENT
LEVEL 23 - 33

TITLE

DRAWN	DATE	SHEET SIZE
SB	SEP 2018	A0

PROJECT No.	PROJECT STAGE	SUITABILITY CODE
3948	STAGE 2	S0

PROJECT ID ORIGINATOR ZONE LEVEL TYPE ROLE DRAWING No. REVISION

3948-AKT-XX-ZZ-DR-S-21230 P01

DRAFT

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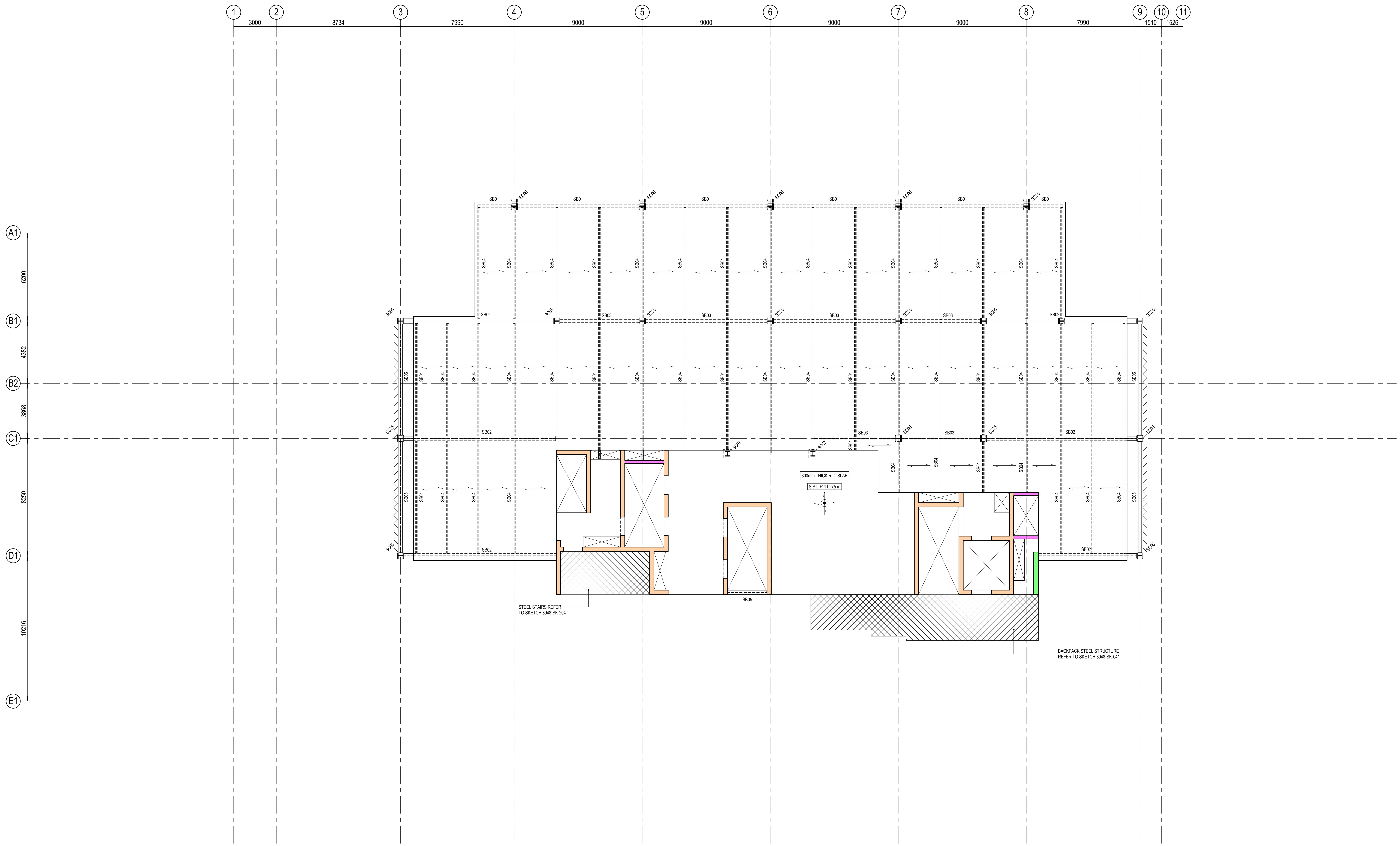
SCALE 1:100



0 1000 2000 3000 4000 5000 mm
SCALE 1:100

LEVEL SCHEDULE	
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LEVEL B1	-150 mm
LEVEL B2	-4650 mm
KH LEVEL B2	-4650 mm

NOTES

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   RC PILE CAPS C35/45
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   RC COLUMNS C50/60
   RC WALLS C80/95 & C60/75, AS NOTED ON DRG
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LEGEND

- 130mm COMPOSITE SLAB / 140 PRECAST SLAB
- 300mm x 100mm TIMBER JOISTS @ 400mm , 15mm PLYWOOD PANEL ON THE TOP
- 150mm x 100mm TIMBER JOISTS, WITH 15mm PLYWOOD PANEL ON THE TOP
- 250mm THICK P.T. SLAB
- 225mm THICK R.C. SLAB
- 300mm THICK R.C. SLAB
- EXO - SKELETON BRACING
- 500mm R.C THICK WALL
- 400mm R.C THICK WALL
- 350mm R.C THICK WALL
- 300mm R.C THICK WALL
- 250mm R.C THICK WALL
- 225mm R.C THICK WALL

STRUCTURAL COLUMN SCHEDULE	
REF.	SECTION SIZE
CC01	1200x1200mm R.C. COL.
CC02	350x400mm R.C. COL.
CC03	350x700mm R.C. COL.
CC04	600x600mm R.C. COL.
CC05	225x1817mm R.C. COL.-WIDTH T.B.C.
CC07	250x1000mm R.C. COL.
CC08	350x350 R.C. COL.
CC09	750x350mm R.C. COL
CC10	750x1100mm R.C. COL.
CC11	400x400 R.C. COL.
FC01	200x200x20
SC01	650 x 650 - 90tf 60tw
SC02	600 x 600 - 80tf 50tw
SC03	600 x 600 - 70tf 45tw
SC04	500 x 500 - 60tf 40tw
SC05	UKC356x406x467
SC06	UC305x305x97
SC07	UC203x203x86
SC08	UB254x102x22
SC09	UC254x254x107

STRUCTURAL FRAMING SCHEDULE	
REF.	SECTION SIZE
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CB02	400 WIDE x 650mm DEEP R.C. BEAM
CB03	400 WIDE x 750mm DEEP R.C. BEAM
CB04	400 WIDE x 1500mm DEEP R.C. BEAM
CB05	300WIDE x 600mm DEEP R.C. BEAM
LB01	L75x75x8
RB01	52mm
SB01	190x500 STEEL BEAM
SB02	315x550 STEEL BEAM
SB03	200x500 STEEL BEAM
SB04	155x500 STEEL BEAM
SB05	250x500 STEEL BEAM
SB06	RHS500x300x12.5
SB07	RHS350x150x16
SB08	250x250 STEEL VERTICAL BRACING
SB09	UC152x152x23
SB10	UC152x152x30
SB11	UKB457x191x106
SB12	UKB457x191x133
SB13	UKC254x254x107 STUB
SB14	UB356x171x67
SB16	UB254x102x22

REV	DATE	DESCRIPTION	CHKD
P0 1	07.11.18	DRAFT STAGE 2 ISSUE	NC

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GREAT PORTLAND ESTATES PLC
CLIENT

NEW CITY COURT
PROJECT

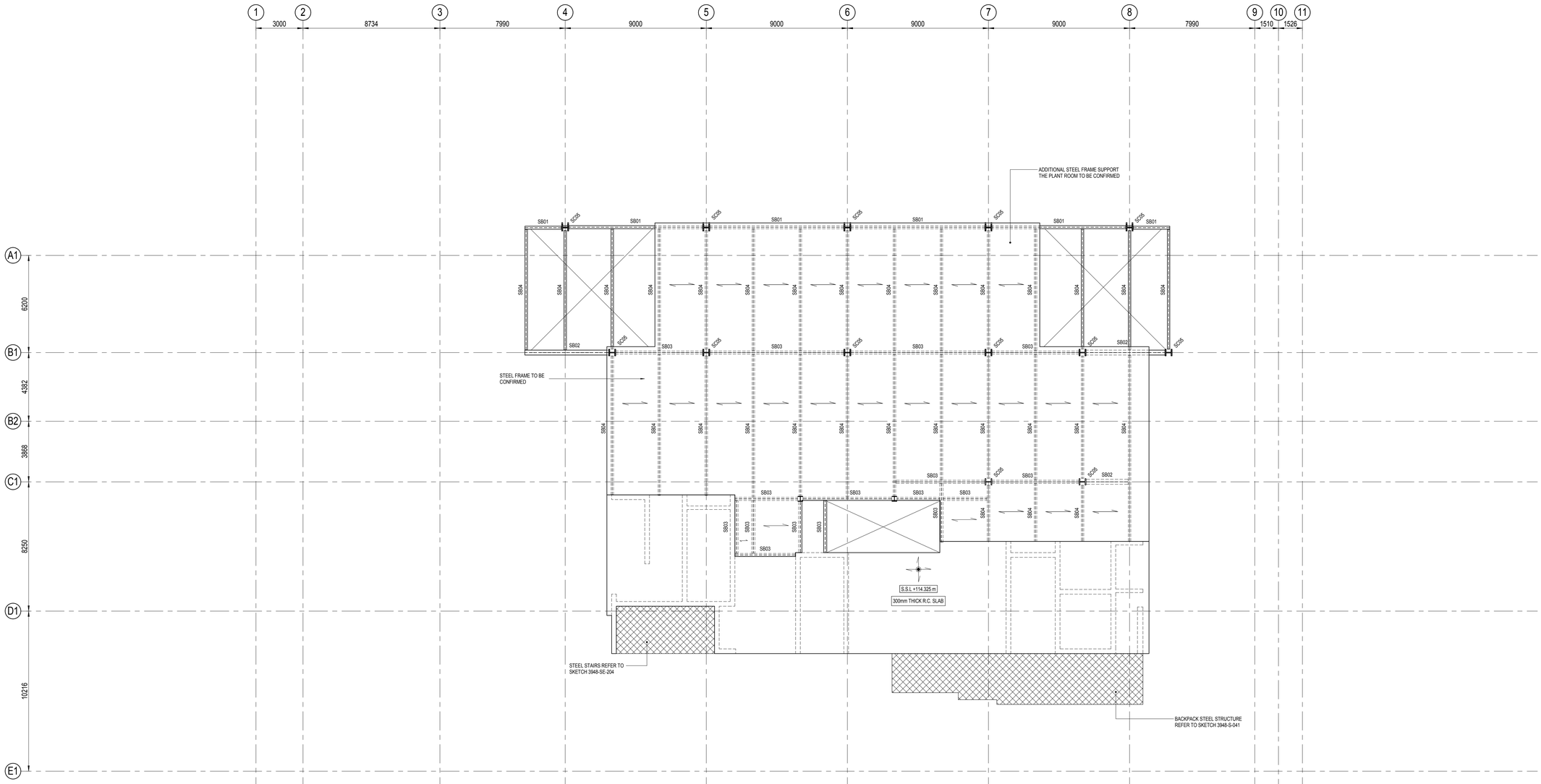
TOWER
GENERAL ARRANGEMENT
LEVEL 34
TITLE

SB DRAWN	SEP' 2018 DATE	A0 SHEET SIZE
3948 PROJECT No.	STAGE 2 PROJECT STAGE	S0 SUITABILITY CODE

PROJECT ID ORIGINATOR ZONE LEVEL TYPE ROLE DRAWING No. REVISION

DRAFT

3948-AKT-XX-34-DR-S-21340 P01



0 1000 2000 3000 4000 5000 mm

SCALE 1:100

LEVEL SCHEDULE	
Name	Elevation
LEVEL 36	117375 mm
LEVEL 35	114325 mm
LEVEL 34	111275 mm
LEVEL 33	108225 mm
LEVEL 32	105175 mm
LEVEL 31	102125 mm
LEVEL 30	99075 mm
LEVEL 29	96025 mm
LEVEL 28	92975 mm
LEVEL 27	89925 mm
LEVEL 26	86875 mm
LEVEL 25	83825 mm
LEVEL 24	80775 mm
LEVEL 23	77725 mm
LEVEL 22	74675 mm
LEVEL 21	71625 mm
LEVEL 20	68575 mm
LEVEL 19	65525 mm
LEVEL 18	62475 mm
LEVEL 17	59425 mm
LEVEL 16	56375 mm
LEVEL 15	53325 mm
LEVEL 14	50275 mm
LEVEL 13	47225 mm
LEVEL 12	44175 mm
LEVEL 11	41125 mm
LEVEL 10	38075 mm
LEVEL 09	35025 mm
LEVEL 08	31975 mm
LEVEL 07	28925 mm
LEVEL 06	25875 mm
LEVEL 05	22825 mm
KH LEVEL RF (RIDGE)	21109 mm
KH ROOF LEVEL	19875 mm
LEVEL 04	19775 mm
LEVEL 03	16725 mm
KH LEVEL 03	15460 mm
LEVEL 02	13675 mm
KH LEVEL 02	12015 mm
LEVEL 01	10625 mm
KH LEVEL 01	8565 mm
LEVEL 00M	7575 mm
GROUND LEVEL	4500 mm
KH GROUND LEVEL	4500 mm
LEVEL B1M	1250 mm
KH LEVEL B1	150 mm
LEVEL B1	-150 mm
LEVEL B2	-4650 mm
KH LEVEL B2	-4650 mm

NOTES

1. NO DIMENSIONS SHOULD BE SCALED FROM THIS DRAWING.
2. ALL DIMENSIONS IN MILLIMETRES U.N.O.
3. ALL GRID LINES AND SETTING OUT TBC
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS & MEP ENGINEERS DRAWINGS AND SPECIFICATIONS.
5. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE LATEST GENERAL ARRANGEMENT DRAWINGS AND DETAILS, AS WELL AS RELEVANT SKETCHES, REPORTS AND CALCULATIONS.
6. ALL DIMENSIONS IN MILLIMETRES U.N.O
7. GRID SETTING OUT TO ARCHITECT'S DETAILS.
8. RC GRADE:
   RC FOUNDATIONS (RAFT & PILES) C35/45
   RC PILE CAPS C35/45
   RC SLABS C35/45
   RC COLUMNS C90/60
   RC WALLS C80/95 & C60/75, AS NOTED ON DRG
9. STEELWORK GRADE: S355
10. STEEL REINFORCEMENT GRADE: H500
11. ALL ELEMENTS OF EXISTING STRUCTURE ARE INFERRED FROM LIMITED RECORD INFORMATION AND SITE SURVEY.
12. FURTHER COORDINATION REQUIRED FOR ALL SERVICES PENETRATION.
13. OPENINGS IN CORE WALLS IN ABEYANCE – FURTHER COORDINATION REQUIRED.
14. LOCATION OF STEPS IN GROUND FLOOR SLABS IN ABEYANCE.

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STRUCTURAL COLUMN SCHEDULE	
REF.	SECTION SIZE
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REV	DATE	DESCRIPTION	CHKD
P0.1	07.11.18	DRAFT STAGE 2 ISSUE	NC

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GREAT PORTLAND ESTATES PLC

CLIENT

NEW CITY COURT

PROJECT

TOWER
GENERAL ARRANGEMENT
LEVEL 35

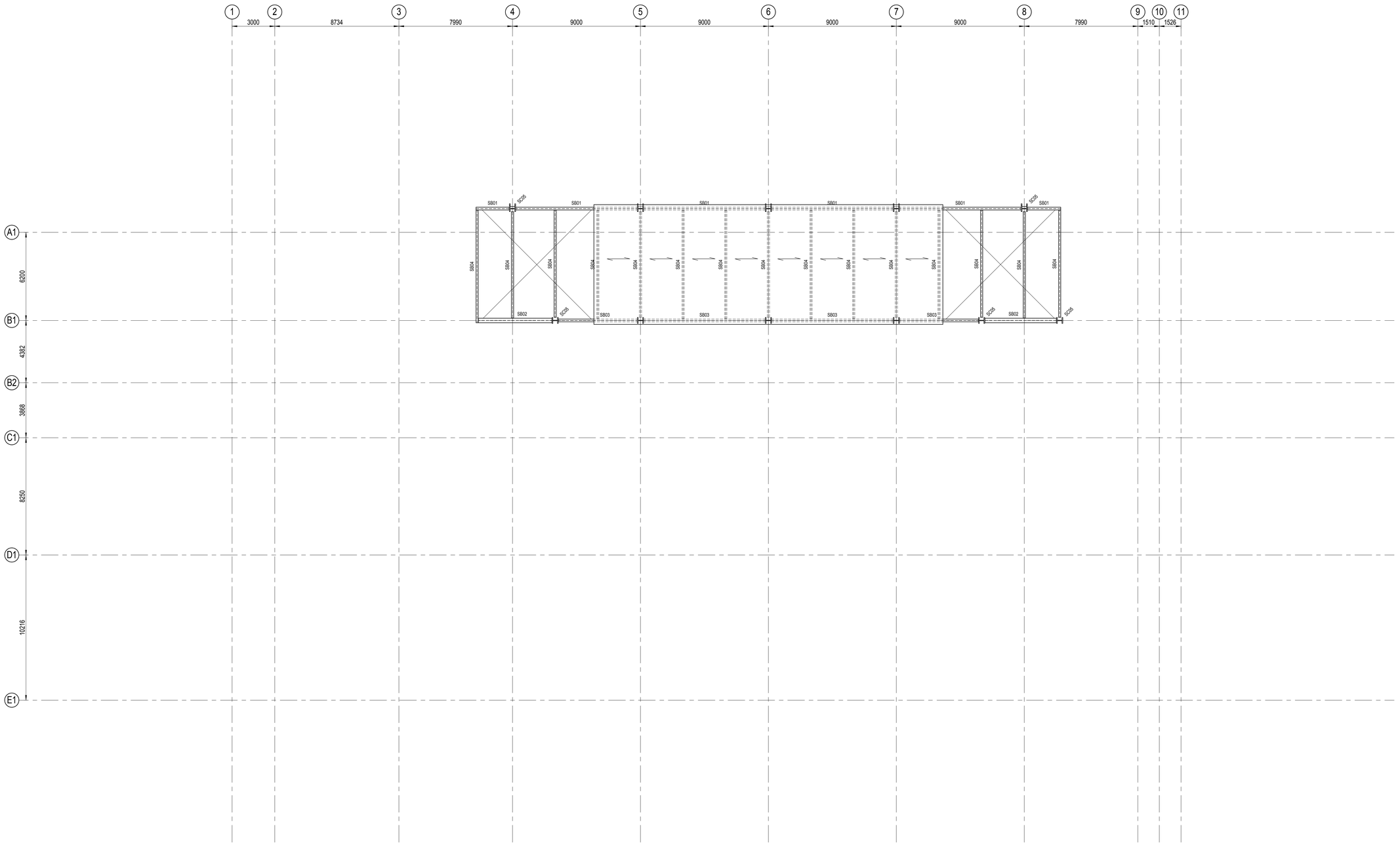
TITLE

SB	SEP 2018	A0
DRAWN	DATE	SHEET SIZE

3948	STAGE 2	S0
PROJECT No.	PROJECT STAGE	SUITABILITY CODE

PROJECT ID	ORIGINATOR	ZONE	LEVEL	TYPE	ROLE	DRAWING No.	REVISION
3948	AKT-XX		35	DR	S	21350	P01

DRAFT



0 1000 2000 3000 4000 5000 mm

SCALE 1:100

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NOTE

- COLUMNS ACTING AS PROPPED CANTILEVERS FROM LEVEL 35
- CONNECTIONS BETWEEN THE STEEL BEAMS AND BETWEEN STEEL BEAMS AND COLUMNS TO BE FIXED IN THE HORIZONTAL PLANE

LEVEL SCHEDULE

Name	Elevation
LEVEL 36	117375 mm
LEVEL 35	114325 mm
LEVEL 34	111275 mm
LEVEL 33	108225 mm
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STRUCTURAL COLUMN SCHEDULE

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SB11	UKB457x191x106
SB12	UKB457x191x133
SB13	UKC254x254x107 STUB
SB14	UB356x171x67
SB16	UB254x102x22

REV	DATE	DESCRIPTION	ORIG
P0.1	07.11.18	DRAFT STAGE 2 ISSUE	AC

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GREAT PORTLAND ESTATES PLC

CLIENT

NEW CITY COURT

PROJECT

TOWER
GENERAL ARRANGEMENT
LEVEL 36

TITLE

DRAWN	DATE	SHEET SIZE
SB	SEP 2018	A0

PROJECT No.	PROJECT STAGE	SUITABILITY CODE
3948	STAGE 2	S0

DRAFT

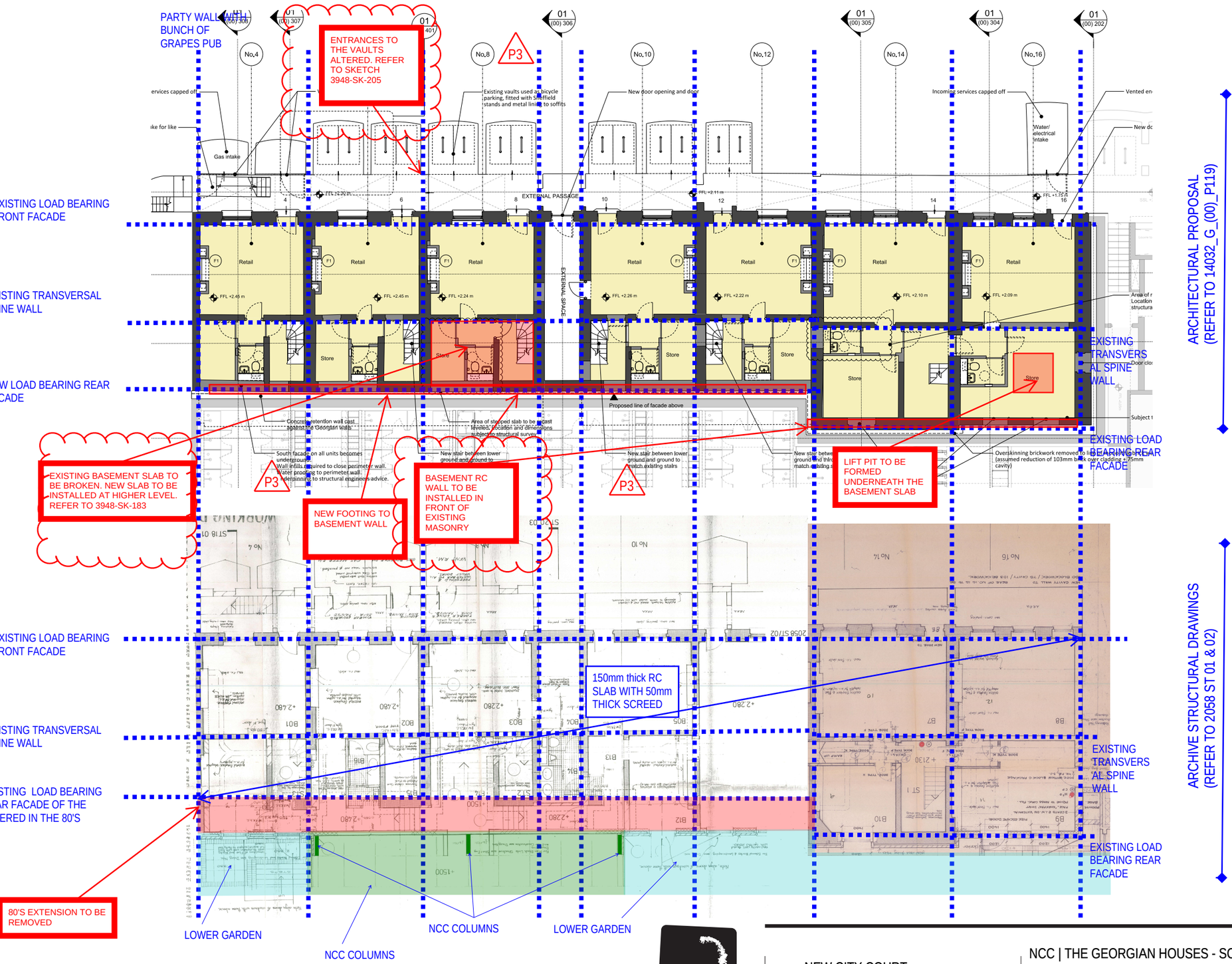
PROJECT ID ORIGINATOR ZONE LEVEL TYPE ROLE DRAWING No. REVISION

3948-AKT-XX-36-DR-S-21360 P01

Appendix 2

Proposed Sketches - 4-16 St. Thomas Street

NCC | THE GEORGIAN HOUSES - SCOPE OF WORKS - BASEMENT

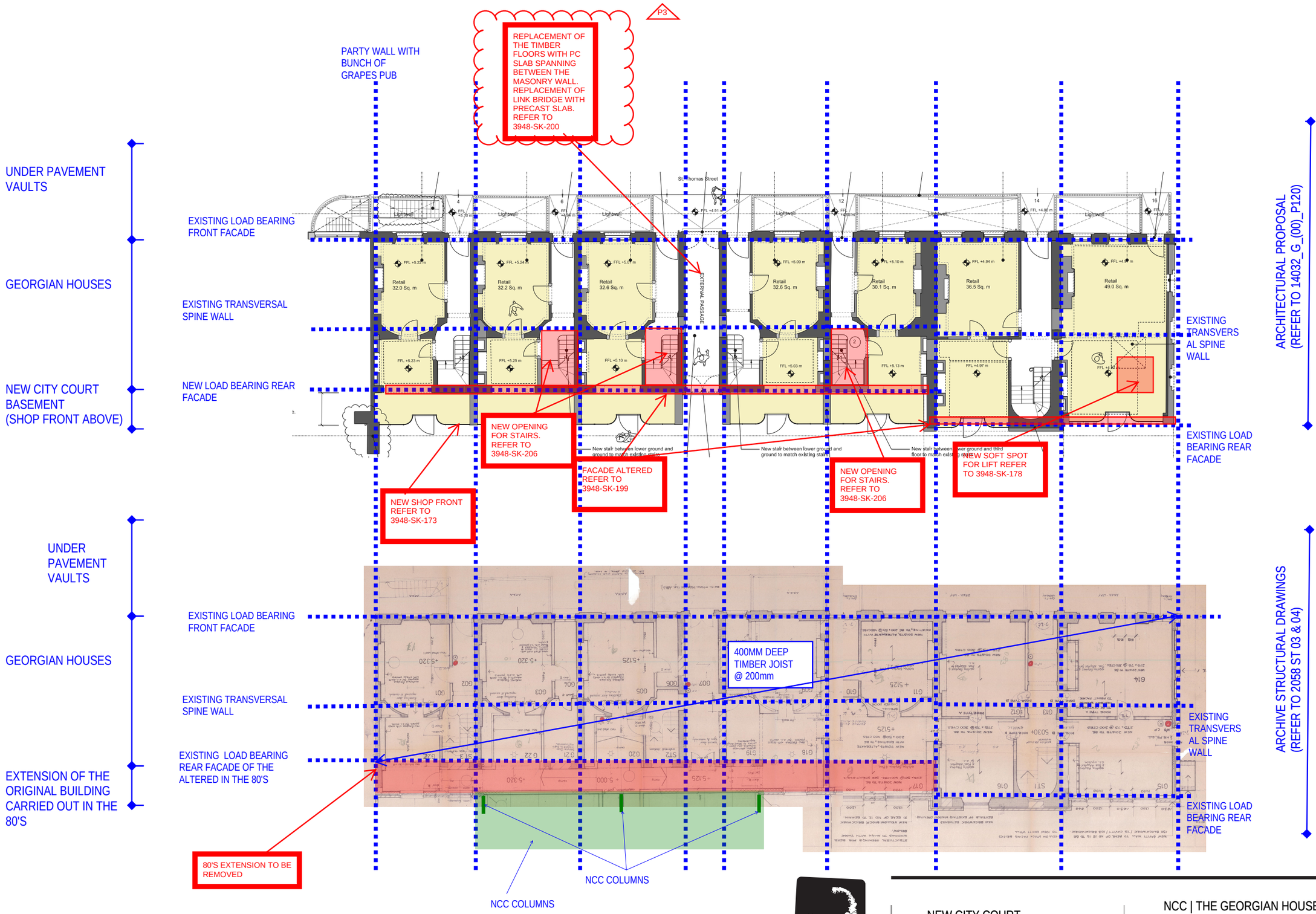


REV	DATE	DESCRIPTION	BY	CHECKED
P3	13/11/2018	FOR DISCUSSION	PM	NC
P2	12/10/2018	FOR DISCUSSION	PM	NC

akt II

PROJECT NEW CITY COURT		TITLE NCC | THE GEORGIAN HOUSES - SCOPE OF WORKS	
DATE 16/08/2018	SCALE NTS	CAD FILENAME -	STATUS FOR DISCUSSION
DRAWN PM	CHECKED NC	PROJECT No. 3948	DRAWING No. 3948-SK-181	REV P1

NCC | THE GEORGIAN HOUSES - SCOPE OF WORKS - GROUND

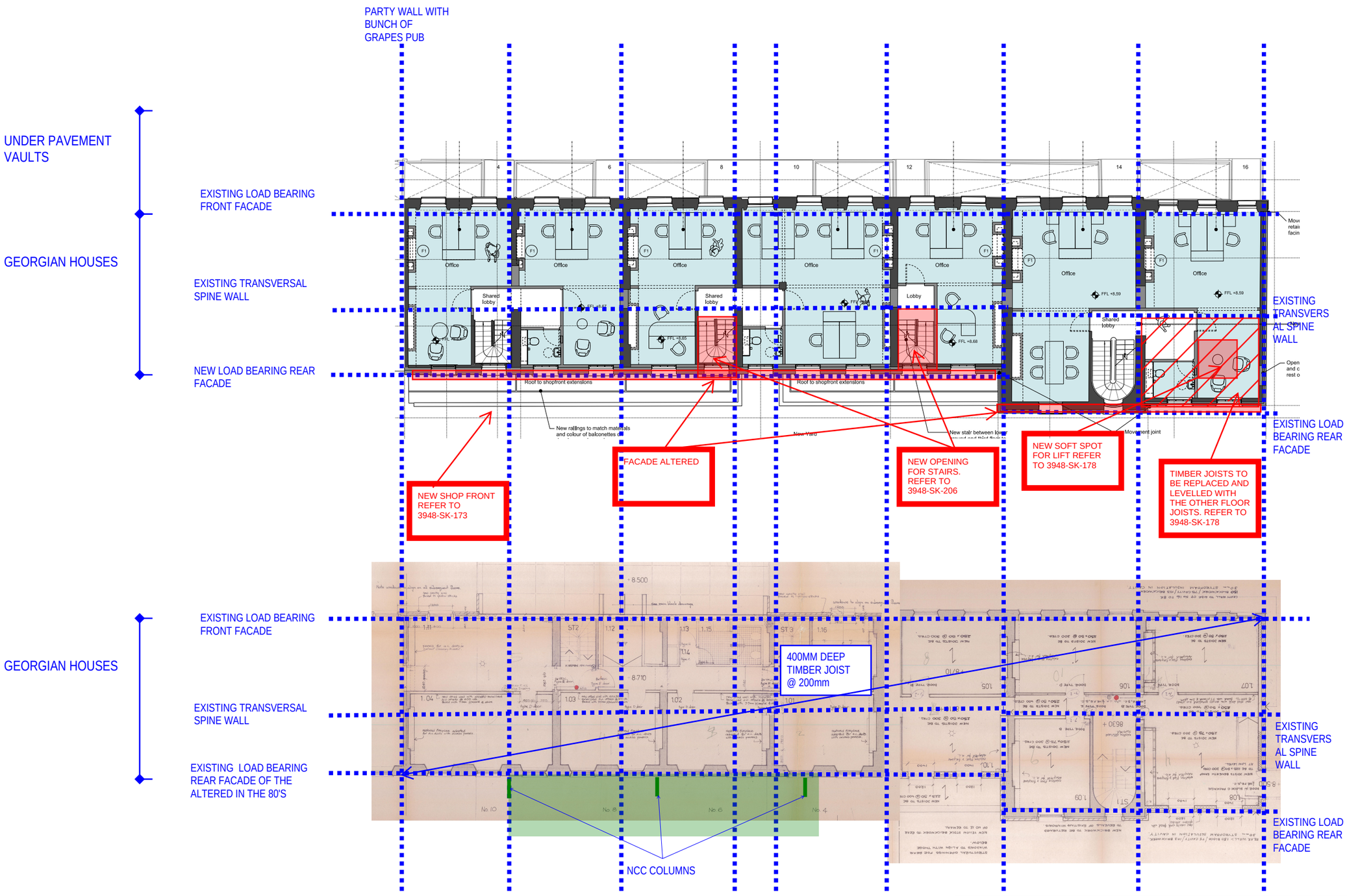


REV	DATE	DESCRIPTION	BY	CHECKED
P3	13/11/2018	FOR DISCUSSION	PM	NC
P2	12/10/2018	FOR DISCUSSION	PM	NC
P1	16/08/2018	FOR DISCUSSION	PM	NC

akt II

PROJECT	NEW CITY COURT	TITLE	NCC | THE GEORGIAN HOUSES - SCOPE OF WORKS
DATE	16/08/2018	SCALE	NTS
CAD FILENAME	-	STATUS	FOR DISCUSSION
DRAWN	PM	CHECKED	NC
PROJECT No.	3948	DRAWING No.	3948-SK-181
REV	P1		

NCC | THE GEORGIAN HOUSES - SCOPE OF WORKS - FIRST FLOOR

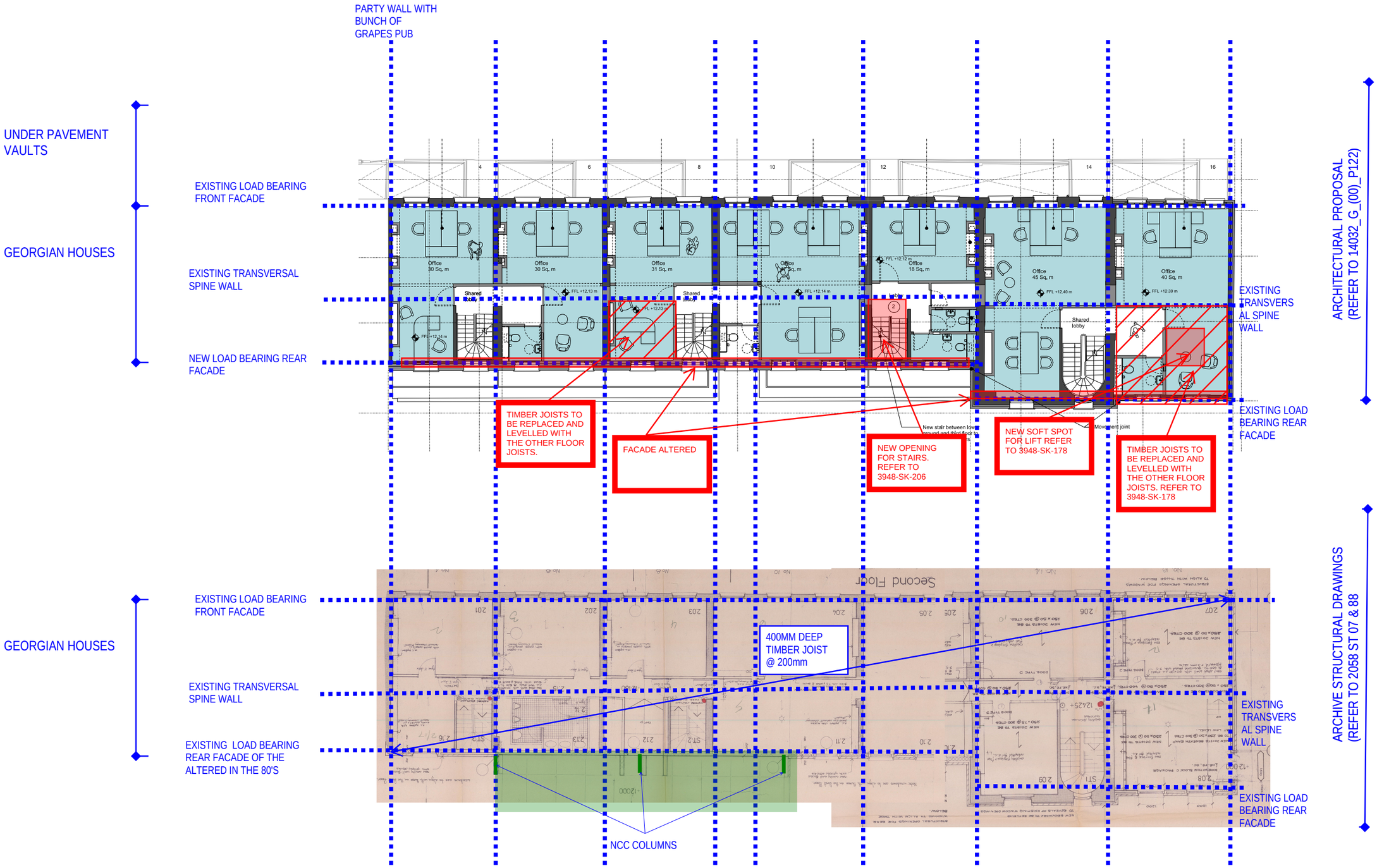


REV	DATE	DESCRIPTION	BY	CHECKED
P2	13/11/2018	FOR DISCUSSION	PM	NC

akt II

PROJECT NEW CITY COURT		TITLE NCC | THE GEORGIAN HOUSES - SCOPE OF WORKS	
DATE 16/08/2018	SCALE NTS	CAD FILENAME -	STATUS FOR DISCUSSION
DRAWN PM	CHECKED NC	PROJECT No. 3948	DRAWING No. 3948-SK-181	REV P1

NCC | THE GEORGIAN HOUSES - SCOPE OF WORKS - SECOND

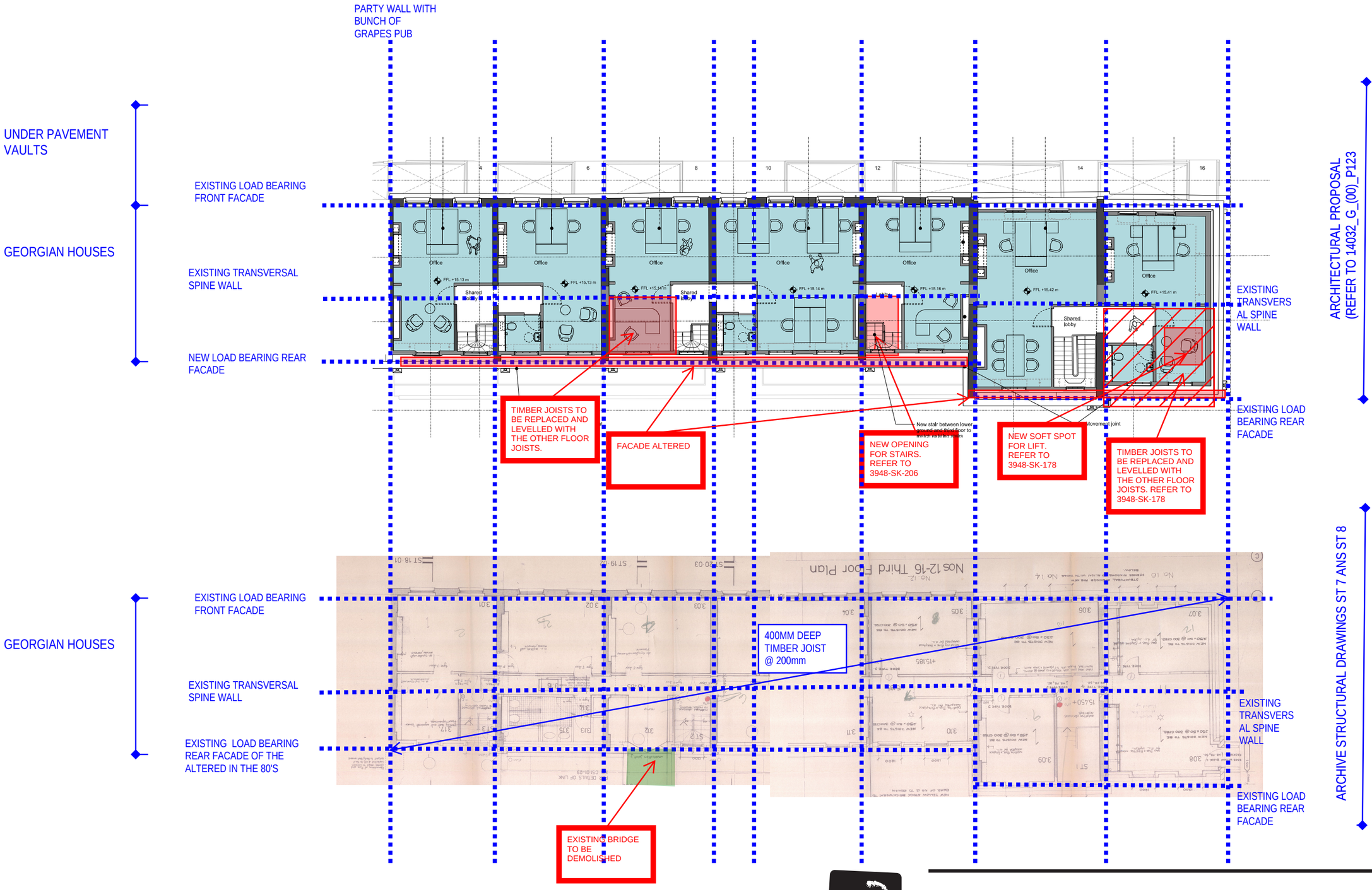


REV	DATE	DESCRIPTION	BY	CHECKED
P2	13/11/2018	FOR DISCUSSION	PM	NC

akt II

PROJECT NEW CITY COURT		TITLE NCC | THE GEORGIAN HOUSES - SCOPE OF WORKS	
DATE 16/08/2018	SCALE NTS	CAD FILENAME -	STATUS FOR DISCUSSION
DRAWN PM	CHECKED NC	PROJECT No. 3948	DRAWING No. 3948-SK-181	REV P1

NCC | THE GEORGIAN HOUSES - SCOPE OF WORKS - THIRD

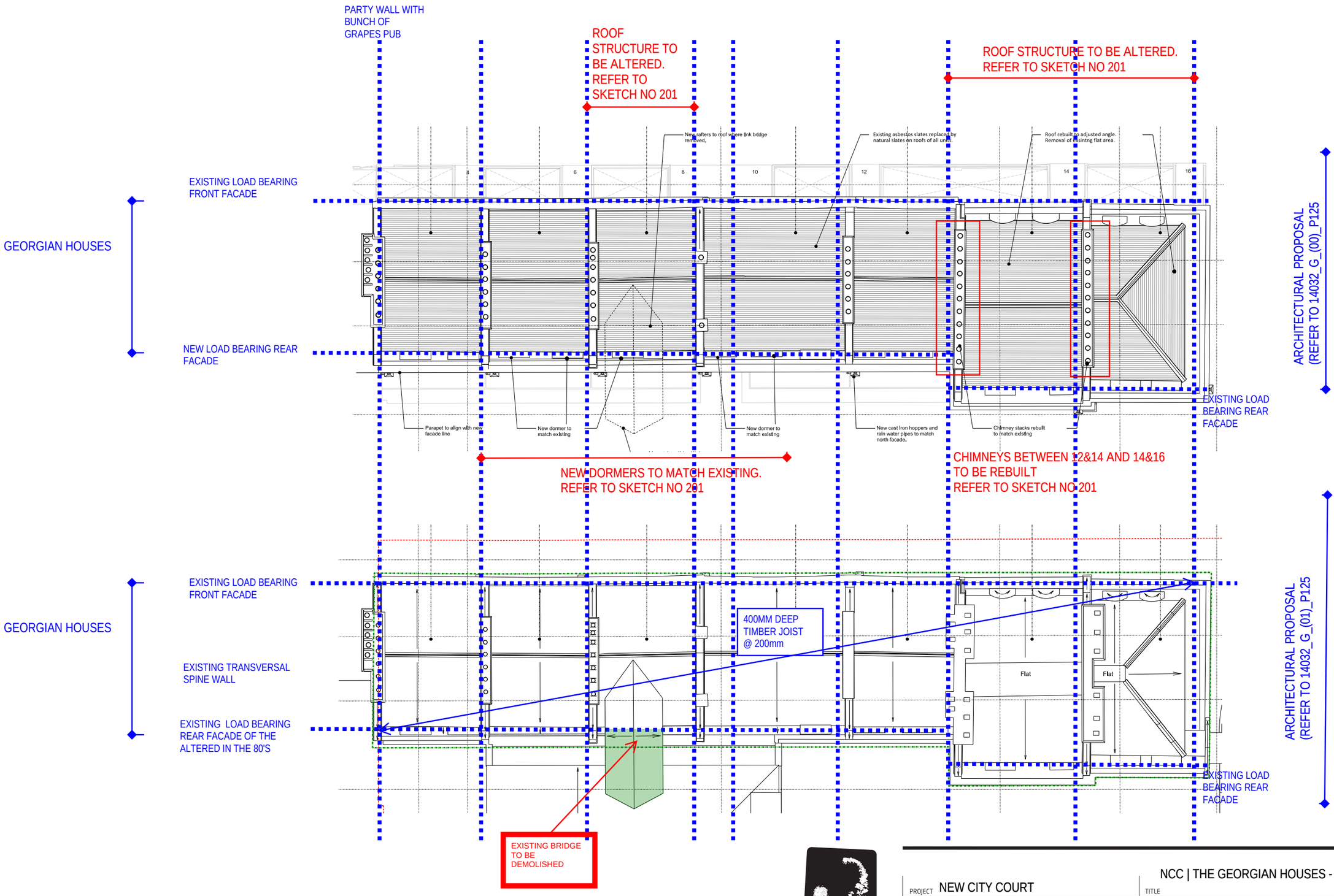


REV	DATE	DESCRIPTION	BY	CHECKED
P2	13/11/2018	FOR DISCUSSION	PM	NC

akt II

PROJECT NEW CITY COURT		TITLE NCC | THE GEORGIAN HOUSES - SCOPE OF WORKS	
DATE 16/08/2018	SCALE NTS	CAD FILENAME -	STATUS FOR DISCUSSION
DRAWN PM	CHECKED NC	PROJECT No. 3948	DRAWING No. 3948-SK-181	REV P1

NCC | THE GEORGIAN HOUSES - SCOPE OF WORKS - ROOF



REV	DATE	DESCRIPTION	BY	CHECKED

akt II

PROJECT NEW CITY COURT			TITLE NCC | THE GEORGIAN HOUSES - SCOPE OF WORKS
DATE 13/11/2018	SCALE NTS	CAD FILENAME -	STATUS FOR DISCUSSION
DRAWN PM	CHECKED NC	PROJECT No. 3948	DRAWING No. 3948-SK-181	REV P1