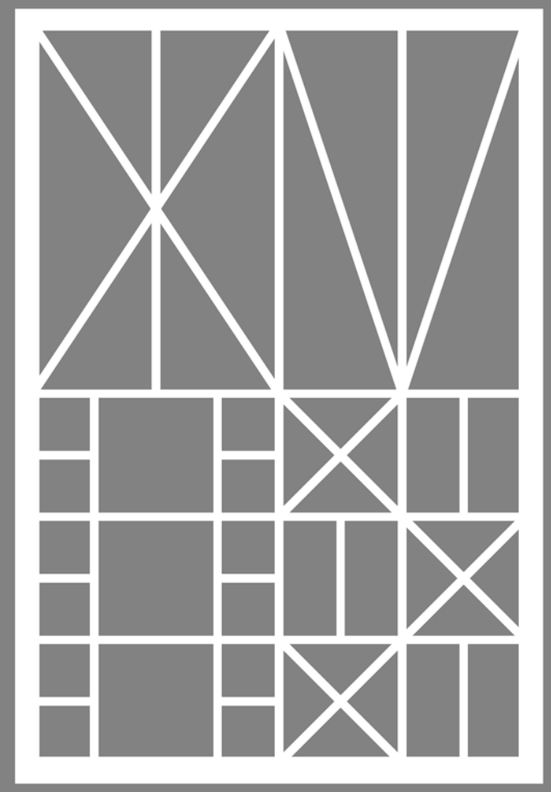


NEW CITY COURT

Circular Economy and Whole Life-Cycle Carbon Assessment July 2021

chapmanbdsp

55287 – New City Court
Circular Economy and Whole Life Carbon Statement

Revision	Issued for	Date	Author	Checked by
0	Planning	13/04/21	EV	PP
1	Planning	15/04/21	EV	PP
2	Planning addendum	16/07/21	PP	EV

chapmanbdsp
40 Gracechurch Street, London EC3V 0BT
T:020 768 4800
www.chapmanbdsp.com

Contents

1 Executive summary

This Circular Economy and Whole Life Carbon Statement has been prepared to support the planning application of the proposed development at New City Court for GPE (St Thomas Street) Limited ('the Applicant'). Redevelopment to include demolition of the 1980s office buildings and erection of a 26-storey building (plus mezzanine and two basement levels), restoration and refurbishment of the listed terrace (nos. 4-16 St Thomas Street), and redevelopment of Keats House (nos. 24-26 St Thomas Street) with removal, relocation and reinstatement of the historic façade on a proposed building, to provide office floorspace, flexible office/retail floorspace, restaurant/café floorspace and a public rooftop garden, associated public realm and highways improvements, provision for a new access to the Borough High Street entrance to the Underground Station, cycling parking, car parking, service, refuse and plant areas, and all ancillary or associated works.

The building circularity for the proposed scheme follows the following principles and approach:

Conserve resources, increase efficiency and source sustainably

- Minimise the quantity of the material used such that the whole life carbon doesn't not exceed the Greater London Authority's WLC aspirational benchmarks.
- The aim is to further reduce the embodied carbon to meet Royal Institute of British Architects (RIBA) 2030 target of 500 $kgCO_2/m^2$.
- The use of recycled content has been maximised. It exceeds the RICS minimum guidance and the industry standards

The material will be procured sustainably. All timber or timber based products will be (Forest Stewardship Council (FSC) or Programme for the Endorsement of Forest Certification (PEFC) certified. Suppliers with ISO 14001 or equivalent environmental management system will be used for material procurement.

Design to eliminate waste

- The building layers with longer life expectancy will be designed for longevity, flexibility and adaptability and layers with shorter life expectancy for ease of maintenance, recoverability and replacement.
- Demountable slabs and soft spots will be provided in structure to provide flexibility of use.
- Building Information Modelling and Digital Twin methods may be explored to reduce construction waste.
- No more than 7.5 $m^3/100m^2$ GIFA or 6.5 tonnes/$100m^2$ GIFA of waste will be generated during construction works.

Manage waste sustainably

- At least 97% of the waste can be diverted from going into landfill or for incineration as per the pre-demolition desktop analysis.
- The minimum aim is to divert 90% (by tonnage) of the non-demolition waste and 95% (by tonnage) of the demolition waste from going into the landfill.
- A resource efficiency and site waste management plan will be implemented on site to minimise waste generation and then manage waste responsibly.
- A operational waste strategy will be implemented to ensure municipal waste is managed sustainably. Tenants will be provided with a recycling facility and separate food and glass bins.

2 Introduction

The objective of the report is to summarise the circular economy principles considered in the design of the scheme and the material and waste targets to be achieved at the practical completion of the project.

2.1 Description of Development

The proposed redevelopment of New City Court will include demolition of the 1980s office buildings and erection of a 26-storey building (plus mezzanine and two basement levels), restoration and refurbishment of the listed terrace (nos. 4-16 St Thomas Street), and redevelopment of Keats House (nos. 24-26 St Thomas Street) with removal, relocation and reinstatement of the historic façade on a proposed building, to provide office floorspace, flexible office/retail floorspace, restaurant/café floorspace and a public rooftop garden, associated public realm and highways improvements, provision for a new access to the Borough High Street entrance to the Underground Station, cycling parking, car parking, service, refuse and plant areas, and all ancillary or associated works.

Summary of Proposed Amendments

It is proposed to amend the Proposed Development to incorporate a series of improvements to the detailed design and energy strategy.

The Proposed Amendments include the following:

- Improvements to the detailed design of the southern elevation, including provision of integrated photovoltaic panels and balconies, enhancing the operational energy strategy and urban greening factor
- Reconfiguration of basement levels to facilitate the relocation of the Keats House façade, improve building management facilities and respond to UKPN comments
- Improvements to Building Management facilities to enhance access and security measures
- Development of façade to allow for safety egress from the BMU and overall maintenance of the building envelope
- Introduction of additional security measures, including bollards, along the base of the building at St Thomas Street and King's Head Yard

Proposed floor areas

Table 1 Proposed floor areas.

Use	Use Class	Proposed GIA (m^2)
Office	E	44,141
Affordable workspace	E	4,908
Flexible office / retail	E	328
Food and drink	E	421
Shared rooftop garden access	-	183
Shared facilities and plant	-	5,480
Total		**55,461**

2.2 Method statement

A holistic approach has been adopted to establish the approach and targets for the project. The focus has been to create an architecture where the circular economy principles could be embedded in the design rather than an afterthought. Having a clear understanding of the objective of the London Plan policies SI2 and SI7, the concepts of whole life carbon and circular economy were considered comprehensively. The design approach follows the following framework:

Retain – Retaining and repurposing existing building on site.
Reuse – Reusing existing structure as much as practically feasible, reusing existing transformers/generators, reusing the strip out materials on site and off site. Thus, reducing embodied carbon of the scheme.
Recycle – Recycling the waste generated from strip out and demolition as well as use recycled material for construction as much as possible.

Discussions were held with the key stakeholders for establishing an integrated approach tailored for the project in specific. Chapmanbdsp, the sustainability champions for the scheme, held focussed workshops for the team to have a collaborative discussion. Some of these are listed below:

23/06/20: Attended by AHMM (architect), AKT (structural engineer), GPE (client) and chapmanbdsp (mechanical and electrical consultant) – Sustainability workshop
11/01/21: Attended by AHMM (architect), AKT (structural engineer), GPE (client) and chapmanbdsp (mechanical and electrical consultant) – Whole Life Carbon and Circular Economy workshop
25/03/21: Attended by AHMM (architect), AKT (structural engineer) and chapmanbdsp (mechanical and electrical consultant) – Sustainability Review workshop

The strategic approach was discussed at these workshops to set the key targets and required actions for achieving those targets in practice. These discussions were followed up in the weekly design team meetings and more one to one informal discussion. The outputs of these discussions are included in Tables 1 and 2 appended to this report.

Additional workshops are to be undertaken at the detailed design stages with the team and the main contractor. This report and the targets set as a part of this process will be readdressed at further stages of the project such that the targets are delivered at the practical completion of the project.

2.3 Circular economy aspirations

The client is committed to optimise material use to minimise upfront embodied carbon to the limits set out by Royal Institute of British Architects (RIBA) and Low Energy Transformation Initiative (LETI) as well as minimise construction waste and divert up to 100% of the demolition and construction waste from landfill. In order to achieve this challenge, the following strategy has been proposed in agreement with the key stakeholders for the project:

- A Pre-demolition audit has been carried out for the demoiltion works. The waste management strategy follows the hierarchy of prevention, reuse, recycle, recover and dispose. Based on the waste forecast, a recycling target of 97% could be achieved. A further audit will be carried out at the detailed design stage, prior to construction.
- New City Court will be assessed under BREEAM 2018 New Construction. The assessments, highest possible credits under Material and Waste categories have been targeted. Early engagement with the contractor will be sought to ensure the targeted credits are secured and if possible, pick up additional exemplary level credits. 1
- The aspiration is to divert 90% (by tonnage) of the non-demolition waste and 95% (by tonnage) of the demolition waste from going into the landfill.
- The contractor will be required to prepare a site waste management plan/resource management plan to minimise waste generated through construction activities. The waste generated on site will be monitor and segregated and managed sustainably. The target will be to produce no more than 7.5 m3/100m2 GIFA or 6.5 tonnes/100m2 GIFA during the construction.

- With regards to contributing towards circularity the recycled content within the construction elements will be maximised as much as possible. The table below indicates the minimum levels recommended by RICS guidance as compared to the recycled proportion and cement replacement in form of ground granulated blast-furnace slag (GGBS) proposed for the project.

Table 2 Proposed recycled content for the scheme

Component	RICS guidance	New City Court
Raft foundation	20% cement replacement	75% GGBS
Pile foundation	20% cement replacement	50% GGBS
Pile wall	20% cement replacement	50% GGBS
Columns	20% cement replacement	25-50% GGBS
Slabs (PT)	20% cement replacement	25% GGBS
Slabs (non-PT)	20% cement replacement	25-50% GGBS
Steel reinforcement	97% recycled	97% recycled

- Modern methods of construction and offsite construction opportunities to be considered during detailed design stages to further optimise the material use and reduce construction waste. As the increased proportion of GGBS can affect the curing time and therefore the construction program, offsite construction can be instrumental in overcoming these challenges.
- The design life of the building is assumed to be 60 years; however, the shell may last up to 200 years. Though it is impossible to predict what construction practices will be in effect at the end of the life of building, but it is expected that with the proposed construction at least 50% of the building material would be recoverable and reusable for future construction.

3 Strategic approach

3.1 Existing site opportunities

The existing buildings on site, apart from Georgian terraces and Keats House, do not provide financial viability for the site setting and value, and the structures contained within the low rise buildings would not be able to be re-used to create the new building.

The design of the development has therefore focused on the efficiency of the new elements and their carbon impact.

The demolition contractors have carried out an audit for the waste streams arising from the strip out and demolition works and identified a waste hierarchy of prevention, reuse, recycle, recover, and dispose. It also identifies the recycling and reclamation centres in proximity of the site for offsite recycle and reuse.

The following sections identify the approach to reuse of various parts of the development.

3.1.1 Georgian terrace

The analysis of the Grade II Listed Georgian Terrace by both Donald Insall Associates (DIA) and KM Heritage (KMH), together with historical record drawings from the 1980s redevelopment, has confirmed the extent to which these buildings were largely altered/rebuilt in the 80s. Little original fabric other than the north St. Thomas Street facade remains, alongside the memory of the original plan form to some levels, this is combined with some works which would sit outside current norms in a competent approach to working with listed buildings.

Most retained plan form exists at ground floor level, although the back line has been moved to create a circulation zone connecting all properties to the 1980s New City Court building. The ground floor is envisaged to be used as the model for the reinstatement of upper level plans, primarily the internal partitions and the south and east brick facades with sympathetic London stock brick akin with the original and sympathetic new windows. The renovation of the south walls would also require reskinning of the existing fabric.

Original internal features such as the remaining three original internal staircases or the fireplaces will be also restored. Other elements significant to the Georgian buildings such as removed fireplaces, chimney breasts, wall niches or wall detailing (cornices, skirting etc.) will be reinstated with simplicity and honesty, sympathetic to the heritage character of the spaces.

The front façades are the main feature of the Georgian Terrace and the primary reason for its Grade II Listed status. It is proposed to retain and repair the existing sash windows and replace the existing poor quality secondary glazing by bespoke timber secondary glazing following the profile of the sash windows.

There are also proposed works to the existing roofs to rebuild misshapen roofs and disproportionate stacks, reintroduce clay chimney pots and replace asbestos tiles with UK-sources natural slate.

Lastly, the vaults adjoining the terrace are proposed to be repurposed and maximum use made of them.

For more information, please refer to the Listed Building Consent document.

3.1.2 Keats House

With only the front facade having been retained in the 1980s development, the internal spaces are devoid of their original character. The proposal seeks to return Keats House closer to its original condition as a standalone building, giving it breathing space and offering active frontage to new public realm areas on site. This requires the removal of the existing 1980s development attached to the back and side of the existing retained façade, the relocation of the façade further west away from Coneybeare House, and the construction of new sympathetic elevations to the flank elevations.

Of the original Keats House façade, the brickwork will be repaired and replaced where necessary, including the flank walls. The stone portico will be preserved and restored, together with the iron railing fronting St Thomas Street.

3.1.3 Existing piles

New City Court's existing foundations have been considered indirectly in the new building foundation design, as stiffening elements that allow for a greater bearing pressure underneath the piled raft, however their contribution is relatively limited.

3.1.4 Reuse of other areas

As described above, the Georgian Terraces and Keats House's retained façade will be reused as part of the new permanent structure. Other parts of the existing structure will be reused in the temporary condition, including the existing basement walls (where possible) – the resulting rubble from the existing structure's demolition will also be reused to form the temporary pilling mat.

3.2 Proposed design considerations

3.2.1 Building in layers

The proposed scheme design has been broken down into building layers to design out waste, optimise material use and keeping building elements/materials in use after the end of their life cycle. Please refer to the summary of strategies in Table 3.

The design objective for the elements with longer life cycle (more than 25 years) is to design for longevity, adaptability and flexibility. The structural engineers have done a design analysis for providing soft spots in the structure to provide flexibility of use to the potential tenants and occupiers. A structural zoning has been done to locate the soft spots on each floor plate (included in Appendix 9). Larger grid sizes provide an opportunity for building to be adaptable for alternate uses in the future. Composite construction makes these large grid sizes possible as well as has other benefits too. Concrete provides longevity and high thermal mass whilst steel is highly recyclable.

Building layers with shorter life expectancy (less than 25 years) will be designed for ease of maintenance, reuse and recoverability. The plant will be made accessible for replaceability and maintenance. In terms of building services, a water based wet system is proposed for the communal network thus reducing the use of refrigerant in the building. The strategy allows for multiple tenancies on each floor thus giving flexibility to potential tenants and the need for additional plant. As the site is within a Heat Network Priority Area, a plant room in the basement and sleeves in the basement wall have been provided for future connectivity to a district network. The passive design of the building has informed the overall services strategy. The proposed mixed mode system reduces the ventilation requirement and heat recovery system reduces the heating demand, thus reducing the plant requirement.

This is a shell and core development, future tenants are unknown and therefore speculative finishes such as raised access floors, grid ceilings, etc. will not be provided to avoid any wastage. The material procured for internal finishes, partitions and furniture in the landlord areas will have ingredients disclosed by the manufacturer, a disclosure organisation or a third party such as Declare label or equivalent. Biogenic material will be selected where possible. The partitions and furniture will be designed for disassembly.

All elements from the demolition that cannot be reused on site will be sent to organisations for onward reuse. Opportunities will be explored for reusing hoardings and scaffoldings. The use of Building Information Modelling in the project could be used for estimating material quantities, thus reducing over procurement and waste generation. All the packaging will be returned to the suppliers for reuse. Offsite and modern methods of construction may be considered to further optimise material use and waste minimisation.

Table 3 Strategies for building layers

Layer	Constituent elements	Strategies
Site	The geographical setting, urban location and external works	**Retain and reuse**
Substructure	Excavations, foundations, basements and ground floors	**Longevity** – durable and resilient; readiness for alternative technologies
Superstructure	Load-bearing elements above plinth including roof supporting structure	**Adaptability** – how the current needs might change in the future
Shell/Skin	The layer keeping out water, wind, heat, cold, direct sunlight and noise	**Flexibility** – potential for reconfiguration of non-structural parts
Services	Installations to ensure comfort, practicality, accessibility and safety	**Reusability** – designed to be redeployed of reused as kit of parts
Space	The layout internal walls, ceilings, floors, finishes, doors, fitted furniture	**Recoverability** – designed to be deconstructed and reused/recycled
Stuff	Anything that could fall if the building was turned upside down	Not applicable due to 'shell and core' nature of the development
Construction Stuff	Any temporary installations/works/ materials, packaging and equipment	**Reusability** – Use of re-usable hoardings **Waste minimisation, material optimisation**

Expected life > 25years

Expected life < 25years

3.2.2 Design optimisation

The design team has done extensive studies to optimise the material use for the scheme. Passive design studies were undertaken to reduce the operational energy of the building. The double skin façade may add to the embodied carbon, but it offsets the ventilation requirement and provides significant operational savings. The structural engineers have undertaken feasibility studies for structural grid size and type of slabs to reduce the amount of embodied carbon contained within them. The result is post-tension slab with varying grids to suit building shape.

Recycled content has been maximised as reported in section 2.3 and 4.3. Further interventions for the reduction of embodied carbon have been listed for further investigation at the design stages. With some of the interventions, there are supply chain limitations, for example recycled aluminium. These challenges and opportunities will have to be explored further.

As part of concept design, detailed studies were carried out to optimise the structure which minimises the material quantity and the embodied carbon. An extract from the studies is shown in Appendix 8.

3.2.3 Approach to disassembly

Modular elements such as demountable floors, cladding, etc. are proposed where possible. The base build installation includes for raised access floors in the offices which are modular and can be re-used as necessary. The façade is modular, with a framed demountable chassis and modularised final elements. These include the demountable glazing systems as well as demountable glass reinforced cement panels, all materials that can be recycled.

Lime mortar will be specified for the brick refurbishment works for the Georgian buildings and Keats House. This reduces the requirement for movement joints, reduces the carbon included in Portland cement manufacture, but also allows for easier disassembly of brick walls in the future for re-use.

Soft spots have been considered and designed into the typical floors slab design. The materiality of the infills is currently envisaged to be concrete but requires confirmation in the next design stage, which will help to confirm the detailing of the infill support – this is envisaged to be formed by either steel angles or concrete nibs upon which the infill panels will rest.

The proposed concrete structure is inherently limited in terms of disassembly potential, however offsite technologies have been considered during this design stage and will be further explored in the next stages to maximise this potential. Where steel structures are proposed, bolted connections will be favoured in lieu of welded connections.

The MEP plant replacement strategy is to be developed to allow for the easy disassembly and removal of plant.

3.3 Operational waste

The scheme has been designed to comply with the capacity and waste managements requirements set out within the following policy documents:

- Waste Management, The Duty of Care Code of Practice (2018 update)
- The Waste (England and Wales) Regulations 2011 (as amended)
- Environment Protection Act 1990
- National Planning Policy Framework (2019)
- Department for Environment, Food and Rural Affairs (DEFRA), our waste, our resources: a strategy for England (2018)
- HM Government, A Green Future: our 25-year plan to improve the environment (2018)
- The London Plan March 2021
- London Environment Strategy (2018)
- Waste Management Strategy 2003 – 2021, Southwark (2003)

The commercial waste store will be provided at basement level one. This is the location that all residual waste, glass waste and food waste generated within the proposed development will be stored prior to collection. The following daily metric have been applied to inform the waste strategy for the development.

Table 4 Waste metric and composition for each commercial building use

Commercial Use	Waste metric	Waste Composition
Office	1,100 litres per 10,000 sq.ft. (NIA)	Residual Waste 50% Dry Mixed Recycling (DMR) 50%
Food & Beverage	1,100 litres per 2,500 sq.ft. (NIA)	
Retail	1,100 litres per 5,00 sq.ft. (NIA)	

All waste storage areas will be designed in accordance with British Standard BS5906:2005 Waste Management in buildings – Code of practice. In summary, the facilities should include the following:

- A suitable waste point in close proximity to allow washing down;
- All surfaces sealed with a suitable waterproof fi nish (vinyl, tiles etc.);
- All surfaces easy to clean;
- A suitable floor drain; and
- Suitable lighting and ventilation.

Each commercial operator will provide temporary internal waste storage within their tenanted area as part of the fit-out phases. The internal collection of waste will be maintained by an on-site Facilities Management (FM) team who will collect the waste in suitable trolleys from each tenanted commercial area as separate waste streams. Using the service lift, the on-site FM team will transfer the individual waste streams to the service yard located at basement level two.

Provision of storage for segregated food waste and glass waste is in addition to the requirements specified by the LBS Community Facilities Manager. The exact capacity required on site will be dictated by the specific business activities of the commercial tenants. Food waste and glass waste will be deposited by the on-site FM team in to 240-litre wheeled bins within the commercial waste store. It is intended that the development will promote composting by informing occupiers of the kitchen waste collection scheme within the building user guide. Information on local recycling centres and sustainable living in general will be provided within the guide provided to the occupiers.

Future tenants will submit a comprehensive waste and recycling management strategy in accordance with the BS5906:2005 Waste Management in Buildings – Code of Practice

3.4 GLA Circular Economy Statement Guidance Table 1

Aspect	Phase/ Building/ Area	Steering Approach	Explanation	Target	Supporting analysis/ studies/ surveys/ audits
Circular economy approach for new development	Design and Construction Phase/ Main Office Building	The following design principles should be adopted for the proposed scheme: • Retain, repurpose, reuse, recycle where possible to reduce the material use • Following lean design principles such as low energy demand, light weight construction • To use material efficiently optimise grid sizes, structural loads etc. • Thinking in layers and how each building layer can be designed for material efficiency • Designing for longevity and future adaptability and flexibility of use • Re-using demolition materials on-site • Using materials with high recycled content • Resilient design to last the life of the building • Prioritising sustainably sourced material e.g. FSC or PEFC certified timber, suppliers who operate a compliant environmental management system • Specifying material with compliant Environmental Product Declarations (EPDs) • Low embodied carbon construction • Design for disassembly and demountability • Minimising energy and water use during construction and operation	The following key stakeholders were engaged from the very outset of the project to consider design interventions in line with the approach: • Architect • Structural engineer • Building Services engineers • Sustainability consultants • Demolition contractors • Project managers • Client The structural engineer carried out extensive studies to maximise the use of existing basement and optimise the new structure. Operational energy studies were done to minimise energy demand and plant requirements	95%diversion from landfill at the end of life and Wate generated during construction to be no more than 7.5 m3/100m2 GIFA or 6.5 tonnes/100m2 GIFA	23/06/20: Attended by AHMM, AKT, GPE and chapmanbdsp – Sustainability workshop 11/01/21: Attended by AHMM, AKT, GPE and chapmanbdsp – Whole Life Carbon and Circular Economy workshop 25/03/21: Attended by AHMM, GPE and chapmanbdsp – Sustainability Review workshop Whole life carbon study (Section 5 of the report) Sustainability Statement BREEAM workshops on waste and materials and pre assessment Sustainable Procurement Plan AKT-II Net Zero Carbon report outlining material optimisation studies
Circular economy approach for the existing site	Main Office Building & Georgian Houses	• A Pre-demolition audit has been carried out to identify the percentage of demolition and strip out waste which can be reused or recycled on site or offsite. • Georgian Houses will be repurposed and refurbished The contractor will implement a compliant Site Waste Management Plan. Diversion of 90% (by tonnage) of the non-demolition waste and 95% (by tonnage) of the demolition waste from going into the landfill.	• Retain the existing basement as much as possible • Use durable materials with low embodied carbon. • Waste streams arising from the strip out and demolition works to be segregated. Waste hierarchy of prevention, reuse, recycle, recover and dispose to be followed • Opportunities for using strip out waste for site office to be considered	95% diversion from landfill at the end of life	AKT-II Net Zero Carbon report outlining material optimisation studies
Circular economy approach for municipal waste during operation	Main Office Building & Georgian Houses	• Provision of on-floor bins to each of the tenants. Waste segregation at source to be considered • Separate bin store for recyclable waste to be provided • Provision of a presentation area on ground floor level • Bin removal strategy and access to bin stores to be considered • Food bins to be provided to each of the tenants	• The commercial waste store will be provided at basement level two • The aim is to reduce the waste going to landfill or incineration. Therefore, waste segregation strategy is key	65% diversion from landfill at the end of life by 2030	Operational Waste Management Strategy proposed by TPP

4 Circular economy commitments

Key Commitments: GLA Circular Economy Statement Guidance Table 2

	Site	Substructure	Super structure	Shell/Skin	Services	Space	Stuff	Construction Stuff	Summary	Challenges	Who and When	Plan to prove and quantify
	Section A: Conserve Resources											
Minimising the quantities of materials used	Repurposing Georgian terraces building and retaining façade for Keat's House.	Retaining existing foundations for Georgian terraces. Main Building – Use of recycled aggregates for basement. Use of cement alternatives. Wherever possible (depending on the material type) the use of offcuts will be re-used i.e. straight reinforcement bars as shear legs. Structural elements optimization to reduce sizes and required material. The concrete generated through demolition is proposed to be crushed, graded, stockpiled and re-used on-site where possible and safe to do so. Materials would be used to refill some of the excavated areas to accommodate the proposed development's	Build structural elements with an inherent 8ortugal88 such as PT slabs (to l soft-spots – tenant flexibility). Structural elements optimization to reduce sizes and required material. Standardisation of the elements will be a key driver of the design to facilitate the installation on site and minimise waste. Wherever possible (depending on the material type) the use of offcuts will be re-used i.e. straight reinforcement bars as shear legs. Wherever applicable, connections will be designed to ease the installation and disassembly; weld will be used only where needed. Connections will be also designed to limit the	Reduced use of aluminium for façade. GRC spandrels and surrounds powder coating instead of anodising. Considering use of recycled aluminium.	Where possible, items are to be prefabricated or assembled off-site.	Limit any finishes installed in the areas to be leased out.	Tenant's responsibility.	Use of demountable and reusable scaffolding. Contractor to operate packaging take back scheme. Avoid stockpiling.				

	Site	Substructure	Super structure	Shell/Skin	Services	Space	Stuff	Construction Stuff	Summary	Challenges	Who and When	Plan to prove and quantify
		new levels. Where materials are crushed, hard core would be compacted to form the piling mat for the new construction.	maintenance regime.									
Minimising the quantities of other resources used (energy, water, land)	The project is located on previously developed land with no impact on virgin land. A whole life carbon assessment is being undertaken.	A whole life carbon assessment is being undertaken taking a holistic view to reducing embodied and operational carbon emissions.	A whole life carbon assessment is being undertaken taking a holistic view to reducing embodied and operational carbon emissions.	Façade optimisation studies have been carried out to reduce energy use. A low heat loss form factor design reduces the exposed façade area.	Highly energy efficient services to aim for 90 kWh/m2/yr energy use intensity target and a minimum of 35% reduction over Part L.	Open plan and large spans inherently provies a flexible and adaptable space to allow tenants to fit out as per their needs.	Tenant's responsibility.	The contractor will be required to set targets and monitor energy and water use during 9ortugal99on (Man 03 credit).				
Specifying and sourcing materials responsibly and sustainably	A sustainable procurement plan will be established. All timber and timber based products will be FSC or PEFC certified. Prioritise products with EPDs, ISO14001, BES6001 or accredited EMS certification.	Specify materials with a higher recycled content, lower embodied carbon and water. Specify locally sourced materials. Consider specifying materials / equipment with minimal maintenance requirements. Use significant percentages of cement-replacement alternative binders, such as GGBS in concrete elements. Use concrete mixes that contain no ordinary 9ortugal	Specify materials with a higher recycled content, lower embodied carbon and water. Specify locally sourced materials. Consider specifying materials / equipment with minimal maintenance requirements. Use significant percentages of cement-replacement alternative binders, such as GGBS in concrete elements. Use concrete mixes that contain no ordinary 9ortugal cement where	Consider the use of low embodied carbon façade cladding. Consider material procurement from manufacturers adopting cleaner manufacturing processes	Avoid refrigerant based systems. If specified then ensure the refrigerant has low GWP. CIBSE TM 65 calculations to be carried out to account for refrigerant 9ortugal9 and charge	If any paints and finishes are being specified, then ensure they have low VOC content and formaldehyde levels	Tenant's responsibility.	Using only certified timber for scaffolding, hoardings etc.				

	Site	Substructure	Super structure	Shell/Skin	Services	Space	Stuff	Construction Stuff	Summary	Challenges	Who and When	Plan to prove and quantify
		cement where feasible. Concrete steel rebars to be 97% recycled and sourced from secondary suppliers employing EAF production processes. Recycled aggregates to be used in the basement construction.	feasible Concrete steel rebars to be 97% recycled. Seek to maximise the use of 10ortu produced using EAF production processes such as rolled sections where possible.									
	Section B: Design to eliminate waste											
Designing for reusability/recoverability/longevity/adaptability/flexibility	By retaining Georgian terraces, the excavation and demolition waste is being reduced.	The Georgian terraces and the Keats House I are being retained thus avoiding a large volume of waste generation from demolition and construction. The existing basement will be reinforced where needed so it could be reused at the end of the life of the building. All structural elements are designed for durability and a minimum design life of 50 years based on the current version of the Eurocodes The retaining wall and foundations are designed using reinforced	All structural elements are designed for durability and a minimum design life of 50 years based on the current version of the Eurocodes. Wherever required structural elements will be designed for accidental load cases such as vehicle impact, blast etc. Build structural elements with an inherent 10ortugal1010 such as PT slabs (to l soft-spots – tenant flexibility). Structural elements optimization to reduce sizes and required material Wherever	Materials will be specified to ensure they are durable. The design criteria to ensure the protection of the roof, will consider the material selection thoroughly for its robustness. Waterproofing detailing, profiling, drainage details, fixings and general geometry will be thoroughly assessed. Lime mortar used in brick refurbishment works for Georgian Terraces and Keats House, reducing use of cement and allow for future	Building services take into account future climate change scenarios. Future resilience provided as the development is being designed to connect to a district network in the future.	Large spans and open floor plates provide flexibility of use The location of cores consider multiple tenancies on each floor. Slab soft spots designed in for future fexlibility and adaptability of tenancy 10ortuga levels. Exposed concrete soffits also reduces wase and improves adaptablility for future tenant fitouts.	Tenant's responsibility.	Sustainable Procurement Plan to be developed. To be reviewed with contractor during pre-construction supply chain engagement.				

	Site	Substructure	Super structure	Shell/Skin	Services	Space	Stuff	Construction Stuff	Summary	Challenges	Who and When	Plan to prove and quantify
		concrete. The material is very durable and able to perform during the life time of the building The only environmental agent that will impact the substructure will be water ingress, Waterproofing system is designed to protect the structure from underground water ingress The foundations and retaining walls are made of reinforced concrete and are not susceptible to any damage due to biological agents	applicable, connections will be designed to ease the installation and disassembly; welds will be used only where needed. Connections will be also designed to limit the maintenance regime Standardisation of the elements will be a key driver of the design to facilitate the installation on site and minimise waste	disassembly. Tower I uses GRC panels as a demountable and recyclable element.								
Designing out construction, demolition, excavation and municipal waste arising	A target benchmark for resource efficiency, i.e. m3 of waste per 100m2 or tonnes of waste per 100m2 (7.5 m3/6.5 tonnes of waste per 100 m2 GIA).	A site waste management plan will be produced and followed. Brick/block/concrete/hardcore waste will be processed off site at a recycling facility for eventual use as aggregate products such Type 6F2 for building and groundworks as well as roads and driveways.	A site waste management plan will be produced and followed. Brick/block/concrete/hardcore waste will be processed off site at a recycling facility for eventual use as aggregate products such Type 6F2 for building and groundworks as well as roads and driveways	Off-site construction/ modular components to reduce waste on site. Glass can be recycled and reused in other glass products or aggregate.	Off-site construction/ modular components to reduce waste on site.	Reuse existing furniture for site office and welfare areas for the project. Reuse existing fire extinguishers for use for the project (undertaking any testing as required).	Tenant's responsibility.	A site waste management plan to be prepared and followed on site To be reviewed with contractor during pre-construction supply chain engagement.				

	Site	Substructure	Super structure	Shell/Skin	Services	Space	Stuff	Contruction Stuff	Summary	Challenges	Who and When	Plan to prove and quantify
	Section C: Manage Waste											
Demolition waste (how waste from demolition of the layers will be managed)	Aim to achieve 95% diversion from landfill.	Brick/block/concrete/hardcore waste will be processed off site to be used for groundworks as well as roads and driveways. The concrete generated through demolition is proposed to be crushed, graded, stockpiled and re-used on-site where possible and safe to do so. Materials will be used to refill some of the excavated areas to accommodate the proposed development's new levels. Where materials are crushed, hard core would be compacted to form the piling mat for the new construction.	Brick/block/concrete/hardcore waste will be processed off site to be used for groundworks as well as roads and driveways. The concrete generated through demolition is proposed to be crushed, graded, stockpiled and re-used on-site where possible and safe to do so. Materials would be used to refill some of the excavated areas to accommodate the proposed development's new levels. Where materials are crushed, hard core would be compacted to form the piling mat for the new construction.	97% of the stripout waste will be reused or recycled as per the pre demolition audit prepared by strip out contractors.	97% of the stripout waste will be reused or recycled as per the pre demolition audit prepared by strip out contractors.	97% of the stripout waste will be reused or recycled as per the pre demolition audit prepared by strip out contractors.	Tenant's responsibility.	97% of the stripout waste will be reused or recycled as per the pre demolition audit prepared by strip out contractors.				
Excavation waste (how waste will be managed)	A site waste management plan will be produced and followed.	A site waste management plan will be produced and followed.	N/A	N/A	N/A	N/A	N/A	N/A				
Construction waste (how waste arising from construction of the layers will be reused or recycled)	A target benchmark for resource efficiency, i.e. m3 of waste per 100m2 or tonnes of waste per 100m2 (7.5m3/6.5 tonnes of waste per 100m2 GIA).	A target benchmark for resource efficiency, i.e. m3 of waste per 100m2 or tonnes of waste per 100m2 (7.5m3/6.5 tonnes of waste per 100m2 GIA).	A target benchmark for resource efficiency, i.e. m3 of waste per 100m2 or tonnes of waste per 100m2 (7.5m3/6.5 tonnes of waste per 100m2 GIA).	A target benchmark for resource efficiency, i.e. m3 of waste per 100m2 or tonnes of waste per 100m2 (7.5m3/6.5 tonnes of waste per 100m2 GIA).	A target benchmark for resource efficiency, i.e. m3 of waste per 100m2 or tonnes of waste per 100m2 (7.5m3/6.5 tonnes of waste per 100m2 GIA).	A target benchmark for resource efficiency, i.e. m3 of waste per 100m2 or tonnes of waste per 100m2 (7.5m3/6.5 tonnes of waste per 100m2 GIA).	Tenant's responsibility	To be reviewed with the contractor. Contractor will seggregate and monitor waste generated during contruction.				

	Site	Substructure	Super structure	Shell/Skin	Services	Space	Stuff	Construction Stuff	Summary	Challenges	Who and When	Plan to prove and quantify
	Aim to divert 90% from landfill.	Aim to divert 90% from landfill.	Aim to divert 90% from landfill.	Aim to divert 90% from landfill.	Aim to divert 90% from landfill.	Aim to divert 90% from landfill.						
Municipal Waste (how waste will be managed)	Refuse store with designated recycling and presenation area planned.	Refue store with designated recycling and presenation area planned.	N/A	N/A	N/A	N/A	Space will be provided for segregation of recyclables and general waste.	Contractor will seggregate and monitor waste generated during contruction.				

4.1 Numerical targets and commitments

The proposal applies lean design principles by reusing the existing basement and light weight construction. The recycled content within the building material has been maximised within the remit of practical feasibility and availability through the supply chain. At the detailed design stage, opportunities for further increasing the recycled content will be investigated.

The percentage of proposed recycled content is presented in Section 2.3 of this report and further breakdown by building layers in presented in the 'Bill of material' table below:

Table 5 Bill of materials

Layer	Material quantity (kg)	Material intensity (kg/m²) (GIA)	Estimated recyclable materials (kg/m²)	Source of information
1 Substructure	39,450,102	711.3	710.4	One Click LCA Building Circularity assessment
2.1 Superstructure: Frame	24,348,200	439.0	439.0	
2.2 Superstructure: Upper Floors	34,981,461	630.7	627.5	
2.3 Superstructure: Roof	2,977,666	53.7	52.5	
2.4 Superstructure: Stairs and Ramps	835,579	15.1	13.8	
2.5 Superstructure: External Walls	3,765,885	67.9	61.7	
2.6 Superstructure: Windows and External doors	28,425	0.5	0.5	
2.7 Superstructure: Internal Walls and Partitions	1,147,833	20.7	19.3	
2.8 Superstructure: Internal doors	125,485	2.3		
3 Finishes	1,369,434	24.7	14.7	
4 Fittings, furnishings & equipment	-	-	-	
5 Services (MEP)	2,242,061	40.4	40.1	
6 Prefabricated buildings and building units	-	-	-	
7 Work to existing building	-	-	-	
8 External works	924,376	16.7	16.7	

Recycling and waste reporting

The following table presents the figures for the different categories of waste production.

Table 6 Summary of waste production by category

Category	Total estimate	Of which…				Source of information
	t/m² (GIA)	% reused or recycled onsite	% reused or recycled offsite	% not reused or recycled (max 5%)		
				% to landfill	% to other management (e.g. incineration)	
Excavation waste	30,109 m³	TBC	TBC	TBC	TBC	Alinea cost plan
Demolition waste	816 t/m²	Subject to methodology of construction/ demolition	95-99% target	0%	<5%	Pre-demolition audit*
Construction waste	3,605 t	TBC	TBC	TBC	TBC	BREEAM targeted benchmark

*Detailed breakdown available on pg. 62 of the *Pre-demolition audit*.

Category	Total estimate	Of which…				Source of information
	t/annum	% reused on or off-site	% recycled or composted on or off-site	% not reused or recycled (max 5%)		
				% to landfill	% to other management (e.g. incineration)	
				Max 35% and NO recyclable or compostable waste		
Municipal waste	TBC	TBC	65% by 2030	TBC	TBC	Deliver, Servicing, and Waste Management Plan
Industrial waste (if applicable)	n/a	n/a	n/a	n/a	n/a	n/a

4.2 Implementation strategy

A Site Waste and Resource Management Plan (SWMP/RMP) will be prepared and implemented by the contractor including procedures and commitments to sort and divert waste from landfill, through either;

- Reusing the material on site (in-situ or for new applications)
- Reusing the material on other sites
- Salvaging or reclaiming the material for reuse
- Returning material to the supplier via a 'take-back' scheme
- Recovery of the material from site by an approved waste management contractor and recycled or sent for energy recovery.

Waste materials will be sorted into separate key waste groups, such as bricks, concrete, insulation, packaging, timber, electricals, plastics, glass, etc., according to the waste streams generated by the scope of the works either onsite or offsite through a licensed contractor for recovery.

The SWMP should include the target benchmark for resource efficiency i.e. 7.5 m3 of waste per 100m2 or 6.5tonnes of waste per 100 m2. It should also cover the following:

- Procedures and commitments for minimising non-hazardous waste in line with the benchmark
- Procedures for minimising hazardous waste
- Procedures for monitoring, measuring and reporting hazardous and non-hazardous site waste
- Procedures for sorting, reusing and recycling construction waste into defined waste groups (see additional guidance section), either on site or through a licensed external contractor
- The name or job title of the individual responsible for implementing the above

The plan should be in line with guidance provided by DEFRA, Building Research Establishment (BRE) and Waste & Resources Action Programme (WRAP). Where materials cannot be reused or recycled on-site, the contractor will identify opportunities for potential reuse off-site. Material and waste generated through construction will be stored safely and efficiently, prior either for reuse on site or removal. Any materials to be reclaimed / reused will be done so in accordance with the WRAP protocol.
The waste reports and records will be reviewed and audited periodically. They will be discussed with the Sustainability champion on site and the BREEAM assessor from time to time. At least 95% of excavation, demolition and construction waste will be diverted from landfill.

The contractor will take appropriate measures on site to further reduce the environmental impact of the construction. They will adopt the following:

- The contractor will register with the Considerate Constructor's Scheme and aim to attain a high score in all categories
- Energy efficient equipment, services and construction methods will be adopted to reduce energy consumption.
- Water use will be minimised during operation, installation and construction processes
- Energy including fuel and water use will be recorded on site during the construction process
- Measures will be put in place to mitigate the potential for pollution from the site to land, air or water including noise and dust
- The contractor will operate as per the guidelines set by ISO 14001 Environmental Management System (or an equivalent standard) and encourage the same throughout the supply chain
- Strategic planning will be done in advance to minimise transport to and from the site to reduce greenhouse gas emissions
- Carbon footprint of material transportation should be recorded through Key Performance Indicator (KPI) sheet provided by the BREEAM assessor.

For commercial waste generated in the building, the quantities of waste and recyclables will be monitored on a monthly basis by the contracted waste specialist, and the results collated by site management. Should there be any undue increase in the level of waste produced, this will be investigated where necessary to identify any specific cause and implement measures to minimise waste.

Although the developer does not have control over the quantum of recycling undertaken by the end user, the proposed arrangements will encourage the tenants to meet or exceed the municipal waste recycling target of 65% by 2030. This will be reviewed and enforced where possible as part of the waste monitoring.

For further information, please refer to Section 8 of the *Delivery, Servicing and Waste Management Plan*.

4.3 End of life strategy

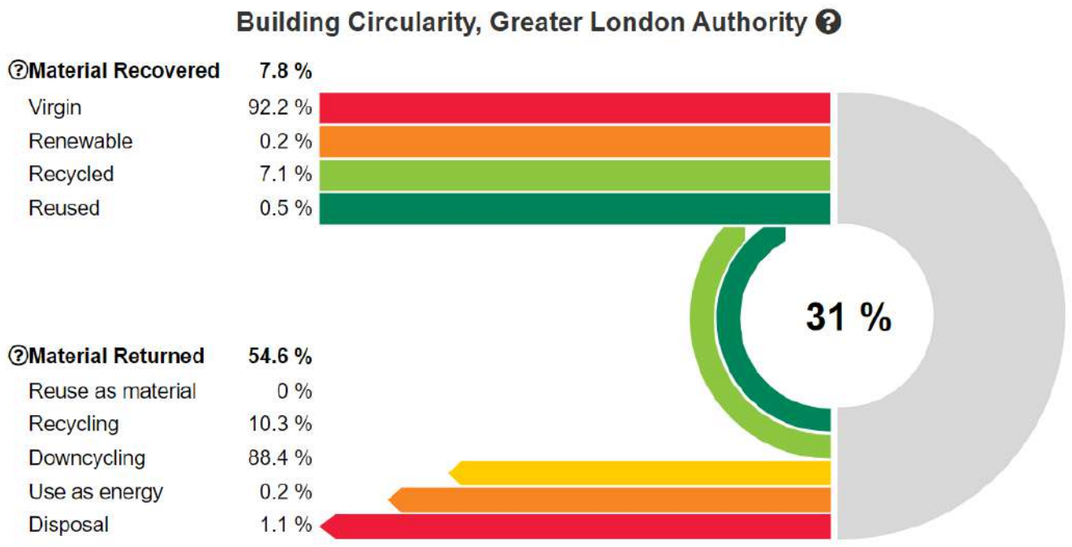
The One Click LCA Building Circularity tool was used to estimate the opportunity for returning the material at the end of life of the building. The results presented here are for the New City Court development based on the inputs used for the whole life carbon analysis of the development. The material quantity and specification inputs are in alignment with the bill of quantities prepared by the cost consultants, Alinea, for the cost plan of the development. Though, it is impossible to predict construction processes and minimum recycling rates in 60 years times but based on current practices and industry benchmarks applied by default by the One Click tool, a reasonable estimation can be done.

This building circularity is being mainly evaluated in terms of the mass of the recovered building material as compared to virgin material likely to be used in the building construction and the percentage of the material that can be returned to building construction at the end of life of the building.

Material Recovered
The calculation takes into account the reused, recycled and renewable materials to ascertain the mass of the recovered material as compared to virgin material. In the case of New City Court building the retained substructure has been taken account which is 10.9% of the total mass of the New City Court building. This was modelled on the basis of estimates provided by the structural engineer and specification of material that may have been used for new structural elements such as piles, raft, basement wall, columns etc.

The recycled content in steel, rebar, aggregates, as reported in Section 2.3, account for 24.1% of the total mass. As Ground Granulated Blast-furnace Slag (GGBS) is a by-product of iron manufacturing, it can neither be categorised as recycled or reused material. Following discussions with One Click LCA, this has been accounted under renewable material. With the proposed strategy the use of virgin material can be reduced to almost half of the building mass.

Material Returned
As mentioned earlier, it is impossible to predict the recycling rates in 60 years' time, however, it has been considered that at least current rates of recycling will be achievable in some cases e.g. steel. The rest of the inputs are based on industry benchmarks applied by the software. Through discussions with the demolition contractor at least 50% of concrete, bricks and masonry by mass are likely to be downcycled that is crushed and used as aggregate at the end of life. Thus, about 56% of the proposed building material can be returned to building construction.



5 Whole life carbon assessment

Whole Life Carbon (WLC) assessment has been carried out for the assessment in line with the new London Plan Policy SI2 for the proposed New City Court development. It has been undertaken in line with the widely accepted environmental performance assessment structure illustrated in EN 15978. The quantities and specifications were taken from the cost model prepared by the cost consultants, Alinea, last updated in July 2021.

The assessment includes life cycle stages: A1–A5, B1, B4, B6, B7, C1-C4; and has been done for 60-year life cycle. After a thorough search of existing literature, we are unable to identify any relevant assumptions or estimations for the B2/B3 emissions at this time. We have also enquired through One Click LCA if they are able to provide any high level assumptions on B2/B3 emissions, however they were also unable to provide such resources. Due to the limited data available, stages B2 and B3 were not included in this assessment.

Table 7 Whole Life-Cycle Embodied Carbon Assessment stages

Product Stage			Construction Process Stage		Use Stage							End-of-Life Stage				Benefits and loads beyond the system boundary		
Raw material supply	Transport	Manufacturing	Transport to building site	Installation into building	Use/application	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	D	D
x			x	x	x			x	x	x	x	x				x		

Description of the life cycle stages and analysis scope are provided in the table below:

Table 8 Description of the life cycle stages

Life cycle stage	Analysis scope
A1-A3 Construction Materials	Raw material supply (A1) includes emissions generated when raw materials are taken from nature, transported to industrial units for processing and processed. Loss of raw material and energy are also taken into account. Transport impacts (A2) include exhaust emissions resulting from the transport of all raw materials from suppliers to the manufacturer's production plant as well as impacts of production of fuels. Production impacts (A3) cover the manufacturing of the production materials and fuels used by machines, as well as handling of waste formed in the production processes at the manufacturer's production plants until end-of-waste state.
A4 Transportation to site	A4 includes exhaust emissions resulting from the transport of building products from manufacturer's production plant to building site as well as the environmental impacts of production of the used fuel.
A5 Construction/ installation process	A5 covers the exhaust emissions resulting from using energy during the site operations, the environmental impacts of production processes of fuel and energy and water as well as handling of waste until the end-of-waste state.
B4 Material replacement	The environmental impacts of material replacements (B4) includes environmental impacts from replacing building products after they reach the end of their service life. The emissions cover impacts from raw material supply, transportation and production of the replacing new material as well as the impacts from manufacturing the replacing material as well as handling of waste until the end-of-waste state.
B6 Energy use	The considered use phase energy consumption (B6) impacts include exhaust emissions from any building level energy production as well as the environmental impacts of production processes of fuel and externally produced energy. Energy transmission losses are also taken into account.
C1-C4 Deconstruction	The impacts of deconstruction include impacts for processing recyclable construction waste flows for recycling (C3) until the end-of-waste stage or the impacts of pre-processing and landfilling for waste streams that cannot be recycled (C4) based on type of material. Additionally, deconstruction impacts include emissions caused by waste energy recovery.
D External impacts/end-of-life benefits	The external benefits include emission benefits from recycling recyclable building waste. Benefits for re-used or recycled material types include positive impact of replacing virgin based material with recycled material and benefits for materials that can be recovered for energy cover positive impact for replacing other energy streams based on average impacts of energy production.

5.1 Results

Since at this stage, individual manufacturers EPDs are not available as yet, the current WLC analysis is based on typical materials database available on One Click LCA to give an indication of the expected performance. The concrete grades, steel grades, recycled content, etc. have been all discussed and agreed with the structural engineer. Please refer to Appendix 6.3 for the list of EPDs used.

Quantities provided from the cost consultant are based on Stage 1+ (Planning design) information. This information is very high level; therefore, the quantities are the same. The quantities provided do not allow for the following:

1. Contingency for the natural design evolution that will take place through the proceeding stages.
2. Items not currently drawn and therefore not quantifiable, e.g. temporary works, construction methodology driven works, secondary steel, upstands, plinths etc.
3. Items not fully coordinated and any discrepancies between documentation.
4. Wastage and ancillary item

The WLC study shows that the embodied carbon over the life cycle is 797 $kgCO_2/m^2$ which is less than the GLA's Aspirational WLC benchmark of 800 $kgCO_2e/m^2$ GIA.

The 'Assessment 1' results are based on SAP 10 carbon factors with Global Warming Potential (GWP) of electricity: 0.233 kg CO_2e/kWh. Assessment 2 illustrates the impact of predicted grid decarbonisation on the carbon emissions. The grid prediction is based on the 'Steady Progression' scenario for 2050. The GWP for this scenario is 0.061 kg CO_2e/kWh.

Embodied carbon figures broken down as per RICS categories are presented below. The detailed results can be found in Appendix 6.1 and 6.2.

Table 9 Assessment 1: Embodied carbon results with SAP 10 carbon factors

	Module A1-A5	Module B1-B5	Module B6-B7	Module C1-C4	Module D
Total kg CO_2e	30,552,754	9,611,100	82,909,030	768,841	-24,674,543
Total kg CO_2e/m^2 GIA	551	173	1495	14	-445

Table 10 Assessment 2: Embodied carbon results with grid decarbonisation

	Module A1-A5	Module B1-B5	Module B6-B7	Module C1-C4	Module D
Total kg CO_2e	30,471,827	8,527,455	26,195,240	768,291	-21,814,109
Total kg CO_2e/m^2 GIA	549	154	472	14	-393

5.2 Actions and opportunities to reduce Embodied carbon

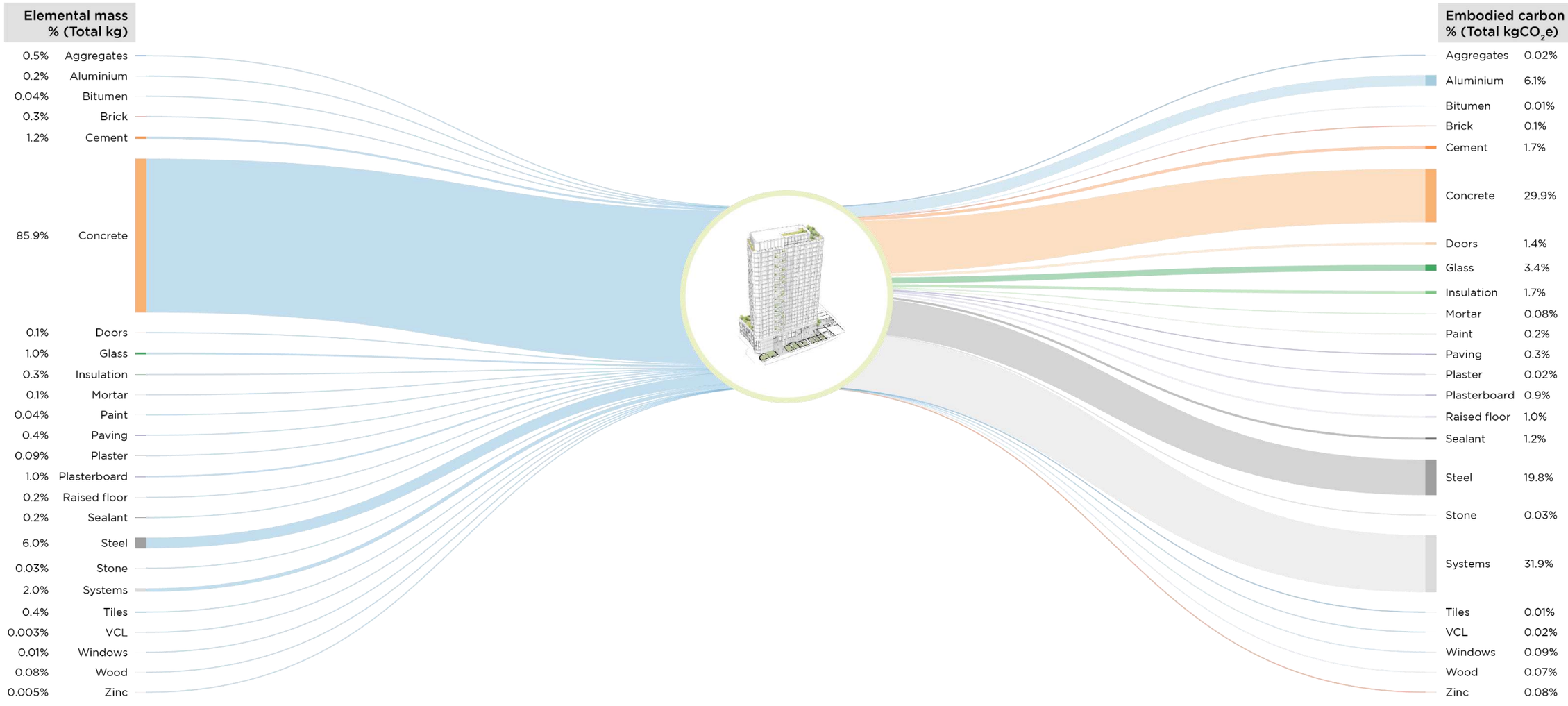
At the outset of the project GLA's WLC template with 16 principles of design was discussed and the strategies were shortlisted. This is presented in the submitted GLA spreadsheet. Following those principles, the key steps that have been taken to reduce the whole life carbon for New City Court include:

- The operational energy has been minimised following the London Plan's Energy Hierarchy such that 49% of the improvement can be achieved over Part L target. More detail can be found in the Energy Statement.
- The existing basement is being retained and reused.
- The GGBS content in concrete has been increased from 25% to 50% for piling, 75% for raft slab.
- PT slabs have been used instead of composite metal deck and steel columns.

Opportunities

To investigate further opportunities for reducing the embodied carbon of the scheme, an investigation of elemental mass vs. embodied carbon was carried out. Please refer to the Sankey diagram for the outcome of the analysis. The elements contributing the most are concrete, steel and aluminium. Therefore, a material interventions matrix has been populated with options to reduce the use of these elements which will be further investigated at the detailed design stage. These options are as below:

- Potential for recycled aluminium. Currently, it is understood that there is shortage of recycled aluminium in the supply chain. The maximum which may be considered is 20%, however, that cannot provide significant reduction in embodied carbon.
- 70% GGBS may be considered to replace cement. However, this can significantly increase the curing time and therefore the construction programme. Therefore, this option needs to be further investigated along with offsite construction.
- Structural load reduction may be considered. It is understood that a reduction of as small as 0.5kPa can lead to significant cost and carbon savings.



6 Appendices

6.1 Appendix 1 – Assessment 1 – WLC SAP 10 scenario

Submitted separately as a standalone spreadsheet.

6.2 Appendix 2 – Assessment 2 – WLC grid decarbonisation scenario

Submitted separately as a standalone spreadsheet.

6.3 Appendix 3 – EPD sources

Resource name	Manufacturer	EPD program	EPD number	Environment Data Source	Standard	Verification	Year	Country	Upstream database
Aggregate (crushed gravel), generic, dry bulk density		One Click LCA	-	One Click LCA	EN15804+ A1	Internally verified	2018	LOCAL	ecoinvent
Air handling unit, with heat recovery through plate heat exchanger		One Click LCA	-	One Click LCA	EN15804	Internally verified	2019	LOCAL	ecoinvent
Aluminium framed glazed doors, double glazed, per unit	Optima	International EPD System	S-P-00480	EPD Aluminium Framed Glazed Doors	EN15804+ A1	Third-party verified (as per ISO 14025)	2017	unitedKingdom	ecoinvent
Aluminium mullion-transom system		OKOBAUDAT	-	Oekobau.dat 2020-II	EN15804+ A1	Third-party verified (as per ISO 14025)	2020	germany	GaBi
Autoclaved aerated concrete block	Forterra	BRE	BREG EN EPD000001	EPD Thermalite Autoclaved Aerated Concrete Block (470-770 kg/m3), Forterra Building Products Ltd 2016	EN15804+ A1	Third-party verified (as per ISO 14025)	2016	unitedKingdom	ecoinvent
Bricks	Wienerberger	IBU	EPDWIE-20130206-IAB1EN	Bricks Wienerberger AS	EN15804+ A1	Third-party verified (as per ISO 14025)	2014	germany	GaBi
Ceramic floor tile	Mosa	MRPI	11.1.0001.004	EPD Vloertegelcollectie Koninklijke Mosa	EN15804+ A1	Third-party verified (as per ISO 14025)	2013	unitedKingdom	ecoinvent
Clay plaster		OKOBAUDAT	-	Oekobau.dat 2020-II	EN15804+ A1	Third-party verified (as per ISO 14025)	2020	germany	GaBi
Coated (sub-face) preweathered rolled zinc, sheets and coils	VM	BRE	BREG EN EPDR00031	EPD COATED (on the sub-face) PREWEATHERED ROLLED ZINC – QUARTZ ZINC PLUS® and ANTHRA ZINC PLUS	EN15804+ A1	Third-party verified (as per ISO 14025)	2018	france	GaBi
Concrete block wall, with high density solid blocks, per m2 of wall including mortar		ICE	-	ICE database August 2019, V3.0	EN15804+ A1	Self declared	2019	unitedKingdom	-
Concrete block wall, with medium density solid blocks, per m2 of wall including mortar		ICE	-	ICE database August 2019, V3.0	EN15804+ A1	Self declared	2019	unitedKingdom	-
Concrete sealant, generic		One Click LCA	-	One Click LCA	EN15804+ A1	Internally verified	2018	LOCAL	ecoinvent
Cooling tower	MDEGD	INIES	INIES_DTOU20190919_144524, 12449	MDEGD_FDES	EN15804+ A1	Third-party verified (as per ISO 14025)	2019	france	ecoinvent
District heat distribution center		One Click LCA	-	One Click LCA	EN15804	Internally verified	2019	LOCAL	ecoinvent
Double glazing windows with wooden frame	INSTITUT TECHNOLOGIQUE FCBA	INIES	INIES_CFEN20200421_091527, 16412	FDES	EN15804+ A1	Third-party verified (as per ISO 14025)	2020	france	ecoinvent
Dried lumber from spruce or pine wood	Puutuoteteollisuus	RTS	RTS_27_19	RTS EPD YMPÄRISTÖSELOSTE, nro. RTS_27_19 Suomalainen kuivattu sahatavara kuusi- tai mäntypuusta	EN15804+ A1	Third-party verified (as per ISO 14025)	2019	finland	ecoinvent
EPS insulation panels for flooring, pavement and slabs	SINIAT	INIES	INIES_IUNI20180504_101133, 8252	FDES	EN15804+ A1	Third-party verified (as per ISO 14025)	2018	france	ecoinvent
Electricity distribution system, cabling and central, for all building types		One Click LCA	-	One Click LCA	EN15804	Internally verified	2019	LOCAL	ecoinvent
Emulsion matt paint for allround interior use	Dulux Trade	MRPI	1.1.00023.2017	EPD Dulux Trade Supermatt	EN15804+ A1	Third-party verified (as per ISO 14025)	2017	unitedKingdom	ecoinvent
Excavation works	Required for IMPACT calculations	One Click LCA	-		EN15804	Internally verified	2013	unitedKingdom	ecoinvent
Exterior lighting, casings embedded in the ground or walls	MDEGD	INIES	INIES_DLUM20191220_142649, 13604	MDEGD_FDES	EN15804+ A1	Third-party verified (as per ISO 14025)	2019	france	ecoinvent
External wood door, 2,1 x 1 m		One Click LCA	-	OneClickLCA	EN15804+ A1	Internally verified	2011	LOCAL	ecoinvent
Fibre cement sheets	Rieder	UL Environment	4789090717.101.1	EPD concrete skin, öko skin and formparts	EN15804+ A1	Third-party verified (as per ISO 14025)	2019	germany	GaBi
Flexible bitumen membrane/sheets for roof waterproofing, European average	European Waterproofing Association	International EPD System	S-P-00414	EPD Flexible Bitumen Sheets For Roof Waterproofing sector EPD	EN15804+ A1	Third-party verified (as per ISO 14025)	2016	europe	GaBi
Floor screed mortar, cement screed	quickmix Gruppe GmbH & Co. KG	IBU	EPD-QMX-20160208-IBC1-DE	Oekobau.dat 2017-I, EPD Mineralische Werkmörtel: Estrichmörtel Zementestrich quickmix Gruppe GmbH & Co. KG	EN15804+ A1	Third-party verified (as per ISO 14025)	2014	germany	GaBi
Glass wool insulation		One Click LCA	-	One Click LCA	EN15804+ A1	Internally verified	2018	LOCAL	ecoinvent

Resource name	Manufacturer	EPD program	EPD number	Environment Data Source	Standard	Verification	Year	Country	Upstream database
panels, unfaced, generic									
Gypsum plaster	Bundesverband der Gipsindustrie	IBU	EPD-BVG-20140073-IAG1-DE	Oekobau.dat 2017-I, EPD GIPSPUTZ Bundesverband der Gipsindustrie e.V.	EN15804+A1	Third-party verified (as per ISO 14025)	2014	germany	GaBi
Gypsum plaster board, regular, generic		One Click LCA	-	One Click LCA	EN15804+A1	Internally verified	2018	LOCAL	ecoinvent
Heat distribution piping network, per m2 heated area, all building types		One Click LCA	-	One Click LCA	EN15804	Internally verified	2019	LOCAL	ecoinvent
Heat distribution system		One Click LCA		One Click LCA generic construction definitions				LOCAL	Ecoinvent
Insulation, EPS solid foam, for ceilings, floors and perimeter insulation	IVH	IBU	EPD-IVH-20140139-IBB1-DE	Oekobau.dat 2017-I, EPD EPS-Hartschaum (Styropor ®) für Decken/Böden und als Perimeterdämmung B/P-035 Industrieverband Hartschaum e.V.	EN15804+A1	Third-party verified (as per ISO 14025)	2015	germany	GaBi
Interior wooden door, with wooden frame	Fédération de l Industrie Bois Construction	INIES	INIES_CBLO 20190722_112115, 11194	FDES	EN15804+A1	Third-party verified (as per ISO 14025)	2019	france	ecoinvent
Laminated safety glass	Guardian Europe	ift Rosenheim	EPD-GFEV-GB-19.0	EPD Uncoated flat glass, laminated safety glass and coated flat glass Guardian Europe S.à.r.l.	EN15804+A1	Third-party verified (as per ISO 14025)	2016	germany, luxembourg, poland, spain, unitedKingdom	GaBi
Lightweight concrete block, with expanded clay aggregate, generic		One Click LCA	-	One Click LCA	EN15804+A1	Internally verified	2018	LOCAL	ecoinvent
Manhole, reinforced concrete		One Click LCA		Adjusted data based on the specifications of the Swedish Transport Administration (Trafikverket).				LOCAL	Ecoinvent
Masonry cavity wall with partial fill and aircrete block + plasterboard inner leaf, U-value 0.25		One Click LCA		Part L 2016				unitedKingdom	Other
Masonry mortar, light	quick-mix	IBU	EPD-QMX-20150010-IBC1-DE	EPD Mineralische Werkmörtel: Mauermörtel Leichtmauermörte	EN15804+A1	Third-party verified (as per ISO 14025)	2015	germany	GaBi

Resource name	Manufacturer	EPD program	EPD number	Environment Data Source	Standard	Verification	Year	Country	Upstream database
				l quickmix Gruppe GmbH & Co. KG					
Natural stone kerbs, per meter	EURO-ROC	IBU	EPD-EUR-2013253-CBG1-EN	EPD Tiles and Slabs from natural stone EURO-ROC	EN15804+A1	Third-party verified (as per ISO 14025)	2014	europe	GaBi
Particleboard, uncoated	Sonae Indústria	IBU	EPD-SON-20160209-IBA1-EN	EPD	EN15804+A1	Third-party verified (as per ISO 14025)	2016	germany, portugal, southAfrica, spain, canada	ecoinvent
Photovoltaic Façade panels	MDEGD	INIES	INIES_DPAR 20180829_143232, 8583	MDEGD_FDES	EN15804+A1	Third-party verified (as per ISO 14025)	2018	france	ecoinvent, ELCD
Pipesystem, hot and cold water supply, PEX/Alu/PEX, per m2 GFA		One Click LCA	-	Ruuska et al. 2013. Rakennusmateriaalien merkitys rakentamisen ympäristövaikutusten kentässä. VTT.	EN15804	Internally verified	2016	LOCAL	GaBi
Planed timber, conifer	Treindustrien	EPD Norge	NEPD-308-179-EN	Structural timber of spruce and pine, Norwegian Wood Industry Federation	EN15804+A1	Third-party verified (as per ISO 14025)	2015	norway	ecoinvent
Plywood, generic		One Click LCA	-	One Click LCA	EN15804+A1	Internally verified	2018	LOCAL	ecoinvent
Precast concrete paving products	BPCF	IBU	EPD-BPC-20170094-CCD1-EN	EPD UK Manufactured 1 tonne of Generic Precast Concrete Paving Products (Blocks, Slabs, Channels and Kerbs) Produced by members of Interpave a product group of British Precast	EN15804+A1	Third-party verified (as per ISO 14025)	2017	unitedKingdom	GaBi
Precast concrete stairs	thomas betonbauteile	IBU	EPD-THO-20200205-IBD1-DE	EPD Treppen thomas betonbauteile	EN15804+A1	Third-party verified (as per ISO 14025)	2020	germany	GaBi
Prestressed steel for concrete reinforcement in strands (PC-strand)	Siderurgica Latina Martin	Kiwa BCS	EPD-SLM-081-EN	EPD PC Strand	EN15804+A1	Third-party verified (as per ISO 14025)	2020	italy	ecoinvent
Raised access flooring system	Kingspan	International EPD System	S-P-00797	EPD Kingspan RG2 Europed	EN15804+A1	Third-party verified (as per ISO 14025)	2016	unitedKingdom	ecoinvent
Ready-mix concrete, high-strength, generic		One Click LCA	-	One Click LCA	EN15804+A1	Internally verified	2018	LOCAL	ecoinvent
Ready-mix concrete, low-strength, generic		One Click LCA	-	One Click LCA	EN15804+A1	Internally verified	2018	LOCAL	ecoinvent

Resource name	Manufacturer	EPD program	EPD number	Environment Data Source	Standard	Verification	Year	Country	Upstream database
Ready-mix concrete, normal strength, generic		One Click LCA	-	One Click LCA	EN15804+A1, EN15804+A2	Internally verified	2020	LOCAL	ecoinvent
Ready-mix concrete, normal-strength, generic		One Click LCA	-	One Click LCA	EN15804+A1	Internally verified	2018	LOCAL	ecoinvent
Ready-mix concrete, normal-strength, generic		One Click LCA	-	One Click LCA	EN15804+A1	Internally verified	2018	LOCAL	ecoinvent
Red brick, average production, UK	The Brick Development Association	BRE	BREG EN EPD000002	EPD BDA generic brick, The Brick Development Association 2015	EN15804+A1	Third-party verified (as per ISO 14025)	2015	unitedKingdom	ecoinvent
Reinforcement steel (rebar)	BRC	-	-	Environmental product declaration (EPD) report of fabricated steel products produced in the UK by Eco-Reinforcement members	EN15804+A1	Third-party verified (as per ISO 14025)	2019	unitedKingdom	ecoinvent
Reinforcement steel (rebar), generic		One Click LCA	-	One Click LCA	EN15804+A1	Internally verified	2018	LOCAL	ecoinvent
Revolving door, per unit	ASSA ABLOY	IBU	EPD-ASAB-20151118-IBA1-EN	EPD ASSA ABLOY RD300-4, Revolving door	EN15804+A1	Third-party verified (as per ISO 14025)	2015	czechRepublic	GaBi
Rock wool insulation panels, unfaced, generic		One Click LCA	-	One Click LCA	EN15804+A1	Internally verified	2018	LOCAL	ecoinvent
Rock wool/mineral wool insulation	Knauf	BRE	BREG EN EPD000097	EPD Rock Mineral Wool Insulation 106 -160 kg/cu.m, Knauf Insulation 2016	EN15804+A1	Third-party verified (as per ISO 14025)	2016	unitedKingdom	ecoinvent
Roof slate		OKOBAUDAT	-	Oekobau.dat 2020-II	EN15804+A1	Third-party verified (as per ISO 14025)	2020	germany	GaBi
Rubber underlayment, for acoustic insulation under screed layer	Scan Underlay	EPD Danmark	MD-19007-DA	MD-19007-DA Scan Underlay Production ApS	EN15804+A1	Third-party verified (as per ISO 14025)	2019	denmark	GaBi
Self levelling mortar, for floors, walls and overhead appl.	PCI Augsburg	IBU	EPD-PCI-20160262-IBE1-DE	Oekobau.dat 2017-I, EPD Ausgleichsmörtel PCI Pericret für Boden, Wand und Decke PCI Augsburg GmbH	EN15804+A1	Third-party verified (as per ISO 14025)	2016	germany	GaBi
Sewage water drainage piping network, per m2 GIFA		One Click LCA	-	One Click LCA	EN15804	Internally verified	2019	LOCAL	ecoinvent

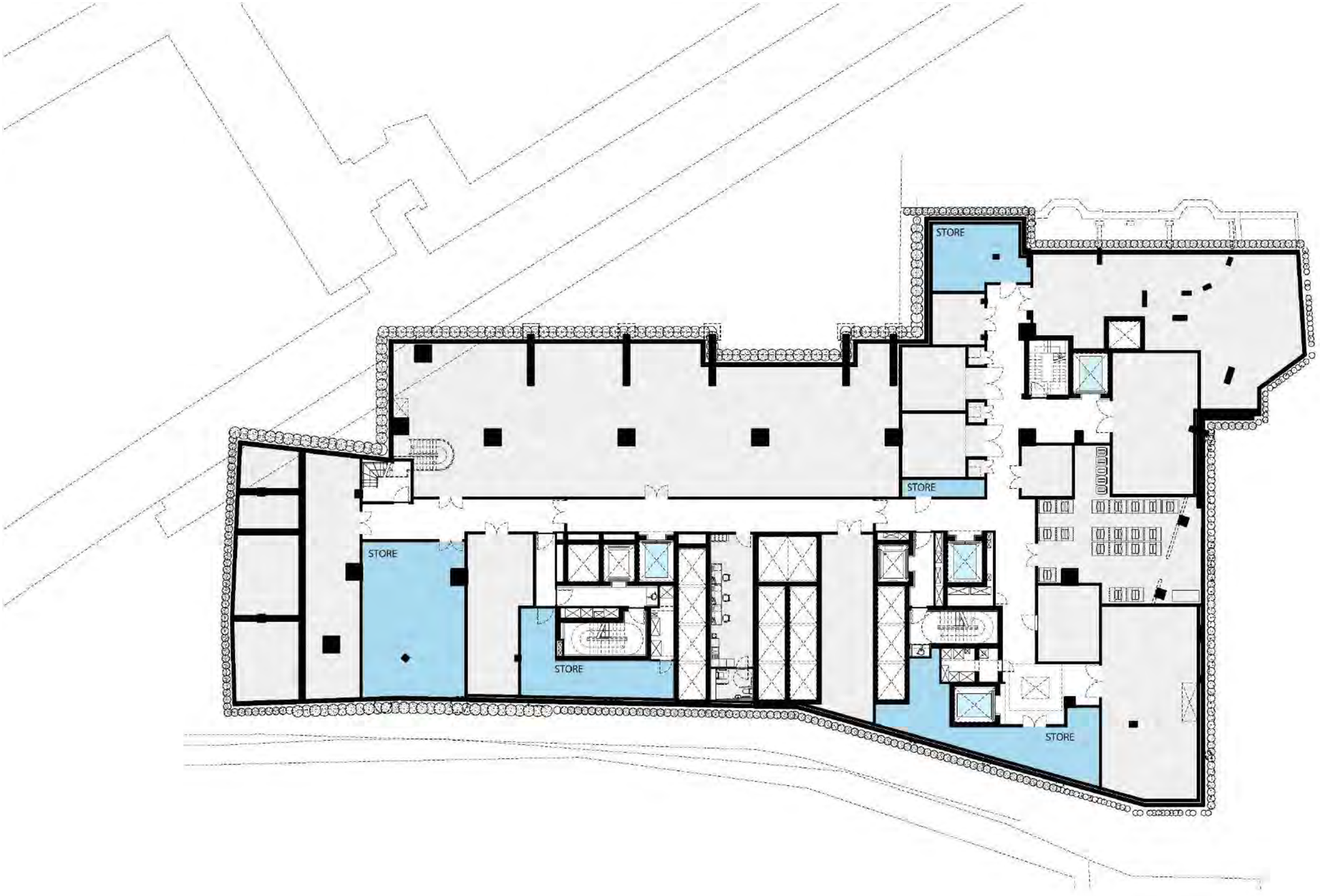
Resource name	Manufacturer	EPD program	EPD number	Environment Data Source	Standard	Verification	Year	Country	Upstream database
(residential buildings)									
Soil, compacted dry density		One Click LCA	-	LCA for site construction products, OneClickLCA 2012	EN15804	Internally verified	2020	LOCAL	ecoinvent
Solar panel photovoltaic system, EU average		One Click LCA	-	One Click LCA	ISO14040	Internally verified	2015	LOCAL	ecoinvent
Stainless steel bicycle rack	MINISTERE DE L'ENVIRONNEMENT, DE L'ENERGIE ET DE LA MER - MINISTERE DU LOGEMENT ET DE L´HABITAT DURABLE	INIES	INIES_DRAT 20200616_135407, 18619	MDEGD_FDES	EN15804+A1	Third-party verified (as per ISO 14025)	2020	france	ecoinvent
Stainless steel handrail	MDEGD	INIES	INIES_DMAI 20180529_140740, 8288	MDEGD_FDES	EN15804+A1	Third-party verified (as per ISO 14025)	2018	france	ecoinvent
Stainless steel wall covering sheets	Construction Specialties (CS)	NSF	EPD10475	EPD Stainless Steel Wall Covering Sheets	ISO14040	Third-party verified (as per ISO 14025)	2020	pennsylvania, USA	GaBi
Steel sheets, generic		One Click LCA	-	One Click LCA	EN15804+A1	Internally verified	2018	LOCAL	ecoinvent
Steel stud internal wall assembly, 100 mm, incl. mineral wool insulation		One Click LCA		One Click LCA generic construction definitions				europe	Other
Structural steel profiles, generic		One Click LCA	-	One Click LCA	EN15804+A1	Internally verified	2018	LOCAL	ecoinvent
Structural steel profiles, generic		One Click LCA	-	One Click LCA	EN15804+A1	Internally verified	2018	LOCAL	ecoinvent
Surveillance camera, French average	MDEGD	INIES	INIES_DEQU20161116_164440, 5662	MDEGD_FDES	EN15804+A1		2016	france	ecoinvent, ELCD
Top hung casement wooden window	Mumford & Wood	BRE	BREG EN EPD 000160	EDP Conservation casement windows	EN15804+A1	Third-party verified (as per ISO 14025)	2017	unitedKingdom	ecoinvent
Ventilation ducting		One Click LCA	-	One Click LCA	EN15804	Internally verified	2019	LOCAL	ecoinvent
Ventilation system for office and care buildings		One Click LCA		One Click LCA generic construction definitions				LOCAL	Ecoinvent
Wastewater drainage system		One Click LCA		One Click LCA generic construction definitions				LOCAL	Ecoinvent

Resource name	Manufacturer	EPD program	EPD number	Environment Data Source	Standard	Verification	Year	Country	Upstream database
Water chiller, HVAC, French average	MDEGD	INIES	INIES_DGRO20161116_164444, 5665	MDEGD_FDES	EN15804+A1		2016	france	ecoinvent, ELCD
Water circulation radiator		One Click LCA	-	One Click LCA	EN15804	Internally verified	2019	LOCAL	ecoinvent
Water-borne interior paints	Teknos	RTS	RTS_14_18	EPD RTS EPD, Water-borne interior paints	EN15804+A1	Third-party verified (as per ISO 14025)	2018	finland, OCLEPD	ecoinvent
Weathering pre-finished steel profile	SAB-profiel, Tata Steel Europe	TATA Steel	EPD-TS-2020-009	EPD SAB 35/1035 wall profile	EN15804+A1	Third-party verified (as per ISO 14025)	2020	netherlands, unitedKingdom	GaBi
Window system, with aluminum composite profile framing, single glazed	Schüco	IBU	EPD 2082-6-201903-20190402075452-EN	EPD Schüco AWS/ADS 50.NI W x H: 6700 mm x 2380 mm for project: 12500 Herbarium - Item: V1-Vinmonopolet Schüco International KG Created by: AS Rubicon	EN15804+A1	Third-party verified (as per ISO 14025)	2019	germany	GaBi
Wooden joist floor assembly		One Click LCA		One Click LCA generic construction definitions				europe	Other
Wooden stud internal wall assembly, 100 mm, incl. mineral wool insulation		One Click LCA		One Click LCA generic construction definitions				europe	Other

6.4 Appendix 4 – Areas for storage

Level B1

Level B2



6.5 Appendix 5 – Pre-demolition audit

New City Court

Pre-demolition Audit

July 2021

Revision No	Date	Description	Amended by	Issued to
T00	26/04/21	Pre-demolition Audit T00 Draft for comment	LT	Nicola Gautrey
T01	08/07/21	Pre-demolition Audit T01	LT	Nicola Gautrey
T02	16/07/21	Pre-demolition Audit T02	LT	Nicola Gautrey

Contents

Appendices

Glossary of Terms

CEMP	Construction Environmental Management Plan
D&CMP	Demolition and Construction Management Plan
FM	Facilities Management
HE	Historic England
LUL	London Underground LTD
CoL	City of London
MOLA	Museum of London Archaeology
NG	National Grid PLC
NwR	Network Rail
PCSA	Pre-Construction Services Agreement
PD	Principal Designer under CDM 2015 regulations
PMS	Project Milestone schedule
RFP	Request for Proposal
TFL	Transport for London
UKPN	UK Power Networks
WSI	Written Scheme of Investigation
RMP	Resource Management Plan
D&CMP	Demolition and Construction Management Plan
FM	Facilities Management
LBoS	London Borough of Southwark

1 Executive Summary

1.1. Cantillon Limited have been invited by Gardiner & Theobald LLP on behalf of GPE to offer a proposal to undertake a pre demolition audit to inform the Clients circular economy and to meet BREEAM requirements.

1.2. The purpose of the audit is to identify and quantify where possible the key materials present within the existing buildings, and to further identify the potential recycling or reuse strategy to assist the Client decision making process in respect to the proposed development.

1.3. This document provides our response to provide a consultancy service to undertake a Pre-demolition Audit for a potential redevelopment on St Thomas Street composing of buildings on the site known as New City Court.

1.4. The audit has been carried out at the Concept Design Stage prior to strip-out or demolition works in order to use the audit results to guide the design, consideration of materials that can be reused, and to set targets for waste management and ensure all Contractors are engaged in the process of maximising high-grade reuse and recycling opportunities.

1.5. This report sets out the findings of the pre-demolition audit and recommendations for opportunities, contained within.

1.6. This audit has been carried out by a competent person who has appropriate knowledge of buildings, waste and options for the reuse and recycling of different waste streams.

2 Location Map

New City Court – Site Location

3 Scope

3.1 Complete a pre-demolition audit of any existing buildings, structures or hard surfaces being considered for demolition. This must be used to determine whether refurbishment or reuse is feasible and, in the case of demolition, to maximise the recovery of material for subsequent high grade or value applications. The audit must cover the content of Pre-demolition audit scope and:

i) Be carried out at Concept Design stage (RIBA Stage 2) by a competent person (see Definitions) prior to strip-out or demolition works

ii) Guide the design, consider materials for reuse and set targets for waste management

iii) Engage all contractors in the process of maximising high-grade reuse and recycling opportunities

3.1. Make reference to the audit in the resource management plan (RMP) (see Definitions).

3.2. Compare actual waste arisings and waste management routes used with those forecasts and investigate significant deviations from planned targets.

3.3. The audit must cover the following content

i) Identification and quantification of the key materials where present on the project

iv) Potential applications and any related issues for the re-use and recycling of the key materials in accordance with the waste hierarchy

v) Opportunities for reuse and recycling within the same development

vi) Identification of local re-processors or recyclers for recycling materials

vii) Identification of overall recycling rate for all key materials

viii) Identification of reuse targets where appropriate

ix) Identification of overall landfill diversion rate for all key materials

4 Limitations of the Audit

4.1. Cantillon subsequently arranged site visits during the week commencing 22nd March and site was accessed on the 26th March. Cantillon were able to achieve access within the occupied buildings to undertake a visual, non-destructive survey.

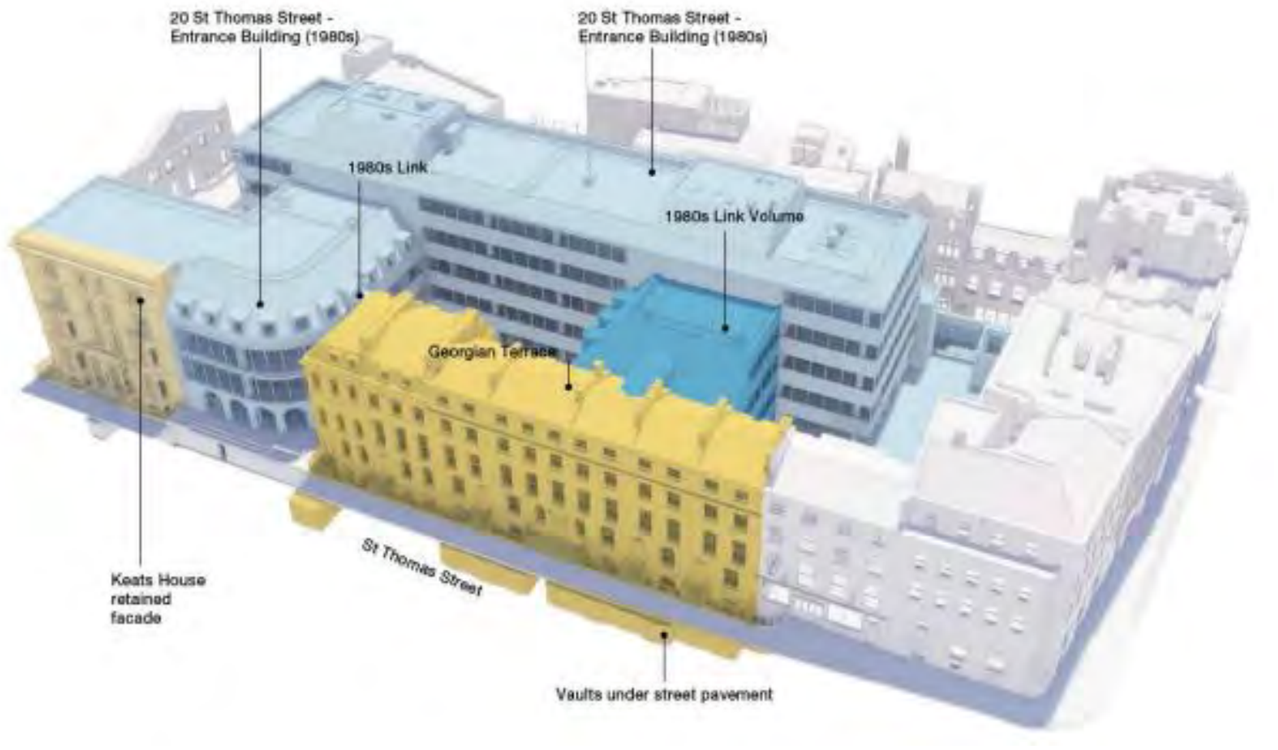
4.2. It should be noted, that due to the limitations of the inspection, it was not possible to access all areas or to inspect live and operational plant and equipment

4.3. During the site visit Cantillon were able to access the majority of the New City Court building and the joining Georgian Terrace.

4.4. On the 6th April Cantillon returned for a second site visit.

4.5. Assumptions have been made in respect to the structure, without further construction data.

4.6. All estimates are based on drawings sent from Allford Hall Monaghan Morris Architects Ltd Cantillons site visit and previous specialist demolition and engineering experience.



5 Identification of Key Materials

5.1 Elemental Building Components

5.1.1. To undertake a pre-demolition audit of the existing site buildings to determine the primary materials that would be site won from the demolition and or refurbishment process.

5.1.2. The audit must take account of any existing buildings, structures or hard surfaces being considered for demolition.

5.1.3. The identification of materials should be used to determine whether refurbishment or re-use is feasible and in the case of demolition, to maximise the recovery of materials for subsequent high grade or value applications.

5.1.4. The following report section, identifies general building components used within the construction of the existing buildings and their likely make up.

5.2 Existing Structure

5.2.1. From the site inspection, some key elements have been established in terms of the method and type of construction, but without further investigation, assumptions have been made as to typical construction depths and thickness measurements where possible.

5.2.2. The key components are as follows:

Basement Slab and Foundations

5.2.3. Existing retaining walls are generally exposed and appear to be RC in form.

5.2.4. From inspection, the basement slab is an RC construction, we would assume to be c.250mm thick. Further evidence would be required to be produced to assess these in a pre-demolition audit.

5.2.5. The concrete materials could conceivably be recovered during the demolition process and possibly be reintegrated within permanent construction as a primary aggregate replacement.

Block work construction

5.2.6. Within the basement levels of New City Court generally, the predominant building materials to form plant space partitions are thermalite concrete blocks, measuring 140mm thick, constructed full height within the frame. This is unlikely to present circular economy reuse potential, but good recycling opportunities.

Fig. 1 Evidence of dense block wall construction within basement plant areas in New City Court

5.3 Internal Fabric

Raised Access Flooring

5.3.1. There is a significant amount of raised access flooring in widespread use on the project. From our site visit Cantillon identified two styles of Raised Access Flooring. The first type identified on the majority of floors of New City Court and the Georgian Terraces was a newer silver style. A further invasive survey would be needed to lift the floor up and identify the make and brand of the flooring.

5.3.2. The second style was and older raised access flooring with four screws in each panel. This is an older style and does not have circular economy opportunities. These were largely found on Level 02 in the New City Court building.

5.3.3. There are companies who specialise in the re-use of raised access flooring, subject to being in good condition and being of the right age and quality. This can be attained through early site access to lift panels to assess the form and make up.

Fig. 2 Example of two types of Raised Access Flooring found in the building. (Left – Level 02 New City Court. Right – Georgian Terrace)

5.3.4. Old tiles with a plaster type or cementitious fill with a dimpled soffit are generally not able to be re-used and would almost certainly be sent for recycling.

5.3.5. Cantillon would require a further intrusive site visit to understand and confirm the types of raised access flooring that is throughout the building. This will enable us to confirm the amount that can be reused or recycled.

5.3.6. Many buildings have different styles of raised access flooring so full access of all areas would be required in order to give an accurate estimation of the reuse/recycle possibilities. Flooring when taken up for re-use present a logistical challenge when recovering large quantities, as there are a limited number that can be stacked on a pallet, meaning that a significant number of pallets need to be used and transported down in the existing lifts.

Carpet Tile Flooring

5.3.7. There is a high volume of carpet tiles in the two buildings ranging from poor to high quality. The basement and stair carpet coverage are of generally poor quality and would need to be recycled, rather than re-used. However, from the ground to the fourth floor the carpet is generally very good quality and would not look out of place in a new building.

Fig. 3 Example of good carpet tiles, that will have reuse opportunities. (Left –New City Court. Right – Georgian Terrace)

5.3.8. Carpet Tiles that are worn or stained are unable to be re-used, so would have to be recycled. The carpet tiles on the lower ground floor of the Georgian Terraces were notably worn, therefore limiting the reuse of these in an existing or future development.

5.3.9. Carpet tiles if recovered for re-use need to be carefully protected from dirt and water and palletised, so ideally these are removed at an early stage prior to heavy works commencing.

Suspended Ceilings

5.3.10. Generally, on the floors of both buildings, the site visit has shown there to be large use of suspended ceilings on all office areas, forming the ceiling void, where services will be located above. Predominantly these are perforated and pressed steel in appearance.

5.3.11. Suspended ceiling tiles can have a life cycle of around 10 years. They can soon become warp, brittle and even break. There are a range of different companies that offer a quick and no hassle recycle service.

5.3.12. Taking them down, storing and removal from site, presents further risk of damage and therefore generally impractical to reuse in its original form.

5.3.13. To date there have been limited opportunities to reuse large areas of suspended ceilings, but certainly on smaller scale it may be possible to reuse some, but the majority would be separated into the relevant waste stream and recovered as a recycled material.

Fig. 4 Light steel suspended tiles on the fourth floor in New City Court.

5.3.14. However, on the second floor a large area of the Runway East office has removed the suspending ceiling tiles and the services are bare to see.

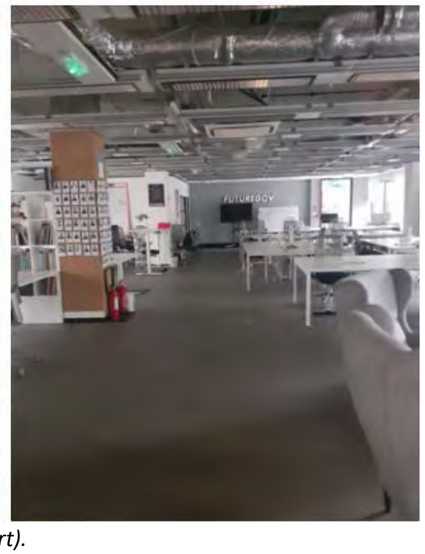


Fig. 5 Bare ceiling on level two, Runway East (New City Court).

Non-loadbearing Lightweight Partitions

5.3.15. Within New City Court the majority of the non-load bearing lightweight partitions are on the office areas between ground and fifth floor. There is a small amount in the basement and none on the roof. These would generally be recycled as once removed are not always suitable for reuse.

5.3.16. We assume the non-loadbearing lightweight partitions to be 12.5mm thick, decorated plasterboard lining either side of a timber stud, with 100mm insulation.

5.3.17. Gypsum products will certainly be separated and sent back into a re-processing stream, where the gypsum will be used to form new plasterboard products. The paper will also be re-processed to use as a new product.

5.3.18. Take back schemes such as those offered by British Gypsum only recover off cuts and unused boards from new boards and not materials recovered that have been decorated, i.e. existing partitions.

Furniture and Equipment

5.3.19. No confirmation at this time has been given on which furniture is to be removed by tenants in both properties at the end of their lease. Cantillon can give an overview on the opportunities to reuse and recycle the furniture, fitouts and equipment once this is confirmed.

5.3.20. Both buildings are furnished to a high level, with the majority of the furniture and equipment looking as new. Particular the kitchen/communal areas, in the New City Court building. These could be re-used on current/future developments.

5.3.21. Office desks and chairs etc. can also be reused in this or other projects and there are specific companies who specialise in assessing these and will take and reuse where the furniture is of good quality, but not all furniture is acceptable. Where not, then these can be sent for recycling.

5.3.22. There are plenty of decorative furniture throughout the buildings that would of interest for reuse in other buildings. These include; dart boards, massage chairs, swing chairs and sofas.

Applied Hard Surfaces (eg: Tiling)

5.3.23. Generally, the front of house entrance flooring in New City Court has been tiled using good quality ceramic tiles, but it is not considered viable to reuse these materials given the challenge of removal.

5.3.24. High quality natural stone such as limestone, could conceivably be recovered and in some cases be reconstituted into terrazzo materials, but from the visit, these were not particularly evident / large areas.

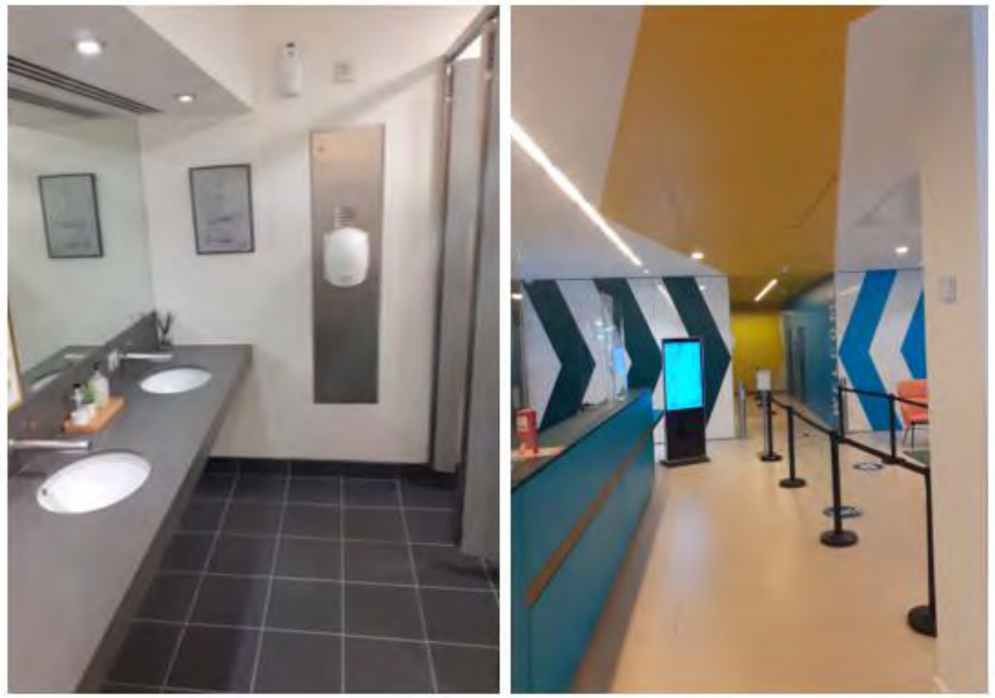


Fig. 6 Ceramic Tiles in the toilet areas and ground floor reception of New City Court.

5.3.25. The tiles in the bathroom and shower areas are ceramic and in good condition, along with the amenities such as the toilets, sinks and showers. Similarly, these would be recovered as a recyclable material only.

Vinyl Flooring

5.3.26. The majority of the communal office hallway floor areas are finished with a 2mm thick vinyl floor layer.

5.3.27. The floor areas of the accessed bathroom areas of the Georgian terraces were vinyl floored.

5.3.28. Vinyl floor can be reused but careful removal has to be taken to ensure no damage to the floor.

Fig. 7 Vinyl flooring on the majority of the building's hallway areas. (Right – New City Court. Left – Georgian Terrace)

5.3.29. When recycled, the granules offer the same properties and deliver the same performance as virgin raw materials, conserving natural resources and creating a lower impact on the environment, compared to using virgin raw materials.

Glazed Partitions

5.3.30. There is a significant amount of partitioning using glazing throughout both buildings. The clear float glass office partitions are a nice feature but again subject to inspection on whether these have been laminated, there is the opportunity to reuse on this or other projects.

5.3.31. Recovery of large glazed panels can be challenging due to the weight for handling and relative access constraints using lifts, which are limited. If these are to be reused, inspections should take place early and the Client press on ahead of the demolition process to achieve the time frame necessary to maximise reuse.

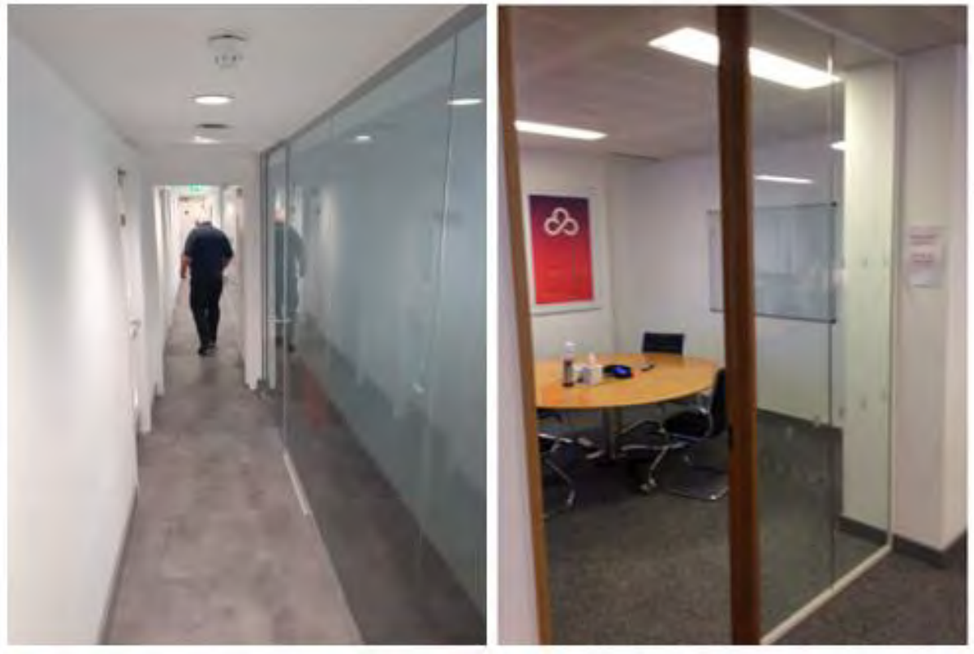


Fig. 8 Internal glazed partitions (Right – New City Court. Left – Georgian Terrace)

Fig: 9 Evidence of brickwork, cladding and glazing on the New City Court property

5.4 External Fabric

Brickwork Fascia to Curtain Walls

5.4.1. The majority of the building's façade is made up of the aluminium cladding. The Aluminium cladding panel appear to be sandwich panel and have an applied coated finish of approx. 2/3mm, further investigation will need be needed to clarify their makeup.

5.4.2. There is also brickwork on the façade in between aluminium cladding.

5.4.3. It is unlikely that the modern nature of the wall construction, would allow the bricks to be re-used, given the impracticality of recovery versus the recycling option.

Glazing to Curtain Walls

5.4.4. There are various difference shapes and sizes of glazing and windows around the buildings. Including a large elevation on the entrance of New City Court on St Thomas Street.

5.4.5. The majority of the glazing around the buildings are double glazed glass. While it is likely that it can be removed, it is unlikely that these would be suitable for re-use in other buildings unless specifically designed to accept them.

5.4.6. Cantillon have been in discussions with various different glass reuse, recycling and refurbishment companies and are looking into ways to maximise the potential reuse of glass.

Fig: 10 Further evidence of brickwork and glazing at the front façade of New City Court and the Georgian Terraces.

Roof Finishes

5.4.7. The roof area of New City Court is consisted of pre-cast paving slabs and natural river terrace decorative gravels. Beneath these, are a layer of c.50mm thick rigid insulation, assumed to overlay a bituminous waterproof membrane. This will not be re-useable and the insulation will have to be recovered as a recycled product subject to testing.

5.4.8. Although not damaged, these would be better recycled rather than re-used as they are worn and would likely not suit a modern development.

5.4.9. No Access was possible to the roof area or the Georgian Terraces.

Electrical and Mechanical Fittings

5.4.10. Generally, we have not been able to assess the quantities of wired or plumbed mechanical and electrical, without further visual inspections of the typical layouts currently obscured by the internal finishes.

5.4.11. In respect to wiring and plumbing, it is unlikely that these elements will be able to be re-used in their original form owing to the stringent requirements of Building Regulations and building control.

5.4.12. Mechanical and electrical fixtures and fittings within the building, including light fittings, sockets may be considered by the Client on future development, subject to assessment of each by a qualified professional, which we would be unable to offer at this stage.

5.4.13. Boilers and other switch gear and plant are again unlikely to be re-used, but this would be best reviewed by specialists.

Hazardous Material

5.4.14. It is not possible to assess the quantity of hazardous materials without undertaking a deleterious materials survey, including a HSG264 compliant asbestos survey.

5.4.15. It is noted in the Allford Hall Monaghan Morris drawings that's the Asbestos roof slates will be replaced by natural slates.

5.5 Construction waste Groups

European Waste Catalogue	Key Group	Examples	Comments
17 01 02	Bricks	Bricks	Facades
17 01 01	Concrete	Slabs, foundations, kerbs hard standings,	Slabs, columns
17 06 04	Insulation	Glass fibre, mineral wool insulation	Wall insulation
15 01	Packaging	Paint pots, cardboard, cable drums, polythene sheets etc	
17 02 01	Timber	Soft wood, hardwood, board products such as plywood, chipboard	
16 02	Electrical and electronic equipment	Electrical and electronic TVs, monitors, fridges, air conditioning units, lamps equipment	TVs, white goods, air conditioning units
13 01	Oils	Hydraulic oil, engine oil, lubricating oil	
17 03	Asphalt and tar	Bitumen, tar, roof or waterproofing materials	Roof material
17 01 03	Tiles and ceramics	Ceramic tiles, sanitary ware	Ground Floor entrances
17 01	Inert	Mixed rubble or excavation materials, glass	
17 04	Metals	Rebar, structural steel, sheet metals	Rebar
17 08 02	Gypsum	Plasterboard, plaster, fibre cement sheets	Office partitions
17 01 01	Binders	Render, cement mortar	
17 02 03	Plastics	Pipes, cladding, frames	
17 05	Soils	Soils, clays sand, gravel natural stone	
Most Rel EWC	Liquids	Non-hazardous paints, thinners and timber treatments	
Most Rel EWC	Hazardous		
04 02 22	Floor coverings [soft]	Carpets, vinyl flooring	Internal walkway areas
Most Rel EWC	Architectural features	Reclaimed elements, features	
Most Rel EWC	Mixed or other		

6 Key Objectives

6.1 Potential Applications

6.1.1. The aim of this audit is to examine the materials that are within the buildings, the constituent parts that make up the structure, it details the amounts and ideally if they can be re-used, repurposed or recycled. This audit will be used as a reference when planning and executing work and assists the Project Management Team to collate the likely distribution of materials within the upper tiers of the Waste Hierarchy, as defined in the current waste regulations.

6.1.2. To represent and promote reuse, repurposing and recycling for the benefit of the wider environment. To promote the individual, collective and principal voice for the demolition industry, whilst developing best practice by promoting legal and regulatory compliance and improving operational standards.

6.1.3. To provide a source of information for the demolition industry on matters relating to the waste and recycling industry, including Industry benchmarking, technical development, training and education.

6.1.4. To promote and communicate the best interests of the industry and for our clients, and promoting our aims and objectives to general public.

6.2 Related issues for re-use and recycling of key materials

6.2.1. To maximise the circular economy opportunities, time and access is key to attaining a higher percentage. This is because, to re-use materials, they have to be carefully separated / protected and removed in more constrained methods, such as palletising and removing large quantities in a labor-intensive manner

6.2.2. It is often quite complicated and complex to design in reuse elements. If the architects/engineers and contractors are not buying into the concept and want to approach the project using the standard solutions.

6.2.3. Sampling and testing are not always possible meaning organisations are unwilling to take on the liability for passing elements on for reuse.

6.2.4. A big issue for re-use of key material is the lack of space for storage. When demolishing/refurbishing a building there is often little space to keep large elements whilst keeping the site safe and tidy.

6.2.5. When wanting to re-use certain elements of the building, the material may be fragile and require specific skill sets to deconstruct. This can lead to a longer project and at more expense.

6.2.6. Fire doors for example, cannot currently be re-used, companies are not set up for this process. However, we are in contact with two/three companies who believe that re-use a viable proposition. On previous projects Fire and other doors have be repurposed in welfare areas as tables and benches.

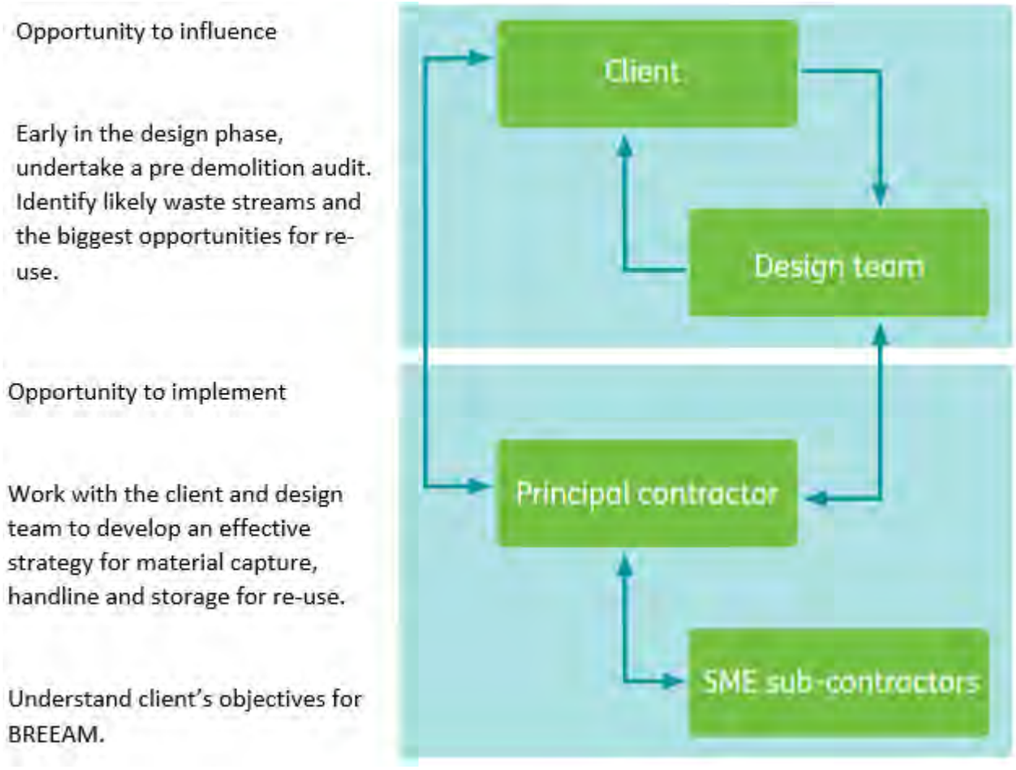


Fig 11: Project relationships and opportunities

6.2.7. If the fixtures and fittings left at vacancy of the properties are in poor condition this will lead to very few re-use opportunities and most likely just recycling.

6.2.8. The Waste Hierarchy Approach is a well-established environmental management principle. It outlines the order of priority for waste management options, highlighting the worst (disposal) and best favorable (prevention) environmental options.

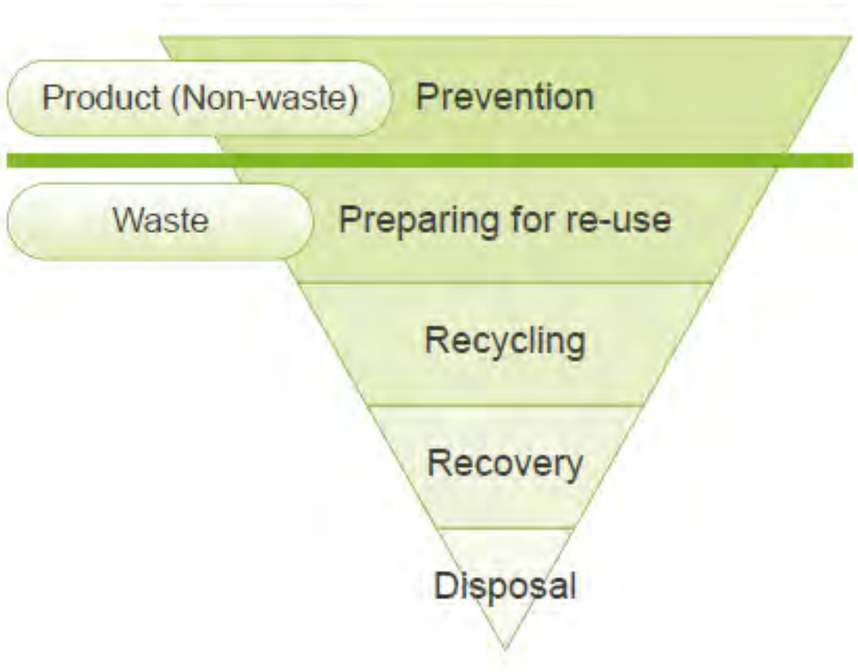


Fig 12: Diagram of The Waste Hierarchy Approach

6.2.9. Each stage within the hierarchy has a distinct meaning. Prevention is the measures taken before a substance, material or product has become waste. This is in order to reduce the quantity of waste and any adverse impacts of the generated waste on the environment and human health.

6.2.10. The second stage is preparing for re-use. Prior to demolition the site team will identify materials or products that have become waste; however, they can still be re-used without any other pre-processing *e.g.,* office furniture or television screens which have been previously discarded

6.2.11. The following stage is recycling. This is any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations.

6.2.12. The fourth stage on the waste hierarchy approach is recovery. This is the result of waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function. This includes anaerobic digestion, incineration with energy recovery, gasification and pyrolysis which produce energy (fuels, heat and power) and materials from waste and some backfilling.

6.2.13. The final process on the waste hierarchy approach is Disposal. This is the least favourable environmental options. Disposal is landfilling or incineration without any thermal recovery.

6.2.14. Each substance, material or product in both New City Court and the Georgian Terraces will go through the waste hierarchy approach. Between the Client and Cantillon an agreement will be made prior to demolition which sets out the targets for each stage.

6.3 Opportunities for Reuse and Recycling within the Development

6.3.1. When deciding whether to reuse or recycle the furniture and equipment in the building, it is important to take the follow three steps into consideration. Anything that gets removed will be subjected to inspection before being re-used. Will the furniture/equipment require additional protection? For example, glass partitions and suspended ceilings. Finally, what impact does the decision have on the programme? Whether this be a time constraint, financial, or another impact are considerations to be taken when deciding what option to choose. The below diagram shows and in-depth view into the considerations required.

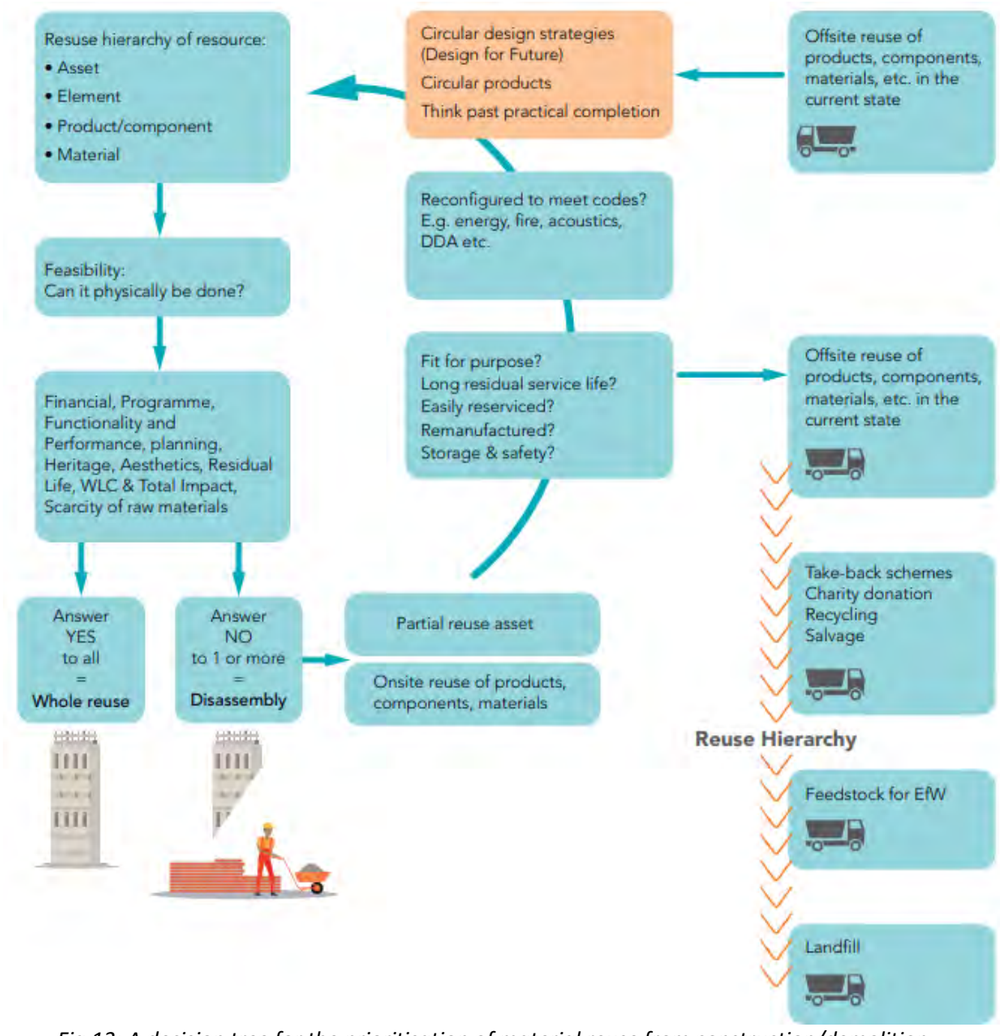


Fig 13: A decision tree for the prioritisation of material reuse from construction/demolition

6.3.2. There are many opportunities to reuse and recycle within New City Court and the Georgian Terraces. Furniture, office equipment and raised access flooring are probably the easiest elements to decide on what to reuse, and what to send off to be recycled.

6.3.3. All the office areas within the properties are fully furnished to a high standard, meaning plenty of opportunities for reuse. Companies like Globechain and WarpIT help distribute, reuse and recycle surplus resources such as furniture, equipment, fixtures and fittings.

6.3.4. The brickwork and blockwork in property have the opportunity to be recycled. Once deconstructed and cleaned, it is possible to assess the quality of these and see if they are fit for repurpose. This is dependent on time, cost and programme.

6.3.5. The roof walk areas and courtyard areas on New City Court are comprised of council paving slabs. These could still be reused as they have a long service life and aren't damaged. The slabs are made of concrete so could easily be recycled if that is what the client decided.

6.3.6. The buildings concrete slabs can be used for onward reuse. This can be used as type 1 subbase if segregated appropriately. The steel rebar and decking can be recycled as steel is widely recycled.

6.3.7. Companies like Rype Office will collect unwanted furniture as long as it meets the reuse requirements, again removing the need to store on site.

6.3.8. Tarkett will take away multiple manufactures carpet tiles as long as they are not PVC backed. They store at their warehouse until ready for resale back into the CAT-B market.

6.3.9. The Mineral wool insulation can be safely removed and either re-used in another building or reprocessed to make new insulation. An increasing proportion of stone wool insulation is recycled material in the form of briquettes.

6.3.10. Steel is permanent material that can be infinitely recycled and is recyclable without loss of quality.

6.3.11. Timber recycling is the process of turning waste timber in usable products. Timber suppliers and consumers and turning to a more sustainable timber source. Timber can be recycled down into wood chips which can be used to power homes or plants. Westminster Waste recycle their timber into a Biomass fuel to be used a renewable power in UK power stations.

6.3.12. Companies like Tarkett have created specialist machinery to clean and recycle shredded post-use vinyl. They have tested and improved the solution to create vinyl granules that can be integrated into new homogeneous flooring. The granules offer the same properties and

deliver the same performance as virgin raw materials, conserving natural resources and creating a lower impact on the environment, compared to using virgin raw materials.

6.3.13. Laminate flooring is recyclable, the majority mass of laminate flooring can be put back into the manufacturing process in the form of wood chips or fibres.

6.3.14. Recycled asphalt is often used an aggregate substitute in highway and commercial construction forming part of a base or subbase material on highways and roads as a base layer for new build construction, residential driveways and car parking. Recycled plastics, glass and other waste products are becoming more common in new asphalt design.

6.3.15. The new style Raised Access Flooring inside both New City Court and the Georgian Terraces have the opportunity to be reused within current or future developments. Cantillon will load 32 tiles per pallet and these are sent to multiple recyclers/developers who can re-use these. Alternatively, if the client has space to store these, they can be stored and then installed back in the new development.

Fig: 14 Raised Access Flooring palleted at a recent Cantillon project.

Fig: 15 Raised Access Flooring being loaded and sent to new building for refurbishment at a recent Cantillon project.

6.3.16. Glass is mostly recycled into bottled glass, lower grade inro glass fibre and the lowest grade into aggregate. Metals, plastics and PVB (plastic in between and laminated glass) removed and distrusted to the appropriate recyclers.

6.3.17. The Glass partitions in both New Court and the Georgian Terraces have the potential to be reused in their current form. If the partitions are removed and all fixtures and fittings are kept these can be re-installed into another building. This is a timely process, so if the client was keen to reuse the glazed partitions this will have to be included into the programme.

6.3.18. Soil testing allows us to identify exactly what is in the ground and inform us of the best recycling option available. There are various types of testing, including; Waste Acceptance Criteria, Heavy metals and hydrocarbons and asbestos quantification testing.

6.3.19. The roof tiles are Lead which is a recyclable metal; it possesses some of the highest recycling rates of all materials commonly used today. With innate properties such as softness and malleability making it highly valuable and usable in a wide variety of applications, lead lends itself perfectly to reuse. Recycled lead is no different from newly-sourced metal in terms of

quality and can often be reused without limits. Additionally, lead-based products are easily identified, allowing for a relatively simple collection and recycling process.

6.3.20. The façade aluminum composite panels can be recycled, the aluminium panel is separated, into aluminium and plastic plates. Such plastics can be recycled into black particles. At present, many manufacturers are engaged in the use of black PE particles for aluminium plastic panels.

6.4 Local Re-processors or Recyclers

6.4.1. We have contacted various local re-processors and recyclers during the pre-demolition audit to gauge an idea of the process and how these companies work. Contact and dialogue with companies such as Globechain, Community Wood Recycling, WarpIT and Tarkett which are found in the Circular Economy Guidance for Construction Clients has been helpful and will be consulting with moving forward.

6.4.2. Globechain are a reuse marketplace that connect companies with charities, SMEs and induvial to redistribute unneeded construction material while collating social environment and economic data. Globechain has created a digital platform which functions in a similar way to eBay. This platform has so far diverted over 5.1 million kgs of waste from landfill through reuse and with over £2m of savings to charities. The platform is able to provide a financial benefit to the organisation looking to remove the materials from their site through the reduced cost of waste disposal. Corporates use Globechain for waste cost reduction and social impact data.

6.4.3. Community Wood Recycling are a social enterprise network who sell a range of reclaimed wood for reuse including flooring, doors, window frames, decking and furniture. Community Wood Recycling saves resources by rescuing and re-using waste timber that would otherwise be landfilled (or at very best downcycled into woodchip). This social enterprise creates sustainable jobs, as well as training and volunteering opportunities, for local people – especially those who might find it difficult to get into or back to employment.

6.4.4. WarpIT facilitate the process of organisations accessing, giving away or loaning office furniture, equipment and other resources. Warp-IT's online platform has created a marketplace to redistribute or sell reuse items both within organisations and externally. This process reduces the need to purchase new items, frees up space and reduces office clearance time.

6.4.5. Tarkett are a flooring supplier that operate a take back scheme for recycling. They collect many manufacturers carpet tiles and recycle them at plants where the nylon goes back to be made into Econyl. If it is Tarkett's Ecobase backing it can be put into new production, or if it is bitumen it goes into the roof/road industry.

6.4.6. Cantillon currently use Westminster Waste Ltd as a local re-processor and recycler on one of our sites. Westminster Waste is a Construction/Demolition waste recycling company in London who ensure zero of our waste goes to landfill.

6.4.7. Cantillon are very engaged in the Circular Economy process and have successful delivered recent projects with great Circular Economy Measures. At Warwick Court, Cantillon successfully reused 14,000 Raised Access Floor panel, 17,390 carpet tiles, over 75 linear meters of glass partitions and various stainless catering equipment.

6.5 Overall Recycling Targets

6.5.1. Recent projects have shown that Cantillon has recycled above 99% of all non-hazardous materials; Ilona Rose House, Blossom St, City Gate House, Camden Town Hall and all are projects within London.

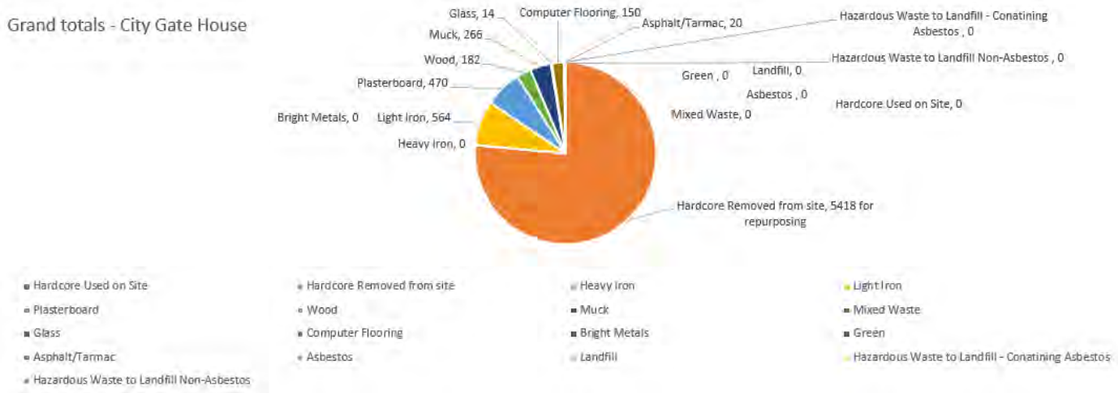


Fig: 16 Cantillon previous recycling target

6.5.2. Cantillon Limited produce pre-demolition audits for proposed developments, with the aim of identifying and assisting in maximising resource recovery. This is achieved by employing the maximum potential for re-use, recycling and recovery at the planning stage of the contract.

6.5.3. Our belief is that this phase of the project is a crucial part of the whole project and that it is essential that all the contractors involved in delivering the project fully appreciate and understand the potential impacts of waste generated and contribute to ensuring high rates of waste re-use, recycling and diversion from landfill.

6.5.4. The project delivery team will set targets for waste stream based on current industry guidance, best practice and codes of practice. During the demolition and soft strip phase, Cantillon will carry out continuous monitoring and recording of the waste produced and removed from site. This data will be compared to the previous monthly period and a report can be issued.

6.6 Overall Landfill Diversion Rate

6.6.1. Cantillon have an above 99% landfill diversion rate target of all non-hazardous waste.

6.6.2. Surplus or waste materials arise from either the materials imported to site or from those generated on site. Imported materials are those, which are brought to the project for inclusion into the permanent works. Generated materials are those, which exist on the project such as brick, concrete and steel generated from the demolition works.

6.6.3. However, there are other considerations to waste management such as waste reduction, segregation of waste, disposal of waste, financial impacts of waste disposal and recording, monitoring, education and reviewing.

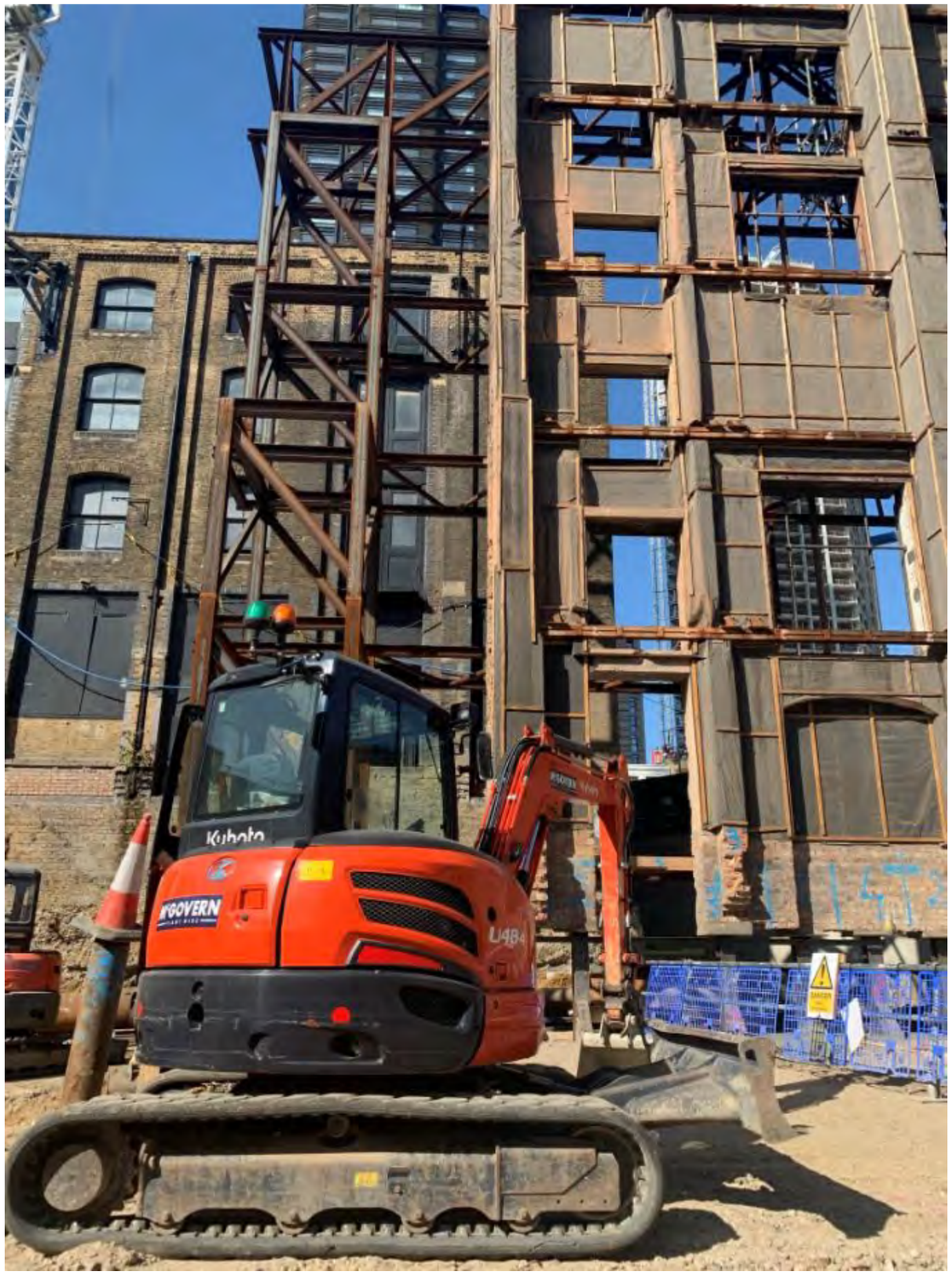
6.6.4. Trade Contractors, Design Team and Suppliers are all being encouraged to look at ways to minimise the amount of waste produced at the work face.

6.6.5. Identification and segregation of materials to enhance recycling. The building will be thoroughly soft stripped to ensure the hardcore from the demolition is clean and suitable to be recycled. Materials bought to site for creating partitioning for welfare will be reused, partitions constructed from ply so they can be dismantled and reused. This is all to reduce the amount of waste and surplus materials, which traditionally would be skipped and sent to landfill. Cantillon will continue to identify waste saving opportunities and we will monitor this throughout the project.

7 Quantification of Key Materials

7.1 Building Measurements

7.1.1. After our site visit Cantillon built up table 7.2 to identify and quantify the key materials of the building. Using the drawings provided from Allford Hall Monaghan Morris Architects Ltd, these were loaded into Bluebeam to find the dimensions and properties of the building. The data pulled from the drawings was then inputted into the below spreadsheets to formulate table 7.2.



7.2 Table of materials

New City Court				
European Waste catalogue	Key Group	Description	Location	Tonnes
17 01 01	Concrete	Concrete Frame	All Floors	**10,215**
17 04 05	Steel	Rebar	All Floors	**405**
17 02 02	Glazing	Façade Windows	Façade	**22**
17 01 02	Brickwork	Brickwork Façade/Walls	Façade/Walls	**156**
17 06 02	Mineral	Façade Insulation	Façade	**0.5**
17 01 02	Blockwork	Blockwork Walls	All Floors	**440**
04 02 22	Carpet	Carpet Tiles	LG-Fourth	**22**
17 08 02	Gypsum	Internal Stud Partition to walls	LG-Fourth	**30**
17 02 01	Timber	Timber Studs to Plasterboard	LG-Fourth	**15**
17 04 05	Lightweight Steel	Suspended Ceilings	LG-Fourth	**28**
17 01 07	Tiles and Ceramics	Floor Tiles	Ground-Fourth	**10**
17 02 02	Glazing	Internal Partitions	LG-Fourth	**195**
04 02 22	Floor Coverings	Vinyl Flooring	LG-Fourth	**3**
17 02 01	Wood	Wooden Laminate Flooring	Second Floor	**2**
17 04 05	Light Steel	Raised Access Flooring	LG-Fourth	**274**
17 04 03	Lead	Lead Roofing	Roof	**1**
17 04 02	Aluminium	Aluminium Cladding	Façade	**78**
17 01 01	Concrete	Paving Slabs	Roof	**100**
17 03	Asphalt	Asphalt Roll Roofing	Roof	**33**

Georgian Terrace				
European Waste catalogue	Key Group	Description	Location	Tonnes
17 02 02	Glazing	Façade Windows	Façade	**1**
17 01 02	Brickwork	Brickwork Façade/Walls	Façade	**105**
17 06 02	Mineral	Façade Insulation	Façade	**0.3**
17 01 02	Blockwork	Blockwork Walls	Façade	**68**
04 02 22	Carpet	Carpet Tiles	LG – Third	**4**
17 08 02	Gypsum	Internal Stud Partition to walls	LG – Third	**12**
17 02 01	Timber	Timber Studs to Plasterboard	LG – Third	**10**
17 04 05	Lightweight Steel	Suspended Ceilings	First Floor	**1**
17 06 04	Mineral Fibre	Suspended ceiling Tiles	Second Floor	**1**
17 01 07	Tiles and Ceramics	Floor Tiles	Toilet Areas	**1**
17 02 02	Glazing	Internal Partitions	First – Third	**37**
04 02 22	Floor Coverings	Vinyl Flooring	First – Third	**2**
17 04 05	Light Steel	Raised Access Flooring	LG – Third	**37**

7.3 Overall Project Reuse and Recycling Targets

7.3.1. Circular Principles Key as set out in the UK GBC Circular economy guidance for construction clients:1) Re-Use existing asset. 2) Recover materials and products on site or from another site. 3) Share materials or products for onwards reuse. 4) Recycle.

Options 1 and 2 are client led decisions to be made, whilst options 3 and 4 are contractor led decisions.

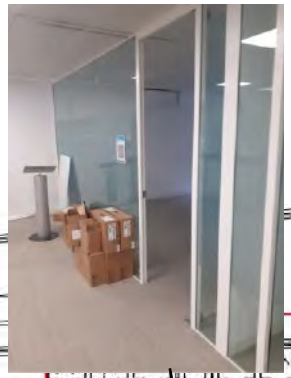
*Project targets including areas not accessed during initial audit.

European Waste catalogue	Key Group	Description	Tonnes	Comments	Circular Principles Options 1-4	*Target %
17 01 01	Concrete	Concrete Frame	10,215	See paragraph; 5.2.5, 6.3.6	3/4	95%
17 04 05	Steel	Rebar	405	See paragraph; 6.3.10	4	99%
17 02 02	Glazing	Façade Windows	23	See paragraph; 5.4.5, 6.3.16	4	95%
17 01 02	Brickwork	Brickwork Façade/Walls	261	See paragraph; 5.4.3	4	95%
17 06 02	Mineral	Façade Insulation	0.8	See paragraph; 6.3.9	4	95%
17 01 02	Blockwork	Blockwork Walls	508	See paragraph; 5.2.6	4	95%
04 02 22	Carpet	Carpet Tiles	26	See paragraph; 5.3.7, 5.3.8, 6.3.8	3/4	90% onward reuse, 9% recycle
17 08 02	Gypsum	Internal Stud Partition to walls	42	See paragraph; 5.3.17, 5.3.18	4	95%
17 02 01	Timber	Timber Studs to Plasterboard	25	See paragraph; 6.3.11	4	99%
17 04 05	Lightweight Steel	Suspended Ceilings	29	See paragraph; 5.3.11	4	99%
17 01 07	Tiles and Ceramics	Floor Tiles	11	See paragraph; 5.3.23	4	95%
17 02 02	Glazing	Internal Partitions	232	See paragraph; 5.3.30, 5.3.31, 6.3.17	3/4	95%
04 02 22	Floor Coverings	Vinyl Flooring	5	See paragraph; 5.3.28, 5.3.29, 6.3.12	4	95%
17 02 01	Wood	Wooden Laminate Flooring	2	See paragraph; 6.3.13	4	95%
17 04 05	Light Steel	Raised Access Flooring	311	See paragraph; 5.3.3, 6.3.15	3/4	90% onward reuse, 9% recycle
17 04 03	Lead	Lead Roofing	1	See paragraph; 6.3.19	4	99%
17 04 02	Aluminium	Aluminium Cladding	78	See paragraph; 6.3.20	4	99%
17 01 01	Concrete	Paving Slabs	100	See paragraph; 5.4.8, 5.2.5	4	99%
17 03	Asphalt	Asphalt Roll Roofing	33	See paragraph; 6.3.14	4	95%

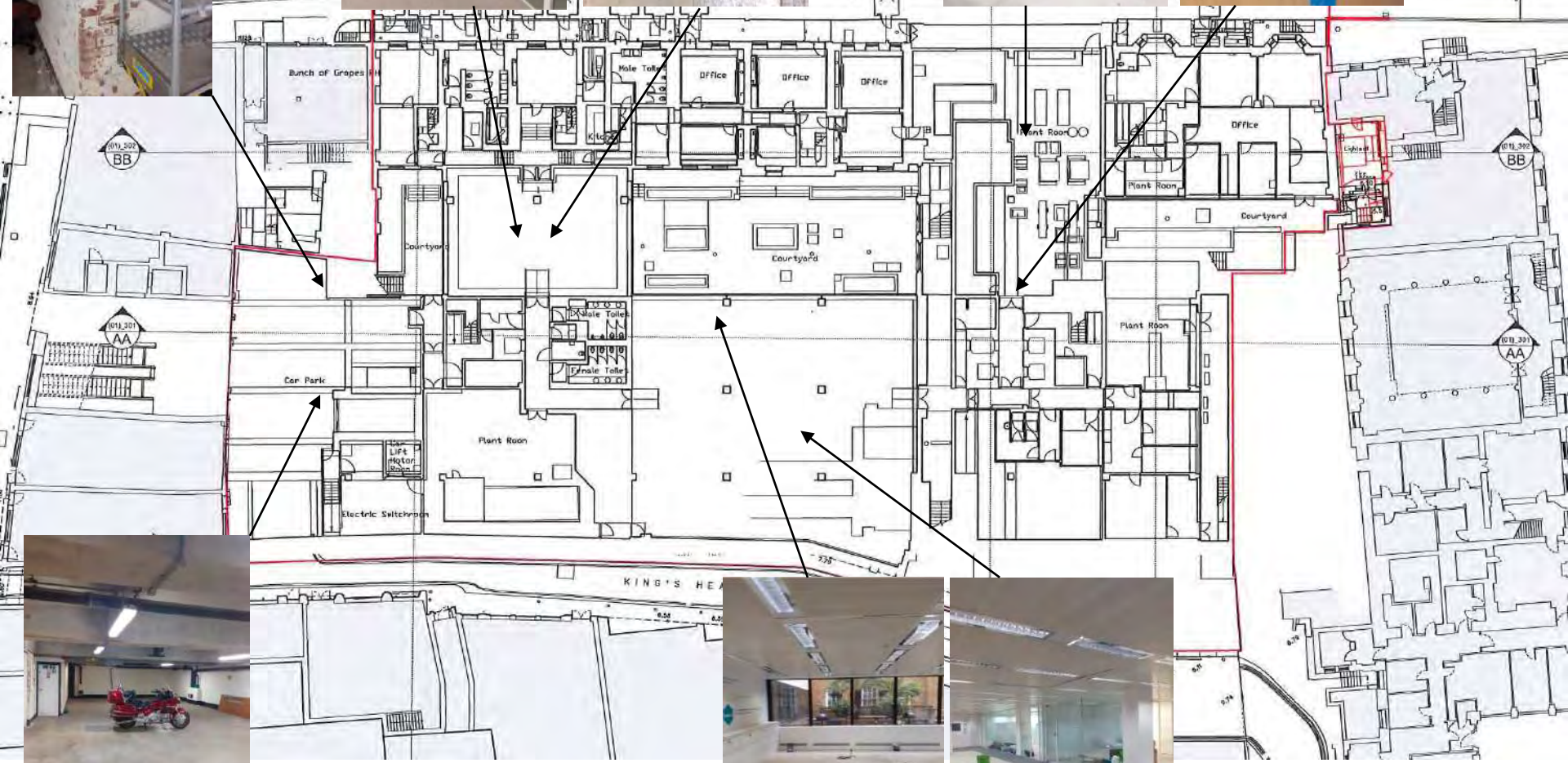
APPENDIX 1

Drawing Annotations

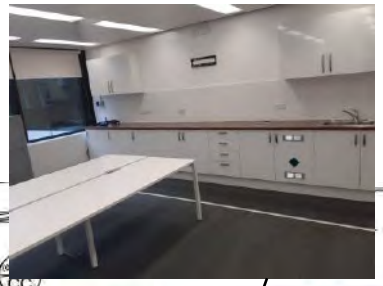
Level - LGF

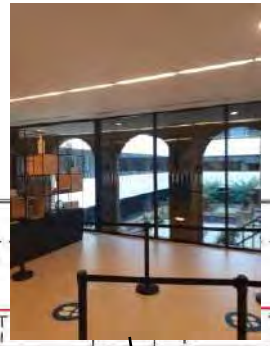


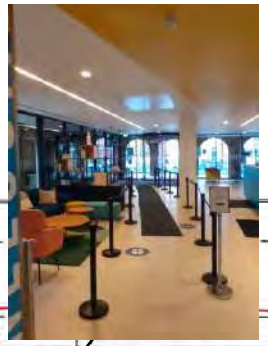

East Basement Plant Room
No smoking
Safety helmets must be worn

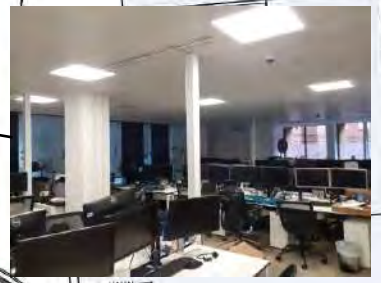

Bunch of Grapes
Male Toilet
Office
Office
Office
Kitchen
Plant Room
Office
Courtyard
Courtyard
Courtyard
Plant Room
Plant Room
Female Toilet
Male Toilet
Car Park
Lift Motor Room
Plant Room
Electric Switchroom
KING'S HE
BB
AA
BB
AA

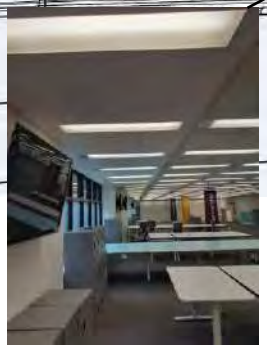
Level - GF

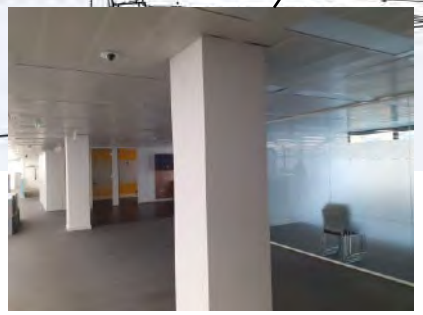


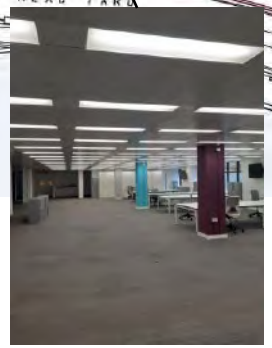




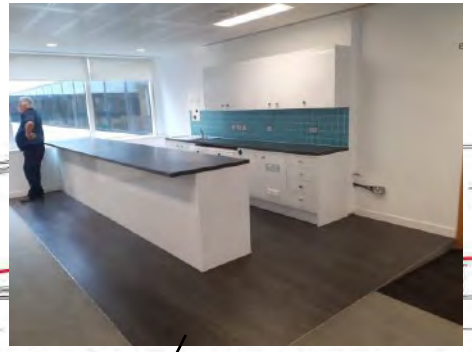


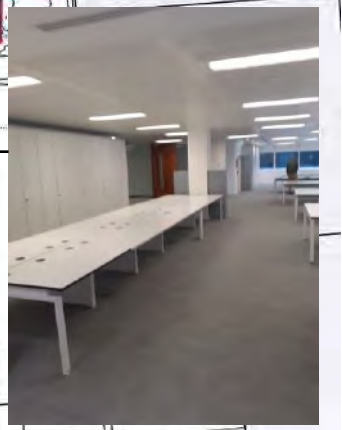


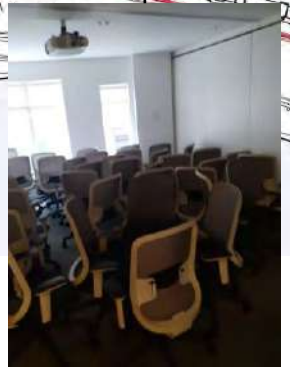


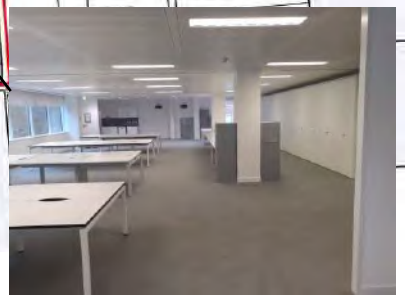


Level - 01

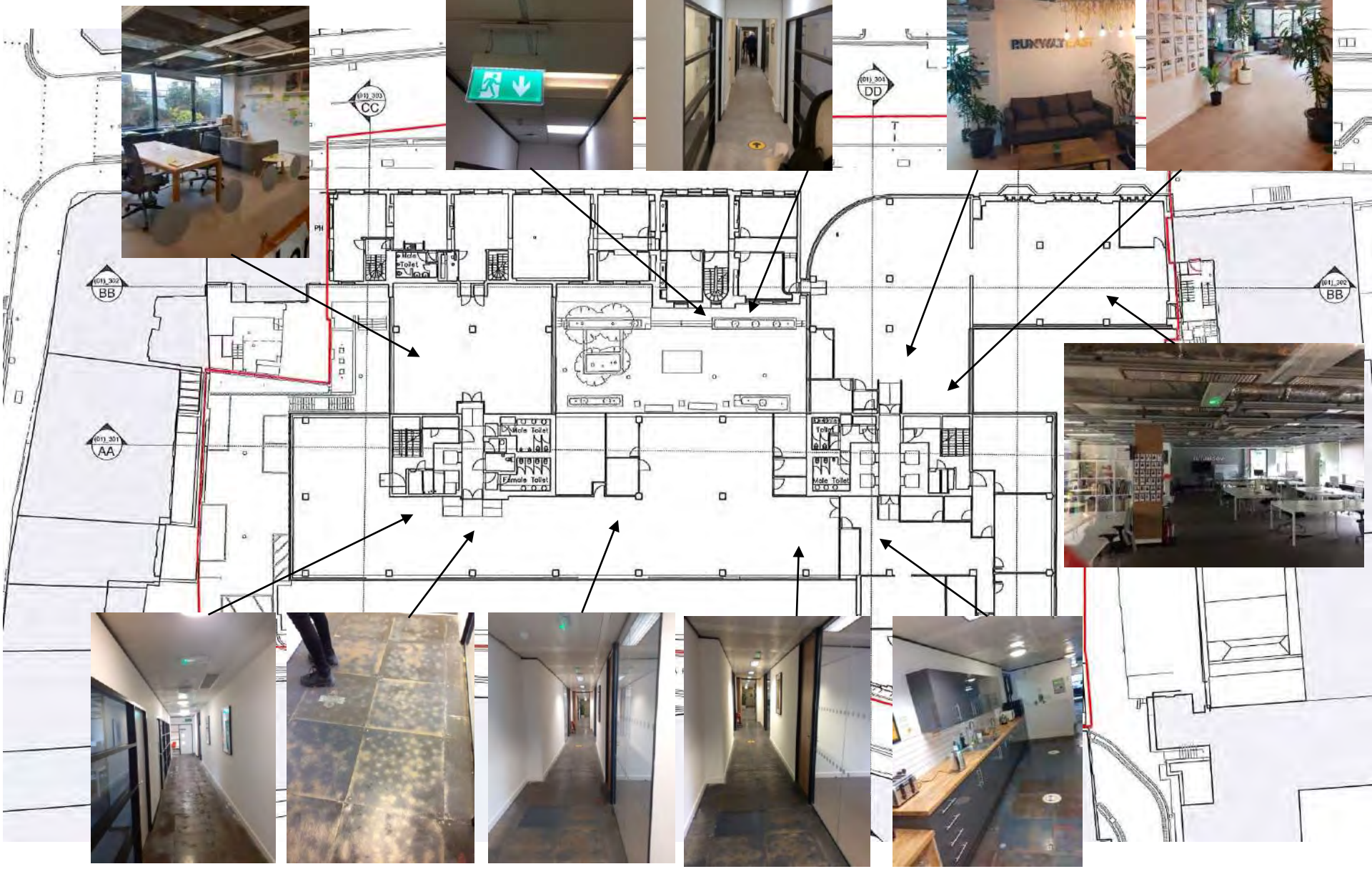




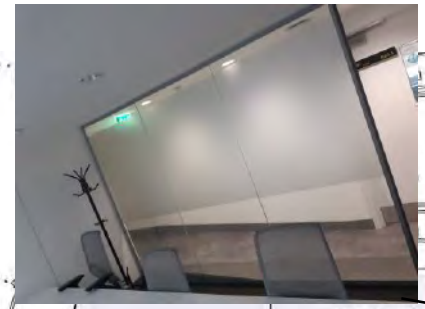


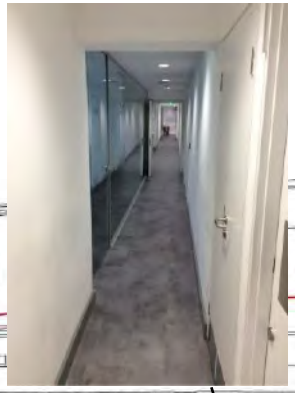


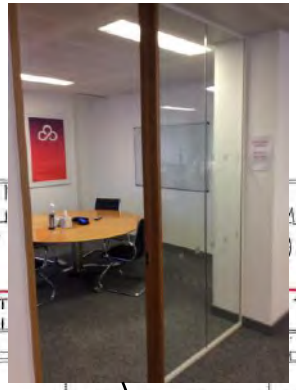
Level - 02

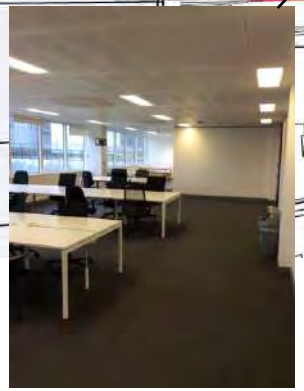


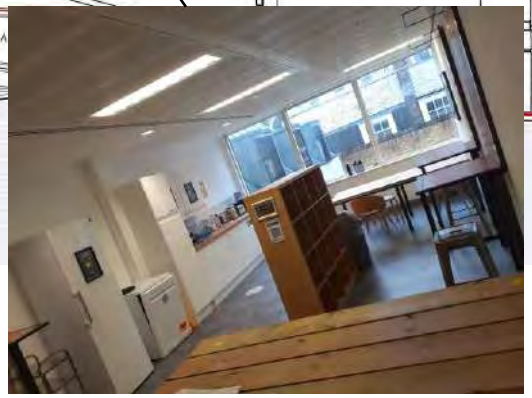
Level - 03



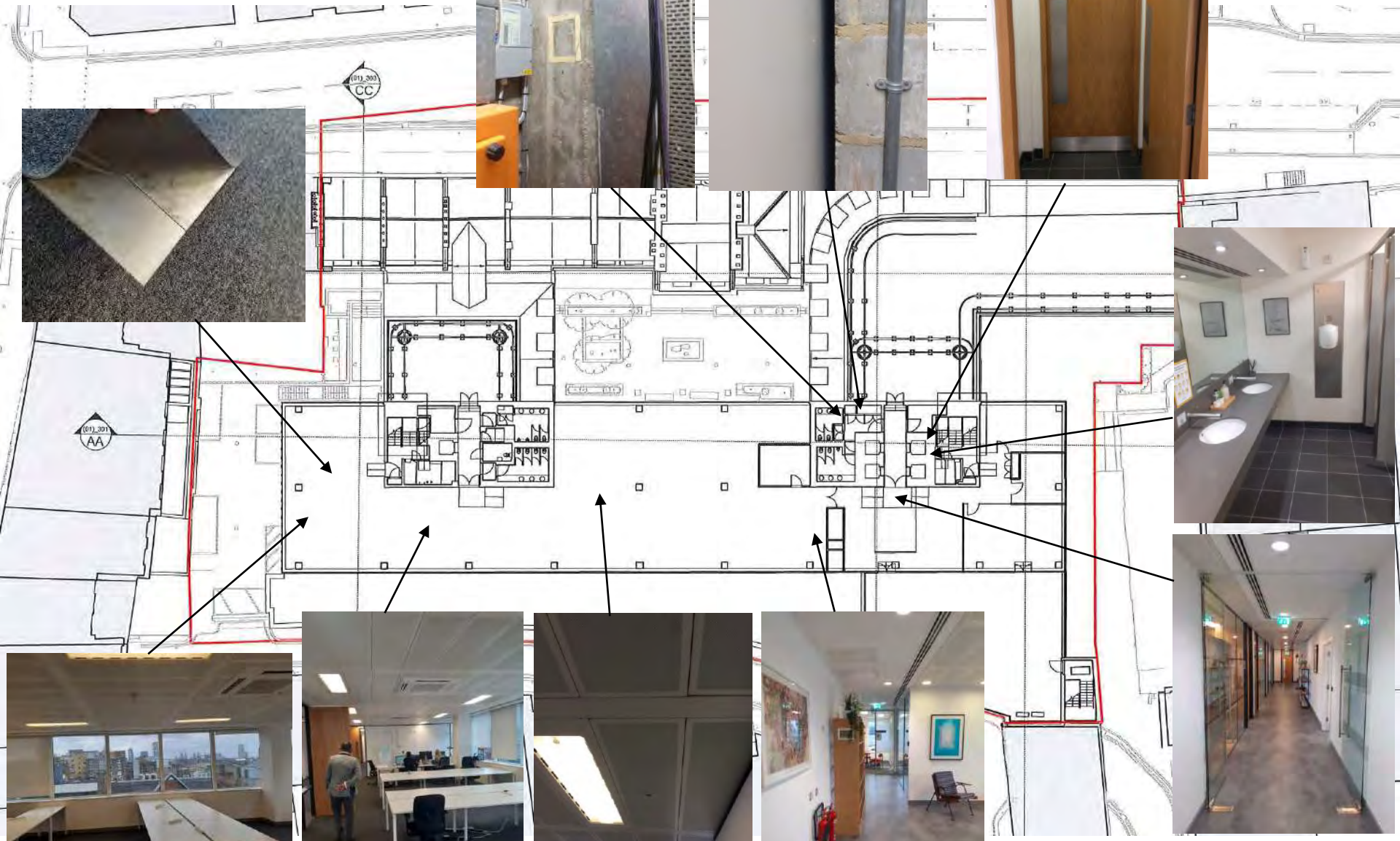




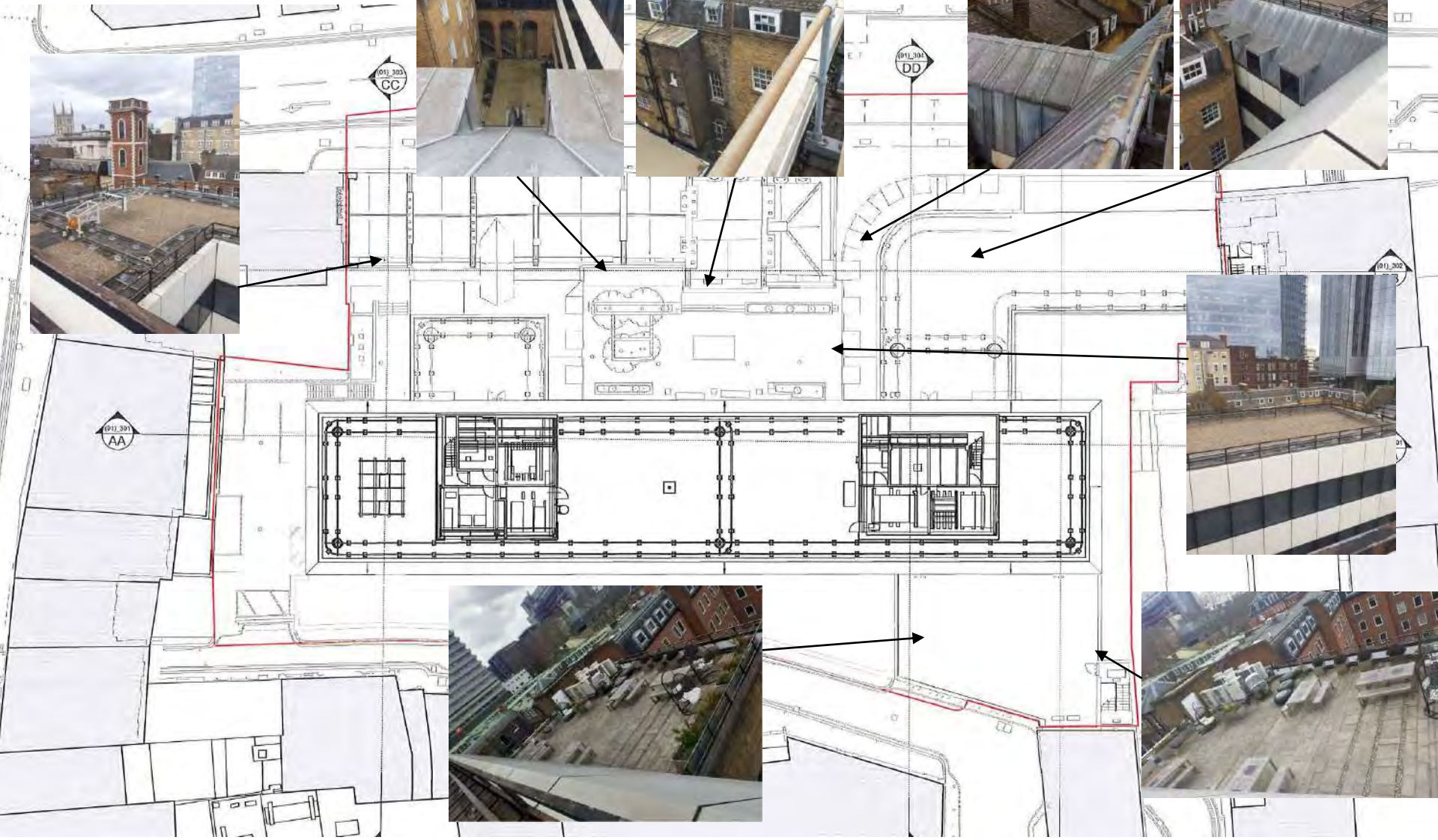




Level - 04



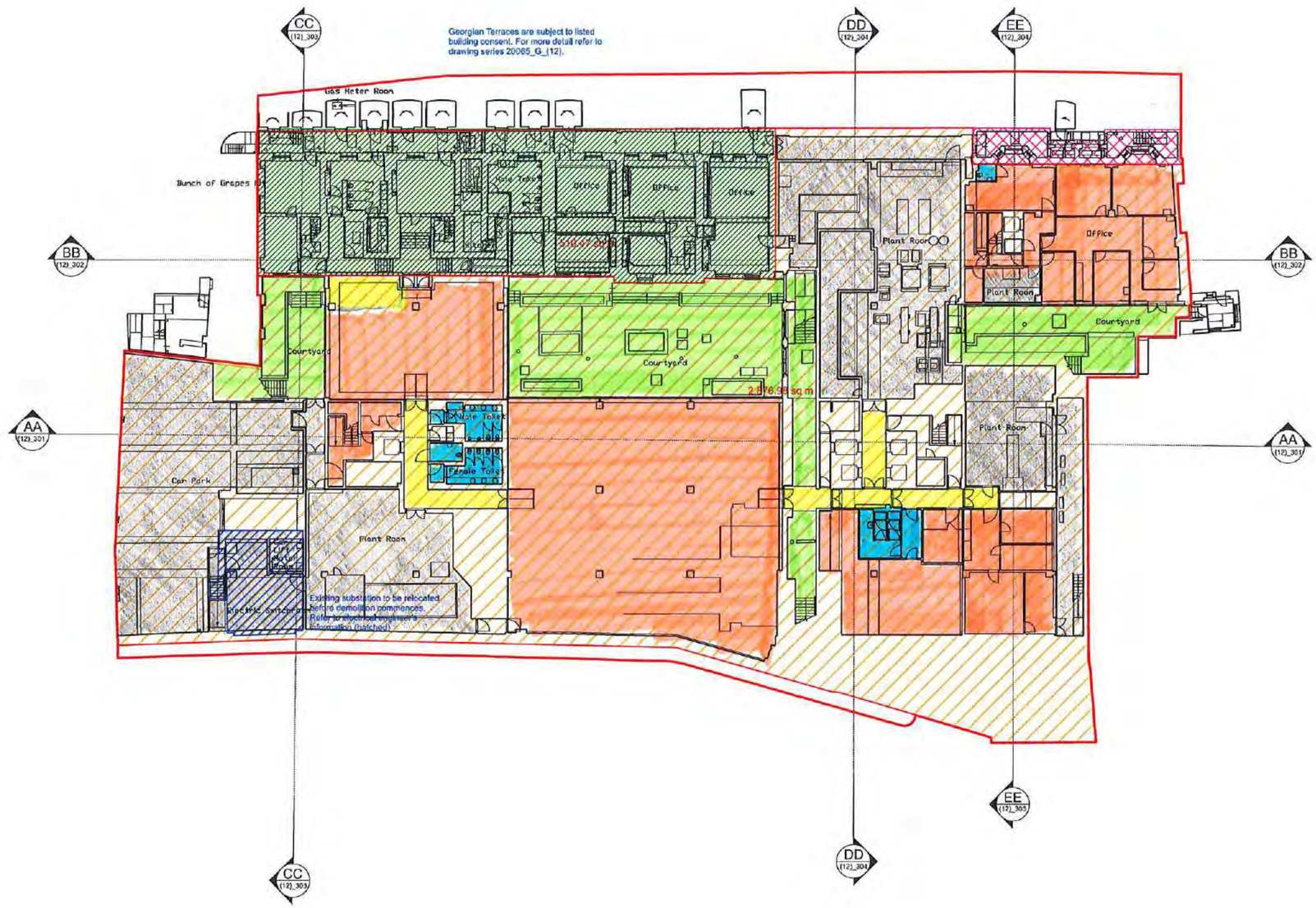
Level – L Roof



Level – U Roof

APPENDIX 2

Bluebeam Drawing Breakdown



KEY

- PLANNING APPLICATION BOUNDARY
- DEMOLITION SCOPE
- KEATS HOUSE RETENTION SCOPE
- GEORGIAN TERRACE SCOPE See drawing series 20065_G_(12)

REV DATE

0 19/02/21 For Information

Carpet Tiles
125, 434, 116, 22, 76, 19, 23, 8, 88

Bare Concrete Floor
228, 154, 117, 267, 12, 62

Ceramic Tiles
27, 20, 2

Council Slabs
63, 216, 75, 65

SOURCE:

This drawing is adapted from Plowman Craven survey drawing 35722F-02B-G-OS.

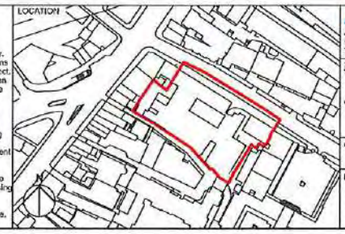
1.00 m
1:100 1:200
0 1 5 10 20

Vinyl Floor
12, 29, 42, 7

NOTE

1. Do not scale from this drawing.
2. All dimensions to be checked on site by the contractor and such dimensions to be his responsibility.
3. Report all drawing errors, omissions and discrepancies to the architect.
4. This document may be issued in an uncontrolled CAD format to enable others to use it as background information to make alterations and/or additions. In that instance the file will be accompanied by a PDF version. It is for those making such alterations and additions to ensure that they make use of current background information. AHMM Ltd accepts no liability for any such alterations or additions to the background information or arising out of changes to background information which occur prior to alterations or additions being made.

LOCATION



ALLFORD HALL MONAGHAN MORRIS
ARCHITECTS Ltd
MORELANDS, 5-23 OLD STREET LONDON EC1V 9HL
TEL 020 7251 5261 FAX 020 7251 5123 WEB WWW.AHMM.CO.UK

job title: NEW CITY COURT

drawing title / location: DEMOLITION SCOPE OF EXISTING LEVEL LG PLAN

drawn by	checked	scale	status
GO	HT	1:200@A1; 1:400@A3	INFORMATION

project	zone	source	classification	drawing no.	revision
20065	X	A	(21)	119	0

ST THOMAS STREET

BOROUGH HIGH STREET

KING'S HEAD YARD

KING'S HEAD YARD

CC (12)_303

DD (12)_304

EE (12)_304

BB (12)_302

AA (12)_301

BB (12)_302

AA (12)_301

EE (12)_305

CC (12)_303

DD (12)_304

Georgian Terraces are subject to listed building consent. For more detail refer to drawing series 20065_G_(12).

2,661.85 sq.m

Entrance feature to be demolished

Future entrance to LUL station behind wall

Curtained front to be demolished

Out building to be demolished (hatched)

Existing substation to be relocated before demolition commence. Refer to electrical engineer's information (hatched)

KA1

Replacement for current access/ egress arrangement with neighbouring building during demolition and construction phases to be agreed.

Replacement for current access/ egress arrangement with neighbouring building during demolition and construction phases to be agreed.

KEY

- PLANNING APPLICATION BOUNDARY
- DEMOLITION SCOPE
- KEATS HOUSE RETENTION SCOPE
- GEORGIAN TERRACE SCOPE See drawing series 20065_G_(12)

REV	DATE	
0	19/02/21	For Information

Carpet Tiles
630, 86, 207, 41, 50, 168, 7

Vinyl Flooring
40, 13,

Coved Slabs
100, 50, 215

Ceramic Tiles
150, 7, 10, 27, 15, 11

SOURCE:

This drawing is adapted from Plowman Craven survey drawing 35722F-02B-G-OS.

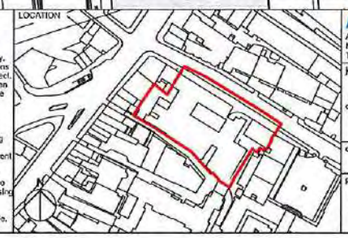
1.00 m
1:200 1:400
0 1 5 10 20

Paving Brick
150,

NOTE

1. Do not scale from this drawing.
2. All dimensions to be checked on site by the contractor and such dimensions to be his responsibility.
3. Report all drawing errors, omissions and discrepancies to the architect.
4. This document may be issued in an uncontrolled CAD format to enable others to use it as background information to make alterations and/or additions. In that instance the file will be accompanied by a PDF version. It is for those making such alterations and additions to ensure that they make use of current background information. AHMM Ltd accepts no liability for any such alterations or additions to the background information or arising out of changes to background information which occur prior to alterations or additions being made.

LOCATION



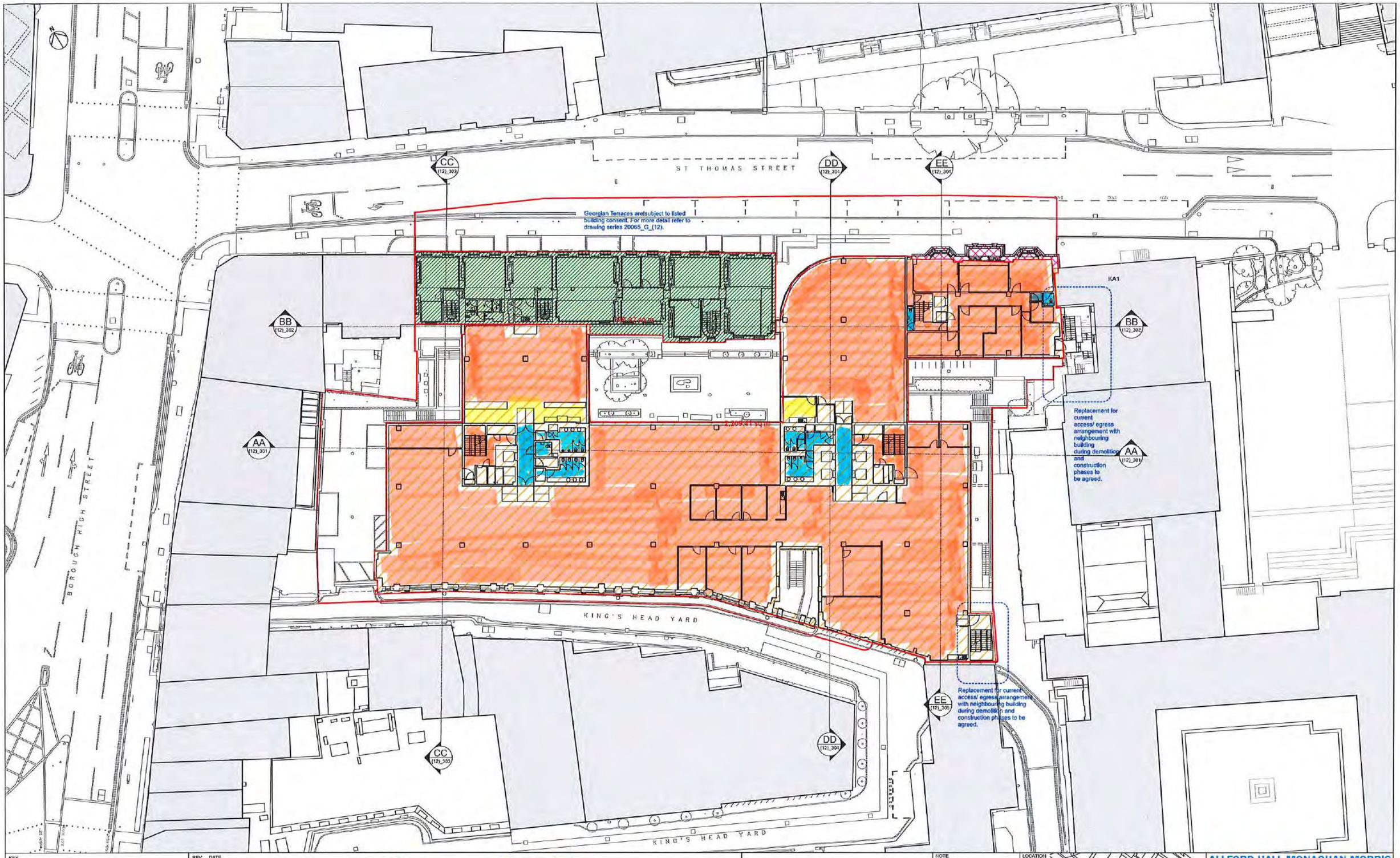
ALLFORD HALL MONAGHAN MORRIS
ARCHITECTS Ltd
MORELANDS, 5-23 OLD STREET LONDON EC1V 9HL
TEL 020 7251 5261 FAX 020 7251 5123 WEB WWW.AHMM.CO.UK

job title
NEW CITY COURT

drawing title / location
DEMOLITION SCOPE OF EXISTING LEVEL 00 PLAN

drawn by	checked	scale	status
GO	HT	1:200@A1; 1:400@A3	INFORMATION

project	zone	source	classification	drawing no.	revision
20065	X	A	(12)	120	0



KEY

- PLANNING APPLICATION BOUNDARY
- DEMOLITION SCOPE
- KEATS HOUSE RETENTION SCOPE
- GEORGIAN TERRACE SCOPE See drawing series 20065_G_(12)

REV	DATE	
0	19/02/21	For Information

Carpet Tiles
1210, 128, 169,
243, 21, 21, 11

Vinyl Flooring
22, 10,

Ceramic Tiles
46, 14, 14, 2, 3

SOURCE:

This drawing is adapted from Plowman Craven survey drawing 35722F-03B-1F-OS.

1.00 m 3.00 m 20.00 m
0 1 5 10 20

NOTE

1. Do not scale from this drawing.
2. All dimensions to be checked on site by the contractor and such dimensions to be his responsibility.
3. Report all drawing errors, omissions and discrepancies to the architect.
4. This document may be issued in an uncontrolled CAD format to enable others to use it as background information to make alterations and/or additions. In that instance the file will be accompanied by a PDF version. It is for those making such alterations and additions to ensure that they make use of current background information. AHMM Ltd accepts no liability for any such alterations or additions to the background information or arising out of changes to background information which occur prior to alterations of additions being made.

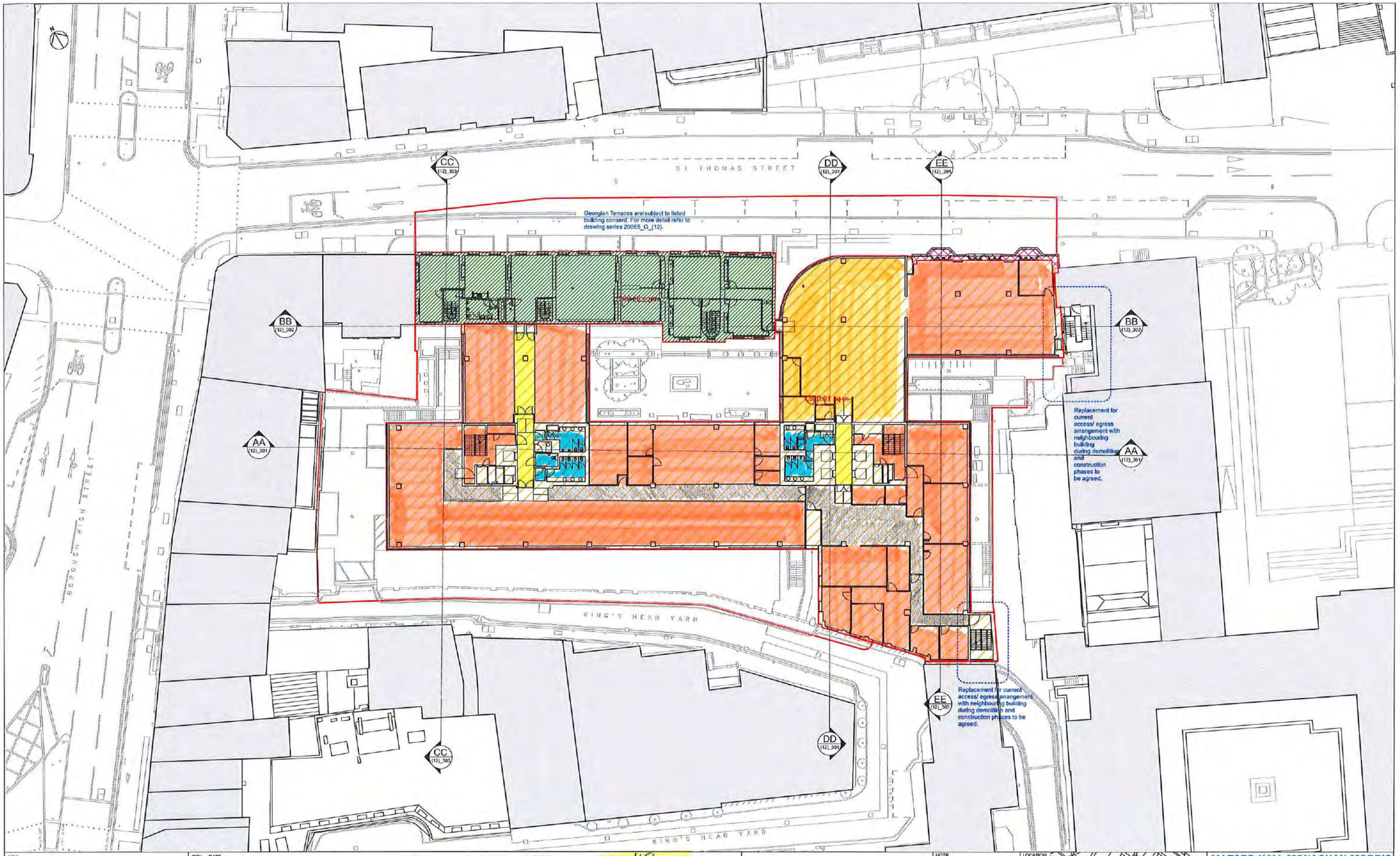
LOCATION

ALLFORD HALL MONAGHAN MORRIS
ARCHITECTS Ltd
MORELANDS, 5-23 OLD STREET LONDON EC1V 9HL
TEL 020 7251 5261 FAX 020 7251 5123 WEB WWW.AHMM.CO.UK

job title	NEW CITY COURT
drawing title / location	DEMOLITION SCOPE OF EXISTING LEVEL 01 PLAN

drawn by	checked	scale	status
GO	HT	1:200@A1; 1:400@A3	INFORMATION

project	zone	source	classification	drawing no.	revision
20065	X	A	(12)	121	0



KEY

- PLANNING APPLICATION BOUNDARY
- DEMOLITION SCOPE
- KEATS HOUSE RETENTION SCOPE
- GEORGIAN TERRACE SCOPE See drawing series 20065_G_(12)

REV	DATE	
0	19/02/21	For Information

Carpet Tiles
189, 320, 158, 136, 158, 22, 21, 69, 69

Wooden Laminate
280,

Ceramic Tiles
46

Vinyl/LVT Flooring
36, 14

SOURCE:

This drawing is adapted from Plowman Craven survey drawing 35722F-04B-2F-OS.

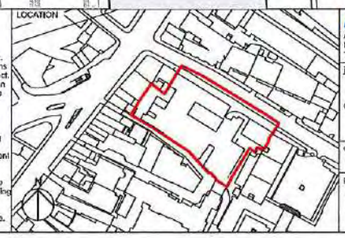
1:00 m 1:50 m 2:00 m
0 1 5 10 20

RAF 85, 87,

NOTE

1. Do not scale from this drawing.
2. All dimensions to be checked on site by the contractor and such dimensions to be his responsibility.
3. Report all drawing errors, omissions and discrepancies to the architect.
4. This document may be issued in an uncontrolled CAD format to enable others to use it as background information to make alterations and/or additions. In that instance the file will be recommended by a PDF version. It is for those making such alterations and additions to ensure that they make use of current background information. AHMM Ltd accepts no liability for any such alterations or additions to the background information or arising out of changes to background information which occur prior to alterations of additions being made.

LOCATION



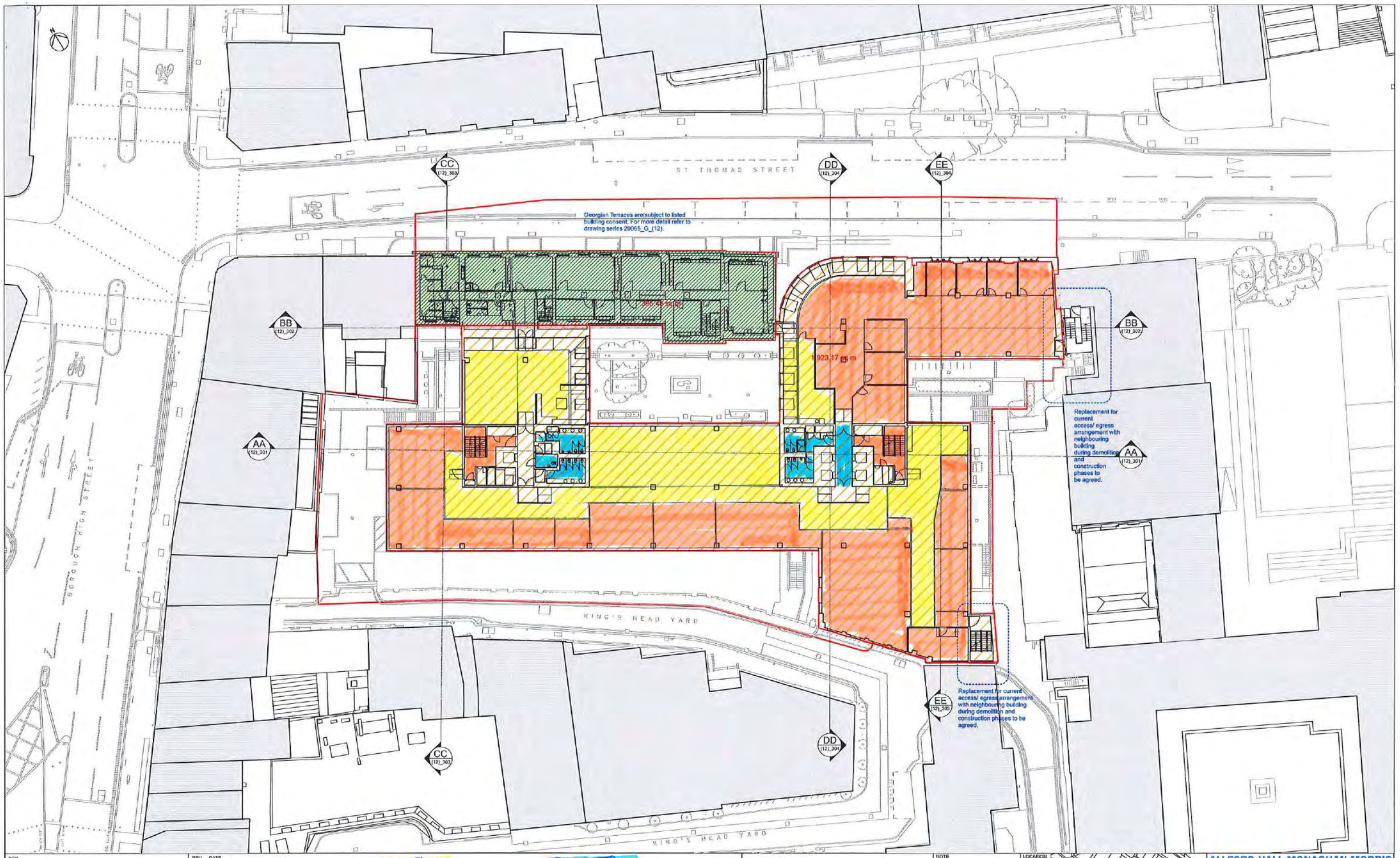
ALLFORD HALL MONAGHAN MORRIS
ARCHITECTS Ltd
MORELANDS, 5-23 OLD STREET LONDON EC1V 9HL
TEL 020 7251 5261 FAX 020 7251 5123 WEB WWW.AHMM.CO.UK

job title: NEW CITY COURT

drawing title / location: DEMOLITION SCOPE OF EXISTING LEVEL 02 PLAN

drawn by	checked	scale	status
GO	HT	1:200@A1; 1:400@A3	INFORMATION

project	zone	source	classification	drawing no.	revision
20065	X	A	(12) 122		0



KEY

- PLANNING APPLICATION BOUNDARY
- DEMOLITION SCOPE
- KEATS HOUSE RETENTION SCOPE
- GEORGIAN TERRACE SCOPE See drawing series 20065_G_(12)

REV	DATE	
0	19/02/21	For Information

Carpet Tiles
371, 584, 21, 21

Vinyl Flooring
43, 101, 293, 148

Ceramic Tiles
46

SOURCE:

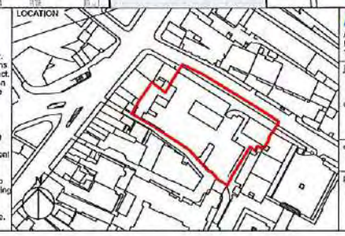
This drawing is adapted from Plowman Craven survey drawing 35722F-05B-3F-OS.

1:200 @ A1 / 1:400 @ A3
1.00 m 5.00 m 20.00 m
0 1 5 10 20

NOTE

1. Do not scale from this drawing.
2. All dimensions to be checked on site by the contractor and such dimensions to be his responsibility.
3. Report all drawing errors, omissions and discrepancies to the architect.
4. This document may be issued in an uncontrolled CAD format to enable others to use it as background information to make alterations and/or additions. In that instance the file will be accompanied by a PDF version. It is for those making such alterations and additions to ensure that they make use of current background information. AHMM Ltd accepts no liability for any such alterations or additions to the background information or arising out of changes to background information which occur prior to alterations of additions being made.

LOCATION

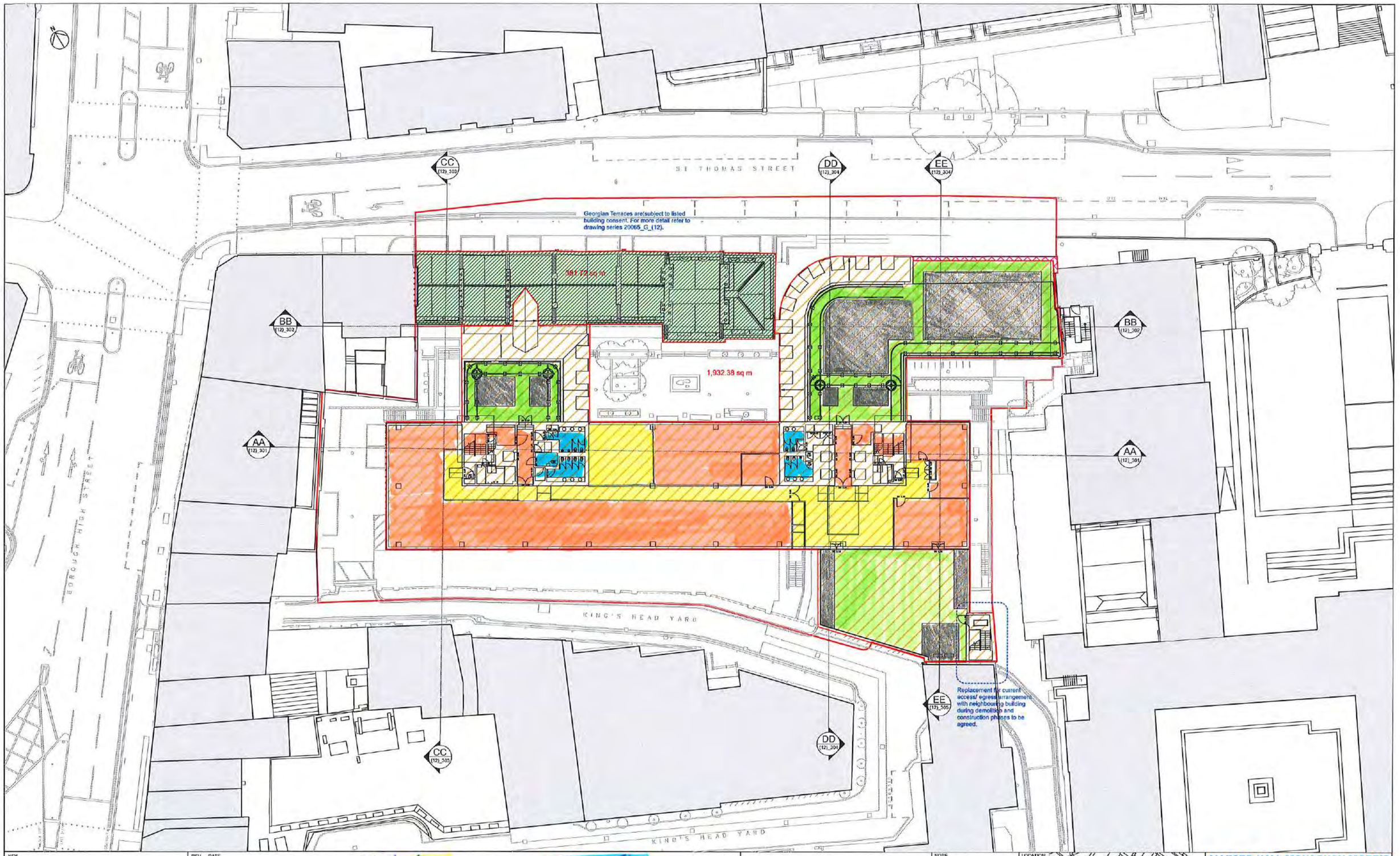


ALLFORD HALL MONAGHAN MORRIS
ARCHITECTS Ltd
MORELANDS, 5-23 OLD STREET LONDON EC1V 9HL
TEL 020 7251 5261 FAX 020 7251 5123 WEB WWW.AHMM.CO.UK

job title	NEW CITY COURT
drawing title / location	DEMOLITION SCOPE OF EXISTING LEVEL 03 PLAN

drawn by	checked	scale	status
GO	HT	1:200@A1; 1:400@A3	INFORMATION

project	zone	source	classification	drawing no.	revision
20065	X	A	(12) 123		0



KEY

- PLANNING APPLICATION BOUNDARY
- DEMOLITION SCOPE
- KEATS HOUSE RETENTION SCOPE
- GEORGIAN TERRACE SCOPE See drawing series 20065_G_(12)

REV	DATE	
0	19/02/21	For Information

Carpet Tiles
40, 16, 325, 99, 20, 20, 21

Vynil Flooring
180, 50,

Ceramic Tiles
46

Council Slabs
58, 151, 173

Stone/Stairs
203, 44, 24

SOURCE:

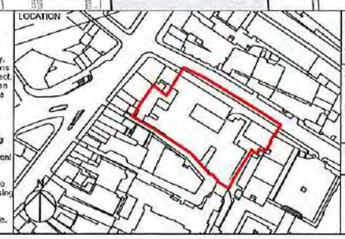
This drawing is adapted from Plowman Craven survey drawing 35722F-06B-OS.

1.00 m
1:200 1:100 1:50 1:20
0 1 5 10 20

NOTE

1. Do not scale from this drawing.
2. All dimensions to be checked on site by the contractor and such dimensions to be his responsibility.
3. Report all drawing errors, omissions and discrepancies to the architect.
4. This document may be issued in an uncontrolled CAD format to enable others to use it as background information to make alterations and/or additions. In that instance the file will be accompanied by a PDF version. It is for those making such alterations and additions to ensure that they make use of current background information. AHMM Ltd accepts no liability for any such alterations or additions to the background information or arising out of changes to background information which occur prior to alterations or additions being made.

LOCATION



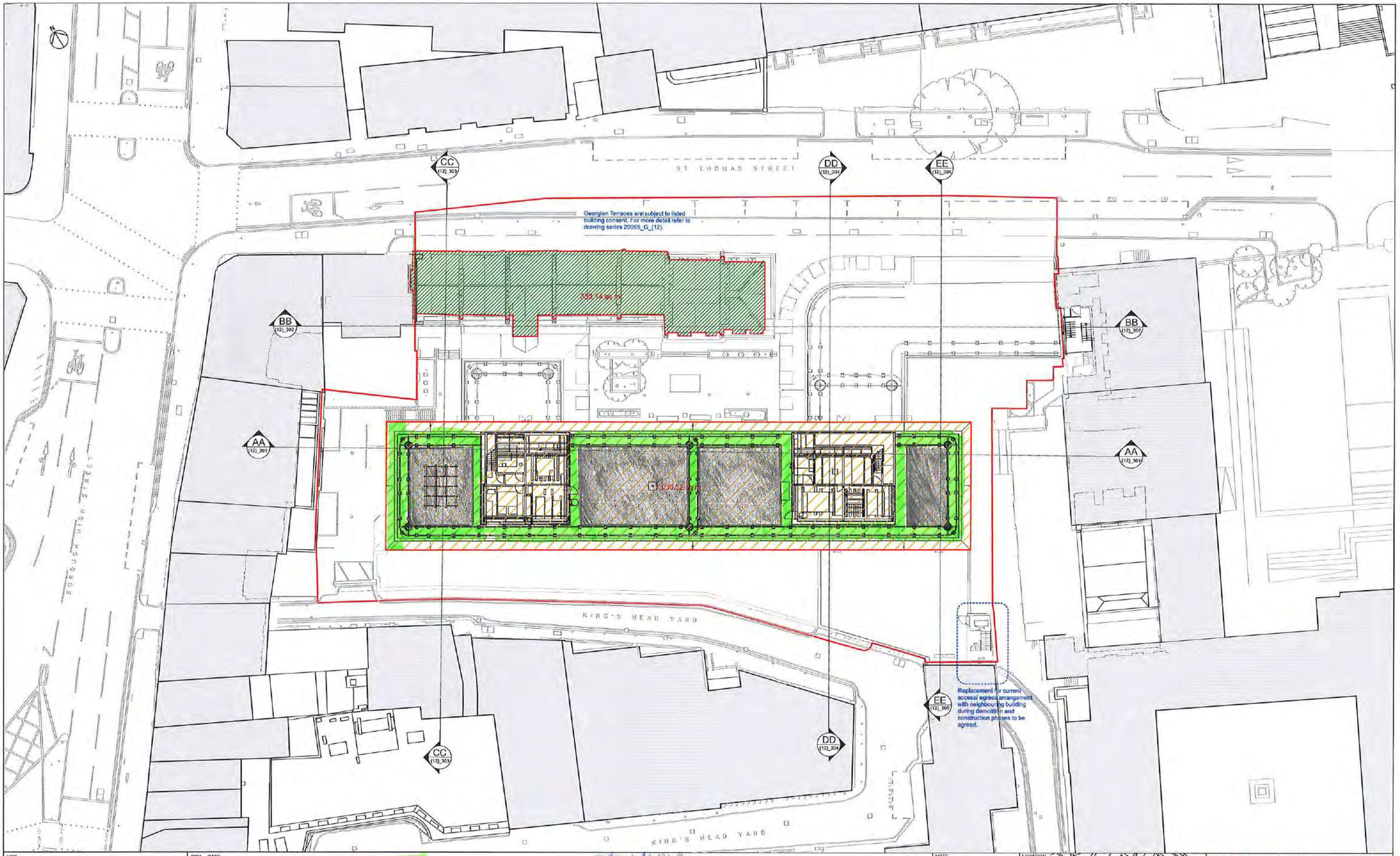
ALLFORD HALL MONAGHAN MORRIS
ARCHITECTS Ltd
MORELANDS, 5-23 OLD STREET LONDON EC1V 9HL
TEL 020 7251 5261 FAX 020 7251 5123 WEB WWW.AHMM.CO.UK

job title
NEW CITY COURT

drawing title / location
DEMOLITION SCOPE OF EXISTING LEVEL 04 PLAN

drawn by	checked	scale	status
GO	HT	1:200@A1; 1:400@A3	INFORMATION

project	zone	source	classification	drawing no.	revision
20065	X	A	(12)	124	0



KEY

- PLANNING APPLICATION BOUNDARY
- DEMOLITION SCOPE
- KEATS HOUSE RETENTION SCOPE
- GEORGIAN TERRACE SCOPE See drawing series 20065_G_(12)

REV	DATE	
0	19/02/21	For Information

Council Slabs
282

Stores/Shafts
335

SOURCE:

This drawing is adapted from Plowman Craven survey drawing 35722F-07A-RS-OS and 35722R-01B-Roof&Plan-OS.

1.00 m
Grid 1:200
0 1 5 10 20

NOTE

1. Do not scale from this drawing.
2. All dimensions to be checked on site by the contractor and such dimensions to be his responsibility.
3. Report all drawing errors, omissions and discrepancies to the architect.
4. This document may be issued in an uncontrolled CAD format to enable others to use it as background information to make alterations and/or additions. In that instance the file will be accompanied by a PDF version. It is for those making such alterations and additions to ensure that they make use of current background information. AHMM Ltd accepts no liability for any such alterations or additions to the background information or arising out of changes to background information which occur prior to alterations or additions being made.

LOCATION

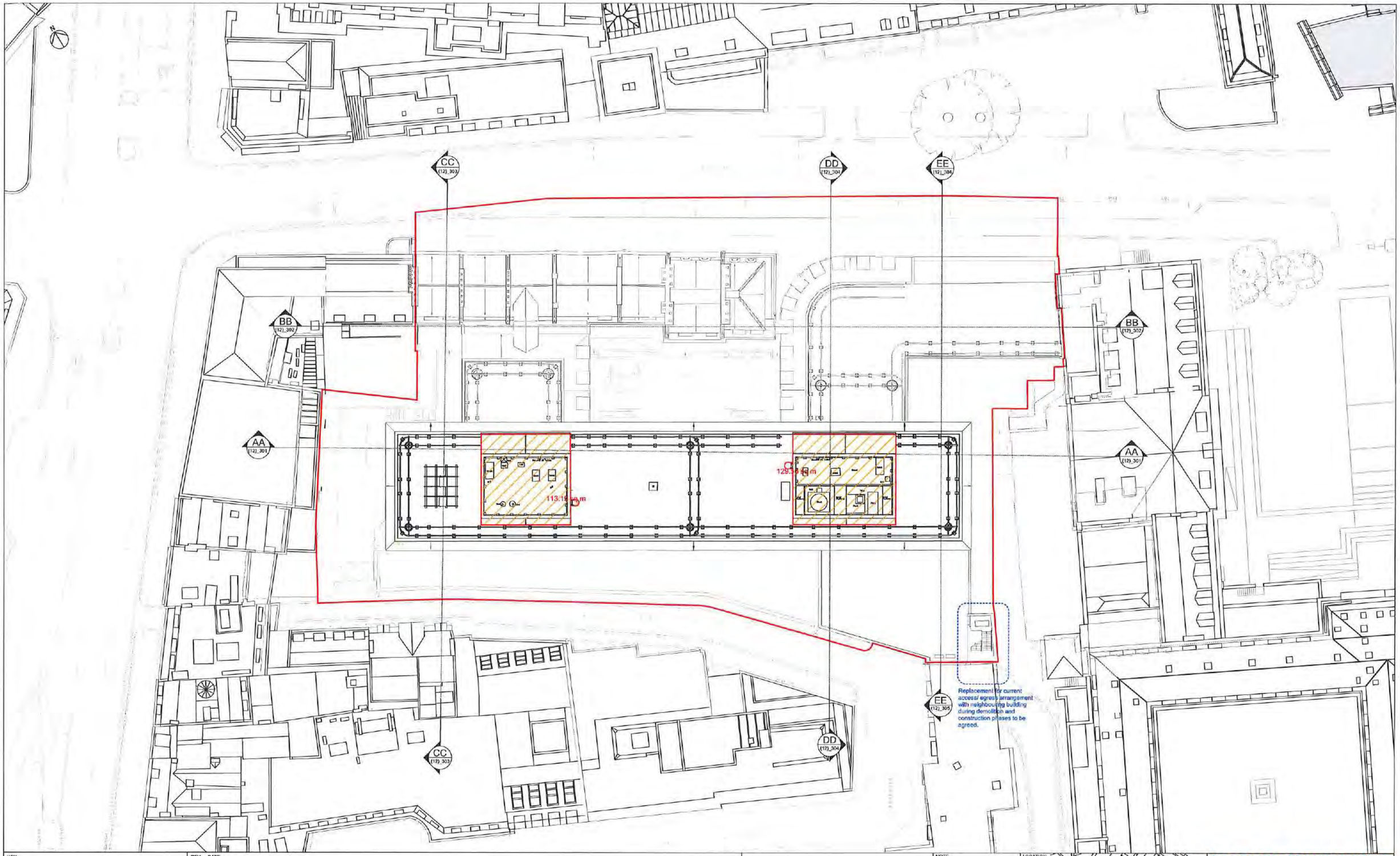
ALLFORD HALL MONAGHAN MORRIS
ARCHITECTS Ltd
MORELANDS, 5-23 OLD STREET LONDON EC1V 9HL
TEL 020 7251 5261 FAX 020 7251 5123 WEB WWW.AHMM.CO.UK

job title
NEW CITY COURT

drawing title / location
DEMOLITION SCOPE OF EXISTING LOWER ROOF PLAN

drawn by	checked	scale	status
GO	HT	1:200@A1; 1:400@A3	INFORMATION

project	zone		source	classification	drawing no.	revision
20065	X	A		(12)	125	0



KEY

- PLANNING APPLICATION BOUNDARY
- DEMOLITION SCOPE
- KEATS HOUSE RETENTION SCOPE
- GEORGIAN TERRACE SCOPE
  See drawing series 20065_G_(12)

REV	DATE	
0	19/02/21	For Information

SOURCE:

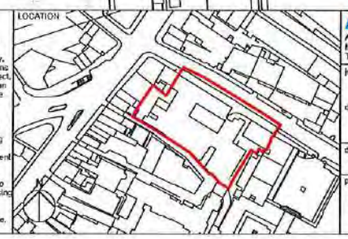
This drawing is adapted from Plowman Craven survey drawing 35722R-02B-UpperRoof-OS.

1.00 m
1:200 @ A1
2.00 m
0 1 5 10 20

NOTE

1. Do not scale from this drawing.
2. All dimensions to be checked on site by the contractor and such dimensions to be his responsibility.
3. Report all building errors, omissions and discrepancies to the architect.
4. This document may be issued in an uncontrolled CAD format to enable others to use it as background information to make alterations and/or additions. In that instance the file will be accompanied by a PDF version. It is for those making such alterations and additions to ensure that they make use of current background information.
   AHMM Ltd accepts no liability for any such alterations or additions to the background information or arising out of changes to background information which occur prior to alterations or additions being made.

LOCATION



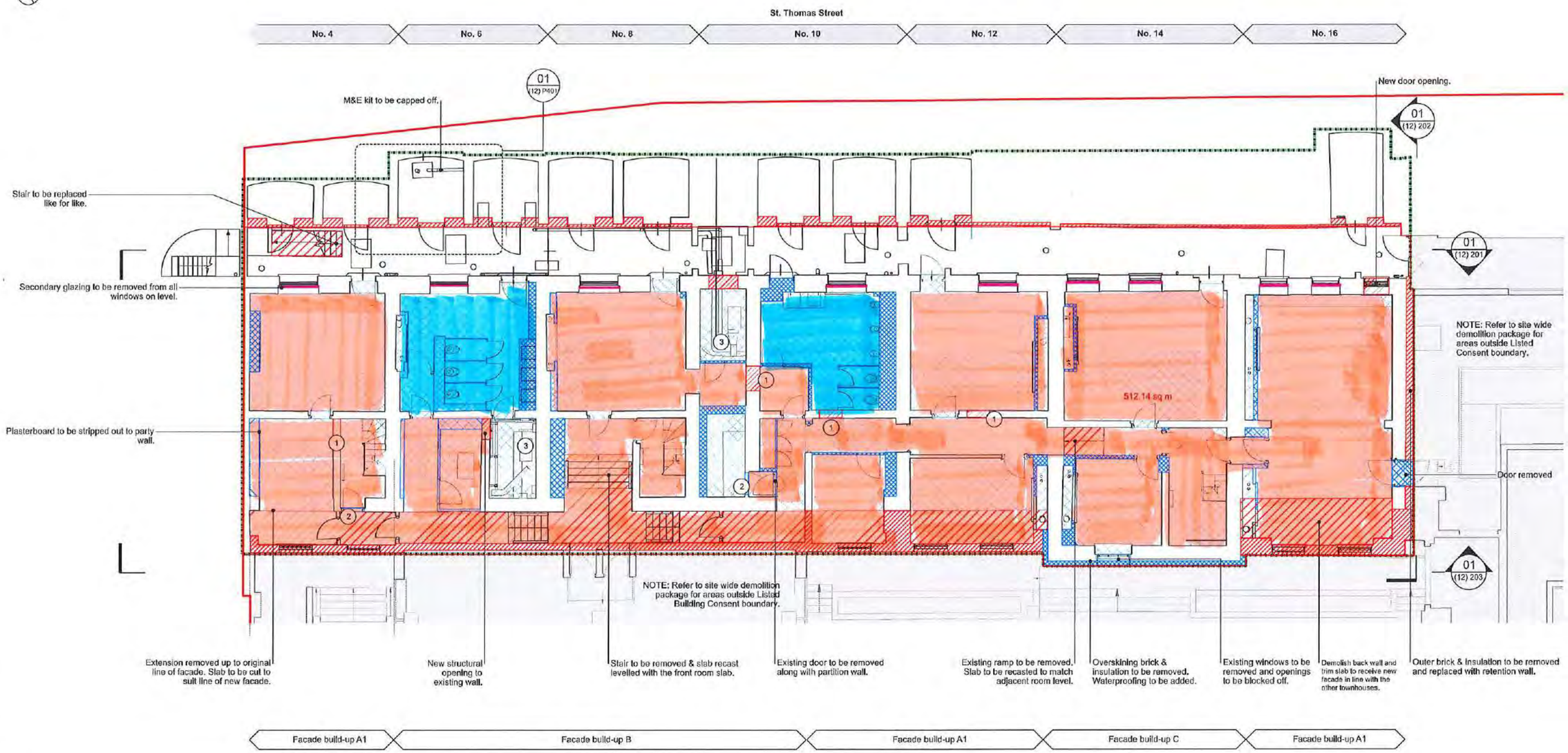
ALLFORD HALL MONAGHAN MORRIS
ARCHITECTS Ltd
MORELANDS, 5-23 OLD STREET LONDON EC1V 9HL
TEL 020 7251 5261 FAX 020 7251 5123 WEB WWW.AHMM.CO.UK

job title
NEW CITY COURT

drawing title / location
DEMOLITION SCOPE OF EXISTING UPPER ROOF PLAN

drawn by	checked	scale	status
GO	HT	1:200@A1; 1:400@A3	INFORMATION

project	zone	source	classification	drawing no.	revision
20065	X	A	(12)	126	0



01 LOWER GROUND FLOOR DEMOLITION PLAN

PRINCIPLES APPLIED THROUGHOUT ALL UNITS

VAULTS:
Doors removed.
Front face opened to express arched ceiling. see detailed zoom (12) P401
All services to be capped and removed. New services to be provided as part of the wider development.

WINDOWS - NORTH FACADE:
Ground floor only: existing single glazing sash windows to be retained and refurbished.
Existing secondary glazing to be removed.
First, second and third floor: existing single glazing sash windows to be retained and refurbished. Existing secondary glazing to be removed and replaced with bespoke timber secondary glazing to match style of retained sash windows. New windows to match style of existing.

WINDOWS - SOUTH FACADE:
All windows are new slimline DGU's. Style to match existing windows on North Facade.

EXISTING STAIRS:
Carpet to be removed and stair refurbished.

INTERNAL WALLS:
Infills where required to line up with existing wall.
Brick walls to be lined with plasterboard.

INTERNAL FINISHES TO WALL AND CEILINGS:
1) All plasterboard to be removed and replaced to line of existing, including plasterboard to north façade. Walls painted with white emulsion. Curved walls to be retained, repaired where necessary and repainted. Dropped ceilings to be removed.

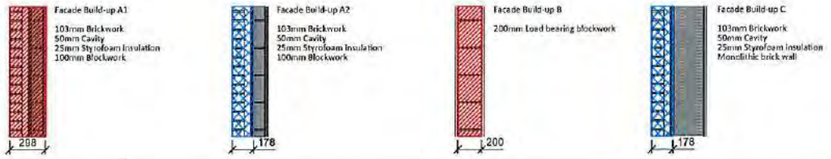
2) All skirting, ceiling coving and picture hanging details to be replaced by appropriate Georgian detailing.

FITTINGS:
All heaters, wall and ceiling mounted fittings, sanitary fittings, fixed furniture, tiles, cable trunking to be removed.

FIREPLACES/CHIMNEY BREASTS:
Rebuilt/reinstated with appropriate Georgian detailing.
All existing M&E kit to be removed

JOISTS AND RAFTERS:
All removed joist/rafters to be retained and reused in suitable locations

1. New structural opening to existing wall.
2. Existing door to be removed and opening blocked off.
3. M&E kit to be removed.



02 EXTENT OF WORK ON LEVEL

KEY:
- Planning Application Boundary
- Listed Building Consent Boundary
- Demolition
- Soft Strip
- Secondary glazing removed
- Below Ground Ownership only

NOTE
*Removed window sill/doors to be refurbished and reused in suitable locations.

REV	DATE	
0	19/02/21	Issued for Information
1	12/03/21	Issued for Information

Carpet Tiles
264

Ceramic Tiles
18,14

1:00 m SCALE 1:100 5:00 m
0 1 3 5 10

SOURCE:
This drawing is adapted from Plowman Craven survey drawing 35722F-01B-LG-03.

DRAFT

NOTE
1. Do not scale from this drawing.
2. All dimensions to be checked on site by the contractor and such dimensions to be his responsibility.
3. Report all drawing errors, omissions and discrepancies to the architect.
4. This document may be issued in an uncontrolled CAD format to enable others to use it as background information to make alterations and/or additions. In that instance the file will be accompanied by a PDF version. It is for those making such alterations and additions to ensure that they make use of current background information. AHMM Ltd accepts no liability for any such alterations or additions to the background information or arising out of changes to background information which occur prior to alterations or additions being made.

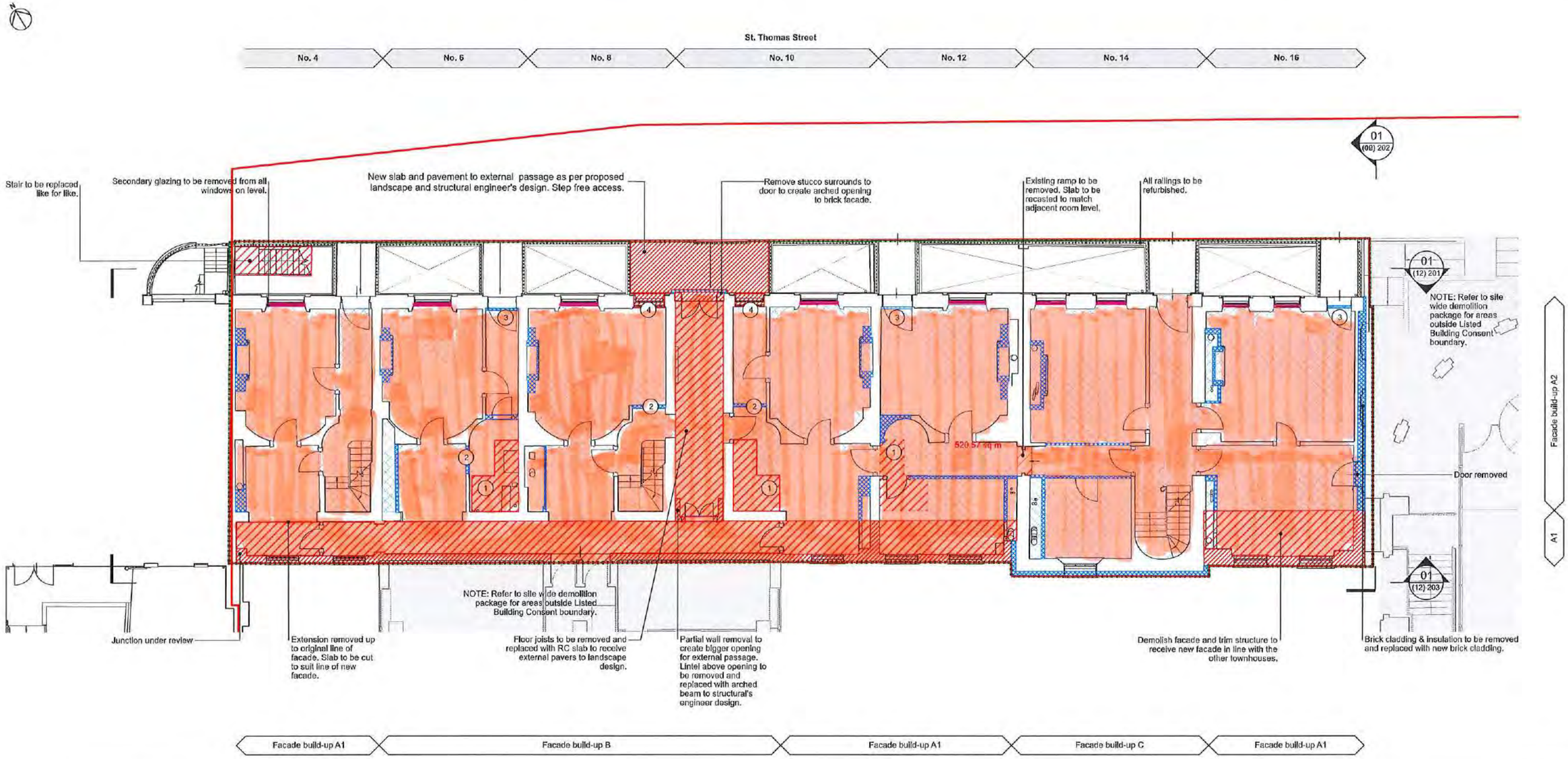
LOCATION

ALLFORD HALL MONAGHAN MORRIS
ARCHITECTS Ltd
MORELANDS, 5-23 OLD STREET LONDON EC1V 9HL
TEL 020 7251 5261 FAX 020 7251 5123 WEB WWW.AHMM.CO.UK

job title	NEW CITY COURT
drawing title / location	GEORGIAN TOWNHOUSES LOWER GROUND FLOOR DEMOLITION PLAN

drawn by	checked	scale	status
SM	HT	1:75@A1; 1:150@A3	INFORMATION

project	zone	source	classification	drawing no.	revision
20065	G	A	(12) 119		1



01 GROUND FLOOR DEMOLITION PLAN

PRINCIPLES APPLIED THROUGHOUT ALL UNITS

VAULTS:
Doors removed.
Front face opened to express arched ceiling see detailed room (12)_P401
All services to be capped and removed. New services to be provided as part of the wider development.

WINDOWS - NORTH FACADE:
Ground floor only: existing single glazing sash windows to be retained and refurbished. Existing secondary glazing to be removed.
First, second and third floor: existing single glazing sash windows to be retained and refurbished. Existing secondary glazing to be removed and replaced with bespoke timber secondary glazing to match style of retained sash windows. New windows to match style of existing.

WINDOWS - SOUTH FACADE:
All windows are new slimline DGU's. Style to match existing windows on North Facade.

EXISTING STAIRS:
Carpet to be removed and stair refurbished.

INTERNAL WALLS:
Infills where required to line up with existing wall.
Brick walls to be lined with plasterboard.

INTERNAL FINISHES TO WALL AND CEILINGS:
1) All plasterboard to be removed and replaced to line of existing, including plasterboard to north façade. Walls painted with white emulsion. Curved walls to be retained, repaired where necessary and repainted. Dropped ceilings to be removed.

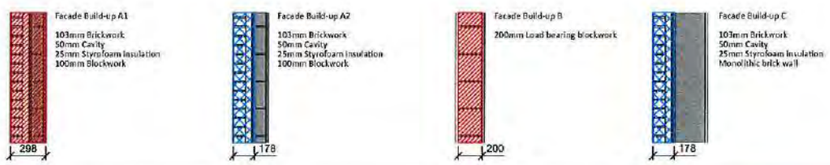
2) All skirting, ceiling coving and picture hanging details to be replaced by appropriate Georgian detailing.

FITTINGS:
All heaters, wall and ceiling mounted fittings, sanitary fittings, fixed furniture, tiles, cable trunking to be removed.

FIREPLACES/CHIMNEY BREASTS:
Rebuilt/reinstated with appropriate Georgian detailing.
All existing MEP kit to be removed.

JOISTS AND RAFTERS:
All removed joist/rafters to be retained and reused in suitable locations

1. Opening to floor slab to receive new stair between ground and lower ground floors.
2. New door opening
3. Partition behind door to be removed.
4. Reinstated door openings



02 EXTENT OF WORK ON LEVEL

KEY
- Planning Application Boundary
- Listed Building Consent Boundary
- Demolition
- Soft Strip
- Secondary glazing removed

NOTE
*Removed windows/doors to be refurbished and reused in suitable locations.

REV	DATE	
0	19/02/21	Issued for Information
1	12/03/21	Issued for Information

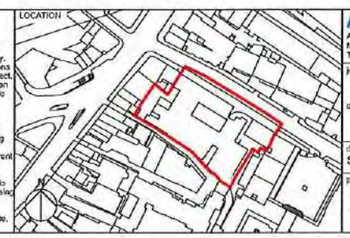
Carpet Tiles
37, 36, 38, 44
182,

SOURCE:
This drawing is adapted from Plowman Craven survey drawing 35722F-02B-G-OS.

DRAFT

NOTE
1. Do not scale from this drawing.
2. All dimensions to be checked on site by the contractor and such dimensions to be his responsibility.
3. Report all drawing errors, omissions and discrepancies to the architect.
4. This document may be issued in an uncontrolled CAD format to enable others to use it as background information to make alterations and/or additions. In that instance the file will be accompanied by a PDF version. It is for those making such alterations and additions to ensure that they make use of current background information. AHMM Ltd accepts no liability for any such alterations or additions to the background information or arising out of changes to background information which occur prior to alterations or additions being made.

LOCATION



ALLFORD HALL MONAGHAN MORRIS
ARCHITECTS Ltd
MORELANDS, 5-23 OLD STREET LONDON EC1V 9HL
TEL 020 7251 5261 FAX 020 7251 5123 WEB WWW.AHMM.CO.UK

job title: NEW CITY COURT
drawing title / location: GEORGIAN TOWNHOUSES GROUND FLOOR DEMOLITION PLAN

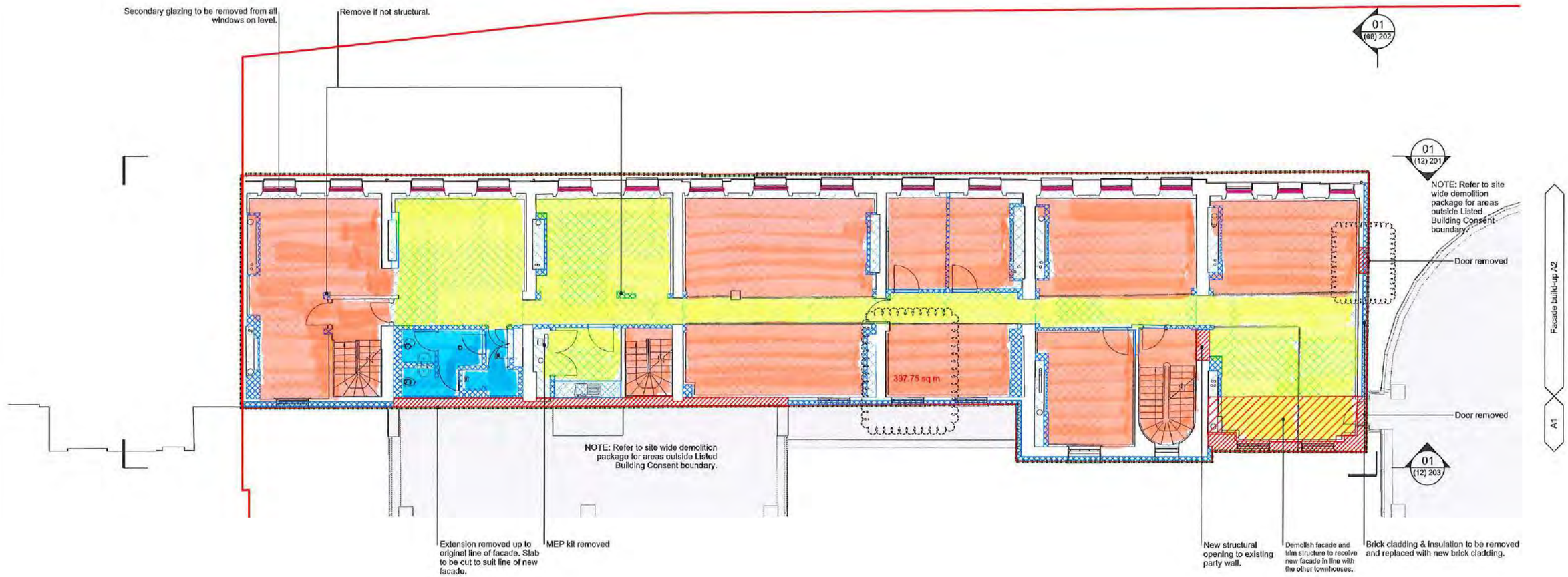
drawn by	checked	scale	status
SM	HT	1:75@A1; 1:150@A3	INFORMATION

project	zone	source	classification	drawing no.	revision
20065	G	A	(12) 120		1

REVISION NOTE: Proposed extra stair to no. 12 omitted.

St. Thomas Street

No. 4 | No. 6 | No. 8 | No. 10 | No. 12 | No. 14 | No. 16



Facade build-up A2 | Facade build-up B | Facade build-up A2 | Facade build-up C | Facade build-up A1

01 FIRST FLOOR DEMOLITION PLAN

PRINCIPLES APPLIED THROUGHOUT ALL UNITS

WINDOWS - NORTH FACADE:
Ground floor only: existing single glazing sash windows to be retained and refurbished. Existing secondary glazing to be removed.
First, second and third floor: existing single glazing sash windows to be retained and refurbished. Existing secondary glazing to be removed and replaced with bespoke timber secondary glazing to match style of retained sash windows. New windows to match style of existing.

WINDOWS - SOUTH FACADE:
All windows are new slimline DGU's. Style to match existing windows on North Facade.

EXISTING STAIRS:
Carpet to be removed and stair refurbished.

INTERNAL WALLS:
Infills where required to line up with existing wall.
Brick walls to be lined with plasterboard.

INTERNAL FINISHES TO WALL AND CEILINGS:
1) All plasterboard to be removed and replaced to line of existing, including plasterboard to north façade. Walls painted with white emulsion. Curved walls to be retained, repaired where necessary and repainted. Dropped ceilings to be removed.

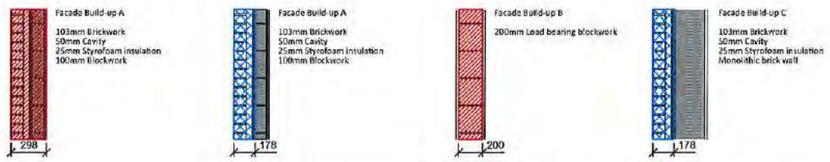
2) All skirting, ceiling coving and picture hanging details to be replaced by appropriate Georgian detailing.

FITTINGS:
All heaters, wall and ceiling mounted fittings, sanitary fittings, fixed furniture, tiles, cable trunking to be removed.

FIREPLACES/CHIMNEY BREASTS:
Rebuilt/reinstated with appropriate Georgian detailing.
All existing MEP kit to be removed.

JOISTS AND RAFTERS:
All removed joist/rafters to be retained and reused in suitable locations.

Rainwater pipes to south and east facades to be replaced and made external.



02 EXTENT OF WORK ON LEVEL

KEY
- Planning Application Boundary
- Listed Building Consent Boundary
- Demolition
- Soft Strip
- Secondary glazing removed

NOTE
*Removed window s/doors to be refurbished and reused in suitable locations.

REV	DATE
0	15/02/21 Issued for Information
1	12/03/21 Issued for Information

Carpet Tiles
36, 5, 26, 18, 16,
13, 21, 14, 9, 18

Vynl Flooring
96, 7

Ceramic Tiles
11,

1:00 m SCALE 1:75 6.00 m
0 1 3 5 10

SOURCE:
This drawing is adapted from Plowman Craven survey drawing 35722F-03B-1F-OS.

DRAFT

NOTE
1. Do not scale from this drawing.
2. All dimensions to be checked on site by the contractor and such dimensions to be his responsibility.
3. Report all drawing errors, omissions and discrepancies to the architect.
4. This document may be issued in an uncontrolled CAD format to enable others to use it as background information to make alterations and/or additions. In that instance the file will be accompanied by a PDF version. It is for those making such alterations and additions to ensure that they make use of current background information. AHMM Ltd accepts no liability for any such alterations or additions to the background information or arising out of changes to background information which occur prior to alterations or additions being made.

LOCATION

ALLFORD HALL MONAGHAN MORRIS
ARCHITECTS Ltd
MORELANDS, 5-23 OLD STREET LONDON EC1V 9HL
TEL 020 7251 5261 FAX 020 7251 5123 WEB WWW.AHMM.CO.UK

job title: NEW CITY COURT
drawing title / location: GEORGIAN TOWNHOUSES FIRST FLOOR DEMOLITION PLAN

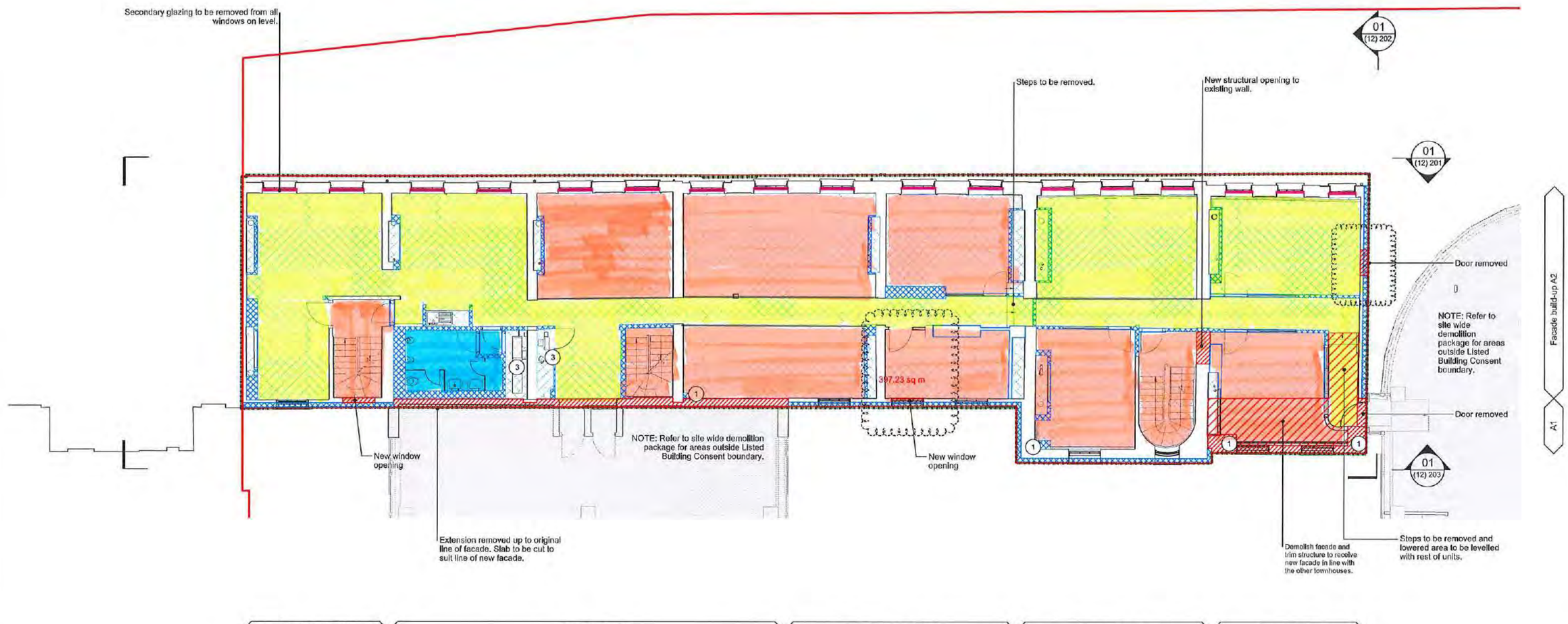
drawn by	checked	scale	status
SM	HT	1:75@A1; 1:150@A3	INFORMATION

project	zone	source	classification	drawing no.	revision
20065	G	A	(12) 121		1

REVISION NOTE: Proposed extra stair to no. 12 omitted.

St. Thomas Street

No. 4 | No. 6 | No. 8 | No. 10 | No. 12 | No. 14 | No. 16



Facade build-up A2 | Facade build-up B | Facade build-up A2 | Facade build-up C | Facade build-up A1

01 SECOND FLOOR DEMOLITION PLAN

PRINCIPLES APPLIED THROUGHOUT ALL UNITS

WINDOWS - NORTH FACADE:
Ground floor only: existing single glazing sash windows to be retained and refurbished. Existing secondary glazing to be removed.
First, second and third floor: existing single glazing sash windows to be retained and refurbished. Existing secondary glazing to be removed and replaced with bespoke timber secondary glazing to match style of retained sash windows. New windows to match style of existing.

WINDOWS - SOUTH FACADE:
All windows are new slimline DGU's. Style to match existing windows on North Facade.

EXISTING STAIRS:
Carpet to be removed and stair refurbished.

INTERNAL WALLS:
Infills where required to line up with existing wall.
Brick walls to be lined with plasterboard.

INTERNAL FINISHES TO WALL AND CEILINGS:
1) All plasterboard to be removed and replaced to line of existing, including plasterboard to north façade. Walls painted with white emulsion. Curved walls to be retained, repaired where necessary and repainted. Dropped ceilings to be removed.

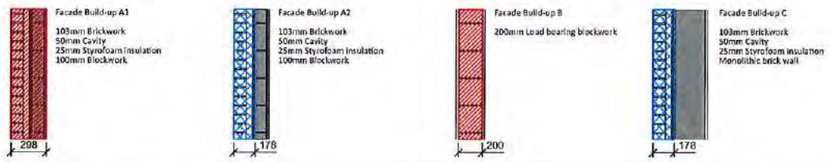
2) All skirting, ceiling coving and picture hanging details to be replaced by appropriate Georgian detailing.

FITTINGS:
All heaters, wall and ceiling mounted fittings, sanitary fittings, fixed furniture, tiles, cable trunking to be removed.

FIREPLACES/CHIMNEY BREASTS:
Rebuilt/reinstated with appropriate Georgian detailing.
All existing MEP kit to be removed.

JOISTS AND RAFTERS:
All removed joist/rafters to be retained and reused in suitable locations

Rainwater pipes to south and east facades to be replaced and made external.



02 EXTENT OF WORK ON LEVEL

KEY
- Planning Application Boundary
- Listed Building Consent Boundary
- Demolition
- Soft Strip
- Secondary glazing removed

NOTE
*Removed windows/doors to be refurbished and reused in suitable locations.

REV	DATE	
0	19/02/21	Issued for Information
1	12/03/21	Issued for Information

Carpet Tiles
7, 21, 29, 20, 5, 20, 12, 17, 9, 19

Vinyl Flooring
44, 24, 22

Ceramic Tiles
9

1. Boxing out to be removed if not structural.
2. Existing door to be removed and opening blocked off.
3. M&E kit to be removed.

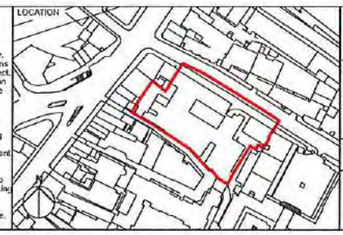
1.00 m SCALE 1:75 @ A1 / 2.00 m @ A3
0 1 3 5 10

SOURCE:
This drawing is adapted from Plowman Craven survey 35722F-04B-2F-OS.

DRAFT

NOTE
1. Do not scale from this drawing.
2. All dimensions to be checked on site by the contractor and such dimensions to be his responsibility.
3. Report all drawing errors, omissions and discrepancies to the architect.
4. This document may be issued in an uncontrolled CAD format to enable others to use it as background information to make alterations and/or additions. In that instance the file will be accompanied by a PDF version. It is for those making such alterations and additions to ensure that they make use of current background information. AHMM Ltd accepts no liability for any such alterations or additions to the background information or arising out of changes to background information which occur prior to alterations or additions being made.

LOCATION



ALLFORD HALL MONAGHAN MORRIS
ARCHITECTS Ltd
MORELANDS, 5-23 OLD STREET LONDON EC1V 9HL
TEL 020 7251 5261 FAX 020 7251 5123 WEB WWW.AHMM.CO.UK

job title: NEW CITY COURT

drawing title / location: GEORGIAN TOWNHOUSES SECOND FLOOR DEMOLITION PLAN

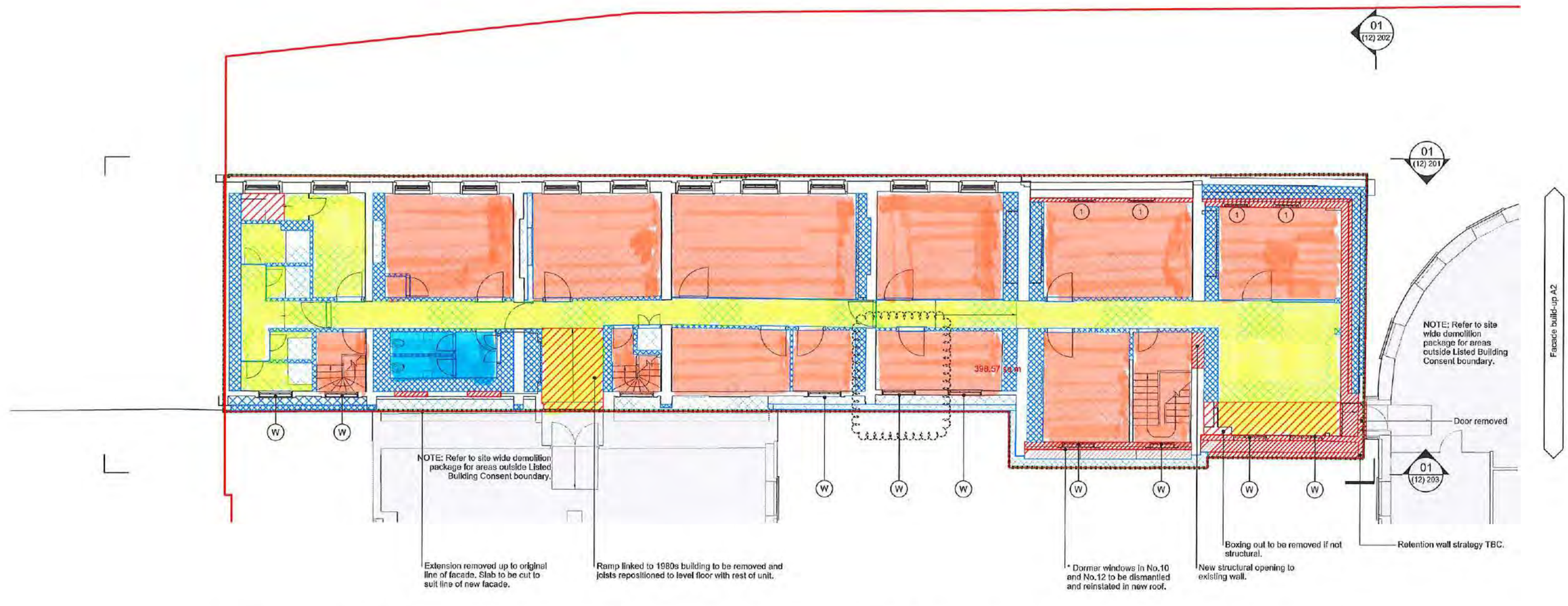
drawn by	checked	scale	status
SM	HT	1:75@A1; 1:150@A3	INFORMATION

project	zone	source	classification	drawing no.	revision
20065	G	A	(12)	122	1

REVISION NOTE: Proposed extra stair to no. 12 omitted.

St. Thomas Street

No. 4 | No. 6 | No. 8 | No. 10 | No. 12 | No. 14 | No. 16



Facade build-up A2 | Facade build-up B | Facade build-up A2 | Facade build-up C | Facade build-up A1

01 THIRD FLOOR DEMOLITION PLAN

PRINCIPLES APPLIED THROUGHOUT ALL UNITS

WINDOWS - NORTH FACADE:
Ground floor only: existing single glazing sash windows to be retained and refurbished. Existing secondary glazing to be removed.
First, second and third floor: existing single glazing sash windows to be retained and refurbished. Existing secondary glazing to be removed and replaced with bespoke timber secondary glazing to match style of retained sash windows. New windows to match style of existing.

WINDOWS - SOUTH FACADE:
All windows are new slim line DGU's. Style to match existing windows on North Facade.

EXISTING STAIRS:
Carpet to be removed and stair refurbished.

INTERNAL WALLS:
Infills where required to line up with existing wall.
Brick walls to be lined with plasterboard.

INTERNAL FINISHES TO WALL AND CEILINGS:
1) All plasterboard to be removed and replaced to line of existing, including plasterboard to north façade. Walls painted with white emulsion. Curved walls to be retained, repaired where necessary and repainted. Dropped ceilings to be removed.

2) All skirting, ceiling coving and picture hanging details to be replaced by appropriate Georgian detailing.

FITTINGS:
All heaters, wall and ceiling mounted fittings, sanitary fittings, fixed furniture, tiles, cable trunking to be removed.

FIREPLACES/CHIMNEY BREASTS:
Rebuilt/reinstated with appropriate Georgian detailing.
All existing MEP kit to be removed.

JOISTS AND RAFTERS:
All removed joist/rafters to be retained and reused in suitable locations

Rainwater pipes to south and east facades to be replaced and made external.

Facade Build-up A
103mm Brickwork
50mm Cavity
25mm Styrofoam insulation
100mm Blockwork

Facade Build-up A
103mm Brickwork
50mm Cavity
25mm Styrofoam insulation
100mm Blockwork

Facade Build-up B
200mm load bearing blockwork

Facade Build-up C
103mm Brickwork
50mm Cavity
25mm Styrofoam insulation
Monolithic brick wall

02 EXTENT OF WORK ON LEVEL

KEY
- Planning Application Boundary
- Listed Building Consent Boundary
- Demolition
- Soft Strip
- Secondary glazing removed

NOTE
*Removed windows/doors to be refurbished and reused in suitable locations.

REV	DATE	
0	19/02/21	Issued for Information
1	12/03/21	Issued for Information

Carpet Tiles
16, 20, 13, 9, 11, 19, 3, 19, 6, 19

Vigil Floor
73, 14

1 Dormer windows to be rebuilt with roof and replaced with slimline DGU's. to match existing windows.

Ceramic Tiles
7

0 1 3 5 10

SOURCE:
This drawing is adapted from Plowman Craven survey 35722F-05B-3F-OS.

DRAFT

NOTE
1. Do not scale from this drawing.
2. All dimensions to be checked on site by the contractor and such dimensions to be his responsibility.
3. Report all drawing errors, omissions and discrepancies to the architect.
4. This document may be issued in an uncontrolled CAD format to enable others to use it as background information to make alterations and/or additions. In that instance the file will be accompanied by a PDF version. It is for those making such alterations and additions to ensure that they make use of current background information.
AHMM Ltd accepts no liability for any such alterations or additions to the background information or arising out of changes to background information which occur prior to alterations of additions being made.

LOCATION

ALLFORD HALL MONAGHAN MORRIS
ARCHITECTS Ltd
MORELANDS, 5-23 OLD STREET LONDON EC1V 9HL
TEL 020 7251 5261 FAX 020 7251 5123 WEB WWW.AHMM.CO.UK

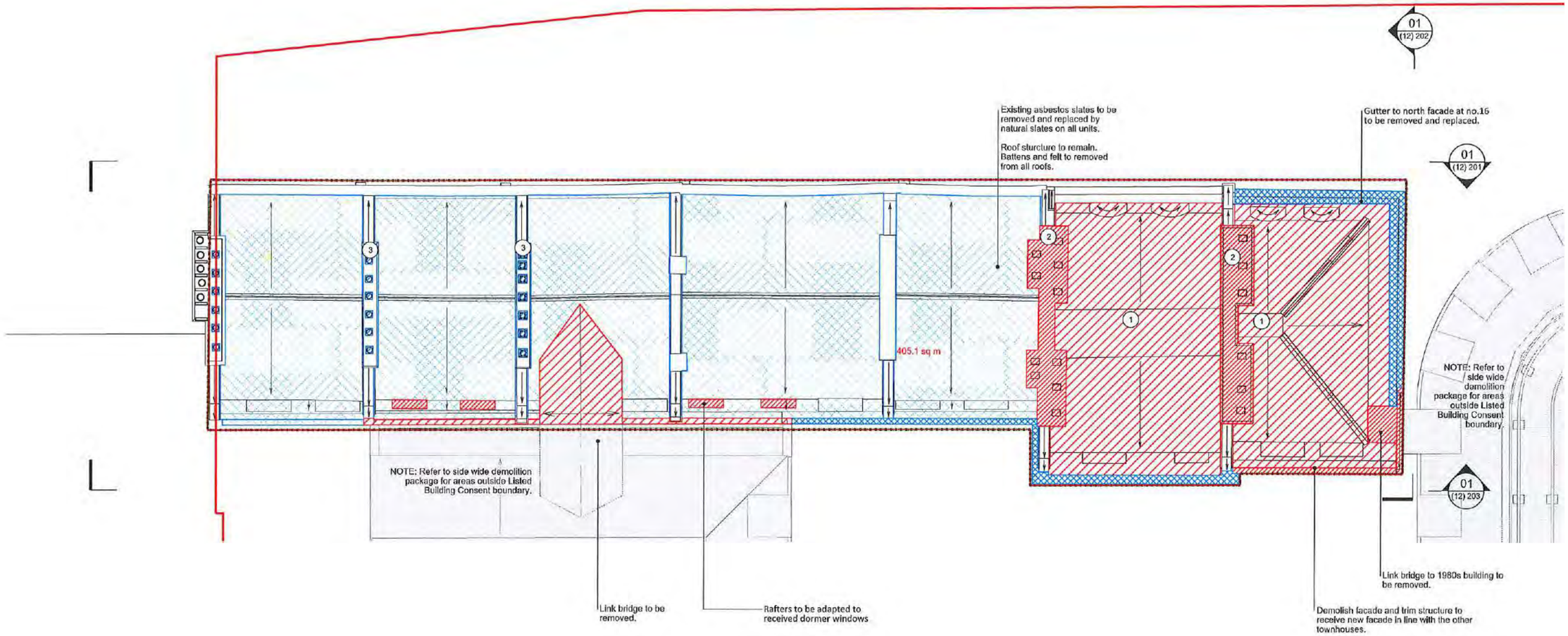
job title	NEW CITY COURT
drawing title / location	GEORGIAN TOWNHOUSES THIRD FLOOR DEMOLITION PLAN

drawn by	checked	scale	status
SM	HT	1:75@A1; 1:150@A3	INFORMATION

project	zone	source	classification	drawing no.	revision
20065	G	A	(12)	123	1

St. Thomas Street

No. 16 | No. 14 | No. 12 | No. 10 | No. 8 | No. 6 | No. 4



01 ROOF DEMOLITION PLAN

PRINCIPLES APPLIED THROUGHOUT ALL UNITS

GUTTERS AND RAINWATER PIPES:
To be replaced to south and east facades. Rainwater pipes to be made external.

02 EXTENT OF WORK ON LEVEL

KEY
- Planning Application Boundary
- Listed Building Consent Boundary
- Demolition
- Soft Strip
- Secondary glazing removed

NOTE
*Removed windows/doors to be refurbished and reused in suitable locations.

REV	DATE	
0	19/02/21	Issued for Information
1	12/03/21	Issued for Information

1. Roof to be rebuilt to adjusted extent and angle. Existing flat area to be removed. Dormer windows to be rebuilt with roof and replaced with slimline DGU's. Style to match existing windows.
2. Chimney stack rebuilt to match existing.
3. Modern chimney pots to be removed throughout all units

0 1 3 5 10

SOURCE:
This drawing is adapted from Plowman Craven survey drawing 35722F-06B-4F-OS.

DRAFT

NOTE
1. Do not scale from this drawing.
2. All dimensions to be checked on site by the contractor and such dimensions to be his responsibility.
3. Report all drawing errors, omissions and discrepancies to the architect.
4. This document may be issued in an uncontrolled CAD format to enable others to use it as background information to make alterations and/or additions. In that instance the file will be accompanied by a PDF version. It is for those making such alterations and additions to ensure that they make use of current background information.
AHMM Ltd accepts no liability for any such alterations or additions to the background information or arising out of changes to background information which occur prior to alterations or additions being made.

LOCATION

ALLFORD HALL MONAGHAN MORRIS
ARCHITECTS Ltd
MORELANDS, 5-23 OLD STREET LONDON EC1V 9HL
TEL 020 7251 5261 FAX 020 7251 5123 WEB WWW.AHMM.CO.UK

job title: NEW CITY COURT						
drawing title / location: GEORGIAN TOWNHOUSES ROOF DEMOLITION PLAN						
drawn by: SM	checked: HT	scale: 1:75@A1; 1:150@A3			status: INFORMATION	
project: 20065	zone: G	source: A	classification: (12) 125		drawing no.	revision: 1

APPENDIX 3

Excel Quantify Calculations

Area	Slabs [m2]	Suspended ceilings [m2]
Lower Ground Floor	2877	
Ground Floor	2582	
First Floor	2210	
Second Floor	1921	
Third Floor	1923	
Fourth Floor	1932	
Lower Roof	1037	
Upper Roof	242	
Totals	**14724**	**0**

Pre-demolition Audit												Circular Economy Opportunity				
Element	Component	Material	EWC	Area [m2]	Depth [m]	Height [m]	Nr	Actual volume	Conversion factor [Tonnes / m3]	Conversion factor Tonnes / m2]	Tonnes		1) Re-use exisiting assest	2) Recover Materials & Products on site or from another site	3) Share materials or products for onward reuse	Recycle	Possiable Outlets (1-3)
Floors	Lower Ground Floor Slab	Concrete	17 01 01	2877	0.25			719.25	2.4		1726		N/A	N/A	1726.2		- Type 1 subbase if segregated appropriately. - Recycled aggregate in concrete
	Lower Ground Floor Rebar	Steel	17 04 05	2877					0.11		79		N/A	N/A		79.12	
	Ground Floor Slab	Concrete	17 01 01	2582	0.25			645.5	2.4		1549		N/A	N/A	1549.2		- Type 1 subbase if segregated appropriately. - Recycled aggregate in concrete
	Ground Floor Rebar	Steel	17 04 05	2582					0.11		71		N/A	N/A		71.01	
													N/A	N/A		#REF!	
	First Floor Slab	Concrete	17 01 01	2210	0.25			552.5	2.4		1326		N/A	N/A	1326		- Type 1 subbase if segregated appropriately. - Recycled aggregate in concrete
	First Floor Rebar	Steel	17 04 05	2210					0.11		61		N/A	N/A		60.78	
													N/A	N/A		0.00	
	Second Floor Slab	Concrete	17 01 01	1921	0.25			480.25	2.4		1153		N/A	N/A	1152.6		- Type 1 subbase if segregated appropriately. - Recycled aggregate in concrete
	Second Floor Rebar	Steel	17 04 05	1921					0.11		53		N/A	N/A		52.83	
													N/A	N/A		0.00	
	Third Floor Slab	Concrete	17 01 01	1923	0.25			480.75	2.4		1154	1182	N/A	N/A	1153.8		- Type 1 subbase if segregated appropriately. - Recycled aggregate in concrete
	Third Floor Rebar	Steel	17 04 05	1923					0.11		53		N/A	N/A		52.88	
	Fourth Floor Slab	Concrete	17 01 01	1932	0.25			483	2.4		1159		N/A	N/A		0.00	
	Fourth Floor Slab	Steel	17 04 05	1932					0.11		53						
	Lower Roof Floor Slab	Concrete	17 01 01	1037	0.25			259.25	2.4		622	622	N/A	N/A	622.2		- Type 1 subbase if segregated appropriately. - Recycled aggregate in concrete
	Lower Roof Floor Rebar	Steel	17 04 05	1037					0.11		29		N/A	N/A		28.52	
	Upper Roof Floor Slab	Concrete	17 01 01	242	0.25			60.5	2.4		145						
	Upper Roof Floor Rebar	Steel	17 04 05	242					0.11		7		N/A	N/A		6.66	
																	14482
							Concrete m3	3681		**Frame Total**	**8834**						3620.5
			Total m2	14724			Total Cubic m3	3681		**Rebar Toral**	**405**						
												Totals	**0**	**0**	**7530**	**#REF!**	

Pre-demolition Audit												Circular Economy Opportunity				
Element	Component	Material	EWC	Length [Lin m]	Height [m]	Area [m2]	Depth [m]	Nr	Actual volume	Conversion factor [Tonnes / m3]	Conversion factor Tonnes / m2]	Tonnes	1) Re-use exisiting assest	2) Recover Materials & Products on site or from another site	3) Share materials or products for onward reuse	Recycle	Possiable Outlets [1-3]
Brickwork	Elevation 01	Bricks	17 01 02			26	0.135		4	1.9		7			0	0.00	
	Elevation 02	Bricks	17 01 02			0	0.135		0	1.9		0				0.00	
	Elevation 03	Bricks	17 01 02			150	0.135		20	1.9		38					
		Bricks	17 01 02				0.135		0	1.9		0					
	Elevation 05	Bricks	17 01 02				0.135		0	1.9		0					
	Elevation 06	Bricks	17 01 02				0.135		0	1.9		0					
	Elevation 07	Bricks	17 01 02			49	0.135		7	1.9		13					
		Bricks	17 01 02				0.135		0	1.9		0				#REF!	
					Total m2	225		**Total M3**	**30**		**Total**	**58**				#REF!	
Glazing	Elevation 01	Glass	17 02 02			163	0.05		8	0.52		4					
	Elevation 02	Glass	17 02 02			23	0.05		1	0.52		1				#REF!	
	Elevation 03	Glass	17 02 02			524	0.05		26	0.52		14				#REF!	
		Glass	17 02 02				0.05		0	0.52		0					
	Elevation 05	Glass	17 02 02				0.05		0	0.52		0					
	Elevation 06	Glass	17 02 02			155	0.05		8	0.52		4					
	Elevation 07	Glass	17 02 02				0.05		0	0.52		0				#REF!	
		Glass	17 02 02				0.05		0	0.52		0				#REF!	
											Total	**22**				0.00	
Insulation Façade	Elevation 01	Mineral	17 06 04			26	0.1		3	0.02		0.05					
	Elevation 02	Mineral	17 06 04			0	0.1		0	0.02		0.00				#REF!	
	Elevation 03	Mineral	17 06 04			150	0.1		15	0.02		0.30				#REF!	
		Mineral	17 06 04				0.1		0	0.02		0.00					
	Elevation 05	Mineral	17 06 04				0.1		0	0.02		0.00				#REF!	
	Elevation 06	Mineral	17 06 04				0.1		0	0.02		0.00				#REF!	
	Elevation 07	Mineral	17 06 04			49	0.1		5	0.02		0.10					
		Mineral	17 06 04				0.1		0	0.02		0.00				#REF!	
											Total	**0.5**					
Cladding Aluminiunum per mm thick 2.768kg per m2	Elevation 01	Aluminium				242	0.02		5		0.05536	13				3.33	
	Elevation 02					78	0.02		2		0.05536	4				0.00	
	Elevation 03					939	0.02		19		0.05536	52				67.48	
							0.02		0			0				85.88	
	Elevation 05						0.02		0			0				0.00	
	Elevation 06					155	0.02		3		0.05536	9				52.14	
	Elevation 07						0.02		0			0					
							0.05		0			0					
					Total m2	225		**Total M3**	**23**		**Total**	**78**					
Lead	Lower Ground Floor	Lead					0.018		0	0.21		0					
	Ground Floor	Lead					0.018		0	0.21		0					
	First Floor	Lead					0.018		0	0.21		0					
	Second Floor	Lead					0.018		0	0.21		0					
	Third Floor	Lead					0.018		0	0.21		0					
	Fourth Floor	Lead				154	0.018		3	0.21		1					
	Lower Roof	Lead					0.018		0	0.21		0					
	Upper Roof	Lead					0.018		0	0.21		0					
					Total m2	1397		**Total M3**	**46**		**Total**	**1**					
Asphalt Roof	Lower Ground Floor	Asphalt	17 03			0	0				0.0054	0					
	Ground Floor	Asphalt	17 03			0	0				0.0054	0					
	First Floor	Asphalt	17 03			0	0				0.0054	0					
	Second Floor	Asphalt	17 03			0	0				0.0054	0					
	Third Floor	Asphalt	17 03			0	0				0.0054	0					
	Fourth Floor	Asphalt	17 03			0	0				0.0054	0					
	Lower Roof	Asphalt	17 03			617	0				0.0054	3					
	Upper Roof	Asphalt	17 03				0				0.0054	0					
											Total	**3**					
Paving Bricks	Lower Ground Floor	Bricks	17 01 02				0.135		0	1.9		0					
	Ground Floor	Bricks	17 01 02			150	0.135		20	1.9		38					
	First Floor	Bricks	17 01 02			0	0.135		0	1.9		0					
	Second Floor	Bricks	17 01 02			0	0.135		0	1.9		0					
	Third Floor	Bricks	17 01 02			0	0.135		0	1.9		0					
	Fourth Floor	Bricks	17 01 02			0	0.135		0	1.9		0					
	Lower Roof	Bricks	17 01 02			0	0.135		0	1.9		0					
	Upper Roof	Bricks	17 01 02			0	0.135		0	1.9		0					
					Total m2	150		**Total M3**	**20**		**Total**	**38**					
Blockwork	Elevation 01	Bricks	17 01 02			242	0.14		34	1		34					
Behind Cladding	Elevation 02	Bricks	17 01 02			78	0.14		11	1		11					
Block	Elevation 03	Bricks	17 01 02			939	0.14		131	1		131					
		Bricks	17 01 02				0.14		0	1		0					
	Elevation 05	Bricks	17 01 02				0.14		0	1		0					
	Elevation 06	Bricks	17 01 02			155	0.14		22	1		22					
	Elevation 07	Bricks	17 01 02				0.14		0	1		0					
		Bricks	17 01 02				0.14		0	1		0					
					Total m2	1414		**Total M3**	**198**		**Total**	**198**					

Total	**0**	**#REF!**

Component	Floor	Material	EWC	Length [Lin m]	Height [m]	Area [m2]	Depth [m]	Nr	Actual volume	Conversion factor [Tonnes / m3]	Weight per 1m2 / kg	Tonnes	Circular Economy Opportunity 1) Re-use exisiting assest	2) Recover Materials & Products on site or from another site	3) Share materials or products for onward reuse	Recycle	Possiable Outlets (1-3)
Vinyl Flooring	Lower Ground Floor	Plastic	17 02 03			90	0.032		3		0.0026	0.2					
	Ground Floor	Plastic	17 02 03			53	0.032		2		0.0026	0.1					
	First Floor	Plastic	17 02 03			32	0.032		1		0.0026	0.1					
	Second Floor	Plastic	17 02 03			50	0.032		2		0.0026	0.1					
	Third Floor	Plastic	17 02 03			585	0.032		19		0.0026	1.5					
	Fourth Floor	Plastic	17 02 03			230	0.032		7		0.0026	0.6					
	Lower Roof	Plastic	17 02 03			0	0.032		0		0.0026	0.0					
	Upper Roof	Plastic	17 02 03			0	0.032		0		0.0026	0.0					
					Total			**Total**			**Total**	**3**					
										Weight per slab	**Weight per m2**						
Council Slab Tiles 600x600 - 50mm 2.7 slabs per m2	Lower Ground Floor	Concrete	17 01 01			419	0.05		20.95	0.041	0.1107	46					
	Ground Floor	Concrete	17 01 01			100	0.05		5	0.041	0.1107	11					
	First Floor	Concrete	17 01 01			0	0.05		0	0.041	0.1107	0					
	Second Floor	Concrete	17 01 01			0	0.05		0	0.041	0.1107	0					
	Third Floor	Concrete	17 01 01			0	0.05		0	0.041	0.1107	0					
	Fourth Floor	Concrete	17 01 01			0	0.05		0	0.041	0.1107	0					
	Lower Roof	Concrete	17 01 01			382	0.05		19.1	0.041	0.1107	42					
	Upper Roof	Concrete	17 01 01			0	0.05		0	0.041	0.1107	0					
					Total m2	**419**		**Total M3**	**20.95**		**Total**	**100**					
Suspended Ceilings Light Steel	Lower Ground Floor	Light Steel	17 04 05			540	0.03		16.2		0.005	3					
	Ground Floor	Light Steel	17 04 05			909	0.03		27.3		0.005	5					
	First Floor	Light Steel	17 04 05			1398	0.03		41.9		0.005	7					
	Second Floor	Light Steel	17 04 05			936	0.03		28.1		0.005	5					
	Third Floor	Light Steel	17 04 05			1197	0.03		35.9		0.005	6					
	Fourth Floor	Light Steel	17 04 05			609	0.03		18.3		0.005	3					
	Lower Roof	Light Steel	17 04 05			0	0.03		0.0		0.005	0					
	Upper Roof	Light Steel	17 04 05			0	0.03		0.0		0.005	0					
										Weight per panel	**Total Weight per m2**	**28**					
Raised Access Floor 600x600x31 2.7 panel m2	Lower Ground Floor	Steel	17 04 05			675	0.031		20.925	0.014	0.0378	25.5					
	Ground Floor	Steel	17 04 05			1137	0.031		35.247	0.014	0.0378	43.0					
	First Floor	Steel	17 04 05			1748	0.031		54.188	0.014	0.0378	66.1					
	Second Floor	Steel	17 04 05			1441	0.031		44.671	0.014	0.0378	54.5					
	Third Floor	Steel	17 04 05			1497	0.031		46.407	0.014	0.0378	56.6					
	Fourth Floor	Steel	17 04 05			762	0.031		23.622	0.014	0.0378	28.8					
	Lower Roof	Steel	17 04 05			0	0.031		0	0.4	0.002	0.0					
	Upper Roof	Steel	17 04 05			0	0.03		0	0.4	0.002	0.0					
											Total	**274**					
Wooden Laminate Flooring	Lower Ground Floor	Wood	17 02 01			0	0.06		0		0.0056	0.0					
	Ground Floor	Wood	17 02 01			0	0.06		0		0.0056	0.0					
	First Floor	Wood	17 02 01			0	0.06		0		0.0056	0.0					
	Second Floor	Wood	17 02 01			280	0.06		16.8		0.0056	1.6					
	Third Floor	Wood	17 02 01			0	0.06		0		0.0056	0.0					
	Fourth Floor	Wood	17 02 01			0	0.06		0		0.0056	0.0					
	Lower Roof	Wood	17 02 01			0	0.06		0		0.0056	0.0					
	Upper Roof	Wood	17 02 01			0	0.06		0		0.0056	0.0					
											Total	**2**					
Carpet Tiles	Lower Ground Floor	Carpet	04 02 22			911	0.03		27.33		0.0033	3.0					
	Ground Floor	Carpet	04 02 22			1189	0.03		35.67		0.0033	3.9					
	First Floor	Carpet	04 02 22			1803	0.03		54.09		0.0033	5.9					
	Second Floor	Carpet	04 02 22			1142	0.03		34.26		0.0033	3.8					
	Third Floor	Carpet	04 02 22			997	0.03		29.91		0.0033	3.3					
	Fourth Floor	Carpet	04 02 22			591	0.03		17.73		0.0033	2.0					
	Lower Roof	Carpet	04 02 22			0	0.03		0		0.0033	0.0					
	Upper Roof	Carpet	04 02 22			0	0.03		0		0.0033	0.0					
											Total	**22**					
Ceramic Tiles	Lower Ground Floor	Tiles & Ceramics	17 01 07			49	0.09		4.41		0.02	1.0					
	Ground Floor	Tiles & Ceramics	17 01 07			220	0.09		19.8		0.02	4.4					
	First Floor	Tiles & Ceramics	17 01 07			79	0.09		7.11		0.02	1.6					
	Second Floor	Tiles & Ceramics	17 01 07			46	0.09		4.14		0.02	0.9					
	Third Floor	Tiles & Ceramics	17 01 07			46	0.09		4.14		0.02	0.9					
	Fourth Floor	Tiles & Ceramics	17 01 07			46	0.09		4.14		0.02	0.9					
	Lower Roof	Tiles & Ceramics	17 01 07			0	0.09		0		0.02	0.0					
	Upper Roof	Tiles & Ceramics	17 01 07			0	0.09		0		0.02	0.0					
											Total	**10**					

Component	Floor	Material	EWC	Length [Lin m]	Height [m]	Area [m2]	Depth [m]	Nr	Actual volume (M3)	Conversion factor [Tonnes / m3]	Weight per 1m2 / kg	Tonnes
RC Walls	Lower Ground Floor	Concrete	17 01 01	176	3.22	566.7	0.25		141.7	2.4		340
	Ground Floor	Concrete	17 01 01	61	3.22	196.4	0.25		49.1	2.4		118
	First Floor	Concrete	17 01 01	88	3.22	283.4	0.25		70.8	2.4		170
	Second Floor	Concrete	17 01 01	56	3.22	180.3	0.25		45.1	2.4		108
	Third Floor	Concrete	17 01 01	56	3.22	180.3	0.25		45.1	2.4		108
	Fourth Floor	Concrete	17 01 01	56	3.22	180.3	0.25		45.1	2.4		108
	Lower Roof	Concrete	17 01 01				0.25		0.0	2.4		0
	Upper Roof	Concrete	17 01 01				0.25		0.0	2.4		0
								Total volume	396.9			
											Total	**952.5**
Blockwork	Lower Ground Floor	Blockwork	17 01 02	249	3.22	801.78	0.14		112.2	1		112
	Ground Floor	Blockwork	17 01 02	67	3.22	215.74	0.14		30.2	1		30
	First Floor	Blockwork	17 01 02	52	3.22	167.44	0.14		23.4	1		23
	Second Floor	Blockwork	17 01 02	56	3.22	180.32	0.14		25.2	1		25
	Third Floor	Blockwork	17 01 02	56	3.22	180.32	0.14		25.2	1		25
	Fourth Floor	Blockwork	17 01 02	56	3.22	180.32	0.14		25.2	1		25
	Lower Roof	Blockwork	17 01 02				0.14		0.0			0.0
	Upper Roof	Blockwork	17 01 02				0.14		0.0			0.0
								No Collums	Per Collum		**Total**	**242**
Concrete Collums	Lower Ground Floor	Concrete	17 01 01	0.63	3.22	0.4	0.63	11	1	2.4		34
	Ground Floor	Concrete	17 01 01	0.63	3.22	0.4	0.63	22	1	2.4		67
	First Floor	Concrete	17 01 01	0.63	3.22	0.4	0.63	31	1	2.4		95
	Second Floor	Concrete	17 01 01	0.63	3.22	0.4	0.63	31	1	2.4		95
	Third Floor	Concrete	17 01 01	0.63	3.22	0.4	0.63	28	1	2.4		86
	Fourth Floor	Concrete	17 01 01	0.63	3.22	0.4	0.63	17	1	2.4		52
	Lower Roof	Concrete	17 01 01				0.2		0	2.4		0
	Upper Roof	Concrete	17 01 01				0.2		0	2.4		0
											Total	**429.4**
								Per sheet m3			Tonnes per sheet	
Partitions Stud/Plasterboard x1	Lower Ground Floor	Gypsum	17 08 02	163	2.56	417.28	0.0125	0.036	5	145	0.0235	3
	Ground Floor	Gypsum	17 08 02	144	2.56	368.64	0.0125	0.036	5	128	0.0235	3
	First Floor	Gypsum	17 08 02	119	2.56	304.64	0.0125	0.036	4	106	0.0235	2
	Second Floor	Gypsum	17 08 02	86	2.56	220.16	0.0125	0.036	3	76	0.0235	2
	Third Floor	Gypsum	17 08 02	122	2.56	312.32	0.0125	0.036	4	108	0.0235	3
	Fourth Floor	Gypsum	17 08 02	79	2.56	202.24	0.0125	0.036	3	70	0.0235	2
	Lower Roof	Gypsum	17 08 02	0			0.0125	0.036	0	0	0.0235	0
	Upper Roof	Gypsum	17 08 02	0			0.0125	0.036	0	0	0.0235	0
								No Studs	Volume	M3 Coversion	**Total**	**15**
Timber Studs Partitions 2.56 * 0.63 * 0.38 at 600mm centres 1.78 stud per m	Lower Ground Floor	Timber	17 02 01	0.63	2.56		0.038	92	6	0.6		3
	Ground Floor	Timber	17 02 01	0.63	2.56		0.038	81	5	0.6		3
	First Floor	Timber	17 02 01	0.63	2.56		0.038	67	4	0.6		2
	Second Floor	Timber	17 02 01	0.63	2.56		0.038	48	3	0.6		2
	Third Floor	Timber	17 02 01	0.63	2.56		0.038	69	4	0.6		3
	Fourth Floor	Timber	17 02 01	0.63	2.56		0.038	44	3	0.6		2
	Lower Roof	Timber	17 02 01	0			0.038		0	0.6		0
	Upper Roof	Timber	17 02 01	0			0.038		0	0.6		0
			Total m2	2				**Total M3**	11		**Total**	**15**
Brickwork 1.5 Bricks	Lower Ground Floor	Bricks	17 01 02	73	3.22	235	0.135		32	1.9		60
	Ground Floor	Bricks	17 01 02				0.135		0	1.9		0
	First Floor	Bricks	17 01 02				0.135		0	1.9		0
	Second Floor	Bricks	17 01 02				0.135		0	1.9		0
	Third Floor	Bricks	17 01 02				0.135		0	1.9		0
	Fourth Floor	Bricks	17 01 02				0.135		0	1.9		0
	Lower Roof	Bricks	17 01 02				0.135		0	1.9		0
	Upper Roof	Bricks	17 01 02				0.135		0	1.9		0
			Total m2	73				**Total M3**	32		**Total**	**60**
Partitions Glass	Lower Ground Floor	Glass	17 02 02	34	2.56	87.04	0.1		8.7	2.5		21.8
	Ground Floor	Glass	17 02 02	55	2.56	140.8	0.1		14.1	2.5		35.2
	First Floor	Glass	17 02 02	57	2.56	145.92	0.1		14.6	2.5		36.5
	Second Floor	Glass	17 02 02	72	2.56	184.32	0.1		18.4	2.5		46.1
	Third Floor	Glass	17 02 02	86	2.56	220.16	0.1		22.0	2.5		55.0
	Fourth Floor	Glass	17 02 02	31	2.56	79.36	0.1		7.9	2.5		19.8
	Lower Roof	Glass	17 02 02	0			0.1		0.0	2.5		0.0
	Upper Roof	Glass	17 02 02	0			0.1		0.0	2.5		0.0
											Total	**194.6**

Circular Economy Opportunity				
1) Re-use exisiting assest	2) Recover Materials & Products on site or from another site	3) Share materials or products for onward reuse	Recycle	Possiable Outlets (1-3)
Total		**0**	**0.00**	

Per Colum	Total m3	Tonne
1.278018	14.058198	33.7396752
1.278018	28.116396	67.4793504
1.278018	39.618558	95.0845392
1.278018	39.618558	95.0845392
1.278018	35.784504	85.8828096
1.278018	21.726306	52.1431344
Total m3	179	

Area	Slabs [m2]	Suspended ceilings [m2]
Lower Ground Floor	512	
Ground Floor	520	
First Floor	398	
Second Floor	397	
Third Floor	398	
Lower Roof	405	
Upper Roof		
Totals	**2630**	**0**

Pre-demolition Audit												Circular Economy Opportunity				
Element	**Component**	**Material**	**EWC**	**Area [m2]**	**Depth [m]**	**Height [m]**	**Nr**	**Actual volume**	**Conversion factor [Tonnes / m3]**	**Conversion factor Tonnes / m2]**	**Tonnes**	**1) Re-use exisiting assest**	**2) Recover Materials & Products on site or from another site**	**3) Share materials or products for onward reuse**	**Recycle**	**Possiable Outlets (1-3)**
																- Type 1 subbase if segregated appropriately.
Floors	Lower Ground Floor Slab	Concrete	17 01 01		0.2				2.4		0	N/A	N/A	0		- Recycled aggregate in concrete
	Lower Ground Floor Rebar	Steel	17 04 05							0.005	0	N/A	N/A		0.00	
																- Type 1 subbase if segregated appropriately.
	Ground Floor Slab	Concrete	17 01 01		0.2				2.4		0	N/A	N/A	0		- Recycled aggregate in concrete
	Ground Floor Rebar	Steel	17 04 05							0.006	0	N/A	N/A		0.00	
												N/A	N/A		#REF!	
																- Type 1 subbase if segregated appropriately.
	First Floor Slab	Concrete	17 01 01		0.2				2.4		0	N/A	N/A	0		- Recycled aggregate in concrete
	First Floor Rebar	Steel	17 04 05							0.006	0	N/A	N/A		0.00	
												N/A	N/A		0.00	
																- Type 1 subbase if segregated appropriately.
	Second Floor Slab	Concrete	17 01 01		0.2				2.4		0	N/A	N/A	0		- Recycled aggregate in concrete
	Second Floor Rebar	Steel	17 04 05							0.006	0	N/A	N/A		0.00	
												N/A	N/A		0.00	
																- Type 1 subbase if segregated appropriately.
	Third Floor Slab	Concrete	17 01 01		0.2				2.4		0					- Recycled aggregate in concrete
	Third Floor Rebar	Steel	17 04 05							0.006	0					
																- Type 1 subbase if segregated appropriately.
	Roof Floor Slab	Concrete	17 01 01		0.2				2.4		0					- Recycled aggregate in concrete
	Roof Floor Rebar	Steel	17 04 05							0.006	0					
										Frame Total	**0**					
			Total m2	0		Total Cubic m3	0			**Rebar Toral**	**0**					
											Totals	**0**	**0**	**0**	**#REF!**	

Component	Floor	Material	EWC	Length [Lin m]	Height [m]	Area [m2]	Depth [m]	Nr	Actual volume	Conversion factor [Tonnes / m3]	Weight per 1m2 / kg	Tonnes
Vinyl Flooring	Lower Ground Floor	Plastic	17 02 03			0	0.032		0.0		0.0026	0
	Ground Floor	Plastic	17 02 03			0	0.032		0.0		0.0026	0
	First Floor	Plastic	17 02 03			103	0.032		3.1		0.0026	1
	Second Floor	Plastic	17 02 03			145	0.032		4.4		0.0026	1
	Third Floor	Plastic	17 02 03			87	0.032		2.6		0.0026	0
	Roof	Plastic	17 02 03			0	0.032		0.0		0.0026	0
					Total			**Total**			**Total**	**2**
Suspended Ceilings Light Steel	Lower Ground Floor	Light Steel	17 04 05				0.03				0.005	
	Ground Floor	Light Steel	17 04 05				0.03				0.005	
	First Floor	Light Steel	17 04 05			258	0.03				0.005	1
	Second Floor	Light Steel	17 04 05				0.03				0.005	
	Third Floor	Light Steel	17 04 05				0.03				0.005	
	Roof	Light Steel	17 04 05				0.03				0.005	
											Total	
Suspended Ceilings Mineral Fibre	Lower Ground Floor	Light Steel	17 04 05				0.03				0.005	
	Ground Floor	Light Steel	17 04 05				0.03				0.005	
	First Floor	Light Steel	17 04 05				0.03				0.005	
	Second Floor	Light Steel	17 04 05			225	0.06		13.5		0.0056	1
	Third Floor	Light Steel	17 04 05				0.03				0.005	
	Roof	Light Steel	17 04 05				0.03				0.005	
											Total	
Carpet Tiles	Lower Ground Floor	Carpet	04 02 22			264	0.03		7.92		0.0033	0.9
	Ground Floor	Carpet	04 02 22			337	0.03		10.11		0.0033	1.1
	First Floor	Carpet	04 02 22			176	0.03		5.28		0.0033	0.6
	Second Floor	Carpet	04 02 22			159	0.03		4.77		0.0033	0.5
	Third Floor	Carpet	04 02 22			133	0.03		3.99		0.0033	0.4
	Roof	Carpet	04 02 22			0	0.03		0		0.0033	0.0
											Total	**4**
Ceramic Tiles	Lower Ground Floor	Tiles & Ceramics	17 01 07			32	0.09		2.88		0.02	0.6
	Ground Floor	Tiles & Ceramics	17 01 07			0	0.09		0		0.02	0.0
	First Floor	Tiles & Ceramics	17 01 07			11	0.09		0.99		0.02	0.2
	Second Floor	Tiles & Ceramics	17 01 07			9	0.09		0.81		0.02	0.2
	Third Floor	Tiles & Ceramics	17 01 07			7	0.09		0.63		0.02	0.1
	Roof	Tiles & Ceramics	17 01 07			0	0.09		0		0.02	0.0
								Per sheet m3			**Total** Tonnes per sheet	**1**
										Weight per panel	**Weight per m2**	
Raised Access Floor 600x600x31	Lower Ground Floor	Steel	17 04 05			132	0.031		4.092	0.014	0.0378	5.0
2.7 panel m2	Ground Floor	Steel	17 04 05			136	0.031		4.216	0.014	0.0378	5.1
	First Floor	Steel	17 04 05			258	0.031		7.998	0.014	0.0378	9.8
	Second Floor	Steel	17 04 05			225	0.031		6.975	0.014	0.0378	8.5
	Third Floor	Steel	17 04 05			219	0.031		6.789	0.014	0.0378	8.3
											Total	**37**

Circular Economy Opportunity				
1) Re-use exisiting assest	**2) Recover Materials & Products on site or from another site**	**3) Share materials or products for onward reuse**	**Recycle**	**Possiable Outlets (1-3)**

Component	Floor	Material	EWC	Length [Lin m]	Height [m]	Area [m2]	Depth [m]	Nr	Actual volume (M3)	Conversion factor [Tonnes / m3]	Weight per 1m2 / kg	Tonnes
								Per Sheet (m3)			Tonnes per sheet	
Partitions Stud/Plasterboard	Lower Ground Floor	Gypsum	17 08 02	39	2.56	99.84	0.0125	0.036	1.2	34.7	0.0235	2.3
	Ground Floor	Gypsum	17 08 02	33	2.56	84.48	0.0125	0.036	1.1	29.3	0.0235	0.7
	First Floor	Gypsum	17 08 02	39	2.56	99.84	0.0125	0.036	1.2	34.7	0.0235	0.8
x1	Second Floor	Gypsum	17 08 02	44	2.56	112.64	0.0125	0.036	1.4	39.1	0.0235	0.9
	Third Floor	Gypsum	17 08 02	45	2.56	115.2	0.0125	0.036	1.4	40.0	0.0235	0.9
	Roof	Gypsum	17 08 02	0	2.56	0	0.0125	0.036	0.0	0.0	0.0235	0.0
								No Studs			**Total**	**6**
Timber Stud	Lower Ground Floor	Timber	17 02 01	0.63	2.56	1.6128	0.038	22	1.3	0.6		1.9
	Ground Floor	Timber	17 02 01	0.63	2.56	1.6128	0.038	19	1.1	0.6		1.7
Partitions 2.56 * 0.63 * 0.38 at 600mm centres	First Floor	Timber	17 02 01	0.63	2.56	1.6128	0.038	22	1.3	0.6		1.9
	Second Floor	Timber	17 02 01	0.63	2.56	1.6128	0.038	25	1.5	0.6		2.1
1.78 stud per m	Third Floor	Timber	17 02 01	0.63	2.56	1.6128	0.038	25	1.5	0.6		2.1
	Roof	Timber	17 02 01	0	2.56	0	0.038		0.0			0.0
											Total	**10**
Partitions Glass	Lower Ground Floor	Glass	17 02 02	0	2.56	0	0.1		0.0	2.5		0.0
	Ground Floor	Glass	17 02 02	0	2.56	0	0.1		0.0	2.5		0.0
	First Floor	Glass	17 02 02	12	2.56	30.72	0.1		3.1	2.5		7.7
	Second Floor	Glass	17 02 02	17	2.56	43.52	0.1		4.4	2.5		10.9
	Third Floor	Glass	17 02 02	28	2.56	71.68	0.1		7.2	2.5		17.9
	Roof	Glass	17 02 02	0	2.56	0	0.1		0.0	2.5		0.0
											Total	**36.5**

Circular Economy Opportunity

	1) Re-use exisiting assest	2) Recover Materials & Products on site or from another site	3) Share materials or products for onward reuse	Recycle	Possiable Outlets (1-3)
Total			**0**	**0.00**	

Component	Floor	Material	EWC	Length [Lin m]	Height [m]	Area [m2]	Depth [m]	Nr	Actual volume (M3)	Conversion factor [Tonnes / m3]	Weight per 1m2 / kg	Tonnes
RC Walls	Lower Ground Floor	Concrete	17 01 01				0.225		0.0	2.4		0
	Ground Floor	Concrete	17 01 01				0.225		0.0	2.4		0
	First Floor	Concrete	17 01 01				0.225		0.0	2.4		0
	Second Floor	Concrete	17 01 01				0.225		0.0	2.4		0
	Third Floor	Concrete	17 01 01				0.225		0.0	2.4		0
	Roof	Concrete	17 01 01				0.225		0.0	2.4		0
											Total	**0.0**
Blockwork	Lower Ground Floor	Blockwork	17 01 02			110	0.1		11.0	1		11
	Ground Floor	Blockwork	17 01 02			150	0.1		15.0	1		15
	First Floor	Blockwork	17 01 02			52	0.1		5.2	1		5.2
	Second Floor	Blockwork	17 01 02			73	0.1		7.3	1		7.3
	Third Floor	Blockwork	17 01 02			66	0.1		6.6	1		6.6
	Roof	Blockwork	17 01 02				0.1		0.0	1		0
								Per Sheet			**Total**	**45.1**
Brickwork	Lower Ground Floor	Bricks	17 01 02			52	0.103		5	1.9		10
	Ground Floor	Bricks	17 01 02			60	0.103		6	1.9		12
	First Floor	Bricks	17 01 02			31	0.103		3	1.9		6
	Second Floor	Bricks	17 01 02			37	0.103		4	1.9		7
	Third Floor	Bricks	17 01 02			27	0.103		3	1.9		5
	Roof	Bricks	17 01 02			0	0.103		0	1.9		0
											Total	**40.5**
Styrofoam Insulation Polystyrene	Lower Ground Floor	Insulation				59	0.025		1	0.04		0.1
	Ground Floor	Insulation				60	0.025		2	0.04		0.1
	First Floor	Insulation				31	0.025		1	0.04		0.03
	Second Floor	Insulation				37	0.025		1	0.04		0.04
	Third Floor	Insulation				27	0.025		1	0.04		0.03
	Roof	Insulation				0	0.025		0	0.04		0.0
											Total	**0.2**

	Circular Economy Opportunity				
	1) Re-use exisiting assest	2) Recover Materials & Products on site or from another site	3) Share materials or products for onward reuse	Recycle	Possiable Outlets (1-3)
Total			**0**	**0.00**	

Pre-demolition Audit													Circular Economy Opportunity			
Element	**Component**	**Material**	**EWC**	**Length [Lin m]**	**Height [m]**	**Area [m2]**	**Depth [m]**	**Nr**	**Actual volume**	**Conversion factor [Tonnes / m3]**	**Conversion factor Tonnes / m2]**	**Tonnes**	**1) Re-use exisiting assest**	**2) Recover Materials & Products on site or from another site**	**3) Share materials or products for onward reuse**	**Recycle**	**Possiable Outlets (1-3)**
Brickwork	North Elevation	Bricks	17 01 02				0.135		0	1.9		0			0	0.00	
	East Elevation	Bricks	17 01 02			53	0.135		7	1.9		14				13.59	
	South Evevation	Bricks	17 01 02			173	0.135		23	1.9		44					
	Vault Demolition	Bricks	17 01 02			23	0.135		3	1.9		6					
					Total m2	249		**Total M3**	**34**		**Total**	**64**				#REF!	
Blockwork	North Elevation	Blockwork	17 01 02				0.1		0.0	1		0				#REF!	
	East Elevation	Blockwork	17 01 02			53	0.1		5.3	1		5.3				#REF!	
	South Evevation	Blockwork	17 01 02			173	0.1		17.3	1		17.3					
	Vault Demolition	Blockwork	17 01 02			0	0.1		0.0	1		0				#REF!	
								Per Sheet			**Total**	**23**				#REF!	
Glazing	North Elevation	Glass	17 02 02			4	0.05		0	0.52		0				0.00	
	East Elevation	Glass	17 02 02			0	0.05		0	0.52		0				#REF!	
	South Evevation	Glass	17 02 02			44	0.05		2	0.52		1				#REF!	
	Vault Demolition	Glass	17 02 02			0	0.05		0	0.52		0					
					Total m2	48		**Total M3**	**2**		**Total**	**1**				#REF!	
Insulation Façade	North Elevation	Mineral	17 06 04			0	0.025			0.02						#REF!	
	East Elevation	Mineral	17 06 04			53	0.025		1	0.02		0.03				0.11	
	South Evevation	Mineral	17 06 04			173	0.025		4	0.02		0.09				0.00	
	Vault Demolition	Mineral	17 06 04			0	0.025		0	0.02		0.00				11.74	
											Total	**0.1**					
																6.07	
																0.00	
																7.24	
													Total		**0**	**#REF!**	

APPENDIX 4

GLA Circular Economy Recycling and Waste Reporting

1 Appendix- GLA Circular Economy Recycling and Waste Reporting Template

Please complete the GLA Appendix D template:

Category	Total Estimate	Of Which…				Source of Information
Demolition Waste	**t/m2 Gross Internal (GIA) Tonnes**	**% reused or recycled onsite** (Subject to methodology of construction/demolition)	**% reused or recycled offsite**	**% not reused or recycled max 5%**		**Paragraph**
				% to landfill	**% to other management (incineration)** (Subject to methodology of construction/demolition	
Concrete Frame & Walls Concrete 17 01 01	10,215	95% >	95% >	0%		See paragraph; 5.2.5, 6.3.6
				0%	< 5%	
Rebar Steel 17 04 05	405		99% >	0%		See paragraph; 6.3.10
				0%	0%	
Façade Windows/Partitions Glazing 17 02 02	23		95% >	0%		See paragraph; 5.4.5, 6.3.16
				0%	< 5%	
Brickwork Wall/Façade Brickwork 17 01 02	261	95% >	95% >	0%		See paragraph; 5.4.3
				0%	< 5%	
Stud Partition Gypsum 17 08 02	42		95% >	0%		See paragraph; 5.3.17, 5.3.18
				0%	< 5%	
Mineral Façade Insulation 17 06 02	0.8		95% >	0%		See paragraph; 6.3.9
				0%	< 5%	
Blockwork Walls Blockwork 17 01 02	508		95% >	0%		See paragraph; 5.2.6
				0%	< 5%	
Carpet Tiles Carpet 04 02 22	26		99% >	0%		See paragraph; 5.3.7, 5.3.8, 6.3.8
				0%	0%	

Category	Total Estimate	Of Which…				Source of Information
Demolition Waste	**t/m2 Gross Internal (GIA) Tonnes**	**% reused or recycled onsite** (Subject to methodology of construction/demolition)	**% reused or recycled offsite**	**% not reused or recycled max 5%**		**Paragraph**
				% to landfill	**% to other management (incineration)** (Subject to methodology of construction/demolition	
Vinyl Flooring Floor Coverings 04 02 22	5		95% >	0%		See paragraph; 5.3.28, 5.3.29, 6.3.12
				0%	< 5%	
Timber Studs Timber 17 02 01	25		99% >	0%		See paragraph; 6.3.11
				0%	0%	
Roofing Asphalt 17 03	33		95% >	0%		See paragraph; 6.3.14
				0%	< 5%	
Suspended Ceilings Steel 17 04 05	29		99% >	0%		See paragraph; 5.3.11
				0%	0%	
Internal Partitions Glazing 17 02 02	232		95% >	0%		See paragraph; 5.3.30, 5.3.31, 6.3.17
				0%	< 5%	
Wooden Laminate Flooring 17 02 01	2		95% >	0%		See paragraph; 6.3.13
				0%	< 5%	
Raised Access Flooring Steel 17 04 05	311		99% >	0%		See paragraph; 5.3.3, 6.3.15
				0%	0%	
Lead Roofing Lead 17 04 03	1		99% >	0%		See paragraph; 6.3.19
				0%	0%	

Category	Total Estimate	Of Which…				Source of Information
Demolition Waste	**t/m2 Gross Internal (GIA) Tonnes**	**% reused or recycled onsite** (Subject to methodology of construction/demolition)	**% reused or recycled offsite**	**% not reused or recycled max 5%**		**Paragraph**
				% to landfill	**% to other management (incineration)** (Subject to methodology of construction/demolition	
Aluminium Cladding Aluminium 17 04 02	78		99%	0%		See paragraph; 6.3.20
				0%	0%	
Paving Slabs Concrete 17 01 01	100		99%	0%		See paragraph; 5.4.8, 5.2.5
				0%	0%	

Please note the >5% margin for ‘other management’ is allowed for potential contaminated non-hazardous waste.

cantillon

6.6 Appendix 6 – Delivery, Servicing and Waste Management Plan

NEW CITY COURT

Delivery, Servicing &
Waste Management Plan
TPP

Contents

Tables

Figures

Appendices

TPP
transport planning practice

1 INTRODUCTION

1.1 Background and context

1.1.1 Transport Planning Practice (TPP) has been appointed to provide transport advice in relation to the proposed redevelopment at New City Court, 4-26 St Thomas Street, London, SE1 9RS (the site) within the London Borough of Southwark (LBS).

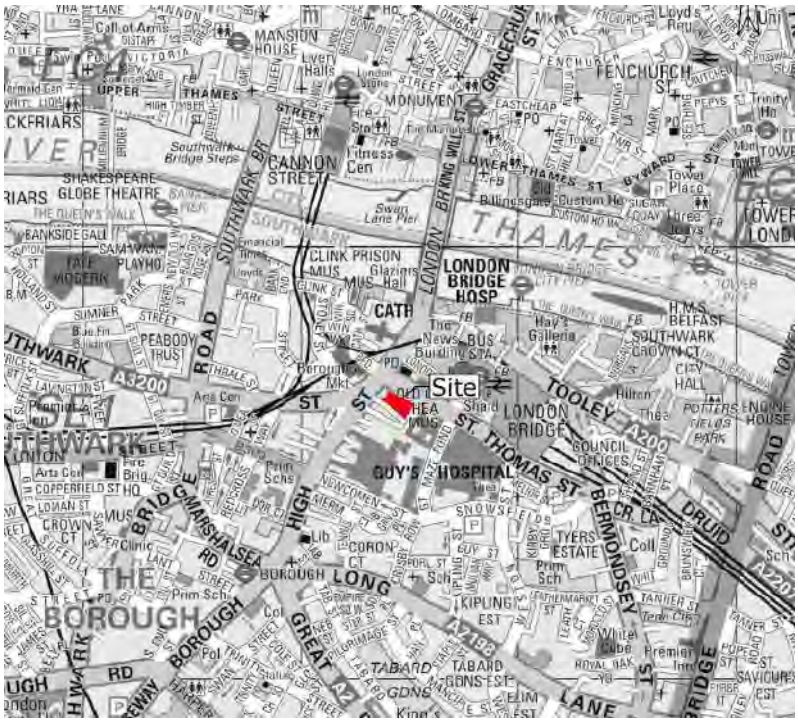
1.2 Existing site

1.2.1 The site is located in the London Bridge area covering an area of approximately 0.36 hectares (ha). The site is bounded by St Thomas Street to the north; shops on Borough High Street (A3) to the west; King's Head Yard to the south; and Guy's Hospital buildings to the east. It is currently almost entirely occupied by:

- 1980s office building to rear (New City Court);
- 1980s four-storey office building fronting St Thomas Street;
- Four storey building with retained 19th Century façade (Keats House);
- Early 19th Century Grade II listed Georgian terrace.

1.2.2 A site location plan is included in Figure 1.

Figure 1 – Site location plan



1.3 Proposed development

1.3.1 The proposals are for *Redevelopment to include demolition of the 1980s office buildings and erection of a 26-storey building (plus mezzanine and two basement levels), restoration and refurbishment of the listed terrace (nos. 4-16 St Thomas Street), and redevelopment of Keats House (nos. 24-26 St Thomas Street) with removal, relocation and reinstatement of the historic façade on a proposed building, to provide office floorspace, flexible office/retail floorspace, restaurant/café floorspace and a public rooftop garden, associated public realm and highways improvements, provision for a new access to the Borough High Street entrance to the Underground Station, cycling parking, car parking, service, refuse and plant areas, and all ancillary or associated works*.

1.3.2 The comprehensive redevelopment of the site to include the demolition of the existing 1980s buildings and alterations, sympathetic restoration of listed Georgian terrace buildings along St Thomas Street, and reconstruction of Keats House with retention of existing façade, to provide the following:

- Delivery of a highly sustainable 26-storey building (plus mezzanine and two basement levels), providing 44,159 sqm (GIA) of high-quality office floorspace (Class E);
- Introduction of 328 sqm (GIA) of flexible office/retail floorspace (Class E) at ground floor level of proposed office building, activating the proposed public realm;
- Provision of 4,889 sqm (GIA) of affordable workspace (Class E) within the Georgian terrace buildings, Keats House and levels 1 and 2 of the proposed office building, representing 10% of the overall office provision;
- Delivery of publicly accessible rooftop garden with high-quality landscaping and a complementary café and restaurant providing 414 sqm (GIA) food/drink floorspace (Class E);

1.4 Report purpose

1.4.1 A Draft Delivery and Service Management Plan (DSMP) is used to inform the local and regional authorities of the intent of the applicant in managing delivery

and servicing trips to and from the development in order to minimise the impact of these trips on the surrounding local highway network.

1.4.2 This report has been prepared to set out the proposed delivery and servicing arrangements and the measures which will be in place to ensure that deliveries are undertaken safety and efficiently. This report will be further reviewed and a final version will be submitted for approval post consent.

1.5 Report Structure

1.5.1 This report is structured as follows:

- **Chapter 2: Policy context** – summarises planning policies and guidance regarding deliveries and servicing.
- **Chapter 3: Aims and objectives** – sets out the objectives of this DSMP.
- **Chapter 4: Proposed delivery and servicing arrangements**– outlines the design proposals for delivery and servicing activities within the development.
- **Chapter 5: Delivery and servicing trips** – outlines the number of trips associated with deliveries and servicing measures activities anticipated to be generated by the proposals.
- **Chapter 6: Impact of servicing trips** – assesses the impact of the predicted servicing movements.
- **Chapter 7: Vehicle routes** – describes the key routes expected to be used by delivery and servicing vehicles to arrive to / depart from the site.
- **Chapter 8: Waste strategy** – describes the waste storage arrangements at the proposed development.
- **Chapter 9: Delivery and servicing plan measures** – describes the measures of mitigation that will be implemented to minimise the impact of deliveries and servicing.
- **Chapter 10: Monitoring and enforcement** – provides a framework for monitoring the DSMP and how this will be enforced.

2 POLICY CONTEXT

2.1 Introduction

2.1.1 This chapter provides a summary of the planning policies and guidance on deliveries and servicing.

2.2 Revised National Planning Policy Framework, February 2019 (NPPF)

2.2.1 Paragraph 110 of the NPPF states that applications for development should:

> *'allow for the efficient delivery of goods, and access by service and emergency vehicles.'*

2.3 London Plan, March 2021

2.3.1 The London Plan 2021 was adopted in March 2021 and most transport policies in the London Plan 2021 help reinforce those implemented in the previous London Plan. The London Plan 2021 covers the period from 2019 to 2041, providing a longer-term view of London's development to inform decision making.

2.3.2 Policy T7 on Freight and Servicing states that:

> *'G -Development proposals should facilitate safe, clean, and efficient deliveries and servicing. Provision of adequate space for servicing, storage and deliveries should be made off-street, with on-street loading bays only used where this is not possible. Construction Logistics Plans and Delivery and Servicing Plans will be required and should be developed in accordance with Transport for London guidance and in a way which reflects the scale and complexities of developments.*
>
> *H -Developments should be designed and managed so that deliveries can be received outside of peak hours and in the evening or night time. Appropriate facilities are required to minimise additional freight trips arising from missed deliveries and thus facilitate efficient online retailing.'*

2.4 Mayor's Transport Strategy, March 2018

2.4.1 The Mayor's Transport Strategy sets out the Mayor's policies and proposals to reshape transport in London over the next 25 years. The strategy was published in March 2018.

2.4.2 The strategy recognises that London's continued success relies on safe, reliable, sustainable and efficient goods delivery and servicing. Improving the efficiency of deliveries – shifting them to alternative times of the day when the network can better accommodate them, and maximising deliveries by sustainable modes – is considered essential to address congestion.

2.4.3 Proposal 15 states that the Mayor, through TfL and the boroughs, will work with business and the freight industry to improve the efficiency and safety of freight and servicing in London by:

'a) Developing tailored and targeted approaches to address the unique challenges faced by the individual sectors such as food and construction deliveries.

b) Planning a strategic consolidation and distribution network, including a review of funding requirements, and protecting industrial land through the London Plan.

c) Encouraging London's businesses, starting with Business Improvement Districts, to work together to use their procurement power to reduce or re-time their deliveries and servicing trips to avoid traffic congestion.

d) Ensuring that all London is within a 30-minute drive of a construction consolidation centre and encouraging their use through Construction Logistics Plans and the planning process.

e) Encouraging businesses in central London to ban personal deliveries, and extending the network of collection points in order to reduce the overall number of work place personal deliveries.

f) Working with Business Improvement Districts to promote waste and recycling consolidation, using the waste consolidation toolkit.

g) Developing a 'London lorry standard' to simplify the regulatory environment for HGVs operating in London.'

2.4.4 Furthermore, the strategy states that new developments will be expected to be designed to encourage efficient, safe and low-emission delivery and servicing

trips. Planning permissions should secure delivery and servicing plans that support off-peak (including night-time) deliveries.

2.4.5 Proposal 81 states that the Mayor, through TfL and the boroughs, will seek to ensure that delivery and servicing plans facilitate off-peak deliveries using quiet technology, and the use of more sustainable modes of delivery, including cargo bikes and electric vehicles where practicable.

2.5 Delivery and Servicing Plan guidance, December 2020

2.5.1 Following the adoption of the new Mayor's Transport Strategy in 2018, this document replaces the previous Guidance which was prepared for a past Mayor's Transport Strategy (MTS) in London. It provides links to tools and templates to help prepare a DSP.

2.5.2 The specific measures within the DSP should include:

- **Safe** - The DSP must show how potential conflicts with pedestrians and cyclists have been removed or managed.;
- **Clean** - Minimise the adverse environmental impact of freight transport and servicing in London;
- **Efficient** - Minimise the impact of congestion on the carriage of goods and provision of servicing; and

2.6 London Bridge Delivery and Servicing Study, July 2017

2.6.1 LBS and Team London Bridge (TLB) commissioned Steer Davies Gleave (SDG) to review the current delivery and servicing regime in the London Bridge Business Improvement District (BID) to reduce the negative impact of freight operations.

2.6.2 The site is located within the BID area as shown below.

Inset 1 – London Bridge Business Improvement District (BID) Area

2.6.3 The results of the area-wide freight site visits (August / September 2016) are reproduced below.

Table 2.1 – SDG area-wide freight site visit results

Location	Freight activity observed
BID-wide	• Majority of roads are TfL Red Routes which restricts loading and unloading to certain time periods and maximum waiting time limits • Several courier delivery companies, food delivery companies and maintenance vehicles noted (early morning)
Crucifix Lane, Bermondsey Street, St Thomas Street (east)	• Very limited parking available at all times due to temporary road markings and barriers
St Thomas Street	• Delivery vehicles parked on Red Routes (newspaper delivery, catering, cleaning / hygiene products) (06:00 – 06:30) • Delivery vehicles queueing to access The Shard loading bay (lunchtime) – see Figure 3.1
London Bridge Hospital	• Two large vans unloading off-street, including Bidvest food delivery (05:30 – 06:00) • Delivery vehicles parked illegally on double yellow lines (lunchtime)
Tooley Street (adj. to St Olaf Stairs)	• Four deliveries on short section of road causing congestion (lunchtime)
Battle Bridge Lane	• Milk delivery (05:30 – 06:00)
More London Estate goods entrance	• Two lorries entering goods area – waste collection and office furniture delivery (05:30 – 06:00)
Collingwood Street (KCL Guy's Campus)	• Significant number of maintenance / tradesman delivery vans parked – likely to be undertaking refurbishment works prior to start of 2016/17 academic year (lunchtime)
Guy's Hospital	• General recycling collection and gas delivery lorries parked off-street (06:00 – 06:30)
Newcomen Street	• Very congested with delivery vans (lunchtime)
Borough High Street	• High volume of goods vehicles at the junction with Southwark Street but no congestion (06:30 – 07:00) • Very congested with numerous delivery vehicles parked on both sides of carriageway (lunchtime)
Weston Street	• On-street parking is 90% full – attributed mostly to delivery vehicles occupying bays (06:00 – 06:30) – see Figure 3.2

2.6.4 A number of recommendations have been made in the report to be considered further by TLB and LBS to reduce, re-time and reroute deliveries. These include the following:

- Promotion of alternative locations for personal deliveries to staff – 6 out of 7 businesses monitored allow employees to receive such parcels at the workplace, comprising up to 60% of all post room items for some businesses. Eliminating these deliveries from offices in the BID would significantly reduce number of courier trips in the London Bridge area and free up staff time.

- TLB (with support of LBS) to investigate the introduction of a 'London Bridge Buyer's Club' to promote a limited number of recommended suppliers within common goods / service categories.

- TLB to establish a quarterly 'Freight Forum' as part of their Responsible Business initiative to provide the platform for BID businesses to discuss constraints / opportunities related to sustainable delivery and servicing methods (similar format to the final stakeholder workshop).

- LBS's Development Control team and TfL to set targets for new major developments brought forward in the BID as part of the planning process on mode share for freight activity by sustainable modes (e.g. 20% within first year of occupation). Ensure developments comply with LBS's forthcoming Kerbside Strategy.

- LBS and TfL to require new developments of a certain size brought forward in the BID to develop an efficient booking system for delivery areas as part of the planning process (likely to be part of DSMPs).

- TfL Freight team to issue data on delivery routes to avoid where possible through the BID to enable local businesses to develop appropriate strategies.

2.7 Southwark's Draft Kerbside Strategy

2.7.1 The public consultation on LBS's Draft Kerbside Strategy ran from February to April 2017.

2.7.2 The proposed strategy would introduce the following new policies to address unsafe parking and parking stress on residential streets and town centres:

- KSS Policy 1: Allocate kerbside space in accordance with Southwark's street wise approach.
- KSS Policy 2: Prioritise kerbside space for walking and cycling.
- KSS Policy 3: Implement parking controls based on an-evidence led approach.
- KSS Policy 4: Review parking in town centres.
- KSS Policy 5: Require safer, robust delivery, servicing and waste management.
- KSS Policy 6: Implement more green infrastructure.
- KSS Policy 7: Expand the shared mobility network.
- KSS Policy 8: Adapt our kerbside to meet future needs.

2.7.3 On KSS Policy 5, the draft strategy requires all new developments to provide a robust delivery, servicing and waste management framework which will include:

- Details of on-site deliveries and servicing facilities and management.
- Expected off-peak deliveries and servicing hours, with built in resilience in the event of unforeseen delays, e.g. financial penalties for suppliers.
- Re-timing freight trips to out-of hours wherever practicable.
- Robust booking facilities to avoid over-spill onto the public highway.
- Maximising opportunities to consolidate trips.
- Monitoring once the development is fully operational to show a progressive reduction of the amount of trips to the site year-on-year from the initial baseline year.

- A commitment that contractors are fully signed up to the TfL Freight Operator Recognition Scheme (FORS).

2.7.4 The draft strategy would also require all new developments to provide on-site space to carry out all servicing and delivery activity. Southwark will refuse all requests for on-street servicing for major developments.

2.8 Draft New Southwark Plan Submission Version – Proposed Changes (August 2020)

2.8.1 Policy P49 'Highway Impact' states that developments should minimise the demand for private car and ensure safe and efficient operation of the local road network, the bus network and the Transport for London (TfL) road network. Developments should also ensure safe and efficient delivery and servicing that minimise the number of vehicle journeys.

2.9 T-Charge, October 2017

2.9.1 Since October 2017, cars, vans, minibuses, buses, coaches and heavy goods vehicles (HGVs) in central London need to meet minimum exhaust emission standards, or pay a daily £10 Emissions Surcharge (also known as the Toxicity Charge, or T-Charge).

2.9.2 The T-Charge applies to the same area as the Congestion Charge. The T-Charge will be in addition to the Congestion Charge and the LEZ tariff if applicable. The minimum emissions standards are Euro 4/IV for both petrol and diesel vehicles and Euro 3 for motorised tricycles and quadricycles.

2.10 Low Emissions Zone, February 2008

2.10.1 The Low Emission Zone (LEZ) operates to encourage the most polluting heavy diesel vehicles driving in London to become cleaner. The LEZ covers most of Greater London and is in operation 24 hours a day, every day of the year.

2.10.2 The LEZ aims to improve air quality in the city by setting and enforcing new emissions standards for vehicles and deterring the use of the most polluting heavy vehicles by freight operators. Cars and motorcycles are not affected.

2.10.3 If measures cannot be taken to meet LEZ standards, there is a daily charge of £200 applicable for HGV's, coaches and buses; and £100 for large vans, pickups and minibuses.

2.10.4 The LEZ is enforced through fixed and mobile cameras which read vehicle registration number plates as vehicles are driven within the LEZ and check them against a database of vehicles. The database contains vehicles which meet the LEZ emissions standards and are therefore exempt from charges, are registered for a 100% discount or have paid the LEZ daily charge. Vehicles not within the database will need to pay by midnight the next working day or will be issued a penalty charge notice.

2.10.5 Even stronger standards are being introduced for the LEZ from 26th October 2020.

2.11 Ultra Low Emission Zone, April 2019

2.11.1 The Ultra Low Emission Zone (ULEZ) will come into force on 8th April 2019 and will operate 24 hours a day, every day of the year, within the same area as the current Congestion Charging Zone (CCZ).

2.11.2 The ULEZ is an area within which all cars, motorcycles, vans, minibuses, buses, coaches and heavy goods vehicles (HGVs) will need to meet exhaust emission standards (ULEZ standards) or pay a daily charge to travel.

2.11.3 The introduction of the ULEZ is intended to reduce exhaust emissions of NO2 and particulate matter PM10 and PM2.5, making central London a more pleasant place to live, work and visit.

3 AIMS AND OBJECTIVES

3.1 Introduction

3.1.1 This chapter sets out the overarching objectives of this DSMP for the proposed development.

3.2 Objectives

3.2.1 The aim of this DSMP is to commit to support a sustainable and well managed development with regards to deliveries and servicing, with minimal disruption to the local highway network.

3.2.2 This DSMP will therefore seek to achieve the following objectives:

- Demonstrate that goods and services can be delivered, and waste removed, in a safe, efficient and environmentally-friendly way;
- Identify deliveries that could be reduced, re-timed or even consolidated, particularly during busy periods;
- Improve the reliability of deliveries to the site;
- Reduce the operating costs of building occupants and freight companies; and
- Reduce the impact of freight activity on local residents and the environment.

4 PROPOSED DELIVERY AND SERVICING ARRANGEMENTS

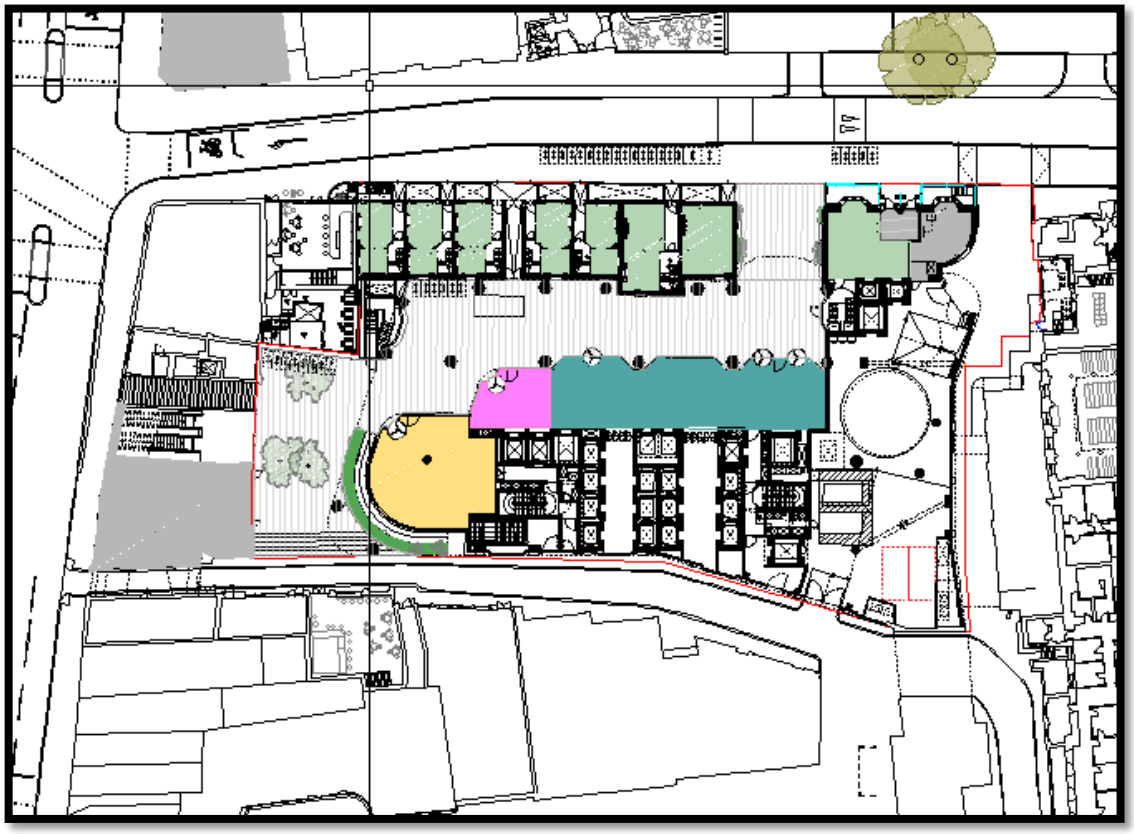
4.1 Introduction

4.1.1 This chapter sets out the proposed arrangements of deliveries and servicing to the proposed development, including the design of the scheme and the expected level of vehicle trip generation.

4.2 Site layout

4.2.1 The site is bounded by St Thomas Street to the north, Borough High Street to the west, Kings Head Yard to the south and Guy's Hospital to the east. Borough High Street and St Thomas Street are part of the Transport for London Road Network (TLRN), also known as a Red Route.

Inset 2 – Proposed Site layout



4.3 Servicing arrangements

4.3.1 The proposed arrangement is for servicing is to take place from the development's service yard away from the public highway.

4.3.2 Service vehicles will park in the service bays and the goods will be trollied to the offices via the B1 level, except for the Georgian Terrace, where the goods will be transported at ground level.

4.3.3 Motorcycle couriers will also stop on St Thomas Street to deliver/collect packages from the development.

4.4 Swept path analysis

4.4.1 Swept path analysis has been undertaken for the proposed access and servicing arrangement and are included in drawing 30848/AC/076 rev A, included in Appendix A. This drawing shows the swept path analysis for both a 10.2m refuse vehicle and a 10m HGV accessing the turntable within the service area, and LGVs and cars accessing their respective bays.

5 DELIVERY AND SERVICING TRIPS

5.1.1 This Chapter sets out the proposed servicing trip generation methodology for the existing and proposed development.

5.2 Existing development

5.2.1 It is noted that the existing development provides approximately 12,763m^2 GIA of class E office space and attracts servicing trips already. A servicing activity survey was undertaken at King's Head Yard, White Hart Yard, St Thomas Street and Borough High Street in the vicinity of New City Court on 7th July (Thursday), 8th July (Friday) and 9th July 2016 (Saturday). The survey also recorded traffic flows and vehicle classification on the above roads. Since the survey was undertaken there have been no major changes in the operation of the building and the results continue to be representative. A summary of the results is set out in Table 5.1 below.

Table 5.1 – Existing site servicing (no. of vehicles)

Time	LGV	HGV	M/C	Total
05:00 - 06:00	1	1	0	2
09:00 - 10:00	0	0	2	2
12:00 - 13:00	1	0	0	1
13:00 - 14:00	1	0	0	1
14:00 - 15:00	0	1	0	1
15:00 - 16:00	2	0	0	2
Total daily	**5**	**2**	**2**	**9**

5.2.2 The survey found that servicing to the existing development takes place from St Thomas Street. Of the total number of vehicles, 4 Light Goods Vehicles (LGVs) were recorded within the on-street loading bay with the remainder of the vehicles stopping within the on-street pay & display bays.

5.3 Proposed Development – servicing vehicle trip methodology

5.3.1 Following comments received from the London Borough of Southwark and TfL all deliveries are subject to a proposed servicing consolidation strategy. Building on the initial research into consolidation by TPP, the evolving strategy has been developed in consultation with a specialist logistics company, Davies & Robson (D&R) who have developed bespoke consolidation strategies for other sites,

including Guy's and St Thomas's Hospital adjacent to New City Court. The consolidation strategy now being advanced for New City Court allows for a significant reduction in vehicle numbers, thus minimising impacts on the local road network and reducing potential conflicts with pedestrians and cyclists.

5.3.2 A key aspect of the strategy will be utilisation of an off-site consolidation centre where individual deliveries that are identified for consolidation will be stored, consolidated and then transported to the site. The strategy has been based on D&Rs extensive experience and is underpinned by empirical data sourced through a comprehensive servicing survey at a comparable existing GPE office at 200 Gray's Inn Road.

5.3.3 It has been shown that there is a considerable potential to consolidate office deliveries, as the majority of items are non-perishable and non-urgent items. Overall, it has been demonstrated that there is potential to reduce the number of office deliveries by 62%. Deliveries to the retail element of NCC are unlikely to be as suitable for consolidation given that this space will include restaurant/café uses relying on daily deliveries of fresh produce, and due to the disparate nature of the retail units being occupied by individual tenants. The proposed strategy has therefore been based on a realistic and honest approach in terms of consolidation potential, and the expected level of vehicle reduction.

5.3.4 The proposed strategy will significantly reduce vehicle movements and minimise vehicle emissions, and the resulting impacts on the local road network is negligible.

5.3.5 The strategy has been developed based on a quantitative approach in consultation with highly experienced logistics experts providing a high level of confidence in the proposed consolidation opportunities and represents a tangible and deliverable strategy for New City Court.

Consolidation potential based on D&R assessment

5.3.6 The D&R study has provided an up-to-date baseline for the servicing assessment. This utilises empirical and up to date data, robustly sought and subsequently comprehensively scrutinised and adjusted by TPP.

5.3.7 Whilst this does provide an updated baseline against which to measure any potential reductions in servicing loads, the principle purpose of the D&R study is

to use their logistics expertise, and real world data, to identify the consolidation potential for NCC, and the associated reduction in vehicle numbers. This study sets out in detail how deliveries to the office development at New City Court can be consolidated. The recommendations set out in the D&R study are evidenced-based and therefore represent a tangible and deliverable strategy.

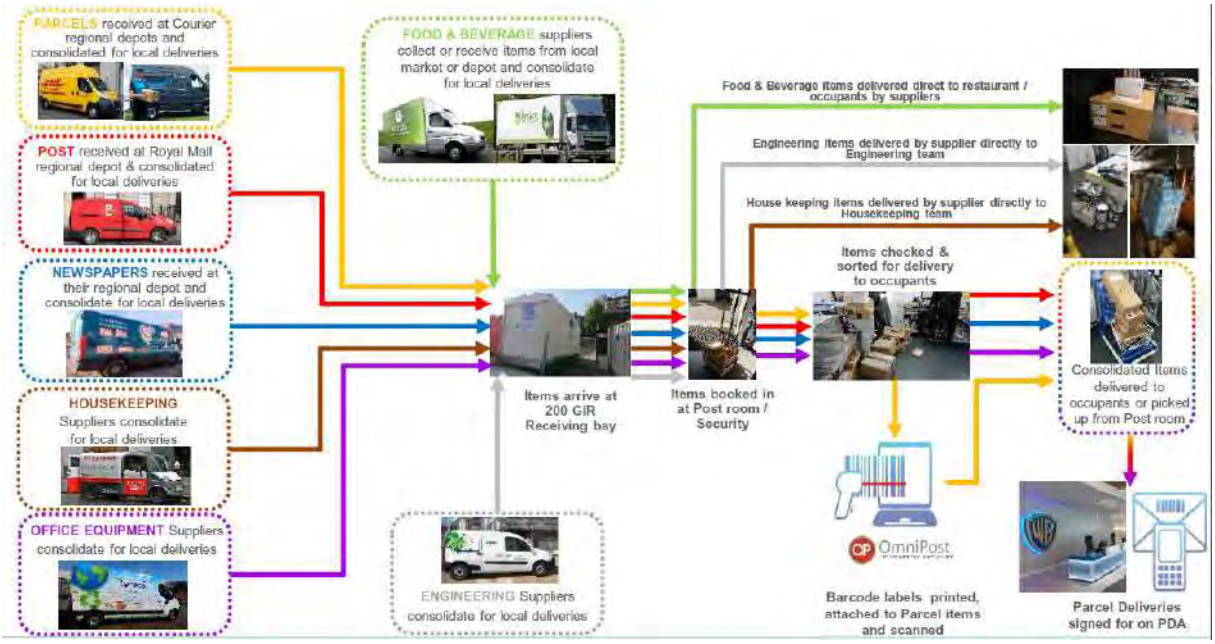
5.3.8 As a starting point to its study, D&R undertook a comprehensive survey at GIR categorising deliveries into different types to understand their suitability for consolidation.

5.3.9 Table 5.2 summarises the various groups and whether they are considered suitable for consolidation.

Table 5.2 – Delivery types and consolidation suitability

Item	Suitable?	Comment
Parcels and couriers	Yes	Including personal deliveries
Post	No	Urgent deliveries
Food and beverage	Limited	Fresh food not consolidated but potential for water towers and ambient vending machines
Engineering deliveries for building repairs and maintenance	Yes	Typically non-urgent
Housekeeping. Cleaning and washroom items	Yes	Not time critical
Newspapers and magazines	No	Time/Date specific
Office equipment, stationary.	Yes	Not time critical

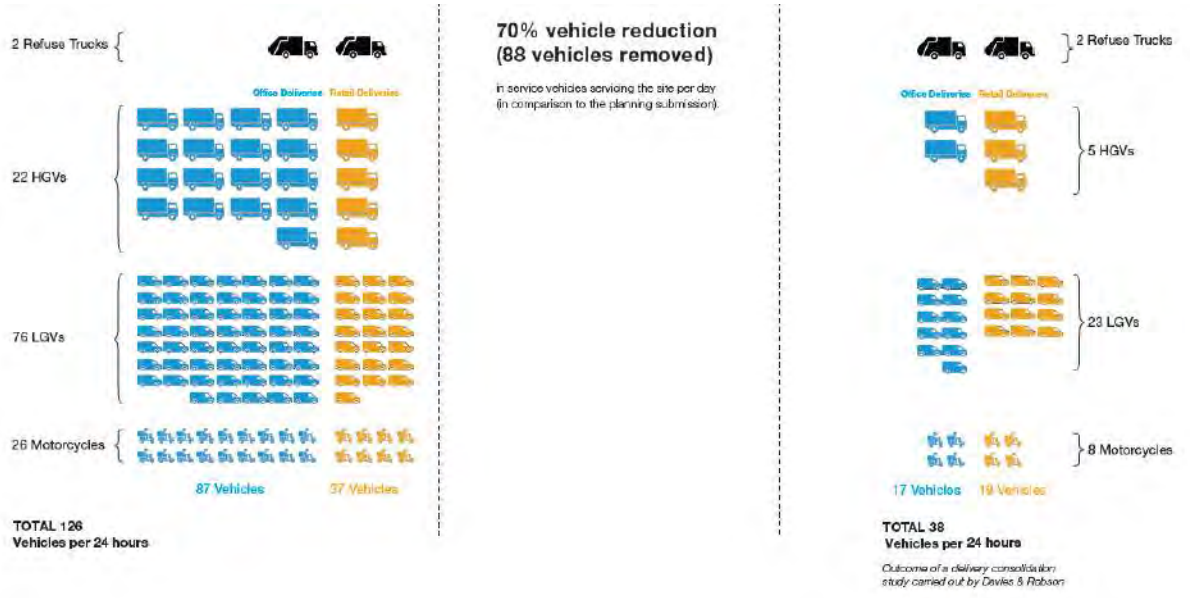
5.3.10 The assessment demonstrates many delivery groups are suitable for consolidation, this includes parcels and courier deliveries which according to D&R make up over 50% of all deliveries. The flow diagram below shows the process for how the consolidation would work for different elements.



5.4 Calculated servicing trip generation

5.4.1 An initial assessment for this development suggested it would produce 126 vehicle deliveries per day as set out below. Following the consolidation exercise this is expected to reduce by 70% to only 38 vehicles a day.

Without consolidation **With consolidation**



5.5 Timing of deliveries

5.5.1 As well as reducing the number of deliveries the proposed consolidation also allows for the deliveries to be scheduled outside of the peak pedestrian periods. This means there will be no deliveries between:

- 07.00 -10.00
- 12.00 – 14.00
- 16.00 – 19.00

5.5.2 The deliveries will be spread out across the remainder of the day (and overnight) with a maximum of six deliveries an hour. These can be accommodated using the proposed two service bays.

6 IMPACT OF SERVICING TRIPS

6.1.1 Due to the proposed consolidation the number of daily deliveries is expected to increase modestly over the existing situation. However the benefits of a dedicated service bay which will be managed and controlled, opposed to the existing situation with vehicles stopping on St Thomas Street, will more than offset the expected daily increase in vehicles.

6.1.2 The management of the delivery timeslots, removing deliveries during the busiest peak pedestrian periods, also offers great benefits over the existing situation where there is currently conflict between pedestrians and servicing.

6.1.3 In light of this the proposed servicing offers an improvement over the existing situation and will have a positive impact on both peak hour congestion and pedestrian safety.

7 VEHICLE ROUTES

7.1.1 Vehicles will be encouraged to use the strategic road network to access the site where to minimise the impact on more residential roads as well as minimise potential conflicts in areas with higher pedestrian and cyclist flows.

7.2 St Thomas Street

7.2.1 With regard to delivery and servicing routes along St Thomas Street, two scenarios are presented:

- A scenario in which St Thomas Street is entirely a one-way road (with westbound movement); and
- A scenario in which it is predominantly one-way westbound, but with a two-way section between the junction with Borough High Street and the Shard.

7.2.2 If a third option for the reversal of the direction of flow on St Thomas Street is progressed by TfL the routeing will essentially be a reversal of the first option, with similar impacts albeit in the opposite direction.

7.3 Access / Egress to / from St Thomas Street, one-way system

Vehicle routeing

From the north

7.3.1 HGV vehicles approaching from the north would be required to drive southbound on Tower Bridge Road and access St Thomas Street via Tooley Street, Tanner Street, Druid Street and Crucifix Lane. Alternatively, vehicles can travel southbound on London Bridge, perform a left-turn onto Duke St Hill / Tooley Street and access St Thomas Street via Tanner Street, Druid Street and Crucifix Lane.

7.3.2 When leaving, vehicles would be required to perform a left-turn from St Thomas Street onto Borough High Street (southbound) and drive on Marshalsea Road / Southwark Bridge Road to access Southwark Bridge northbound.

From the south

7.3.3 HGVs approaching the site from the south are expected to drive northbound on Borough High Street and perform a right-turn onto Long Lane before accessing St Thomas Street from Bermondsey Street, Tower Bridge Road, Druid Street and Crucifix Lane.

7.3.4 When leaving the site, vehicles would perform a left-turn from St Thomas Street onto Borough High Street and drive southbound.

From the east

7.3.5 HGVs approaching the site from the east are expected to approach from Druid Street / Crucifx Lane and access St Thomas Street by driving westbound.

7.3.6 When leaving the site, HGVs would perform a left-turn from St Thomas Street onto Borough High Street, drive southbound and turn left (towards east) onto Long Lane and drive eastbound.

From the west

7.3.7 HGVs approaching the site from the west are expected to drive through Southwark Street, Southwark Bridge Road, Marshalsea Road, Long Lane, Bermondsey Street, Tower Bridge Road, Druid Street and Crucifix Lane before accessing St Thomas Street.

7.3.8 When leaving the site, vehicles would perform a left-turn from St Thomas Street onto Borough High Street, access Southwark Street and drive westbound.

7.4 Access / Egress to / from St Thomas Street, two-way at western end

Vehicle routeing

From the north

7.4.1 HGV vehicles approaching from the north would drive southbound on London Bridge and Borough High Street and perform a left-turn onto St Thomas Street.

7.4.2 When leaving, HGVs would be required to perform a left-turn from St Thomas Street onto Borough High Street (southbound) and drive on Marshalsea Road / Southwark Bridge Road to access Southwark Bridge northbound.

From the south

7.4.3 HGVs approaching the site from the south would drive northbound on Borough High Street and perform a right-turn onto St Thomas Street.

7.4.4 When leaving the site, vehicles would perform a left-turn from St Thomas Street onto Borough High Street and drive southbound.

From the east

7.4.5 HGVs approaching the site from the east are expected to approach from Druid Street / Crucifx Lane and access St Thomas Street by driving westbound.

7.4.6 When leaving the site, HGVs would perform a left-turn from St Thomas Street onto Borough High Street, drive southbound and turn left (towards east) onto Long Lane and drive eastbound.

From the west

7.4.7 HGVs approaching the site from the west are expected to drive through Southwark Street and Borough High Street before preforming a right-turn onto St Thomas Street.

7.4.8 When leaving the site, vehicles would perform a left-turn from St Thomas Street onto Borough High Street, access Southwark Street and drive westbound.

7.4.9 The proposed vehicle routes are shown in Appendix x and will be communicated to all delivery drivers and route plans will be displayed in the loading area.

8 WASTE STRATEGY

8.1 Introduction

8.1.1 This chapter sets out the waste strategy for the proposed development.

8.2 Waste storage

8.2.1 The proposed arrangement is for waste to be stored at basement level 2, under the Tower, which will contain 16 x 1,280l Eurobins. The bin store is located next to the goods lift to provide easy access. Separate containers will be provided for general and recyclable waste. Additionally, a cardboard baler will be provided in the basement refuse store given that cardboard/paper is expected to make up a large proportion of waste being generated. Waste calculations setting out the expected volume of waste per waste stream and the resultant bin requirement is provided in Appendix C. These demonstrate a requirement for 13 x 1,280l Eurobins. In addition smaller sized bins will be provided for the storage of food waste from both the office and the commercial units.

8.2.2 The layouts of the bin store and collection facilities are flexible and will allow the number and type of bins to be altered to meet the development's requirements. As there is currently an over provision of bins there is already spare capacity incorporated into the design.

8.2.3 The above calculations are based on 70% of waste being recycled. The developer does not have control over the quantum of recycling undertaken by the end user, but the proposed arrangements will encourage the tenants to meet or exceed the municipal waste recycling target of 65% by 2030. This will be reviewed and enforced where possible as part of the waste monitoring.

8.2.4 A waste holding area is provided within the service area to allow easy loading into the refuse vehicle.

8.2.5 The relevant set of bins will be brought to the ground level waste store from the basement via a goods lift by the site management.

8.3 Waste Minimisation

8.3.1 The waste generated will be managed in accordance with the waste hierarchy, and in order to reduce the amount of waste generated, further specialist recycling activity will be encouraged on an ad hoc basis. This will include printer

cartridge and electronics recycling through recognised recycling schemes. Reusable items will be offered within the office community, or through site management links to local community groups/furniture projects/charities etc. to minimise unnecessary items being transported to landfill.

8.4 Monitoring of Commercial Waste

8.4.1 The quantities of waste and recyclables will be monitored on a monthly basis by the contracted waste specialist, and the results collated by site management. Should there be any undue increase in the level of waste produced, this will be investigated where necessary to identify any specific cause and implement measures to minimise waste.

8.4.2 Appropriate signage will be placed adjacent to the recycling and waste receptacles within the offices to encourage correct segregation of recyclables and organic waste in order to minimise general waste as far as possible.

8.5 Waste collection

8.5.1 It is proposed that waste will be collected from the service area accessed from St Thomas Street. Once emptied, the bins will be transported back to the basement by the site management. Waste would be collected daily for general and recyclable waste.

9 DELIVERY AND SERVICING PLAN MEASURES

9.1 Introduction

9.1.1 This chapter outlines the proposed measures and initiatives which will be implemented to achieve a sustainable and well managed development with regard to deliveries and servicing, with minimal disruption to the local highway network.

9.1.2 The measures and initiatives have been grouped into the following areas:

- Site Management;
- Design;
- Procurement Strategy; and
- Waste Management.

9.2 Site Management

9.2.1 The successful operation of the servicing area will require careful management from the facilities management team. The proposed management measures are set out below.

- **Deliveries via a consolidation centre**: All deliveries will, where possible, be diverted to the off-site consolidation centre, where they will be received, consolidated and then brought to the office in a dedicated electric vehicle.
- **Centralised pre-booking system**: All regular deliveries, including the consolidation vehicles will pre-book a timeslot in advance of arriving. No slots will be offered during the peak pedestrian periods to minimise impact on the public highway. This will also help to manage the capacity of the loading facilities available.
- **Night-time servicing:** Given that the proposed development will have management presence 24 hours, a proportion of deliveries will be scheduled to take place overnight (between 12am – 5am). This further reduces the number of deliveries during the key time periods including during the peak hours.

- **Communication of delivery procedures** - Freight operators can contact the site management prior to arriving at the site so that they can discuss access arrangements if required and any procedures they should undertake to deliver goods and services the site safely and efficiently.

- **Accommodating special deliveries** - Any special deliveries to the site, will need to be pre-arranged and discussed with the site management team. The delivery time and duration will be negotiated with the development management to minimise the impact upon the routine daily servicing requirements of the development.

- **Staff and training** - All staff who may be assisting in the loading area will receive appropriate training related to the delivery and servicing processes and procedures in operation on the site. There should be additional staff available to receive larger deliveries to minimise vehicle loading time.

- **Security measures** - Vehicles accessing, manoeuvring and egressing the site will be monitored by the site management team and to ensure that deliveries and servicing are being undertaken in a safe and secure manner.

- **Personal deliveries** – Personal deliveries to the building will not be permitted. This policy will be written into building tenants' leases and this will be communicated to all staff.

9.3 Design

Abnormal deliveries

9.3.1 Any abnormal deliveries would need to be specifically assessed for appropriate means of accessing the site and any essential temporary mitigation that may be required to cater for the weight or size of the vehicle / load. These would be treated as exceptional circumstances.

Risk assessment of servicing area

9.3.2 A risk assessment would be normally undertaken by suitably trained site management staff prior to use. This assessment will examine the following issues.

- Adequate manoeuvring space for the vehicles;
- Interaction with pedestrians;
- Adequate unloading area;
- Level route from vehicle to destination; and
- Interaction with vehicles.

Traffic Management Regulation Audit

9.3.3 An audit of the local traffic management regulations on the road network surrounding the site was undertaken in November 2020, based upon site observations and Traffic Management Regulations.

9.3.4 The main restrictions that may affect goods vehicle movements in the wider area are summarised below:

Height Restrictions

- 3.9m on Stainer Street to the north.
- 5.2m on Bermondsey Street.
- 5.4m Borough High Street.
- 4.4m through Rotherhithe Tunnel.

Weight Restrictions

- Max 18 tonnes at Tower Bridge.
- Max 17 tonnes at Rotherhithe Tunnel.

Width Restrictions

- 2.2m through Rotherhithe Tunnel.

9.3.5 Further information can be obtained across the road network, including more minor routes using the London Lorry Control network website

(www.londonlorrycontrol.com) and Freight Journey Planner (http://www.freightjourneyplanner.co.uk/).

9.4 Procurement strategy

9.4.1 As part of procurement process for deliveries to the site, an awareness of all vehicle activity associated with the site, its impacts and appropriate measures to reduce it should be taken into account.

Consolidation of Suppliers

9.4.2 The opportunities to consolidate deliveries will be reviewed with suppliers by the site management team on a regular basis.

Freight Operator Recognition Scheme

9.4.3 The site management will be encouraged to contract suppliers registered with a best practice scheme, such as the Freight Operator Recognition Scheme (FORS). Full details of the benefits associated with FORS can be found at www.tfl.gov.uk/fors.

Low Emission / EV Goods Vehicles

9.4.4 Suppliers of goods to the site will be encouraged to use Low Emission / Electric Vehicles to deliver to the site.

9.5 Waste management

9.5.1 On refuse collection days, refuse collection will be undertaken as set out in Chapter 8 of this report.

9.5.2 Refuse collection will be undertaken early in the morning, outside of the peak hours.

10 MONITORING AND ENFORCEMENT

10.1 Introduction

10.1.1 It will be important to understand how the servicing area is being operated and any issues that may arise. This chapter sets out the surveys proposed to monitor the use and identify any possible improvements.

10.2 Monitoring surveys

10.2.1 It is proposed that monitoring surveys will be undertaken on a periodic basis. The first delivery survey audit will be undertaken a maximum of 6 months after the development is occupied. The site management team (or appointed consultant) will undertake delivery monitoring surveys on the third and fifth year after the initial survey.

10.2.2 The surveys should provide data such as the number of vehicles, dwell times, vehicle size, and where possible, the type of goods being delivered and the frequency of this delivery.

10.3 Review

10.3.1 The site management will use the results of the surveys to identify particular trends such as a number of different companies deliver similar products. The results will then help the development management to look for 'quick wins'.

10.3.2 This process will provide the opportunity for current delivery operations and procedures on the site at the time to be reviewed and new management measures to be implemented (if necessary) to achieve the objectives set out within Chapter 3.

10.4 Enforcement

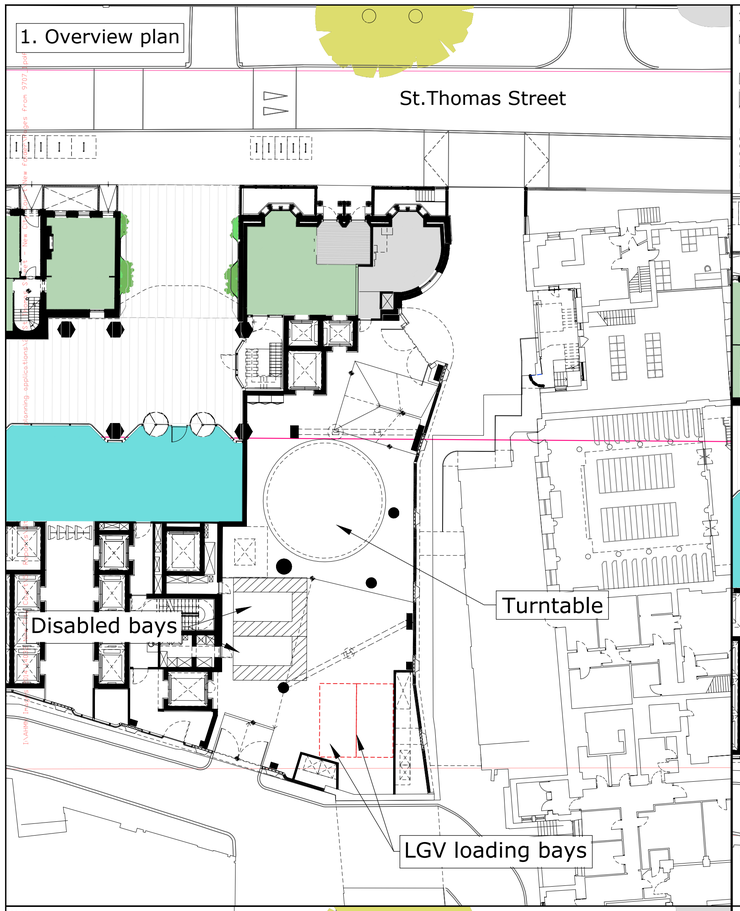
10.4.1 The contents of this outline DSMP have been prepared in order to inform the planning authority of the developer's intent for the planning application for this site. Therefore it must be complied with unless otherwise agreed in writing with the planning authority.

Appendix A

Swept path analysis of service vehicles

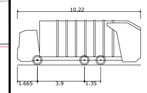
TPP
transport planning practice

1. Overview plan



1. Swept path analysis of 10.2m refuse vehicle

Vehicle used

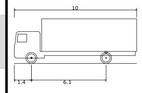


Phoenix 2-17N (with Elite 2 6x2 RS chassis)

Overall Length	10.220m
Overall Width	2.250m
Overall Body Height	3.707m
Min Body Ground Clearance	0.260m
Track Width	2.250m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	7.900m

2. Swept path analysis of 10m rigid HGV

Vehicle used

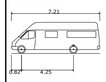


FTA Design HG Rigid Vehicle (1998)

Overall Length	10.000m
Overall Width	2.500m
Overall Body Height	3.645m
Min Body Ground Clearance	0.440m
Track Width	2.470m
Lock to Lock Time	3.00s
Kerb to Kerb Turning Radius	11.000m

4. Swept path analysis of 7.2m panel van

Vehicle used



7.5t Panel Van

Overall Length	7.210m
Overall Width	2.192m
Overall Body Height	2.544m
Min Body Ground Clearance	0.316m
Track Width	1.865m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	7.400m

5. Swept path analysis of 4.6t Transit van

Vehicle used

4.6t Light Van

Overall Length	5.885m
Overall Width	2.000m
Overall Body Height	2.526m
Min Body Ground Clearance	0.299m
Track Width	1.765m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	6.000m

6. Swept path analysis of Large car

Vehicle used

Large Car (2006)

Overall Length	5.079m
Overall Width	1.872m
Overall Body Height	1.525m
Min Body Ground Clearance	0.310m
Max Track Width	1.831m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	5.900m

This drawing has been prepared for planning purposes and should not be used for construction.

Based on drawing number 20065_X_(00)_120_Ground FloorTPP - TPP REF - IN_78.

T:\30000_Projects\30848 New City Court\ACAD\076_A.dwg

REV	COMMENTS	DR	CH	DATE

NOTES

N

DRAWN BY	CHECKED
LD/LB	REV

SCALE @ A1 1:250 — 0 5 10m

DATE 20/26/2021

NEW CITY COURT

Swept path analysis of service yard

TRANSPORT PLANNING PRACTICE

70 Cowcross Street
London, EC1M 6EL

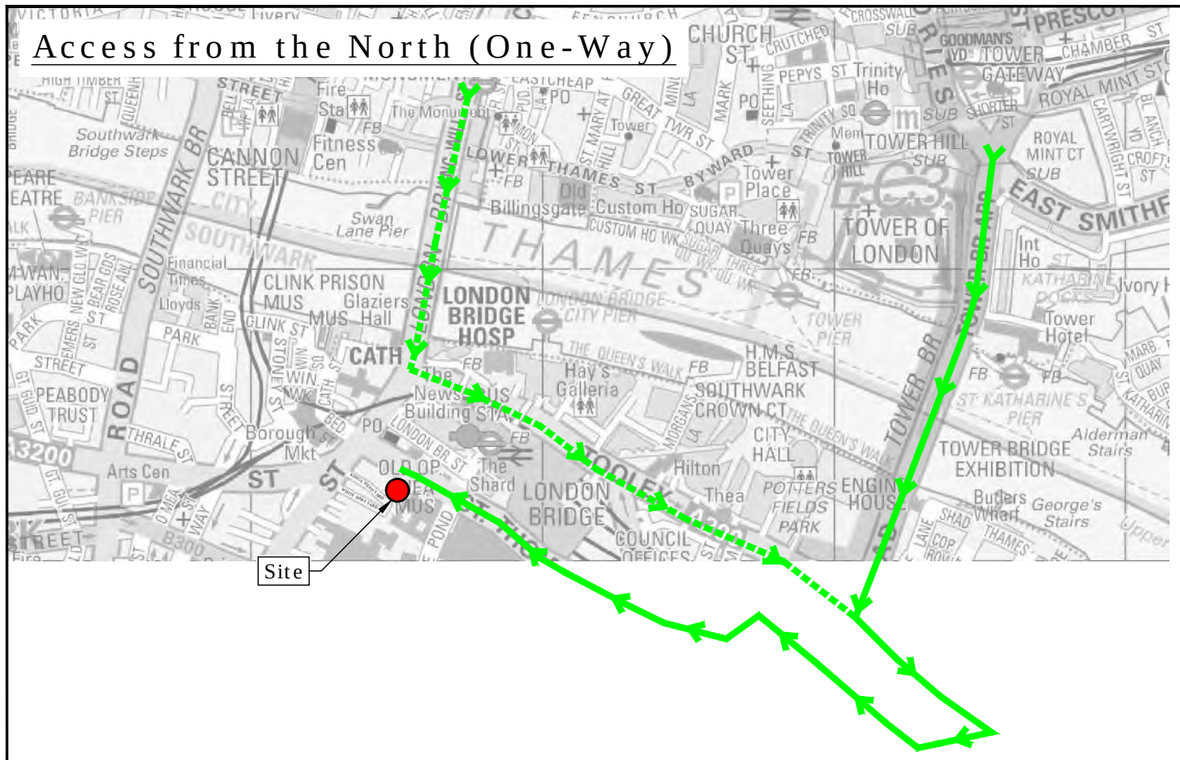
t: 020 7608 0008
w: www.tppweb.co.uk

DRAWING NUMBER	REV
30848/AC/076	A

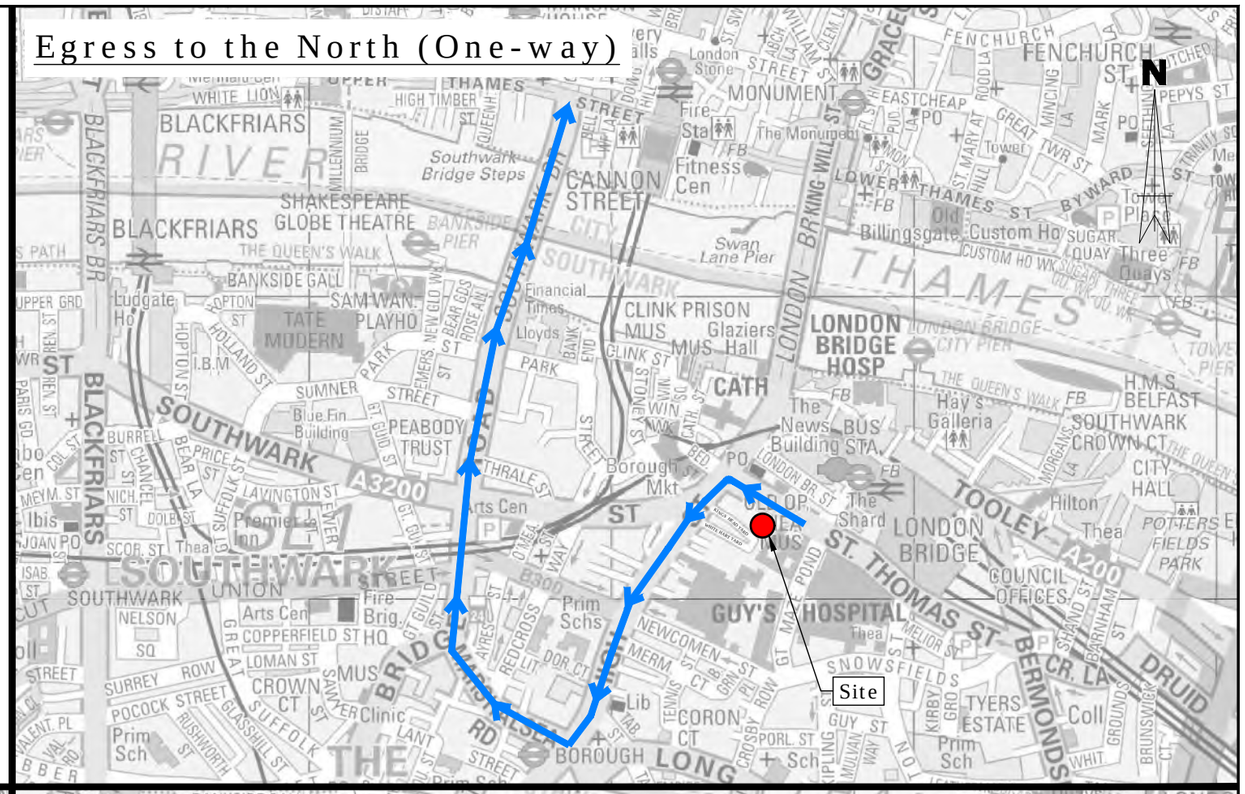
Appendix B

Vehicle routeing plans

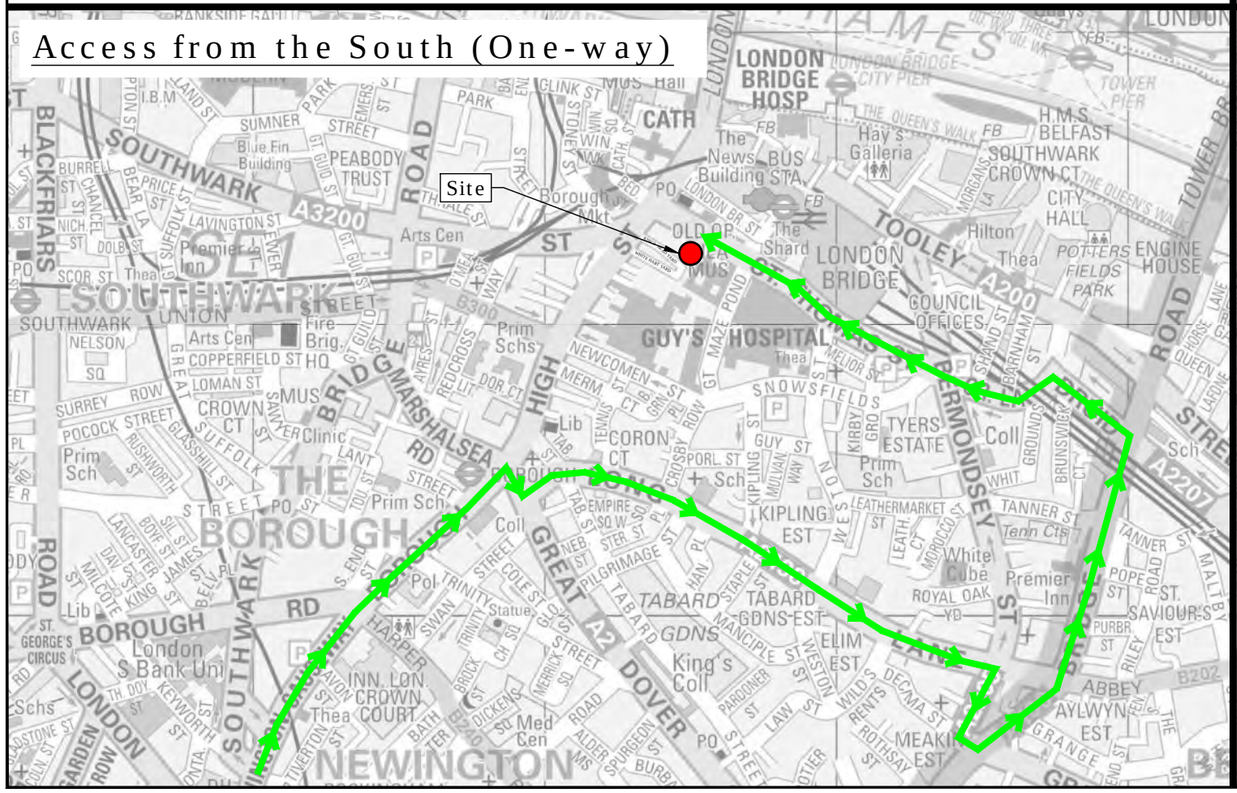
Access from the North (One-Way)



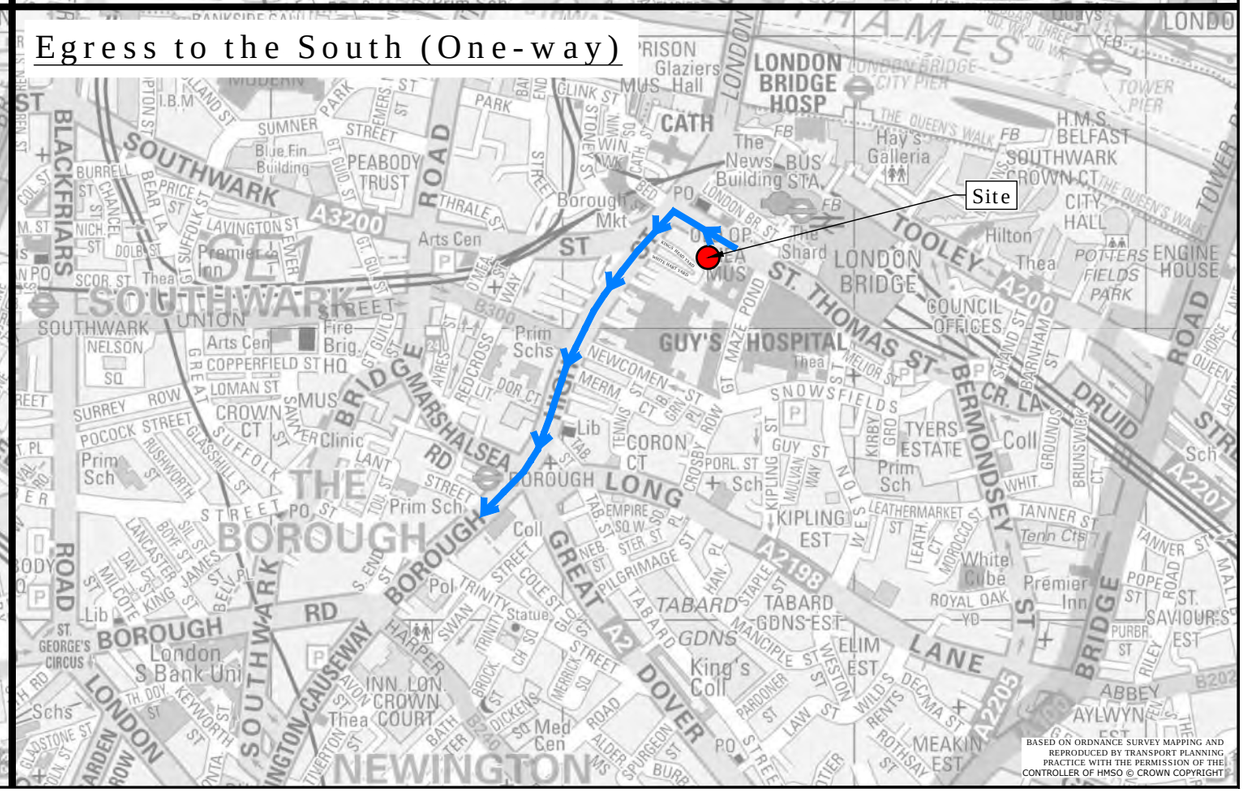
Egress to the North (One-way)



Access from the South (One-way)



Egress to the South (One-way)



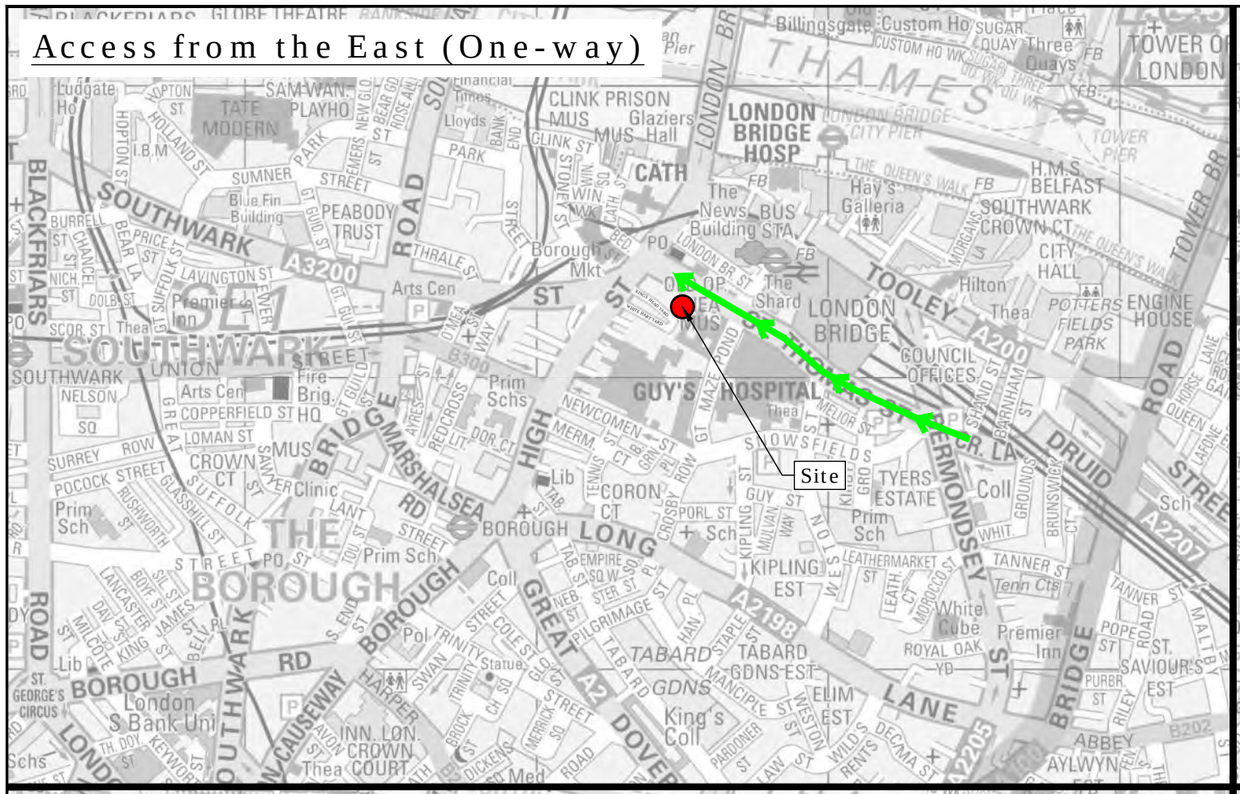
T:\30000_Projects\30848 New City Court\ACAD\026 - 027c.dwg

St.Thomas Street access/egress (One-way)

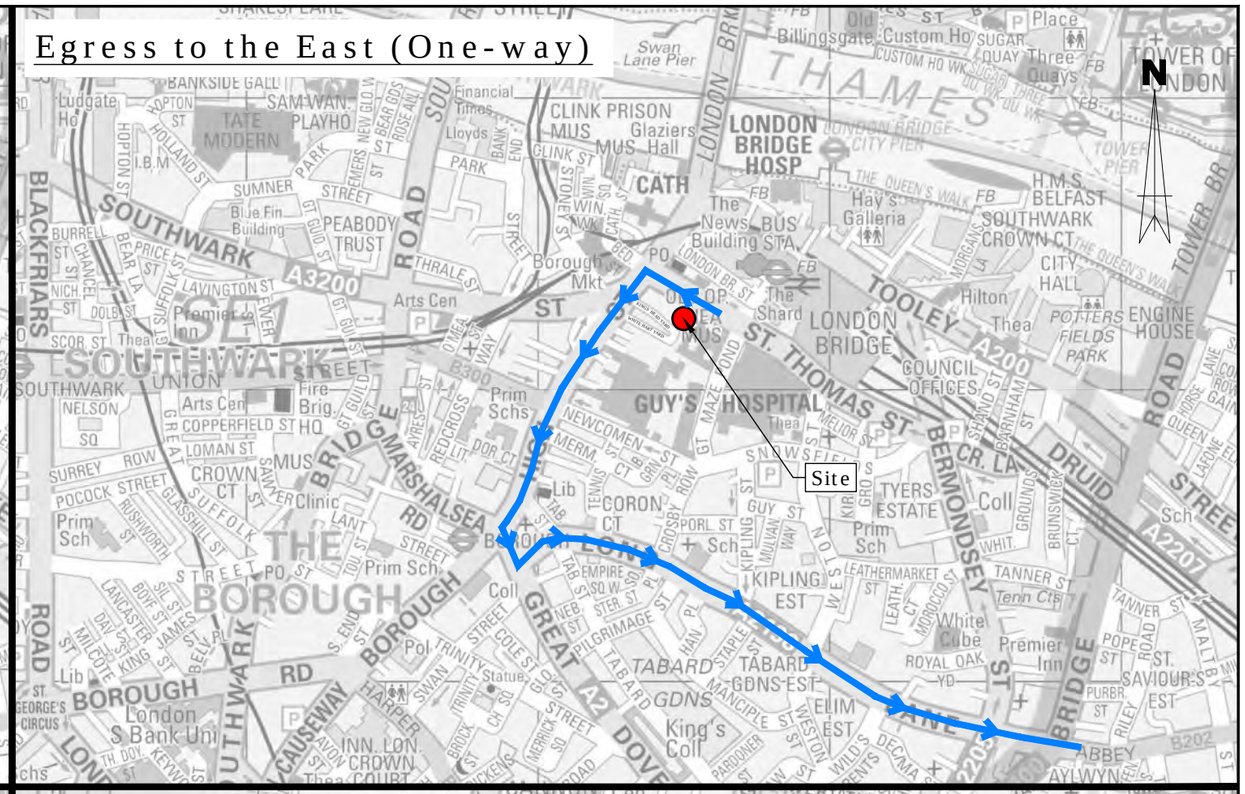
TPP transport planning practice
70 Cowcross Street
London, EC1M 6EL
t: 020 7608 0008
w: www.tppweb.co.uk

Figure 3

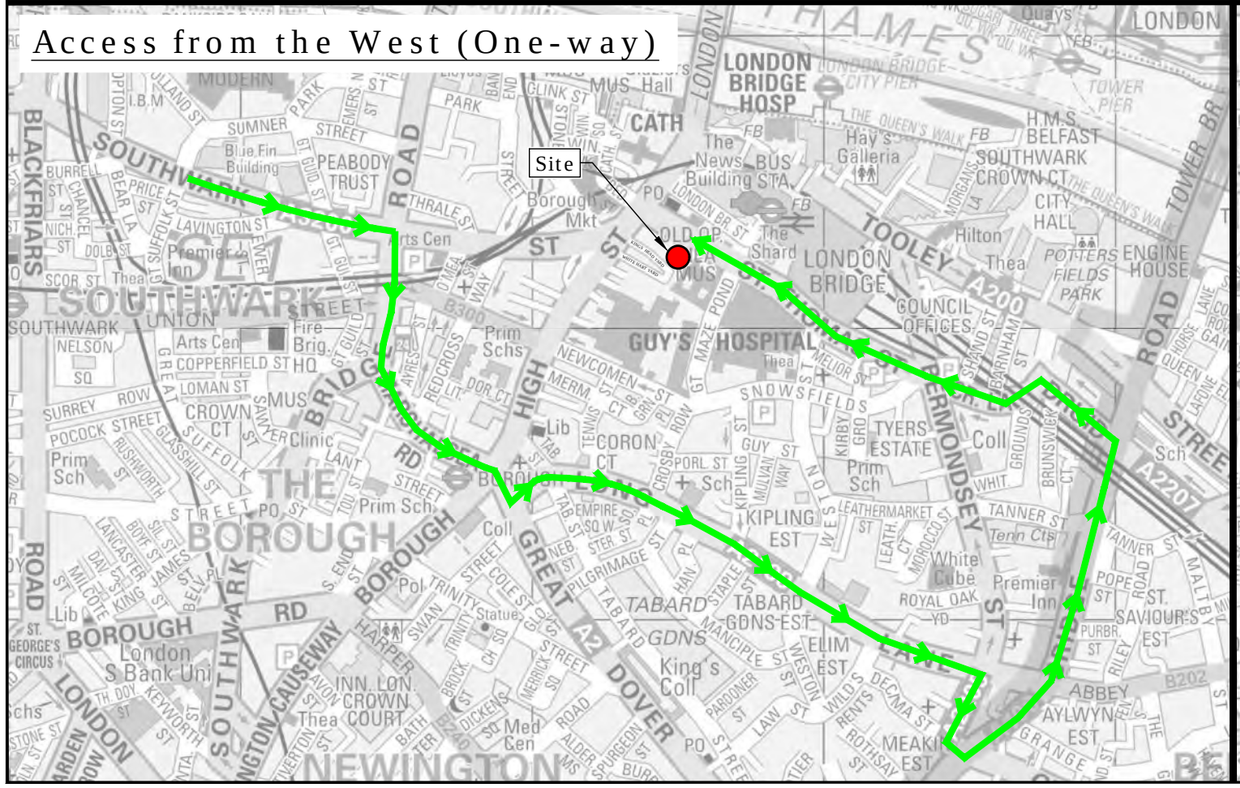
Access from the East (One-way)



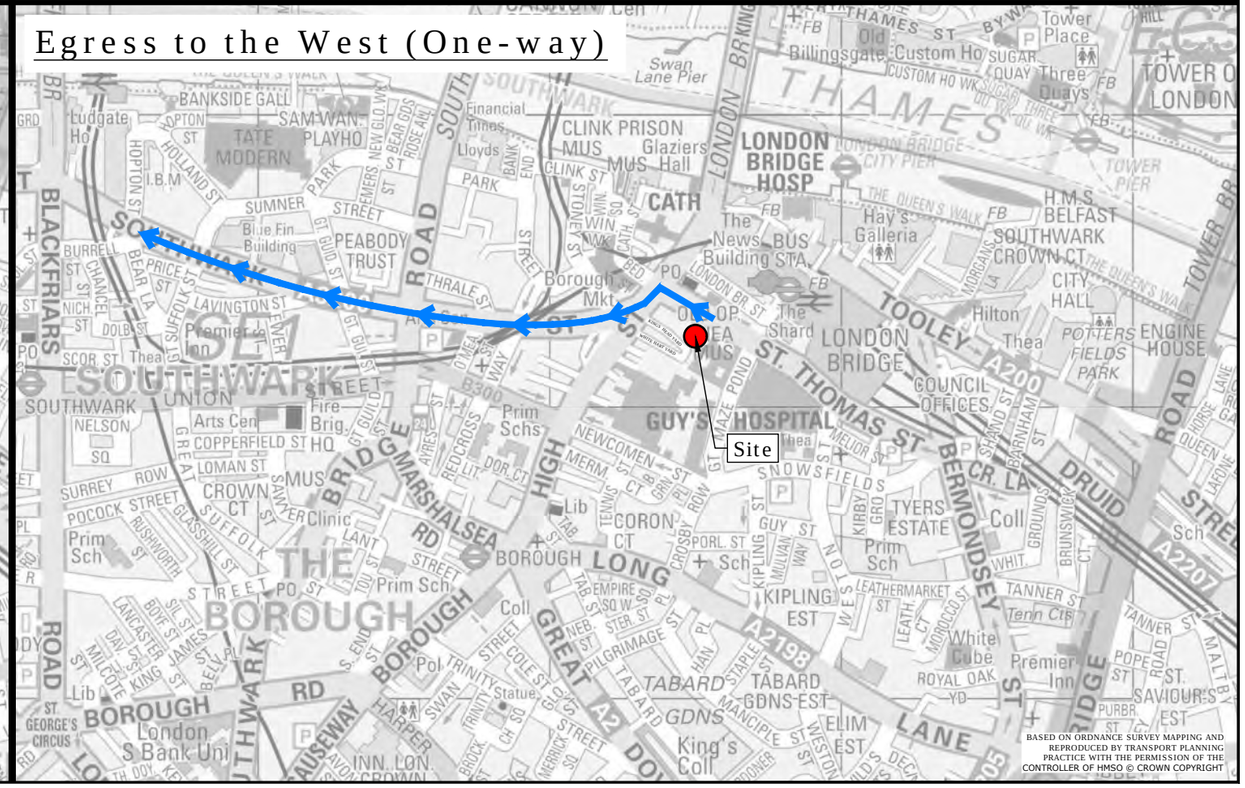
Egress to the East (One-way)



Access from the West (One-way)



Egress to the West (One-way)



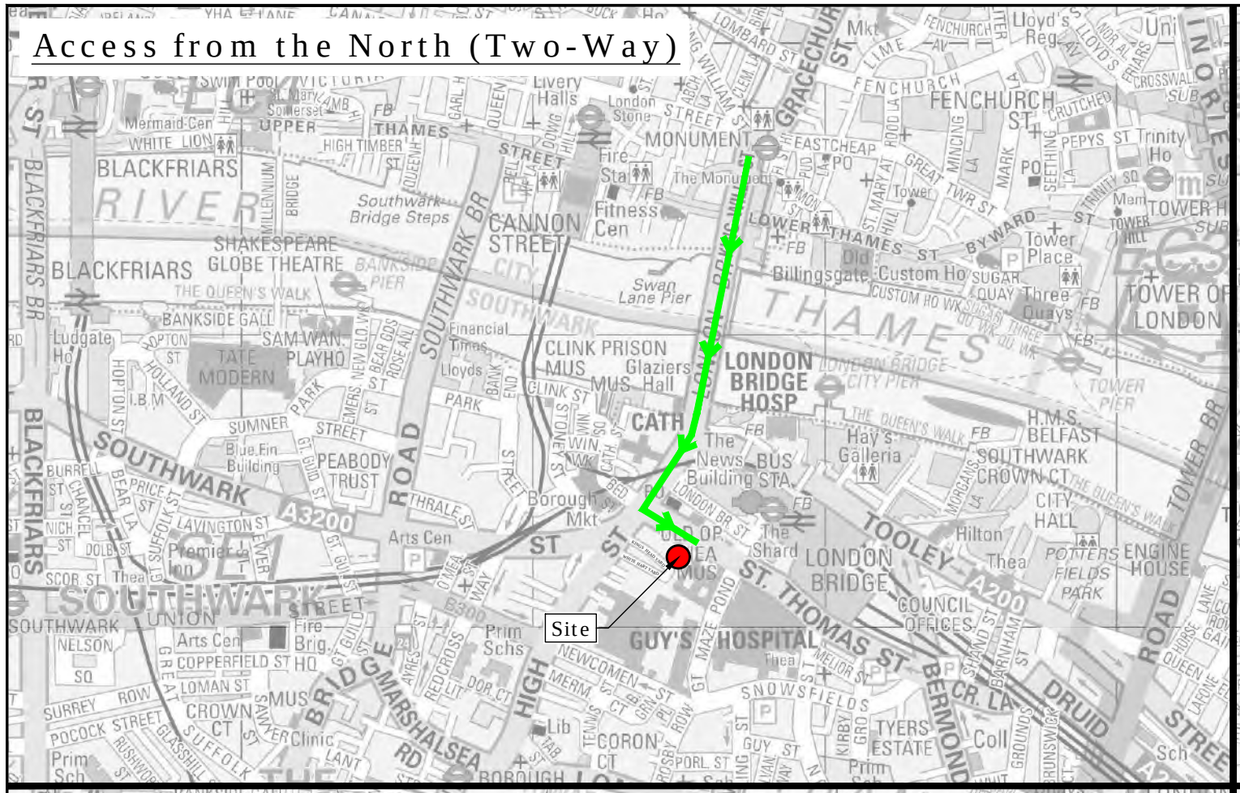
T:\30000_Projects\30848 New City Court\ACAD\026 - 027c.dwg

St.Thomas Street access/egress (One-way)

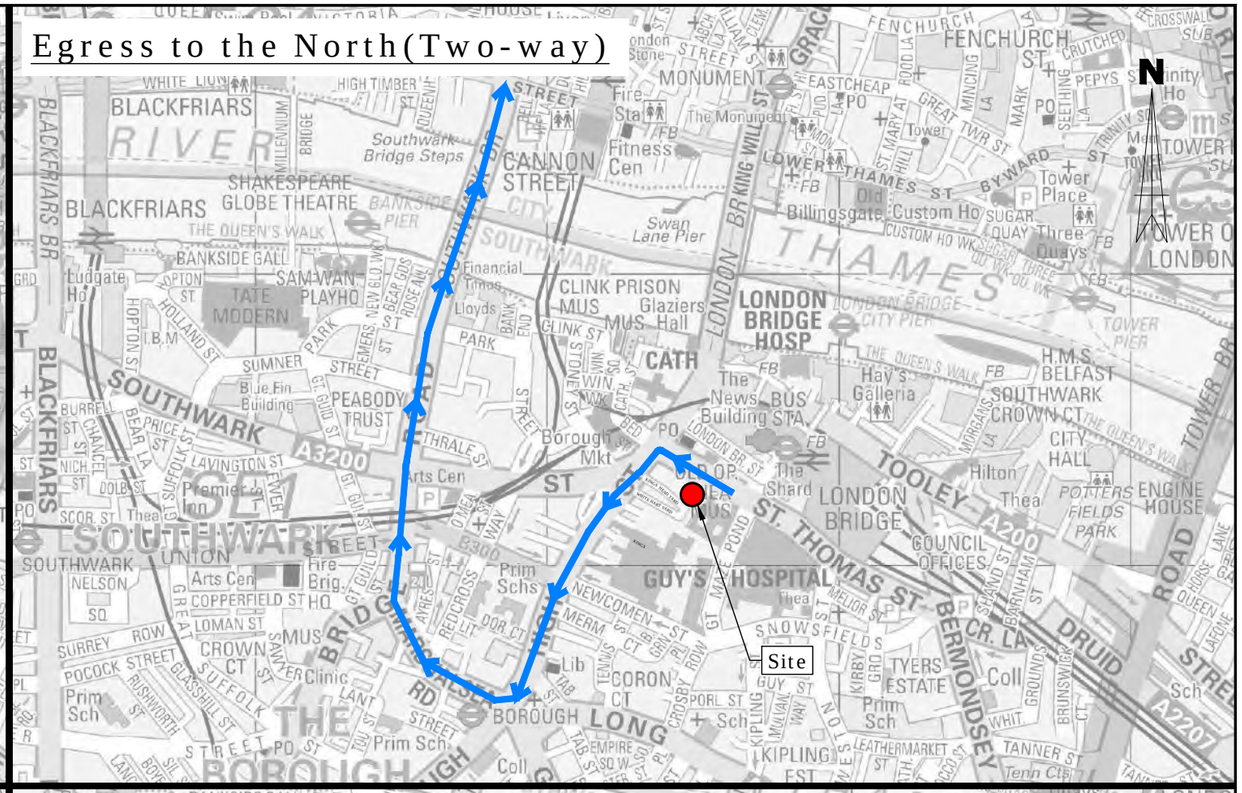
TPP transport planning practice
70 Cowcross Street
London, EC1M 6EL
t: 020 7608 0008
w: www.tppweb.co.uk

Figure 4

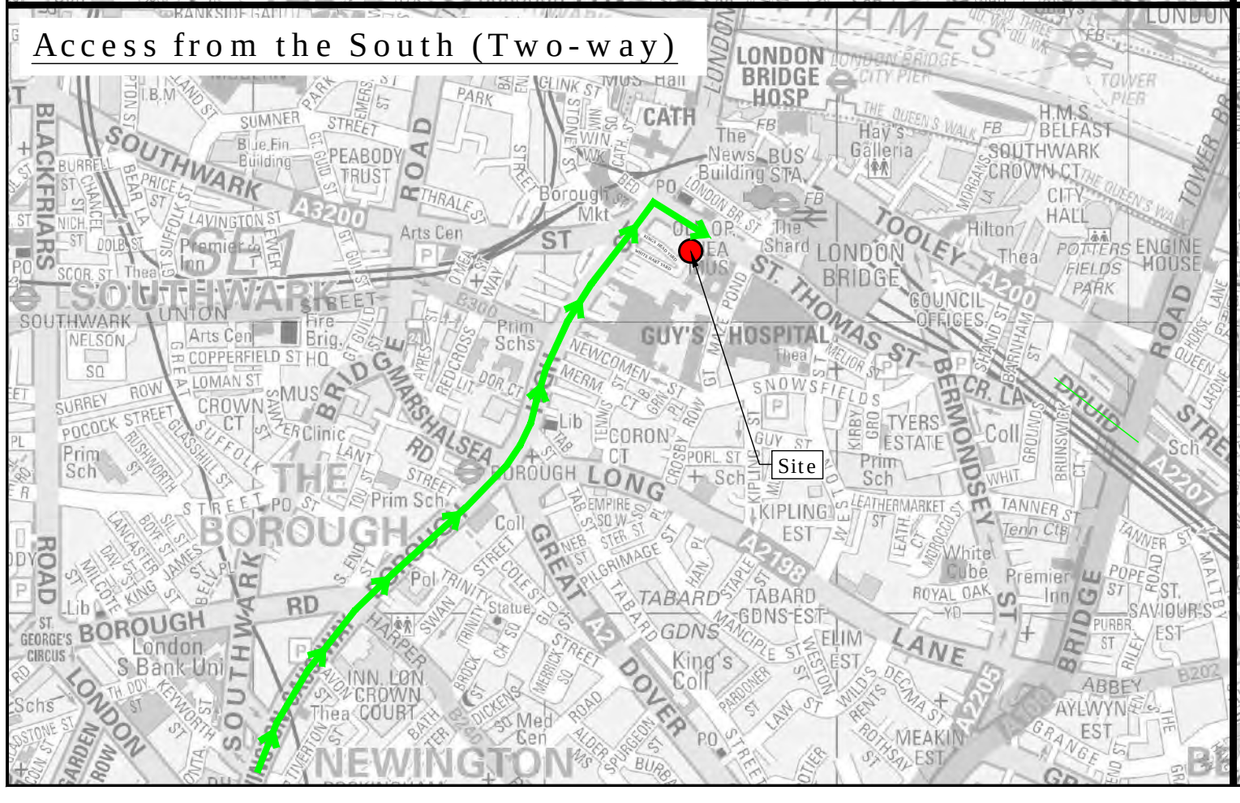
Access from the North (Two-Way)



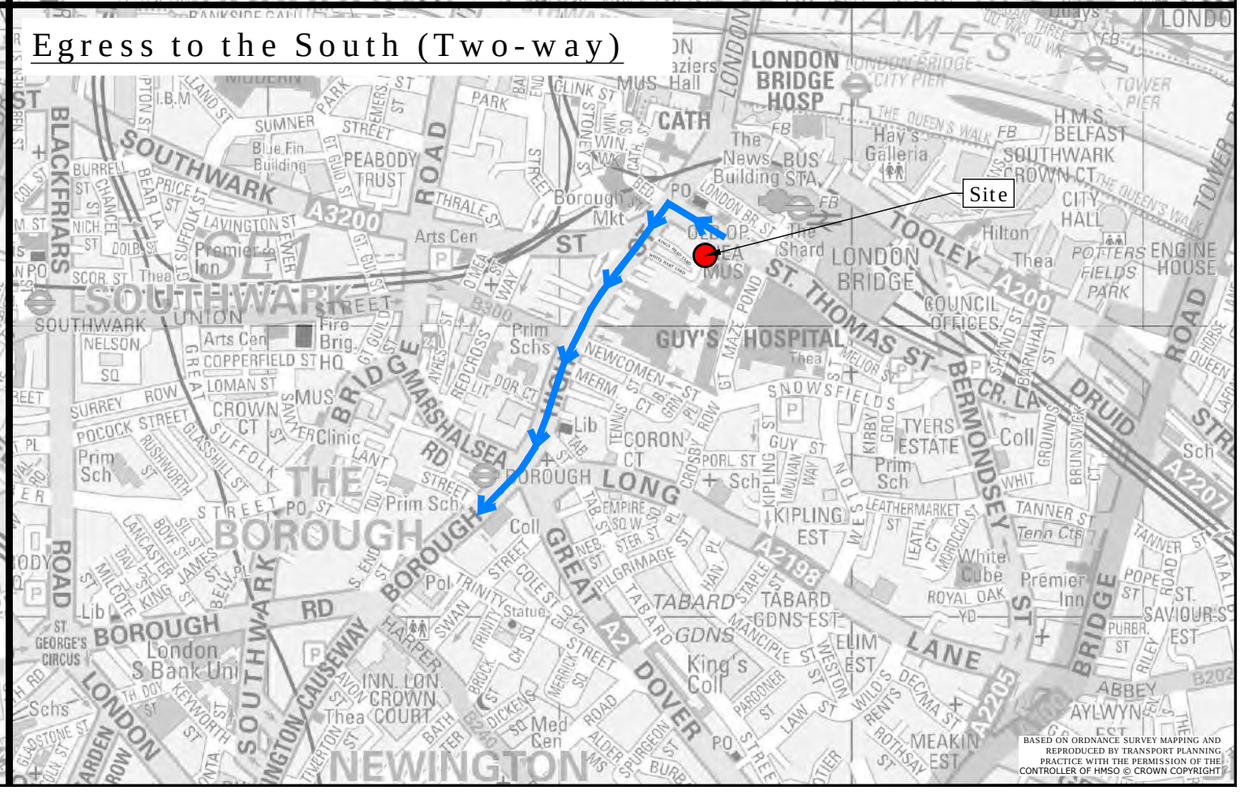
Egress to the North(Two-way)



Access from the South (Two-way)



Egress to the South (Two-way)



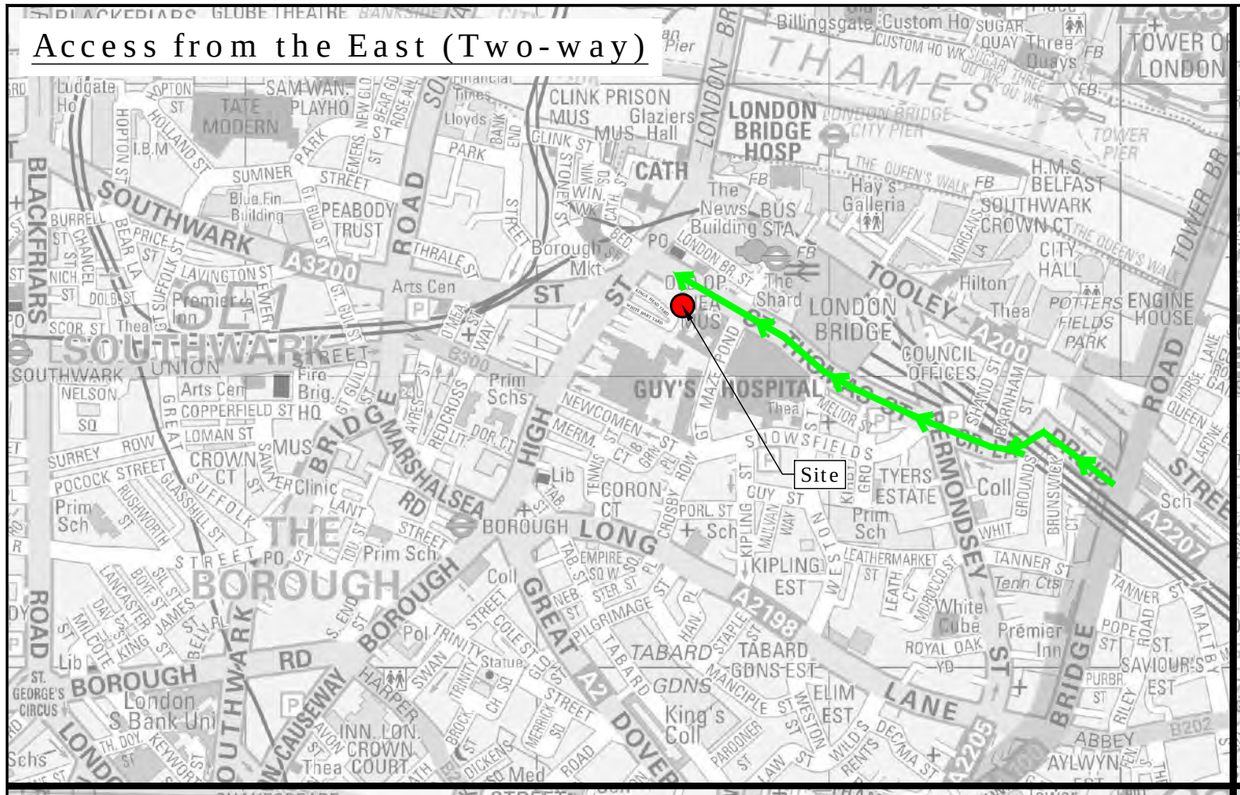
T:\30000_Projects\30848 New City Court\ACAD\028 - 029a.dwg

St.Thomas Street access/egress (Two-way)

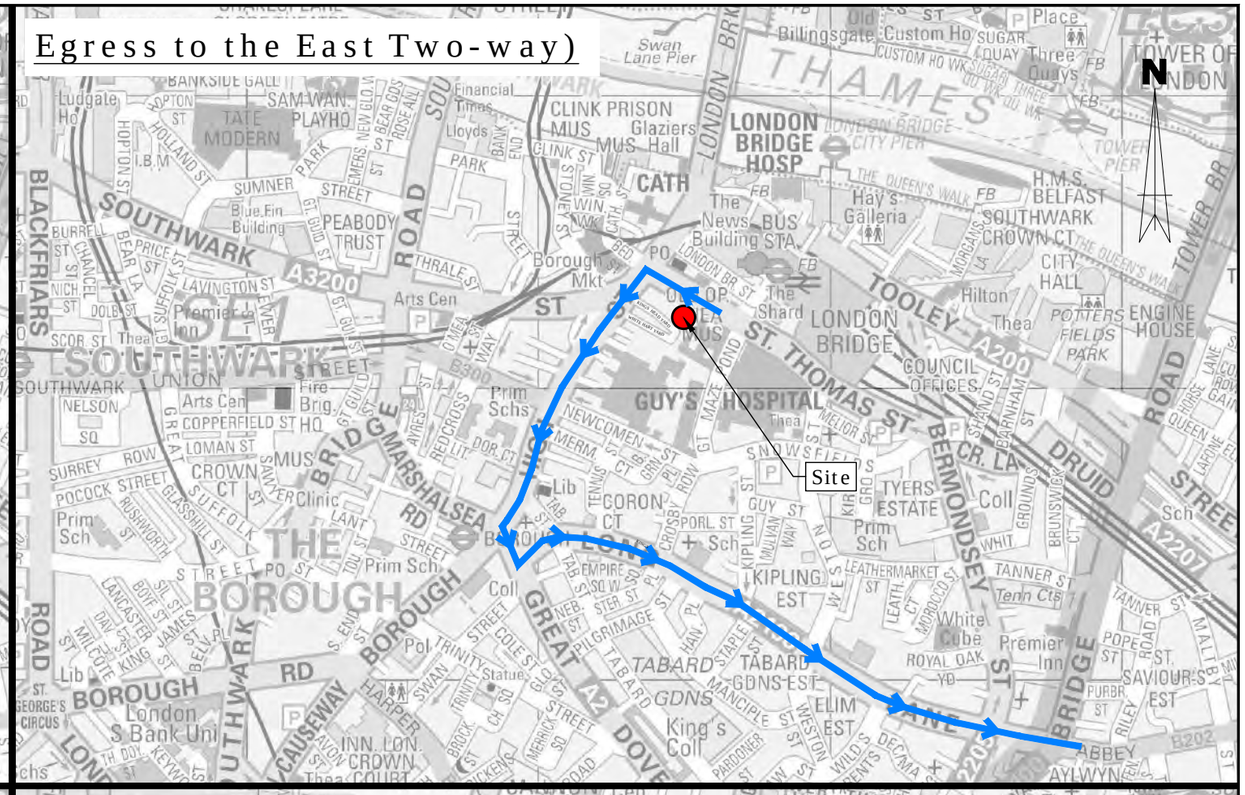
TPP transport planning practice
70 Cowcross Street
London, EC1M 6EL
t: 020 7608 0008
w: www.tppweb.co.uk

Figure 5

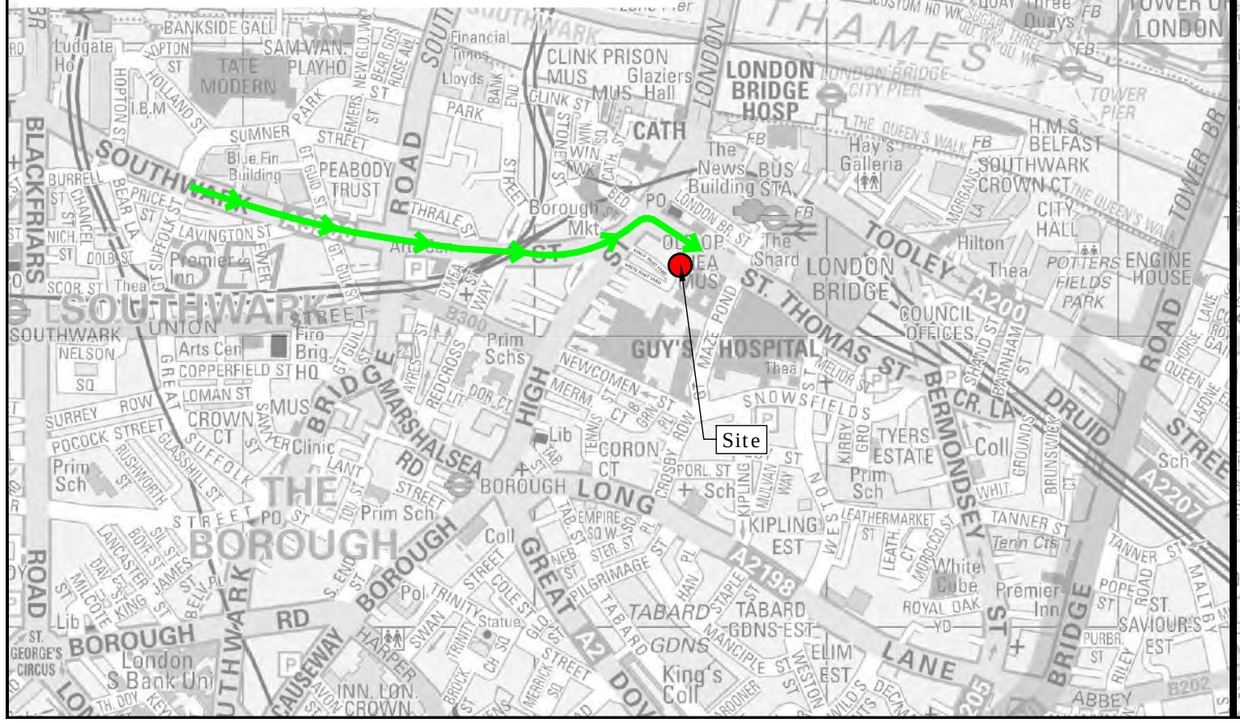
Access from the East (Two-way)



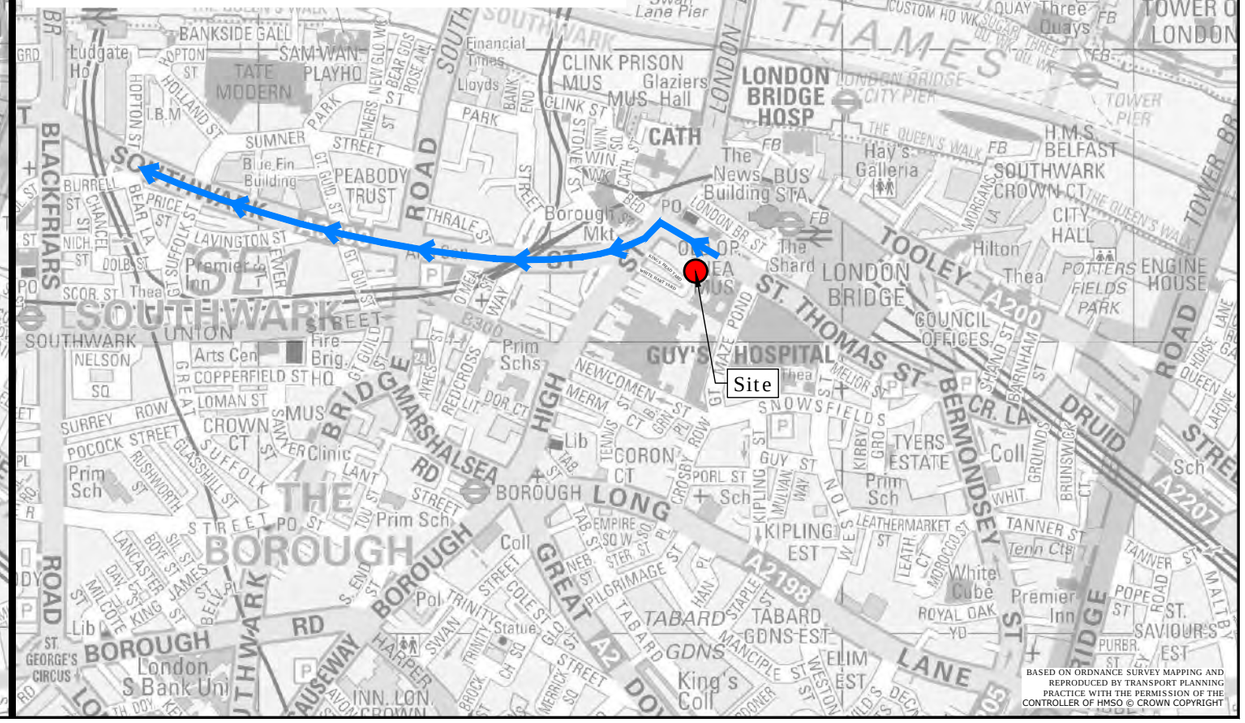
Egress to the East Two-way)



Access from the West (Two-way)



Egress to the West (Two-way)



T:\30000_Projects\30848 New City Court\ACAD\028 - 029a.dwg

St.Thomas Street access/egress (Two-way)

TPP transport planning practice
70 Cowcross Street
London, EC1M 6EL
t: 020 7608 0008
w: www.tppweb.co.uk

Figure 6

Appendix C

Waste generation calculations

New City Court - Waste Generation and Storage Requirements - Option 1: 1,280 litre Eurobins and 30/70 split between general and recyclable waste + compaction of cardboard for Office Use

Land Use	GEA (m2)	Total Waste storage requirements (weekly)				
Class E Office	52962	2000	litres	per	1000	m2 GFA
Class E Retail	358	4000	litres	per	1000	m2 GFA
Class E Food and drink	450	3500	litres	per	1000	m2 GFA

Based on Westminster City Council 'Recycling and Waste Storage Requirements' document (2017-2018)

Land Use	Total Weekly Storage Requirement (litres)	Daily Storage Requirement (litres), based on 5 collections a week			Daily Storage Requirement (No. of 1,280 litre Eurobins), based on 5 collections a week			Cardboard to account for 50% of recyclable waste
		Total Waste Storage Requirement (litres)	General Waste Storage Requirement (litres)	Recyclable Waste Storage Requirement (litres)	Total Waste Storage Requirement (litres)	General Waste Storage Requirement (litres)	Recyclable Waste Storage Requirement (litres)	
Class E Office	105924	21185	6355	14829	11	5	6	Compacted into Bales and collected separately
Class E Retail	1432	286	86	200	Combined Provision as below			
Class E Food and drink	1575	315	95	221				
Non-Office Uses	3007	601	180	421				
D2	Assessed on its own merit in the context of the small amount of floorspace and the type of of use proposed				2	1	1	
Total					included within Non-Office Provision as above			
					13	6	7	

Bin Type	1280	litre

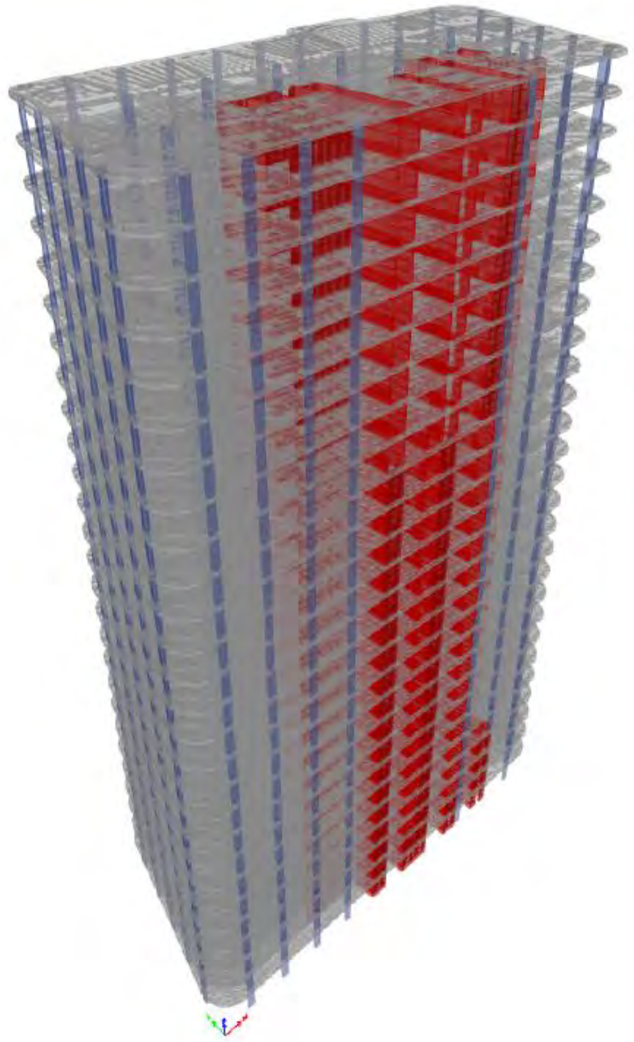
Split of total waste	
30%	general
70%	recycable

	Recycable Waste Reduction
Cardboard Baler for Office Use	50%

Assumes 50% of recyclable office waste would be cardboard which could be compacted into bales and collected separately. This reduces the recyclable Eurobins by half.

NEW CITY COURT | BUILDING WEIGHT

akt II



FINITE ELEMENT MODEL

SOFTWARE OUTPUT DEAD LOAD: 70,000 TONNES

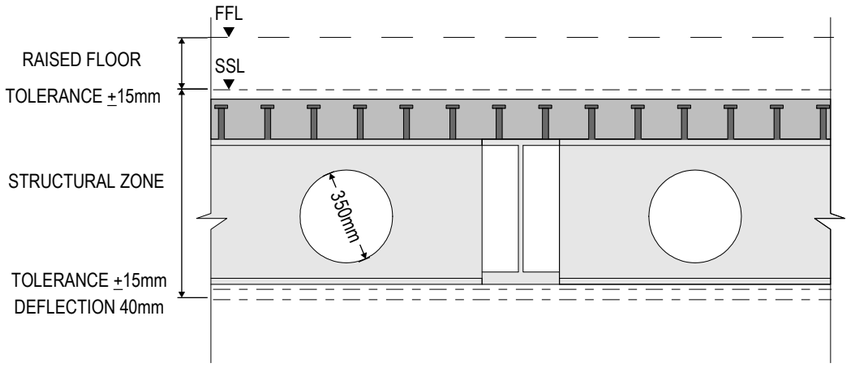
NOTE: THIS VALUE DOES NOT INCLUDE FOUNDATIONS

6.8 Appendix 8 – Lean design options appraisal

FLOOR OPTIONS - STRUCTURAL ZONES

FLOOR OPTION / STRUCTURAL GRID	9.00 x 9.00m	10.50 x 9.00m

COMPOSITE SLAB ON STEEL BEAMS



STEEL BEAM 540mm
STR. ZONE 750mm

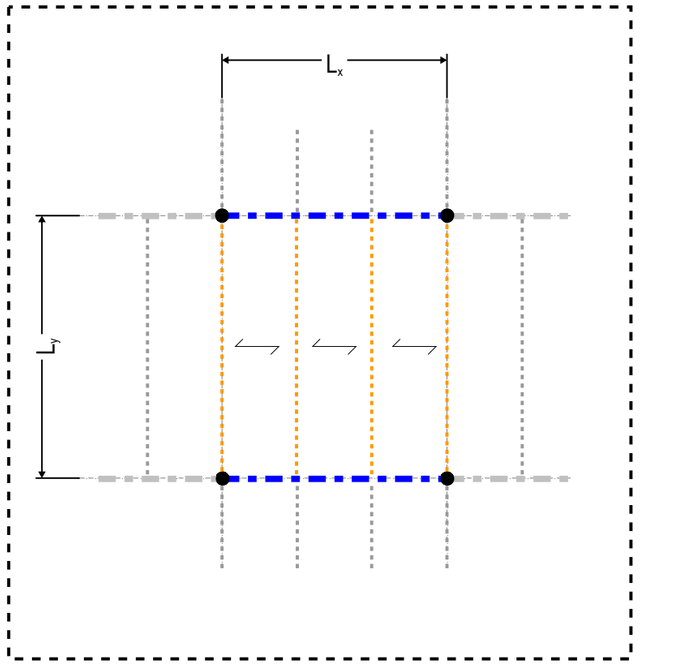
FLOOR WEIGHT: 45-50kg/m²

INCLUDES THE WEIGHT OF THE SECONDARY & PRIMARY BEAMS ONLY

STEEL BEAM 540mm
STR. ZONE 750mm

FLOOR WEIGHT: 50-55kg/m²

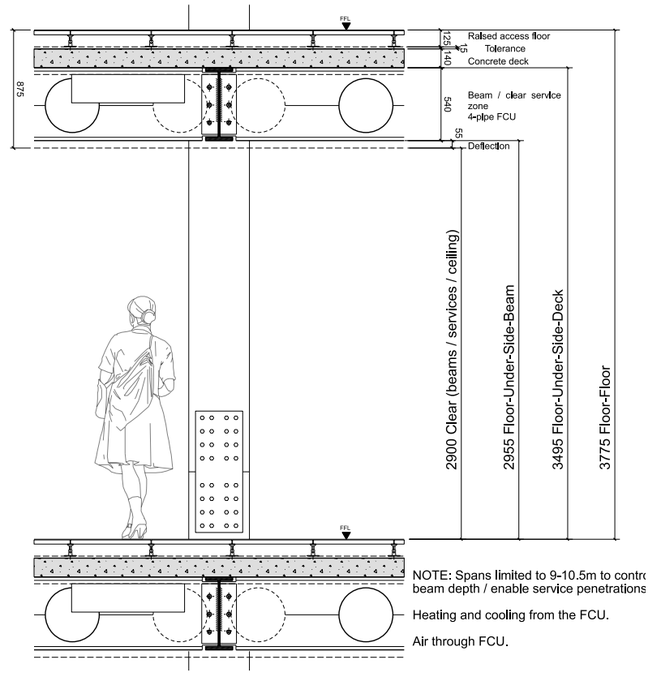
INCLUDES THE WEIGHT OF THE SECONDARY & PRIMARY BEAMS ONLY



PRIMARY BEAM

SECONDARY BEAM

COMPOSITE METAL DECK [90m FIRE]



NOTE: Spans limited to 9-10.5m to contro
beam depth / enable service penetrations

Heating and cooling from the FCU.

Air through FCU.

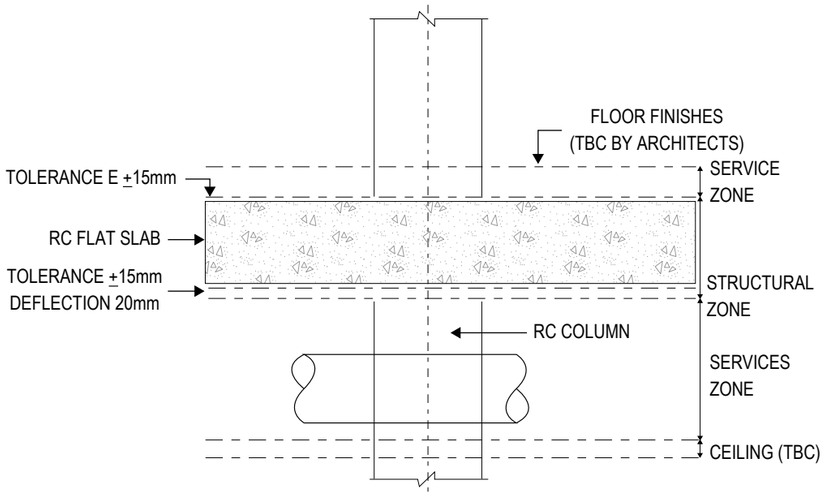
REV	DATE	DESCRIPTION	BY	CHECKED
P1	25.11.2020	PRESENTATION	IK	PG

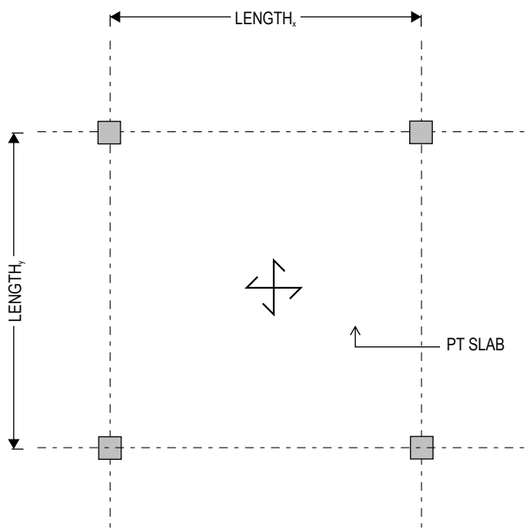
akt II

PROJECT	NEW CITY COURT	TITLE	FLOOR OPTIONS - STRUCTURAL ZONES		
DATE	25.11.2020	SCALE	NTS	CAD FILENAME	-	STATUS	PRELIMINARY
DRAWN	IK	CHECKED	PG	PROJECT No.	3948	DRAWING No.	3948-S-HSK-003A	REV	P1

FLOOR OPTIONS - STRUCTURAL ZONES

FLOOR OPTION / STRUCTURAL GRID		9.00 x 7.50m	9.00 x 9.00m	10.50 x 7.50m	10.50 x 9.00m
PT SLAB					
	THICKNESS	225-250mm	250-275mm	270-290mm	275-300mm
	STR. ZONE	275-300mm	300-325mm	320-340mm	325-350mm





REV	DATE	DESCRIPTION	BY	CHECKED
P1	25.11.2020	PRESENTATION	IK	PG

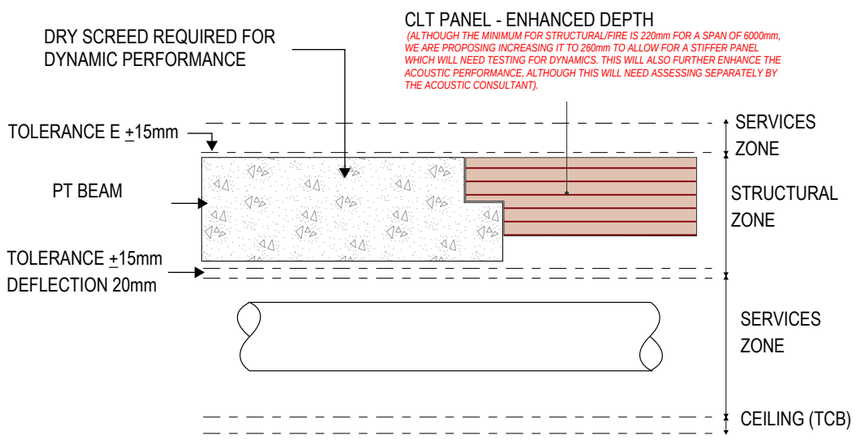
akt II

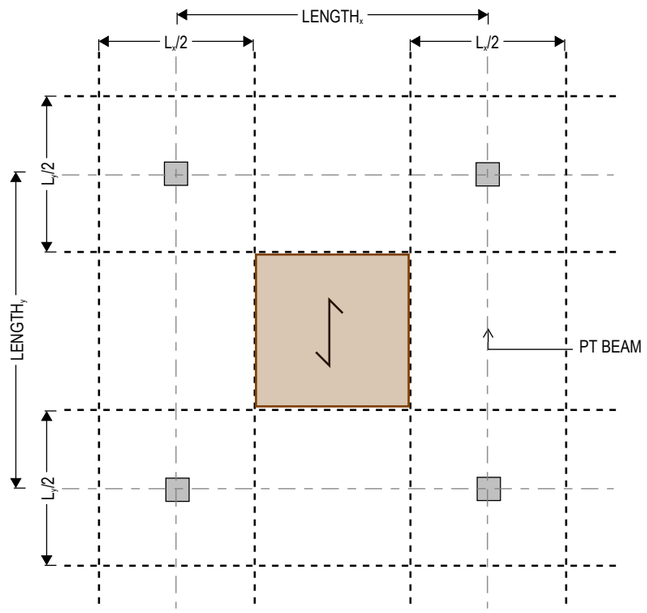
PROJECT	NEW CITY COURT			TITLE	FLOOR OPTIONS - STRUCTURAL ZONES		
DATE	25.11.2020	SCALE	NTS	CAD FILENAME	-	STATUS	PRELIMINARY
DRAWN	IK	CHECKED	PG	PROJECT No.	3948	DRAWING No.	3948-S-HSK-003B	REV	P1

FLOOR OPTIONS - STRUCTURAL ZONES

FLOOR OPTION / STRUCTURAL GRID	9.00 x 9.00m	10.50 x 9.00m

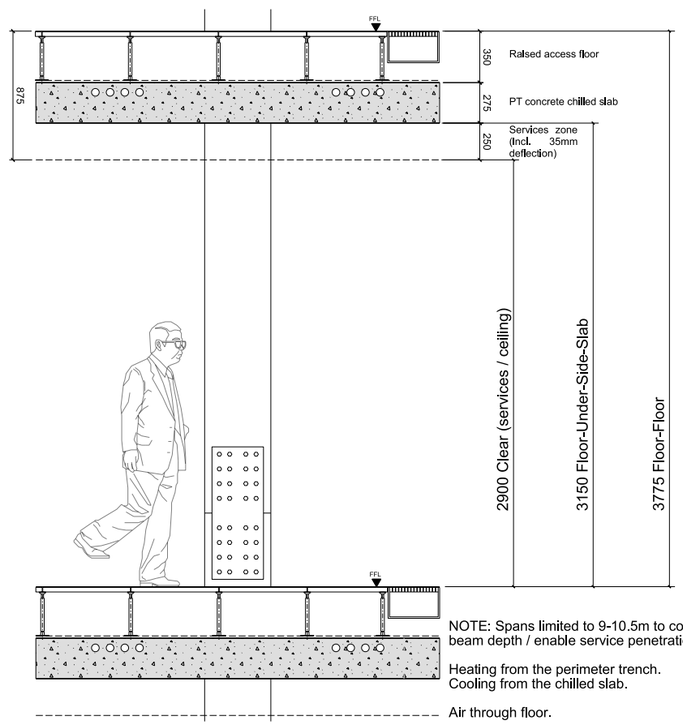
PT BEAMS WITH CLT PANELS





BEAM THICK. 300-325mm
CLT THICK. 220mm
STR. ZONE 350-375mm

BEAM THICK. 325-350mm
CLT THICK. 260mm
STR. ZONE 375-400mm



REV	DATE	DESCRIPTION	BY	CHECKED
P1	25.11.2020	PRESENTATION	IK	PG

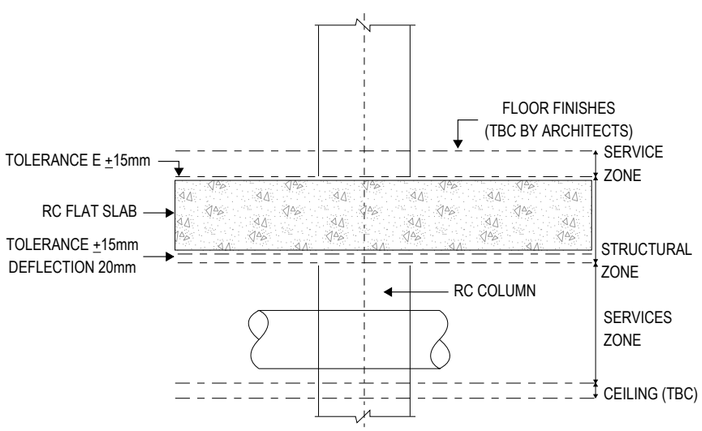
akt II

PROJECT NEW CITY COURT		TITLE FLOOR OPTIONS - STRUCTURAL ZONES	
DATE 25.11.2020	SCALE NTS	CAD FILENAME -	STATUS PRELIMINARY
DRAWN IK / CHECKED PG	PROJECT No. 3948	DRAWING No. 3948-S-HSK-003C	REV P1

FLOOR OPTIONS - STRUCTURAL ZONES

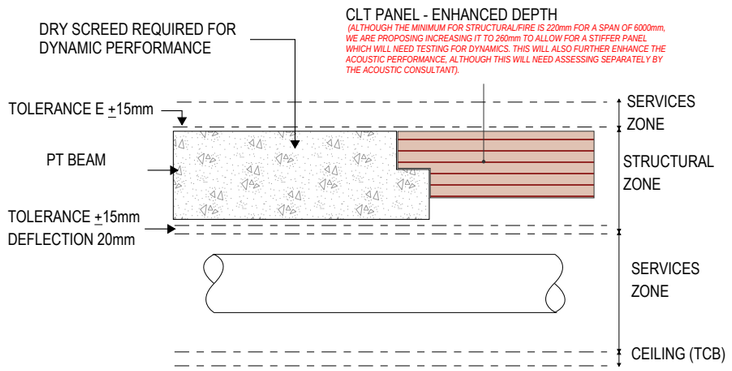
FLOOR OPTION / STRUCTURAL GRID	9.00 x 7.50m	9.00 x 9.00m	10.50 x 7.50m	10.50 x 9.00m

PT SLAB



THICKNESS	225-250mm	THICKNESS	250-275mm	THICKNESS	275-300mm	THICKNESS	275-300mm
STR. ZONE	285-310mm	STR. ZONE	310-335mm	STR. ZONE	335-360mm	STR. ZONE	335-360mm

PT BEAMS WITH CLT PANELS



—		BEAM THICK.	300-325mm	—		BEAM THICK.	325-350mm
		CLT THICK.	220mm			CLT THICK.	260mm
		STR. ZONE	350-375mm			STR. ZONE	375-400mm

REV	DATE	DESCRIPTION	BY	CHECKED
P1	25.11.2020	PRESENTATION	IK	PG

akt II

PROJECT	NEW CITY COURT	TITLE	FLOOR OPTIONS - STRUCTURAL ZONES
DATE	25.11.2020	SCALE	NTS
CAD FILENAME	-	STATUS	PRELIMINARY
DRAWN	IK	CHECKED	PG
PROJECT No.	3948	DRAWING No.	3948-S-HSK-003D
REV	P1		

6.9 Appendix 9 – Soft spots assessment

10 New City Court

10.1 Introduction

This is the main building of the proposed development. It is a 26-storey building (with mezzanine and two basement levels), extending to 108m AOD.

The proposed structural solution for the tower is a reinforced concrete frame with PT slabs typically 275mm thick.

The atypical office floor levels (L0M to L03 included). The main characteristic of these floors is the wedge slab at the south-east side of the Site, the gallery slabs and the cantilever core circulation slab.

The typical office floor layout starts from Level 04 and goes up to Level 24. The core layout/footprint changes slightly along the height of the building (Level 16 to roof).

Level 24 is where the main terrace is located and one more storey above this level is extending with a smaller footprint to host a restaurant, mechanical plants, cooling towers and a BMU.

The main stability system which provides resistance to the lateral loads i.e. wind loads for the tower is the reinforced concrete core which runs from the B2 Level to roof and is split into three parts namely; the Western part, the Central part and the Eastern part.

Different structural frame options have been also considered at this stage such as steel frame with metal deck however the preferred option at the time of authoring this report is the reinforced concrete frame with PT slabs.

10.1.1 Typical Floors

The internal columns are typically located at a 9.50m x 10.50m grid and have a circular shape, while the perimeter columns are located at 6m distance along the facade and have a rectangular shape.

The thickness of the typical tower PT slab as mentioned before is equal to 275mm. Several iterations have taken place to derive a balance between an economical design in terms of tendons, loose reinforcement, slab thickness long term deflections and footfall response to human induced vibrations.

Soft Spots

The future tenants' flexibility has been considered in the typical tower PT slab design. Different options with soft spots on the floor plate have been assessed and designed respectively and infill options for each one of these cases have been provided depending on the soft spot required dimensions. At the time of authoring this report the soft spot locations that appear to be more preferred are:

- one soft spot between grid lines A-G2 and G-G3, (bay in the north-east side of the floor plate)
- one soft spot between grid lines A-8 and G-9B (the bay opposite to the balcony)

Please note that a traffic light system for the different soft spot locations can be found to the relevant appendix attached to this report.

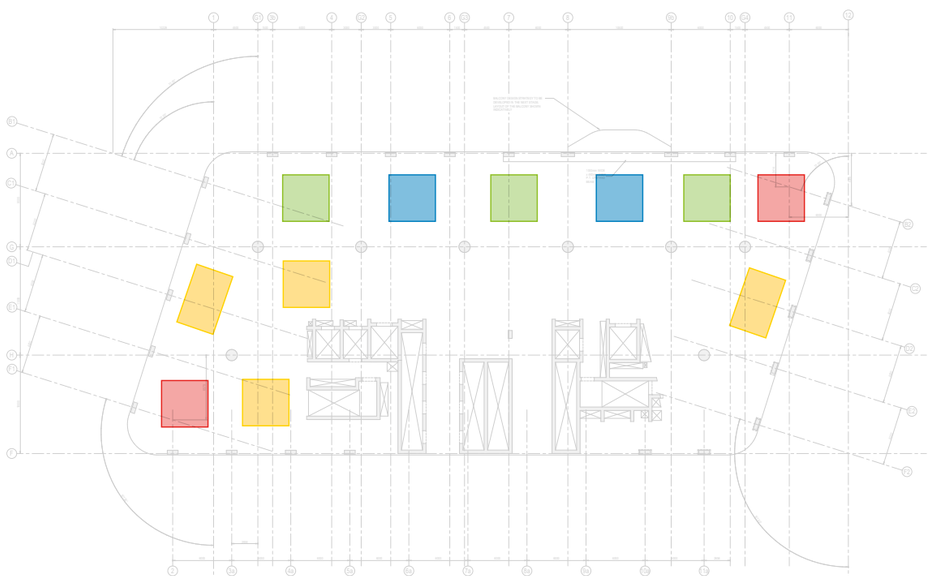


Figure 10.42 Typical PT office floor layout with the soft spots traffic light system (in blue the location of the soft-spots agreed at this stage)

10.1.2 Lower Floors

From the Ground Floor Level up to Level 02, the floor plate area is reduced and a different perimeter columns' arrangement has been proposed closer to the Georgian Terraces which ensures not only a minimum impact to the existing buildings but also meets the criteria for the gallery space.

Level 00

The ground floor slab is a reinforced concrete slab which varies in terms of depth, levels and is also characterized by the number of steps along the different interfaces. The slab can be split into four different parts:

- slab following the tower's footprint which also provides direct support to the Levels 01 and 02 steel columns as well as the additional Level 0M supports, 400mm thick
- slab that supports the landscape close next to the proposed new London Bridge Tube Station entracnce, 450mm thick
- loading bay slab, 400mm thick
- Keats House slab, 225mm thick (refer to the relevant section)

Level 0M

With regards to the Level 0M and the cantilever core circulation slab a different system has been adopted where the core slabs are becoming 300mm and supporting the thinner slab that spans between them. Additional columns (reinforced concrete or RHS steel sections) are provided to provide supports to the slab and to the beams along its perimeter. These columns are directly supported on the Level 00 slab and are not continuing to the basement levels.

LEVELS 01 & 02

Different options to support the slabs for Levels 01 and 02 have been proposed and designed respectively; vertical support provided by either the steel RHS sections placed at approximately 3m c/c along the perimeter of these slabs (preferred option) or through the use of hangers supported from Level 03. For all of these options the use of a 275mm PT slab has been adopted.

10.1.3 Top Floors

Level 24 is where the public terrace and the main restaurant area are located. The remaining floor plate is occupied by mechanical plants and cooling towers.The slab at this level is expected to be circa 450mm thick RC slab with the potential of adding column-heads within the build-up zone, to the internal columns that are supporting the landscape area due to the defflections and the magnitude of the punching shear forces.

Level 25 hosts the mezzanine level of the restaurant and is occupied for the remaining area mainly by mechanical plants and the BMU. Slabs at this level are expected to vary between 300mm and 350mm.

Please note that a steel frame structure will be also installed on top of the slab to support the metal decking roof on top (photovoltaic panels' areas).

Level 26 is the top roof of the structure and it is occupied by the private tenant terrace on the northern side and by solar panels in the remaining area. The slab supporting a tenant terrace is expected to be circa 300mm thick RC slab, while the remaining roof is assumed to be supported by a steel frame and metal decking.

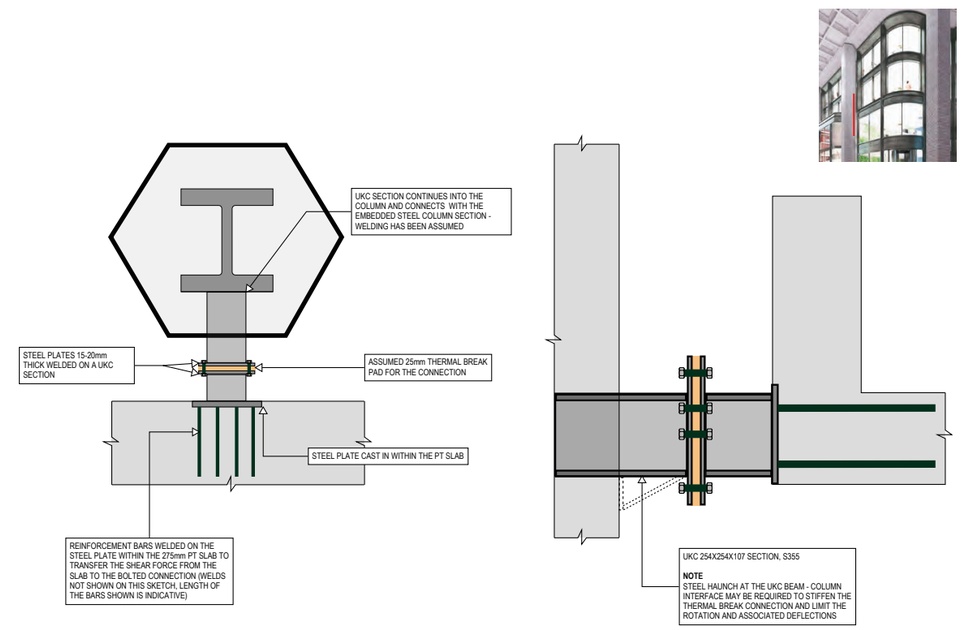
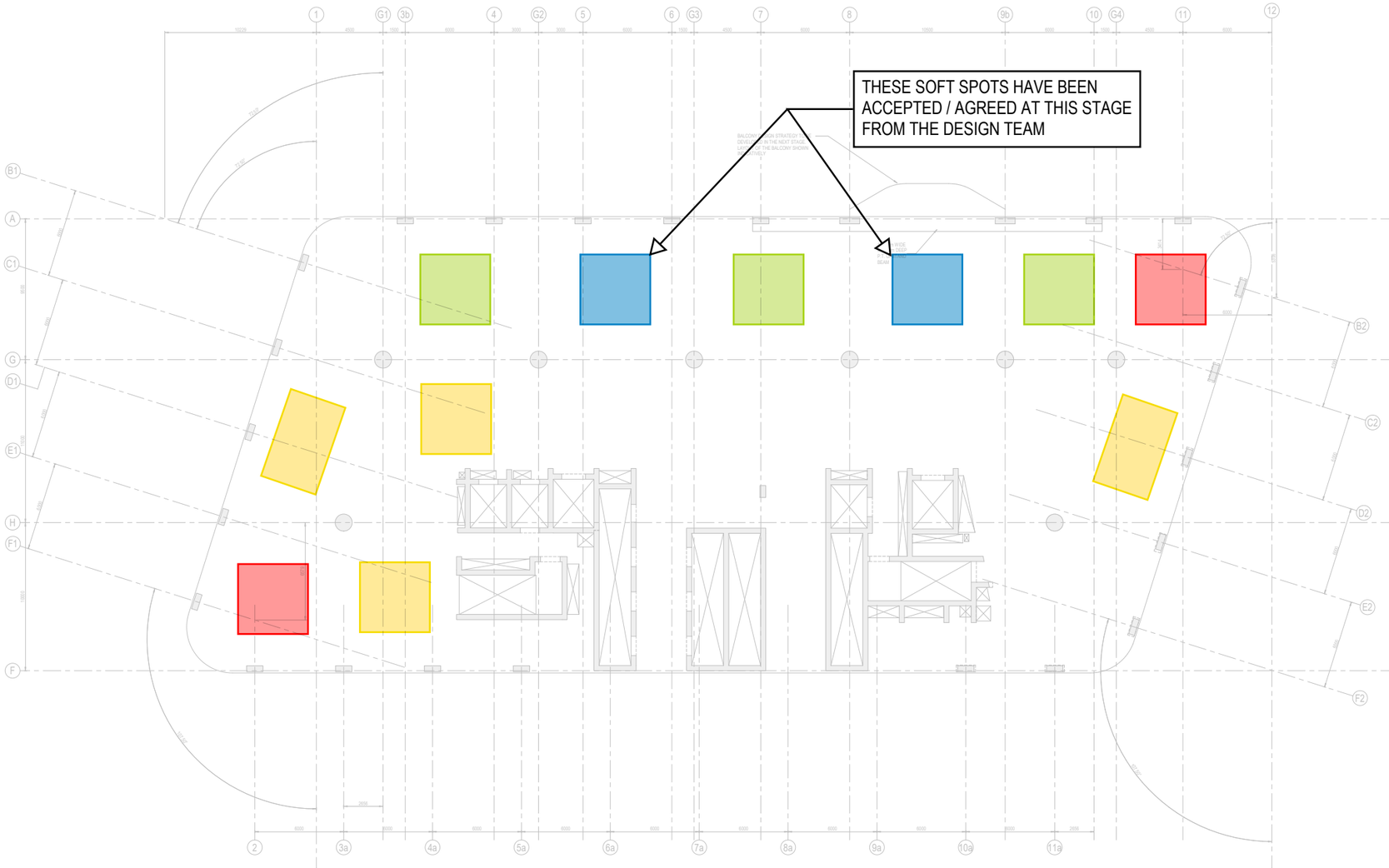


Figure 10.43 Thermal break connection for Levels 01 and 02

NEW CITY COURT | TYPICAL PT FLOOR SLAB - SOFT SPOTS LOCATION



LEGEND

- SOFT-SPOT LOCATION ACCEPTABLE
- SOFT-SPOT LOCATION ACCEPTABLE - DIMENSIONS WILL NEED TO BE REDUCED / ADJUSTED
- SOFT-SPOT LOCATION NOT RECOMMENDED
- SOFT-SPOT LOCATION ACCEPTED / AGREED

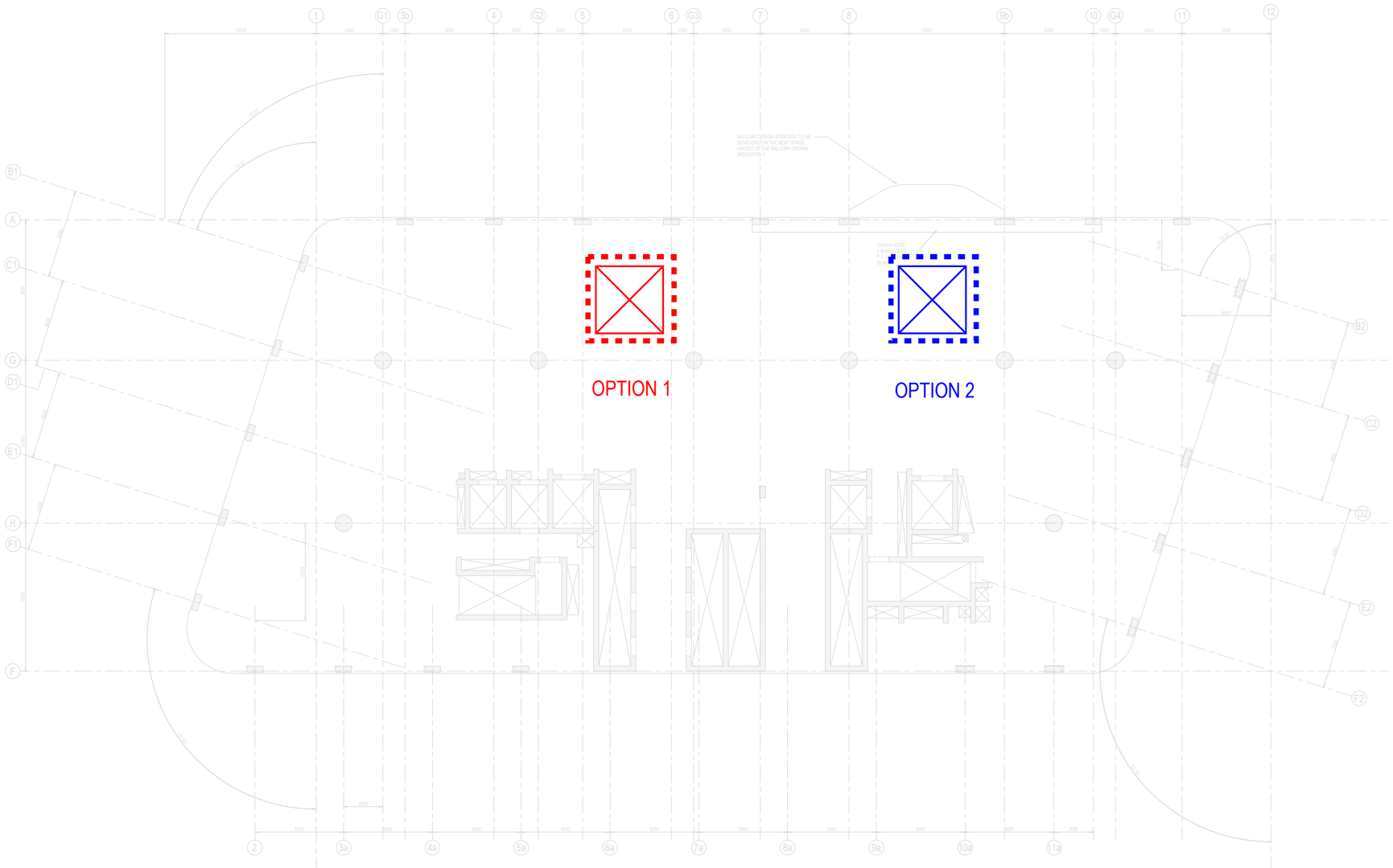
SOFT-SPOTS POTENTIAL LOCATIONS

REV	DATE	DESCRIPTION	BY	CHECKED
P1	25/06/2021	FOR DISCUSSION	MG	IK

akt II

PROJECT	NEW CITY COURT			TITLE	PT SLAB SOFT SPOTS - TRAFFIC LIGHT SYSTEM		
DATE	25.06.2021	SCALE	NTS	CAD FILENAME		STATUS	FOR DISCUSSION
DRAWN	MG	CHECKED	IK	PROJECT No.	3948	DRAWING No.	3948-HSK-303	REV	P1

NEW CITY COURT | TYPICAL PT FLOOR SLAB - SOFT SPOTS INFILLS



SOFT-SPOTS LOCATIONS TESTED

OPTIONS 1 AND 2

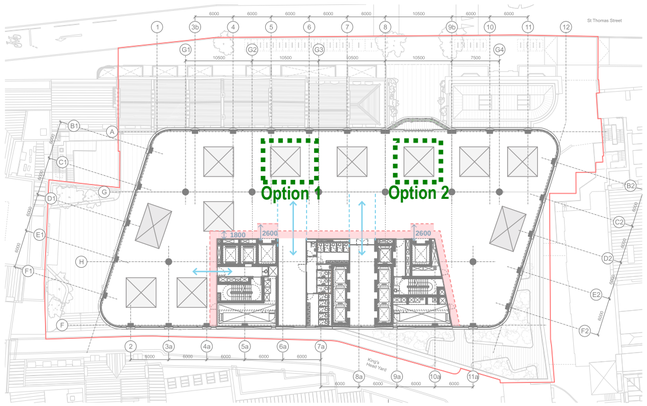
SOFT SPOT	RC / PRECAST	CLT
4m x 4m	175mm	170mm + 50mm SCREED
5m x 5m	200mm	230mm + 50mm SCREED
6m x 6m	200mm	260mm + 50mm SCREED

REV	DATE	DESCRIPTION	BY	CHECKED
P1	25/06/2021	FOR DISCUSSION	MG	IK

akt II

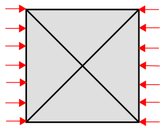
PROJECT	NEW CITY COURT	TITLE	PT SLAB SOFT SPOTS - INFILLS
DATE	25.06.2021	SCALE	NTS
CAD FILENAME		STATUS	FOR DISCUSSION
DRAWN	MG	CHECKED	IK
PROJECT No.	3948	DRAWING No.	3948-HSK-308
REV	P1		

SOFT SPOTS & BALCONIES - LOADS ASSUMPTIONS AND DEFLECTIONS



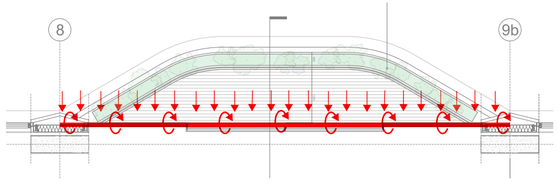
AHMM PROPOSED LOCATIONS

LOADS



6m x 6m

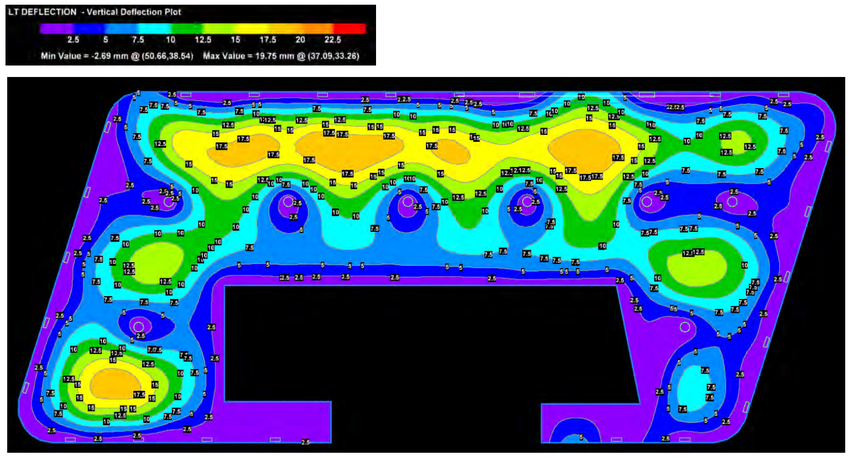
ASSUMED 200mm THICK CONCRETE INFILL
(WORST CASE SCENARIO ONE WAY SPANNING)
SW = 0.2m x 3m x 25kN/m^3 = 15kN/m
SIDL = 1kPa x 3m = 3kN/m
LL = 3.5kPa x 3 = 10.5kN/m



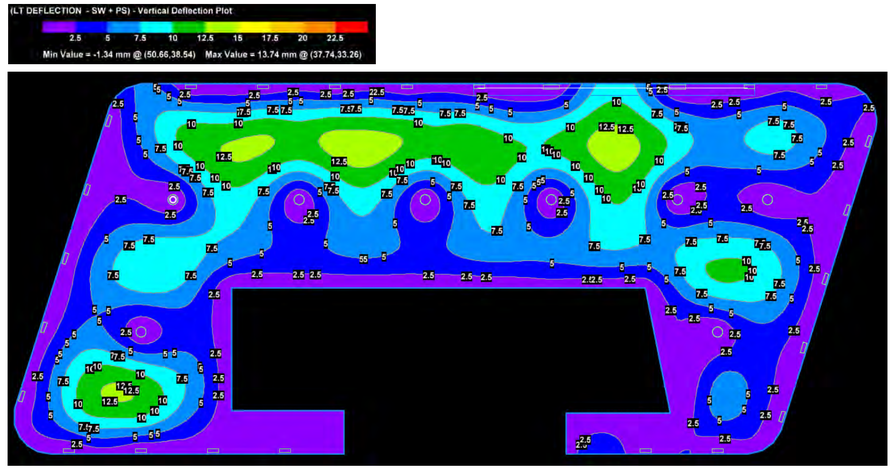
SIDL VERTICAL = 10kN/m
SIDL MOMENT = 17.5kNm/m

IL VERTICAL = 5kN/m
IL MOMENT = 9.2kNm/m

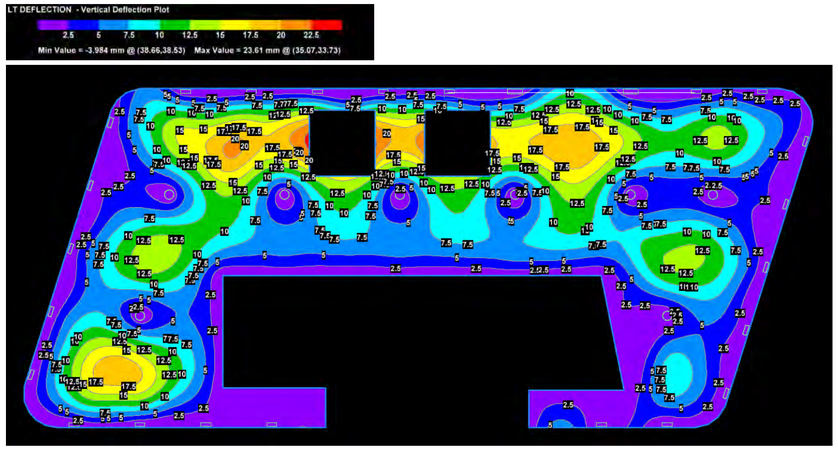
PLAN WITH NO SOFT-SPOTS LT DEFLECTIONS



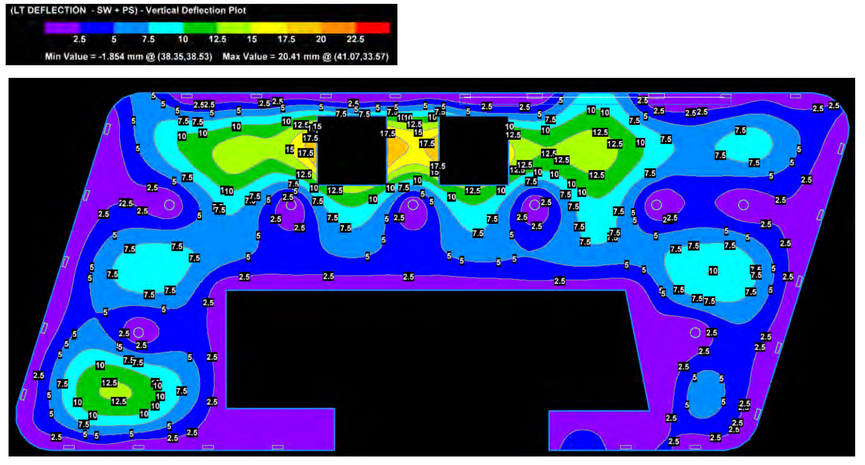
PLAN WITH NO SOFT-SPOTS POST FACADE INSTALLATION DEFLECTIONS



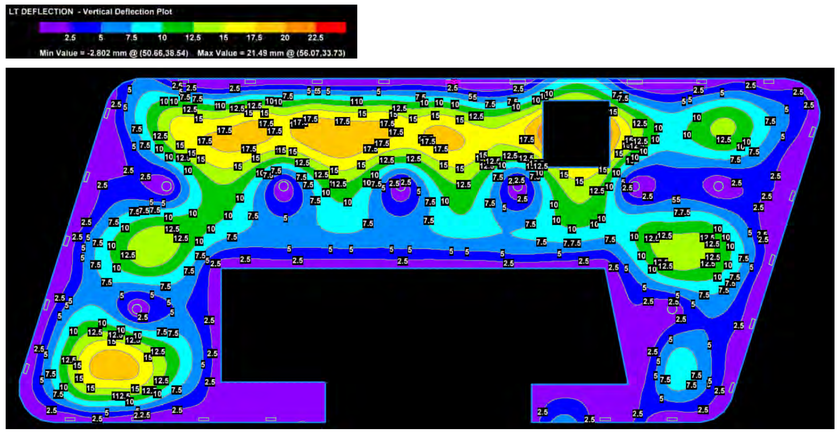
OPTION 1 - LT DEFLECTIONS



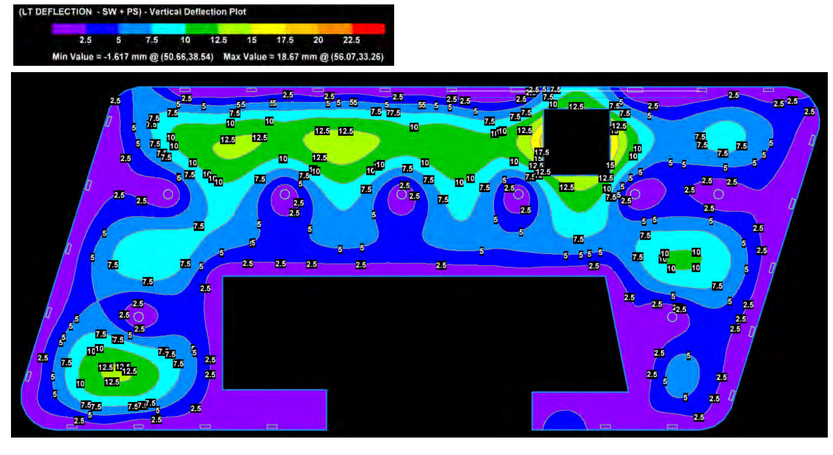
OPTION 1 - POST FACADE INSTALLATION DEFLECTIONS



OPTION 2 - LT DEFLECTIONS



OPTION 2 - POST FACADE INSTALLATION DEFLECTIONS



NOTE:

1. PLEASE REFER TO THE SOFT SPOT OPTIONS LOCATION SKETCH FOR MORE INFORMATION; 3948-HSK-303

2. THE EFFECT OF HAVING TWO SOFT SPOTS NEXT TO EACH OTHER AT THE NORTH BAY WAS ALSO EXAMINED TO ASSESS THE SLAB DEFLECTIONS AND ARE SHOWN IN THIS SKETCH

akt II

PROJECT NEW CITY COURT		TITLE PT SLAB - BALCONY INTERFACE DEFLECTIONS	
DATE 25.06.2021	SCALE NTS	CAD FILENAME -	STATUS PRELIMINARY
DRAWN MG	CHECKED IK	PROJECT No. 3948	DRAWING No. 3948-HSK-302	REV P1