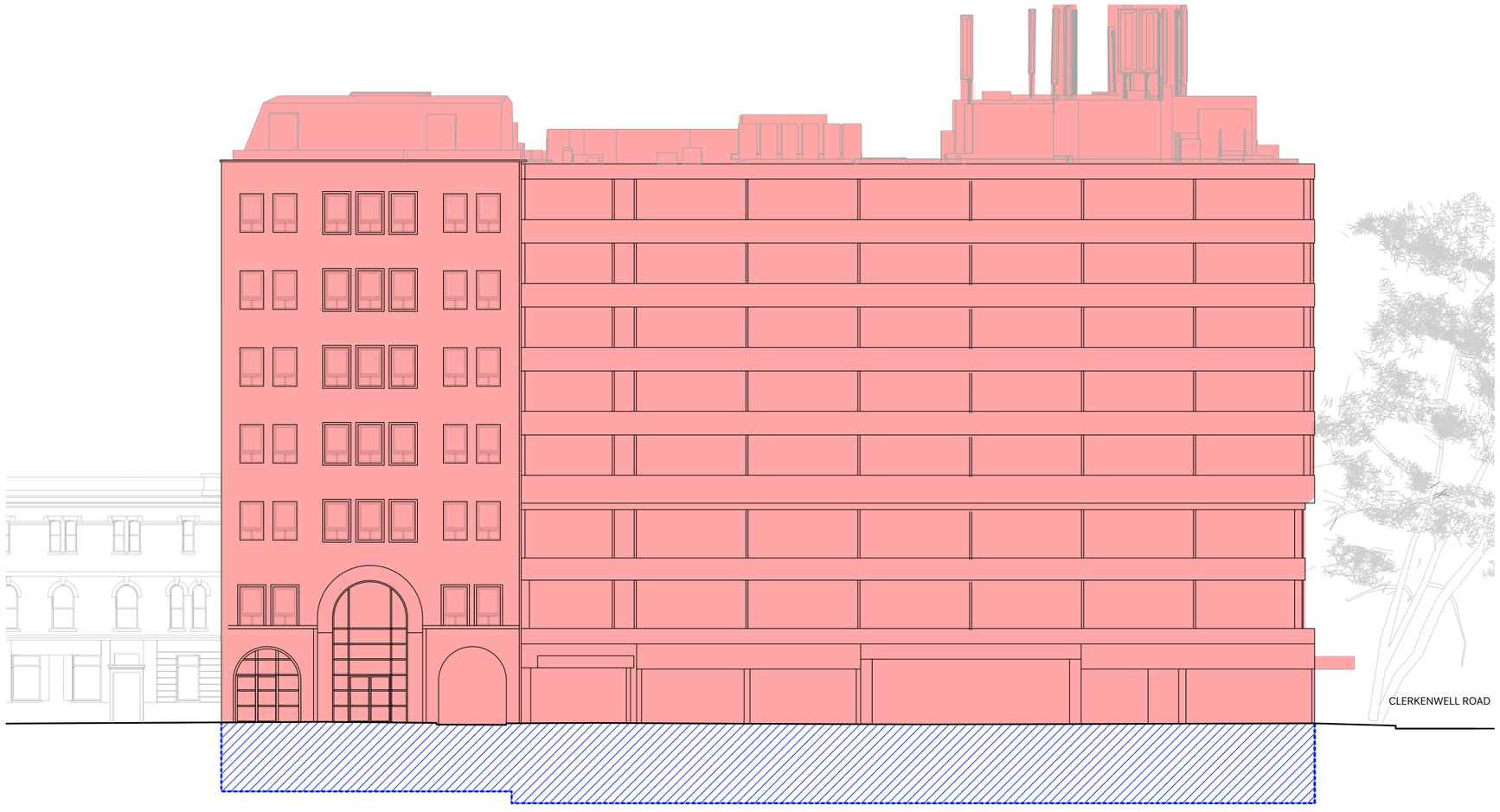
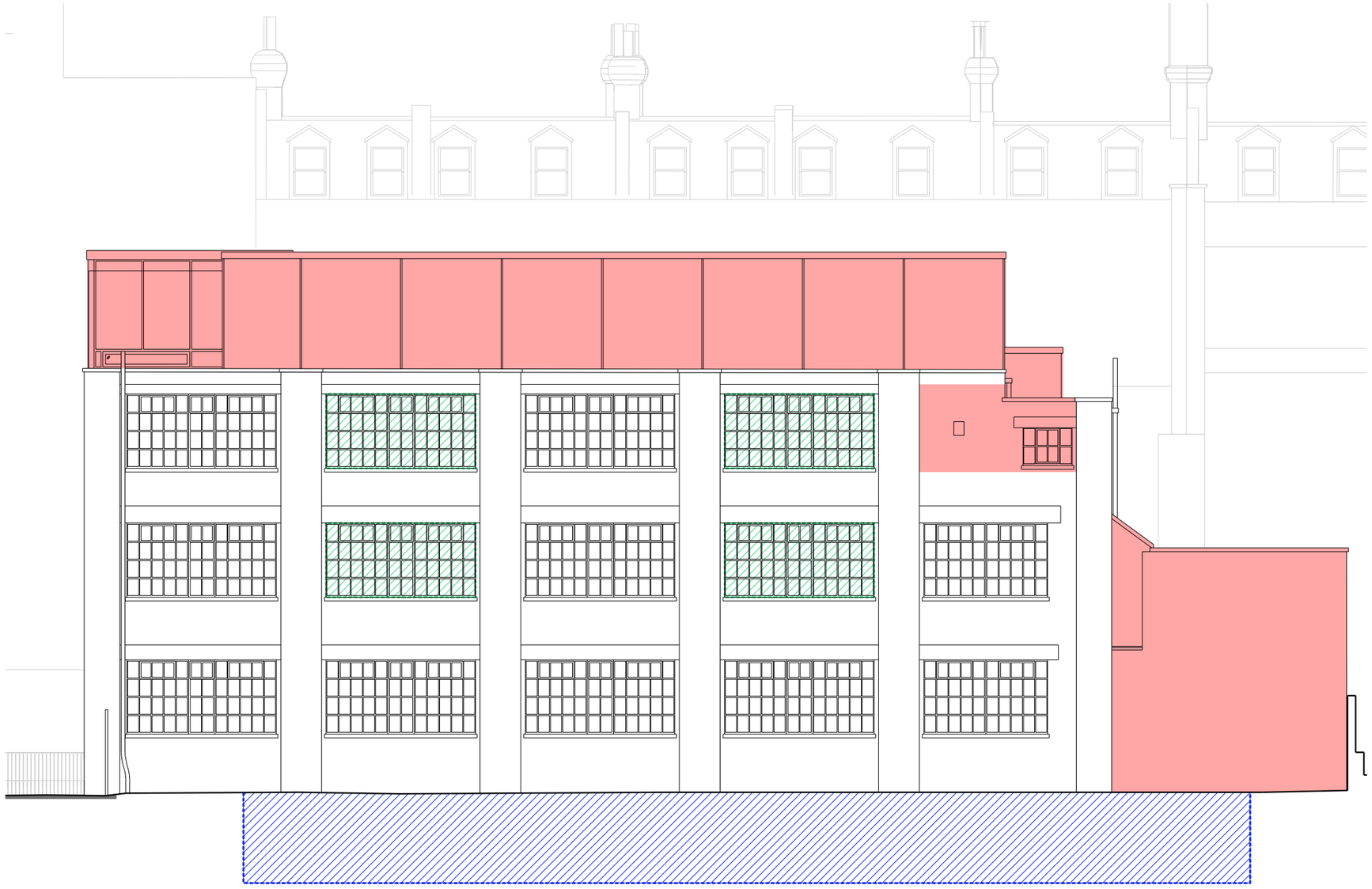


Scope of Basement Retention

Demolition Scope of Existing Building



Scope of Basement Retention

Demolition Scope of Existing Building

Windows removed for proposed inset balconies

Appendix E: Circular Economy Workshop

ENVELOPE & STRUCTURE *External Walls, Windows, Cladding, Ground and Upper Floors, Frame, Foundations, Roof, Site works etc.*

OPTIONS CONSIDERED

Lean Design / Designing Out Waste

Prompts: Re-used elements, Re-claimed elements, Recycled Content, Lean design processes, Utilisation Factor management, Prefabricated Solutions, Standard dimensions, Waste-efficient procurement, biogenic materials etc.

- Reclaimed brick from 127 if possible. May also crush them and use in new bricks
- lightweight materials in facade?
- Stacking facades to remove need for backets
- Space for waste segregation
- Use of 88 GIR as a welfare area during construction: removes need for temporary welfare facilities
- Facade panel size minimises bracketing - currently introduces challenges for accommodating differential movements between structure and facade

Design for Longevity

- 60 + year life span
- Adaptable floorspace
- Natural ventilation as air quality improves
- Long lasting material approach
- Design for disassembly and future re-use of components- facilitated by the prefabricated approach
- We are considering joisted structure to roofs to provide better leak detection. This needs to be investigated from a fire perspective

Design for Adaptability & Flexibility

DISCOUNTED OPTIONS AND WHY

- Alternative structural materials e.g. RC flat slab or Steel composite, these will have an adverse impact on embodied carbon
- Retaining and adapting existing buildings
- Removal of brick faced panels
- A concrete podium up to first floor may help reduce the risk of vandalism / arson, also providing more flexibility to the ground floor layout

OPTIONS TAKEN FORWARD INTO DESIGN DEVELOPMENT

- Amount of repetition in facade panelisation optimises material waste
- Space for waste segregation
- Facade: profiling of vertical and horizontal elements has been designed in such a way to remove excess material
- recycled content in facade elements: use of recycled aggregates into repcast (with implications on the fabrication time required)
- use of reclaimed bricks
- TBC: brick faced-precast for the South facade lower levels
- optimising facade thicknesses
- DfD approach
- Recycled content in structure: specifying recycled steel and aggregate is standard practice and will be employed on this project
- Raft foundation to reduce piling, minimise risk to local hydrology and improve sustainability
- recycled content in facade elements: use of highly recycled content in aluminium frames
- TBC: stacking vs hanging facade panels
- Optimised structural grid for timber layout with a more modern / modest span
- Precast facade do not require use of SFS, only dry lining system (lighter studs) to support internal finishes
- Blue roofs and blue/green roofs to provide sustainable water attenuation
- Retaining existing retaining walls to remove requirement for temporary pile walls with significant savings in material, carbon and cost
- High e.g. 70% GGBS to substructure where curing times are not critical. Ambitious 50% GGBS limit proposed to suspended concrete structures
- full off-site production of facade precast panels, with pre-assembly of window systems
- Lifespan: CLT should last for a long time if maintained / protected
- precast facade can last for reasonably long with low maintenance requirements
- incorporation of windows to allow natural ventilation
- External envelope uses long lasting materials and provides excellent thermal performance
- owner using building for more than 50 years with minimum retrofitting if possible and will look to maintain
- Flexible and adabtable structure and floorspace
- Pumped basement drainage to reduce the risk of flooding
- While the structure is designed for a 60 year design life the building will be carefully detailed to last. The substructure sits in sands and gravels above the water table and we do not expect that long-term degredation will be a significant issue. The timber superstructure will last as long as it is protected from moisture and long-term deflections have been incorporated into the design. As such we believe that the building has the potential for longevity

Design for Adaptability & Flexibility

CLT Frame

Future floor penetrations are simple

Floor by Floor MEP plant strategy, with ability to split each floorplate

We have considered a 'soft core' solution with external facade bracing for stability which would facilitate future core modifications

Timber structures are inherently flexible with dry, reversable joints and light weight members. We will look to design the structure so that openings can be formed for e.g. future stair cases, and the higher imposed loads of commercial use ensures that a future conversion to residential use would be possible

Timber structures have the low waste, precision and quality control of steel structure if not better, while still retaining the onsite adaptability of concrete

Openable windows are provided – future proofing – nat vent

Deep reveals to reduce summer peak solar gains.

Flexible and adabtable structure and floorspace

Louvres or canopies to provide shading to mitigate future overheating risks.

Design for Disassembly

Can facade be disassembled?

CLT structure can be easily dissasembled

Discarded RC Concrete & steel options

Dry reversible joints and lightweight members allow for easy dissasembly

Facade is panelised which makes it much easier to disassemble in future

Using systems, elements or materials that can be re-used and recycled

CLT can potentially be reused or downcycled. HTS to advise on whether it can be recycled in future

Precast concrete: can we procure with recycled concrete?

Building as materials bank: EOC to provide details

CLT and glulam are large 'dry' elements with significant potential for re-use / down cycling

BOARD B

Core & Local Services *Mechanical and Electrical, Plumbing, Stairs, Lifts & Fire*

OPTIONS CONSIDERED	DISCOUNTED OPTIONS AND WHY	OPTIONS TAKEN FORWARD INTO DESIGN DEVELOPMENT
Lean Design / Designing Out Waste Prompts: Re-used elements, Re-claimed elements, Recycled Content, Lean design processes, Utilisation Factor management, Prefabricated Solutions, Standard dimensions, Waste-efficient procurement, biogenic materials etc. exposed services Minimise ductwork and pipework needed - using floor plenums for supply, extract, cooling and heating. Larger on floor Air Conditioning Zone units. Heat Pump Air Handling Units Larger on floor Air Conditioning Zone units rather than lots of FCUs or Chilled Beams. Reduces pipework, valves etc. On floor Heat Pump AHUs - option for prefabrication of on floor plantroom Low flow sanitraryware Exposed services on floor plates. Common solution for each floor for repeatability Waste heat from 100GIR used in 88GIR as heat Can 100GIR and 88GIR share a heat source to reduce material use?	rain / grey water harvesting - site constraints - not enough space for tanks.	Minimise ductwork and pipework needed - using floo plenums for supply extract, cooling anc heating. Larger on floor Air Conditioning Zone units rather than lots of FCUs or Chilled Beams. Reduces pipework, valves etc. On floor Heat Pump AHUs - option for prefabrication of on floor plantroom exposed services Exposed services on floor plates. Common solution for each floor for repeatability Low flow sanitraryware
Design for Longevity Easily maintainable equipment. Located in cupboards, on floor plantrooms, basement, and roof plant compound. High Quality Equipment selection for long life expectancy		Easily maintainable equipment. Located in cupboards, on floor plantrooms, basement, and roof plant compound. High Quality Equipment selection for long life expectancy
Design for Adaptability & Flexibility Copper busbar easy for future connections Multiple Tenants per floor. Multiple risers Strategy allows for open plan or cellular offices On floor AHUs and Air Conditioning zone units. Easily reconfigurable - by moving fan-tile units. Flexible HVAC Strategy Space provided on roof for tenant plant requirements. exposed services		Copper busbar easy for future connections Multiple Tenants per floor. Multiple risers Strategy allows for open plan or cellular offices On floor AHUs and Air Conditioning zone units. Easily reconfigurable - by moving fan-tile units. Flexible HVAC Strategy Space provided on roof for tenant plant requirements. exposed services

Design for Disassembly

All services installations can be disassembled for refit and end of life

exposed services

All services installations can be disassembled for refit and end of life

exposed services

Using systems, elements or materials that can be re-used and recycled

Recyclability of building services to be considered

Recyclability of building services to be considered

BOARD C

Internal Elements

Finishes, Flooring, Internal Walls, Connections, FF&E

OPTIONS CONSIDERED	DISCOUNTED OPTIONS AND WHY	OPTIONS TAKEN FORWARD INTO DESIGN DEVELOPMENT
Lean Design / Designing Out Waste Prompts: Re-used elements, Re-claimed elements, Recycled Content, Lean design processes, Utilisation Factor management, Prefabricated Solutions, Standard dimensions, Waste-efficient procurement, biogenic materials etc. recycled content? exposed CLT is self-finishing / biophilic design reclaimed raised access floor Could put temporary lighting system in place to avoid Cat #A Waste resilient planting Could green lease stipulate certain things for tenant fit out: - lighting efficiency Can we work with manufacturers to allow "lighting swap" if tenants dont like products? Terrazo flooring (recycled material) in reception		exposed CLT is self-finishing / biophilic design reclaimed raised access floor - has to be sealed and may be difficult to obtain this from reclaimed suppliers
Design for Longevity		
Design for Adaptability & Flexibility		

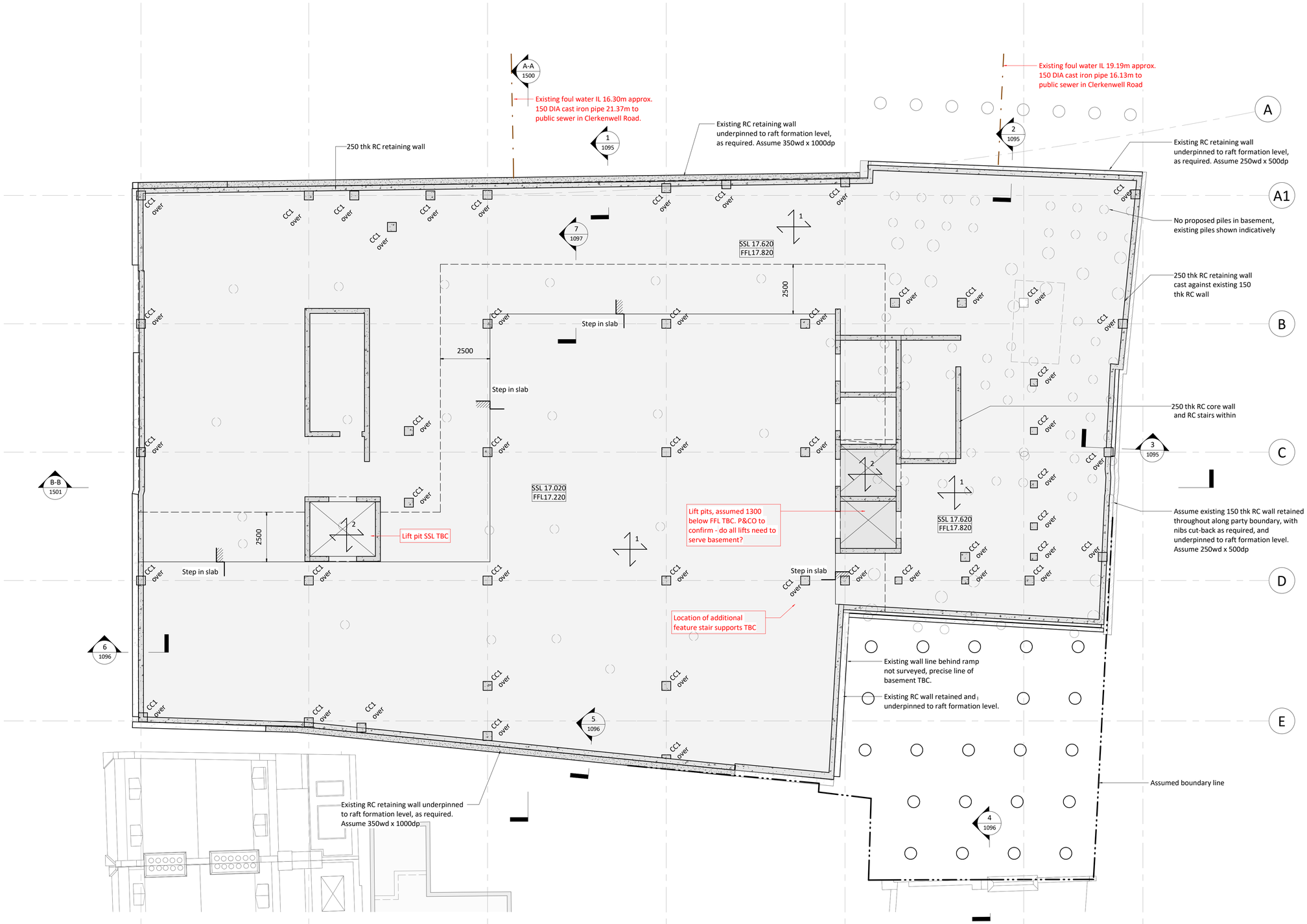
Design for Disassembly timber elements in landscape exposed screw fittings		
Using systems, elements or materials that can be re-used and recycled		

BOARD D

Manage Waste

OPTIONS CONSIDERED	DISCOUNTED OPTIONS AND WHY	OPTIONS TAKEN FORWARD INTO DESIGN DEVELOPMENT
Demolition Waste Understand amount, Identify opportunities, Divert from landfill Reclaim bricks from 127. Consider circular economy materials including Kenoteq K-brick which is 90%+ recycled content and cold cured		
Excavation Waste Calculate, How to reduce? Excavation should be minimised as substructure perimeter walls are being retained.		
Construction Waste Off site prefabrication? The design utilises a 1.5 m planning grid, and considers standard brick / material dimensions for elevations - optimised		

Appendix F: Design out waste – Reuse of existing foundation



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Column Schedule

CC1	450 x 450mm RC40/50	TC1	520 x 520mm GL28h
CC2	350 x 550mm RC40/50	TC2	320 x 320mm GL28h

Beam Schedule

B1	100x100x10 EA fixed to perimeter	TB7	440d x 280/360w Glulam T beam GL28h
B2	SHS150x150x10	TB8	240d x 320/360w Glulam L beam GL28h
B3	UB610x305x149	TB9	560mm dp x 400mm wide GL28h
CB?	600dp x 225wd RC beam	TB10	560mm dp x 600mm wide GL28h
DJ	2No 150dp x 50wd timber joists bolted together to form double joist trimmer	TB11	560mm dp x 520mm wide GL28h
TB1	640mm dp x 520mm wide GL28h	TB12	200mm dp x 360mm wide GL28h
TB2	440mm dp x 400mm wide GL28h	TB13	240mm dp x 320mm wide GL28h
TB3	560d x 760/840w Glulam T beam GL28h	TB14	640mm dp x 600mm wide GL28h
TB4	560d x 520/600w Glulam T beam GL28h	TB15	400mm dp x 300mm wide GL28h
TB5	600d x 760/840w Glulam T beam GL28h	TB16	240d x 240w Glulam T beam GL28h
TB6	560d x 420/500w Glulam T beam GL28h	TB17	320mm dp x 280mm wide GL28h
		TB18	280mm dp x 320mm wide GL28h

Floor Schedule

Concrete Floor X	Profiled deck X	Timber Floor X

1	750 thk RC raft slab on 50 thk blinding and 150 thk compacted hardcore, into sands & gravels
2	300 thk RC slab
3	200 thk RC slab
4	240 thk CLT/L7s-2
5	175d x 50w C24 joists at 400 crs with 18 thk plywood screwed to top face of joists
6	500 thk RC raft foundation on 50 thk blinding and 150 thk compacted hardcore, into sands & gravels
7	250d x 50w C24 joists at 400 crs with 18 thk plywood screwed to top face of joists

Wall Schedule

W1	HTS_RC-core-250

Legend

	Proposed RC structure
	Proposed WRC structure
	Proposed Steel Framing
Dim	Red dimension TBC by architect
PSx	PS1 - 450lg x 215wd x 150dp MC padstone PS2 - 600lg x 215wd x 215dp MC padstone
ST	Connection Strengthening
C	Crank
S	Splice
M	Moment connection
TB	Thermal Break
B1 [25mm]	Pre-camber
BR	Break in beam

Rev	Date	By	Eng	Amendments
P3	07.09.20	SH	AH	Revised Preliminary Issue
P2	17.08.20	SH	AH	Revised Preliminary Issue
P1	23.07.20	SH	AH	Preliminary Issue

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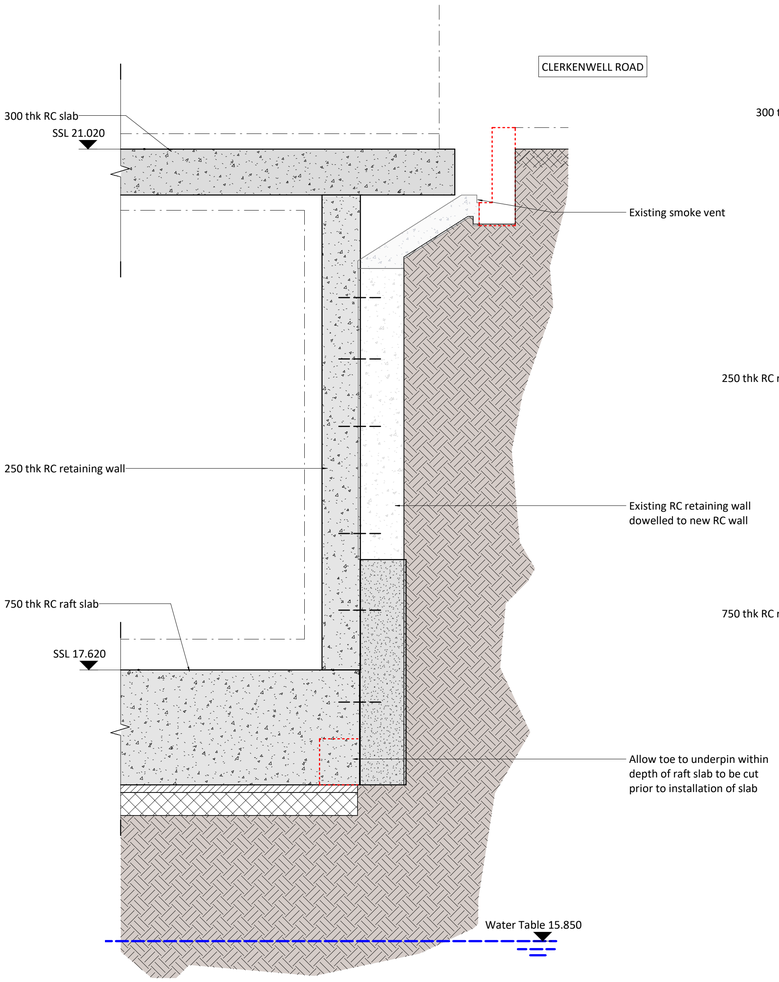
Job Name
100 Grays Inn Road, WC1X 8AL

Drawing Title
Proposed Basement Layout

Purpose of Issue **Preliminary** Scale at A1 **1 : 100**

Drg No **2423-HTS-00-B1-DR-S-1090**

Rev **P3**



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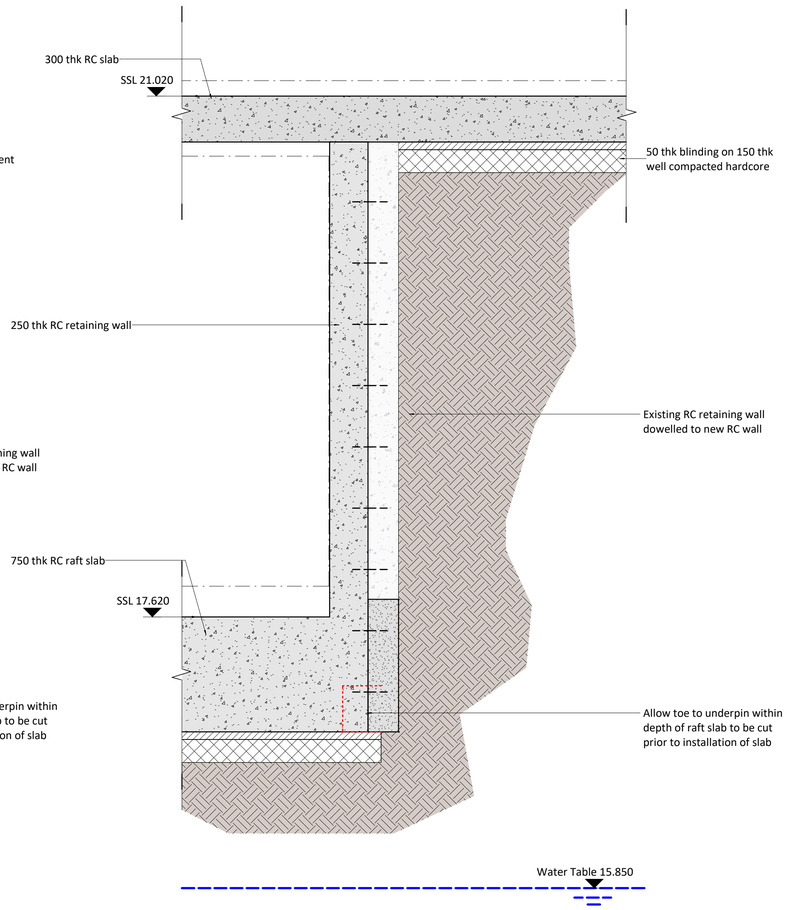

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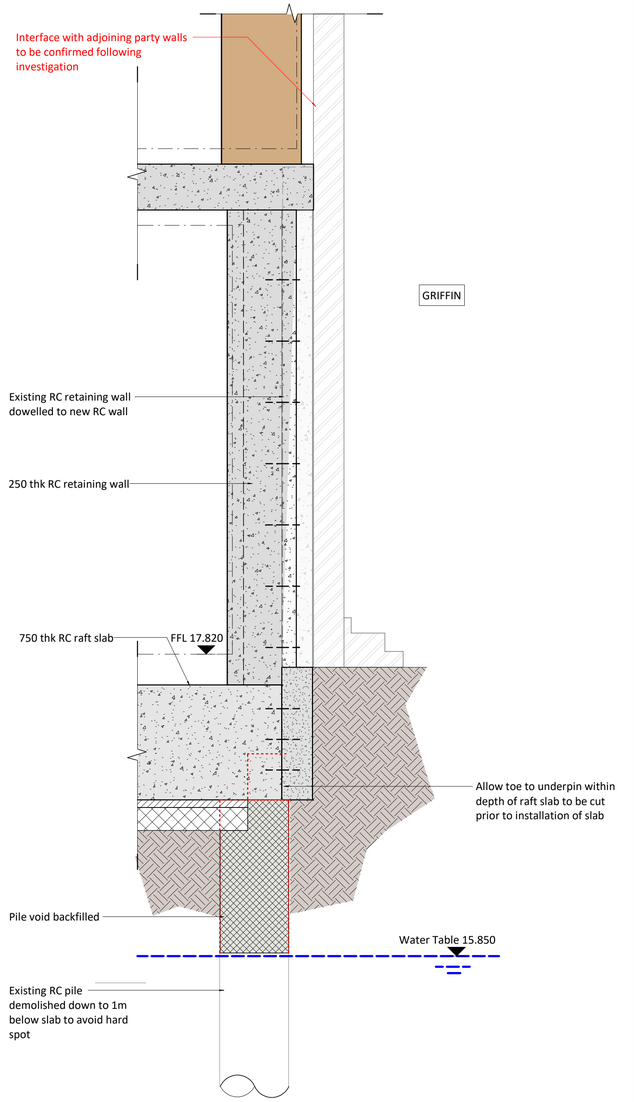

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Column Schedule

CC1	450 x 450mm RC40/50	TC1	520 x 520mm GL28h
CC2	350 x 550mm RC40/50	TC2	320 x 320mm GL28h

Beam Schedule

B1	100x100x10 EA fixed to perimeter	TB7	440d x 280/360w Glulam T beam GL28h
B2	SHS150x150x10	TB8	240d x 320/360w Glulam L beam GL28h
B3	UB610x305x149	TB9	560mm dp x 400mm wide GL28h
CB?	600dp x 225wd RC beam	TB10	560mm dp x 600mm wide GL28h
DJ	2No 150dp x 50wd timber joists bolted together to form double joist trimmer	TB11	560mm dp x 520mm wide GL28h
TB1	640mm dp x 520mm wide GL28h	TB12	200mm dp x 360mm wide GL28h
TB2	440mm dp x 400mm wide GL28h	TB13	240mm dp x 320mm wide GL28h
TB3	560d x 760/840w Glulam T beam GL28h	TB14	640mm dp x 600mm wide GL28h
TB4	560d x 520/600w Glulam T beam GL28h	TB15	400mm dp x 300mm wide GL28h
TB5	600d x 760/840w Glulam T beam GL28h	TB16	240d x 240w Glulam T beam GL28h
TB6	560d x 420/500w Glulam T beam GL28h	TB17	320mm dp x 280mm wide GL28h
		TB18	280mm dp x 320mm wide GL28h

Floor Schedule

Concrete Floor X	Profiled deck X / Timber Floor X
1	750 thk RC raft slab on 50 thk blinding and 150 thk compacted hardcore, into sands & gravels
2	300 thk RC slab
3	200 thk RC slab
4	240 thk CLT/L7s-2
5	175d x 50w C24 joists at 400 crs with 18 thk plywood screwed to top face of joists
6	500 thk RC raft foundation on 50 thk blinding and 150 thk compacted hardcore, into sands & gravels
7	250d x 50w C24 joists at 400 crs with 18 thk plywood screwed to top face of joists

Wall Schedule

W1	HTS_RC-core-250

Legend

	Proposed RC structure
	Proposed WRC structure
	Proposed Steel Framing
Dim	Red dimension TBC by architect
PSx	PS1 - 450lg x 215wd x 150dp MC padstone PS2 - 600lg x 215wd x 215dp MC padstone
ST	Connection Strengthening
C	Crank
S	Splice
M	Moment connection
TB	Thermal Break
B1 [25mm]	Pre-camber
BR	Break in beam

Rev	Date	By	Eng	Amendments

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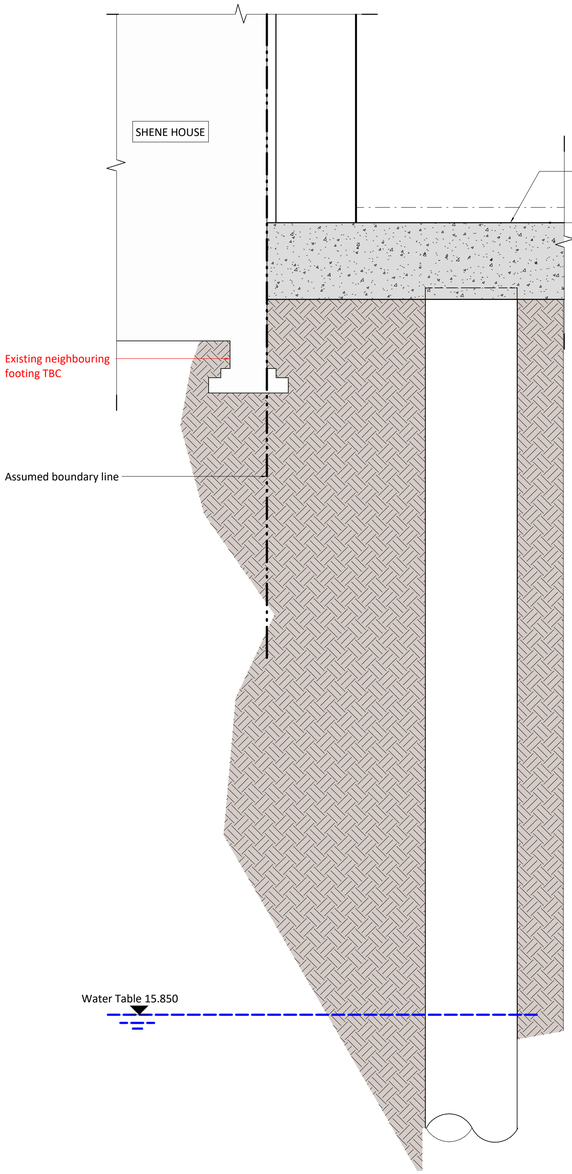
Drawing Title
Proposed Basement Sections - Sheet 1

Purpose of Issue **Preliminary** Scale at A1 **1 : 20**

Drg No **2423-HTS-00-XX-DR-S-1095**

Rev **P1**



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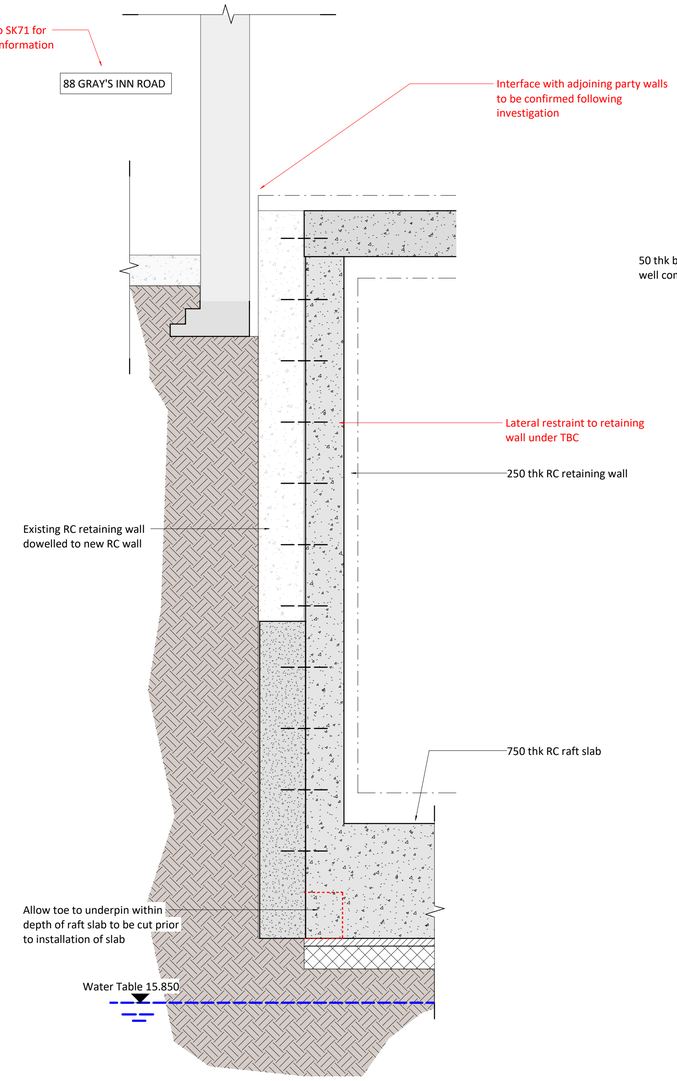

DWG 1090 **Section 5-5**
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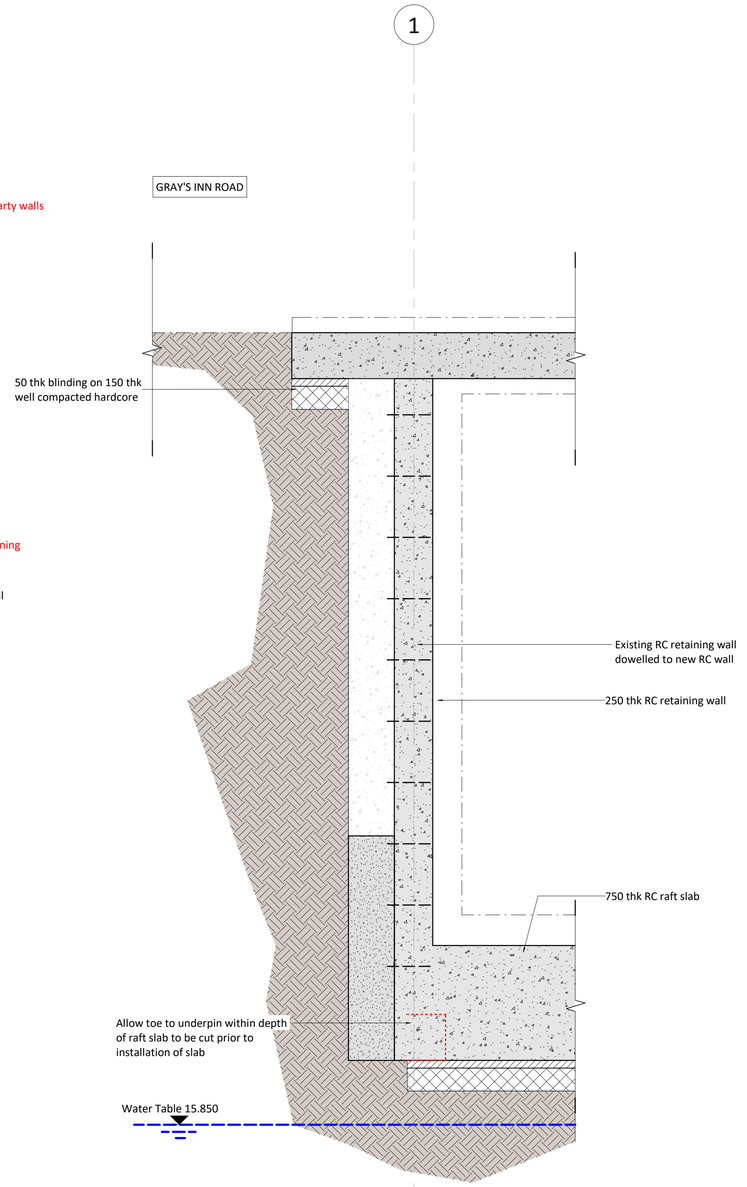

DWG 1090 **Section 6-6**
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Column Schedule

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Beam Schedule

B1	100x100x10 EA fixed to perimeter	TB7	440d x 280/360w Glulam T beam GL28h
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B3	UB610x305x149	TB9	560mm dp x 400mm wide GL28h
CB?	600dp x 225wd RC beam	TB10	560mm dp x 600mm wide GL28h
DJ	2No 150dp x 50wd timber joists bolted together to form double joist trimmer	TB11	560mm dp x 520mm wide GL28h
TB1	640mm dp x 520mm wide GL28h	TB12	200mm dp x 360mm wide GL28h
TB2	440mm dp x 400mm wide GL28h	TB13	240mm dp x 320mm wide GL28h
TB3	560d x 760/840w Glulam T beam GL28h	TB14	640mm dp x 600mm wide GL28h
TB4	560d x 520/600w Glulam T beam GL28h	TB15	400mm dp x 300mm wide GL28h
TB5	600d x 760/840w Glulam T beam GL28h	TB16	240d x 240w Glulam T beam GL28h
TB6	560d x 420/500w Glulam T beam GL28h	TB17	320mm dp x 280mm wide GL28h
		TB18	280mm dp x 320mm wide GL28h

Floor Schedule

Concrete Floor X	Profiled deck X	Timber Floor X

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2	300 thk RC slab
3	200 thk RC slab
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6	500 thk RC raft foundation on 50 thk blinding and 150 thk compacted hardcore, into sands & gravels
7	250d x 50w C24 joists at 400 crs with 18 thk plywood screwed to top face of joists

Wall Schedule

W1	HTS_RC-core-250

Legend

	Proposed RC structure
	Proposed WRC structure
	Proposed Steel Framing
Dim	Red dimension TBC by architect
PSx	PS1 - 450lg x 215wd x 150dp MC padstone PS2 - 600lg x 215wd x 215dp MC padstone
ST	Connection Strengthening
C	Crank
S	Splice
M	Moment connection
TB	Thermal Break
B1 [25mm]	Pre-camber
BR	Break in beam

Rev	Date	By	Eng	Amendments

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Drawing Title
Proposed Basement Sections - Sheet 2

Purpose of Issue — Scale at A1 **1 : 20**

Drg No **2423-HTS-00-XX-DR-S-1096**

Rev **P1**

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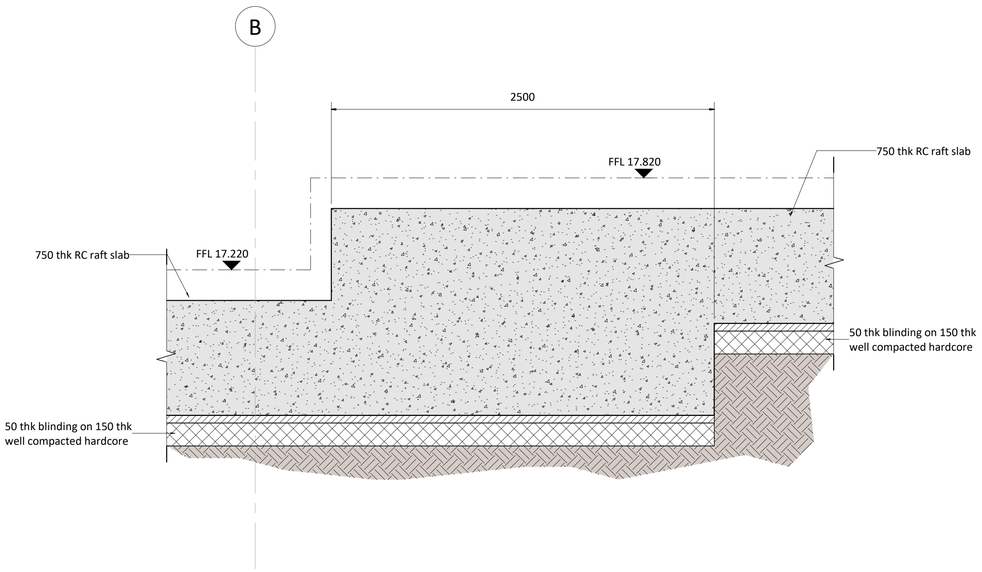

DWG 1090

Section 7-7

1 : 20

100mm @ A1 (50mm @ A3)

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CB?	600dp x 225wd RC beam	TB10	560mm dp x 600mm wide GL28h
DJ	2No 150dp x 50wd timber joists bolted together to form double joist trimmer	TB11	560mm dp x 520mm wide GL28h
TB1	640mm dp x 520mm wide GL28h	TB12	200mm dp x 360mm wide GL28h
TB2	440mm dp x 400mm wide GL28h	TB13	240mm dp x 320mm wide GL28h
TB3	560d x 760/840w Glulam T beam GL28h	TB14	640mm dp x 600mm wide GL28h
TB4	560d x 520/600w Glulam T beam GL28h	TB15	400mm dp x 300mm wide GL28h
TB5	600d x 760/840w Glulam T beam GL28h	TB16	240d x 240w Glulam T beam GL28h
TB6	560d x 420/500w Glulam T beam GL28h	TB17	320mm dp x 280mm wide GL28h
		TB18	280mm dp x 320mm wide GL28h

Floor Schedule

Concrete Floor X	Profiled deck X	Timber Floor X

1	750 thk RC raft slab on 50 thk blinding and 150 thk compacted hardcore, into sands & gravels
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7	250d x 50w C24 joists at 400 crs with 18 thk plywood screwed to top face of joists

Wall Schedule

W1	HTS_RC-core-250

Legend

	Proposed RC structure
	Proposed WRC structure
	Proposed Steel Framing
Dim	Red dimension TBC by architect
PSx	PS1 - 450lg x 215wd x 150dp MC padstone PS2 - 600lg x 215wd x 215dp MC padstone
ST Connection Strengthening	C Crank
	S Splice
M Moment connection	TB Thermal Break
B1 [25mm] Pre-camber	BR Break in beam

Rev	Date	By	Eng	Amendments

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Drawing Title

Proposed Basement Sections - Sheet 3

Purpose of Issue **Preliminary** Scale at A1 **1 : 20**

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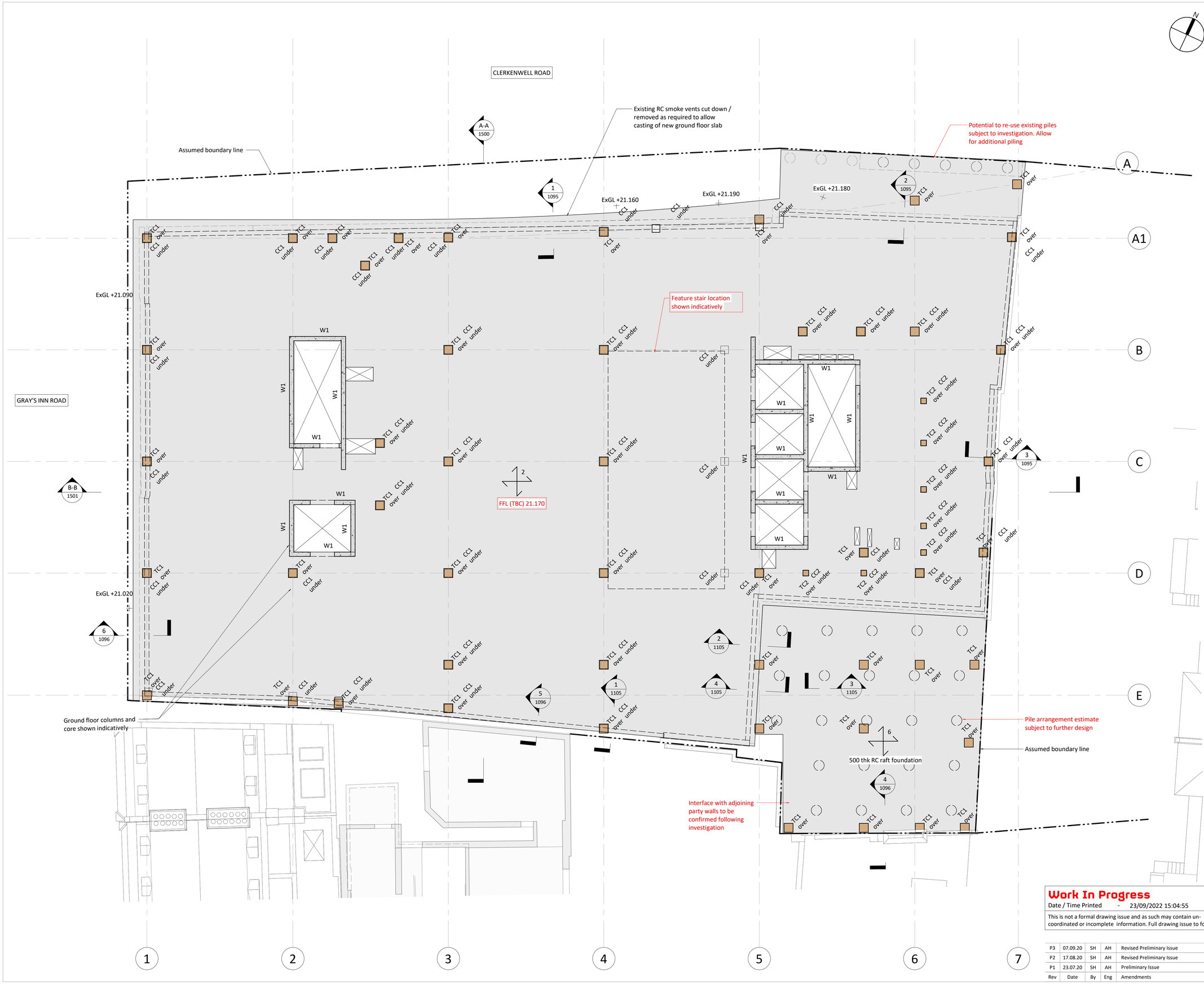

100mm @ A1 (50mm @ A3)

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Column Schedule

CC1	450 x 450mm RC40/50	TC1	520 x 520mm GL28h
CC2	350 x 550mm RC40/50	TC2	320 x 320mm GL28h

Beam Schedule

B1	100x100x10 EA fixed to perimeter	TB7	440d x 280/360w Glulam T beam GL28h
B2	SHS150x150x10	TB8	240d x 320/360w Glulam L beam GL28h
B3	UB610x305x149	TB9	560mm dp x 400mm wide GL28h
CB?	600dp x 225wd RC beam	TB10	560mm dp x 600mm wide GL28h
DJ	2No 150dp x 50wd timber joists bolted together to form double joist trimmer	TB11	560mm dp x 520mm wide GL28h
TB1	640mm dp x 520mm wide GL28h	TB12	200mm dp x 360mm wide GL28h
TB2	440mm dp x 400mm wide GL28h	TB13	240mm dp x 320mm wide GL28h
TB3	560d x 760/840w Glulam T beam GL28h	TB14	640mm dp x 600mm wide GL28h
TB4	560d x 520/600w Glulam T beam GL28h	TB15	400mm dp x 300mm wide GL28h
TB5	600d x 760/840w Glulam T beam GL28h	TB16	240d x 240w Glulam T beam GL28h
TB6	560d x 420/500w Glulam T beam GL28h	TB17	320mm dp x 280mm wide GL28h
		TB18	280mm dp x 320mm wide GL28h

Floor Schedule

Concrete Floor X	Profiled deck X	Timber Floor X
1	750 thk RC raft slab on 50 thk blinding and 150 thk compacted hardcore, into sands & gravels	
2	300 thk RC slab	
3	200 thk RC slab	
4	240 thk CLT/L7s-2	
5	175d x 50w C24 joists at 400 crs with 18 thk plywood screwed to top face of joists	
6	500 thk RC raft foundation on 50 thk blinding and 150 thk compacted hardcore, into sands & gravels	
7	250d x 50w C24 joists at 400 crs with 18 thk plywood screwed to top face of joists	

Wall Schedule

W1	HTS_RC-core-250

Legend

	Proposed RC structure
	Proposed WRC structure
	Proposed Steel Framing
Dim	Red dimension TBC by architect
PSx	PS1 - 450lg x 215wd x 150dp MC padstone PS2 - 600lg x 215wd x 215dp MC padstone
ST	Connection Strengthening
C	Crank
S	Splice
M	Moment connection
TB	Thermal Break
B1 [25mm]	Pre-camber
BR	Break in beam

Rev	Date	By	Eng	Amendments
P3	07.09.20	SH	AH	Revised Preliminary Issue
P2	17.08.20	SH	AH	Revised Preliminary Issue
P1	23.07.20	SH	AH	Preliminary Issue

HEYNE TILLETT STEEL
STRUCTURAL ENGINEERS
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Work In Progress
Date / Time Printed - 23/09/2022 15:04:55
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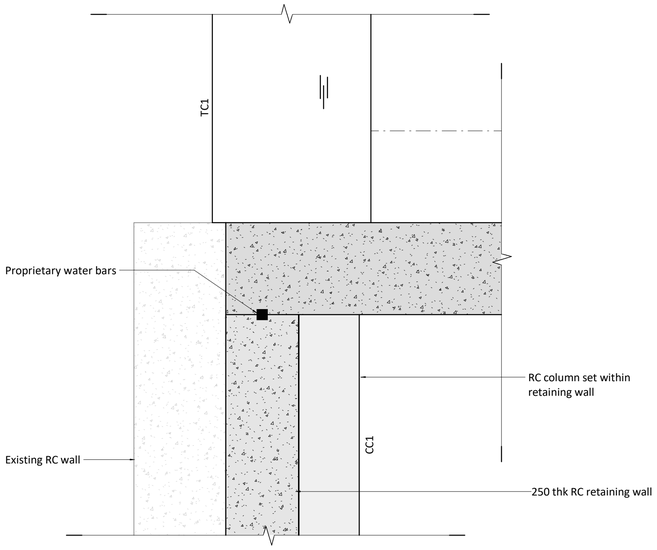
Job Name
100 Grays Inn Road, WC1X 8AL

Drawing Title
Proposed Ground Floor Layout

Purpose of Issue **Preliminary** Scale at A1 **1 : 100**

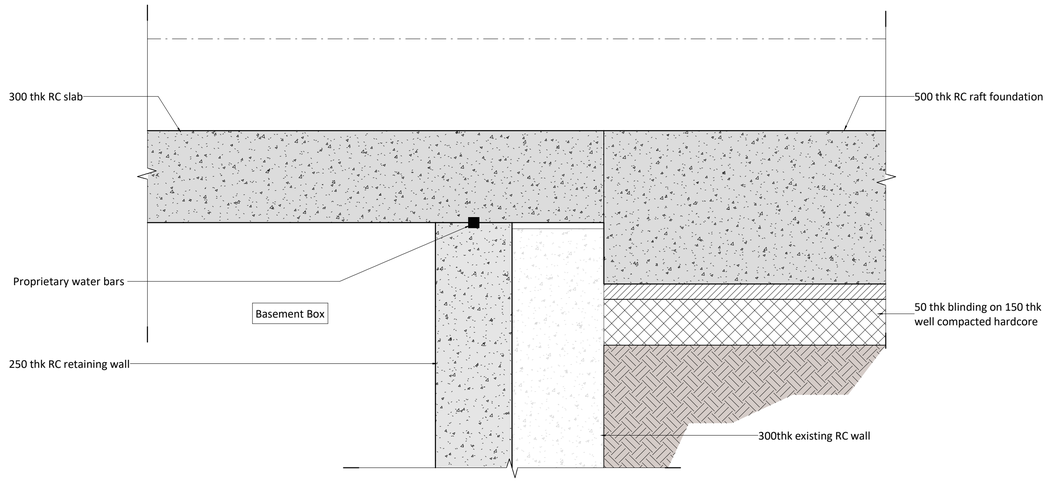
Drg No **2423-HTS-00-00-DR-S-1100**

Rev **P3**



DWG 1100 **Section 1-1**

1 : 10



DWG 1100 **Section 2-2**

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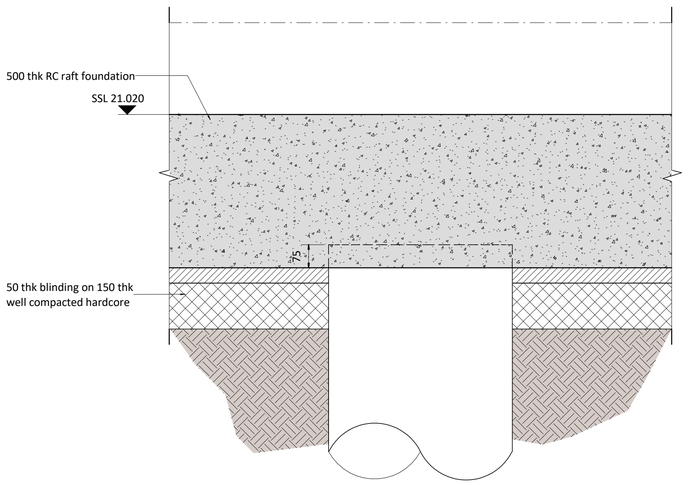
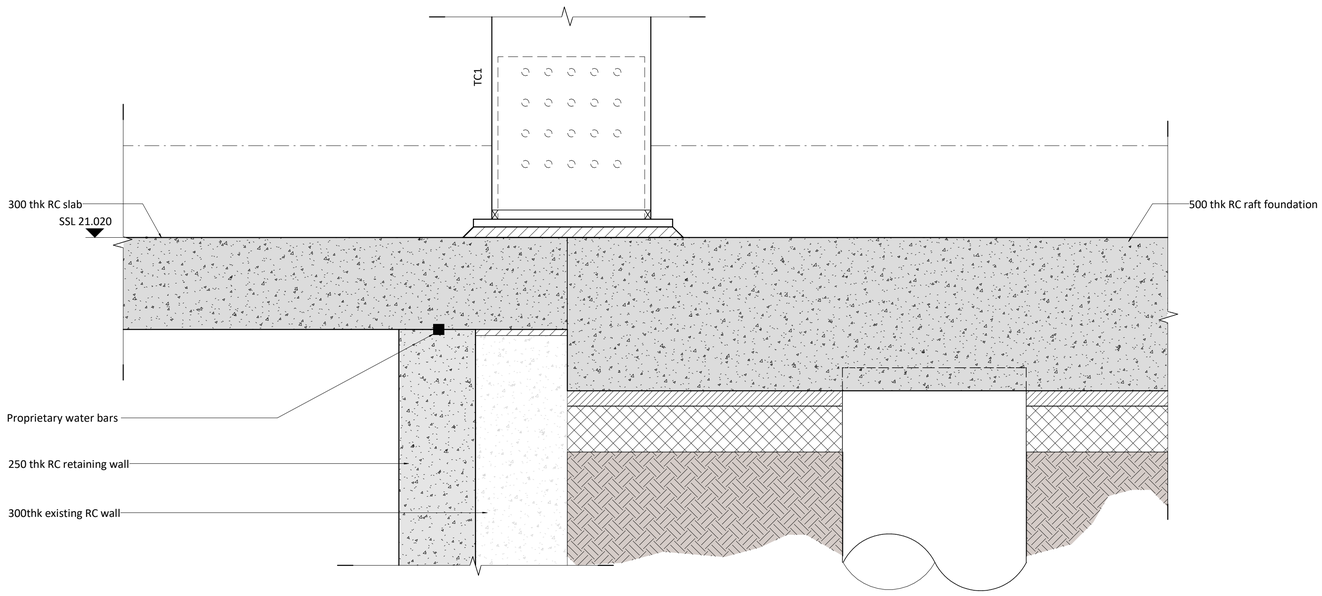


DWG 1100 **Section 3-3**

1 : 10



DWG 1100 **Section 4-4**

1 : 10

Work In Progress

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100mm @ A1 (50mm @ A3)

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Wall Schedule

W1	HTS_RC-core-250

Legend

	Proposed RC structure
	Proposed WRC structure
	Proposed Steel Framing
Dim	Red dimension TBC by architect
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ST	Connection Strengthening
C	Crank
S	Splice
M	Moment connection
TB	Thermal Break
B1 [25mm]	Pre-camber
BR	Break in beam

Rev	Date	By	Eng	Amendments

HEYNE TILLETT STEEL

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Job Name

100 Grays Inn Road, WC1X 8AL

Drawing Title

Proposed Ground Floor Sections

Purpose of Issue **Preliminary** Scale at A1 **1 : 10**

Drg No **2423-HTS-00-XX-DR-S-1105**

Rev **P1**

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TIMBER VS RC LOAD TAKE DOWN

TIMBER FLOOR = SDL = 1.2kN/m² (CBCO + GIFA BOARD)
DL = 1.6kN/m² (C24O CLT + GLULAM)
LL = 3.5kN/m² (OFFICE)

RC FLOOR = SDL = 0.85kN/m² (CBCO)
DL = 6.25kN/m² (250 RC SLAB)
LL = 3.5kN/m²

FLOOR SLABS + COLUMNS + BEAMS ONLY. NO FACADE ALLOWANCE.
LIVE LOADS THE SAME

ROOF = SDL = 3kN/m²

∴ TIMBER = 8 x (1.2 + 1.6) kN/m² + 1 (3kN/m² + 1.6kN/m²
= 27 kN/m² DL

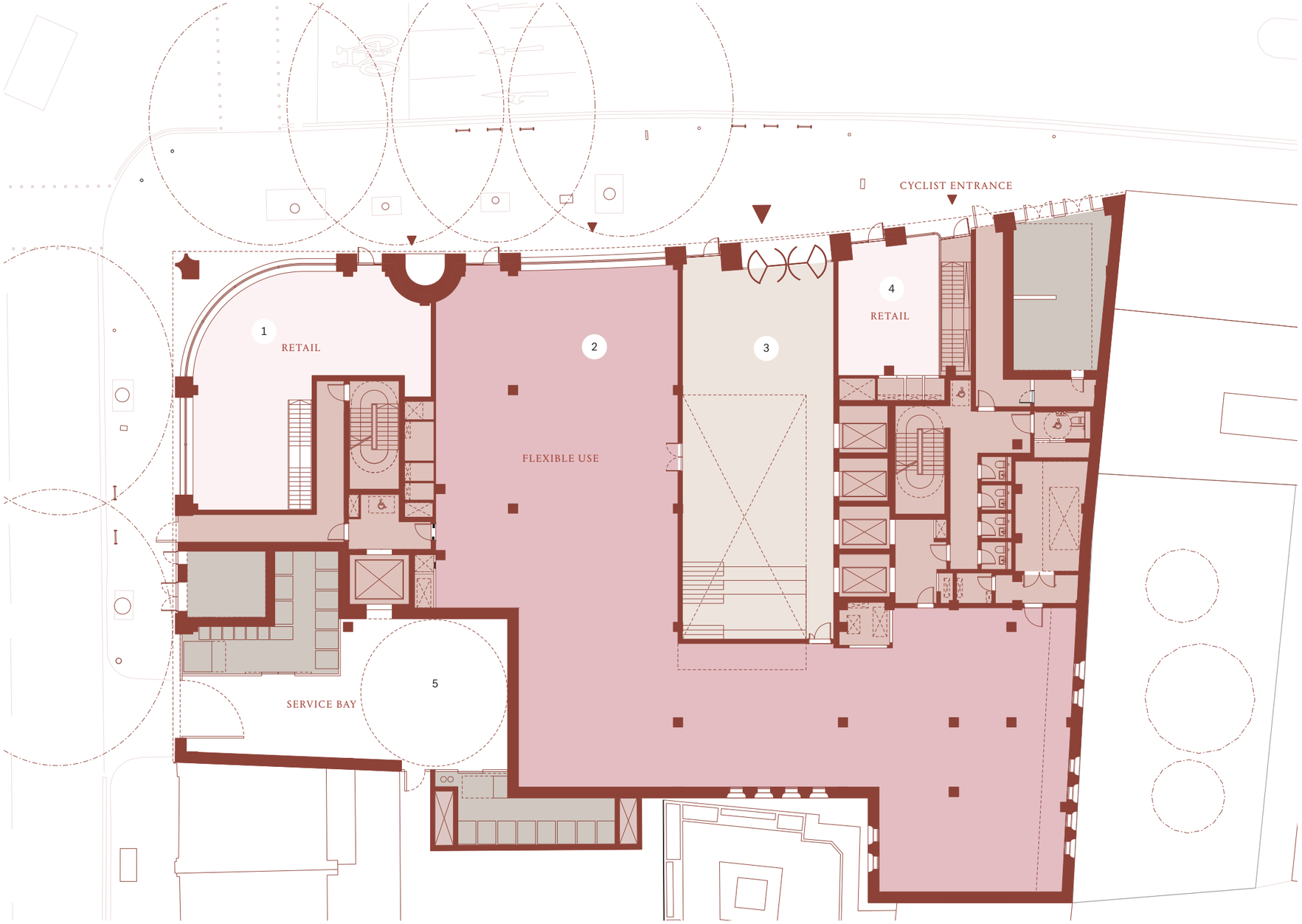
9 x (3.5 x 0.6 LLR) = 18.9 kN/m² LL

∴ RC = 8 x (6.25 + 0.85) kN/m² + 1 (3kN/m² + 6.25kN/m²)
= 66.1 kN/m² DL
(9 x 3.5 x 0.6 LLR) = 18.9 kN/m²

TIMBER STRUCTURE = 41% OF RC STRUCTURE (DL)
54% OF RC INCLUDING IMPOSED LOAD

Appendix G: Design for adaptability and disassembly

4.37 PUBLIC REALM - PROPOSED GROUND FLOOR LAYOUT



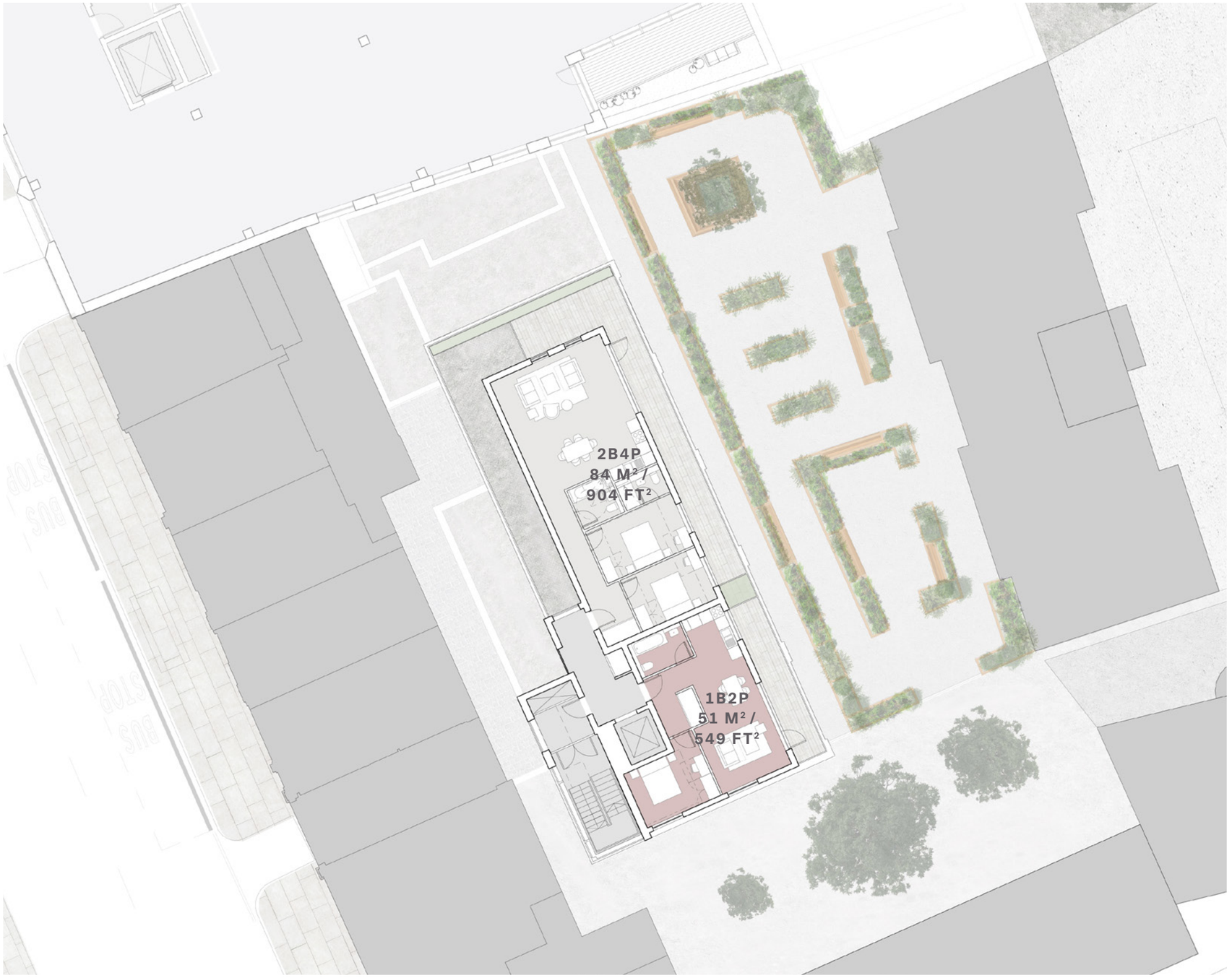
1. Retail corner unit 174 sqm / 1,879 sqft
2. Flexible commercial use 531 sqm / 5,720 sqft
3. Building foyer / events space
4. Retail / cycle entrance & cafe 59 sqm / 640 sqft
5. Servicing bay with vehicle turntable

PROPOSED GROUND FLOOR PLAN

5.9.1 The entrance lobby to the affordable apartments is positioned at the end of an existing arched passageway, which will be significantly enhanced and which connects the block to Gray's Inn Road.

5.9.2 In close proximity to the entrance, various utilities will be placed including cycle storage, refuse storage, letterboxes, a seating area and access to the basement ancillary areas.

5.11.1 The generous floor to ceiling height of 3.2m and large crittal windows (replaced and upgraded) would create around 220m2 of very good quality affordable office space at Ground Floor Level.



proposed first floor plan

5.14.1 Insetting the plan on this top floor creates external terraces on the east side and means that the existing houses to the west retain good levels of internal daylight. Both the 2-bed (84 m^2/ 904 ft^2) and the 1-bed (51 m^2/ 549 ft^2) units are generously sized and dual aspect with direct access to generous east facing external amenity (terrace: 48 m^2 / 517 ft^2). If required the 2-bed could be reconfigured into a 3-bed unit.

5.14.2 All apartments are oversized with respect to London Plan Guidelines. This is both a consequence of negotiating an existing building layout but also a bid to provide the highest quality and generously sized affordable apartments.

NB: Internal layout, fittings, occupation and furnishing is indicative and for illustrative purposes only.

5.17.1 The generous floor to ceiling heights (3m) and large windows have the potential to create good quality living spaces. The living space is dual aspect, large and has access to an external balcony

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Beam Schedule

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Floor Schedule

Concrete Floor X	Profiled deck X	Timber Floor X

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4	240 thk CLT/L7s-2
5	175d x 50w C24 joists at 400 crs with 18 thk plywood screwed to top face of joists
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Wall Schedule

W1	HTS_RC-core-250

Legend

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PSx	PS1 - 450lg x 215wd x 150dp MC padstone PS2 - 600lg x 215wd x 215dp MC padstone
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C	Crank
S	Splice
M	Moment connection
TB	Thermal Break
B1 [25mm]	Pre-camber
BR	Break in beam

Facade detail tbc potential requirement for brackets to take out torsional forces

All perimeter beams are to be upstand beams. Support angle detail to be resolved.

Pre-cast facade to be fixed back to and supported by columns

Slight curve on plan for perimeter beams

TB4 with moment connection back to column

FFL (TBC) 25.670

Assumed consistent SSL to balconies and terraces

Propping requirement to free-standing wall TBC. Allow permanent UC254x254x89 steel post at 2m crs

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Rev	Date	By	Eng	Amendments
P2	07.09.20	SH	AH	Revised Preliminary Issue
P1	17.08.20	SH	AH	Preliminary Issue

HEYNE TILLETT STEEL

STRUCTURAL ENGINEERS

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Job Name

100 Grays Inn Road, WC1X 8AL

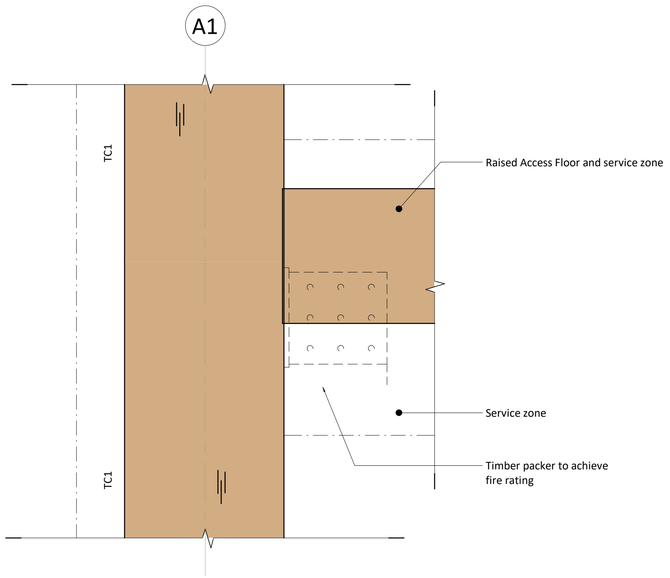
Drawing Title

Proposed First Floor Layout

Purpose of Issue **Preliminary** Scale at A1 **1 : 100**

Drg No **2423-HTS-00-01-DR-S-1110**

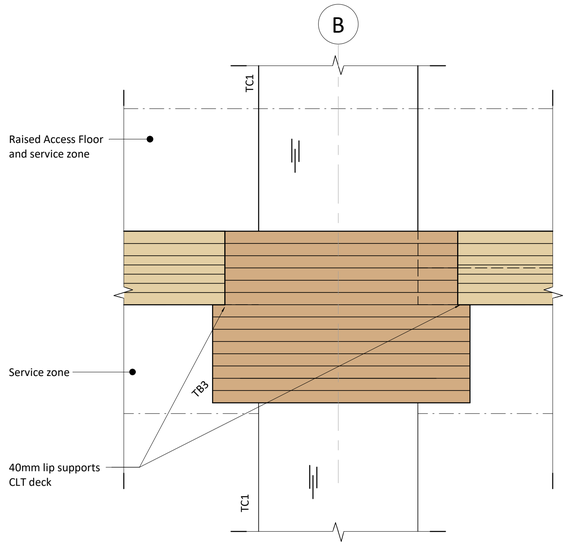
Rev **P1**



DWG 1110

Section 1-1

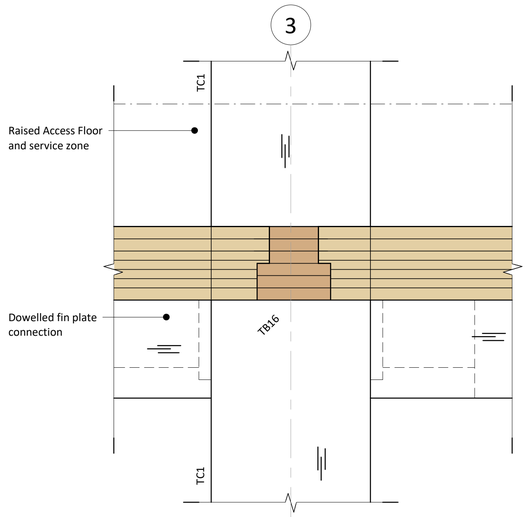
1 : 10



DWG 1110

Section 2-2

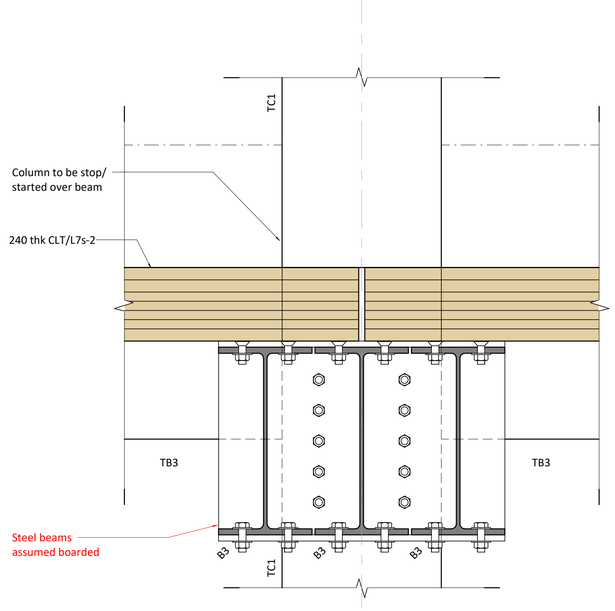
1 : 10



DWG 1110

Section 3-3

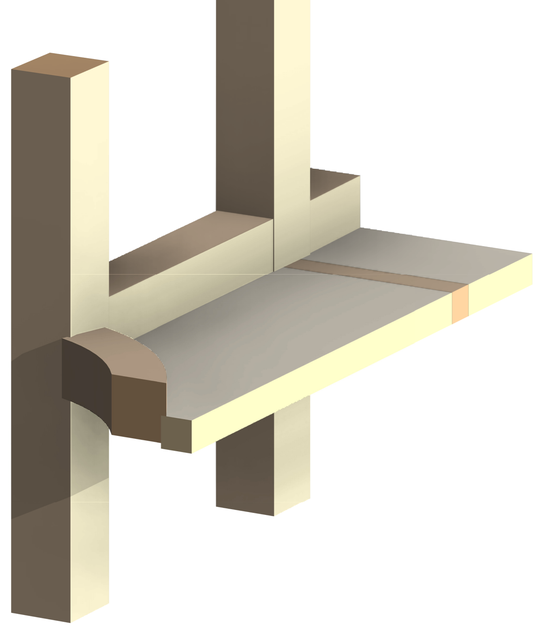
1 : 10



DWG 1110

Section 4-4

1 : 10



Section 1-1 Perspective

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B1 [25mm]	Pre-camber
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Rev	Date	By	Eng	Amendments

HEYNE TILLETT STEEL

STRUCTURAL ENGINEERS

hts.uk.com

Job Name

100 Grays Inn Road, WC1X 8AL

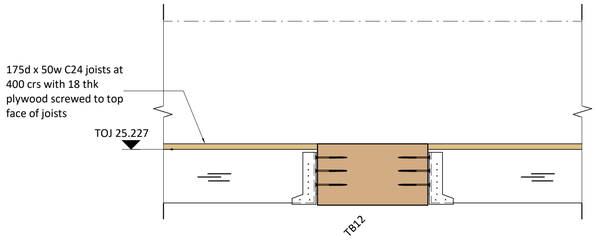
Drawing Title

Proposed First Floor Sections - Sheet 1

Purpose of Issue **Preliminary** Scale at A1 **1 : 10**

Drg No **2423-HTS-00-XX-DR-S-1115**

Rev **P1**



DWG 1110

Section 5-5

1 : 10

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M	Moment connection
TB	Thermal Break
B1 [25mm]	Pre-camber
BR	Break in beam

Work In Progress

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Rev	Date	By	Eng	Amendments

HEYNE TILLETT STEEL

STRUCTURAL ENGINEERS

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Job Name

100 Grays Inn Road, WC1X 8AL

Drawing Title

Proposed First Floor Sections - Sheet 2

Purpose of Issue **Preliminary** Scale at A1 **1 : 10**

Drg No **2423-HTS-00-XX-DR-S-1116**

Rev **P1**

Appendix H: Tenant Fit-out Guide for Embodied Carbon and Circular Economy

100 GRAYS INN ROAD, TENANT FIT-OUT GUIDE FOR EMBODIED CARBON AND CIRCULAR ECONOMY

FIT-OUT PERFORMANCE TARGETS

- Upfront carbon for tenant fit-out to be less than 150kgCO2e/m^2
- Site Waste Management
    - >95% of total amount of fit-out waste to be reused or recycled, with the aim to reuse >50% of strip-out waste on site or elsewhere. Note: Note: A product can be considered to have been reused where it is salvaged and used for its original intended purpose or where the majority of component parts of the product are remanufactured into new products without significant reprocessing.
    - A site waste management plan (SWMP) is prepared and in line with:
        - the voluntary code of practice Site Waste Management Plans: Guidance for Construction Contractors and Clients.
        - The format of the SWMP includes and allows for the projected and actual waste stream volumes to be individually tracked (e.g. using SKA assessment).
        - The SWMP should have appended a schedule of all items to be removed from site that are covered by the WEEE (Waste Electrical and Electronic Equipment) regulations and those figures included in the overall targets for managing and reducing the creation site waste.
- New materials and furniture installed to meet the following:
    - The requirements for the % recycled and recyclable content of those good practice measures.
    - If containing timber components, the timber meets the criteria of good practice measure D20 Timber.
    - Recycled content claims must comply with ISO 14021:1999 Type II Self declared Environmental Claims and state knowledge of IAQ emissions.
    - In particular, Suspended ceiling, Soft flooring, Hard flooring, Workstations and tables & Other new ancillary furniture items: to have Cradle to CradleCM Silver - Platinum certificate; or are supplied with an environmental product declaration, written in accordance with ISO 14025 standards.
- Bio-based materials:
    - Newly specified ceiling finishes and soft flooring to contain a minimum of 50% (by mass) renewable or bio-based natural products (e.g. wood, wool, natural rubber, hessian)
    - Internal partitions to include a minimum of 30-50% (by mass) renewable or bio-based natural products (e.g.woodfibre insulation, fermacell, Orb)
- Recyclable waste storage
    - An operational waste management strategy has been developed. Space is provided for the storage of recyclable waste generated by the occupant's operations, based on the waste management strategy's recommendations. This space should be:
        - adequately sized in line with the operational activities of the occupant and waste collection frequencies;
        - accessible to both building occupants and waste collectors; and
        - clearly marked as an area for recycled waste.

MATERIAL CRITERIA

- Ceiling
    - If ceiling systems are new, they are manufactured with at least 90% recycled content (by mass) and 100% recyclable content
    - Where existing ceiling is to be removed, at least 30-50% of the existing ceiling finishes are to be reused.
- Timber, timber elements and joinery
    - In removing any existing timber, >50%of the existing timber elements are to be reused for intended use or repurposed for other uses (e.g. fire door into desk tops)
- Partitions
    - All new partitions are to be demountable and reusable within the existing building;
    - Glazed and metsec partitions with plasterboard to be detailed in such a way they could be demounted without damage, for reuse elsewhere.

- Masonry
    - Any new cement-based masonry proposed within fit-out to have a minimum of 90% recycled content, or alternatively propose reclaimed brick, unfired clay bricks or bio-ased masonry products.
    - If new brick, are manufactured with at least 30% recycled content.
    - If new, are sourced from a certified manufacturer with a BES 6001 'Very Good' performance rating for the product and the corresponding quarry
- Raised access flooring
    - All raised flooring systems meet at least one of the following criteria:
        - Existing flooring systems are to be reused;
        - if new, are manufactured with 100% recycled and recyclable content, designed for deconstruction with components that can be recycled; or
    - New hard or soft flooring to be installed should be easily demountable to allow cleaning of the existing raised access floor
- Doors
    - At least 50-80% of doors are to be reused or recycled;
    - If new, are manufactured in a factory that has achieved and maintains an Environmental Management System in accordance with BS EN ISO 14001 with either (or a combination of both): – composite materials that have at least 80% recycled content; or – metal components that follow WRAP's Choosing construction products guidance containing an average of:
        - steel section 15%
        - stainless steel 75%
        - copper sheet 60%
        - aluminium extrusion 44%
        - aluminium sheet 73%; or
        - are supplied with an environmental product declaration, written in accordance with ISO 14025 standards.
- Soft flooring
    - If new, all soft floor coverings, including underlay, are manufactured with at least 50% recycled content (measured by mass) and 100% recyclable content (designed for deconstruction with components that can be recycled);
    - Existing soft flooring in good condition to be reused; or demounted for reuse elsewhere.
- Paint
    - All paints to have been manufactured with at least 90% recycled content and have EU Ecolabel
- Mechanical and electrical services
    - At least 30-50% of mechanical and electrical (M&E) services materials that are in good condition, to be reused on-site or elsewhere (e.g. refurbished light-fitting)
- Insulation
    - All insulation materials (thermal and acoustic) are manufactured with at least 50% recycled (measured by mass) and 100% recyclable content that is designed for deconstruction with recyclable components;
- Furniture
    - If new, chairs are manufactured with at least 40% recycled content (measured by mass) and 90% recyclable content (measured by mass and designed for deconstruction with components that can be recycled);
    - If new, storage units are to be manufactured with at least 40% recycled content (measured by mass) and 90% recyclable content (measured by mass and designed for deconstruction with components that can be recycled);
    - Where joinery items are completed off site, paint finishes should meet the criteria for paints; Polishes and varnishes are to be water based.
    - All adhesives used in the assembly of each joinery item must have been tested to EN 13999 or ISO16000 standards and show that carcinogenic and volatile organic compounds are absent; or the adhesive is to have been awarded one of the following labels:
        - Eurofins Indoor Air Comfort Gold standard
        - Blue Angel RAL-UZ 113
        - M1 Emissions Classification for construction products

- WC cubicles
    - If new, are manufactured with at least 70% recycled content (measured by mass) and 100% recyclable content (designed for deconstruction with components that can be recycled);
- Screed
    - Specification to have at least 50-70% recycled content
- Hard wall covering
    - if new, are manufactured with at least 70% recycled content (measured by mass) and 100% recyclable content (excluding wall tiles);
    - if a new wall tile (ceramic, glass, clay, stone, porcelain), are manufactured with at least 50% recycled content and recyclable content, measured by mass;

Appendix I: Materials Sustainable Procurement Plan

MAX FORDHAM

100 Gray's Inn Road

Sustainable Procurement Plan

Planning Issue

September 2022

Max Fordham LLP
Max Fordham LLP
42/43 Gloucester Crescent
London
NW1 7PE

T +44 (0)20 7267 5161

maxfordham.com

ISSUE HISTORY

Issue	Date	Description
P01	16/11/2020	First issue
P02	30/09/2022	Planning Issue

CONTENTS

1.0 EXECUTIVE SUMMARY

Introduction and Scope
This document sets out a clear framework for the responsible sourcing of construction products to guide all those involved in the specification and purchasing of materials, products and goods on 100 Gray's Inn Road.

The project is an office building at 100 Gray's Inn Road and 127 Clerkenwell Road, including retail space on the ground floor, and an affordable housing building with affordable workspace. The project is a mixture of new build and refurbishment. The aim is to deliver pioneering and sustainable commercial space and quality affordable housing.

Sustainable procurement strives to minimise adverse impacts of purchasing choices and have the most positive environmental, social and economic effects across the entire life cycle.

The project is targeting 'Excellent' under BREEAM UK New Construction (NC) 2018. The certification will cover the office space only, however the principles are applicable to the whole development. The key performance indicators for responsible procurement are linked to the relevant BREEAM credits.

Specific BREEAM credits that **directly relate** to sustainable and responsible procurement of construction products:

- BREEAM Mat 02 - Specification of products with a recognised Environmental Product Declaration (EPD)
- BREEAM Mat 03 - Responsible sourcing of construction products
    - Legal and sustainable timber
    - Enabling sustainable procurement
    - Measuring responsible sourcing
- BREEAM Mat 05 - Designing for durability and resilience
- BREEAM Hea 02 - Emissions from construction products
- BREEAM Wst 02 - Use of recycled and sustainably sourced aggregates
- BREEAM Pol 01 - Impact of refrigerants
- BREEAM Pol 04 - Reduction of night time light pollution

BREEAM credits that are **influenced** by sustainable procurement choices:

- Mat 01 - Environmental impacts from construction products - Building life cycle assessment (LCA)
- Mat 06 - Material efficiency

Local procurement objectives:

- Local Sourcing - reduce transport related carbon emissions as well as positively affect the local economy
- Local Employment and Capacity Building - promote local procurement and employment opportunities
- Community Engagement - conduct stakeholder engagement and consultation with the local community

Detailed procurement requirements are listed in Table 7 at the end of the document.

2.0 ROLE AND PURPOSE OF THIS DOCUMENT

This document sets out framework for the responsible sourcing of construction products to guide all those involved in the specification and purchasing of materials, products and goods on 100 Gray's Inn Road. The Sustainable Procurement Plan is in line with the requirements set out under the BREEAM Mat 03 #1 'Enabling sustainable procurement' credit. It has been created for (and in consultation with) the client Lawnmist Limited and project team during the briefing stage. It will be used by the design team from November 2020 onwards so that it is in place prior to the end of Concept Design, when material specification options become significant. The framework will be used throughout all the design and construction phases.

Also set out in this document, are the details of the sustainability aims and objectives that guide the project's procurement activities alongside strategic procurement targets where relevant.

Evidence of the successful implementation of the Plan will be demonstrated by achieving BREEAM certification, and in particular obtaining the targeted Mat 03 #2 'Measuring responsible sourcing' credits.

Project programme: Subject to Planning approval, work will commence in 2023 and completion is scheduled for 2025.

3.0 INTRODUCTION

3.1 100 Gray's Inn Road

The project is an office building at 100 Gray's Inn Road and 127 Clerkenwell Road, including retail space on the ground floor, and an affordable housing building with affordable workspace. The project is a mixture of new build and refurbishment. The aim is to deliver pioneering and sustainable commercial space and quality affordable housing.

Lawnmist Limited in conjunction with York Property Management Limited, have a long history of operating and managing residential, commercial and hotel real estate across the UK, Europe and the USA. Being the long term owner and operator, they have committed to deliver an excellent design, while quality control is executed throughout every step of the process.

3.2 Sustainability Certification Aims

The design team have been commissioned to deliver an environmentally sustainable building that supports the health and wellbeing of the staff who will ultimately occupy the offices at 100 Gray's Inn Road/ 127 Clerkenwell Road and residents of 80 Gray's Inn Road. Achievement of these aims will be demonstrated by targeting an 'Excellent' rating under the BREEAM NC 2018 scheme. The certification will cover the office space only, however the principles are applicable to the whole development. In addition, Net Zero Carbon is being pursued, the details of which are to be further developed.

In order to achieve the 'Excellent' BREEAM rating, detailed requirements relating to responsible and sustainable procurement will need to be addressed by the design team. Evidence of the successful implementation of this Plan will be demonstrated by achieving the BREEAM certification, and in particular obtaining the targeted Mat 03 #2 'Measuring responsible sourcing' credits. The BREEAM requirements can thus be treated as key performance indicators (KPIs) and since performance against these KPIs is certified by a third-party it allows industry-wide comparison.

3.3 Principles of Sustainable Procurement

Sustainable procurement strives to minimise adverse impacts of purchasing choices. Instead, it is procurement that has the most positive environmental, social and economic effects across the entire life cycle.

The main principles for sustainable procurement are:

- Accountability
- Transparency
- Ethical behaviour
- Full and fair opportunity
- Respect for stakeholder interests
- Respect for the rule of law and international norms of behaviour
- Respect for human rights
- Focus on needs
- Integration
- Analysis of all costs
- Continual improvement

As the lead organisation on the project, Lawnmist Limited commits to abide by these principles in driving forwards the sustainable procurement practices on the 100 Gray's Inn Road project.

Figure 1 below illustrates the seven core issues of sustainable procurement as defined by the BS ISO 20400:20171 standard. The broad range of social, environmental and economic issues presents the spread of risks and opportunities associated with Lawnmist Limited procurement procedures for 100 Gray's Inn Road.

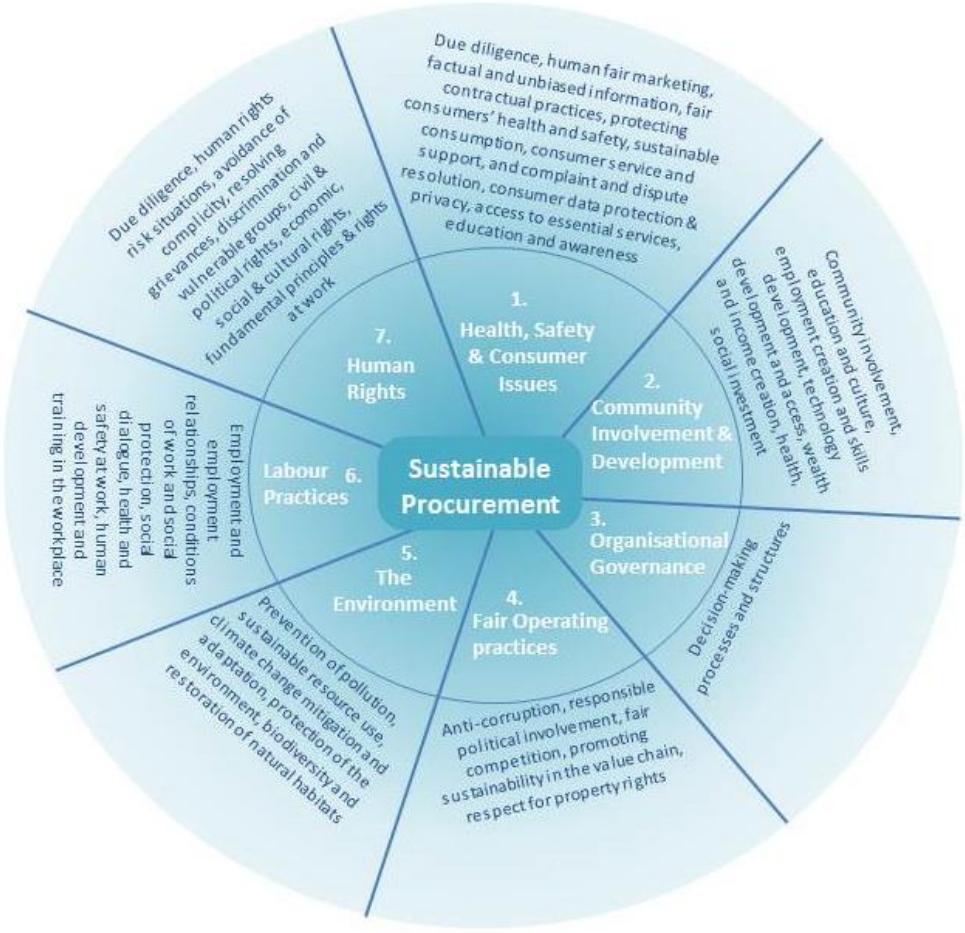


Figure 1: Core issues of sustainable procurement

Impacts and opportunities at each stage of the project
Table 1 below sets out the impact opportunities that exist for Lawnmist Limited to positively influence sustainable procurement in the seven core issue areas during the development and construction process.

It should be noted that since Lawnmist Limited will continue to own the development there are many opportunities to influence sustainable procurement in RIBA Stage 7, in the operational stage of the building. During the design and construction phases they also have significant opportunity to make substantial positive impact on sustainable procurement in all core areas and set the base of a smooth delivery.

Table 1: Opportunities to influence sustainable procurement

Core issues		RIBA Stage 1 Brief setting	RIBA Stage 2 Concept design	RIBA Stage 3 Developed design	RIBA Stage 4 Technical design	RIBA Stage 5 Construction	RIBA Stage 6 Handover	RIBA Stage 7 In-use
1	**Health & Safety: Consumer issues**							
2	**Community involvement and development**							
3	**Organisational Governance**							
4	**Fair Operating Practices**							
5	**The Environment**							
6	**Labour Practices**							
7	**Human Rights**							

Priority	High impact	Medium impact	Low impact

Governance
A priority for implementing and achieving the sustainable purchasing outcomes is to have solid organisational governance. This Sustainable Procurement Plan forms part of such governance: it forms a framework that will guide the decision making process in a structured way. Lawnmist Limited will be required to ensure that procedurally it is adopted throughout the project, and have therefore committed to formalising specific procurement reviews at each RIBA Stage of the project.

Please note that Lawnmist Limited roles and responsibilities in relation to Construction (Design and Management) Regulations 2015 (CDM 2015) are outside the scope of this document.

4.0 SPECIFIC SUSTAINABLE PROCUREMENT OBJECTIVES

4.1 BREEAM Sustainable Procurement Targets

The BREEAM NC 2018 credits which directly relate to sustainable and responsible procurement of construction products are listed below. Refer to the 100 Gray's Inn Road BREEAM assessment for the credits that are applicable to the project.

BREEAM Mat 02 - Specification of products with a recognised Environmental Product Declaration (EPD)
One credit available
One credit is available to projects that specify construction products with EPD that achieve a total EPD points score of at least 20, as calculated following the BREEAM NC 2018 methodology.

An EPD compliant with BREEAM is an independently verified environmental label (i.e. ISO Type III label) according to the requirements of ISO 14025.

Table 2: Compliant EPD types

Recognised types of EPD	Validity	EPD points
EPD applicable to more than one product in the same product category, and more than one manufacturer.	EPD unexpired at the point of specification. Product installed in the building by the end of construction. EPD issued or registered by an ISO 14025 compliant programme operator. For products covered by the Construction Product Regulations, the EPD must have been generated using product category rules based on either BS EN 15804 or ISO 21930.	0.5
EPD applicable to more than one product in the same product category, and a single manufacturer		0.75
EPD applicable to a single product*, and a single manufacturer (the product may be manufactured in more than one location) *Or variations of a single product that only differ in terms of colour or pattern.		1.5

Details of each of the EPDs must be entered into the Mat 01/02 results submission tool, which will verify the EPD points score.

BREEAM Mat 03 - Responsible sourcing of construction products
Prerequisite
Legal and sustainable timber: All timber and timber-based products used on the project must be legally harvested and traded timber as per the UK Government's Timber Procurement Policy (TPP). Compliance with this criterion is a minimum requirement for achieving any BREEAM rating. Lawnmist Limited will ensure that all timber and timber-based products used on the project complies with this pre-requisite through audits of their supply chain.

BREEAM Mat 03 - Enabling sustainable procurement
One credit available
One credit is available for a Sustainable Procurement Plan, which must be used by the design team to guide specification towards sustainable construction products. The implementation of this document fulfils this criterion.

BREEAM Mat 03 - Measuring responsible sourcing
Up to three credits are available
This category acknowledges materials that have demonstrable responsible sourcing certificates and chain of custody.

Projects must use the BRE's Mat 03 calculator tool and methodology to determine the number of credits achieved for the construction products specified or procured. Credits are awarded in proportion to the scope of the assessment and the number of points achieved, as set out below.

Table 3: BREEAM credits available for each scope level and percentage of points achieved

Credits achieved	Mat 03 scope level	% available points achieved
1	Superstructure	≥ 10%
2	As above plus • Internal finishes • Substructure and hard landscaping	≥ 20%
3		≥ 30%
1 exemplary performance credit	As above, plus core building services (N/A to shell only assessments)	≥ 50%

The following elements comprise the scope of the superstructure: frame, upper floors, roof, stairs and ramps, external walls, windows and external doors, internal walls and partitions.

Responsible sourcing evidence must be submitted in the form of the BREEAM recognised responsible sourcing certifications scheme certificate or BREEAM recognised environmental management certificate. (N.B. Where the construction product has no certification, is non-compliant with broken chain requirements or the certification type is not listed in BREEAM's Guidance Note 18 the score is zero. Where the construction product is a reused product, obtain the score from Guidance Note 18.)

During the design process it will be necessary to consider what relevant schemes apply to selected materials, as not all schemes are readily available to each material. The following table provides material specific guidance; where possible select materials that are responsibly sourced under the 'Recommended process' list on the far right.

Table 4: Processes for material selection

	Element Material	Minimum Process	Expected Process	Recommended Process
		Improved score		
Priority: consider massive materials first	**Brick and blockwork (including, clay tiles and other ceramics), pavers**	EMS* key process & supply chain *(product manufacture & clay extraction)*	BES 6001 Good/Pass	BES 6001 Excellent/Very Good
	In situ and pre-cast concrete	EMS* key process & supply chain *(cement production & aggregate extraction and production)*	BES 6001 Good/Pass	BES 6001 Excellent/Very Good
	Timber (including timber composites, and wood panels)	MTCC, SGS, TFT	-	FSC, CSA, SFI with CoC, PEFC, Grown in Britain
	Stone and gravel	EMS* key process & supply chain *(stone product manufacture & extraction)*	BES 6001 Good/Pass	BES 6001 Excellent/Very Good
	Steel, aluminium, copper	BES 6001 Good/Pass	EMS* key process & supply chain *(metal product manufacture &* • *Steel: electric arc furnace or basic oxygen furnace process* • *Aluminium: ingot production* • *Copper: ingot or cathode production)*	BES 6001 Excellent/Very Good, CARES Sustainable Construction Steel Scheme

	Plasterboard	BES 6001 Good/Pass	EMS* key process & supply chain *(manufacture & gypsum extraction, or synthetic gypsum production)*	BES 6001 Excellent/Very Good
Consider second	**Glass**	EMS* key process & supply chain *(glass production and sand extraction Soda ash production or extraction)*	BES 6001 Good/Pass	BES 6001 Excellent/Very Good
	Bituminous materials	BES 6001 Good/Pass		EMS* key process & supply chain *(manufacture & bitumen production and aggregate extraction and production)*
	Plastics (including EPDM, TPO, PVC and VET roofing and polymeric membranes)	BES 6001 Good/Pass		EMS* key process & supply chain *(manufacture & main polymer production)*

* EMS – ISO 14001, EMAS, BS8555, Green Dragon level 4 & 5

The BREEAM Mat 03 proforma should be completed and submitted to the BREEAM Assessor to input into the Mat 03 Calculator. A copy of the proforma can be found in Appendix I.

BREEAM Mat 05 - Designing for durability and resilience
One credit available
The building's design and construction must incorporate measures to protect vulnerable parts of the building against damage. In addition, it must incorporate measures which will protect exposed parts of the building from material degradation. Critical to fulfil this latter requirement is that key exposed elements of the building will be designed and specified to limit long and short term degradation due to environmental factors. Elements or products must achieve the appropriate quality or durability standard as listed below. (if not available, use BS 7543:2015 as the default appropriate standard).

Table 5: Relevant industry durability or quality standards and design guides

Relevant industry durability or quality standards and design guides
Timber
BS EN 350:2016. Durability of wood and wood-based products - Testing and classification of the durability to biological agents of wood and wood-based materials, BSI; 2016. WIS 4-28. Durability by design, TRADA; 2016 WIS 2/3-60. Specifying timber exposed to weathering, TRADA; 2015 WIS 1-47. Timber external doors, TRADA; 2015 BS 8605-1:2014. External timber cladding - Method of specifying, BSI; 2014
Curtain walling
Standard for systemised building envelopes, Centre for Window and Cladding Technology; 2006 CWCT Curtain Wall Installation Handbook, Centre for Window and Cladding Technology; 2006 BS EN 13830:2015. Curtain walling - Product standard, BSI; 2015
Brickwork, blockwork
BDA Design Note 7 - Brickwork durability, Brick Development Association; 2011 Severely Exposed Brickwork, Brick Development Association; 2014 BS 8297-2017. (Design, manufacture and installation of architectural precast concrete cladding. Code of practice). The standard refers to EN 13369 (Common Rules for precast concrete products) on durability requirements and

requires concrete cover to be in accordance to EN 1992-1-1 and BS 8500. BS 8500-1:2015 +A1:2016. Concrete – complementary British Standard to BS EN 2016 part 1: Method of specifying and guidance for the specifier and BS 8500-2:2015 +A1:2016. Concrete – complementary British Standard to BS EN 2016 part 2: Specification for constituent materials and concrete.
Roof elements
BR 504. Roofs and roofing: Performance, diagnosis, maintenance, repair and the avoidance of defects (Third Edition), BRE; 2009 Profiled sheet roofing and cladding. The guide to design and best practice (4th edition), National Federation of Roofing Contractors; 2016 Guidelines for the Design & Application of Green Roof Systems, CIBSE; 2013 Single Ply: Design Guide 2016 Edition, Single Ply Roofing Association; 2016 SPRA: Guidance and standards LRWA: technical guidance notes
Metal cladding
Profiled sheet roofing and cladding. The guide to design and best practice (4th edition) National Federation of Roofing Contractors 2016 Metal Fabrications: Design, Detailing and Installation Guide, Metal Cladding and Roofing Manufacturers Association; 2006
Glazing
BS EN 12488:2016. Glass in building - Glazing recommendations - Assembly principles for vertical and sloping glazing, BSI; 2016
Masonry
PD 6697:2010. Recommendations for the design of masonry structures to BS EN 1996-1-1 and BS EN 1996-2, BSI; 2010 BS EN 1996-2:2006. Eurocode 6. Design of masonry structures. Design considerations, selection of materials and execution of masonry, BSI; 2006
Other useful standards or design guides
BR 292. Cracking in buildings (Second edition), BRE; 2016 BRE Good Practice guidance's

BREEAM Hea 02 - Emissions from construction products
Up to two credits available
To achieve the one targeted credit, three out of the five product types listed below must meet the emission limits, testing requirements and any additional requirements listed in Table 5.11 of the BREEAM NC 2018 manual (shown below). Where wood-based products are not one of the three selected product types, all wood-based products used for internal fixtures and fittings must be tested and classified as formaldehyde E1 class as a minimum. For two credits, all five product types should meet the criteria.

The following emissions criteria are met by the design:

Table 6: Construction product emission limits

Emission limit*			Testing requirement	Additional requirements
Formaldehyde	Total volatile organic compounds (TVOC)	Category 1A and 1B carcinogens		
Interior paints and coatings				
≤ 0.06 mg/m³	≤ 1.0 mg/m³	≤ 0.001 mg/m³	EN 16402 or ISO 16000-9 or EN 16516 or CDPH Standard Method v1.1	Meet TVOC content limits. Paints used in wet areas (e.g. bathrooms, kitchens, utility rooms) should protect against mould growth
Wood-based products (including wood flooring)				
≤ 0.06 mg/m³ (Non-MDF) ≤ 0.08 mg/m³(MDF	≤ 1.0 mg/m³	≤ 0.001 mg/m³	ISO 16000-9 or EN 16516 or CDPH Standard Method v1.1 or EN 717-1 (formaldehyde emissions only)	N/A
Flooring materials (including floor levelling compounds and resin flooring)				
≤ 0.06 mg/m³	≤ 1.0 mg/m³	≤ 0.001 mg/m³	ISO 10580 or ISO 16000-9 or EN 16516 or CDPH Standard Method v1.1	N/A
Ceiling, wall, and acoustic and thermal insulation materials				
≤ 0.06 mg/m³	≤ 1.0 mg/m³	≤ 0.001 mg/m³	ISO 16000-9 or EN 16516 or CDPH Standard Method v1.1	N/A
Interior adhesives and sealants (including flooring adhesives)				
≤ 0.06 mg/m³	≤ 1.0 mg/m³	≤ 0.001 mg/m³	EN 13999 (Parts 1-4) or ISO 16000-9 or EN 16516 or CDPH Standard Method v1.1	N/A

^ The emission limits in this table apply to the finished product, i.e. after any coating or other treatment process has been applied.

* Compliance with emission limits shall be demonstrated after 28 days in an emission test chamber or earlier as stipulated by the relevant testing requirements standard. The emission rate obtained from the chamber test method must be extrapolated to predict what the concentration would be in the air of the theoretical model or reference room (as detailed in the respective testing standard) and this extrapolated concentration compared with the emission limit in this table.

Where test results for a product exceed the TVOC emission limit, compliance with the above requirements can still be achieved where the test results demonstrate an R-value ≤ 1 after 28 days

BREEAM Wst 02 - Use of recycled and sustainably sourced aggregates
Prerequisite
If demolition occurs on site a pre-demolition audit of any existing buildings, structures or hard surfaces must be undertaken to encourage the re-use of site won material on site, which would minimise transport related carbon emissions. The pre-demolition audit must be undertaken in accordance with Wst 01 Construction waste management: Criteria 1 and 2 of the BREEAM NC 2018 manual.

BREEAM Wst 02 - Use of recycled and sustainably sourced aggregates
One credit available
To obtain the credit, projects must score 3.5 - 6 sustainable aggregate points, using the BREEAM Wst 02 Calculator tool. The points are based on the type, quantity and the region the aggregate is sourced from as well as the km distance travelled by transport type.

BREEAM Pol 01 - Impact of refrigerants
Up to three credits available
For three credits, no refrigerant is used within installed plant or system.

Where refrigerants are used, all systems (with electric compressors) must comply with the requirements of BS EN 378:2016, and;

- For two credits, systems using refrigerants have a direct effect life cycle (DELC) CO_2 equivalent emissions of ≤ 100 $kgCO_2e/kW$ or refrigerants used have a global warming potential (GWP) ≤ 10,
- For one credit, systems using refrigerants have a DELC CO_2 equivalent emissions of ≤ 1000 $kgCO_2e/kW$.

BREEAM Pol 04 - Reduction of night time light pollution
One credit available
One credit is awarded if the design has removed the need for external lighting without adversely affecting the safety and security of the site and its users. Alternatively, if the project does have external lighting one credit can be awarded as follows:

- The external lighting strategy has been designed in compliance with Table 2 (and its accompanying notes) of the Institution of Lighting Professionals (ILP) Guidance notes for the reduction of obtrusive light, 2011.
- All external lighting (except for safety and security lighting) can be automatically switched off between 23:00 and 07:00.
- If safety or security lighting is provided and will be used between 23:00 and 07:00, this part of the lighting system complies with the lower levels of lighting recommended during these hours in Table 2 of the ILP guidance notes.
- Illuminated advertisements are designed in compliance with ILP PLG05 the Brightness of Illuminated Advertisements.

4.2 BREEAM Targets Influenced by Sustainable Procurement

In addition to the above, there are three more credit categories that are influenced by sustainable procurement choices. These are listed as follows:

Mat 01 - Environmental impacts from construction products - Building life cycle assessment (LCA) Superstructure
Up to six credits available
A building LCA of the superstructure design, including benchmarking exercise and options analysis, using either the BREEAM Simplified Building LCA tool or an IMPACT Compliant LCA tool should be carried out at Concept Design and Technical Design.

Note: Technical design credits can still be achieved even if concept design credits have not been awarded. LCA analysis must be submitted to BRE at concept and technical design stages.

Mat 01 - Environmental impacts from construction products - Building life cycle assessment (LCA)
Substructure and hard landscaping options appraisal during Concept Design
One credit available
During Concept Design building LCA options appraisal of a combined total of at least six significantly different substructure or hard landscaping design options (at least two must be substructure and at least two must be hard landscaping) should be carried out, using a building LCA tool recognised by BREEAM.

Mat 06 - Material efficiency
One credit available
To gain one credit, a report that sets targets and discusses the opportunities and methods that optimise the use of materials must be completed at the following stages of the project:

- Preparation and Brief
- Concept Design
- Developed Design
- Technical Design
- Construction

In addition - 100 Gray's Inn Road will need to develop and record the implementation of material efficiency during:

- Developed Design
- Technical Design
- Construction

100 Gray's Inn Road will need to finally report the targets and actual material efficiencies achieved.

4.3 Local Impact

Local Sourcing Policy
Lawnmist Limited are committed to implement this to reduce transport related carbon emissions as well as positively affect the local economy. Thus, all contractors and sub-contractors working on 100 Gray's Inn Road project are to assess and report on the potential to procure construction products locally. Where viable, construction products must be procured locally.

This is split into two targets/objectives relating specifically to the design and product/material selection for 100 Gray's Inn Road.

1. Maximum use of locally available reclaimed and recycled materials. Where possible there should be significant incorporation of reclaimed and recycled materials in the design. The local availability of such products/materials should be assessed via the following means
    a. Submitting a request on/ reviewing what is available on Salvo website and other 'waste exchange' websites.
    b. Email/phone calls to local demolition and/or development sites.
    c. Contacting local reclamation, demolition companies and recycling sites to assess what products and materials are/will be in stock.
    d. Other sources of information and networks from the project/ contracting team.
2. Where new products and materials are to be used, local businesses should be supported where similar levels of cost, availability, technical and environmental performance, and responsible sourcing credentials can be maintained.
    a. A good example of this is the 'Grown in Britain' Campaign that supports the British Timber Industry. See https://www.growninbritain.org/ .
    b. Other products and materials can also be sourced in areas local to London. Possible materials to be sourced locally include brick, tiles, concrete, carpet, aggregate etc.

Local Employment and Capacity Building
Procurement and employment opportunities for certain stakeholder groups should be promoted, in order to encourage the following:

- Local employability and skills development – especially supporting local apprenticeships
- Diversity of workforce
- Small business development for local business owners

The main contractor should establish targets and maintain a mechanism to track, evaluate and report local procurement and employment KPIs relative to the vendor type attributes and workforce classifications which have been identified for the 100 Gray's Inn Road project. They should also work with local suppliers to identify skills/capacity issues and, where appropriate, provide training and support to improve quality, safety, environmental and social performance.

Community Engagement
The Project teams for Gray's Inn Road are to conduct stakeholder engagement and consultation with the local community (where practicable) and should include the following content:

1. Functionality, build quality and impact (including aesthetics).
2. Provision of appropriate internal and external facilities (for future building occupants and visitors or users).
3. Management and operational implications.
4. Maintenance resources implications.
5. Impacts on the local community, e.g. local traffic or transportation impact.
6. Opportunities for shared use of facilities and infrastructure with the community or appropriate stakeholders.
7. Compliance with statutory (national or local) consultation requirements.
8. Energy use and sustainability measures.
9. Implementing principles and processes that deliver an inclusive and accessible design.

The stakeholders which must be involved with the consultation should include:

1. Actual or intended building users (if known) including facilities management staff or those responsible for the day-to-day operation of the building and grounds.
2. Representative consultation group from the existing community (if the building is a new development in an existing community) or for a community still under construction.
3. Existing partnerships and networks that have knowledge of, and experience of working on, existing buildings of the same type.
4. Potential users of any shared facilities, e.g. operators of clubs and community groups.
5. Statutory consultees

The main contractor for 100 Gray's Inn Road should produce a plan detailing the impact of construction on the local community will be minimised and be used as a beneficial opportunity. This plan should include:

- Reduce local impacts – such as noise, dust, dirt on roads etc.
- Reduce transport impacts
- Possibilities for mentoring and other community based activities

5.0 DETAILED PROCUREMENT REQUIREMENTS

Lawnmist Limited expects their contractors and sub-contractors on the 100 Gray's Inn Road project to comply with the following requirements:

Table 7: Procurement requirements

Procurement Requirements	Mandatory	Preference	If technically feasible
Local Sourcing			
Preference is to be given to locally sourced construction products where feasibly possible		x	
Construction product manufacturers			
To have a full and relevant environmental policy	x		
To have or be working towards a full environmental management system e.g. EMAS, ISO 14001 or BS8555 from a UKAS registered certification body		x	
Responsible sourcing of materials to BES 6001, BS 8902		x	
Product manufacturers to have, or be working towards BS EN 15804 compliant EPD		x	
Share best practice, new products & innovation with Lawnmist Limited and the supply chain		x	
Provide technical information to support any performance related product claims when requested	x		
Comply with the provisions of the UN Global Compact Principles[1]	x		
Construction product distributors			
To have a full and relevant environmental policy	x		
To have or be working towards a full environmental management system e.g. EMAS, ISO 14001 or BS8555 from a UKAS registered certification body		x	
Active members of the Supply Chain Sustainability School		x	
Global warming potential			
The Global Warming Potential (GWP) of insulants < 5 or refrigerants <10 (<1000 $kgCO_2e/kWh$ cooling and heating)	x		
Volatile organic compounds			
Use of low or zero VOC paints and sealants			x
Design out the use of high VOC products			x
Ensure that all materials and substances used comply with relevant legislation	x		
No paints or other finishes to contain lead	x		
Timber & timber products			
All timber and timber-based products used on all Lawnmist Limited projects must be legally harvested and traded timber as per the UK Government's Timber Procurement Policy (TPP)	x		
All fixed timber & temporary timber to be from legal and sustainable sources (PEFC or FSC) or 'Grown in Britain'	x		
Preference for timber which is assured as 'Grown in Britain'		x	
All contractors to complete the monthly UKCG timber reporting requirements	x		
All supply chain members providing timber must be able to evidence compliance with obligations of the EU Timber Regulation (EUTR) if required	x		
Natural dimensional stone			
Give preference to natural dimensional stone suppliers demonstrating leadership in the ethical stewardship of their supply chain		x	
Polyvinyl chloride (PVC)			
PVC manufacturers must have phased out, or be working towards and reporting on the phasing out of heavy metals	x		
Preference shall be given to PVC products with a recycled content		x	

[1] UN Global Compact Principles: https://www.unglobalcompact.org/what-is-gc/mission/principles

All chemicals used in manufacture of PVC to be registered under REACH	x		
Either operate a take-back scheme or identify a mechanical recycling system for installation waste	x		
Packaging			
All manufacturers, suppliers and subcontractors must apply the waste hierarchy to packaging	x		
Use of larger pack sizes to reduce the amount of packaging per unit, including products that are available in concentrated forms		x	
Use cardboard wrapping where appropriate instead of plastic wrapping i.e. bubble wrap		x	
Collect and reuse packaging as many times as possible		x	
Promote the use of manufacturer branded pallets		x	
Avoid the use of polystyrene packaging		x	
Mechanical site plant			
Site plant or equipment including generators to be no more than 18 months old		x	
Preference to be given to the use of Stage III diesel engines as a minimum		x	
Contractor site offices			
Consideration must be given to the energy and water reduction measures in temporary site accommodation	x		
Hand towels are not to be provided where hand dryers are installed		x	
All white goods for use in offices to be a minimum of A-rated	x		
Agreement of a waste segregation and recycling strategy	x		
Trade contractors			
Demonstrate continuous development and improvement to reduce environmental and social impacts		x	
Have a full and relevant environmental policy	x		
Have, or be working towards, a full environmental management system e.g. EMAS, ISO 14001 or BS8555 from a UKAS registered certification body		x	
To be receptive to the promotion and management of apprenticeship opportunities and/or training and development of site operatives	x		
Comply with all UK employment legislation and ensure that workers have the right to work in the UK	x		
Professional services			
All providers of professional services and their employees shall comply with the principles and objectives set out within this procurement policy	x		
All personnel and key stakeholders involved with have the necessary skills, knowledge and experience, and provide evidence if requested	x		
Waste & recycling			
Waste service providers must demonstrate a minimum diversion from landfill of 90% for construction waste	x		
Waste service providers encouraged to report in accordance with PAS 402		x	
Site catering			
Supply chain caterers to select food using Fairtrade produce, locally sourced and food currently in season		x	
All tea and coffee to be either Fairtrade or Rainforest Alliance certified		x	
Where water dispensers are required on-site, install mains supplied filtered water dispensers to avoid the use of bottled water and bottled water dispensers			x
Agency labour & site security			
Where agency staff, cleaners, site labour or site security personnel are engaged, supply chain companies must have appropriate systems and processes in place to ensure compliance with all UK employment legislation (including the National Minimum Wage, the Agency Worker Regulations 2011 and the Asylum and Immigration Act 2006)	x		
Use security services from companies approved by the Security Industry Authority (SIA)		x	
All security guard personnel to have a current SIA licence	x		

6.0 APPENDIX I – BREEAM MAT 03 PROFORMA

Appendix J: Operational Waste Management Plan

PAUL MEW ASSOCIATES
TRAFFIC CONSULTANTS

LAWNMIST LTD

88 & 100 GRAYS INN ROAD / 127 CLERKENWELL ROAD, LONDON, WC1X.

SITE WASTE MANAGEMENT PLAN

September 2022

Unit 1, Plym House, 21 Enterprise Way, London, SW18 1FZ
T:0208 780 0426 F:0208 780 0428 E:paul.mew@pma-traffic.co.uk W: www.pma-traffic.co.uk

Contents

Appendices

1.0 INTRODUCTION

1.1 Lawnmist Ltd is currently seeking planning consent relating to proposed development at 88 &100 Grays Inn Road / 127 Clerkenwell Road, London, WC1X.

1.2 The local planning and highways authority is the London Borough of Camden.

1.3 The proposed development comprises:

- 88 Grays Inn Road: Proposed refurbishment of warehouse building to provide high quality affordable housing & affordable workspace
- 100 Grays Inn Road: Proposed demolition of 1960's office block, proposed new building to provide best in class office and retail space
- 127 Clerkenwell Road: Proposed demolition of 1980's office block, proposed new building to provide best in class office space

1.4 The development at 88 Grays Inn Road and 127 Clerkenwell Road will be supplemented by a service vehicle access from Grays Inn Road with refuse stores provided at ground and basement levels. Relevant proposed site layouts are shown in Appendix A.

1.5 The following chapters set out the policy context of Waste Management Plans, the forecast waste arisings from the site and how waste storage and collection arrangements will be managed.

2.0 POLICY ASSESSMENT

2.1 This chapter sets out the requirements of polices relevant to waste management.

Camden Local Plan 2017, London Borough of Camden (2017)

2.2 Policy CC5 Waste sets out that:

The Council will seek to make Camden a low waste borough.

We will:

a. *aim to reduce the amount of waste produced in the borough and increase recycling and the reuse of materials to meet the London Plan targets of 50% of household waste recycled/composted by 2020 and aspiring to achieve 60% by 2031;*
b. *deal with North London's waste by working with our partner boroughs in North London to produce a Waste Plan, which will ensure that sufficient land is allocated to manage the amount of waste apportioned to the area in the London Plan;*
c. *safeguard Camden's existing waste site at Regis Road unless a suitable compensatory waste site is provided that replaces the maximum throughput achievable at the existing site; and*
d. *make sure that developments include facilities for the storage and collection of waste and recycling.*

2.3 The supporting text goes on to set out that:

To make sure that residents and businesses can properly store and sort their waste and to make household recycling as easy as possible, the Council will require developments to provide adequate facilities for recycling and the storage and disposal of waste… Our supplementary planning document Camden Planning Guidance on design contains further information on the Council's expectations for on-site facilities for waste and recycling and on construction waste.

To ensure an integrated approach to waste management and the highest possible reuse and recycling rates, the Council will encourage the submission of a site waste management plan prior to construction. For further details please refer to our supplementary planning document Camden Planning Guidance on sustainability.

Camden Planning Guidance: Transport, London Borough of Camden (January 2021)

2.4 The Council's planning guidance on Transport includes the text extract below;

Developments that have demonstrated a significant movement of goods or materials by road in the Transport Assessment (typically major developments or those where the floor area exceeds the thresholds set out in Appendix A of this guidance) will be expected to accommodate goods and service vehicles on site. This also includes provision for waste collection vehicles should it be

demonstrated that they require onsite access (see CPG: Waste for information). Accommodating servicing and delivery vehicles on-site should also take into account the guidance on vehicular access in Section 7 of this CPG.

Camden Planning Guidance: Waste Storage and Arrangements for Residential and Commercial Units, London Borough of Camden (December 2018)

2.5 The key message of the Councils Waste Planning Guidance is that;

Planning for all waste and storage should ensure that;

- *adequate space is designed for the containment, storage and transfer of all wastes e.g. recyclables, food waste, general waste and bulky waste;*
- *allows for reasonable changes to collection services and transferor activities in the future*
- *safe storage locations and systems for waste transfer – are accessible for all users, collectors and minimise nuisance to occupiers and neighbours and their amenity space, e.g. noise, obstruction, odours, pests, etc.;*
- *access for all waste transfer activities is well designed;*
- *waste containers should have designated indoor or external storage areas;*
- *facilities sensitively designed/located, especially in conservation areas/or listed buildings; and*
- *plans are documented within a waste strategy and design and access statement to meet planning waste conditions for approval*

Camden Planning Guidance: Design, London Borough of Camden (January 2021)

2.6 The key message of Chapter 8 of the Councils Design Planning Guidance is that;

Developers should ensure that all waste systems and storage areas in new developments or refurbished developments are:

- *designed to provide adequate space for the temporary storage of all types of waste, including internal storage areas with sufficient space for the separation of temporary storage of all recycling, food waste and residual waste;*
- *sensitively designed and located in relation to the local environment especially in conservation areas and listed buildings;*
- *safely located and accessible for all users, including waste contractors, and designed to minimise nuisance to occupiers and neighbours and their amenity;*
- *sufficiently flexible to accommodate future increases in recycling targets;*
- *designed to include where appropriate, innovative waste management solutions that increase efficiency and help meet and exceed recycling and other waste reduction targets.*

London Plan, The Mayor of London (March 2021)

2.7 Policy SI 7 of the London Plan relates to Reducing Waste and Supporting the Circular Economy and includes the following requirements;

- *design developments with adequate, flexible, and easily accessible storage space and collection systems that support, as a minimum, the separate*

collection of dry recyclables (at least card, paper, mixed plastics, metals, glass) and food.

- *adequate and easily accessible storage space and collection systems to support recycling and re-use*

2.8 In preparing this Site Waste Management Plan and the waste facilities and arrangements at the development site, the policy and guidance set out above has been taken in to account.

3.0 WASTE CAPACITY ASSESSMENT & DESIGN

3.1 This chapter sets out details of the waste capacity assessment and bin store design for the proposed development based on the proposed development detailed in Table 1.

Table 1. Proposed Development

	No.88 Grays Inn Road	No.100 Grays Inn Road & 127 Clerkenwell Road
Affordable Housing (1 bed 2 person)	2 units	-
Affordable Housing (2 bed 4 person)	2 units	-
Affordable Housing (3 bed 4/5 person)	2 units	-
Affordable Workspace	335sqm	-
Office	-	8,497sqm
Retail	-	262sqm

Source: Piercy & Co 17/08/22

Waste Capacity Assessment

No.88 Grays Inn Road

3.2 For the proposed residential element of the scheme at No. 88 Grays Inn Road, metrics for communal residential properties in Camden Planning Guidance: Waste Storage and Arrangements for Residential and Commercial Units, London Borough of Camden (December 2018) detail that each dwelling (up to 3 bedrooms) could generate;

- 140L of mixed recycling
- 23L of food waste
- 120L of general waste

3.3 For the proposed residential element (6 units), the total weekly arisings would be;

- 840L of mixed recycling
- 138L of food waste
- 720L of general waste

3.4 The ground floor layout for 88 Grays Inn Road (Appendix A) shows that bin provision for the residential element will be made adjacent to the residential entrance with a single bin for mixed recycling, another for general waste and a food waste bin.

3.5 For the proposed affordable workspace element at No.88 Grays Inn Road, the Camden Planning Guidance refers to the Council's Technical Guidance with regards commercial waste. Para 5.16 of the Technical Guidance sets out that "*Commercial waste arising's are calculated based on the industry type for each unit and planned assumptions for weekly waste production based on metres or sq. footage*." The Technical Guidance does not provide metrics for calculating commercial waste arisings.

3.6 In lieu of this, other sources of metrics for commercial waste arisings have been examined. BS 5906 'Waste Management in Buildings – Code of Practice (BSI, 2005) is 15 years old and 'national' and in the 15 years since the BS standards, offices tend to be more 'paper-free'. As such more recent and local standards have been researched. Westminster City Council's 'Recycling and Waste Storage Requirements' (2021) are up to date and specific to central London offices and hence are considered to better would reflect current office waste generation than BS 5906 standards

3.7 Based on the waste storage guidance published by Westminster City Council, office developments are forecast to require a weekly capacity for waste arisings of 2,000 litres per 1,000sqm (GFA).

3.8 On this basis the affordable workspace at No.88 Grays Inn Road (335sqm) could generate 678 litres of waste per week. In line with Westminster City Council guidance, it is proposed that 70% of commercial waste storage is provided for recyclable waste.

3.9 An office refuse store room is proposed at basement level at No.88 Grays Inn Road, as shown in Appendix A, which will accommodate waste from the affordable workspace element of the scheme by means of a single general waste and a recycling bin.

No.100 Grays Inn Road & 127 Clerkenwell Road

3.10 For the proposed office space at No.100 Grays Inn Road and No.127 Clerkenwell Road, the Westminster City Council office waste arising metric has again been used. Based on the proposed office provision of 8,497sqm across the combined development, the weekly waste arising would be just under 17,000 litres per week. Again, it is proposed that 70% of commercial waste storage is provided for recyclable waste.

3.11 For the proposed retail element at No.100 Grays Inn Road and No.127 Clerkenwell Road, the Westminster City Council guidance has again been used as Camden's Technical Guidance does not detail retail waste arising metrics. The Westminster guidance suggests retail generates 4,000 litres of waste per week per 1,000sqm.

3.12 Based on the proposed retail provision of 262sqm and the Westminster guidance, the weekly waste arising would be 1,048 litres per week. Again, it is proposed that 70% of commercial waste storage is provided for recyclable waste.

3.13 As shown in Appendix A, a service yard will be provided for No.100 Grays Inn Road and No.127 Clerkenwell Road which will accommodate 15 x recycling bins, 2 x general waste bins, 6 x food waste bins, 1 x WEE bin along with a compactor and baler. This level of provision will accommodate the combined arisings from the proposed office and retail elements of the scheme.

Waste Storage Location, Design & Construction

3.14 Proposed site layouts showing the location of bin stores are shown in Appendix A. It is noted that bin store areas are within the curtilage of the site with gated access from Grays Inn Road. As such, bin store areas will be secure.

3.15 Bin stores have been designed in accordance with industry standard guidelines, namely BS 5906:2005 Waste Management in Buildings – Code of Practice (BSI, 2005) and relevant London Borough of Camden guidance.

3.16 Access to bin stores will be via doors with ventilation as required.

3.17 Within bin store areas there will be no pipes or services, and as such rubber buffers will not be required. The walls of the bin store will be of metal finish, while the floor will be concrete with a smooth texture which are non-porous, resistant and easy to clean.

3.18 The floor of the bin store areas for No.100 Grays Inn Road and No.127 Clerkenwell Road will be provided with dedicated drain points for washing down.

3.19 As there will be a level difference between the floor of the bin store for No.100 Grays Inn Road and No.127 Clerkenwell Road and the service yard from where collection will take place, there will be a platform lift to accommodate the level difference.

3.20 The bin store areas will be brightly lit, in over-looked positions, close to areas of activity to help avoid fly-tipping and anti-social behaviour, although this is unlikely to be an issue as the bin store areas will be within the secure curtilage of the site.

3.21 Storage areas for refuse and recycling bins will be clearly identifiable through the use of appropriate signage on doors or walls. There will be separate signage for recycling and refuse for all bin storage areas. The signage will promote recycling, and outline what goes in each of the bins.

3.22 The bin stores will provide adequate space for bins to be suitably housed with the front (long) side of each bin being accessible by staff and will allow each bin to be moved independently.

4.0 WASTE COLLECTION ARRANGEMENTS

4.1 For No.88 Grays Inn Road, residential waste will be collected by the Council's residential waste contractor in line with current residential waste collections on Grays Inn Road.

4.2 Bins will be moved prior to collection to a location from where waste can be collected by Council contractor in line with the 10m maximum distance as set out in the Council's Planning Guidance.

4.3 This arrangement is considered acceptable and in line with Para 8.15 of the Council's Planning Guidance sets out that "*Kerbside collection is generally appropriate for single-family homes, smaller developments of flatted properties, small cul-de-sacs, flats above and below shops, and live-work properties*".

4.4 For the affordable workspace element of No.88 Grays Inn Road, sacked waste will be presented at the kerbside prior to collection by existing Council commercial waste collections. An arrangement will be entered in to with the Council to provide this service.

4.5 With regards waste collection for No.100 Grays Inn Road / 127 Clerkenwell Road, this will be collected via the on-site service yard accessed from Grays Inn Road and will be carried out by a private refuse contractor.

4.6 The service yard will feature an 8.0m diameter turntable which will allow the refuse vehicle (and other suitably sized service vehicles) to enter and leave the site in forward gears.

4.7 Under the contract with the private refuse contractor, building management can specify the size of vehicle used to collect refuse, such that it would be no bigger than the largest required vehicle that can access and egress the site's service yard.

4.8 Appendix B shows swept path analysis for a small refuse vehicle entering and exiting the site and taking up position on the turntable.

5.0 SUMMARY & CONCLUSIONS

5.1 Site management is committed to implementing a safe and effective Site Waste Management Plan which seek to minimise refuse service trips relating to the development and adheres to the requirements of the Borough's guidance.

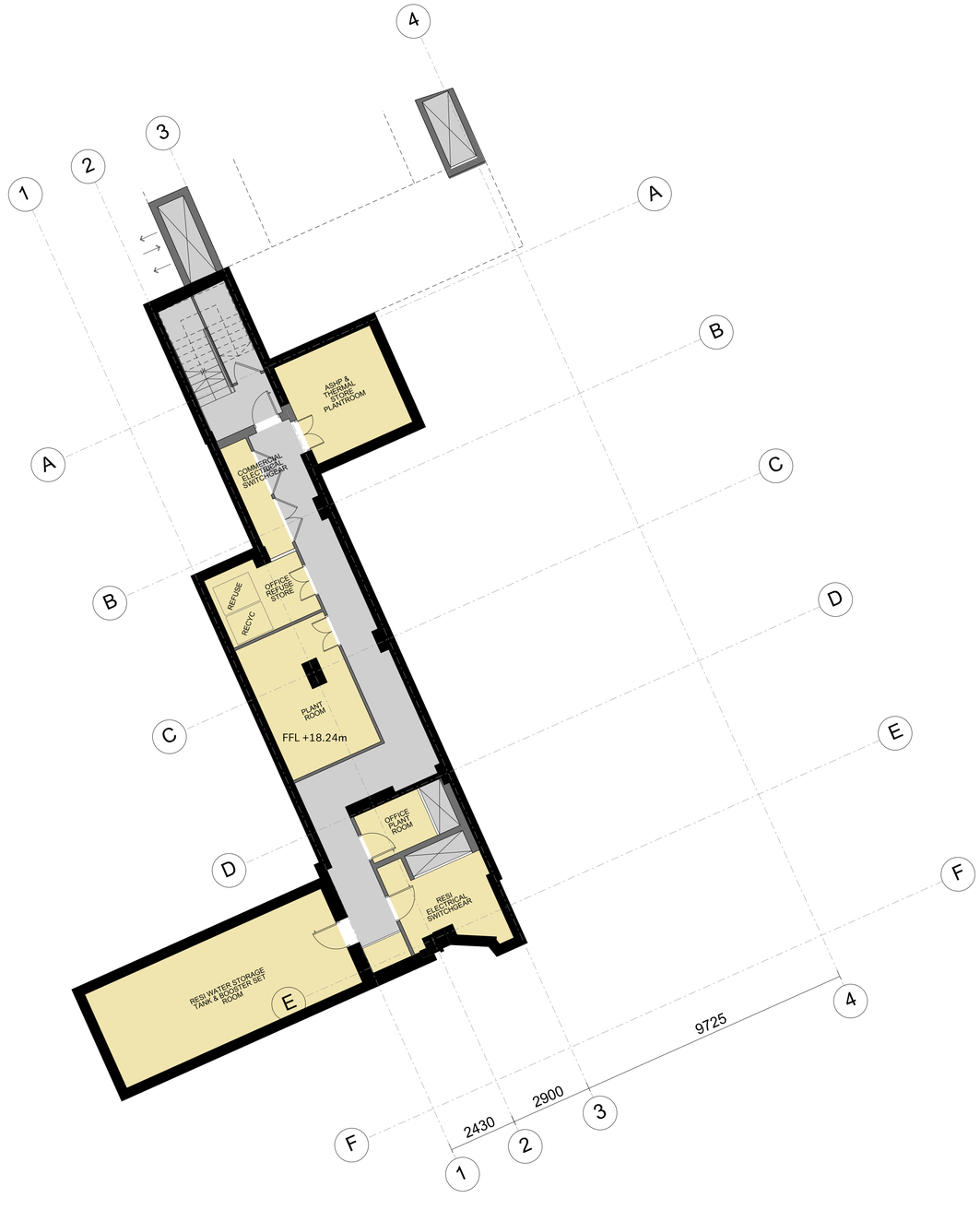
5.2 Bin stores will be located as shown in Appendix A.

5.3 The design and construction of bin stores will conform with industry standard and local design guidelines.

5.4 Swept path analysis demonstrates refuse collection vehicles can access and egress the service yard for No.100 Grays Inn Road / No.127 Clerkenwell Road.

5.5 Waste collection for No.88 Grays Inn Road will be carried out by Council residential / commercial waste contractors, with waste collection for No.100 Grays Inn Road / No.127 Clerkenwell Road being carried out by a private contractor under contract from the building management company.

Appendix A
Proposed Site Layouts



Notes

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0 1 5 10m

- Plant & Services
- Circulation
- Affordable Workspace
- Studio
- 1B2P [intermediate]
- 2B4P [intermediate]
- 1B2P [social / aff. housing]
- 2B3P/4P [social / aff. housing]
- 3B4P/5P [social / aff. housing]
- 4B [social / aff. housing]

Rev	Date	Description
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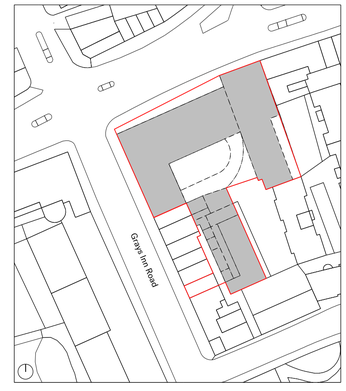
B	02.08.22	GA Issue
A	05.02.21	GA Issue

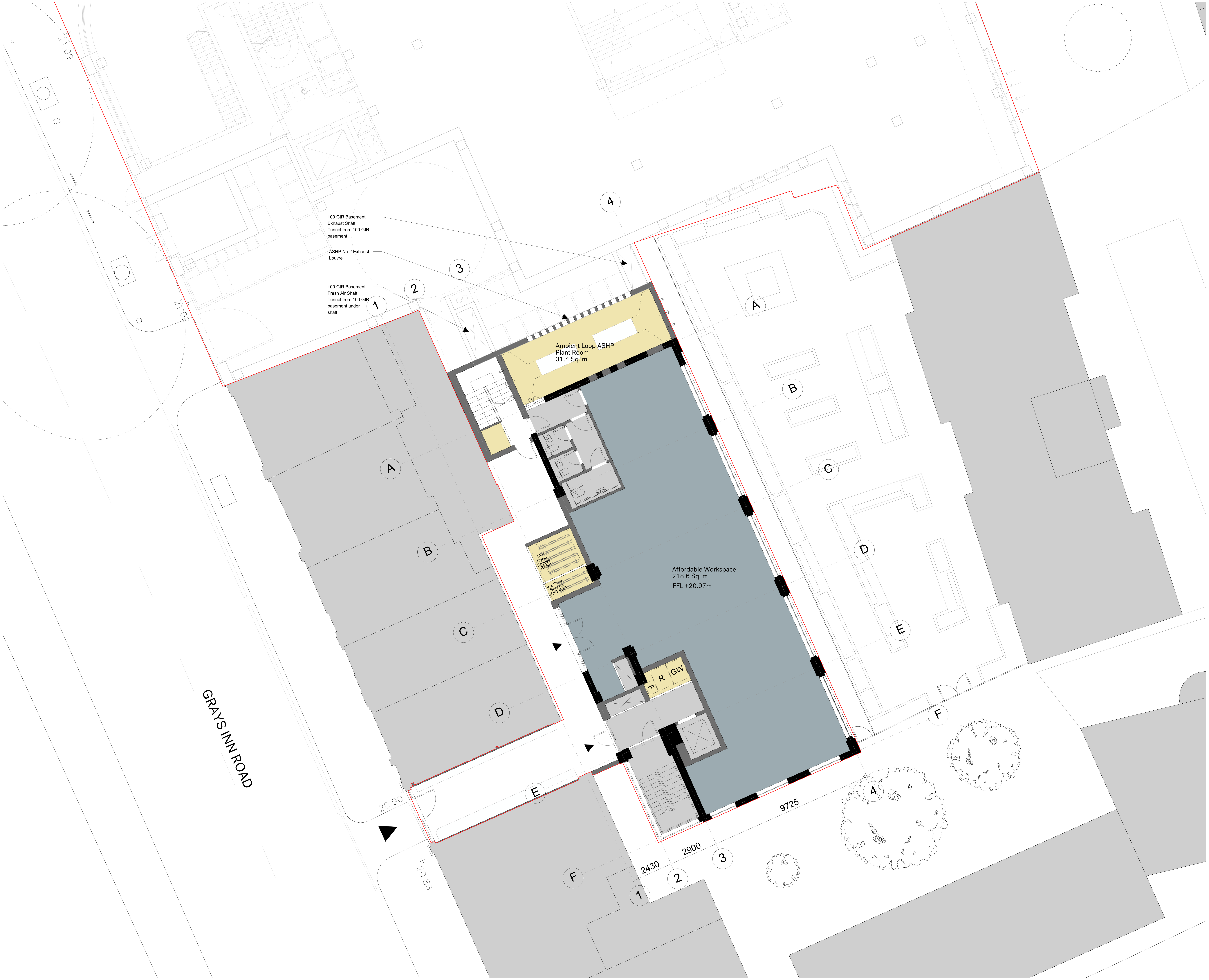


Project
100 & 88 Gray's Inn Road / 127 Clerkenwell Road
Client
Global Holdings Management Group UK
Date
17/08/2022
Scale
1:100 @ A1
Drawing Title
88 Grays Inn Road: Proposed Basement Floor Plan Apartment Option
Drawn KC
Checked YH
Approved DC
Drawing Status
For Information

Project	Disc	Zone	Level	Series	Drg No.	Rev.
13636	A	88	B01	00	099	C

122 Arlington Road
London NW1 7HP
Telephone
+44 (0)207429611
info@piercyandco.com
www.piercyandco.com

Piercy&Company



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0 1 5 10m

- Plant & Services
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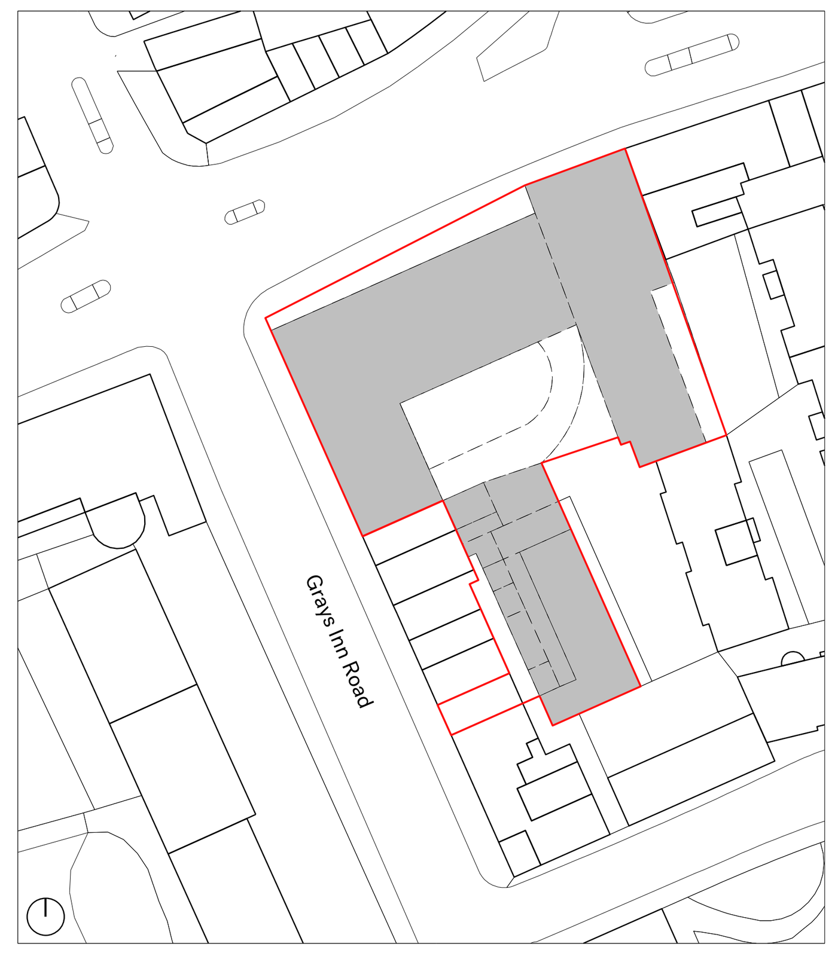
- 2B3P/4P [social / aff. housing]
- 3B4P/5P [social / aff. housing]
- 4B [social / aff. housing]

Rev	Date	Description
C	17.08.22	GA Issue
B	02.08.22	GA Issue
A	05.02.21	GA Issue



Project
100 & 88 Gray's Inn Road / 127 Clerkenwell Road

Client
Global Holdings Management Group UK

Date	Scale
17/08/ 2022	1:100 @ A1

Drawing Title
88 Grays Inn Road: Proposed Ground Floor Plan
Apartment Option

Drawn	Checked	Approved
KC	YH	DC

Drawing Status
For Information

Project	Disc	Zone	Level	Series	Drg No.	Rev.
13636	A	88	L00	00	100	C

122 Arlington Road
London NW1 7HP

Telephone
+44 (0)207429611

info@piercyandco.com
www.piercyandco.com

Piercy&Company

SEC AA

CLERKENWELL ROAD

1 2 3 4 5 6 7

8450 9000 9000 9000 9000 6000

100-04-200

21.14 +

21.16 +

21.19 +

21.18 +

21.09 +

21.12 +

RECEPTION DESKS / PASS GATES / FURNITURE TO BE STUDIED

A B C D E

6461 6461 7071

GRAYS INN ROAD

SEC BB

100-04-203

E1 Retail
104.2 Sq. m /
1,121.2 Sq. '

Class E
568.9 Sq. m /
6,123.9 Sq. '

Reception
+21.17m AOD

E1 Retail
39.4 Sq. m /
424.0 Sq. '

UKPN
Substation
(Double)

R14 R1 R12 R9 R6A LOBBY

GOODS LIFT / EVAC LIFT 2,000KG.

GEN. EXH

CAM UNIT CLIPD ZONE 2

UKPN
Substation
(Single)

RECYCLE WASTE FOOD WASTE ADDI WASTE PAPER WASTE WEEE COMPACTOR

8000
Turntable

Loading bay area

Refuse store

BALER

FRESH AIR INTAKE IS ABOVE IS ABOVE BIN STORE

R2 R10 R13

FIREFIGHTING STAIR

PASSENGER LIFT (24P.)

PASSENGER LIFT/SVAC LIFT (21P.)

PASSENGER LIFT/FIRE LIFT (21P.)

FIREFIGHTING LOBBY

R6A R11 R8 R3

CAM UNIT CLIPD ZONE 5

DWC CC

AHU PLANT ROOM 22.2 Sq. m

B-B
100-05-301

LOBBY VENTILATION RISER FROM BELOW

EXHAUST LOUVRE AT HIGH LEVEL

100-04-201

FRESH AIR LOUVRE AT HIGH LEVEL

FRESH AIR DUCT IN BULKHEAD

A-A
100-05-300

100-04-202

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NOTE: STAIRS TO BE CHECKED FOR NEW FTF HEIGHTS

0 1 5 10m

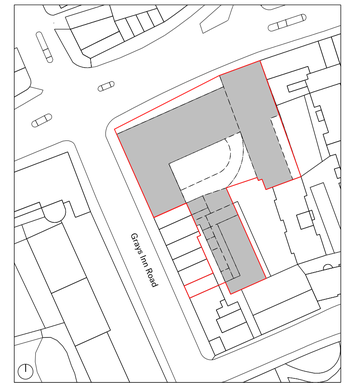
RISER LEGEND

R1 - H&C RISER SIDE A (3m2)
R2 - H&C RISER SIDE B (3m2) & CAM UNIT ZONE 5 COMBINED
R5 - STAIR PRESSURISATION (COLT SAFT) (1.5m2)
R6 - SPRINKLER / DRY RISER STAIR 2 (1.5m2)
R9 - TENANT A TELECOMS RISER (1m2)
R10 - TENANT B TELECOMS RISER (1m2)
R11 - LANDLORD ELECTRICAL RISER (3m2)
R12 - TENANT A ELECTRICAL RISER (1m2)
R13 - TENANT B ELECTRICAL RISER (1m2)
R14 - KITCHEN EXTRACT RISER TO ROOF (2m2)
R18 - LANDLORD eLV RISER (1m2)
RGE - RISER FOR GENERATOR EXHAUST

USES LEGEND

B1 OFFICE USE
RECEPTION / LOBBY
CLASS E
RETAIL
PLANT & ANCILLARY AREAS
CIRCULATION
EXTERNAL AMENITY

Rev	Date	Description
H	17.08.22	GA Issue
G	07.05.22	GA Issue
F	07.04.22	GA Issue
E	24.11.21	GA Issue
D	28.05.21	GA Issue
C	05.02.21	GA Issue
B	28.09.20	GA Issue
A	24.07.20	GA Issue



Project
100 & 88 Gray's Inn Road / 127 Clerkenwell Road

Client
Global Holdings Management Group UK

Date 17.08.2022

Scale 1:100 @ A1

Drawing Title
Proposed Ground Floor Plan

Drawn	Checked	Approved
KC	YH	DC

Drawing Status
For Information

Project	Disc	Zone	Level	Series	Drg No.	Rev.
13636	A	100	L00	00	100	H

122 Arlington Road
London NW1 7HP

Telephone
+44 (0)207429611

info@piercyandco.com
www.piercyandco.com

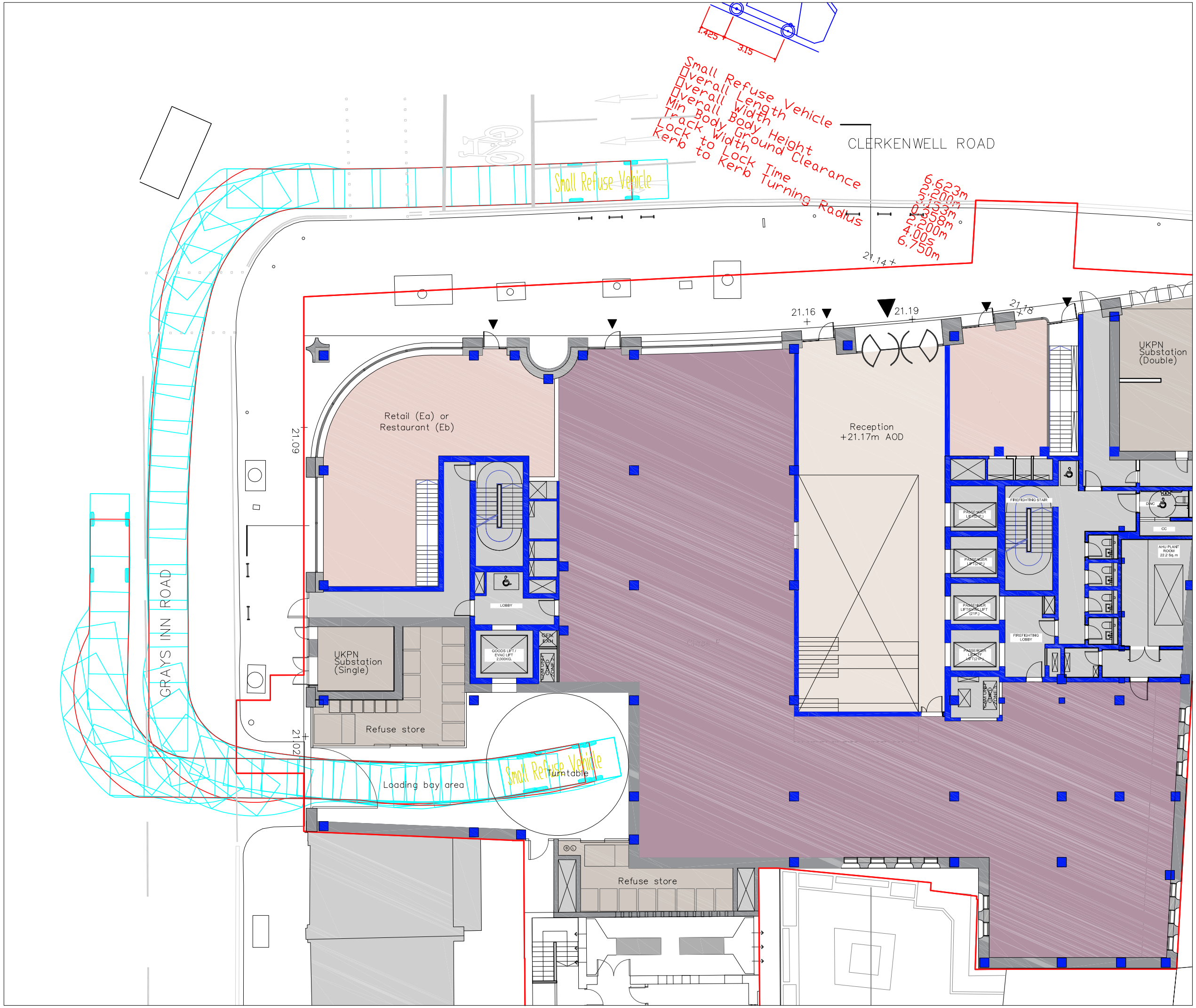
Piercy&Company

Appendix B
Swept Path Analysis

PAUL MEW ASSOCIATES
TRAFFIC CONSULTANTS
Plym House, 21 Enterprise Way, London SW18 1FZ
Tel: 0208 780 0426 Web: pma-traffic.co.uk

P2761 No.88 & No.100 Grays Inn Road / No. 127 Clerkenwell Road London

Swept Path Analysis
Small Refuse Vehicle Accessing & Egressing Service Yard & Turntable



Date: 28/09/22
Scale: 1/200@A3
Source: Piercy & Co

P2761 Grays Inn Road

Proposed Development	No.88	No.100 & 127
Affordable Housing (1 bed 2 person units)	2	
Affordable Housing (2 bed 4 person units)	2	
Affordable Housing (3 bed 4/5 person units)	2	
Total Residential	6	
Affordable Workspace (GIA sqm)	335	
Office (sqm)		8497
Retail (sqm)		262

Waste Arisings (Litres per Week)

No.88 (Litres per Week)	Mixed Recycling (L)	Food Waste (L)	General Waste (L)	Total (L)
Residential (per dwelling)	140	23	120	283
Residential (Proposed Development)	840	138	720	1698
Affordable Workspace (per 1000 sqm)	1400		600	2000
Affordable Workspace (Proposed Development)	469		201	670

No.100 / No.127 (Litres per Week)	Mixed Recycling (L)	Food Waste (L)	General Waste (L)	Total (L)
Office (per 1000 sqm)	1400		600	2000
Office (Proposed Development)	11896		5098	16994
Retail (per 1000sqm)	2800		1200	4000
Retail (proposed development)	734		314	1048

Total Development (Litres per Week)	Mixed Recycling (L)	Food Waste (L)	General Waste (L)	Total (L)
No.88 (litres)	1309	138	921	2368
No.100 / No.127 (litres)	12629		5413	18042
Total Development (litres)	13938	138	6334	20410

Waste Arisings (Cubic Meters per Week)	Mixed Recycling (m3)	Food Waste (m3)	General Waste (m3)	Total (m3)
No.88 (cubic meters)	1.3	0.1	0.9	2.4
No.100 / No.127 (cubic meters)	12.6		5.4	18.0
Total Development (cubic meters)	13.9	0.1	6.3	20.4

Waste Arisings (Annual Cubic Meters)	Mixed Recycling (m3)	Food Waste (m3)	General Waste (m3)	Total (m3)
No.88 (cubic meters)	68.1	7.2	47.9	123.1
No.100 / No.127 (cubic meters)	656.7		281.5	938.2
Total Development (cubic meters)	724.8	7.2	329.3	1061.3

Waste Arisings (Annual Tonnes) *				Total (tonnes)
No.88 (tonnes)				33.2
No.100 / No.127 (tonnes)				253.3
Total Development (tonnes)				286.6

* Weight Conversion based on 1 cubic meter of houshold waste weighing 0.27 tonnes

Appendix K: GLA Circular Economy Spreadsheet Output

GREATERLONDONAUTHORITY

Detailed Application Stage - Circular Economy Statement

Project details	
Project name	88 Grays Inn Road
Planning application reference number (if applicable)	
Applicant	Lawnmist Limited
London Borough	Camden
Brief description of the project	The proposal is for part-demolition, refurbishment and extension of a 3 storey building (88 Gray's Inn Road).
Author/s	Max Fordham
Date of assessment	28.09.2022
Number of Use Types	2
Use Class / Type	**Floor Area by use type (m2)**
Class C3	*823*
Class E	*326*
Overall GIA (m2)	1149.00

Circular Economy Design Approaches

Circular Economy Design Approaches for Existing Structures / Buildings		Applicant Response
Is there an existing building on the site?		Yes
Is it technically feasible to retain the building(s) in whole or in part?		Yes
Is the existing building, or parts of the building, suited to the requirements for the site?		Yes, in part
The preferred strategy is:		**PARTIAL RETENTION and REFURBISHMENT**
Circular Economy Design Approach	**Phase/Building/Area/Layer**	**Strategic Response**
Refurbish	Building	The design team have determined that it is technically feasible to retain the existing building. The top floor of the structure is to be removed, due to structural issues, and replaced with a new lightweight structure consisting of a steel frame with a traditional joisted roof structure. The building's shape and size are suited to adapt for use as housing and part of the ground floor as office space.
Repurpose		
Disassemble / Deconstruct and Reuse		
Demolish / Deconstruct and Recycle		
Circular Economy Design Approaches for New Buildings, Infrastructure		**Applicant Response**
Is the whole building designed to have a short life on its current site? (e.g. less than 10 yrs)		No
Is it foreseeable that the building will need to change use/function within its design life?		No
All developments should apply the 6 Circular Economy principles, including:		**Designing for DISASSEMBLY and ADAPTABILITY, MATERIAL REUSE ON-SITE and/or RECYCLING should be maximised**
Circular Economy Design Approach	**Phase/Building/Area/Layer**	**Strategic Response**
Building relocation		
Component or material reuse		
Adaptability		The proposed ambient loop heating strategy allows the owner to retrofit low grade cooling to adapt to future increasing temperature
Flexibility		Existing open floor plates and ceiling height has resulted in large apartments, bigger than the london space standards. This offers greater flexibility for the residents.
Replaceability		The main plant room is in the ground floor providing clear access for maintenance and replacements. Water source heat pumps in the apartments will have to be accessed by the council/management firms whilst the tenants are present.
Disassembly		
Longevity		By retrofitting the existing building, it's operational life is further increased by 60+ years, rather than demolition.

Circular Economy Design Principles by Building Layer

The Circular Economy Commitments table should consider where the Applicant seeks to go beyond standard practice. If there are multiple phases / buildings / areas with different measures / strategies, please specify these separately within the table below.

		Building Layer: Site	Substructure	Superstructure	Shell/Skin	Services	Space	Stuff	Construction Stuff	Summary	Challenges	Actions & Counter-Actions, Who and When	Plan to Prove and Quantify
Is it likely the layer (or components within it) will need to be moved or otherwise modified within 5-15 years, e.g. due to changing use patterns or user requirements		N/A							N/A				
Is it likely the layer (or components within it) will need to be changed, upgraded or replaced within 5-15 years, e.g. for improved performance, aesthetics		N/A							N/A				
The preferred strategy is:		-							-				
Design Principles		**All developments should apply the 6 circular economy principles, including designing for DISASSEMBLY and ADAPTABILITY, MATERIAL REUSE ON-SITE and/or RECYCLING should be maximised.**											
Designing out waste	Module A - Product Sourcing and Construction Stage		The replacement of the existing top floor with a lightweight replacement, and the reduced loading from the change of use from office to residential, mean that by inspection the existing foundations within the main building for 88GIR are suitable and require no further investigation or strengthening.	The existing top floor structure is to be removed and replaced with a new lightweight structure consisting of a steel frame with a traditional joisted roof structure. Column lines will be centred over lines of existing structure below. Stability will be provided by a series of braced bays.	The existing 88 GIR building and existing windows have been retained with the modification to four inset balconies placed on the north eastern (courtyard facing elevation). Balconies allow generous glazing areas and openable façade area to promote natural ventilation to dwellings.	A plate heat exchanger shall also be provided to allow the LTHW system of 100 GIR to connect to the ambient loop system in 88 GIR. This would allow a greater proportion of heat recovery from the 100 GIR chilled water system to be used by the multi-function heat pumps improve annual efficiency. The addition of the 100 GIR connection also adds an additional level of resilience for 88 GIR.							
	Module B - In-Use Stage												
	Module C - End-of-Life Stage												
	Module D - Benefits and Loads Beyond the System Boundary												
Designing for longevity													
Designing for adaptability or flexibility						At basement level plantroom a safeguarded incoming point of connection shall be identified to enable future connection to the site in from Clerkenwell Road. No active cooling has been proposed, however the option to retrofit is available within the current system if the requirement arises in the future.	All apartments are oversized with respect to London Plan Guidelines. This is both a consequence of negotiating an existing building layout but also a bid to provide the highest quality and generously sized affordable apartment						
Designing for disassembly													
Using systems, elements or materials that can be re-used and recycled													

Bill of Materials

Please click the + symbol to the left hand side of the Bill of Materials table to view or hide the input rows for each Building Element Category. The rows for substructure and frame have been unhidden to highlight this.

BUILDING ELEMENT CATEGORY - LEVEL 1 (based on the RICS New Rules of Measurement (NRM) classification system level 2 sub-elements https://www.rics.org/globalassets/rics-website/media/products/data-products/bcis-construction/bcis-elemental-standard-form-cost-analysis-4th-nrm-edition 2012.pdf)

PRODUCT AND CONSTRUCTION STAGE (MODULE A)

	Building Element Category	Material Type	Material quantity (Module A) (kg)	Material intensity (Module A) (kg/m² GIA)	Performance Indicator (LPG Appendix 1)	Construction Waste Factor (Module A)	Construction Waste (Module A) (kg)	Recycled Content by mass (kg)	Recycled Content by value (%)
0.1	Demolition: Toxic/Hazardous/Contaminated Material Treatment	-	0	0	-	-	0	-	-
0.2	Major Demolition Works	-	0	0	-	-	0	-	-
0.3	Temporary Support to Adjacent Structures	-	0	0	-	-	0	-	-
0.4	Specialist Ground Works	-	0	0	-	-	0	-	-
1	Substructure	-	0	0		-	0	-	-
2.1	Superstructure: Frame	-	7,201	6	Building Element Category 2.1, 1st Quartile	-	231	-	-
2.2	Superstructure: Upper Floors	-	0	0		-	0	-	-
2.3	Superstructure: Roof	-	31,210	27	Building Element Category 2.3, 2nd Quartile	-	3,830	-	-
2.4	Superstructure: Stairs and Ramps	-	0	0	-	-	0	-	-
2.5	Superstructure: External Walls	-	78,364	68	Building Element Category 2.5 & 2.6, 2nd Quartile	-	6,394	-	-
2.6	Superstructure: Windows and External Doors	-	4,800	4	Building Element Category 2.5 & 2.6, 2nd Quartile	-	0	-	-
2.7	Superstructure: Internal Walls and Partitions	-	11,219	10	Building Element Category 2.7 & 2.8, 1st Quartile	-	1,058	-	-
2.8	Superstructure: Internal Doors	-	1,360	1	Building Element Category 2.7 & 2.8, 1st Quartile	-	0	-	-
3	Finishes	-	69,362	60	-	-	7,731	-	-
4	Fittings, furnishings & equipment (FFE)	-	0	0	-	-	0	-	-
5	Services (MEP)	-	17,298	15	-	-	398	-	-
6	Prefabricated Buildings and Building Units	-	0	0	-	-	0	-	-
7	Work to Existing Building	-	0	0	-	-	0	-	-
8	External works	-	51,924	45	-	-	1,004	-	-
	Overall		272,738	237			20,646		

USE STAGE (MODULE B)

	Building Element Category	Expected Lifespan (years)	Number of Replacements (over assumed 60-year period)	Repair and Replacement quantities of materials (Module B) (kg)	Construction Waste Factor (Module B)	Construction Waste (Module B) (kg)
0.1	Demolition: Toxic/Hazardous/Contaminated Material Treatment	-	-	0	-	0
0.2	Major Demolition Works	-	-	0	-	0
0.3	Temporary Support to Adjacent Structures	-	-	0	-	0
0.4	Specialist Ground Works	-	-	0	-	0
1	Substructure	-	-	0	-	0
2.1	Superstructure: Frame	-	-	0	-	2
2.2	Superstructure: Upper Floors	-	-	0	-	0
2.3	Superstructure: Roof	-	-	1	-	22
2.4	Superstructure: Stairs and Ramps	-	-	0	-	0
2.5	Superstructure: External Walls	-	-	1	-	28
2.6	Superstructure: Windows and External Doors	-	-	0	-	0
2.7	Superstructure: Internal Walls and Partitions	-	-	0	-	0
2.8	Superstructure: Internal Doors	-	-	0	-	0
3	Finishes	-	-	6	-	22
4	Fittings, furnishings & equipment (FFE)	-	-	0	-	0
5	Services (MEP)	-	-	1	-	16
6	Prefabricated Buildings and Building Units	-	-	0	-	0
7	Work to Existing Building	-	-	0	-	0
8	External works	-	-	0	-	6
	Overall			9		191

END OF LIFE STAGE (MODULE C) / BENEFITS BEYOND THE SYSTEM BOUNDARY (MODULE D)

	Building Element Category	Design for Disassembly	Assumed End of Life Scenario (Description)	% Reusing	% Recycling	% Landfill	Estimated reusable materials (kg)	Estimated reusable materials intensity (kg/m² GIA)	Estimated recyclable materials (kg)	Estimated recyclable materials intensity (kg/m² GIA)
0.1	Demolition: Toxic/Hazardous/Contaminated Material Treatment	-	-	0%	0%	100%	0	0	0	0
0.2	Major Demolition Works	-	-	0%	0%	100%	0	0	0	0
0.3	Temporary Support to Adjacent Structures	-	-	0%	0%	100%	0	0	0	0
0.4	Specialist Ground Works	-	-	0%	0%	100%	0	0	0	0
1	Substructure	-	-	0%	0%	100%	0	0	0	0
2.1	Superstructure: Frame	-	-	0%	100%	0%	0	0	7,201	6
2.2	Superstructure: Upper Floors	-	-	0%	0%	100%	0	0	0	0
2.3	Superstructure: Roof	-	-	0%	88%	12%	0	0	27,371	24
2.4	Superstructure: Stairs and Ramps	-	-	0%	0%	100%	0	0	0	0
2.5	Superstructure: External Walls	-	-	0%	100%	0%	0	0	78,365	68
2.6	Superstructure: Windows and External Doors	-	-	0%	100%	0%	0	0	4,800	4
2.7	Superstructure: Internal Walls and Partitions	-	-	0%	83%	17%	0	0	9,357	8
2.8	Superstructure: Internal Doors	-	-	0%	100%	0%	0	0	1,360	1
3	Finishes	-	-	0%	63%	37%	0	0	43,468	38
4	Fittings, furnishings & equipment (FFE)	-	-	0%	0%	100%	0	0	0	0
5	Services (MEP)	-	-	0%	98%	2%	0	0	17,000	15
6	Prefabricated Buildings and Building Units	-	-	0%	0%	100%	0	0	0	0
7	Work to Existing Building	-	-	0%	0%	100%	0	0	0	0
8	External works	-	-	0%	39%	61%	0	0	20,214	18
	Overall			0%	77%	23%	0	0	418,271	364

Recycling and Waste Reporting table

The light green-coloured cells should be completed to achieve 'pioneering' status.

	Type of Waste	Source of Information	TOTAL ESTIMATES OF WASTE: Overall Waste (tonnes)	Overall Waste (tonnes/m² GIA)	Performance Indicator (LPG Appendix 1)	WASTE MANAGEMENT ROUTES – REUSE: Reuse Onsite (%)	Reuse Offsite (%)	RECYCLE: Recycle Onsite(%)	Recycle Offsite (%)	OTHER DISPOSAL: To Landfill (%)	To Other Management (%)	SUMMARY: Total Reuse (%)	Total Recycle (%)	Total Reuse and Recycle (%)	Total Waste Reported (%)
			PRODUCT AND CONSTRUCTION STAGE (MODULE A)												
1	Demolition Waste	Predemolition audit	70	0.061	1st Quartile				95%		5%	0%	95%	95%	100%
2	Excavation Waste	N/A	0	0.000								0%	0%	0%	0%
3	Construction Waste	As per GLA CE guidance, lower quartile benchmark, based on industry data	75	0.065	1st Quartile				95%		5%	0%	95%	95%	100%
			USE STAGE (MODULE B)												
3	Demolition / Strip-out Waste		0	0.000	-							0%	0%	0%	0%
4	Construction Waste		0	0.000	-							0%	0%	0%	0%
			Overall Waste (tonnes/annum)	Overall Waste (tonnes/annum /m²)	Performance Indicator (LPG Appendix 1)	Reuse Onsite (%)	Reuse Offsite (%)	Recycle Offsite(%)	Recycle Offsite (%)	To Landfill (%)	To Other Management (%)	Total Reuse (%)	Total Recycle (%)	Total Reuse and Recycle (%)	Total Waste Reported (%)
5	Municipal Waste	As calculated for the Operational Waste Management Plan	33	0.029	2nd Quartile				65%		35%	0%	65%	65%	100%
6	Industrial Waste (if applicable)			-	-							0%	0%	0%	0%
			MODULE A - MODULE C												
			Overall Materials (tonnes)	Overall Materials (Modules A-C) (tonnes /m²)	-	Reuse Onsite (%)	Reuse Offsite (%)	Recycle Offsite(%)	Recycle Offsite (%)	To Landfill (%)	To Other Management (%)	Total Reuse (%)	Total Recycle (%)	Total Reuse and Recycle (%)	Total Waste Reported (%)
7	Total Materials		0	0.000	-							0%	0%	0%	0%

Circular Economy Targets

Circular economy targets for existing and new development	Policy Requirement	Target Aiming For (%)	Policy Met?	Explanation (How will performance against this metric be secured through design, implementation and monitoring?)
Demolition waste materials (non-hazardous)	Minimum of 95% diverted from landfill for reuse, recycling or recovery.	95%	Yes	A detailed review of predemolition audit report's recommendations, alongside consultation with demolition contractors will be undertaken post-planning as part of the procurement process. The aim of the scheme is to divert 100% of demolition waste from landfill. The main contractor on appointment will be responsible for developing a Site Waste Management Plan (SWMP) and use the process to monitor the waste disposal management process.
Excavation waste materials	Minimum of 95% diverted from landfill for beneficial reuse.			Not applicable
Construction waste materials	Minimum of 95% diverted from landfill for reuse, recycling or recovery.	95%	Yes	On appointment of the contractor, a Site Waste Management Plan (SWMP) will be prepared for the Site. Its intent is to achieve high environmental performance, comply with standards and reduce costs of waste disposal. Key waste quantities were estimated at design stage based on information provided by the design team and industry benchmarks. As part of the contractor's commitment to divert construction waste from landfill, they will be required to regularly monitor and record the site's waste reduction performance. The aim is to divert 95% of waste from landfill (excluding hazardous waste). This figure will therefore be set as a target for the site. All waste disposal will be in accordance with the requirements of the Environmental Act 1995, Special Waste Regulations 1996, Duty of Care Regulations 2003, Control of Pollution Act 1974 (COPA) and the Environmental Agency.
Municipal waste	Minimum 65% recycling rate by 2030.	65%	Yes	The ground floor layout for 88 Grays Inn Road (Appendix A) shows that bin provision for the residential element will be made adjacent to the residential entrance with a single bin for mixed recycling, another for general waste and a food waste bin. An office refuse store room is proposed at basement level at No.88 Grays Inn Road, which will accommodate waste from the affordable workspace element of the scheme by means of a single general waste and a recycling bin.
Recycled content	Minimum 20% of the building material elements to be comprised of recycled or reused content.	20%	Yes	At this RIBA stage, a detailed Bill of Materials is not yet available and will instead be provided in time for the Post Construction Circular Economy Statement. A draft bill of materials has been provided. In accordance with GLA guidance, the Bill of Materials will include kg/m2 for the proposed new development and will commit to target a benchmark of 20% reused or recycled content by value., where feasible
Additional requirements	**Policy Requirement**	**Please acknowledge acceptance for a planning condition**		**Please set out an indicative timescale and responsible party for the provision of this information**
Post-Construction Report	A CE Statement is required at post-construction (i.e. upon commencement of RIBA Stage 6 and prior to the building being handed over, if applicable. Generally, it would be expected that the assessment would be received no more than three months post-construction)	It is accepted that the Post Construction Reporting will be conditioned		Main contractor, on project completion TBC

GREATER**LONDON**AUTHORITY

Detailed Application Stage - Circular Economy Statement

Project details	
Project name	100 Grays Inn Road
Planning application reference number (if applicable)	
Applicant	Lawnmist Limited
London Borough	Camden
Brief description of the project	The proposal involves the demolition (basement retained) of the existing 8 storey + 7 storey buildings (100 Gray's Inn Road and 127 Clerkenwell Road, respectively) and the erection of a 9 storey engineered timber framed building, with CLT floors, to provide office and retail floorspace; roof-level amenity spaces; refuse and recycling storage facilities; cycle parking; servicing, plant and back of house areas; landscaping; highway improvements and other associated works.
Author/s	Max Fordham
Date of assessment	28.09.2022
Number of Use Types	
Use Class / Type	**Floor Area by use type (m2)**
Class E	*12747*
Overall GIA (m2)	12747.00

Circular Economy Design Approaches

Circular Economy Design Approaches for Existing Structures / Buildings		**Applicant Response**
Is there an existing building on the site?		Yes
Is it technically feasible to retain the building(s) in whole or in part?		No
Is it technically feasible to recover the 'residual value' of the buildings elements or materials?		No
The preferred strategy is:		**NEW BUILDING**
The preferred strategy is:		**DEMOLISH/DECONSTRUCT AND RECYCLE**
Circular Economy Design Approach	**Phase/Building/Area/Layer**	**Strategic Response**
Refurbish		
Repurpose		
Disassemble / Deconstruct and Reuse		The existing foundations and basements are being reused. Other items identified for reuse will be reaccommodated in hard landscaping and reuse internally, where condition of the materials allow to do so. Before strip-out, organisations will be engaged to takeaway items for reuse with the local community or elsewhere. Any items, that can be reused during the course of construction will be reused to support welfare facilities.
Demolish / Deconstruct and Recycle		An extensive pre-development optioneering 100 Grays Inn Road and 127 Clerkenwell Road was carried out to ascertain the technical feasibility to meet: BCO standards, high-quality work space, net zero carbon ambitions alongside commercial viability. The pre-redevelopment optioneering was developed with input from Camden Council, in terms of the development needs in the area, limitations and the Council's sustainability aspirations to retain as supposed to demolition. See appendix X. In addition, a whole life carbon assessment study of three development scenarios: refurbishment, refurbishment+extension, new build, showed that a low-carbon new build CLT structure resulted in the lowest lifecycle carbon over longer term. The refurbishment options resulted in higher WLC emissions than one might assume due to the significant structural work required. The new build option was subsequently selected as it has several clear advantages compared to the refurbishment option, leading to the provision of high-quality space that will be well-utilised over its lifetime. This was peer-reviwed and consulted in detail with the Camden Council to arrive at the decision for demolition. All main demolition materials will be recovered and follow appropriate recycling pathways with the aim of zero landfill; internal office fit-out elements identified for reuse by the pre-demolition audit will be reviewed on item by item basis for recovery - which will form part of the contractor's obligations.
Circular Economy Design Approaches for New Buildings, Infrastructure		**Applicant Response**
Is the whole building designed to have a short life on its current site? (e.g. less than 10 yrs)		No
Is it foreseeable that the building will need to change use/function within its design life?		No
All developments should apply the 6 Circular Economy principles, including:		**Designing for DISASSEMBLY and ADAPTABILITY, MATERIAL REUSE ON-SITE and/or RECYCLING should be maximised**
Circular Economy Design Approach	**Phase/Building/Area/Layer**	**Strategic Response**
Building relocation		The building has been designed with a long lifespan; therefore, 'design for relocation' are not relevant to this project.
Component or material reuse		As a long term asset owner, the applicant will facilitate reuse of internal elements by tenants. A tenant fit-out guide for NABERS, embodied carbon and Circular economy has been developed with clear performance targets for embodied carbon, material specification to enable reuse, recycled content and reduce waste. This will form part of a Green Lease agreement.
Adaptability		Internal height of 2.8m from finished floor to ceiling and 9x6.5m grid allows greater internal adaptability required
Flexibility		Head line summary - based on input from Ed
Replaceability		Head line summary - based on input from Ed
Disassembly		Structure: CLT and glulam frame construction, with connection details designed for disassembly. Façade: Pre-cast panels supported at individual floor level, allowing deconstruction of individual panels, with factory mounted windows; size aligned with standard grid size of 9m, allowing reuse in future
Longevity		Design life for the building is for a longer life span, 50+ years;

Circular Economy Design Principles by Building Layer

The Circular Economy Commitments table should consider where the Applicant seeks to go beyond standard practice. If there are multiple phases / buildings / areas with different measures / strategies, please specify these separately within the table below.

		Building Layer: Site	Substructure	Superstructure	Shell/Skin	Services	Space	Stuff	Construction Stuff	Summary	Challenges	Actions & Counter-Actions, Who and When	Plan to Prove and Quantify
Is it likely the layer (or components within it) will need to be moved or otherwise modified within 5-15 years, e.g. due to changing use patterns or user requireme		N/A	No	No	No	Yes		Yes	N/A				
Is it likely the layer (or components within it) will need to be changed, upgraded or replaced within 5-15 years, e.g. for improved performance, aesthetics		N/A	No	No	No	Yes		Yes	N/A				
The preferred strategy is:		-	Design for ADAPTABILITY	Design for ADAPTABILITY	Design for ADAPTABILITY	Design for FLEXIBILITY		Design for FLEXIBILITY	-				
Design Principles		**All developments should apply the 6 circular economy principles, including designing for DISASSEMBLY and ADAPTABILITY, MATERIAL REUSE ON-SITE and/or RECYCLING should be maximised.**											
Designing out waste	Module A - Product Sourcing and Construction Stage	Whole life carbon assessment has been carried out to inform the material and design choices. The proposed development will be built using low carbon structural solution - engineered timber and CLT. The targeted construction waste for the proposed development is <9.3 t/100 m2. This reflects the client and design team's aspirations in promoting the principles of a circular economy.	Reduced foundation requirements compared to traditional construction methods due to lightweight construction GGBS contents of 50% and 70% will be specified for the super- and sub-structure RC respectively. Reuse of existing basement and retaining wall substructure.	Reduced foundation requirements compared to traditional construction methods due to lightweight construction.	Facade options compared pre-cast vs UHPC panels - the current design proposes pre-cast solution which will be reviewed in detail at subsequent stages. 9m wide panel sizes minimising the amount of dead load brackets. Panels supported on timber columns avoiding loading the CLT slabs and expensive primary structure design solutions. Upper floor extension is of lighter aluminimum curtain wall construction, triple glazed to meet the thermal performance requirements.	The MEP strategy is heat pump led by each floor as supposed to a centralised system providing better control to the floor energy demands. This also mean that floor can be more easily shut down without impact other occupied levels The above combined with efficient building fabric will result in lower whole life carbon over life time in comparison to typical office developments.							
	Module B - In Use Stage					Designed to meet NABERS 5-5.5 stars in opeation. Tenants are provided with a greater control of their on floor HVAC plant. Rather than a service charge rate, the on floor AHU desin and heat energy metering allow the tenant to monitor their own HVAC use and target operation energy reductions. Demand led controls and occupancy sensor shall control HVAC plant to their optimum design requirement.	Tenant will be required to sign a green lease with commitments to meet energy efficiency, embodied carbon, material reuse and waste targets.						
	Module C - End-of-Life Stage						A tenant fit-out guide for NABERS, embodied carbon and Circular economy has been developed with clear performance targets for embodied carbon, material specification to enable reuse, recycled content and reduce waste. This will form part of a Green Lease agreement.						
	Module D - Benefits and Loads Beyond the System Boundary												
Designing for longevity													
Designing for adaptability or flexibility				Designed with 'kit of parts' approach offering flexible and adaptable floor plates. For example, internal CLT planks can be removed to create double storey internal volumes to suit tenant needs, higher ceiling height and 9x6.5m grid to allow internal separation as required		Mixed mode ventilation i.e .provision of openable windows providing flexibility of use by occupants CAM units are located at the core and provide conditioned air to floor raised access floor void to provide a displacement ventilation system. Raised access floor tiles vents can be more easily adapted to re arranged floor plates without having to move M&E equipment such as ceiling fan coil units. Inclusion of a sprinkler systems to safeguard & futureproof against fire regulations changes and material change of use On floor AHU are floor standing and side access is provided to maintainable component such as fans, filters and coils in situ. CAM units are located in dedicated cupboards access directly from the office floor plate like a riser. This provided full front access to all maintainable components.							
Designing for disassembly				Cross-laminated timber will be used throughout to erect the internal structure. All beams and columns have been designed with pinned connections to allow for simple connection detailing throughout. These will typically comprise embedded steel fin plates with dowelled connectors that are plugged to provide fire resistance.		Need input from Ed - what is the strategy for maintenance and replacement of on floor AHUs and heat pumps.							
Using systems, elements or materials that can be re-used and recycled													

Bill of Materials

Please click the + symbol to the left hand side of the Bill of Materials table to view or hide the input rows for each Building Element Category. The rows for substructure and frame have been unhidden to highlight this.

BUILDING ELEMENT CATEGORY - LEVEL 1 (based on the RICS New Rules of Measurement (NRM) classification system level 2 sub-elements https://www.rics.org/globalassets/rics-website/media/products/data-products/bcis-construction/bcis-elemental-standard-form-cost-analysis-4th-nrm-edition 2012.pdf)

PRODUCT AND CONSTRUCTION STAGE (MODULE A)

	Building Element Category	Material Type	Material quantity (Module A) (kg)	Material intensity (Module A) (kg/m² GIA)	Performance Indicator (LPG Appendix 1)	Construction Waste Factor (Module A)	Construction Waste (Module A) (kg)	Recycled Content by mass (kg)	Recycled Content by value (%)
0.1	Demolition: Toxic/Hazardous/Contaminated Material Treatment	-	0	0	-	-	0	-	-
0.2	Major Demolition Works	-	0	0	-	-	0	-	-
0.3	Temporary Support to Adjacent Structures	-	0	0	-	-	0	-	-
0.4	Specialist Ground Works	-	0	0	-	-	0	-	-
1	Substructure	-	6,049,060	475	Building Element Category 1, 4th Quartile	-	243,330	-	-
2.1	Superstructure: Frame	-	4,752,838	373	Building Element Category 2.1, 4th Quartile	-	294,481	-	-
2.2	Superstructure: Upper Floors	-	234,890	18	Building Element Category 2.2, 1st Quartile	-	39,230	-	-
2.3	Superstructure: Roof	-	85,900	7	Building Element Category 2.3, 1st Quartile	-	4,816	-	-
2.4	Superstructure: Stairs and Ramps	-	0	0	-	-	0	-	-
2.5	Superstructure: External Walls	-	1,645,740	129	Building Element Category 2.5 & 2.6, 3rd Quartile	-	14,585	-	-
2.6	Superstructure: Windows and External Doors	-	25,640	2	Building Element Category 2.5 & 2.6, 3rd Quartile	-	0	-	-
2.7	Superstructure: Internal Walls and Partitions	-	119,350	9	Building Element Category 2.7 & 2.8, 1st Quartile	-	16,930	-	-
2.8	Superstructure: Internal Doors	-	10,950	1	Building Element Category 2.7 & 2.8, 1st Quartile	-	0	-	-
3	Finishes	-	499,130	39	-	-	30,550	-	-
4	Fittings, furnishings & equipment (FFE)	-	0	0	-	-	0	-	-
5	Services (MEP)	-	198,821	16	-	-	4,693	-	-
6	Prefabricated Buildings and Building Units	-	0	0	-	-	0	-	-
7	Work to Existing Building	-	0	0	-	-	0	-	-
8	External works	-	25,220	2	-	-	1,030	-	-
	Overall		13,647,539	1,071			649,645		

USE STAGE (MODULE B) / END OF LIFE STAGE (MODULE C) / BENEFITS BEYOND THE SYSTEM BOUNDARY (MODULE D)

	Building Element Category	Expected Lifespan (years)	Number of Replacements (over assumed 60-year period)	Repair and Replacement quantities of materials (Module B) (kg)	Construction Waste Factor (Module B)	Construction Waste (Module B) (kg)	Design for Disassembly	Assumed End of Life Scenario (Description)	% Reusing	% Recycling	% Landfill	Estimated reusable materials (kg)	Estimated reusable materials intensity (kg/m² GIA)	Estimated recyclable materials (kg)	Estimated recyclable materials intensity (kg/m² GIA)
0.1	Demolition: Toxic/Hazardous/Contaminated Material Treatment	-	-	0	-	0	-	-	0%	0%	100%	0	0	0	0
0.2	Major Demolition Works	-	-	0	-	0	-	-	0%	0%	100%	0	0	0	0
0.3	Temporary Support to Adjacent Structures	-	-	0	-	0	-	-	0%	0%	100%	0	0	0	0
0.4	Specialist Ground Works	-	-	0	-	0	-	-	0%	0%	100%	0	0	0	0
1	Substructure	-	-	0	-	0	-	-	0%	100%	0%	0	0	6,049,060	475
2.1	Superstructure: Frame	-	-	0	-	0	-	-	0%	100%	0%	0	0	4,752,838	373
2.2	Superstructure: Upper Floors	-	-	0	-	0	-	-	0%	100%	0%	0	0	234,890	18
2.3	Superstructure: Roof	-	-	1	-	31	-	-	0%	93%	7%	0	0	79,531	6
2.4	Superstructure: Stairs and Ramps	-	-	0	-	0	-	-	0%	0%	100%	0	0	0	0
2.5	Superstructure: External Walls	-	-	1	-	33	-	-	0%	99%	1%	0	0	1,632,482	128
2.6	Superstructure: Windows and External Doors	-	-	0	-	0	-	-	0%	90%	10%	0	0	23,076	2
2.7	Superstructure: Internal Walls and Partitions	-	-	0	-	25	-	-	0%	95%	5%	0	0	113,683	9
2.8	Superstructure: Internal Doors	-	-	0	-	0	-	-	0%	100%	0%	0	0	10,950	1
3	Finishes	-	-	3	-	59	-	-	0%	87%	13%	0	0	436,541	34
4	Fittings, furnishings & equipment (FFE)	-	-	0	-	0	-	-	0%	0%	100%	0	0	0	0
5	Services (MEP)	-	-	1	-	16	-	-	0%	83%	17%	0	0	164,468	13
6	Prefabricated Buildings and Building Units	-	-	0	-	0	-	-	0%	0%	100%	0	0	0	0
7	Work to Existing Building	-	-	0	-	0	-	-	0%	0%	100%	0	0	0	0
8	External works	-	-	1	-	11	-	-	0%	100%	0%	0	0	25,221	2
	Overall			8		348			0%	99%	1%	0	0	27,045,482	2,122

Recycling and Waste Reporting table

The light green-coloured cells should be completed to achieve 'pioneering' status.

			TOTAL ESTIMATES OF WASTE			WASTE MANAGEMENT ROUTES						SUMMARY			
						REUSE		RECYCLE		OTHER DISPOSAL					
	Type of Waste	Source of Information	Overall Waste (tonnes)	Overall Waste (tonnes/m² GIA)	Performance Indicator (LPG Appendix 1)	Reuse Onsite (%)	Reuse Offsite (%)	Recycle Onsite(%)	Recycle Offsite (%)	To Landfill (%)	To Other Management (%)	Total Reuse (%)	Total Recycle (%)	Total Reuse and Recycle (%)	Total Waste Reported (%)
			PRODUCT AND CONSTRUCTION STAGE (MODULE A)												
1	Demolition Waste	Predemolition audit	11435	0.897	3rd Quartile	1%	1%		98%			2%	98%	100%	100%
2	Excavation Waste	As calculated by the design team	4156.8	0.326	2nd Quartile		100%					100%	0%	100%	100%
3	Construction Waste	As per GLA guidance, lower quartile benchmark, based on industry data	829	0.065	1st Quartile				100%			0%	100%	100%	100%
			USE STAGE (MODULE B)												
3	Demolition / Strip-out Waste		0	0.000	-							0%	0%	0%	0%
4	Construction Waste		0	0.000	-							0%	0%	0%	0%
			Overall Waste (tonnes/annum)	Overall Waste (tonnes/annum /m²)	Performance Indicator (LPG Appendix 1)	Reuse Onsite (%)	Reuse Offsite (%)	Recycle Offsite(%)	Recycle Offsite (%)	To Landfill (%)	To Other Management (%)	Total Reuse (%)	Total Recycle (%)	Total Reuse and Recycle (%)	Total Waste Reported (%)
5	Municipal Waste	As calculated for the Operational Waste Management Plan	253	0.020	2nd Quartile				65%		35%	0%	65%	65%	100%
6	Industrial Waste (if applicable)			-	-							0%	0%	0%	0%
			MODULE A - MODULE C												
			Overall Materials (tonnes)	Overall Materials (Modules A-C) (tonnes /m²)	-	Reuse Onsite (%)	Reuse Offsite (%)	Recycle Offsite(%)	Recycle Offsite (%)	To Landfill (%)	To Other Management (%)	Total Reuse (%)	Total Recycle (%)	Total Reuse and Recycle (%)	Total Waste Reported (%)
7	Total Materials		0	0.000	-							0%	0%	0%	0%

Circular Economy Targets

Circular economy targets for existing and new development	Policy Requirement	Target Aiming For (%)	Policy Met?	Explanation (How will performance against this metric be secured through design, implementation and monitoring?)
Demolition waste materials (non-hazardous)	Minimum of 95% diverted from landfill for reuse, recycling or recovery.	100%	Exceeds Policy	A detailed review of predemolition audit report's recommendations, alongside consultation with demolition contractors will be undertaken post-planning as part of the procurement process. The aim of the scheme is to divert 100% of demolition waste from landfill. The main contractor on appointment will be responsible for developing a Site Waste Management Plan (SWMP) and use the process to monitor the waste disposal management process.
Excavation waste materials	Minimum of 95% diverted from landfill for beneficial reuse.	98%	Exceeds Policy	The light-weight CLT structural designcompared to in-situ RC solutions, has minimised the amount of foundation excavation required. The aim of the scheme is to divert close to 100% of excavation soil from landfill.. This will be reviewed with the main contractor on appointment and establish pathways to meet this target as part of the SWMP. The main contractor will be required to monitor, manage and report construction, demolition and excavation waste quantities and recycling rates - using tools such as BRE SmartWaste.
Construction waste materials	Minimum of 95% diverted from landfill for reuse, recycling or recovery.	100%	Exceeds Policy	The proposed scheme follows 'kit of parts' approach where all of the superstructure will follow modular solution i.e.no on site waste. The aim of the scheme is to divert 100% of construction waste from landfill. On appointment of the contractor, a Site Waste Management Plan (SWMP) will be prepared for the Site. Its intent is to achieve high environmental performance, comply with standards and reduce costs of waste disposal. All waste disposal will be in accordance with the requirements of the Environmental Act 1995, Special Waste Regulations 1996, Duty of Care Regulations 2003, Control of Pollution Act 1974 (COPA) and the Environmental Agency. Throughout construction works the main contractor will be responsible for monitoring waste arisings, update the SWMP to manage the disposal process and meet the targets. A monthly update of waste arisings against waste targets and the SWMP strategy will be submitted to the client.
Municipal waste	Minimum 65% recycling rate by 2030.	65%	Yes	a service yard will be provided for No.100 Grays Inn Road and No.127 Clerkenwell Road which will accommodate 15 x recycling bins, 2 x general waste bins, 6 x food waste bins, 1 x WEE bin along with a compactor and baler. This level of provision will accommodate the combined arisings from the proposed office and retail elements of the scheme.
Recycled content	Minimum 20% of the building material elements to be comprised of recycled or reused content.	20%	Yes	At this RIBA stage, a detailed Bill of Materials is not yet available and will instead be provided in time for the Post Construction Circular Economy Statement. A draft bill of materials has been provided. In accordance with GLA guidance, the Bill of Materials will include kg/m2 for the proposed new development and will commit to target a benchmark of 20% reused or recycled content by value., where feasible
Additional requirements	**Policy Requirement**	**Please acknowledge acceptance for a planning condition**		**Please set out an indicative timescale and responsible party for the provision of this information**
Post-Construction Report	A CE Statement is required at post-construction (i.e. upon commencement of RIBA Stage 6 and prior to the building being handed over, if applicable. Generally, it would be expected that the assessment would be received no more than three months post-construction)	It is accepted that the Post Construction Reporting will be conditioned		Main contractor, on project completion TBC