4.8 Roof plant

Two small areas of additional condenser plant are proposed to be located at roof level. The roof is thought to have sufficient capacity to support a future floor, which would be sufficient to support the condensers, however as no investigation has been possible to date, a separate structural deck has been proposed over the existing roof structure to support the condensers and the plant screen.

The deck will be supported from steel beams that span between known structural columns or beam locations, sheltering the existing roof slab from additional loads. The overall loading from the plant deck is small and can be accommodated in the existing structure.

The condensers are required to incorporate an acoustic louvred enclosure on all sides to minimise vibration transfer to residents. The enclosures would be designed to match the existing louvres and the enclosure would remain open on the top, with the screen framed to accommodate.

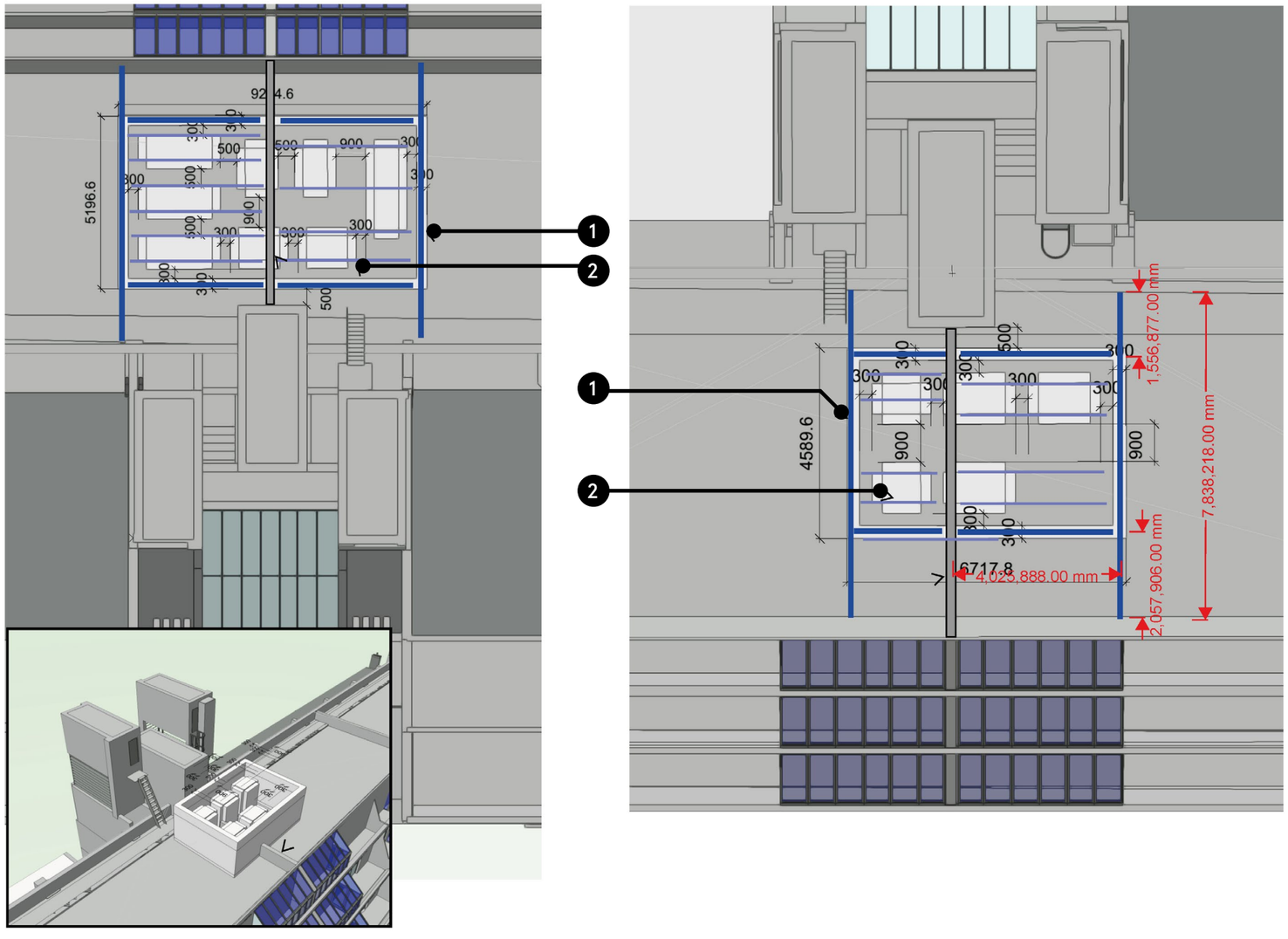


Image 20 - Roof Plant support

4.8.1 PV Panels

PV panels are proposed to be installed around the perimeter of the existing roof. Based on the historical design guidance and archive information suggesting the roof was designed for use as a future floor, it is expected that the roof has sufficient capacity to support the PV panels, which are relatively lightweight. A ballasted system has been proposed, with shallow pitch for the PV panels.

Wind effects have been assessed by a specialist PV installer, who confirmed that the number of PV panels is limited to work with a ballasted system. The installation of additional PV panels on the lower roofs was also investigated but ultimately discounted as these proved unviable due to being in shadow half of the day.

1. 203UC46 to be supported by upstand on either side of the roof.
2. Secondary beams required if investigations show that slab doesn't have the capacity to support the condensers.

4.8.2 Green roof

An option has been considered to look at incorporating a green roof on the main roofs, alongside the PV panels.

The green roof product proposed used the BauderSOLAR G LIGHT system, which can incorporate PV panels in and around a green roof substrate. However the weight of this system at 176kg/m^2 is significant and beyond what a typical roof slab would have been designed for, which would have a superimposed design load between 100-150kg/m^2 at the time of construction.

Snow and maintenance access loads would also need to be considered on top of the weight of the green/solar system, with modern standards requiring a minimum of 75kg/m^2 to cover this. Once considered, there would be a minimal weight allowance left for a green roof system and PV panels and therefore a significant risk that structural strengthening would be required to accommodate. Any strengthening could be disruptive to the tenanted areas below and would add embodied carbon, taking away the sustainability benefits that the green roof would provide.

Structurally it is therefore not recommended to install both PV panels and a green roof, unless the capacity of the existing roof can be fully proven to accommodate this, something which would be disruptive to prove.

4.9 Proposed drainage

The surface water is not impacted by the development and it is proposed to retain this as is, with no SUDs measures included. The strategy is discussed further in the accompanying drainage strategy report.

The proposals at planning stage are for the new hotel drainage to also be pumped to high level and to utilise the new drainage connections. The proposals are also discussed further in the drainage strategy report.

5. Buildability

5.1 Demolition

Methods have been assessed for how the slab can be demolished whilst minimising noise and vibration. Different techniques assessed are shown below. It is anticipated that a combination of core stitch drilling and angle griding/saw cutting will be used, which will minimise vibration

5.1.1 Core stitch drilling

This is a process involving using a coring rig fixed to the floor slab. This requires water to lubricate the teeth of the coring barrel. The coring barrel teeth can sometimes get caught on rebar and will wear/degrade through use.

This method avoids any vibration; however it is quite slow and leaves an overlapping circle edge which requires repair or further cutting back. As such the use of an angle grinder or similar is still required to straighten the slab edges were needed.

Stitch Drilled Cores (precisioncutting.co.uk)

5.1.2 Hydro-demo

This is a specialist demolition process involving use of a high-pressure jet of water to demolish any concrete and expose the steel reinforcement. This requires a lot more water than other demolition methods, is a slow process and is the most expensive. The benefit is that you can retain the steel rebar and low vibration but the plant to undertake the works is still noisy and is messy as it creates a slurry residue.

As there is still noise associated with this option, in addition to the cost and length of time required to undertake the works in the context of the existing residents, this option was discounted.

Hydro-demo (corecut.co.uk)

5.1.3 Angle grinder / Saw cutting

This is a relatively standard demolition process involving using either handheld or a machine to saw cut a concrete slab. This requires water to lubricate the cutting saw. This is a relatively quick process and is likely a cheaper option and you get a relatively neat cut line.

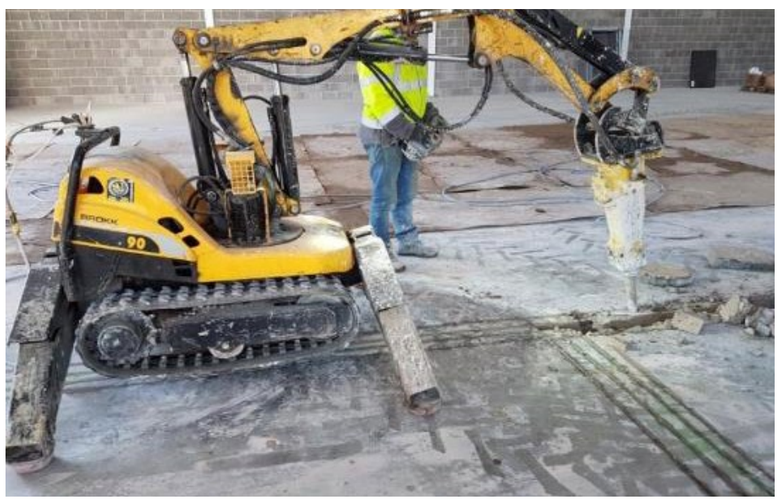
It can be challenging to get the cut line right to the column wall but we consider this is the most suitable method for undertaking this work.

Saw Cutting Machines (corecut.co.uk)

5.1.4 Percussive demolition

This is the standard demolition process involving using machines to vibrate and break apart the concrete. A mist of water is typically used to dampen down dust created. This is a quick process and is likely a cheaper option. The disadvantage is that you get a rough cut line and a lot of vibration and noise.

Because of these reasons, this method was discounted by the Project Team.

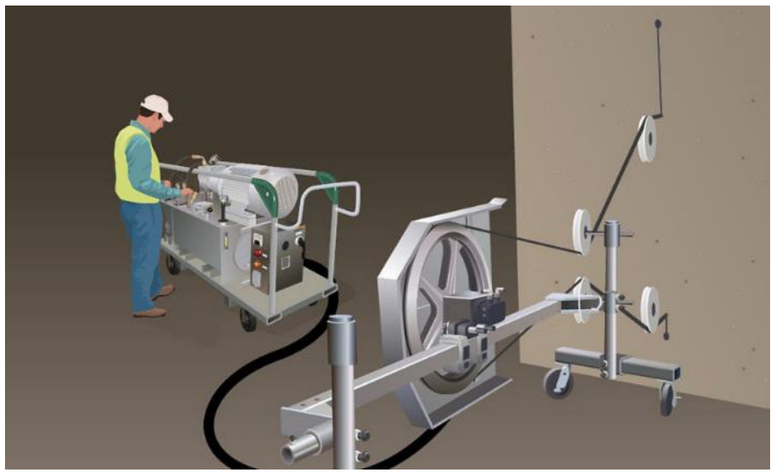


Jacking and Slab Cut Out

5.1.5 Diamond Saw Wire Cutting

This is a specialist item of demolition involving a diamond encrusted rope which is pulled through a loop and saw cuts the wall / floor slab in a neat line. This is relatively expensive and slow to set up, requiring a core drill hole to thread through the rope in advance. You get a neat cut line and can cut through thick sections.

The method can be effective for straight lines but the wires will get worn out after a few cuts and when considering the time taken to set up and difficultly in getting close to existing structural walls/ columns, this method has not been taken forward.



Diamond Saw Cut

5.1.6 Demolition Options Summary

Below is an appraisal of the demolition options available and their benefits and disadvantages for the project.

	Angle grinder / saw cutting	Diamond Saw Wire Cutting	Percussive demolition	Core stitch drilling	Hydro demolition
Noise	Medium potential for Noise	Medium potential for Noise	High potential for Noise	Medium potential for Noise	Medium potential for Noise
Vibration	Medium potential for Vibration	Low potential for Vibration	High potential for Vibration (unless separated/isolated from other structures)	Low potential for Vibration	Low potential for Vibration
Dust	Dust is created and requires water to suppress	Water required for lubrication dampens dust	Dust is created and requires water to suppress	Water required for lubrication dampens dust	Water required for lubrication dampens dust
Cost	£	££	£	££	£££
Requirement for Water	Water required for lubrication	Water required for lubrication	Some mist water required for damping dust	Water required for lubrication	Most water required for the process and messy
Programme	Relatively quick demolition process	Slower than other methods, with time required for initial coring requirement	Relatively quick demolition process	Very slow process of overlapping cores and setting up of machine	Relatively slow demolition process
Neat demolition cut line	Neat demolition cut line possible with saw cutting – Slightly limited ability to get tightly abutting to walls/columns	Somewhat neat demolition cut line possible with saw cutting but requires circular cores to thread diamond wire rope through - circles of cores require treatment in permanent condition to repair	Very rough edge to demolition cut line – requires treatment of slab edges in permanent condition to repair	Very rough edge to demolition cut line – overlapping circles of cores require treatment of slab edges in permanent condition to repair	Neater demolition cut line possible with hydro-demo but requires shallow angle cut at start to define cut location

5.2 Temporary works

Temporary works will be required to prop the slabs in the temporary condition during strengthening installation and prior to slab lowering. This will primarily comprise of props from the lower basement slab and foundations.

Some localised propping will also be required where modifications are made to the walls are being formed. However it is proposed for the permanent steel trimming to be installed where possible to re-support slabs prior to demolition, to minimise temporary works.

6. Conclusion

An assessment of the existing structure at the Brunswick Centre has been undertaken, with a view to minimise the demolition and installation of new structure to facilitate the hotel development and to use techniques that minimise noise and vibration that may otherwise impact other users of the building.

A novel approach has been adopted to lower the existing upper basement slab using jacking, to locate this at a level that gives the required head heights for hotel use. Working with a specialist contractor, the feasibility and logistics of completing this operation have been verified, with a number of sustainability and buildability advantages.

Strengthening is required to some of the existing columns within the basement area, where the unrestrained length is increased.

New drainage is to be installed within a void between the existing lower basement level and the new lowered hotel level.

Overall it is confirmed that the structural works associated with the development of the Brunswick Centre can be completed, whilst respecting the listed structural fabric and minimising the required interventions.

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Appendix A

Design Parameters

1. Outline Specification & Design Parameters

1.1 Outline Specification

1.1.1 General

The following elements should be designed in accordance with the architect's details:

+ Water and damp proofing
+ Internal partitions
+ Floor separation and acoustic isolation
+ Finishes
+ External works
+ Insulation

1.1.2 Concrete

The concrete grades to be used are as follows:

+ Blinding: Gen1
+ Mass concrete: Gen3
+ Columns and core walls: RC40/50
+ Floor slabs: RC32/40
+ Basement slab: RC32/40
+ Retaining walls: RC40/50
+ Capping beams: RC 40/50
+ All formed surfaces to be Type A (basic) finish in accordance with the National Structural Concrete Specification (NSCS).

1.1.3 Steelwork

Steelwork generally to be grade S355 to BS EN 10025-2. Steelwork to be in accordance with the current edition of the National Structural Steelwork Specification (NSSS) CE Marking Version and structural engineer's specification. All open sections and plates are to be to BS EN 10025-1. All hollow sections (RHS / SHS / CHS / OHS) are to be Celsius 355 sections by TATA or equivalently graded to BS EN 10210-1.

The Execution Class of the steel structure is EXC2 unless noted otherwise.

All connections to have minimum 4No. M16 bolts, with minimum 6mm leg length continuous fillet welds, unless noted otherwise. The steelwork fabricator will be responsible for the design and detailing of all steelwork connections.

All steelwork to be blast cleaned to SA2½. Internal steelwork painted with 75µm of zinc phosphate primer. External steelwork to be galvanised to 140µm. All primers for steelwork to be compatible with the chosen intumescent paint.

1.2 Design Parameters

1.2.1 Codes of Practice

1.2.1.1 Eurocodes

+ Actions: BS EN 1991-1-1 (permanent and imposed Loads) and BS EN 1991-1-4 (wind loads)
+ Concrete: BS EN 1992-1
+ Steel: BS EN 1993-1
+ Timber: BS EN 1995-1
+ Masonry: BS EN 1996-1
+ Foundations: BS EN 1997-1
+ Balustrades: BS EN 1991-1-1:2002 & UK NA Table NA.8

1.2.1.2 Building Regulations 2000

+ Approved Document A – Structure (2013 edition)
+ Approved Document H – Drainage & Waste Disposal (2010 edition)

1.2.2 Imposed Loads

1.2.2.1 Hotel

Imposed loads (Q_k) all stated in kN/m^2:

+ Ground floor: 5.0
+ Upper floors: 1.5
+ Roof: 0.75 (maintenance access only)
+ Allowance for non-structural partitions: 1.0
+ Corridors and stairs: 3.0
+ Plant areas: 5.0

1.2.2.2 Office

Imposed loads (Q_k) all stated in kN/m^2:

+ Ground floor: 4.0
+ Upper floors: 2.5
+ Roof: 0.75 (maintenance access only)
+ Allowance for non-structural partitions: 1.0
+ Corridors and stairs: 3.0
+ Plant areas: 5.0

2. Design Criteria

2.1 Deflections

The deflections of the new structure will be designed to meet the following criteria, unless agreed otherwise with the contractor or client:

2.1.1 Concrete Elements (in-situ and precast)

Vertical deflection of floor slabs and beams will be limited to:

+ Continuous spans = span/250 under total load
+ Cantilevers = span/180 under total load
+ Internal spans = span/360 under imposed load*
+ Slab perimeters = span/500 under imposed load*
+ Cantilevers = span/250 under imposed load*

*or 20mm whichever is the lesser

Differential deflection between any two floors = ±20mm

2.1.2 Steelwork Elements

Deflection of portal frames will be limited to:

+ Lateral deflection at eaves = height/300
+ Vertical deflection at ridge = span/250 under total load
+ Vertical deflection at ridge = span/360 under imposed load

Vertical deflection of beams will be limited to:

+ Simply supported beams = span/250 under total load
+ Cantilevers = span/125 under total load
+ Simply supported beams = span/360 under imposed loads*
+ Cantilevers = span/180 under imposed loads*
+ Slab perimeters = span/500 under imposed loads*

*or 20mm whichever is the lesser

All cladding, finishes and building services are to be designed and detailed to accommodate the most onerous combination of these deflections.

2.1.3 Movement Joints

2.1.4 Concrete Elements

Movement joints are typically provided in any reinforced concrete structure with length or width of 50m or more.

2.1.5 Masonry Elements

Horizontal movement joints are typically provided every 9m or every third storey, whichever is less.

Vertical movement joints are typically provided at every 10-12m, and not less than every 15m.

2.2 Durability

Long term durability of the concrete structure will be achieved by providing adequate cover to steel reinforcement bars as set out in BS EN 1992-1. Cover distance will be specified taking into account atmospheric and soil conditions.

Steelwork is to be painted and the building's internal environment is to be controlled so as to limit moisture, in order to prevent corrosion and ensure durability of steel elements.

2.3 Fire Protection

Fire protection to new reinforced concrete structure will be achieved by providing adequate cover to steel reinforcement, and providing minimum concrete section sizes, as set out in BS EN 1992-1.

Fire protection to steel elements will be provided by fire-rated protective material, such as plasterboard, intumescent paint etc.

2.4 Tolerances

The frame of the primary structure will be constructed within tolerances set out in the technical specifications and recommendations of the National Structural Concrete Specification (NSCS), the National Structural Steelwork Specification (NSSS) and the National Building Specification.

All finishes, cladding, services and internal partitions are required to be detailed to accommodate the most onerous combination of these construction tolerances.

2.5 Structural Robustness

The new building will be designed in accordance with Section A3 of the UK Building Regulations, in order to satisfy requirements for robustness.

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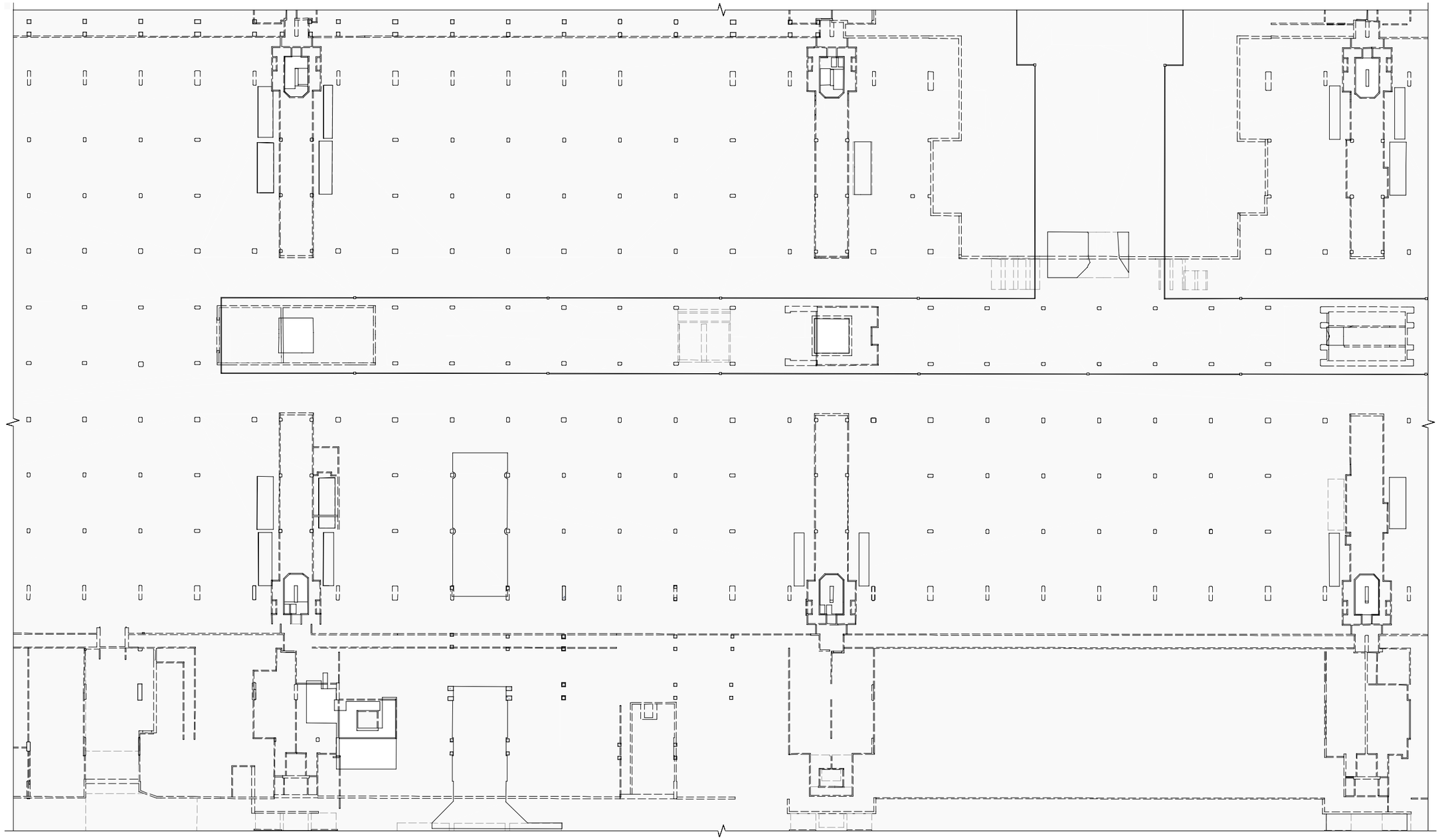
Appendix B

Structural Drawings



100mm @ A1 (50mm @ A3)

1 This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

2 Do not scale from this drawing in either paper or digital form. Use written dimensions only. To check drawing has been printed to the intended scale the above bar should be 100mm long

3 Add notes

4 Add notes

NOTE:
All existing details shown are based on archive drawings and limited opening up works. Assumptions have been made regarding existing construction. Materials, construction, framing and spans of existing slabs and walls to be confirmed by site investigations.

Slab levels shown in red have been derived from assumed finishes and are to be confirmed by site investigations.

Rev	Date	By	Eng	Amendment
P1	11.05.23	HS	RM	Draft Stage 2 Issue

HEYNE TILLETT STEEL

STRUCTURAL & CIVIL ENGINEERS

http://hts.uk.com/

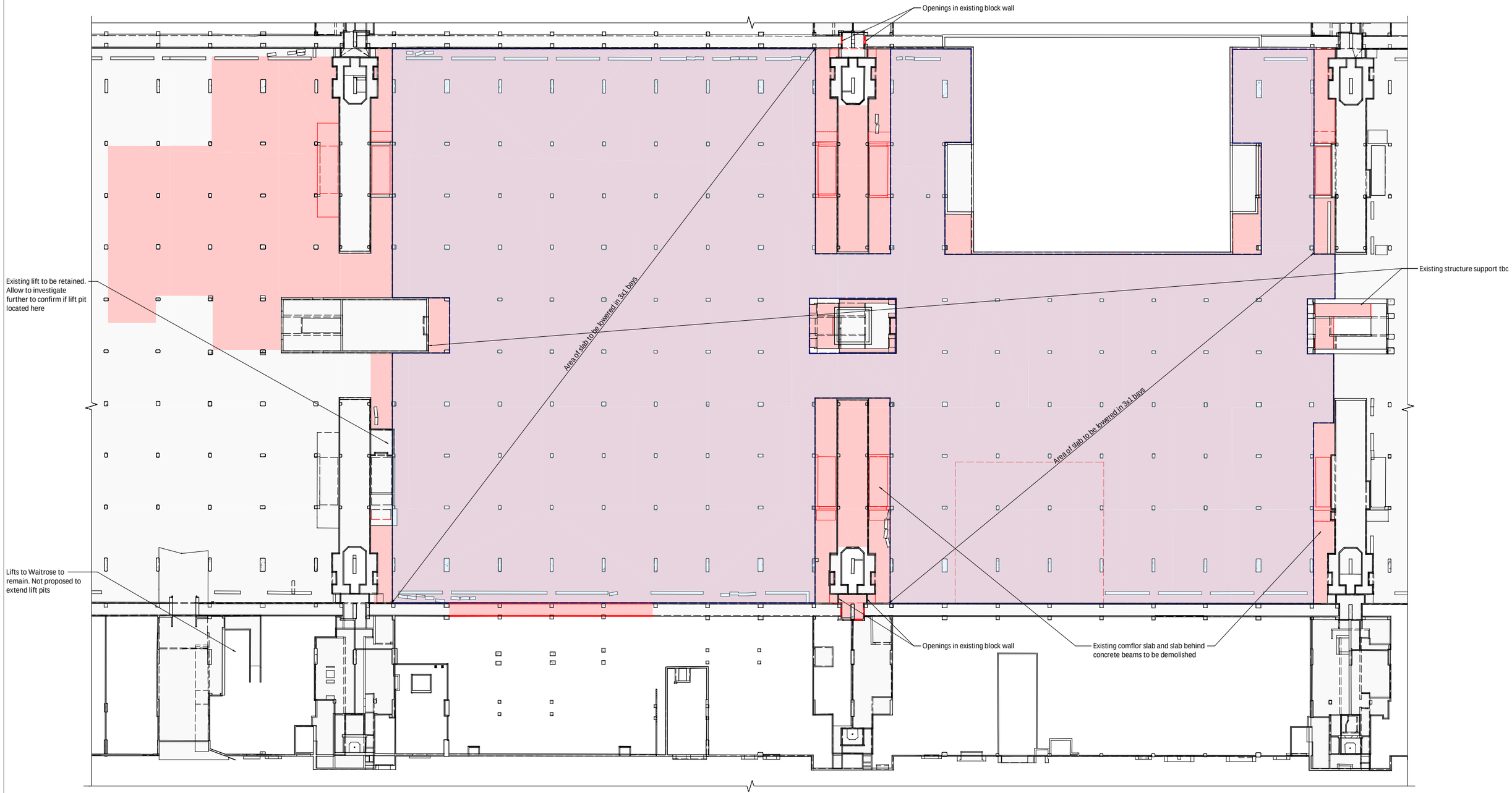
Job Name
Brunswick Centre Hub
WC1N 1BS

Drawing Title
Existing
Ground Floor Plan

Purpose of Issue Preliminary Scale at A1 1 : 200

Drg No 2911-HTS-XX-00-DR-S-0100

HTS Job No Suitability S1 Rev P1



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3 All demolition drawings are to be read in conjunction with proposed plans

4 Assume all edges of RC are to be disc-cut UNO
Where edges of slab are to be demolished, floors are to be disc cut to face of nearest beam if applicable.

5 Care to be taken not to cut / adversely affect existing retained beams / columns while demolition is taking place. Contractor to undertake careful exploratory works and submit appropriate method statement to ensure retained structure is not damaged undertaking areas of demolition

6 Treat all cut concrete faces with Ronabond concrete repair system by Ronacrete, or similar concrete repair system

7 Temporary support required prior to demolition of existing slabs and until the new resupporting structure is in place. Contractor to submit full temporary works and sequencing proposal to the CA for review prior to commencing work

The existing structural information shown on these drawings is based on visual inspection of the building, limited opening up works and relevant archive information. All details of the existing construction are subject to confirmation by the Contractor during the works on site. No materials are to be ordered until the relevant details and conditions are confirmed by the Contractor on site. Should the contractor discover any discrepancies between the assumed existing structure and what is found on site they should notify the engineer immediately, and await further instruction

Demolition legend

	Area of floor to be removed
	Area of floor to be lowered
	Beam removed
	Column removed
	RC / Masonry wall demolished

Rev	Date	By	Eng	Amendment
P4	24.08.23	HS	JC	Key Updated
P3	22.08.23	MC	JC	Revised as clouded
P2	18.05.23	HS	RM	Stage 2 Issue
P1	11.05.23	HS	RM	Draft Stage 2 Issue

HEYNE TILLETT STEEL

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http://hts.uk.com/

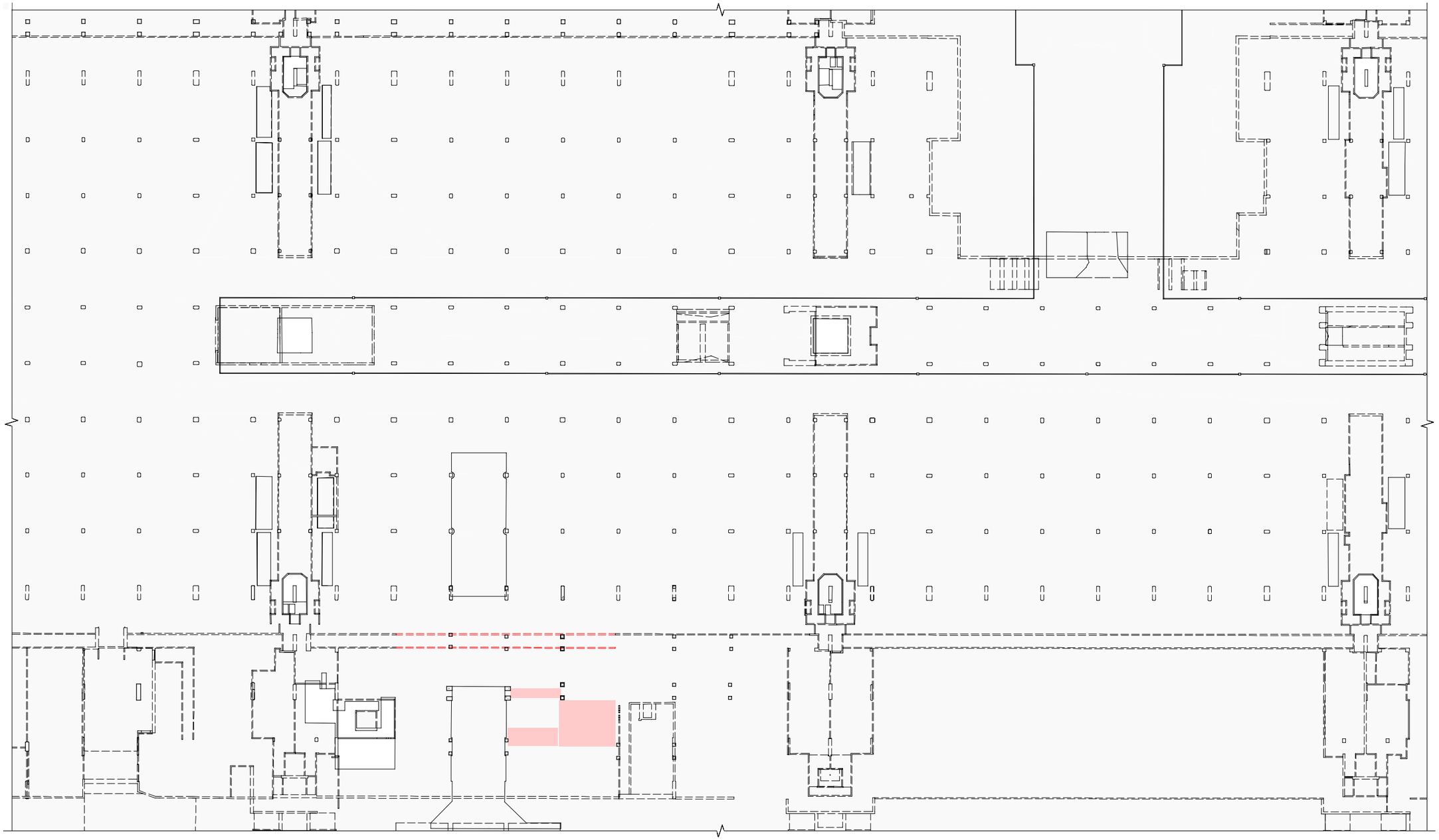
Job Name
Brunswick Centre Hub
WC1N 1BS

Drawing Title
Demolition
Basement 1 Floor Plan

Purpose of Issue | Scale at A1 1 : 200

Drg No 2911-HTS-XX-00-DR-S-1090

HTS Job No | Suitability S1 | Rev P4



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Demolition legend

	Area of floor to be demolished/dropped
	Beam demolished / removed
	Column demolished / removed
	RC / Masonry wall demolished

Rev	Date	By	Eng	Amendment
P2	18.05.23	HS	RM	Stage 2 Issue
P1	11.05.23	HS	RM	Draft Stage 2 Issue

HEYNE TILLETT STEEL

STRUCTURAL & CIVIL ENGINEERS

http://hts.uk.com/

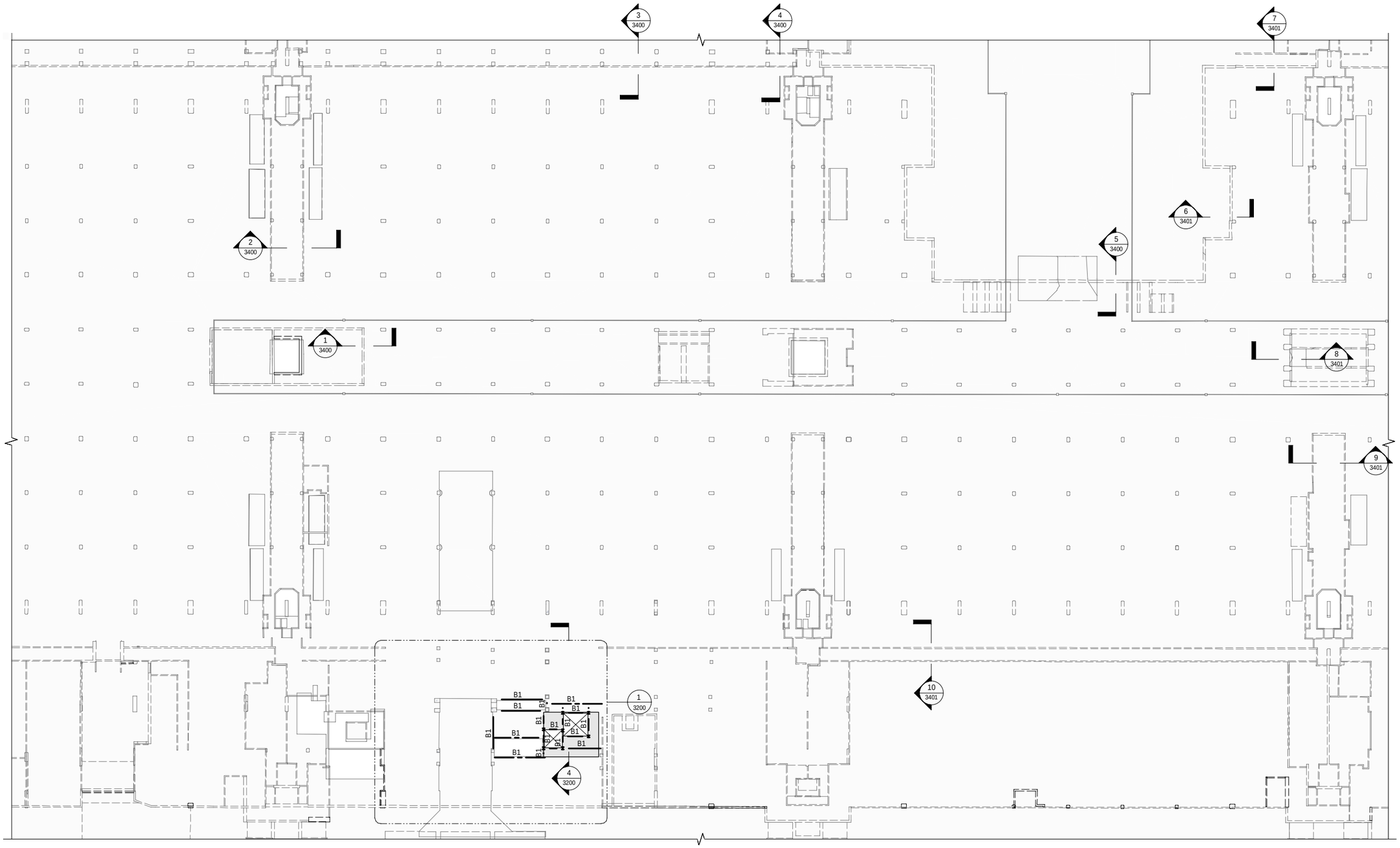
Job Name
Brunswick Centre Hub
WC1N 1BS

Drawing Title
Demolition
Ground Floor Plan

Purpose of Issue | Scale at A1 1 : 200

Drg No 2911-HTS-XX-00-DR-S-1100

HTS Job No | Suitability S1 | Rev P2



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

Proposed Floors

Ref	Thickness and Type
1	250 thk RC slab
2	100 thk Beam & Block
3	200 thk RC slab

Proposed Steel Beams

Ref	Type
B1	UC203x203x71
B2	UB254x146x37

Proposed Steel Cols

Ref	Type
C1	UC203x203x100
C2	SHS100x100x10

Proposed Walls

Ref	Thickness and Type
W1	100 Blockwork

Rev	Date	By	Eng	Amendment
P2	18.05.23	HS	RM	Stage 2 Issue
P1	11.05.23	HS	RM	Draft Stage 2 Issue

HEYNE TILLETT STEEL

STRUCTURAL & CIVIL ENGINEERS

http://hts.uk.com/

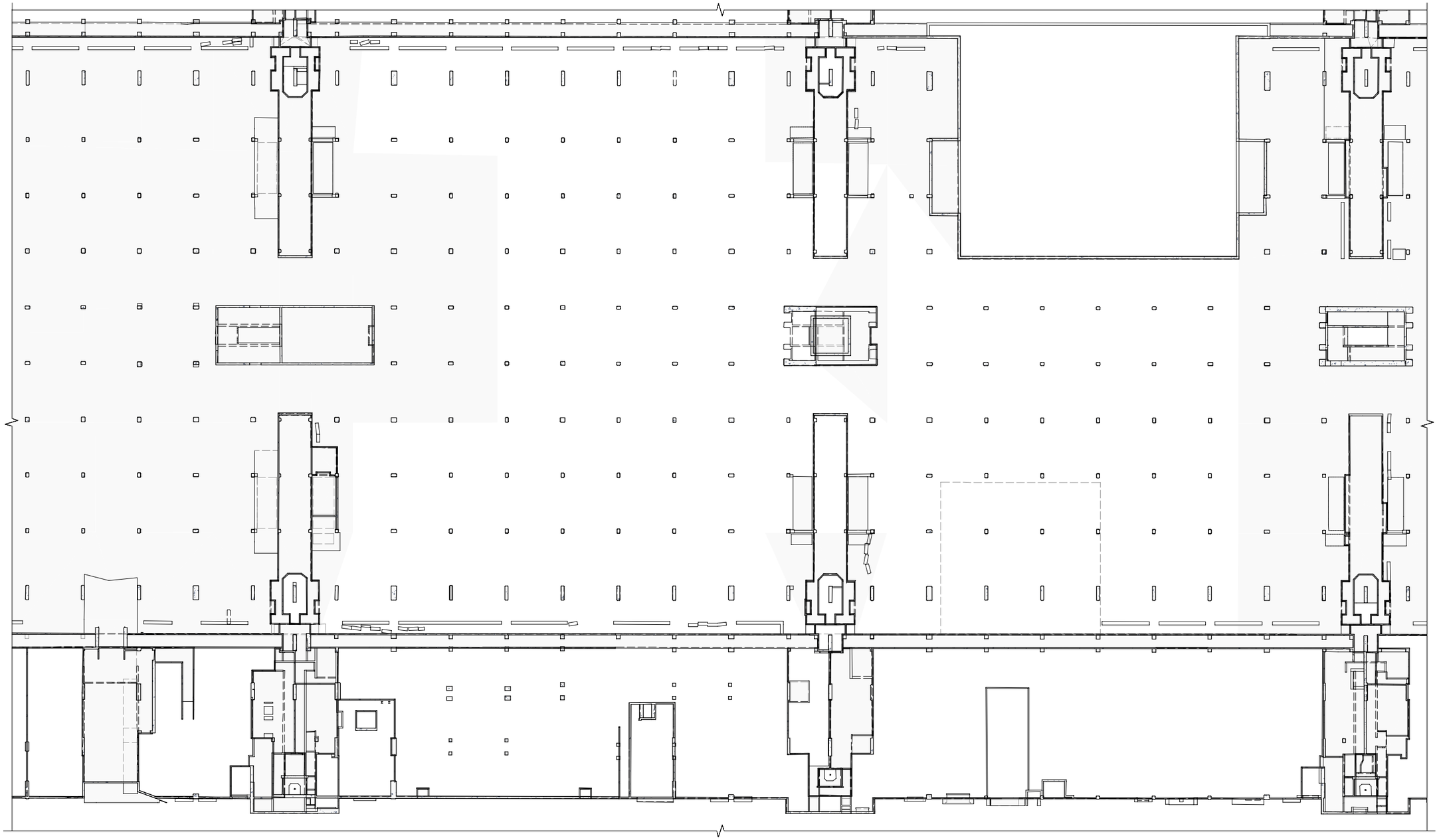
Job Name
Brunswick Centre Hub
WC1N 1BS

Drawing Title
Proposed Ground Floor Plan

Purpose of Issue Preliminary | Scale at A1 1 : 200

Drg No 2911-HTS-XX-00-DR-S-3100

HTS Job No | Suitability S1 | Rev P2



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3 Add notes

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Rev	Date	By	Eng	Amendment
P1	11.05.23	HS	RM	Draft Stage 2 Issue

HEYNE TILLETT STEEL
STRUCTURAL & CIVIL ENGINEERS
http://hts.uk.com/

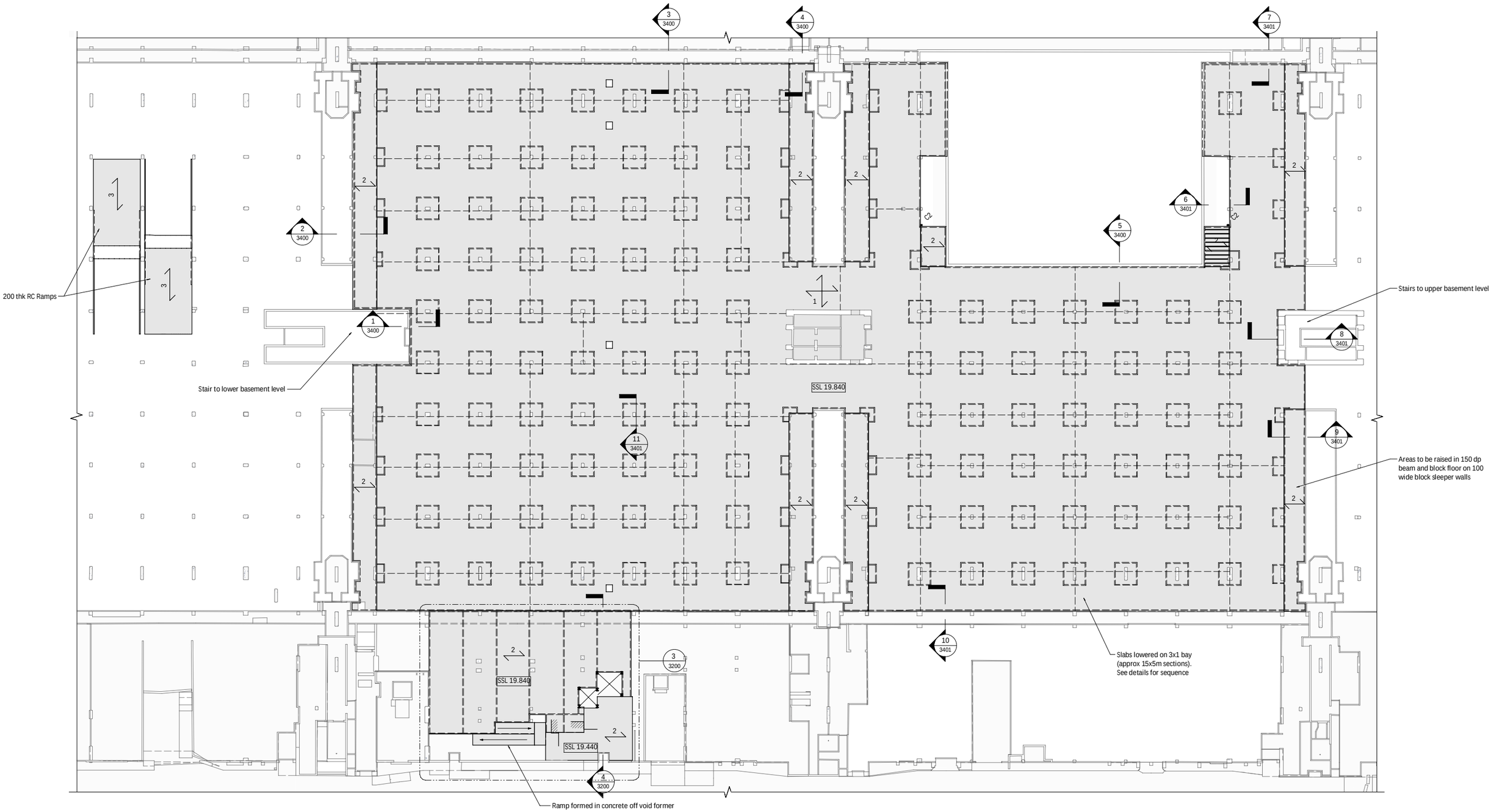
Job Name
Brunswick Centre Hub
WC1N 1BS

Drawing Title
Existing
Basement 1 Floor Plan

Purpose of Issue Preliminary
Scale at A1 1 : 200

Drg No 2911-HTS-XX-B1-DR-S-0090

HTS Job No
Suitability S1
Rev P1



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Proposed Steel Cols

Ref	Type
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C2	SHS100x100x10

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Ref	Thickness and Type
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Rev	Date	By	Eng	Amendment
P2	18.05.23	HS	RM	Stage 2 Issue
P1	11.05.23	HS	RM	Draft Stage 2 Issue

HEYNE TILLETT STEEL

STRUCTURAL & CIVIL ENGINEERS

http://hts.uk.com/

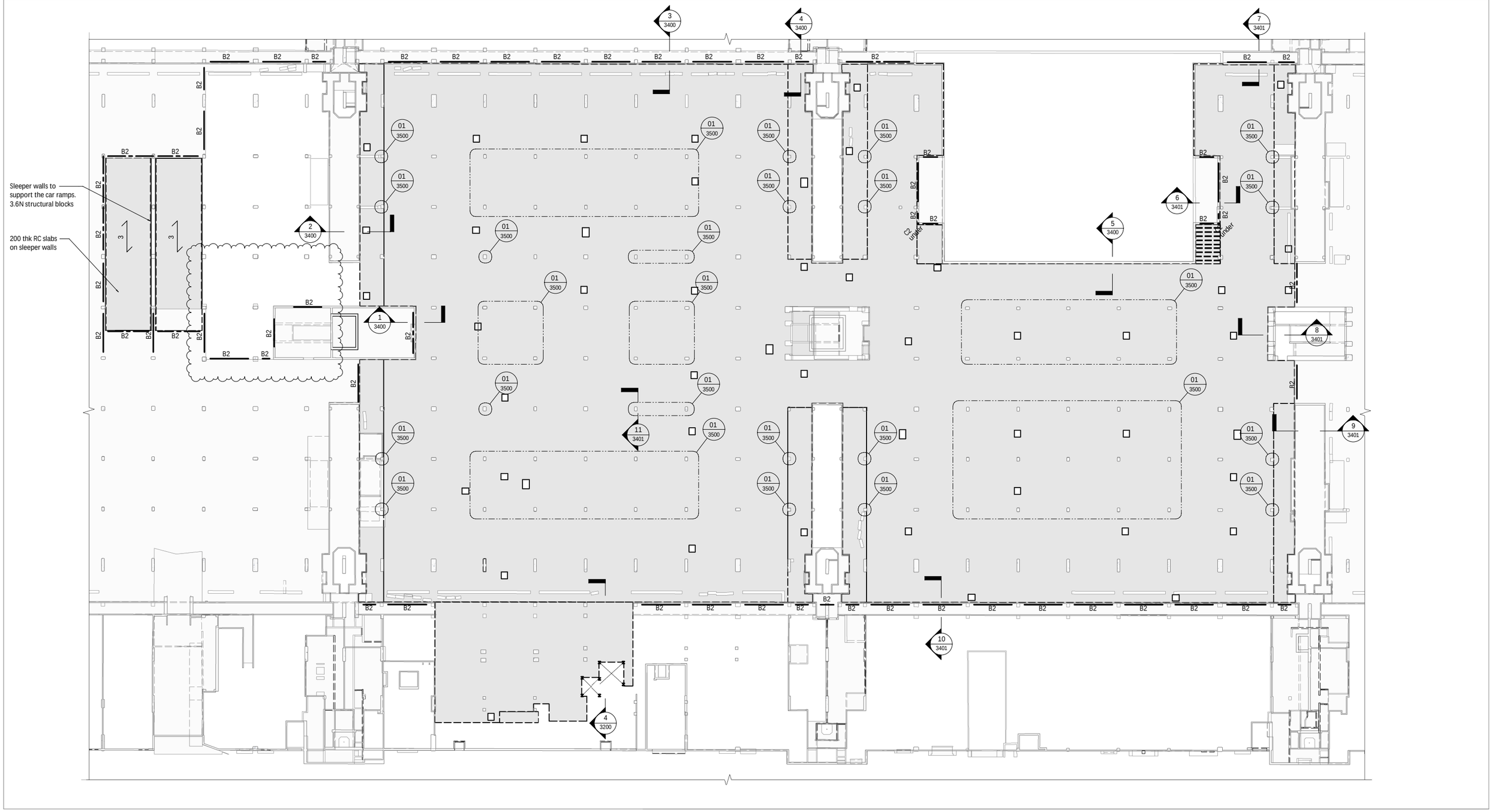
Job Name
Brunswick Centre Hub
WC1N 1BS

Drawing Title
Proposed
Hotel Level

Purpose of Issue Preliminary | Scale at A1 1 : 200

Drg No 2911-HTS-XX-B1-DR-S-3085

HTS Job No | Suitability S1 | Rev P2



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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

Proposed Floors

Ref	Thickness and Type
	320 thk RC slab
2	100 thk Beam & Block
3	200 thk RC slab

Proposed Steel Beams

Ref	Type
B1	UC203x203x71
B2	UB254x146x37

Proposed Steel Cols

Ref	Type
C1	UC203x203x100
C2	SHS100x100x10

Proposed Walls

Ref	Thickness and Type
W1	<varies> <varies>

Rev	Date	By	Eng	Amendment
P3	22.08.23	MC	JC	Revised as clouded
P2	18.05.23	HS	RM	Stage 2 Issue
P1	11.05.23	HS	RM	Draft Stage 2 Issue

HEYNE TILLETT STEEL

STRUCTURAL & CIVIL ENGINEERS

http://hts.uk.com/

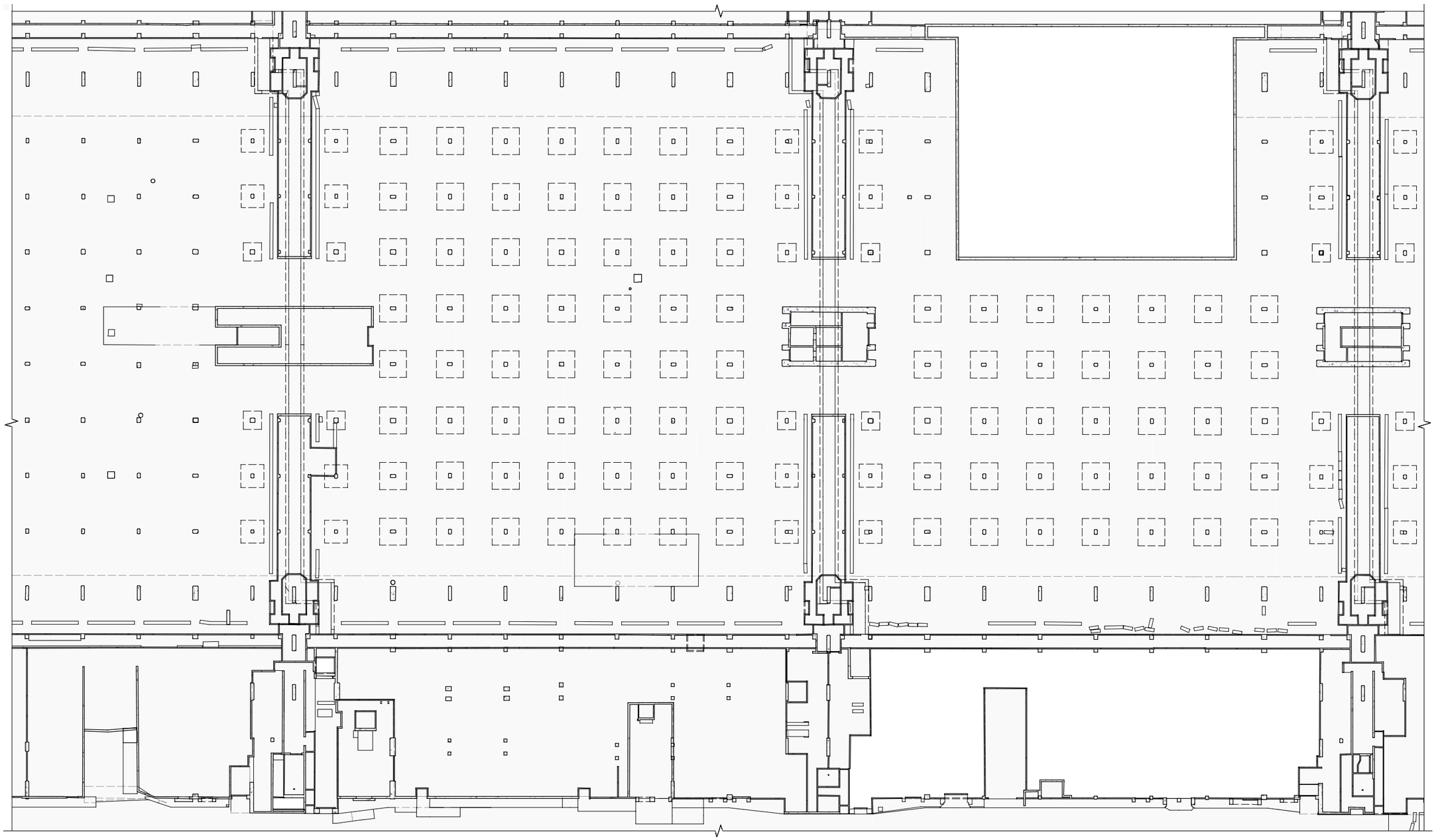
Job Name
Brunswick Centre Hub
WC1N 1BS

Drawing Title
Proposed
Basement 1 Floor Plan

Purpose of Issue Preliminary
Scale at A1 1 : 200

Drg No 2911-HTS-XX-B1-DR-S-3090

HTS Job No
Suitability S1
Rev P3



100mm @ A1 (50mm @ A3)

1 This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

2 Do not scale from this drawing in either paper or digital form. Use written dimensions only. To check drawing has been printed to the intended scale the above bar should be 100mm long

3 Add notes

4 Add notes

NOTE:
All existing details shown are based on archive drawings and limited opening up works. Assumptions have been made regarding existing construction. Materials, construction, framing and spans of existing slabs and walls to be confirmed by site investigations.

Slab levels shown in red have been derived from assumed finishes and are to be confirmed by site investigations.

Rev	Date	By	Eng	Amendment
P1	11.05.23	HS	RM	Draft Stage 2 Issue

HEYNE TILLETT STEEL
STRUCTURAL & CIVIL ENGINEERS
http://hts.uk.com/

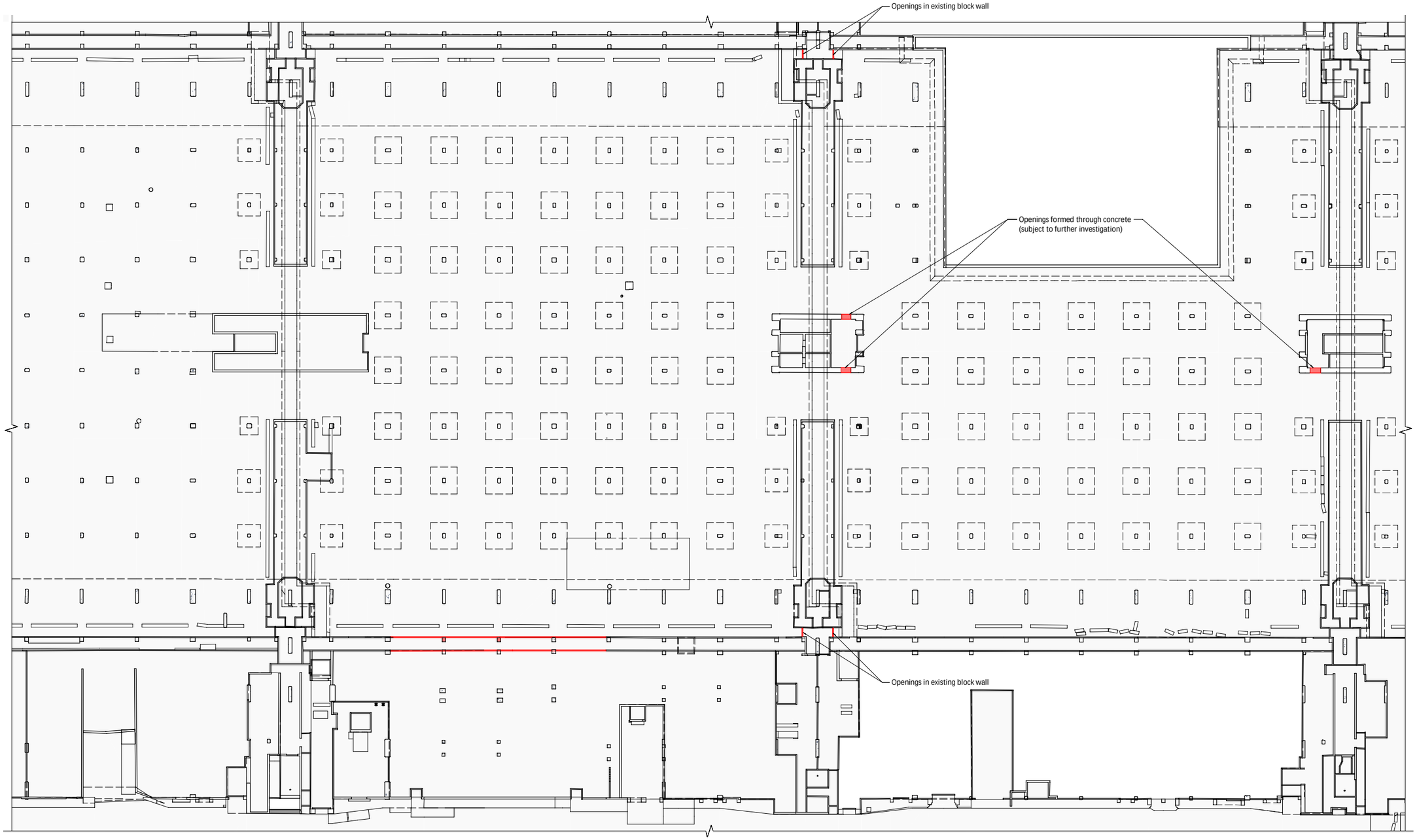
Job Name
Brunswick Centre Hub
WC1N 1BS

Drawing Title
Existing
Basement 2 Floor Plan

Purpose of Issue Preliminary Scale at A1 1 : 200

Drg No 2911-HTS-XX-B2-DR-S-0080

HTS Job No Suitability S1 Rev P1



100mm @ A1 (50mm @ A3)

1 This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

2 Do not scale from this drawing in either paper or digital form. Use written dimensions only. To check drawing has been printed to the intended scale the above bar should be 100mm long

3 All demolition drawings are to be read in conjunction with proposed plans

4 Assume all edges of RC are to be disc-cut UNO
Where edges of slab are to be demolished, floors are to be disc cut to face of nearest beam if applicable.

5 Care to be taken not to cut / adversely affect existing retained beams / columns while demolition is taking place. Contractor to undertake careful exploratory works and submit appropriate method statement to ensure retained structure is not damaged undertaking areas of demolition

6 Treat all cut concrete faces with Ronabond concrete repair system by Ronacrete, or similar concrete repair system

7 Temporary support required prior to demolition of existing slabs and until the new resupporting structure is in place. Contractor to submit full temporary works and sequencing proposal to the CA for review prior to commencing work

The existing structural information shown on these drawings is based on visual inspection of the building, limited opening up works and relevant archive information. All details of the existing construction are subject to confirmation by the Contractor during the works on site. No materials are to be ordered until the relevant details and conditions are confirmed by the Contractor on site. Should the contractor discover any discrepancies between the assumed existing structure and what is found on site they should notify the engineer immediately, and await further instruction

Demolition legend

	Area of floor to be demolished/dropped
	Beam demolished / removed
	Column demolished / removed
	RC / Masonry wall demolished

Rev	Date	By	Eng	Amendment
P2	18.05.23	HS	RM	Stage 2 Issue
P1	11.05.23	HS	RM	Draft Stage 2 Issue

HEYNE TILLETT STEEL

STRUCTURAL & CIVIL ENGINEERS

http://hts.uk.com/

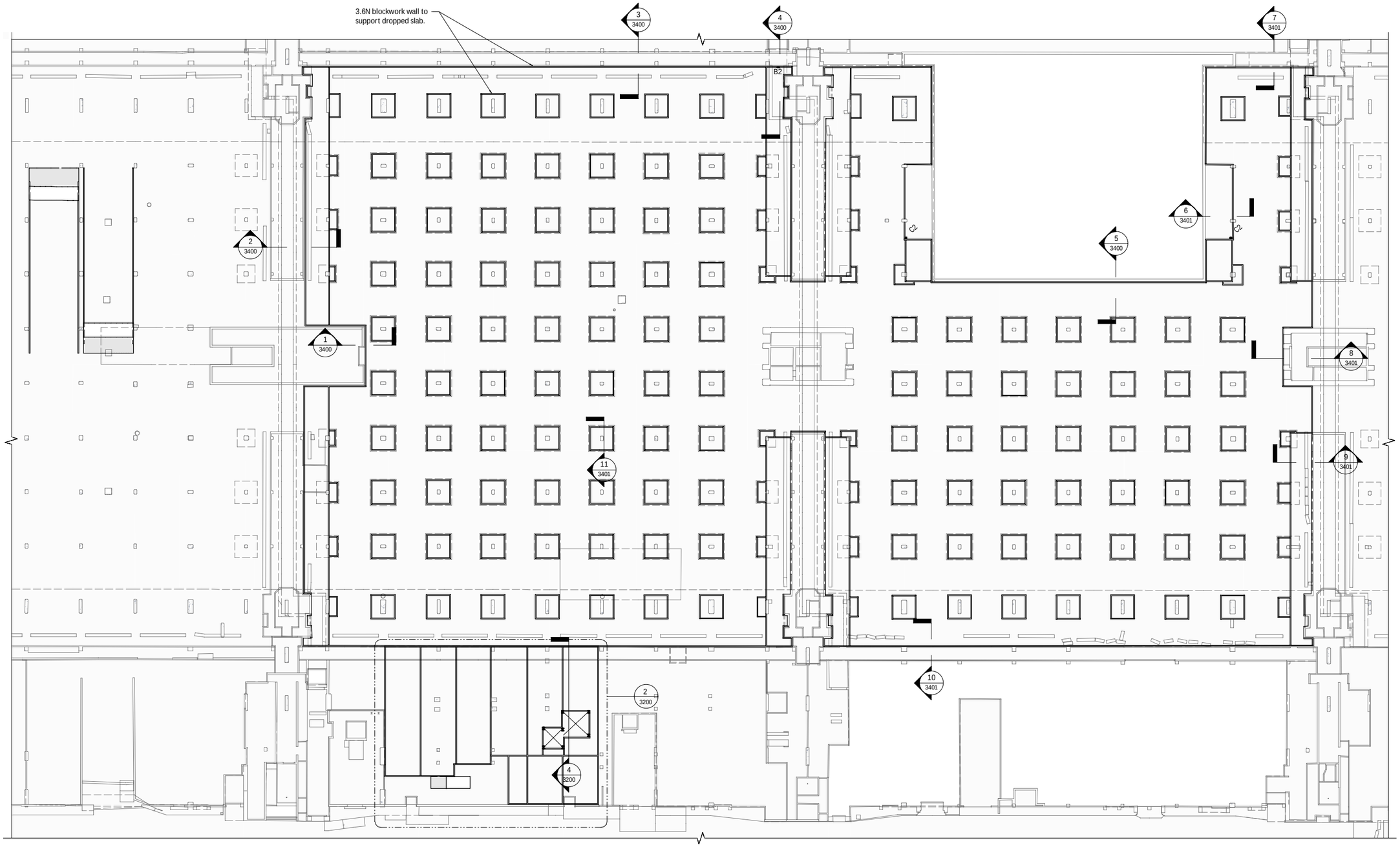
Job Name
Brunswick Centre Hub
WC1N 1BS

Drawing Title
Demolition
Basement 2 Floor Plan

Purpose of Issue | Scale at A1 1 : 200

Drg No 2911-HTS-XX-B2-DR-S-1080

HTS Job No | Suitability S1 | Rev P2



100mm @ A1 (50mm @ A3)

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

Proposed Floors

Ref	Thickness and Type
1	250 thk RC slab
2	100 thk Beam & Block
3	200 thk RC slab

Proposed Steel Beams

Ref	Type
B1	UC203x203x71
B2	UB254x146x37

Proposed Steel Cols

Ref	Type
C1	UC203x203x100
C2	SHS100x100x10

Proposed Walls

Ref	Thickness and Type
W1	100 Blockwork

Rev	Date	By	Eng	Amendment
P2	18.05.23	HS	RM	Stage 2 Issue
P1	11.05.23	HS	RM	Draft Stage 2 Issue

HEYNE TILLETT STEEL

STRUCTURAL & CIVIL ENGINEERS

http://hts.uk.com/

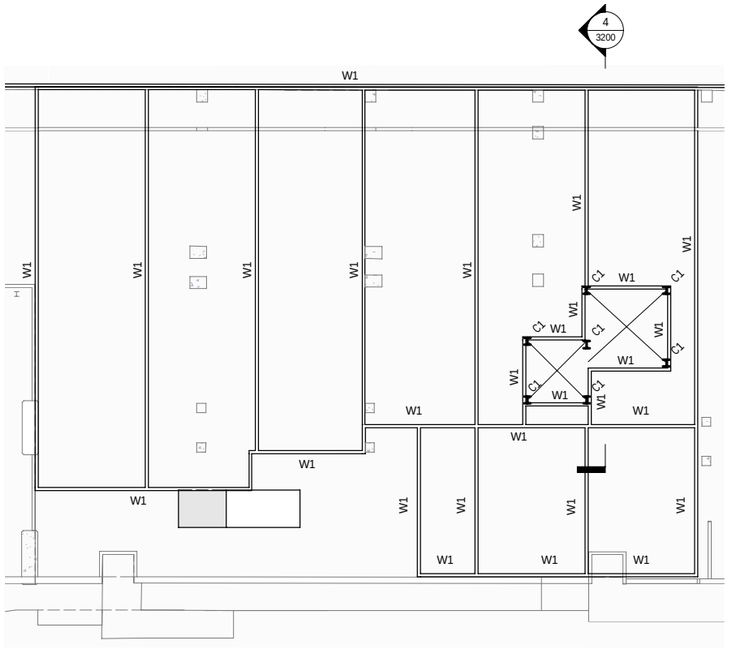
Job Name
Brunswick Centre Hub
WC1N 1BS

Drawing Title
Proposed Basement 2 Floor Plan

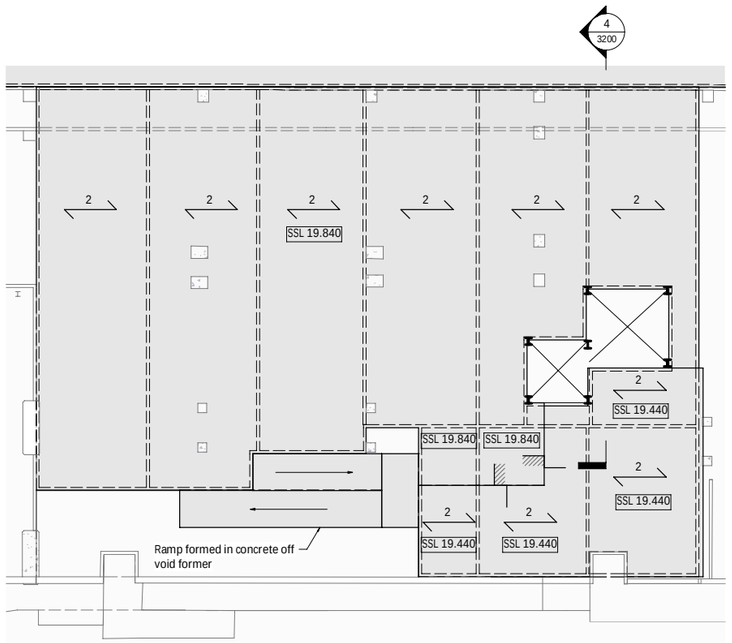
Purpose of Issue Preliminary | Scale at A1 1 : 200

Drg No 2911-HTS-XX-B2-DR-S-3080

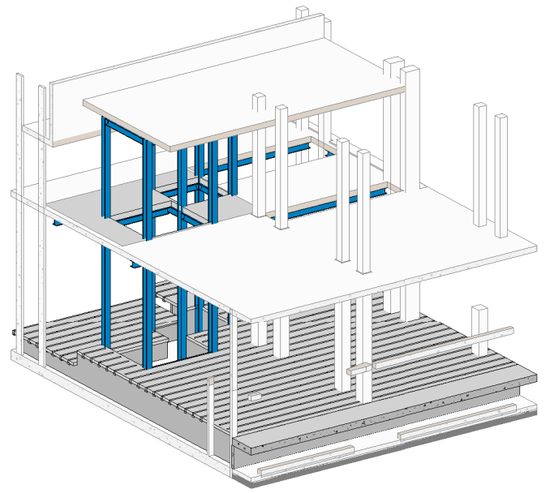
HTS Job No | Suitability S1 | Rev P2



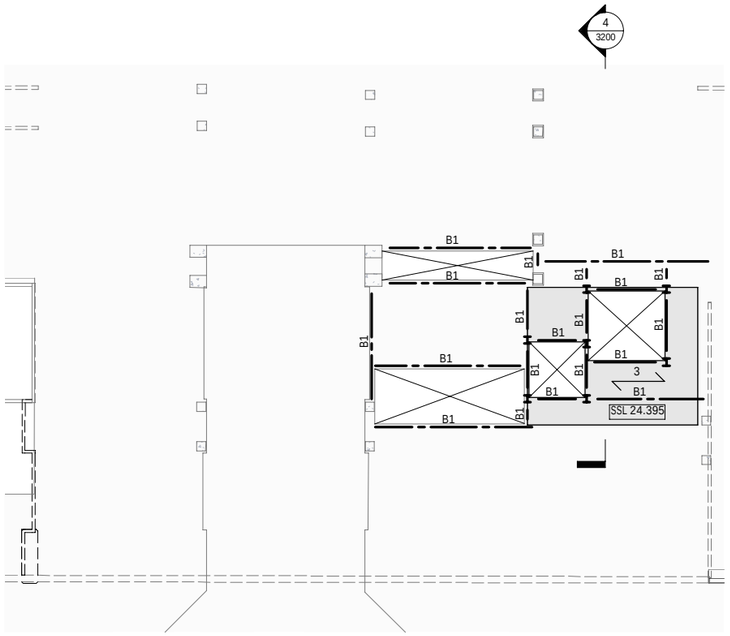
Entrance Lobby Basement 2



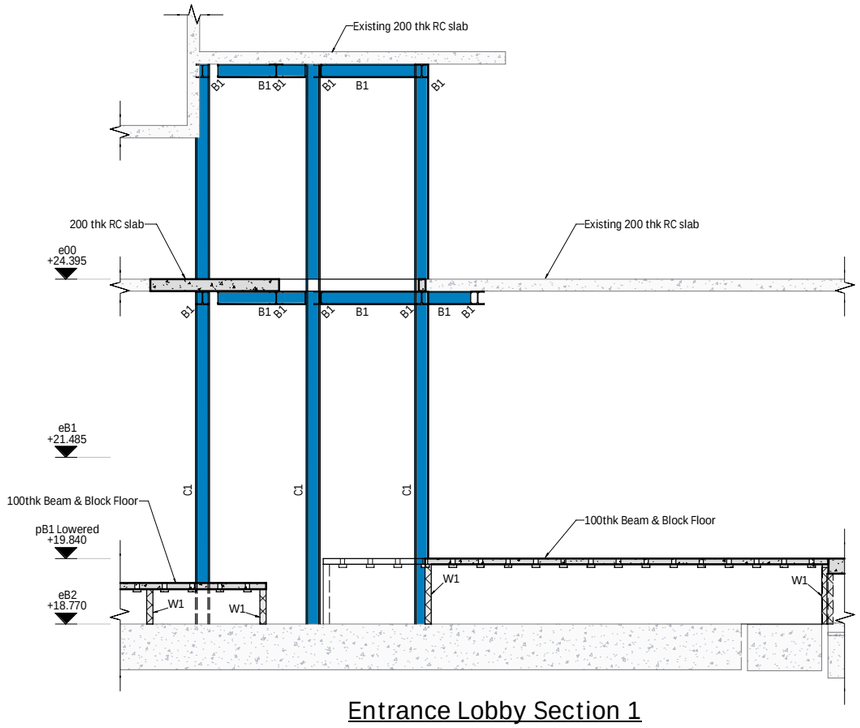
Entrance Lobby Basement 1



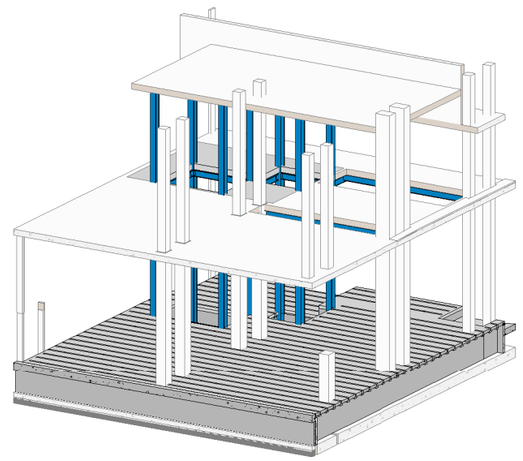
Entrance Lobby Isometric 1



Entrance Lobby Ground Floor



Entrance Lobby Section 1



Entrance Lobby Isometric 2

100mm @ A1 (50mm @ A3)

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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

Proposed Floors

Ref	Thickness and Type
1	250 thk RC slab
2	100 thk Beam & Block
3	200 thk RC slab

Proposed Steel Beams

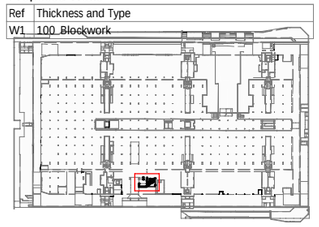
Ref	Type
B1	UC203x203x71
B2	UB254x146x37

Proposed Steel Cols

Ref	Type
C1	UC203x203x100
C2	SHS100x100x10

Proposed Walls

Ref	Thickness and Type
W1	100 Blockwork



Key Plan

Rev	Date	By	Eng	Amendment
P2	18.05.23	HS	RM	Stage 2 Issue
P1	11.05.23	HS	RM	Draft Stage 2 Issue

HEYNE TILLETT STEEL

STRUCTURAL & CIVIL ENGINEERS

http://hts.uk.com/

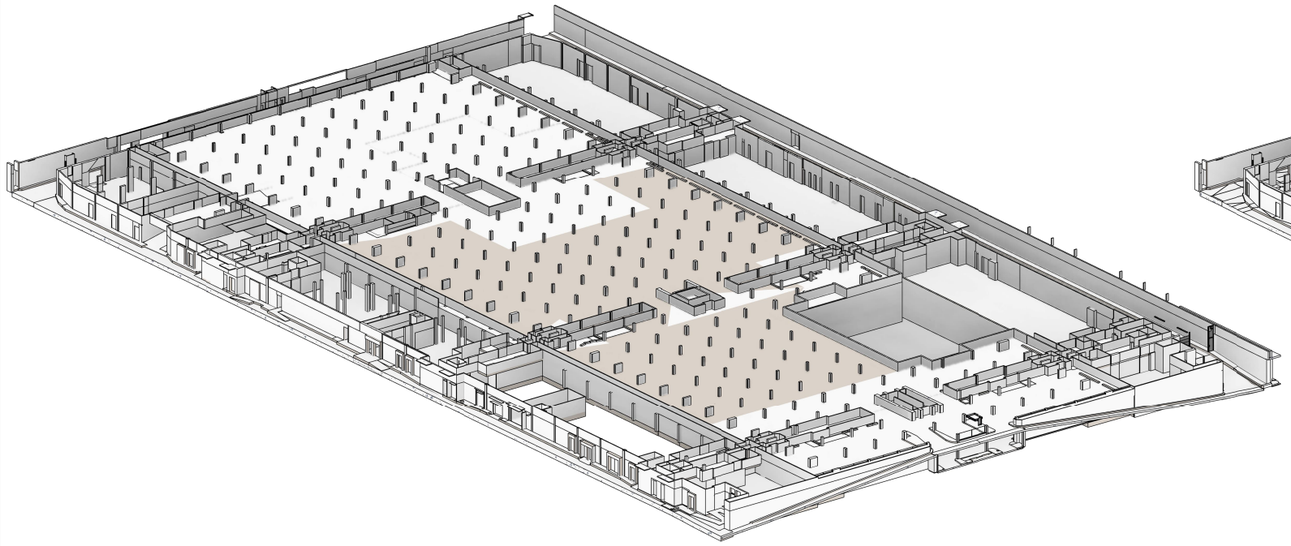
Job Name
Brunswick Centre Hub
WC1N 1BS

Drawing Title
Proposed
Entrance Lobby Details

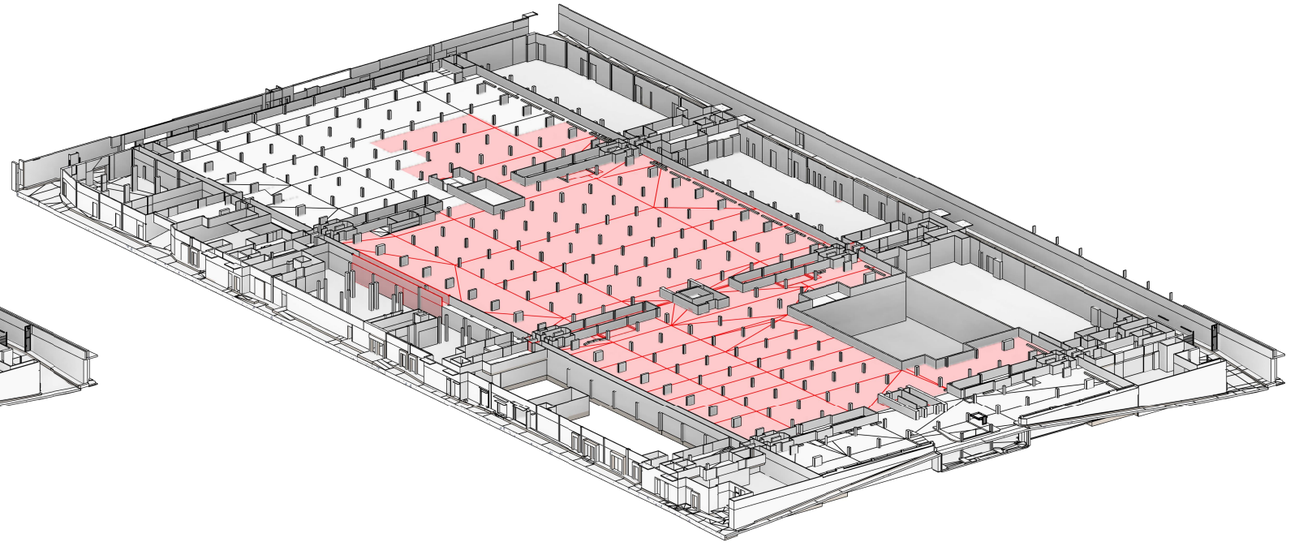
Purpose of Issue Preliminary | Scale at A1 As indicated

Drg No 2911-HTS-XX-ZZ-DR-S-3200

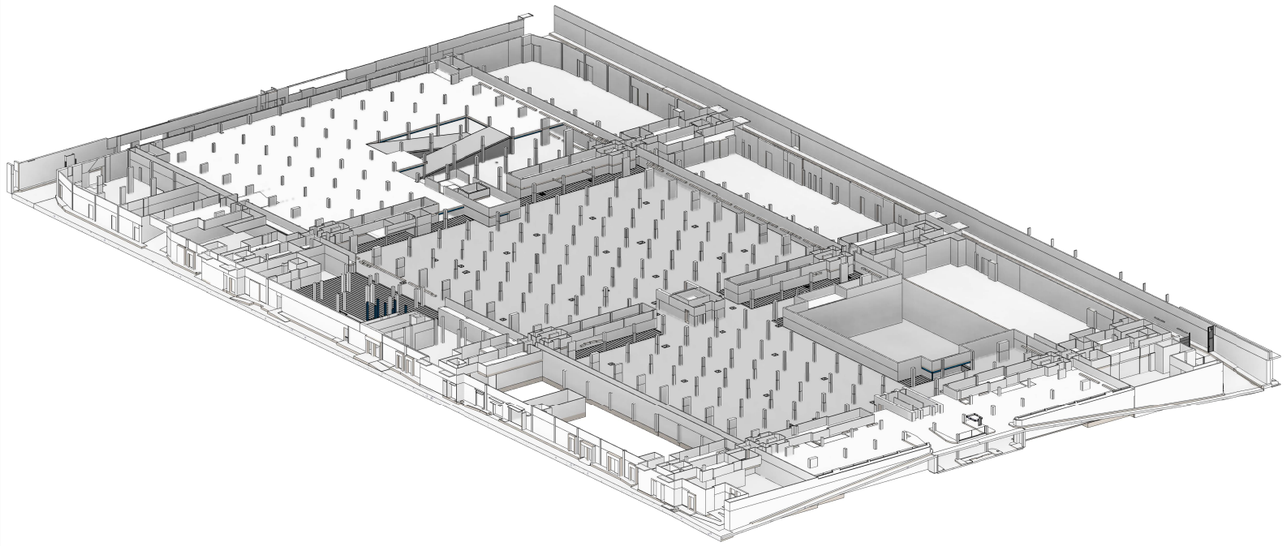
HTS Job No | Suitability S1 | Rev P2



Existing B1 View 1



Demo B1 View 1



Proposed B1 View 1

100mm @ A1 (50mm @ A3)

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Rev	Date	By	Eng	Amendment
P3	23.08.23	JW	JC	Revised Issue
P2	18.05.23	HS	RM	Stage 2 Issue
P1	11.05.23	HS	RM	Draft Stage 2 Issue

HEYNE TILLETT STEEL
STRUCTURAL & CIVIL ENGINEERS
http://hts.uk.com/

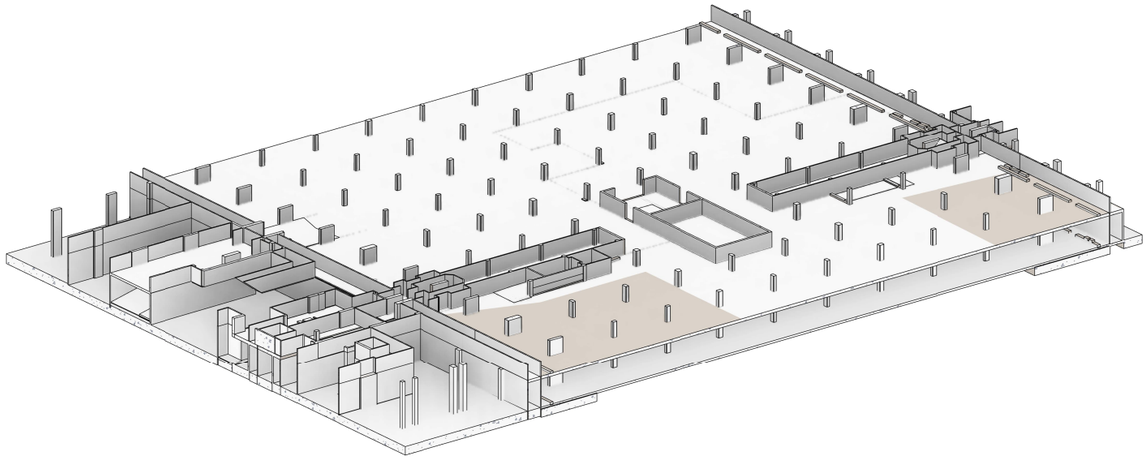
Job Name
Brunswick Centre Hub
WC1N 1BS

Drawing Title
B1 Isometric Views
Sheet 1

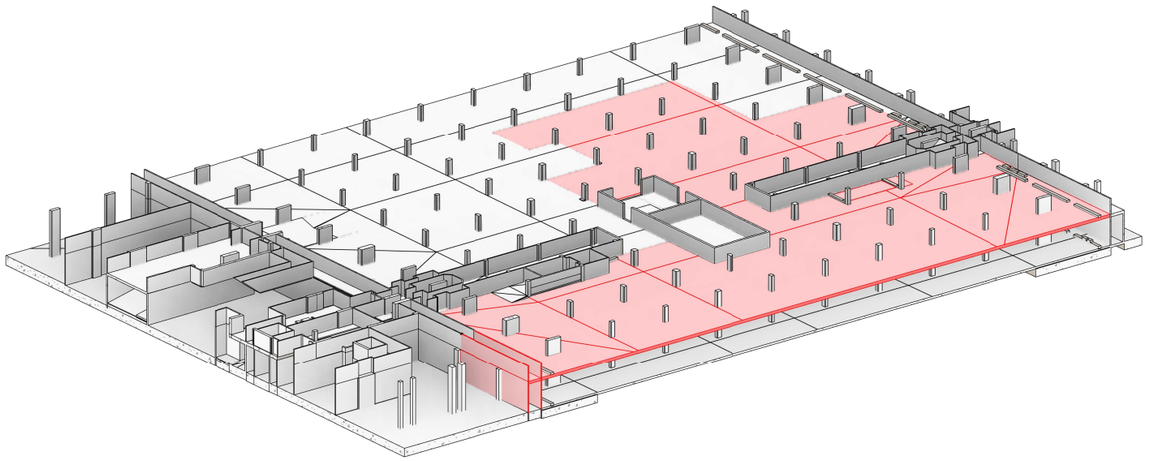
Purpose of Issue Preliminary Scale at A1

Drg No 2911-HTS-XX-ZZ-DR-S-3300

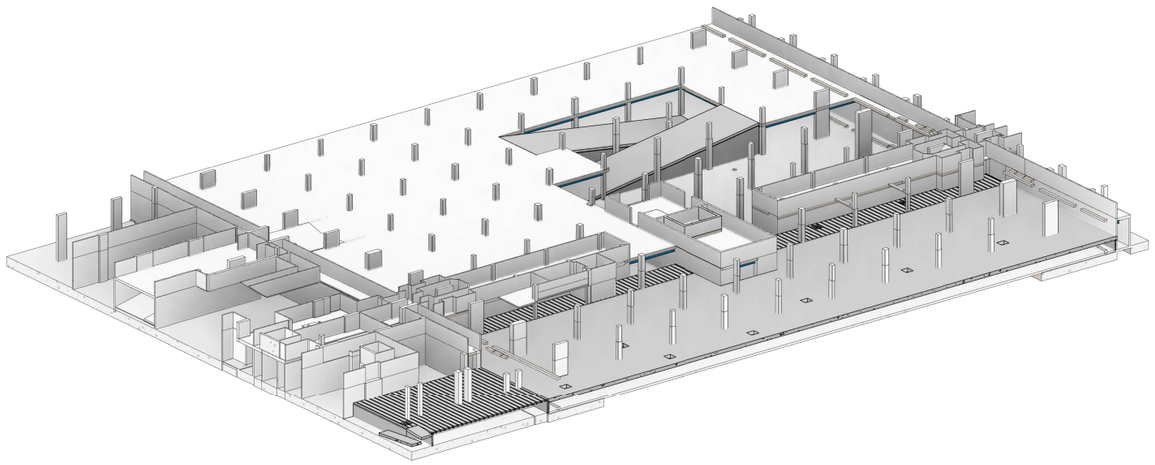
HTS Job No Suitability S1 Rev P3



Existing B1 View 2



Demo B1 View 2



Proposed B1 View 2

100mm @ A1 (50mm @ A3)

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Rev	Date	By	Eng	Amendment
P3	23.08.23	JW	JC	Revised Issue
P2	18.05.23	HS	RM	Stage 2 Issue
P1	11.05.23	HS	RM	Draft Stage 2 Issue

HEYNE TILLETT STEEL
STRUCTURAL & CIVIL ENGINEERS
http://hts.uk.com/

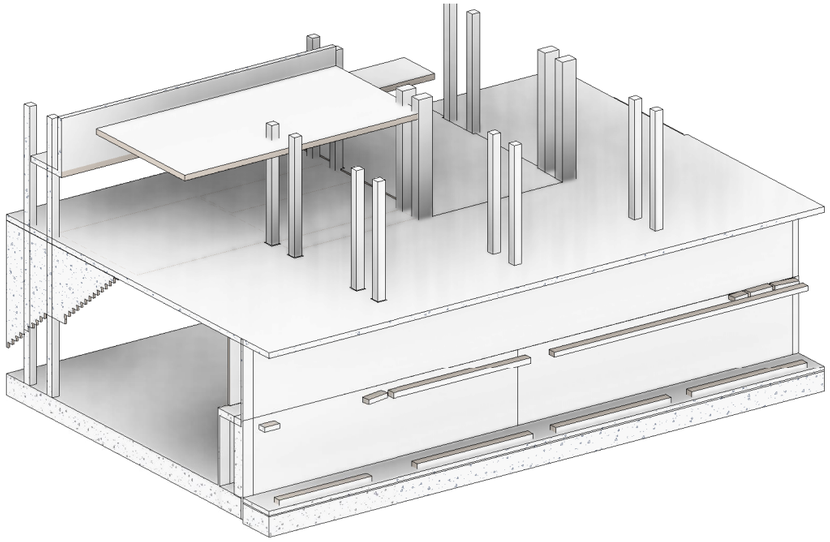
Job Name
Brunswick Centre Hub
WC1N 1BS

Drawing Title
B1 Isometric Views
Sheet 2

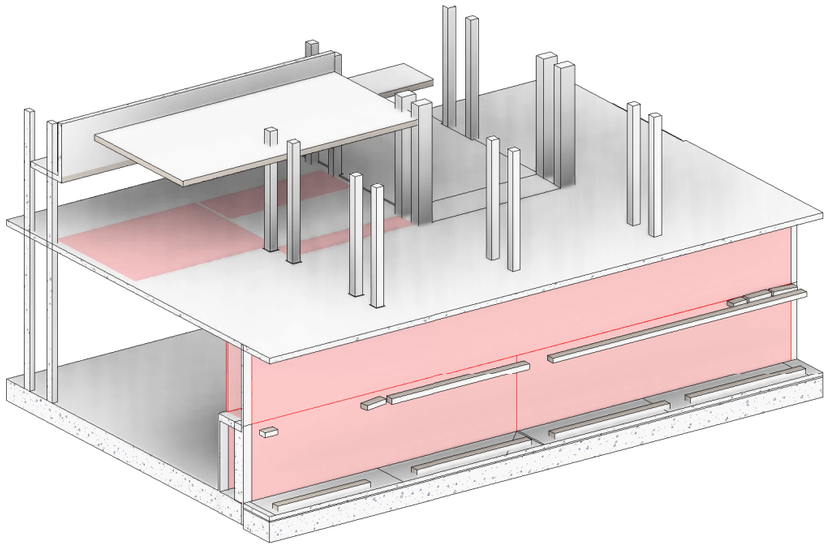
Purpose of Issue Preliminary
Scale at A1

Drg No 2911-HTS-XX-ZZ-DR-S-3301

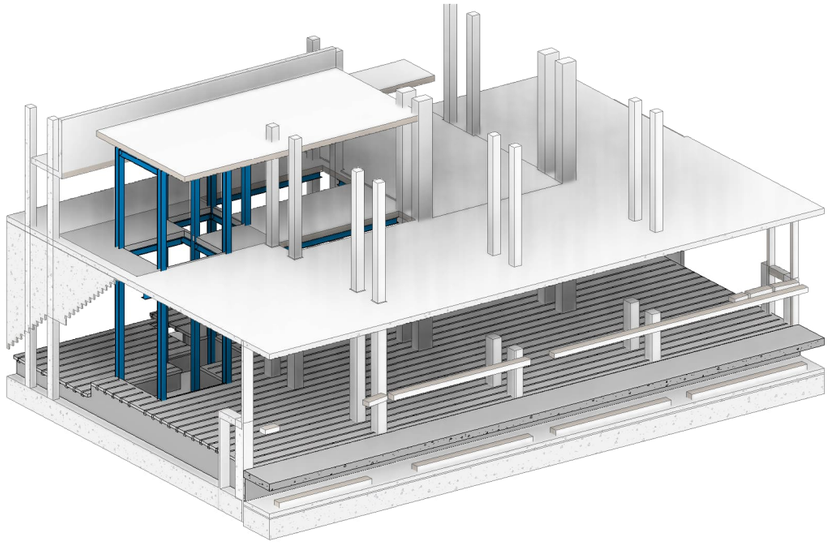
HTS Job No
Suitability S1
Rev P3



Existing Entrance Lobby



Demo Entrance Lobby



Proposed Entrance Lobby

100mm @ A1 (50mm @ A3)

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Rev	Date	By	Eng	Amendment
P2	18.05.23	HS	RM	Stage 2 Issue
P1	11.05.23	HS	RM	Draft Stage 2 Issue

HEYNE TILLETT STEEL

STRUCTURAL & CIVIL ENGINEERS

http://hts.uk.com/

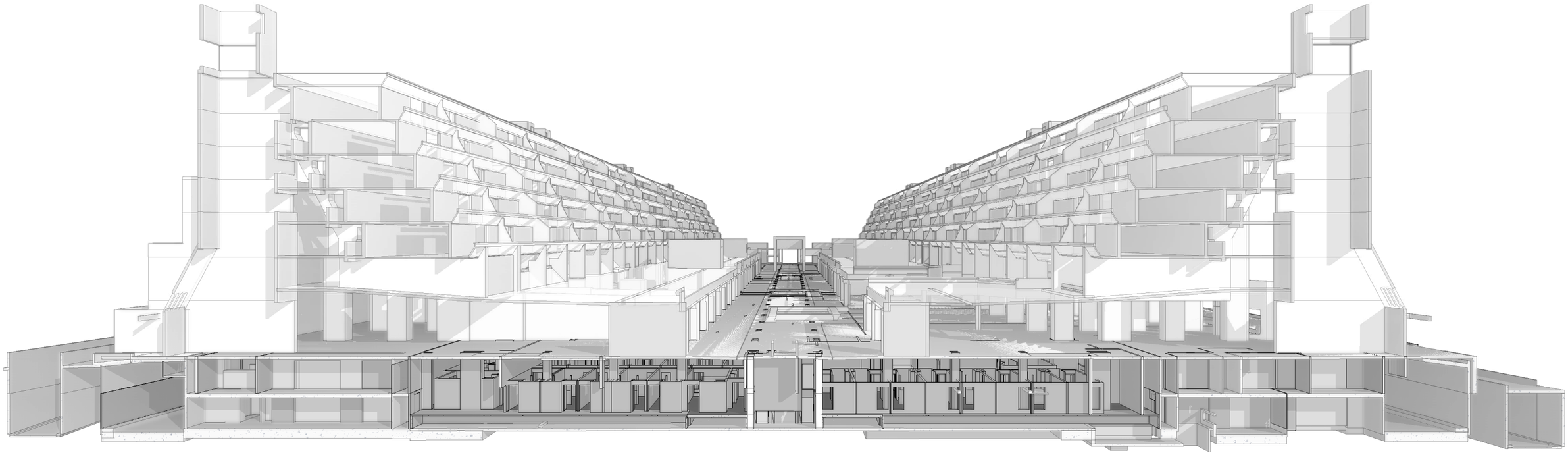
Job Name
Brunswick Centre Hub
WC1N 1BS

Drawing Title
Entrance Lobby 3D Views

Purpose of Issue Preliminary Scale at A1

Drg No 2911-HTS-XX-ZZ-DR-S-3302

HTS Job No Suitability S1 Rev P2



100mm @ A1 (50mm @ A3)

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P1	11.07.23	HS	RM	Stage 2 Issue
Rev	Date	By	Eng	Amendment

HEYNE TILLETT STEEL

STRUCTURAL & CIVIL ENGINEERS

http://hts.uk.com/

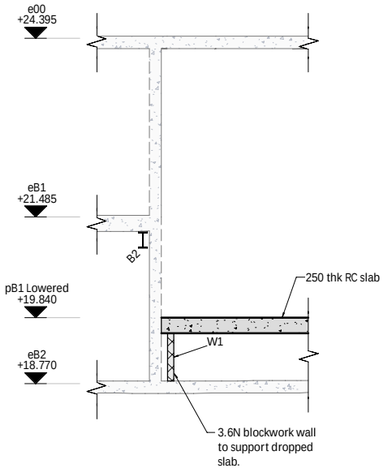
Job Name
Brunswick Centre Hub
WC1N 1BS

Drawing Title
Proposed
Isometric Views sheet 1

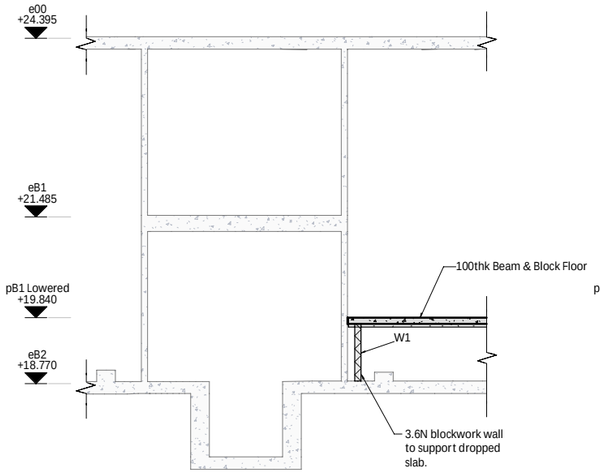
Purpose of Issue Preliminary Scale at A1

Drg No 2911-HTS-XX-ZZ-DR-S-3310

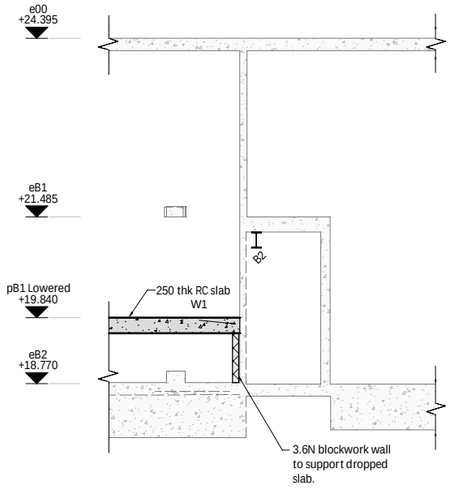
HTS Job No Suitability Rev P1



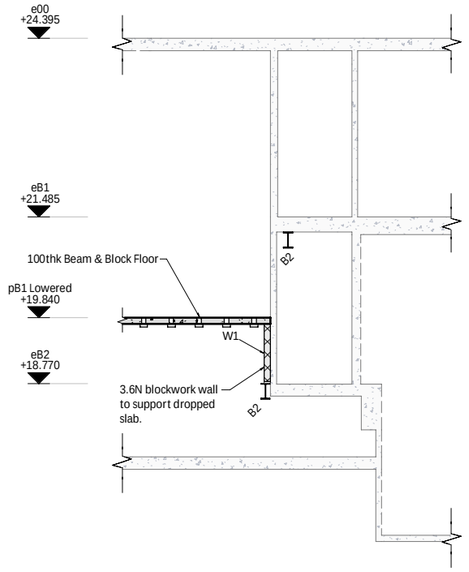
Section 1



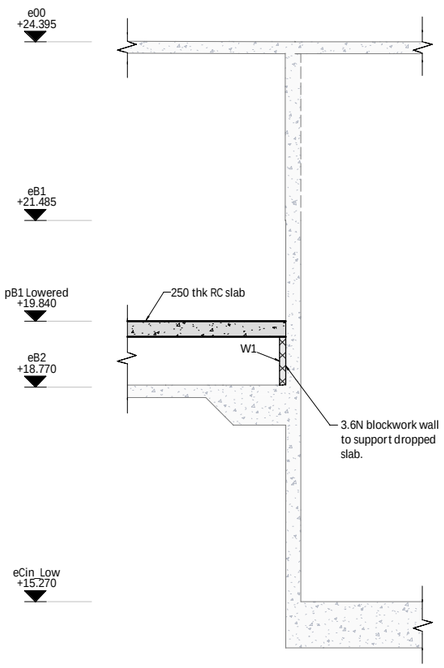
Section 2



Section 3



Section 4



Section 5

100mm @ A1 (50mm @ A3)

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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

Proposed Floors

Ref	Thickness and Type
1	250 thk RC slab
2	100 thk Beam & Block
3	200 thk RC slab

Proposed Steel Beams

Ref	Type
B1	UC203x203x71
B2	UB254x146x37

Proposed Steel Cols

Ref	Type
C1	UC203x203x100
C2	SHS100x100x10

Proposed Walls

Ref	Thickness and Type
W1	100 Blockwork

Rev	Date	By	Eng	Amendment
P2	18.05.23	HS	RM	Stage 2 Issue
P1	11.05.23	HS	RM	Draft Stage 2 Issue

HEYNE TILLETT STEEL

STRUCTURAL & CIVIL ENGINEERS

http://hts.uk.com/

Job Name

Brunswick Centre Hub

WC1N 1BS

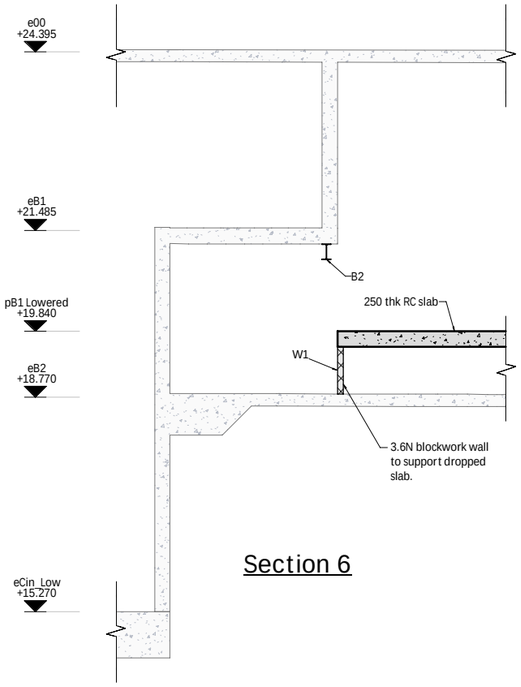
Drawing Title

Proposed Sections Sheet 1

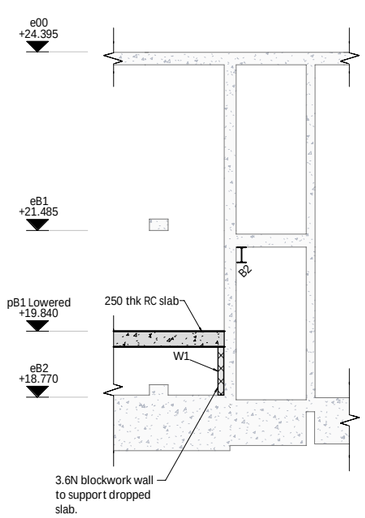
Purpose of Issue Preliminary | Scale at A1 1 : 50

Drg No 2911-HTS-XX-ZZ-DR-S-3400

HTS Job No | Suitability S1 | Rev P2



Section 6



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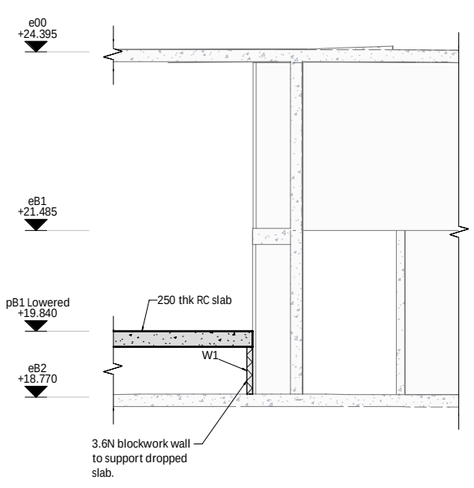

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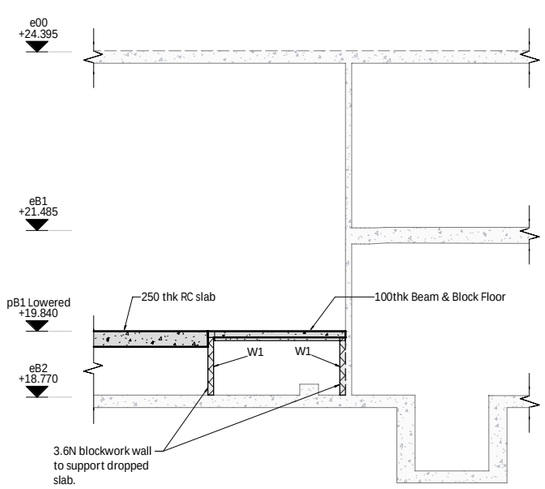

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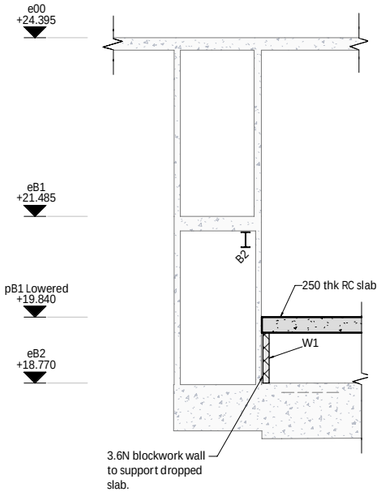
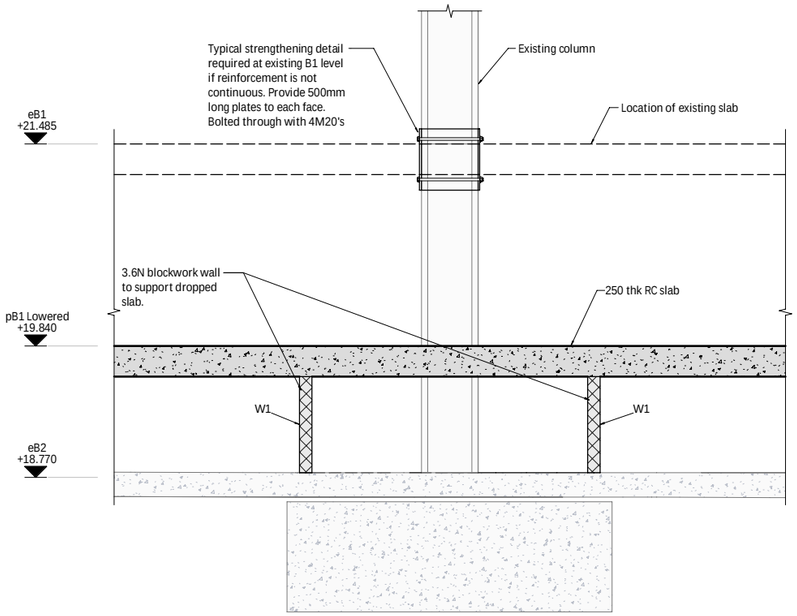


Section 10



Section 11

100mm @ A1 (50mm @ A3)

1. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
2. Do not scale from this drawing in either paper or digital form. Use written dimensions only. To check drawing has been printed to the intended scale the above bar should be 100mm.
3. Any setting out dimensions shown in red are to be confirmed by the architect. All dimensions are to be checked by the contractor against site dimensions prior to fabrication /commencement of work on site. Beams and columns are to be centred on grid unless noted otherwise. Setting out of steelwork is shown to the centre of symmetric sections and to the back face of PFCs and RSAs.

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

Proposed Floors

Ref	Thickness and Type
1	250 thk RC slab
2	100 thk Beam & Block
3	200 thk RC slab

Proposed Steel Beams

Ref	Type
B1	UC203x203x71
B2	UB254x146x37

Proposed Steel Cols

Ref	Type
C1	UC203x203x100
C2	SHS100x100x10

Proposed Walls

Ref	Thickness and Type
W1	100 Blockwork

Rev	Date	By	Eng	Amendment
P2	18.05.23	HS	RM	Stage 2 Issue
P1	11.05.23	HS	RM	Draft Stage 2 Issue

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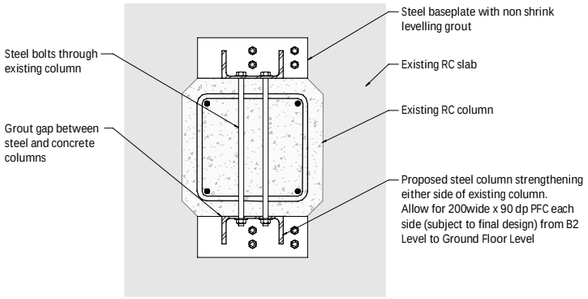
Drawing Title
Proposed Sections Sheet 2

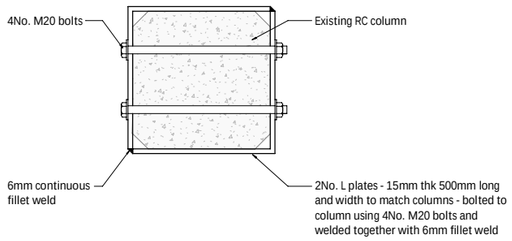
Purpose of Issue Preliminary Scale at A1 As indicated

Drg No 2911-HTS-XX-ZZ-DR-S-3401

HTS Job No Suitability S1 Rev P2



Typical Detail 01 - Column Strengthening



Typical Detail 02 - Column Strengthening at B1 Level

100mm @ A1 (50mm @ A3)

Rev	Date	By	Eng	Amendment
P1	18.05.23	HS	RM	Stage 2 Issue

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Job Name
Brunswick Centre Hub
WC1N 1BS

Drawing Title
Typical Details
Sheet 1

Purpose of Issue Preliminary | Scale at A1 1 : 10

Drg No 2911-HTS-XX-ZZ-DR-S-3500

HTS Job No | Suitability S1 | Rev P1

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