Appendices

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Appendix A - Structural Drawings

1.0 NOMENCLATURE

STANDARD ABBREVIATIONS USED IN THESE GENERAL NOTES, PLUS THE DRAWINGS AND

BLK BLOCKWORK
BWK BRICKWORK
CA CONTRACT ADMINISTRATOR
CL CENTRE LINE
CTRS CENTRES
DIA DIAMETER
DP DEEP
DRG DRAWING
EL EXISTING LEVEL
FFL FINISHED FLOOR LEVEL
HOR HORIZONTAL
NTS NOT TO SCALE
RC REINFORCED CONCRETE
SFL STRUCTURAL FLOOR LEVEL
SOL SETTING OUT LINE
SOP SETTING OUT POINT
UNO UNLESS NOTED OTHERWISE
VERT VERTICAL

2.0 GENERAL

2.1 WHERE THE TERM ENGINEER IS USED, THEN THIS SHALL MEAN SIMPLE WORKS.

2.2 THE ENGINEERS' DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS', SERVICE ENGINEERS' AND SPECIALISTS DRAWINGS PLUS THE SPECIFICATIONS AND BILL OF QUANTITIES.

2.3 FOR THE PURPOSES OF CONSTRUCTION ALL DRAWINGS MUST NOT BE SCALED AND ONLY WRITTEN OR CALCULATED DIMENSIONS USED. LEVEL DATUMS TO BE CONFIRMED BY THE ARCHITECT.

2.4 ANY DISCREPANCIES BETWEEN THE ENGINEERS' DRAWINGS AND THE ARCHITECT'S DRAWINGS SHOULD IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE CA.

2.5 GENERALLY, ONLY HOLES, POCKETS, RECESSES ETC. WITH DIMENSIONS GREATER THAN 300X300mm ARE SHOWN ON THE DRAWINGS.FOR CONFIRMATION OF THESE AND FOR DETAILS OF SMALLER HOLES PLUS INSERTS, FIXINGS ETC. REFERENCE SHALL BE MADE TO THE ARCHITECTS', SERVICES ENGINEER'S OR THE RELEVANT SUBCONTRACTOR'S BUILDERS WORK DRAWINGS.

2.6 ALL PROPRIETARY PRODUCTS ARE TO BE USED STRICTLY IN ACCORDANCE WITH THE MANUFACTURERS' DETAILS AND REQUIREMENTS.

2.7. ALL DIMENSIONS ON ENGINEERS' DRAWINGS ARE RELATED TO CENTRE LINES, UNLESS NOTED OTHERWISE EXCEPT IN THE CASE OF CHANNELS AND ANGLES WHERE DIMENSIONS RELATE TO CHANNEL AND ANGLE OUTSIDE FACES.

2.8. THE CONTRACTOR SHALL ENSURE THAT TEMPORARY LOADS ONTO THE NEW STRUCTURES SHALL BE LESS THAN THOSE FOR WHICH IT HAS BEEN DESIGNED. AS SET OUT IN SECTION 12 OF THESE GENERAL NOTES. THE CONTRACTOR SHALL ALSO ENSURE ANY TEMPORARY LOADS PLACED ON THE EXISTING STRUCTURE (WHETHER IT IS TO BE RETAINED OR DEMOLISHED) ARE ALSO WITHIN THE CAPACITY OF THESE EXISTING ELEMENTS.

2.9. THE FOLLOWING ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS:-
i) PLANT BASES/UPSTANDS
ii) LOCATION OF ANY CAST-IN SERVICES
iii) HOLES LESS THAN 300X300mm
iv) MANHOLES AND UNDERSLAB DRAINAGE
v) DUCTS UNDER AND CAST INTO THE GROUND FLOOR, BASEMENT FLOOR AND PERIMETER RETAINING WALLS
vi) CLADDING CONNECTIONS
vii) SECONDARY STRUCTURES TO SUPPORT WALL AND ROOF CLADDING.
REFERENCE SHOULD BE MADE TO THE RELEVANT ARCHITECTURAL, SERVICES OR SUB-CONTRACTORS DRAWINGS FOR THIS INFORMATION.

2.10 THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND CHECKING THE SETTING OUT OF GRIDLINES, LEVELS AND DATUMS.

2.11 THE MAIN STRUCTURAL GRID AND STRUCTURAL SLAB LEVELS ARE TO BE AGREED ON SITE WITH THE CA PRIOR TO PERMANENT WORKS COMMENCING.

2.12 THE CONTRACTOR SHALL CARRY OUT A DETAILED GEOMETRIC SURVEY TO ACCURATELY LOCATE THE EXISTING RETAINED ELEMENTS OF STRUCTURE AND SUBMIT DETAILS TO THE CA FOR THEIR INFORMATION. FORMAT OF RESULTS TO BE AGREED WITH CA PRIOR TO WORK COMMENCING.

2.13 THE STRUCTURE IS DESIGNED AND DETAILED FOR THE PERMANENT CONDITION ONLY. THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING ITS TEMPORARY CONDITION AND ANY TEMPORARY WORKS REQUIRED DURING CONSTRUCTION. IF THE CONTRACTOR WISHES TO USE THE PERMANENT STRUCTURE AS TEMPORARY WORKS (E.G. CRANE SUPPORT) THEY MUST DEMONSTRATE WITH DRAWINGS AND CALCULATIONS THAT THE TEMPORARY LOADS ARE WITHIN THE CAPACITY OF THE PERMANENT WORKS AND THAT THIS WILL NOT AFFECT THE FUTURE PERFORMANCE OF THE PERMANENT WORKS.

THE CONTRACTOR WILL BE REQUIRED TO PREPARE AND SUBMIT THE NECESSARY DRAWINGS AND CALCULATIONS FOR ALL TEMPORARY WORKS TO THE CA FOR AGREEMENT.

2.14 THE CONTRACTOR IS TO BE AWARE THAT EXPOSED ELEMENTS OF STRUCTURE WILL BE REQUIRED TO BE OF THE HIGHEST QUALITY OF FINISH, ALL DUE ALLOWANCE SHALL BE MADE IN PRICING OF THE WORKS. THESE ELEMENTS INCLUDE TIMBER AND EXPOSED STEELWORK. THE CONTRACTOR IS REQUIRED TO DEMONSTRATE WITHIN THEIR TENDER THEIR ABILITY TO ACHIEVE THESE REQUIREMENTS AND GIVE EXAMPLES OF PREVIOUS WORK WHERE THE ARCHITECT CAN VISIT TO SATISFY THEMSELVES OF THIS ABILITY.

2.15 THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO ENSURE THAT NOISE, VIBRATION AND DUST RESULTING FROM THE WORKS ARE KEPT WITHIN REASONABLE AND AGREED LIMITS.

2.16 WORKS COVERED BY PROVISIONAL SUMS SHOULD NOT BE UNDERTAKEN UNTIL DETAILED PROPOSALS HAVE BEEN RECEIVED FROM THE CONTRACTOR INCLUDING COSTS, AND ACCEPTED BY THE CA. THE CONTRACTOR SHALL ENSURE THAT SUFFICIENT TIME IS ALLOWED TO ACHIEVE THE ABOVE WHILST MAINTAINING THE OVERALL PROGRAMME.

2.17 WHERE THE ENGINEER IS REQUIRED TO PRODUCE RECORD DRAWINGS, THESE SHALL BE THE LAST ISSUE OF CONSTRUCTION DRAWINGS.

2.18 WHERE THE ENGINEER IS REQUIRED TO REVISIT CONSTRUCTION DRAWINGS AFTER THEIR FIRST ISSUE TO REFLECT INFORMATION RECEIVED FROM OTHERS AFTER THE AGREED DATES. AS SET OUT IN THE ENGINEER'S CONSTRUCTION DRAWING PROGRAMME AND INFORMATION REQUIRED SCHEDULE, THIS WILL CONSTITUTE ADDITIONAL WORK AND SUBJECT TO AN ADDITIONAL FEE.

2.19 THE CONSTRUCTION DRAWINGS REFLECT DRAWN POSITIONS AND DO NOT INCLUDE ANY AS BUILT SURVEY INFORMATION AND/OR CONSTRUCTION TOLERANCES AND/ OR DEVIATIONS.

2.20 ANY INFORMATION PROVIDED BY THE ENGINEER ON THE EXTENT AND LOCATION OF ANY EXISTING SERVICES, UTILITIES, TUNNELS, FEATURES ETC SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING WORKS ON SITE.

3.0 STANDARDS

3.1 EUROCODES

REFERENCE TO A EUROCODE OR TO AN EXECUTION OR A MATERIAL STANDARD REFERENCED IN ANY DOCUMENTS SHALL BE DEEMED TO INCLUDE THE APPROPRIATE UNITED KINGDOM NATIONAL ANNEX TO THE EUROCODE OR REFERENCE STANDARD. NATIONALLY DETERMINED PARAMETERS SHALL APPLY. NONCONTRADICTORY COMPLEMENTARY INFORMATION TO BE APPLIED WHEN REFERENCED IN THE NATIONAL ANNEX.

3.2 WHERE REFERENCE IS MADE TO BRITISH STANDARDS, EUROCODES AND OTHER STANDARDS AND GUIDANCE DOCUMENTATION, THEN THESE SHALL BE THE LATEST VERSION OF THESE DOCUMENTS

4.0 GROUND CONDITIONS

4.1 THE FORMATION LEVEL OF THE FOUNDATIONS IS TO BE TO THE SATISFACTION OF THE ENGINEER AND LOCAL AUTHORITY. SITE INVESTIGATIONS ARE REQUIRED TO CONFIRM THE FOUNDATION, GROUND SLAB AND RETAINING WALL, AND A SUITABLE CONTINGENCY SHOULD BE ALLOWED FOR BOTH UNDERTAKING THE SITE INVESTIGATION, AND FOR ANY AMENDMENTS TO THE GROUND WORKS THAT MIGHT BE REQUIRED FOLLOWING THE SITE INVESTIGATION RESULTS.

4.2 ALL EXCAVATIONS ARE TO BE LINED WITH BLINDING CONCRETE OR SIMILAR APPROVED BELOW SPECIFIED FORMATION LEVELS OR BOTTOMED OUT IN ACCORDANCE WITH THE SPECIFICATIONS.

4.3 THE INTEGRITY OF THE EXCAVATIONS IS TO BE MAINTAINED BY THE CONTRACTOR AT ALL TIMES, AND THE INTEGRITY BASED ON THE RESULTS OF THE SITE INVESTIGATION.

4.4 ALL DISTURBED GROUND TO BE REINSTATED WITH GRANULAR FILL IN ACCORDANCE WITH THE SPECIFICATION AND TO THE APPROVAL OF THE ENGINEER.

4.5 WHERE EXISTING DRAINS AND FOUNDATIONS OCCUR UNDER NEW FOUNDATIONS THEY ARE TO BE GRUBBED OUT AND BACK FILLED WITH MASS CONCRETE TO THE APPROVAL OF THE ENGINEER.

4.6 SOFT SPOTS AT FOUNDATION LEVELS ARE TO BE EXCAVATED AND BACK FILLED WITH BLINDING CONCRETE TO THE APPROVAL OF THE ENGINEER.

4.8 THE REMOVAL OF EXCESS WATER FROM THE SITE IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR MUST SATISFY THEMSELVES WITH RESPECT TO THE GROUND WATER CONDITIONS ON SITE AND TAKE MEASURES TO DEAL WITH THE PERCHED GROUND WATER CONDITIONS MAY EXIST OR ANY SHALLOW COHESIVE MATERIAL. PROVIDE ALL NECESSARY SETTLING LAGOONS AND SEEK PERMISSION FROM RELEVANT STATUTORY BODIES TO DISCHARGE TREATED EXCESS WATER INTO PUBLIC SEWER SYSTEM OR WATER COURSES.

4.9 WHERE EXISTING FOUNDATIONS OCCUR UNDER THE GROUND SLAB OR GROUND BEAMS, THE TOPS ARE TO BE CUT DOWN TO 600mm BELOW THE U/S OF THE GROUND SLAB AND GROUND BEAMS AND BACKFILLED IN ACCORDANCE WITH THE SPECIFICATION UNLESS NOTED OTHERWISE.

4.10 SOFT SPOTS UNDER THE GROUND SLAB ARE TO BE EXCAVATED AND BACKFILLED WITH HARDCORE IN ACCORDANCE WITH THE SPECIFICATION, SUBJECT TO THE APPROVAL OF THE ENGINEER.

6.0 DRAINAGE

6.1 THE DESIGN AND SPECIFICATION OF BELOW GROUND DRAINAGE IS WHOLLY THE RESPONSIBILITY OF THE CONTRACTOR FOR THE REQUIRED PICK-UP POINTS SPECIFIED BY THE ARCHITECT. ALL WORKS ARE TO BE CARRIED OUT IN ACCORDANCE WITH REQUIRED BUILDING REGULATIONS AND THE REQUIRED APPORVALS SOUGHT AND GAINED WITH THE NECESSARY APPROVAL AUTHORITIES. THIS INCLUDES ANY DRAINED CAITIES, AND ANY ATTENUATION REQUIRED.

6.2 ANY DUCTS/SLEEVES REQUIRED THROUGH THE PERIMETER RETAINING WALLS AND FLOOR STRUCTURES FOR INCOMING SEWERS/SERVICES SHALL BE DETAILED BY THE MEP ENGINEER/SUBCONTRACTOR.

7.0 UTILITIES

7.1 THE CONTRACTOR IS TO UNDERTAKE ALL NECESSARY RECORD INFORMATION SEARCHES AND/OR INVESTIGATION WORKS ON SITE (WHERE APPROPRIATE) TO CONFIRM LOCATION OF ALL SERVICES WITHIN AND ADJACENT TO THE SITE BOUNDARY, PRIOR TO COMMENCING CONSTRUCTION WORK ON SITE.

8.0 WATERPROOFING

8.1 WATERPROOFING IS THE RESPONSIBILITY OF OTHERS.

8.2 ENGINEER RESPONSIBILITY FOR WATERPROOFING IS LIMITED TO STRUCTURALLY INTEGRAL SOLUTIONS. WATERPROOF CONCRETE ADDITIVE TO CONTRACTOR'S SPECIFICATION.

8.3 ALL RETAINING WALLS, SERVICE DUCTS, ETC. BELOW GROUND AND AGAINST GROUND ARE TO BE IN WATERTIGHT CONSTRUCTION (WATER BARS TO BE USED IN ALL CONSTRUCTION JOINTS).

9.0 PRIMARY / SECONDARY STRUCTURE

9.1 PRIMARY STRUCTURE IS DEFINED AS ELEMENTS REQUIRED TO ENSURE OVERALL STABILITY OF THE BUILDING STRUCTURE, THE REMOVAL OF WHICH WOULD RESULT IN COLLAPSE OR FAILURE OF OTHER PARTS OF THE PRIMARY STRUCTURE AND MAIN FLOOR SLAB ELEMENTS

9.2 SECONDARY STRUCTURE IS DEFINED AS ELEMENTS OUTSIDE THE PRIMARY STRUCTURE WHICH INCLUDE THE FOLLOWING: -
1) STAIRS 6) WIND POSTS
2) BALUSTRADES 7) PLANT PLATFORM
3) BALCONIES 8) SHELF ANGLES
4) CANOPIES 9) ACCESS WALKWAYS
5) HANDRAILS 10) ETC

PLUS ANY SECONDARY STRUCTURAL FRAMEWORK REQUIRED TO PROVIDE SUPPORT TO THE FOLLOWING ELEMENTS: -
1) CEILINGS 5) SERVICES
2) LIFT MOTORS/GUIDE RAILS 6) LIGHTING GANTRIES
3) CLEANING CRADLES 7) ACOUSTIC WALLS
4) PLANT 8) ETC.

9.3 THE ENGINEER'S RESPONSIBILITY IS LIMITED TO THE PRIMARY STRUCTURE AS DEFINED ABOVE.

10.0 DEMOLITION

10.1 THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ISOLATION, DISCONNECTION AND REMOVAL OF ALL EXTERNAL SERVICES CONNECTIONS INCLUDING WATER, ELECTRICITY, DRAINAGE AND TELECOMMUNICATIONS. ANY SERVICES THAT CANNOT BE CUT OFF SHALL BE MARKED AND CAREFULLY PROTECTED AT ALL TIMES, AS SHOWN ON SERVICE ENGINEERS DRAWINGS.

10.2 THE CONTRACTOR SHALL LIAISE WITH THE RELEVANT SUPPLY AUTHORITIES FOR THE SAFE TERMINATION OF ALL EXTERNAL SERVICES WITHIN OR ADJACENT TO THE SITE BOUNDARY, AND TO INCLUDE THE DIVERSION OF ANY SERVICES AFFECTED BY THE CONSTRUCTION WORKS.

11.0 LOADINGS

11.1 THE FOLLOWING DEAD AND SUPERIMPOSED SERVICE LOADS HAVE BEEN USED IN THE DESIGN OF THE NEW STRUCTURAL ELEMENTS.

ALL LOADS ARE IN kN/m2
IMPOSED (MAINTENANCE ACESS) 0.75
SNOW DRIFT (UPTO) 0.6
PARTITIONS 0.5

WIND LOADS REFER TO EN 1991-1-4.
SNOW LOADS REFER TO EN 1991-1-3.

CLADDING LOADS

11.3 THE FOLLOWING CLADDING VERTICAL AND HORIZONTAL CLADDING LOADS HAVE BEEN USED IN THE DESIGN OF THE PRIMARY STRUCTURE:

ALL LOADS ARE IN kN/m2
SELF - WEIGHT (VERTICAL): 1.50
IMPOSED (HORIZONTAL): CALCULATED TO EN 1991-1-4.

THE CONTRACTOR IS TO CONFIRM THAT THE ACTUAL LOADS WILL BE WITHIN THIS FIGURE PRIOR TO COMMENCING FABRICATION OR CONSTRUCTION OF THE PRIMARY STRUCTURE.

12.0 CONCRETE

12.1 THE WORKS ARE TO BE BUILT IN ACCORDANCE WITH EXECUTION CLASS 2, OTHER THAN FOR POST-TENSIONED CONSTRUCTION WHERE CLASS 3 IS TO BE USED, IN ACCORDANCE WITH BS EN 13670, UNLESS OTHERWISE SPECIFIED IN OTHER PROJECT SPECIFICATIONS.

12.2. CONCRETE CHARACTERISTIC DESIGN STRENGTH AT 28 DAYS;- C35/45 (U.N.O)
BLINDING - GRADE C16/20 - (CLAUSE E10/105A)
REINFORCED CONCRETE ABOVE GROUND GRADE RC35/45 - (CLAUSE E10/ 132B)
REINFORCED CONCRETE BELOW GROUND GRADE RC35/45 - (CLAUSE E10/132A)

12.3 THE ABOVE CONCRETE GRADES ARE SUITABLE FOR NON-AGGRESSIVE SOILS. FOR CONCRETE IN CONTACT WITH AGGRESSIVE SOILS USE GRADE FND 2.

12.4 REINFORCEMENT GRADES; -

HIGH YIELD - GRADE 500N/mm2 - (CLAUSE E30/150) (DEFORMED TYPE 2)
PLAIN BARS - GRADE 250N/mm2 - (CLAUSE E30/140)
FABRIC - GRADE 500N/mm2 - (CLAUSE E30/210)

12.5 THE MINIMUM LAP LENGTHS TO BE AS FOLLOWS:- (UNO)
A193 MESH – 300mm
A252 MESH – 400mm
A393 MESH – 500mm
LAPS IN MESH FABRIC ARE TO BE KEPT TO A MINIMUM AND THE SHEETS STAGGERED TO ENSURE AT THE CORNERS A MAXIMUM OF 3 LAYERS IS NOT EXCEEDED.
LOOSE BAR REINFORCEMENT - 50 TIMES THE SMALLER BAR DIAMETER OR LAPS TO BE IN ACCORDANCE WITH BS EN 1992 WHICHEVER IS THE GREATER. LAPPING BAR ARRANGEMENT TO BE IN ACCORDANCE WITH BS EN 1992.
ALSO REFER TO 13.32.

12.6 LAPPING OF REINFORCEMENT BARS SHALL BE STAGGERED AS RECOMMENDED BY BS EN 1992.

12.7 ALL CONCRETE ENCASED STEEL SECTIONS TO HAVE D98 WRAPPING FABRIC AROUND SECTIONS. REINFORCEMENT TO BE PLACED CENTRALLY WITHIN COVER.

12.9 UNLESS NOTED OTHERWISE CONCRETE COVER TO OUTERMOST REINFORCEMENT TO BE:-

i) FOUNDATIONS - 50mm BOTTOM, 30mm SIDE AND TOP
ii) PILE CAPS - 75mm BOTTOM, 30mm SIDE AND TOP
iii) GROUND BEAMS - 40mm AGAINST BLINDING, 30mm ALL OTHER FACES
iv) GROUND FLOOR SLAB - 40mm AGAINST BLINDING, 30mm ALL OTHER FACES
v) SUSPENDED SLAB/SUPERSTRUCTURE - 25mm ALL FACES
vi) BEAMS - 25mm ALL FACES
vii) COLUMNS - 25mm ALL FACES
viii) FIRE ESCAPE STAIRS/FLIGHTS AND LANDINGS - 30mm ALL FACES
ix) WALLS - 25mm ALL FACES
THE ABOVE COVERS RELATE TO CONCRETE CAST AGAINST FORMED SURFACES.
WHERE CONCRETE IS CAST AGAINST SOIL, WITH THE AGREEMENT OF THE CA, THE COVER TO REINFORCEMENT SHALL BE INCREASED TO 75mm.
ADDITIONAL REINFORCEMENT SHALL BE PROVIDED WHERE COVER EXCEEDS 70mm

12.10 FINISHES TO INSITU CONCRETE SURFACES:-
TOP SURFACE OF SLAB SMOOTH FLOATED FINISH
(TO RECEIVE FLOOR FINISH) (CLAUSE E41/310)
TOP SURFACE OF SLAB TROWELLED FINISH
(TO RECEIVE WATERPROOFING) (CLAUSE E41/320)
TOP SURFACE OF SLAB TROWELLED FINISH
(TO PROVIDE WEARING SURFACE) (CLAUSE E41/330)

EXPOSED FACES OF EXTERNAL RETAINING WALLS AND EXPOSED FACES OF INTERNAL FACES OF THE RAFT UPSTANDS AND DOWNSTANDS (ALL FACES OUTSIDE OF THE POTS) SHALL RECEIVE SPECIAL FINISH AS OUTLINED IN E20/630A OR E20/630B: LIGHTLY BRUSHED AND WASHED, OR ACID ETCHED. PRECONTRACT SAMPLE OR FINISHED EXAMPLE TO BE SUBMITTED FOR LEAD DESIGNER APPROVAL.

THE ABOVE FINISHES ARE TO BE CONFIRMED BY THE ARCHITECT PRIOR TO CONCRETING OPERATIONS COMMENCING.

12.11 REFER TO ARCHITECTS DRAWINGS FOR DETAILS OF REBATES, CHAMFERS ETC TO EXPOSED CONCRETE CONSTRUCTION.

12.12 CONTRACTOR TO PROVIDE ALL NECESSARY FALSEWORK AND FORMWORK WHICH COMPLY WITH BS EN 13670 SECTION 5 TO ACHIEVE THE SURFACE FINISHES AS SPECIFIED IN DRAWINGS AND SPECIFICATIONS. ALL TIMBER PRODUCTS ARE TO BE SOURCED FROM FOREST STEWARDSHIP COUNCIL (FSC) OR PROGRAM FOR THE ENDORSEMENT OF FOREST CERTIFICATION SCHEME (PEFC).

12.14 THE CONTRACTOR SHALL PROVIDE FORMWORK DRAWINGS TO ALL AREAS OF THE EXPOSED CONCRETE STRUCTURE AND OBTAIN THE CA'S APPROVAL 4 WEEKS PRIOR TO THE WORKS COMMENCING ON SITE. THE DRAWINGS SHOULD BE AT MINIMUM SCALE OF 1:100 AND DESCRIBE ALL SERVICE HOLES, CAST IN SERVICES, CAST IN FIXINGS, AND OTHER ITEMS, REBATES, CHAMFERS, TYPE OF FINISH, CONSTRUCTION JOINTS, SHUTTERING BOLT HOLES ETC. IT SHOULD BE NOTED THAT THE STRUCTURAL GA'S ONLY SHOW MAIN SERVICE HOLES; REFERENCE SHOULD BE MADE TO THE ARCHITECTS AND SERVICE ENGINEERS DRAWINGS AND ALL RELEVANT SUB-CONTRACTORS DRAWINGS FOR ITEMS AFFECTING THE CONCRETE SECTIONS AND PROFILES.

12.15 THE CONTRACTOR WILL BE REQUIRED TO PROVIDE DETAILED METHOD STATEMENTS DESCRIBING FULLY HOW THEY INTENDS TO CONTROL THE QUALITY OF ALL STRUCTURAL ELEMENTS, ESPECIALLY THE EXPOSED CONCRETE WORKS. PRELIMINARY METHOD STATEMENTS SHOULD BE SUBMITTED AT TENDER STAGE. NO PERMANENT WORKS WILL BE PERMITTED ON SITE UNTIL THESE METHOD STATEMENTS HAVE BEEN APPROVED BY THE CA. THE CONTRACTORS ATTENTION IS BROUGHT TO THE IMPORTANCE OF ACHIEVING THE TOLERANCES DEFINED; THIS ISSUE MUST BE FULLY ADDRESSED IN THE SUBMITTED METHOD STATEMENT.

12.16 FINAL CONSTRUCTION DRAWINGS FOR ALL CONCRETE ELEMENTS WILL BE ISSUED IN ACCORDANCE WITH THE FOLLOWING TIMESCALE PRIOR TO CONCRETING THE RESPECTIVE PART OF THE STRUCTURE, UNLESS AGREED OTHERWISE WITH ENGINEER.
GENERAL ARRANGEMENT DRAWINGS 6 WEEKS
REINFORCEMENT BENDING SCHEDULE 4 WEEKS
(WHERE ENGINEER PREPARES REINFORCEMENT DRAWINGS)
REINFORCEMENT DETAIL DRAWINGS 2 WEEKS
(WHERE ENGINEER PREPARES REINFORCEMENT DRAWINGS)
REINFORCEMENT INTENT SKETCHES 6 WEEKS
(WHERE CONTRACTOR PREPARES REINFORCEMENT DRAWINGS)

12.17 ALL CONCRETE FOR THE SLAB AND RETAINING WALLS ARE TO BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH BS EN 1992-3 DESIGN OF CONCRETE STRUCTURES PT 3: LIQUID RETAINING AND CONTAINMENT STRUCTURES, UNLESS STATED OTHERWISE ON THE DRAWINGS.

12.18 POUR SIZES ARE TO BE DETERMINED BY THE CONTRACTOR AND TO THE APPROVAL OF ENGINEER. INFILL POURS BETWEEN RIGID RESTRAINTS SHOULD BE AVOIDED OR MINIMISED WHERE POSSIBLE. THE CONTRACTOR MUST PROVIDE A DETAILED SEQUENCE FOR THE APPROVAL OF THE CA TAKING INTO ACCOUNT PROGRAMME, SPECIFICATION, FORMWORK USAGE, CRANAGE, DELIVERIES, PROTECTION, CURING AND CONTINUITY OF WORK.

simple works

NOTES:
1. NO DIMS TO BE SCALED FROM THIS DRAWING
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT, SERVICES AND ENGINEERS DRAWINGS TOGETHER WITH THE RELEVANT SPECIFICATIONS AND GENERAL NOTES.
3. ANY NON-STRUCTURAL ITEMS SUCH AS WATERPROOFING, CLADDING, FINISHES, FIRE STOPPING ARE TO THE ARCHITECT'S SPECIFICATION.
4. ALL PROPRIETARY PRODUCTS ARE TO BE USED AND INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S' DETAILS AND REQUIREMENTS
5. THE STRUCTURE IS DESIGNED AND DETAILED FOR THE PERMANENT CONDITION ONLY. THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING ITS TEMPORARY CONDITION, ANY TEMPORARY WORKS REQUIRED DURING CONSTRUCTION AND ANY TEMPORARY LOADS ONTO EXISTING AND NEW STRUCTURE WHICH SHALL BE LESS THAN THOSE FOR WHICH IT HAS BEEN CONFIRMED OR DESIGNED RESPECTIVELY
6. ALL WORKS UNDERTAKEN BY CONTRACTOR TO BE COMPLIANT WITH RELEVANT AND CURRENT BUILDING CODES, REGULATIONS AND GOOD PRACTICES.
7. ALL LEVELS AND SETTING OUT TO BE PROVIDED BY ARCHITECT
8. ALL STEEL TO STEEL CONNECTIONS DESIGNED BY CONTRACTOR. ASSUME MINIMUM M20 BOLTS AND 8mm FILLET WELDS
9. ALL LINTELS TO BE DESIGNED BY CONTRACTOR
10. FIRE PROTECTION OF STRUCTURE AND OTHER ELEMENTS TO ARCHITECT'S SPECIFICATIONS
11. DETAILING OF REINFORCING STEEL BY OTHERS

NOT FOR CONSTRUCTION

Rev	Date	Desc.	By
P1	05.05.23	PRELIMINARY ISSUE	NC

Project name: DALEHAM GARDENS
Client name: NW3 CLT
Project No: 2102
Scale: 1:50 @A2
Drawn/Checked: NC/AC
Status: PRELIMINARY
Title: GENERAL NOTES - SHEET 01
Drawing No.: 1803-SW-XX-XX-DR-S-0001
Rev: P1
Date: 05/05/2023

12.19 CONTRACTOR TO SUBMIT PROPOSED LAYOUT OF CONSTRUCTION JOINTS AND WATER BAR DETAILS IN ADVANCE FOR CONSULTANT TO PROGRESS RC DETAILING OF SLAB AND SUSPENDED FLOORS 6 WEEKS PRIOR TO ISSUE OF RELEVANT CONSTRUCTION DRAWINGS. IN ADDITION TO THE RELEVANT CODES OF PRACTICE THE CONTRACTOR MUST SATISFY THE REQUIREMENTS OF THE FOLLOWING DOCUMENTS AND REFERENCES THERE IN.
i) CIRIA REPORT 135 – CONCRETING DEEP LIFT AND LARGE VOLUME POURS.
ii) REINFORCED CONCRETE COUNCIL – LARGE AREA POURS FOR SUSPENDED SLABS A DESIGN GUIDE
iii) CONCRETE SOCIETY DIGEST No 2 – MASS CONCRETE

12.20 WHERE CONCRETE WALLS OR BEAMS ARE CAST AGAINST EXISTING FEATURES THE TOLERANCES OF THESE CONCRETE FACES SHALL COMPLY WITH THE TOLERANCES SPECIFIED FOR FORMED SURFACES. THE CONTRACTOR SHALL PROVIDE VOID FORMERS OR DEVELOP A REAR SHUTTER SYSTEM TO ACHIEVE THIS REQUIREMENT, UNLESS SHOWN OTHERWISE ON THE DRAWINGS.

12.21 WHERE CONCRETE IS CAST AGAINST EXISTING FEATURES/PARTY WALLS THE CONTRACTOR SHALL ENSURE THESE ELEMENTS CAN ACCEPT THE HYDROSTATIC PRESSURE. WHERE THEY CANNOT A SHUTTER SYSTEM OR TEMPORARY SUPPORTS SHALL BE INTRODUCED TO AVOID OVERLOADING THESE ELEMENTS.

12.22 WHERE CONCRETE IS BEING POURED INTO AREAS WITH RESTRICTED ACCESS THE CONTRACTOR SHALL GIVE CONSIDERATION TO THE USE OF A CONCRETE MIX USING REDUCED SIZED AGGREGATES TO ENSURE FULL AND ADEQUATE COMPACTION IS ACHIEVED TO ALL AREAS WITHIN THE SHUTTERS AND AROUND ALL REINFORCEMENT.

EXPOSED SURFACES

12.23 REFERENCE SHOULD BE MADE TO THE ARCHITECTS DRAWINGS FOR LOCATIONS OF FAIR FACED CONCRETE FINISH (EXPOSED FACES OF EXTERNAL RETAINING WALLS AND EXPOSED FACES OF INTERNAL FACES OF THE RAFT UPSTANDS AND DOWNSTANDS (ALL FACES OUTSIDE OF THE POTS)) REQUIREMENTS EQUIVALENT TO FORMWORK GRADE 1, CLAUSE E20/630A AND 630B AND NOTE 13.27 BELOW. ALL VISUAL CONCRETE IS TO BE CONSTRUCTED TO ACHIEVE "SPECIAL FINISH" TO TABLE F.4 OF BS EN 13670 ALL STRUCK SURFACES WHICH ARE NOT EXPOSED TO HAVE FORMWORK GRADE 2 FINISH SPECIFICATION E20/620Y.

12.24 SOME AREAS OF FAIR FACE CONCRETE, AS DEFINED IN CLAUSE E20/630 AND NOTE 13.26 BELOW ARE TO HAVE WORKED FINISHES AS DESCRIBED BELOW. REFER TO THE ARCHITECTS DRAWINGS FOR SPECIFIC LOCATIONS: EXPOSED FACES OF EXTERNAL RETAINING WALLS AND EXPOSED FACES OF INTERNAL FACES OF THE RAFT UPSTANDS AND DOWNSTANDS (ALL FACES OUTSIDE OF THE POTS))
FINISH S1: LIGHTLY TOOLED FINISH - CLAUSE E70/202
FINISH S2: STRUCK FINISH - CLAUSE E70/203
FINISH S3: ACID WASHING/SAND BLASTING - CLAUSE E70/204

12.25 THE CONTRACTOR SHALL PROVIDE RATES FOR THE FOLLOWING TYPES OF FORMWORK TO ACHIEVE THE FAIR FACE FINISH REQUIRED TO BOTH FLAT AND CURVED SURFACES:
(i) MARINE VARNISH (3 COATS) ON BIRCH PLYWOOD
(ii) STEEL
(iii) FORMICA
(iv) WISAFORM
(v) POURFORM
(vi) FIBREGLASS

12.26 THERE ARE AREAS OF EXPOSED CONCRETE CONSTRUCTION THAT WILL BE VISIBLE WITHIN THE COMPLETED BUILDING. THE HIGHEST QUALITY OF WORKMANSHIP WILL BE EXPECTED FOR THESE AREAS SPECIFICALLY AS IN "SPECIAL FINISH" TO BS EN 13670. THE CONTRACTOR SHOULD ALSO WORK TO THE BCA GUIDANCE NOTE 'VISUAL CONCRETE – DESIGN AND PRODUCTION' FOR EXPOSED CONCRETE.
REBAR ESTIMATES

12.27 REINFORCEMENT ESTIMATES PROVIDED BY THE ENGINEER ARE BASED ON THE ENGINEERING, REINFORCEMENT INTENT DRAWINGS AND STANDARD DETAILING PRACTICES TO ACHIEVE THE LOWEST QUANTITIES OF REINFORCEMENT. IN PREPARING THE DETAILED REINFORCEMENT DRAWINGS AND BENDING SCHEDULES THE CONTRACTOR SHALL ENSURE THAT THE FINAL QUANTITIES ARE WITHIN THESE ESTIMATES PROVIDED BY THE ENGINEER AND THAT ANY SIGNIFICANT DIFFERENCE (+/-10%) ARE BROUGHT TO THE ATTENTION OF THE ENGINEER.

WHERE THE CONTRACTOR CHOOSES TO COMPLETE THE REINFORCEMENT DETAILING IN A WAY IN WHICH RESULTS IN AN INCREASE IN REINFORCEMENT QUANTITIES, SUCH AS ACHIEVING EFFICIENCIES IN THEIR DETAILING COSTS AND/OR FOR BUILDABILITY REASONS, ANY ASSOCIATED ADDITIONAL COSTS SHALL BE ESTIMATED BY THE CONTRACTOR AND INCLUDED IN THEIR TENDER PRICE.
UNLESS SHOWN/NOTED OTHERWISE, THE ENGINEER ESTIMATES ARE BASED ON INSITU CONCRETE CONSTRUCTION. IF THE CONTRACTOR CHOOSES AN ALTERNATIVE FORM OF CONSTRUCTION, THEY SHALL MAKE SUFFICIENT ALLOWANCE IN THEIR TENDER FOR ANY INCREASES IN REINFORCEMENT QUANTITIES REQUIRED, FOR EXAMPLE AT THE INTERFACES BETWEEN PRE-CAST ELEMENTS AND THE PRIMARY INSITU CONCRETE FRAME. THE REINFORCEMENT DETAILING SHALL TAKE ACCOUNT OF ALL RELEVANT MOVEMENTS AND TOLERANCES SHOWN ON THE ENGINEERS DRAWINGS.

12.28 REINFORCEMENT QUANTITY ESTIMATES MAKE ALLOWANCE FOR LAPPING OF BARS, BUT DO NOT ALLOW FOR CHAIRS OR OTHER ANCILLARY SUPPORT ITEMS USED FOR FIXING THE REINFORCEMENT OR FOR COUPLERS OR FOR SHEAR RAILS. REINFORCEMENT FOR TEMPORARY WORKS (INCLUDING PILES) OR FOR THE TEMPORARY CONDITION IS NOT INCLUDED IN THE REBAR ESTIMATE.

13.0 STEELWORK

13.1 ALL STEELWORK TO BE DESIGNED IN ACCORDANCE WITH BS EN 1993-1 PART 1, UNLESS STATED OTHERWISE; ALL STEEL SHALL BE TO BS EN 10025, GRADE S355 UNLESS NOTED OTHERWISE.
THE WORKS ARE TO BE BUILT IN ACCORDANCE WITH BS EN 1090-2, EXECUTION CLASS 2 (EXC2).

WELD QUALITY SHALL BE EXC2: QUALITY LEVER C FOR BUILDINGS , UNLESS OTHERWISE SPECIFIED IN OTHER

PROJECT SPECIFICATIONS.

13.2 ALL WORK SHALL BE IN ACCORDANCE WITH THE ENGINEER'S SPECIFICATION. APPROVAL OF ALTERNATIVES TO SPECIFICATION IS REQUIRED FROM THE EMPLOYER'S AGENT PRIOR TO DESIGN.

13.3 THE CONTRACTOR SHALL BE CERTIFIED TO UNDERTAKE WORKS EQUAL OR ABOVE THE EXECUTION CLASS FOR THE PROJECT.

13.4 ALL FABRICATED STRUCTURAL STEELWORK SHALL BE CE MARKED.

13.5 THE CONTRACTOR MUST IDENTIFY IN THEIR TENDER SUBMISSION ANY STEELWORK ITEMS WHICH HAVE ANY LONG LEAD-IN PERIODS FOR WHICH THE MATERIALS WOULD NEED TO BE PRE-ORDERED PRIOR TO THE AWARD OF THE CONTRACT.

13.6 IF INFORMATION IS MISSING FROM THE ENGINEER'S DRAWINGS, RAISE THE QUERIES IN GOOD TIME FOR ENGINEER TO RESPOND WITHOUT CAUSING DELAYS IN WORKS.

13.7 FINAL CONSTRUCTION DRAWINGS FOR ALL STRUCTURAL STEEL ELEMENTS WILL BE ISSUED 16 WEEKS PRIOR TO COMMENCEMENT OF ERECTION DATE FOR THE RESPECTIVE ELEMENT, UNLESS AGREED OTHERWISE BETWEEN THE CA AND CONTRACTOR.

13.8 WHERE REQUESTED BY THE ENGINEER, THE CONTRACTOR SHALL SUBMIT FABRICATION DRAWINGS FOR REVIEW IN DIGITAL FORMAT (PDF FILES) TOGETHER WITH TWO A3 PAPER COPIES OF EACH DRAWING.

13.9 PRIOR TO PROCEEDING WITH THE PRODUCTION OF FABRICATION DRAWINGS THE CONTRACTOR SHALL SUBMIT AND OBTAIN THE ENGINEERS AND ARCHITECTS AGREEMENT OF FRAMING PLANS/ELEVATION SHOWING THE OVERALL LAYOUT AND SETTING OUT OF ALL STEELWORK ELEMENTS.

13.10 DUE CONSIDERATION MUST BE GIVEN TO THE FABRICATION PROCESS TO MINIMISE RESIDUAL STRESSES IN THE WORK PIECES WHICH COULD CAUSE DISTORTION DURING HOT DIP GALVANISING PROCESS, WHERE SPECIFIED. FABRICATOR TO CONSULT AND WORK TO "GALVANISING ASSOCIATION" GUIDELINES WHERE NECESSARY.

13.11 THE SUBGRADE SHALL BE IN ACCORDANCE WITH RELEVANT TABLES IN BS EN 1993-10-10/PD 6695-1-10 (UNLESS NOTED OTHERWISE) FOR EXTERNAL AND/OR INTERNAL USE, TO SUIT THE PLATE THICKNESS PROVIDED.

13.12 ALL BOLTS SHALL BE GRADE 8.8

13.13 HSFG BOLTS OR CLOSE TOLERANCE BOLTS SHALL BE USED IN THE CONNECTIONS OF STEEL TRUSSES OR SIMILAR ELEMENTS TO AVOID THE EFFECTS OF BOLT SLIPPAGE.

13.20 DESIGN OF ALL CONNECTIONS IS THE RESPONSIBILITY OF THE CONTRACTOR.

13.21 IN THE DESIGN OF CONNECTIONS BETWEEN STEEL AND CONCRETE ELEMENTS THE CONTRACTOR MUST COMPLETE THE DETAILING FOUR WEEKS PRIOR TO THE AGREED ISSUE DATE OF THE REINFORCEMENT DRAWINGS AND PROVIDE/AGREE THIS WITH THE ENGINEER OR ALTERNATIVELY IF FINALISED AFTER THIS DATE TAKE INTO ACCOUNT THE REINFORCEMENT ARRANGEMENT DETAILED BY OTHERS IN FINALISING THEIR CONNECTION DESIGN.

13.22 FOR FACTORED DESIGN LOADS REFER TO DRAWINGS. WHERE NO FORCE IS SHOWN ON THE DRAWINGS RAISE THE QUERIES IN GOOD TIME FOR ENGINEER TO RESPOND TO ENSURE TENDER PRICES INCLUDE FOR ALL LOADS AND NO DELAYS OCCUR TO THE PROGRAMME.

13.23 AT BEAM TO COLUMN CONNECTIONS, THE CENTRE LINE OF THE COLUMN SHALL COINCIDE WITH THE CENTRE LINE OF THE BEAM UNLESS NOTED OTHERWISE.

13.24 WHERE POSSIBLE ALL CONNECTIONS DESIGNED BY THE CONTRACTOR SHALL BE ACHIEVED WITHIN THE DEPTH OF THE MEMBER UNLESS SHOWN OTHERWISE ON THE DRAWINGS OR AGREED WITH THE ARCHITECT AND ENGINEER. ALL CONNECTIONS SHALL BE DESIGNED AND DETAILED TO AVOID FINISHES AND ZONES.

13.25 WHERE CLOSED SECTIONS ARE DRILLED TO FORM CONNECTIONS TO OTHER STEEL OR BUILDING ELEMENTS THE CONNECTION SHALL BE DETAILED TO ENSURE THE HOLE IS SEALED IN A MANNER TO PROVIDE ADEQUATE CORROSION PROTECTION TO THE INSIDE OF THE CLOSED SECTION.

13.28 PAINT PROTECTION TO BE IN ACCORDANCE WITH THE STRUCTURAL STEELWORK SPECIFICATION G10 AND THE FOLLOWING:
i) ALL EXTERNAL EXPOSED STEELWORK – (CLAUSE G10/TBC).
ii) ALL INTERNAL EXPOSED STEELWORK – (CLAUSE G10/630A.).
iii) ALL INTERNAL NON–EXPOSED STEELWORK – (CLAUSE G10/638A)
iv) BUILT–IN STEELWORK – (CLAUSE G10/TBC).
v) FIRE PROTECTION

13.33 THE DESIGN OF THE FOLLOWING SECONDARY STEELWORK ITEMS PLUS THEIR CONNECTIONS ONTO THE PRIMARY STEEL FRAME IS THE RESPONSIBILITY OF THE RELEVANT CONTRACTOR:
i) CLADDING RAILS AND PURLINS
iii) SUPPORTS TO SERVICES
iv) STAIRS
v) BALUSTRADES AND HANDRAILS
vi) WALKWAYS AND ACCESS LADDERS
vii) ALL OTHER GENERAL OR ARCHITECTURAL METALWORK

13.35 WIND POSTS ARE GENERALLY DESIGNED AS NON-LOADBEARING (UNLESS NOTED OTHERWISE) AND VERTICAL SLOTTED HOLES MUST BE INTRODUCED TO INTERFACE CONNECTIONS WITH PRIMARY STEELWORK TO ACCOMMODATE LIVE LOAD DEFLECTION. THE CONTRACTOR SHOULD SEQUENCE THE INSTALLATION OF WIND POSTS TO TAKE PLACE ONLY AFTER ALL THE DEAD LOAD DEFLECTIONS HAVE TAKEN PLACE.

14.0 STRUCTURAL TIMBER

14.1 THE DESIGN OF STRUCTURAL TIMBER SHALL BE IN ACCORDANCE WITH BS EN 1995

14.2 ALL STRUCTURAL TIMBER IS TO BE STRENGTH CLASS AS INDICATED ON THE ENGINEERS DRAWINGS TO BS 4978 UNLESS NOTED OTHERWISE ON THE DRAWING. SERVICE CLASS 1 OR 2 OR 3 TO EN 14081-1

14.3 FOR ALLOWABLE SIZES AND POSITIONS OF NOTCHES AND HOLES IN STRUCTURAL TIMBER REFER TO CLAUSE P31/230.

14.4 STRUCTURAL PLYWOOD DECKING IS TO BE CANADIAN DOUGLAS FIR GRADE C24 (CLAUSE G20/310). STRENGTH CLASS AS INDICATED TO EN 636

14.5 THE STRUCTURAL DRAWINGS SHOW MAIN STRUCTURAL ELEMENTS (FLOOR JOISTS AND ROOF RAFTERS). FOR THE SIZES OF SECONDARY TIMBER ELEMENTS AND ALL SETTING OUT INFORMATION REFER TO THE ARCHITECT'S DRAWINGS.

14.6 THE DESIGN OF ALL CONNECTIONS IS THE RESPONSIBILITY OF THE TIMBER SUB CONTRACTOR; THIS COVERS BOTH TIMBER-TO-TIMBER CONNECTIONS PLUS TIMBER TO STEEL, CONCRETE OR BLOCKWORK CONNECTIONS. CALCULATIONS SHALL BE SUBMITTED TO THE CA FOR REVIEW 4 WEEKS PRIOR TO ANY FABRICATION/SITE WORKS COMMENCING OF AFFECTED WORKS.

14.7 FOR FACTORED DESIGN LOADS REFER TO DRAWINGS, WHERE NO FORCES ARE SHOWN ON PLANS, RAISE QUERIES IN GOOD TIME FOR ENGINEER TO RESPOND TO ENSURE TENDERS INCLUDE FOR ALL CONNECTION LOADS AND NO DELAYS OCCUR TO THE PROGRAMME.

14.9 SUITABLE PROTECTION MEASURES MUST BE PROVIDED IF SERVICE CLASS 1 OR 2 ELEMENTS ARE EXPECTED TO BE SUBJECT TO EXTERNAL CONDITIONS DURING CONSTRUCTION STAGE.

15.0 HEALTH AND SAFETY

15.2 IN CARRYING OUT DESIGN WORK, ENGINEERING JUDGEMENT HAS BEEN APPLIED TO ELIMINATE OR WHERE NOT REASONABLY PRACTICABLE, TO REDUCE DESIGN HAZARDS AND RISKS ASSOCIATED WITH THE CONSTRUCTION AND SUBSEQUENT PHASES OF THE STRUCTURE.

15.3 THE CONTRACTOR IS REMINDED OF THEIR RESPONSIBILITIES AND THEIR OBLIGATIONS UNDER OTHER HEALTH & SAFETY LEGISLATION WHEN UNDERTAKING CONSTRUCTION OPERATIONS BOTH ON AND OFF SITE. THIS ALSO APPLIES TO ALL SUB-CONTRACTORS AND SUPPLIERS.

16.0 INFORMATION REQUIRED FROM THE CONTRACTOR

16.1 IN ADDITION TO ALL THE OTHER REQUIREMENTS THE CONTRACTOR SHALL PROVIDE THE FOLLOWING INFORMATION AT TENDER STAGE:
i) PRELIMINARY PROGRAMME
ii) METHOD STATEMENT FOR THE INSTALLATION OF TEMPORARY WORKS
iii) GENERAL STATEMENT COVERING THE OVERALL ERECTION SEQUENCE FOR THE WORKS.
v) PROPOSED DETAILS OF THE MIX AND CONSTITUENTS FOR THE CONCRETE.
vi) DETAILS OF PROPOSED FIRE PROTECTION MATERIALS IF ANY
vii) DETAILS OF THE PROPOSED PAINT PROTECTION MATERIALS
viii) DETAILS OF THE PROPOSED FORMWORK MATERIALS FOR THE GRADE 1 FINISH
ix) METHOD STATEMENTS COVERING THE QUALITY CONTROL PROCEDURES PROPOSED
x) ITEMS THAT REQUIRE PRE-ORDERING
xi) INFORMATION REQUIRED SCHEDULE

17.0 SURVEYING OF THE COMPLETED WORKS

17.1 ON COMPLETION OF EACH ELEMENT OF THE STRUCTURAL WORKS THE CONTRACTOR SHALL CARRY OUT AN AS BUILT SURVEY TO INCLUDE THE FOLLOWING:
i) LEVEL SURVEY OF ALL HORIZONTAL SURFACES AT A MAXIMUM OF GRID OF 5m – ACCURACY +/- 3mm. TO INCLUDE TOP AND BOTTOM SURFACES OF SUSPENDED SLABS AND BEAMS.
ii) ALIGNMENT SURVEY OF ALL VERTICAL FACES AT MAXIMUM GRID OF 5m HORIZONTALLY AND 2M VERTICALLY – ACCURACY +/- 3mm
iii) THE EXACT POSITION OF ALL DATUM POINTS – ACCURACY +/- 3mm
THE ABOVE IS TO BE AGREED WITH THE CA PRIOR TO THE WORKS BEING ACCEPTED.

17.2 ANY OUT OF TOLERANCE CONSTRUCTION IS TO THE BROUGHT TO THE ATTENTION OF THE CA IMMEDIATELY.

17.3 THE CONTRACTOR SHALL PROVIDE A SET OF 'AS BUILT' DRAWINGS INDICATING ALL SURFACES NOTED IN 8.01 PROGRESSIVELY AS THE STRUCTURAL FRAME IS CONSTRUCTED. THIS SHALL BE UNDERTAKEN AT INTERVALS NO GREATER THAN 4 WEEKS.

18.0 SHOP/FABRICATION DRAWINGS AND CALCULATIONS PREPARED BY SUB-CONTRACTORS

18.1 DETAILED PROGRAMMES ARE TO BE PROVIDED BY THE CONTRACTOR GIVING DETAILS OF ALL SHOP DRAWINGS AND CALCULATIONS TO BE PRODUCED BY SUB-CONTRACTORS. THIS WILL INCLUDE DRAWING TITLES AND APPROVAL PERIODS. THIS IS REQUIRED TO ENSURE SUFFICIENT RESOURCES ARE PROVIDED BY THE DESIGN TEAM TO PROCESS THE CHECKING OF THIS INFORMATION TO SATISFY THE CONTRACTOR'S CONSTRUCTION PROGRAMME.

18.2 THE MAIN CONTRACTOR SHALL ENSURE ALL INFORMATION WHICH EFFECTS THE DETAILING OF THE PRIMARY STRUCTURE IS PROVIDED 8 WEEKS PRIOR TO THE CONSTRUCTION OR MANUFACTURE OF THE RESPECTIVE ELEMENT.

19.0 NOTES SPECIFIC TO CLADDING SUB-CONTRACTORS

19.1 THE FINAL DESIGN OF ALL CLADDING SUPPORT MEMBERS, FIXING DETAILS AND RESTRAINTS WILL BE THE RESPONSIBILITY OF THE CLADDING CONTRACTOR. THIS WILL INCLUDE ALL SHEETING RAILS AND PURLINS WHICH SUPPORT CLADDING ELEMENTS PLUS THEIR FIXINGS ONTO THE PRIMARY STRUCTURE.

19.2 ALL CALCULATIONS AND DRAWINGS SHALL BE SUBMITTED TO THE CA, A MINIMUM OF 4 WEEKS BEFORE THE COMMENCEMENT OF ANY WORKS. THESE SHALL INCLUDE DETAILS OF ALL CAST IN FITTINGS.

19.3 ALL SUPPORT MEMBERS, FIXINGS ETC LOCATED EXTERNAL TO THE WATERPROOFING MEMBRANE ARE TO BE MANUFACTURED FROM STAINLESS STEEL TO EN 10088-1 GRADE 1-4301 - GENERAL USE, GRADE 14401 TO EN10088-1 POLLUTED INDUSTRIAL OR MARINE ENVIRONMENT. THE STRUCTURAL DESIGN OF THESE ELEMENTS TO EN 1993-1-4.

19.4 THE CLADDING CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT BIMETALLIC CORROSION IS AVOIDED BETWEEN THEIR AND OTHER CONTRACTORS PERMANENT WORKS.

19.5 ALL ANCHORS ARE TO BE FIXED IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS SPECIAL NOTE SHOULD BE TAKEN OF ALLOWABLE EDGE DISTANCES.

19.6 WHEN DRILLING INTO CONCRETE THE HOLE MUST BE RELOCATED IF REINFORCEMENT IS ENCOUNTERED AND THE FIRST HOLE FILLED WITH AN APPROVED GROUT.

19.7 THE DESIGN AND DETAILING OF THE CLADDING AND ASSOCIATED FIXINGS SHALL ACCOMMODATE THE VARIOUS TOLERANCES MOVEMENTS AND DEFLECTIONS OF THE PRIMARY STRUCTURAL FRAME.

20.0 NOTES SPECIFIC TO BALCONIES, INTERNAL PARTITIONS, ARCHITECTURAL METAL WORK AND BALUSTRADE SUB-CONTRACTORS

20.1 THE DESIGN RESPONSIBILITY FOR THESE ELEMENTS IS WITH THE SUB-CONTRACTOR.

20.2 DRAWINGS AND CALCULATIONS SHALL BE SUBMITTED TO THE CA AT LEAST 4 WEEKS BEFORE THE COMMENCEMENT OF FABRICATION, THESE SHALL INCLUDE ALL CAST IN OR POST DRILLED FIXINGS.

20.3 REFERENCE SHOULD BE MADE TO BS EN 1991 AND BS 6180 FOR LOADING CRITERIA.

20.4 ENGINEER DRAWINGS HAVE BEEN ISSUED FOR DESIGN INTENT PURPOSES ONLY.

20.5 THE DESIGN AND DETAILING OF ALL ELEMENTS SHALL TAKE INTO CONSIDERATION THE TOLERANCES, MOVEMENTS AND DEFLECTIONS OF THE PRIMARY STRUCTURE AND SPECIFIC REQUIREMENTS RELATING TO PREVENTING THERMAL BRIDGING.

21.0 NOTES SPECIFIC TO STAIRCASE SUB-CONTRACTOR

21.1 THE FINAL DESIGN OF ALL STAIRCASE MEMBERS AND FIXINGS WILL BE THE RESPONSIBILITY OF THE RELEVANT SUB-CONTRACTOR, FOLLOWING THE DESIGN INTENT DRAWINGS PRODUCED BY THE ENGINEER AND ARCHITECT.

21.2 ALL CALCULATIONS AND DRAWINGS SHALL BE SUBMITTED TO THE CA 4 WEEKS BEFORE THE COMMENCEMENT OF ANY WORKS

21.3 MATERIALS
ALL STEELWORK, CONCRETE OR TIMBER SHALL BE TO THE RELEVANT EUROCODES

21.4 LOADINGS
ALL STAIRCASES SHALL BE DESIGNED FOR AN IMPOSED LOAD ALLOWANCE OF 4kN/m2 MIMIMUM, UNLESS NOTED OTHERWISE

21.5 DEFLECTION
THE LIMITATIONS OF DEFLECTION OF ALL STAIRCASE MEMBERS ARE LISTED BELOW:
A) IMPOSED LOAD DEFLECTION
i) CONTINUOUS OR SIMPLY SUPPORTED MEMBERS SPAN/360
ii) CANTILEVER MEMBERS SPAN/180 – BUT NOT MORE THAN A MAXIMUM IMPOSED LOAD DEFLECTION OF 20mm
B) DEAD AND IMPOSED LOAD DEFLECTION
i) CONTINUOUS OR SIMPLY SUPPORTED MEMBERS - SPAN/250
ii) CANTILEVER MEMBERS SPAN/125 – BUT NOT MORE THAN A MAXIMUM LIVE LOAD DEFLECTION OF 35mm

21.6 THE NATURAL FREQUENCY WILL BE LIMITED TO A MINIMUM OF 9Hz (VERTICALLY) AND 4.5 Hz (HORIZONTALLY), OR A VERTICAL RESPONSE FACTOR OF 32, WHICHEVER IS MORE ONEROUS.

21.7 PRIOR TO THE FABRICATION OF THE STAIR, A DETAILED SITE SURVEY SHALL BE UNDERTAKEN TO ESTABLISH THE EXACT DIMENSION BETWEEN CONCRETE SUPPORT WALLS AND FLOOR BEAMS. THE STRUCTURAL STEEL STRINGER SHALL THEN BE FABRICATED TO SUIT THESE SITE DIMENSIONS.

21.8 THE DESIGN AND DETAILING OF THE STAIRCASE SHALL ACCOMMODATE THE TOLERANCES, MOVEMENTS AND DEFLECTIONS OF THE PRIMARY STRUCTURE.

simple works

NOTES:
1. NO DIMS TO BE SCALED FROM THIS DRAWING
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT, SERVICES AND ENGINEERS DRAWINGS TOGETHER WITH THE RELEVANT SPECIFICATIONS AND GENERAL NOTES.
3. ANY NON-STRUCTURAL ITEMS SUCH AS WATERPROOFING, CLADDING, FINISHES, FIRE STOPPING ARE TO THE ARCHITECT'S SPECIFICATION.
4. ALL PROPRIETARY PRODUCTS ARE TO BE USED AND INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S' DETAILS AND REQUIREMENTS
5. THE STRUCTURE IS DESIGNED AND DETAILED FOR THE PERMANENT CONDITION ONLY. THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING ITS TEMPORARY CONDITION, ANY TEMPORARY WORKS REQUIRED DURING CONSTRUCTION AND ANY TEMPORARY LOADS ONTO EXISTING AND NEW STRUCTURE WHICH SHALL BE LESS THAN THOSE FOR WHICH IT HAS BEEN CONFIRMED OR DESIGNED RESPECTIVELY
6. ALL WORKS UNDERTAKEN BY CONTRACTOR TO BE COMPLIANT WITH RELEVANT AND CURRENT BUILDING CODES, REGULATIONS AND GOOD PRACTICES.
7. ALL LEVELS AND SETTING OUT TO BE PROVIDED BY ARCHITECT
8. ALL STEEL TO STEEL CONNECTIONS DESIGNED BY CONTRACTOR. ASSUME MINIMUM M20 BOLTS AND 8mm FILLET WELDS
9. ALL LINTELS TO BE DESIGNED BY CONTRACTOR
10. FIRE PROTECTION OF STRUCTURE AND OTHER ELEMENTS TO ARCHITECT'S SPECIFICATIONS
11. DETAILING OF REINFORCING STEEL BY OTHERS

NOT FOR CONSTRUCTION

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Drawing No.: 1803-SW-XX-XX-DR-S-0002
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23.0 STRUCTURAL SAMPLES

23.1 THE CONTRACTOR IS TO PROVIDE THE FOLLOWING STRUCTURAL ITEMS FOR CA APPROVAL: (REFERENCE SHOULD ALSO BE MADE TO THE RELEVANT SPECIFICATIONS)
i) SAMPLES PANELS ALL EXPOSED CLT AND GLULAM MEMBERS, SAMPLE SIZES TO BE AGREED WITH THE ARCHITECT

23.2 NO FURTHER WORK ON THE RELEVANT ITEMS CAN CONTINUE UNTIL THE ABOVE NOTED SAMPLES HAVE BEEN ACCEPTED.

23.3 THESE SAMPLE REQUIREMENTS ARE IN ADDITION TO ALL OTHER REQUIREMENTS NOTED ON THE DRAWINGS, SPECIFICATIONS OF PRELIMINARIES FOR INSPECTION REQUIREMENTS OF THE CA.

25.0 STATUTORY UNDERTAKERS/UTILITIES PROVIDERS INFRASTRUCTURE

25.1 METHOD STATEMENTS
THE CONTRACTOR IS TO PROVIDE DETAILED METHOD STATEMENTS RELATING TO THE CONSTRUCTION OF THE NEW BUILDING TO FULLY COMPLY WITH REQUIREMENTS OF, AND OBTAIN ANY NECESSARY APPROVALS FROM ALL RELEVANT STATUTORY UNDERTAKERS/UTILITY PROVIDERS. THIS SHALL INCLUDE THE MONITORING OF MOVEMENTS AND CONDITION SURVEYS.

26.0 MATERIALS

26.1 DELETERIOUS MATERIAL

THE FOLLOWING DELETERIOUS MATERIALS SHALL NOT BE EMPLOYED IN THE WORKS
i) HIGH ALUMINA CEMENT IN STRUCTURAL ELEMENTS.
ii) WOOD WOOL SLABS IN PERMANENT FORM WORK TO CONCRETE OR IN STRUCTURAL ELEMENTS.
iii) CALCIUM CHLORIDE IN ALL ADMIXTURES FOR USE IN REINFORCED CONCRETE.
iv) ASBESTOS OR ASBESTOS CONTAINING PRODUCTS
v) LEAD, WHERE THE METAL OR ITS CORROSION PRODUCTS MAYBE DIRECTLY INGESTED, INHALED OR ABSORBED
vi) UREA FORMALDEHYDE FOAM, OR MATERIALS WHICH MAY RELEASE FORMALDEHYDE IN QUANTITIES WHICH MAY BE HAZARDOUS OR AN IRRITANT WITH REFERENCE TO THE LIMITS SET FROM TIME TO TIME BY THE HEALTH AND SAFETY EXECUTIVE.
vii) POLYISOCYANURATE FOAM.
viii) POLYURETHANE FOAM OTHER THAN IN FURNITURE AND FURNISHING COMPRISING COMBUSTION MODIFIED HIGH RESILIENCE FOAM, COMPLYING WITH THE FURNITURE AND FURNISHINGS (FIRE SAFETY) REGULATIONS 1989.
ix) MATERIALS WHICH ARE GENERALLY COMPRISED OF MINERAL FIBRES EITHER MAN-MADE OR NATURALLY OCCURRING WHICH HAVE AN AVERAGE DIAMETER OF 3 MICRONS OR LESS OR WHICH CONTAIN FIBRE NOT SEALED OR OTHERWISE STABILISED TO ENSURE THAT FIBRE MIGRATION IS PREVENTED.
x) TROPICAL HARDWOODS OR OTHER HARDWOODS AND SOFTWOODS FROM NON-SUSTAINABLE SOURCES.
xi) CFC'S AND HCFC'S IN ANY FORM
xii) CALCUM SILICATE BRICKS OR TILES
xiii) CROCIDOLITE
xiv) READY MIXED CONCRETE CONTAINING AGGREGATES APT TO CAUSE "MUNDIC CONCRETE'.
xv) AND AS OTHERWISE CONFIRMED IN:
a) GOOD PRACTICE IN THE SELECTION OF CONSTRUCTION MATERIALS 1997 – OVE ARUP AND PARTNERS
b) GOOD PRACTICE IN THE SELECTION OF CONSTRUCTION MATERIALS 2011 – BRITISH COUNCIL OFFICES, BRITISH PROPERTY FEDERATION.
c) INVESTIGATING HAZARDOUS AND DELETERIOUS BUILDING MATERIALS – RICS, 2006

26.2 CONSTRUCTION MATERIALS
THE FOLLOWING MATERIALS WILL BE USED OR ARE LIKELY TO BE USED AS PART OF THE CONSTRUCTION PROCESS. THEIR USE SHOULD BE CONSIDERED BY THE CONTRACTOR WITH RESPECT TO HEALTH AND SAFETY:-i)
STEELWORK CORROSION PROTECTION, PAINTS IN A CONTROLLED ENVIRONMENT AND ON SITE
ii) WATERPROOFING PRODUCTS SUCH AS SERVICISED PREPRUF, USED IN A SITE ENVIRONMENT
iii) ADHESIVES FOR THE PURPOSES OF POST FIXING ON SITE

27.0 METHOD STATEMENTS
AS A MINIMUM METHOD STATEMENTS SHOULD BE PREPARED FOR THE FOLLOWING SITE ACTIVITIES. THIS LIST IS NOT EXHAUSTIVE:-i)
DEMOLITION OF EXISTING STRUCTURES
ii) ERECTION OF THE TIMBER STRUCTURE INCLUDING PROPOSALS TO PROPPING SEQUENCE
III) ERECTION OF THE STEELWORK PACKAGE. THIS SHOULD BE CONSIDERED PARTICULARLY WITH RESPECT TO TEMPORARY WORKS PROPOSALS FOR THE STABILISATION OF THE STRUCTURE DURING ERECTION.
IV) CRANAGE
V) TEMPORARY WORKS GENERALLY

28.0 CONTRACTOR DESIGN PORTIONS

28.1 THE FOLLOWING IS A LIST OF CONTRACTOR DESIGN PORTIONS (CDP) ITEMS WITH RESPECT TO THE STRUCTURAL ASPECTS OF THE PROJECT/PERMANENT WORKS.
1. STEELWORK CONNECTIONS
2. TIMBER CONNECTIONS
3. CLADDING INCLUDING ALL FIXINGS AND FRAMEWORK REQUIRED TO CONNECT IT TO THE PRIMARY STRUCTURAL FRAME, AS SHOWN ON THE STRUCTURAL ENGINEER'S DRAWINGS
4. ARCHITECTURAL METALWORK INCLUDING:
A) STAIRS
B) BALUSTRADES/HANDRAILS
C) BALCONIES
D) CANOPIES
5. SECONDARY STEELWORK/GENERAL METALWORK INCLUDING ALL FRAMING/SUPPORTS TO THE FOLLOWING ELEMENTS INCLUDING THE CONNECTIONS ONTO THE PRIMARY STRUCTURE, AS SHOWN ON THE STRUCTURAL ENGINEER'S DRAWINGS
B) BUILDERSWORK/SUPPORTS TO SERVICES
C) LIFT EQUIPMENT/GUIDERAILS
E) LIGHTING GANTRIES
F) NON-LOADBEARING WALLS/PARTITIONS
G) CEILINGS
I) LIGHTING BARS/GANTRIES
L) FALSE/FLOATING FLOORS
M) SCENERY FLY SUPPORTS
O) ACOUSTIC CEILINGS/WALLS/CURTAINS
P) PUBLIC ADDRESS SYSTEMS

6. ALL SUPPORT SYSTEMS AND FIXINGS PLUS WIND POSTS TO MASONRY WALLS
7. PROPRIETARY FIRE PROTECTION SYSTEMS
8. CORROSION PROTECTION SYSTEMS
9. SECONDARY TIMBER ELEMENTS WITHIN THE EXTERNAL ENVELOPE (ROOF & WALLS) AND ASSOCIATED FIXINGS ONTO THE PRIMARY STRUCTURE, AS SHOWN ON THE STRUCTURAL ENGINEER'S DRAWINGS
10. GLAZING INCLUDING ALL FIXINGS AND FRAMEWORK REQUIRED TO CONNECT IT TO THE PRIMARY STRUCTURAL FRAME
11. THE PERFORMANCE OF ANY WATERPROOF ADDITIVES TO CONCRETE MIXES
12. REINFORCED CONCRETE DETAILING DRAWINGS AND BAR BENDING SCHEDULE
13. STEELWORK FABRICATION DRAWINGS
14. CONCRETE OR STEEL SHEET PILES RETAINING STRUCTURES
15. LIFTING BEAMS REQUIRED FOR THE LIFTS ARE TO BE DESIGNED AND SUPPLIED BY THE LIFT MANUFACTURER.

simple works

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3. ANY NON-STRUCTURAL ITEMS SUCH AS WATERPROOFING, CLADDING, FINISHES, FIRE STOPPING ARE TO THE ARCHITECT'S SPECIFICATION.
4. ALL PROPRIETARY PRODUCTS ARE TO BE USED AND INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S' DETAILS AND REQUIREMENTS
5. THE STRUCTURE IS DESIGNED AND DETAILED FOR THE PERMANENT CONDITION ONLY. THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING ITS TEMPORARY CONDITION, ANY TEMPORARY WORKS REQUIRED DURING CONSTRUCTION AND ANY TEMPORARY LOADS ONTO EXISTING AND NEW STRUCTURE WHICH SHALL BE LESS THAN THOSE FOR WHICH IT HAS BEEN CONFIRMED OR DESIGNED RESPECTIVELY
6. ALL WORKS UNDERTAKEN BY CONTRACTOR TO BE COMPLIANT WITH RELEVANT AND CURRENT BUILDING CODES, REGULATIONS AND GOOD PRACTICES.
7. ALL LEVELS AND SETTING OUT TO BE PROVIDED BY ARCHITECT
8. ALL STEEL TO STEEL CONNECTIONS DESIGNED BY CONTRACTOR. ASSUME MINIMUM M20 BOLTS AND 8mm FILLET WELDS
9. ALL LINTELS TO BE DESIGNED BY CONTRACTOR
10. FIRE PROTECTION OF STRUCTURE AND OTHER ELEMENTS TO ARCHITECT'S SPECIFICATIONS
11. DETAILING OF REINFORCING STEEL BY OTHERS

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Client name: NW3 CLT
Project No: 2102
Scale: 1:50 @A2

Drawn/Checked: NC/AC
Status: PRELIMINARY
Title: GENERAL NOTES - SHEET 03
Drawing No.: 1803-SW-XX-XX-DR-S-0003
Rev: P1
Date: 05/05/2023

1.0 PRE-CAMBER DETAILS

1.1 VERTICAL UPWARDS CAMBERS ARE INDICATED THUS - 30
THIS INDICATES A 30mm UPWARDS CAMBER.

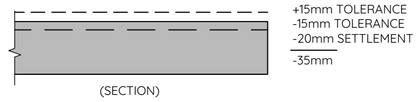
1.2 PRE-CAST CONCRETE SLABS TO BE PRE-CAMBERED TO REMOVE SELF WEIGHT AND INSITU TOPPING DEFLECTIONS. REFER TO MANUFACTURER FOR FURTHER DETAILS.

1.3 THE CAMBER VALUE FOR INSITU CONCRETE AND STRUCTURAL STEEL REPRESENTS APPROXIMATELY 2/3 OF THE FINAL DEAD LOAD DEFLECTION THAT IS EXPECTED WHEN THE CONSTRUCTION IS COMPLETE.

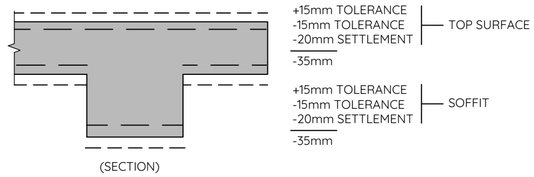
2.0 CONSTRUCTION TOLERANCES AND CONSTRUCTION STAGE DEFLECTIONS

2.1 CONCRETE STRUCTURE

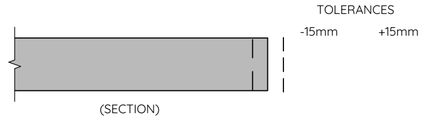
2.1.1 TOP SURFACE OF RAFT SLAB



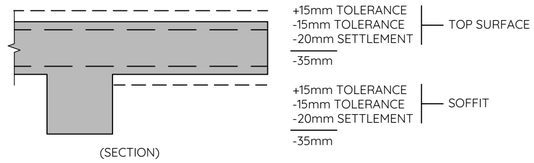
2.1.2 SUSPENDED SLABS AND BEAM



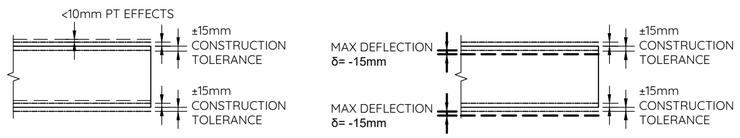
2.1.3 VERTICAL FACES OF SLABS & BEAMS



2.1.4 CANTILEVER SLABS

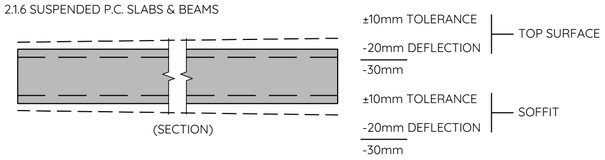


2.1.5 P.T. SLABS

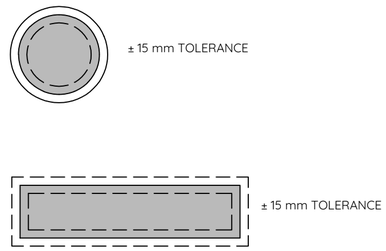


SLAB EDGE STRUCTURAL ZONE
POST TENSION (P.T) SLABS

2.1.6 SUSPENDED P.C. SLABS & BEAMS

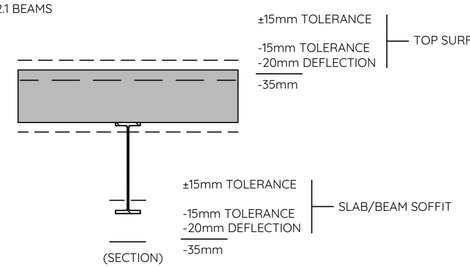


2.1.7 COLUMNS AND WALLS

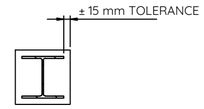


2.2 STEELWORK ELEMENTS

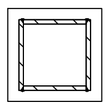
2.2.1 BEAMS



2.2.2 COLUMNS

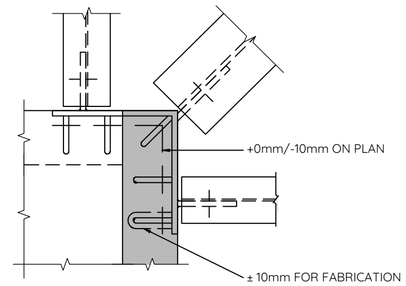


2.2.3 PLUNGE COLUMNS



TOLERANCE AT PILE MAT LEVEL = ±10mm
RAKES WITHIN PILES = ±1/400

2.4 CAST IN PLATES



3.0 DEFLECTION OCCURRING IN STRUCTURE AFTER CONSTRUCTION IS COMPLETE

3.1 THE MAXIMUM VERTICAL DEFLECTION AFTER THE CONSTRUCTION (i.e LIVE LOAD DEFLECTION) IS COMPLETE FOR SPANS UP TO 10 m IS CALCULATED AS FOLLOWS DUE TO ALLOWANCE MUST BE MADE IN THE DETAILING OF FINISHES AND NON STRUCTURAL PARTITIONS:
a. MID SPAN = 20mm
b. PERIMETER BEAMS = 20mm

3.2 THE LATERAL DEFLECTION OF THE STRUCTURAL FRAME DUE TO WIND LOAD IS LIMITED TO HEIGHT / 500

4.0 DIFFERENTIAL MOVEMENTS

4.1 THE MAXIMUM VERTICAL DIFFERENTIAL MOVEMENT BETWEEN COLUMN POSITIONS IS ESTIMATED TO BE DISTANCE / 500

4.2 THE MAXIMUM VERTICAL DIFFERENTIAL MOVEMENT BETWEEN ANY TWO ADJACENT FLOORS IS CALCULATED TO BE:
a. INTERNAL BEAM MIDSPAN = 20mm
b. PERIMETER BEAM = 20mm
c. PERIMETER BEAM AND GROUND BEARING SLAB = 20mm

4.3 THE MAXIMUM VERTICAL DIFFERENTIAL SETTLEMENT OF FOUNDATIONS BETWEEN COLUMN POSITIONS IS ESTIMATED AS DISTANCE / 500

4.4 THE MAXIMUM DIFFERENTIAL SETTLEMENT BETWEEN THE NEW SUBSTRUCTURE AND ADJACENT PAVEMENT IS ESTIMATED AS 25 mm

simple works

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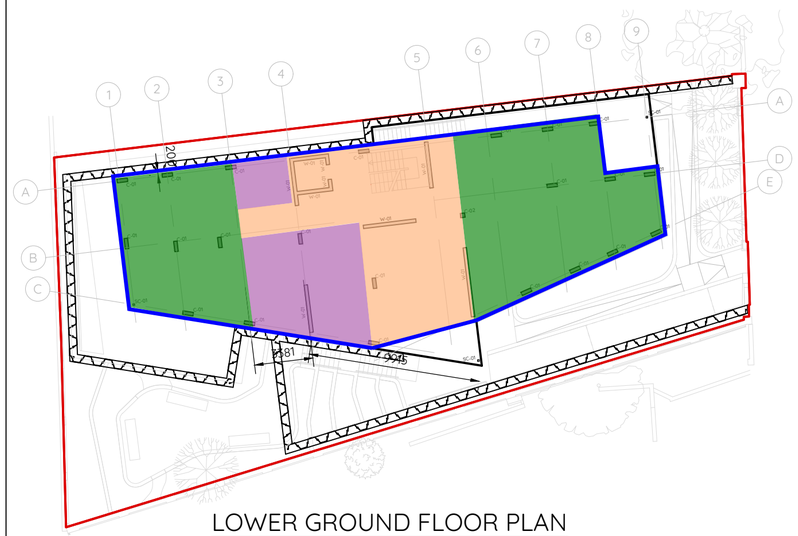
7. ALL LEVELS AND SETTING OUT TO BE PROVIDED BY ARCHITECT
8. ALL STEEL TO STEEL CONNECTIONS DESIGNED BY CONTRACTOR. ASSUME MINIMUM M20 BOLTS AND 8mm FILLET WELDS
9. ALL LINTELS TO BE DESIGNED BY CONTRACTOR
10. FIRE PROTECTION OF STRUCTURE AND OTHER ELEMENTS TO ARCHITECT'S SPECIFICATIONS
11. DETAILING OF REINFORCING STEEL BY OTHERS

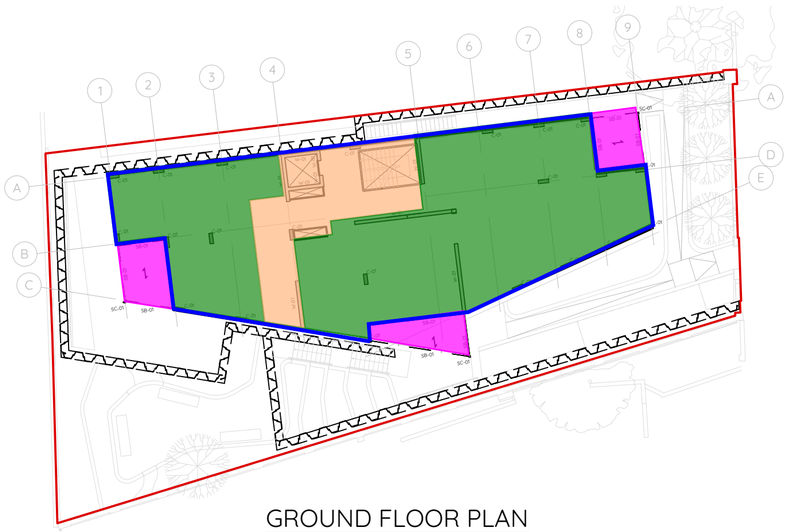
NOT FOR CONSTRUCTION

Rev	Date	Desc.	By
P1	05.05.23	PRELIMINARY ISSUE	NC

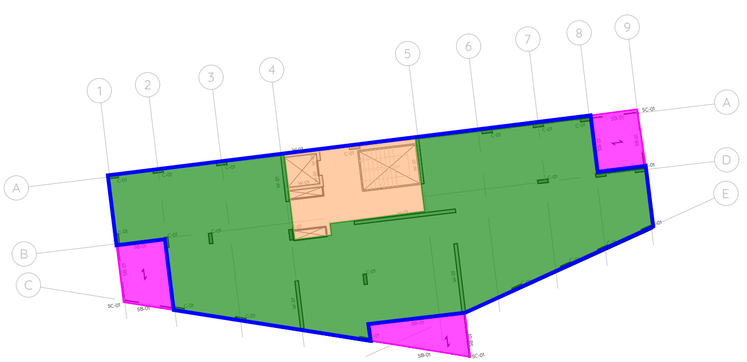
Project name: DALEHAM GARDENS
Client name: NW3 CLT
Project No: 2102
Scale: 1:50 @A2
Drawn/Checked: NC/AC
Status: PRELIMINARY
Title: MOVEMENT AND TOLERANCES
Drawing No.: 1803-SW-XX-XX-DR-S-0004
Rev: P1
Date: 05/05/2023



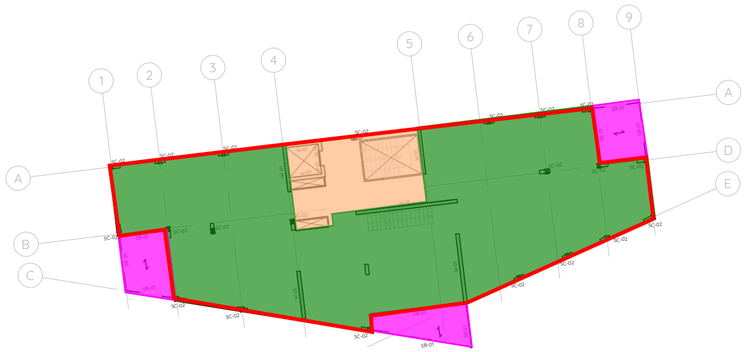
LOWER GROUND FLOOR PLAN
1:250



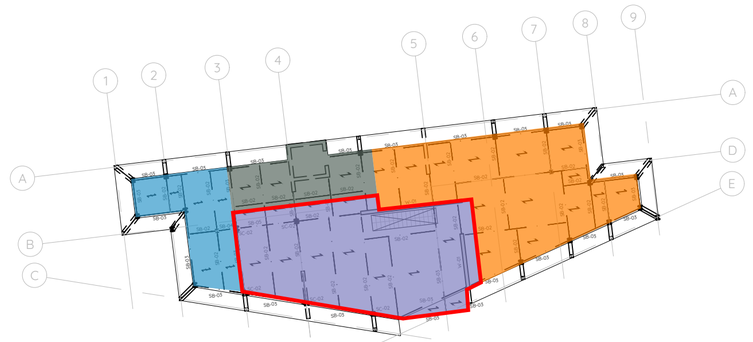
GROUND FLOOR PLAN
1:250



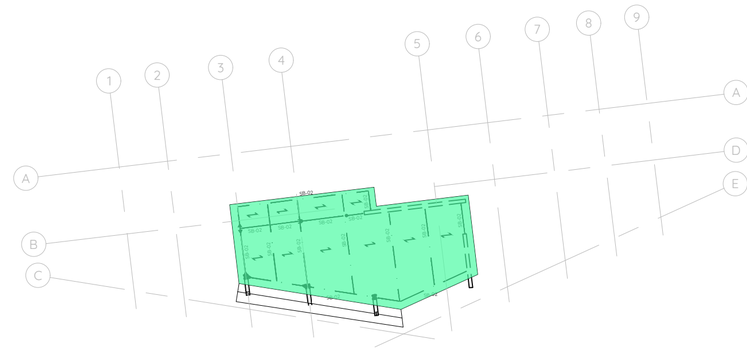
FIRST AND SECOND FLOOR PLAN
1:250



THIRD FLOOR PLAN
1:250



FOURTH FLOOR PLAN
1:250



ROOF PLAN
1:250

	CATEGORY	SUPER IMPOSED DEAD LOAD	LIVE LOAD
	CONCRETE RESIDENTIAL* (A1)	1.50 kN/m2	2.50 kN/m²
	TIMBER RESIDENTIAL** (A1)	1.50 kN/m²	2.00 kN/m²
	CIRCULATION (C31)	1.50 kN/m²	4.00 kN/m²
	PLANT (E213)	1.50 kN/m²	7.50 kN/m²
	BALCONY (A5)	1.50 kN/m²	2.50 kN/m²

* - THIS IS CONSIDERING 1 kN/m² OF PARTITIONS
** - THIS IS CONSIDERING 0.5 kN/m² OF PARTITIONS ONLY

	CATEGORY	SUPER IMPOSED DEAD LOAD	LIVE LOAD
	ROOF TERRACE (A5)	1.50 kN/m²	2.50 kN/m²
	GREEN ROOF (H)	2.85 kN/m²	0.75 kN/m²
	ROOF WITH PV (H)	1.55 kN/m²	0.75 kN/m²
	ROOF W/O PV (H)	1.05 kN/m²	0.75 kN/m²
	CLADDING (CERAMIC TILES)	1.20 kN/m²	-
	CLADDING (BRICK)	2.80 kN/m²	-

simple works

NOTES:
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11. DETAILING OF REINFORCING STEEL BY OTHERS

NOT FOR CONSTRUCTION

Rev	Date	Desc.	By
P1	05.05.23	PRELIMINARY ISSUE	NC

Project name: DALEHAM GARDENS
Client name: NW3 CLT
Project No: 2102
Scale: 1:250 @A2

Drawn/Checked: NC/AC
Status: PRELIMINARY
Title: LOADING PLANS
Drawing No.: 1803-SW-XX-XX-DR-S-0005
Rev: P1
Date: 05/05/2023

MATERIALS

THE FOLLOWING MATERIAL GRADES ARE TO BE USED IN CONSTRUCTION U.N.O.

- BLOCKWORK = 10.4 N
- BRICKWORK = 7.3 N
- ENGINEERING BRICK = CLASS B
- MORTAR = M6
- STEEL = S355
- CONCRETE = C30/37
- REINFORCEMENT STEEL = B500B
- TIMBER = C24

STRUCTURE KEY

- AREA SITE BOUNDARY LINE
- CONCRETE COLUMN
- CONCRETE WALL
- STEEL COLUMN
- STEEL SHEET PILED WALL

CONCRETE COLUMN SCHEDULE

C-01 200x600mm
C-02 250x250mm

STEEL COLUMN SCHEDULE

SC-01 SHS 100x100x5

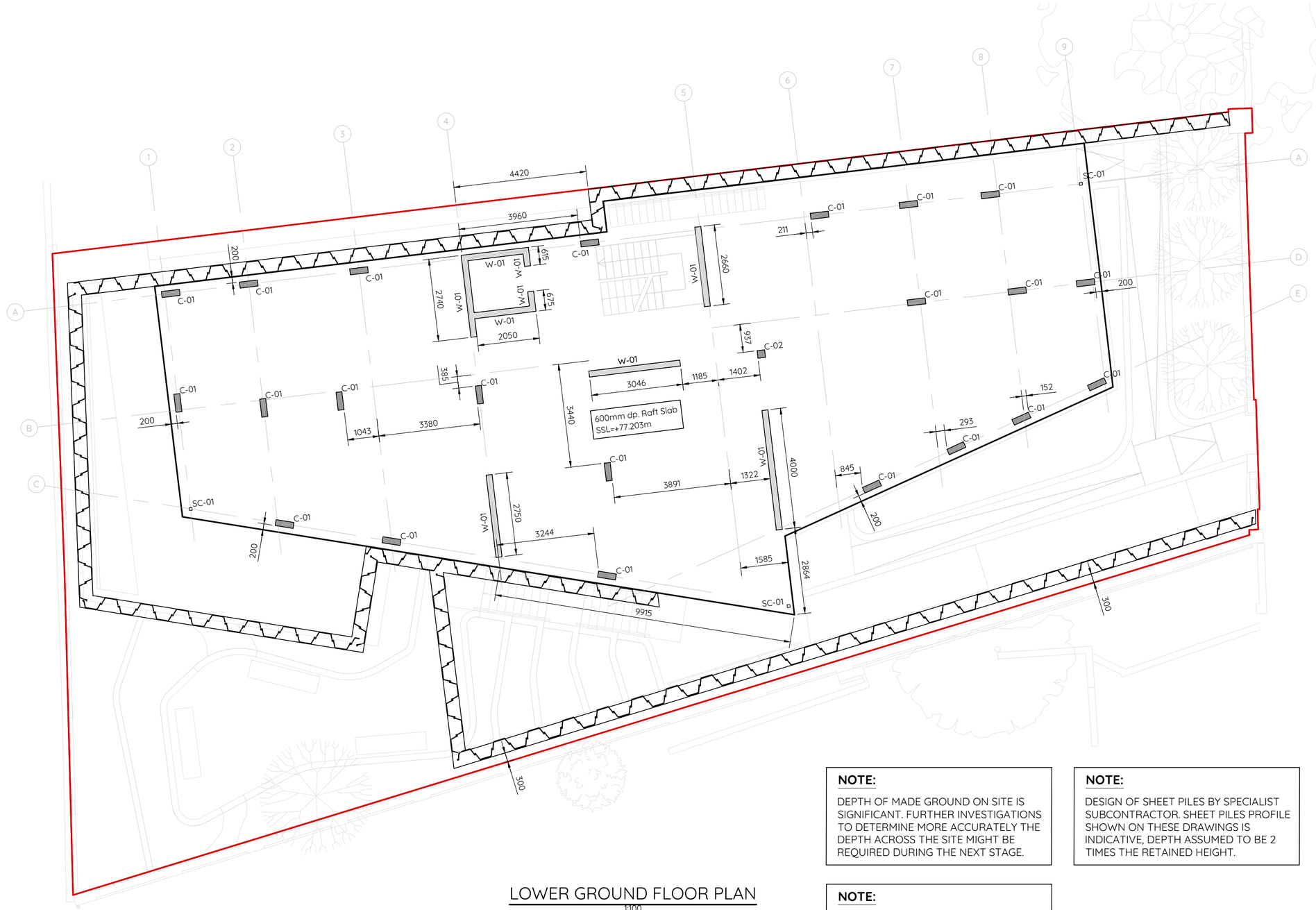
WALL SCHEDULE

W-01 200 Thk.

STEEL SHEET PILE SCHEDULE

STEEL SHEET PILE PROFILE AU14 FROM ARCELOR MITTAL OR SIMILAR APPROVED, PILES DESIGN BY SPECIALIST SUBCONTRACTOR

REINFORCEMENT WEIGHTS	
REFERENCE	QUANTITY
RAFT SLAB	115kg/m³
WALLS	70kg/m³
COLUMNS	175kg/m³
NOTE: REINFORCEMENT QUANTITIES INDICATIVE	



LOWER GROUND FLOOR PLAN
1:100

NOTE:

DEPTH OF MADE GROUND ON SITE IS SIGNIFICANT. FURTHER INVESTIGATIONS TO DETERMINE MORE ACCURATELY THE DEPTH ACROSS THE SITE MIGHT BE REQUIRED DURING THE NEXT STAGE.

NOTE:

DESIGN OF SHEET PILES BY SPECIALIST SUBCONTRACTOR. SHEET PILES PROFILE SHOWN ON THESE DRAWINGS IS INDICATIVE, DEPTH ASSUMED TO BE 2 TIMES THE RETAINED HEIGHT.

NOTE:

FURTHER SITE INVESTIGATIONS MIGHT BE REQUIRED TO INFORM DETAILED DESIGN OF RAFT SLAB FOUNDATION AND ASSES FEASIBILITY OF GROUND IMPROVEMENT TECHNIQUES.

simple works

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11. DETAILING OF REINFORCING STEEL BY OTHERS

NOT FOR CONSTRUCTION

Rev	Date	Desc.	By
P1	05.05.23	PRELIMINARY ISSUE	NC

Project name: DALEHAM GARDENS
Client name: NW3 CLT
Project No: 2102
Scale: 1:100 @A2
Drawn/Checked: NC/AC
Status: PRELIMINARY
Title: LOWER GROUND FLOOR PLAN
Drawing No.: 1803-SW-XX-00-DR-S-0100
Rev: P1
Date: 05/05/2023

MATERIALS

THE FOLLOWING MATERIAL GRADES ARE TO BE USED IN CONSTRUCTION U.N.O.

- BLOCKWORK = 10.4 N
- BRICKWORK = 7.3 N
- ENGINEERING BRICK = CLASS B
- MORTAR = M6
- STEEL = S355
- CONCRETE = C30/37
- REINFORCEMENT STEEL = B500B
- TIMBER = C24

STRUCTURE KEY

- AREA SITE BOUNDARY LINE
- CONCRETE COLUMN
- CONCRETE WALL
- STEEL COLUMN
- STEEL BEAM
- DIRECTION OF METAL LIGHT GAUGE FRAMING FOR BALCONY FLOOR
- DIRECTION OF TIMBER JOIST
- STEEL SHEET PILED WALL UNDER

CONCRETE COLUMN SCHEDULE

C-01 200x600mm
C-02 250x250mm

STEEL COLUMN SCHEDULE

SC-01 SHS 100x100x5

WALL SCHEDULE

W-01 200 Thk.

STEEL BEAM SCHEDULE

SB-01 UB 203x102x23

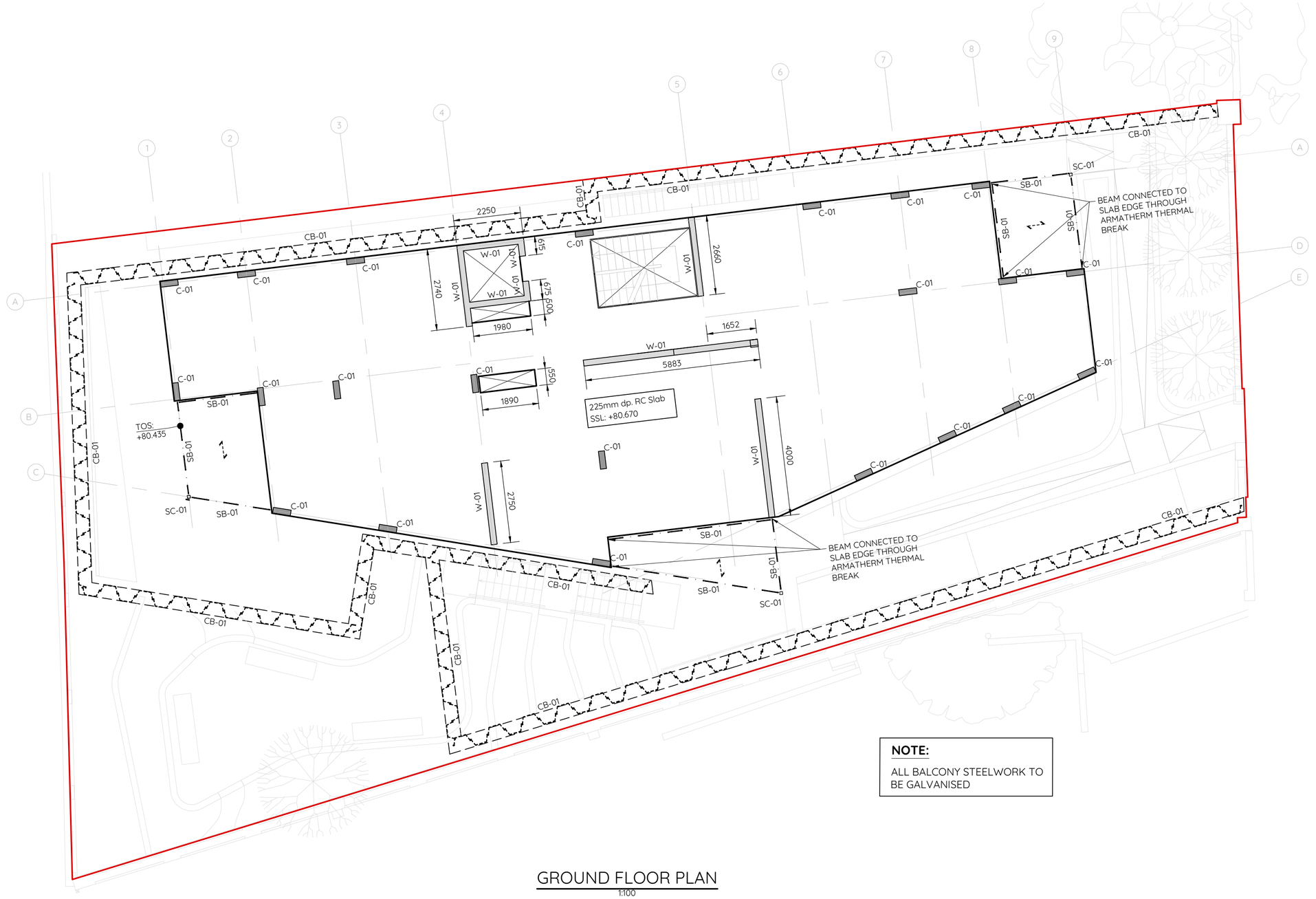
CONCRETE CAPPING BEAM SCHEDULE

CB-01 600 WIDE x 300 DEEP mm

TIMBER JOIST SCHEDULE

47x150mm @ 400mm C/C SPACING

REINFORCEMENT WEIGHTS	
REFERENCE	QUANTITY
SLAB	135kg/m³
WALLS	70kg/m³
COLUMNS	175kg/m³
CAPPING BEAM	260kg/m³
NOTE: REINFORCEMENT QUANTITIES INDICATIVE	



NOTE:

ALL BALCONY STEELWORK TO BE GALVANISED

GROUND FLOOR PLAN

1:100

simple works

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NOT FOR CONSTRUCTION

Rev	Date	Desc	By
P1	05.05.23	PRELIMINARY ISSUE	NC

Project name: DALEHAM GARDENS
Client name: NW3 CLT
Project No: 2102
Scale: 1:100 @A2
Drawn/Checked: NC/AC
Status: PRELIMINARY
Title: GROUND FLOOR PLAN
Drawing No.: 1803-SW-XX-01-DR-S-0101
Rev: P1
Date: 05/05/2023

MATERIALS

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- ENGINEERING BRICK = CLASS B
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- CONCRETE = C30/37
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- TIMBER = C24

STRUCTURE KEY

- CONCRETE COLUMN
- CONCRETE WALL
- STEEL COLUMN
- STEEL BEAM
- DIRECTION OF METAL LIGHT GAUGE FRAMING FOR BALCONY FLOOR

CONCRETE COLUMN SCHEDULE

C-01 200x600mm

STEEL COLUMN SCHEDULE

SC-01 SHS 100x100x5

WALL SCHEDULE

W-01 200 Thk.

STEEL BEAM SCHEDULE

SB-01 UB 203x102x23

REINFORCEMENT WEIGHTS	
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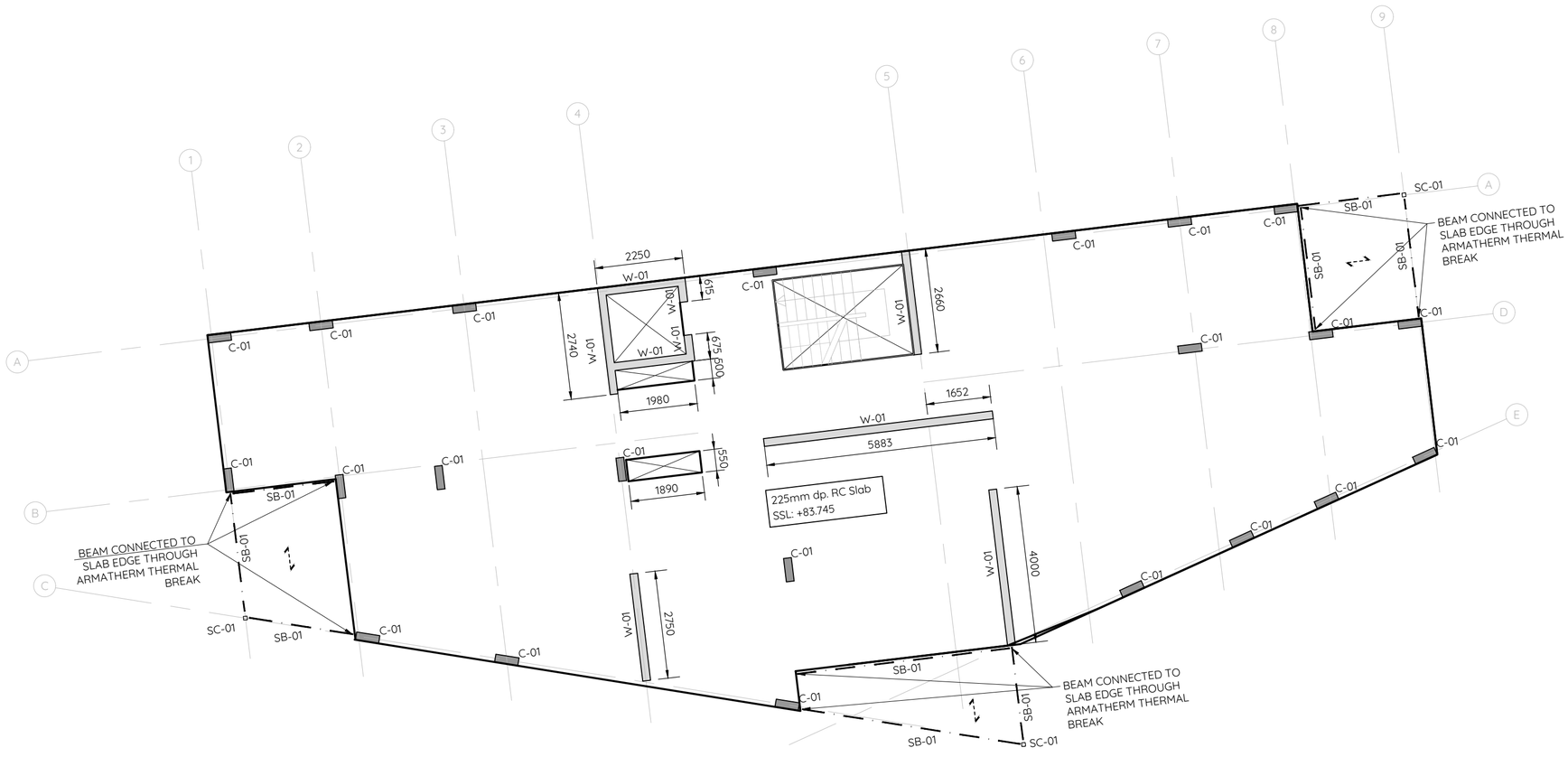
SLAB	135kg/m³
WALLS	70kg/m³
COLUMNS	175kg/m³
NOTE: REINFORCEMENT QUANTITIES INDICATIVE	



NOTE:

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FIRST FLOOR PLAN

1:100

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10. FIRE PROTECTION OF STRUCTURE AND OTHER ELEMENTS TO ARCHITECT'S SPECIFICATIONS
11. DETAILING OF REINFORCING STEEL BY OTHERS

NOT FOR CONSTRUCTION

simple works

Rev	Date	Desc.	By
P1	05.05.23	PRELIMINARY ISSUE	NC

Project name: DALEHAM GARDENS

Client name: NW3 CLT

Project No: 2102

Scale: 1:100 @A2

Drawn/Checked: NC/AC

Status: PRELIMINARY

Title: FIRST FLOOR PLAN

Drawing No.: 1803-SW-XX-02-DR-S-0102

Rev: P1

Date: 05/05/2023

MATERIALS

THE FOLLOWING MATERIAL GRADES ARE TO BE USED IN CONSTRUCTION U.N.O.

- BLOCKWORK = 10.4 N
- BRICKWORK = 7.3 N
- ENGINEERING BRICK = CLASS B
- MORTAR = M6
- STEEL = S355
- CONCRETE = C30/37
- REINFORCEMENT STEEL = B500B
- TIMBER = C24

STRUCTURE KEY

- CONCRETE COLUMN
- CONCRETE WALL
- STEEL COLUMN
- STEEL BEAM
- DIRECTION OF METAL LIGHT GAUGE FRAMING FOR BALCONY FLOOR

CONCRETE COLUMN SCHEDULE

C-01 200x600mm

STEEL COLUMN SCHEDULE

SC-01 SHS 100x100x5

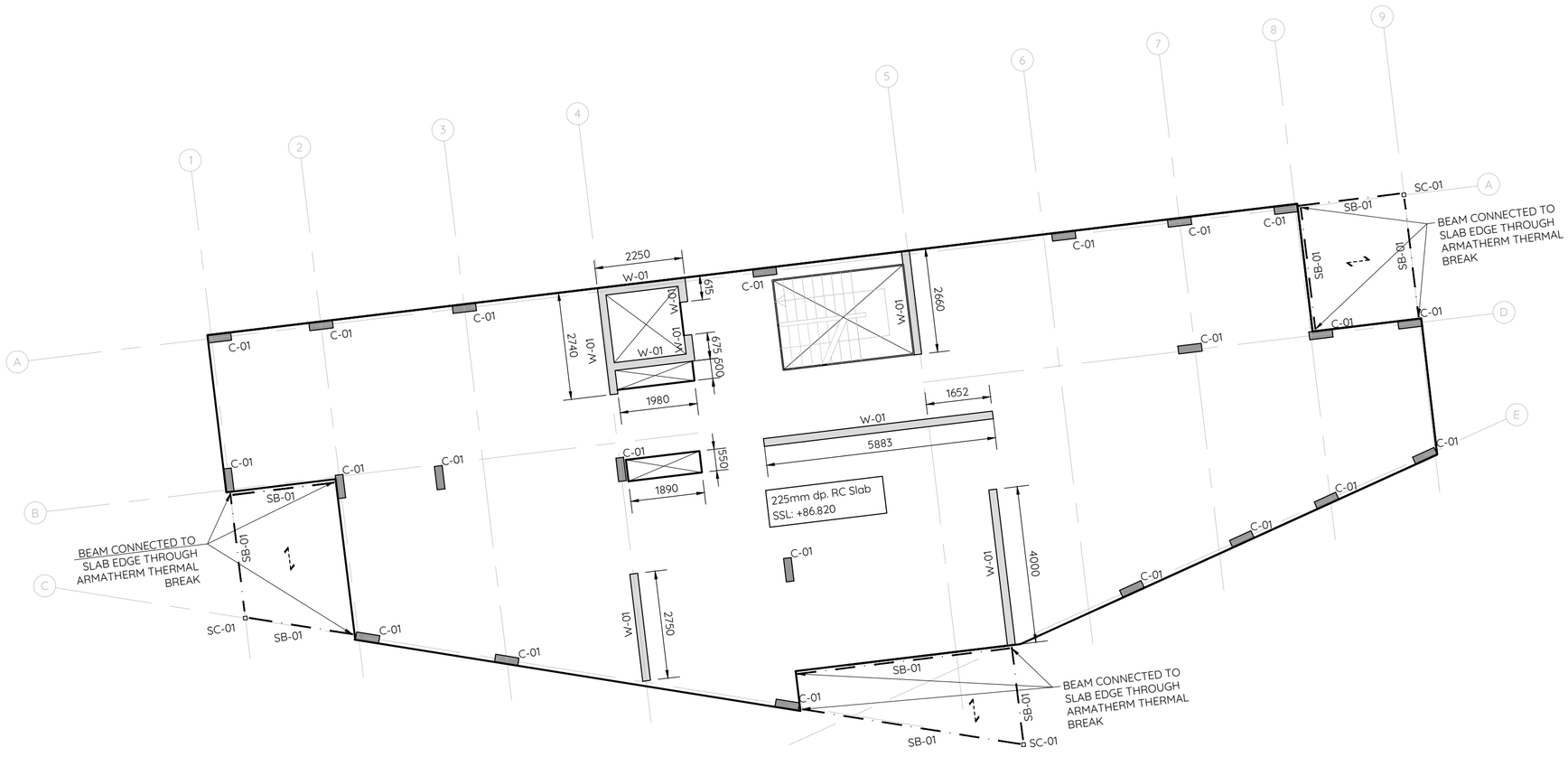
WALL SCHEDULE

W-01 200 Thk.

STEEL BEAM SCHEDULE

SB-01 UB 203x102x23

REINFORCEMENT WEIGHTS	
REFERENCE	QUANTITY
SLAB	135kg/m³
WALLS	70kg/m³
COLUMNS	175kg/m³
NOTE: REINFORCEMENT QUANTITIES INDICATIVE	



SECOND FLOOR PLAN
1:100

NOTE:
ALL BALCONY STEELWORK TO BE GALVANISED

NOTES:
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11. DETAILING OF REINFORCING STEEL BY OTHERS

NOT FOR CONSTRUCTION

Rev	Date	Desc.	By
P1	05.05.23	PRELIMINARY ISSUE	NC

Project name: DALEHAM GARDENS
Client name: NW3 CLT
Project No: 2102
Scale: 1:100 @A2
Drawn/Checked: NC/AC
Status: PRELIMINARY
Title: SECOND FLOOR PLAN
Drawing No.: 1803-SW-XX-03-DR-S-0103
Rev: P1
Date: 05/05/2023

MATERIALS

THE FOLLOWING MATERIAL GRADES ARE TO BE USED IN CONSTRUCTION U.N.O.

- BLOCKWORK = 10.4 N
- BRICKWORK = 7.3 N
- ENGINEERING BRICK = CLASS B
- MORTAR = M6
- STEEL = S355
- CONCRETE = C30/37
- REINFORCEMENT STEEL = B500B
- TIMBER = C24

STRUCTURE KEY

- CONCRETE COLUMN
- CONCRETE WALL
- STEEL COLUMN
- STEEL BEAM
- DIRECTION OF METAL LIGHT GAUGE FRAMING FOR BALCONY FLOOR

STEEL COLUMN SCHEDULE

SC-02 UC 203x203x46

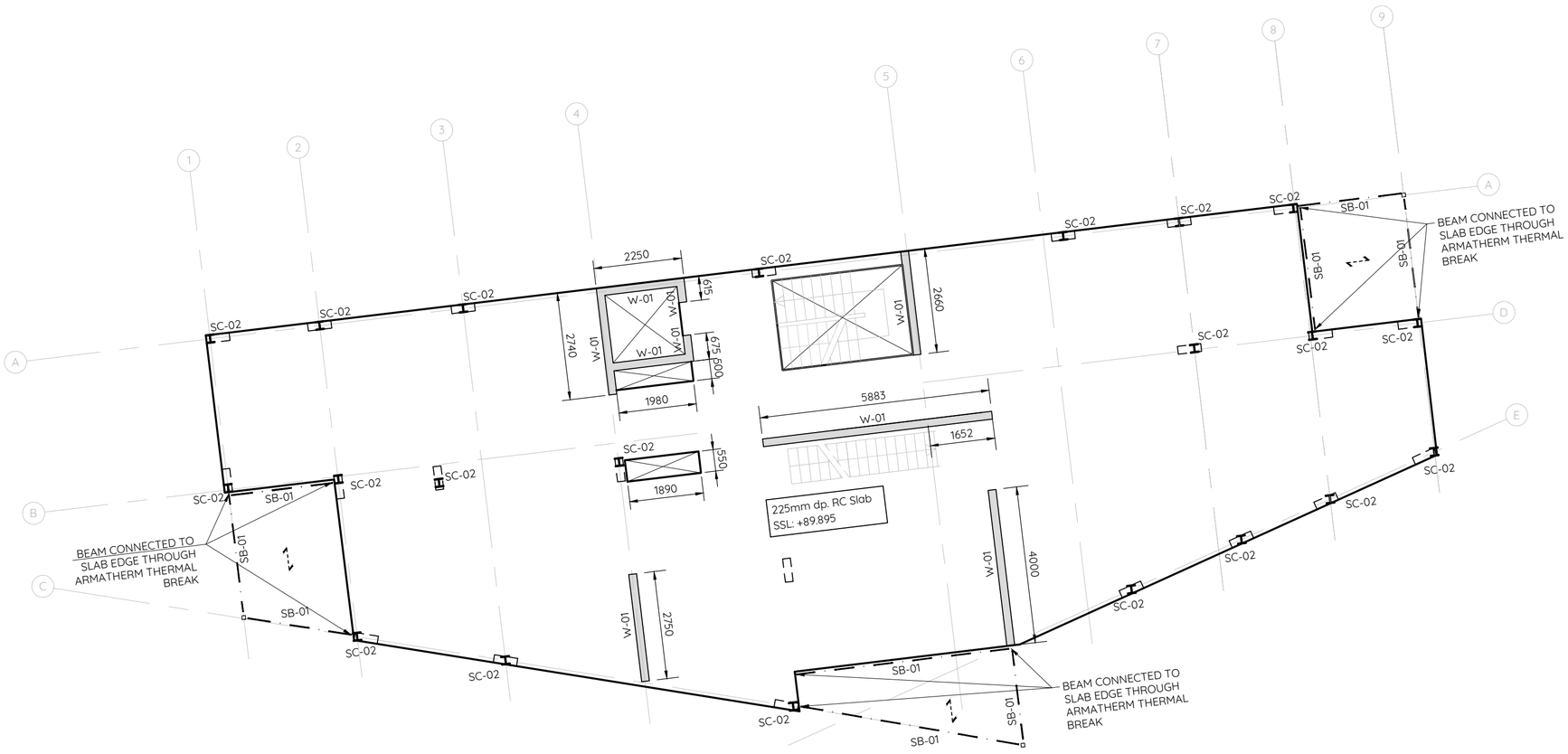
WALL SCHEDULE

W-01 200 Thk.

STEEL BEAM SCHEDULE

SB-01 UB 203x102x23

REINFORCEMENT WEIGHTS	
REFERENCE	QUANTITY
SLAB	135kg/m³
WALLS	70kg/m³
NOTE: REINFORCEMENT QUANTITIES INDICATIVE	



NOTE:

ALL BALCONY STEELWORK TO BE GALVANISED

THIRD FLOOR PLAN

1:100

NOTES:

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11. DETAILING OF REINFORCING STEEL BY OTHERS

simple works

NOT FOR CONSTRUCTION

Rev	Date	Desc.	By
P1	05.05.23	PRELIMINARY ISSUE	NC

Project name: DALEHAM GARDENS
Client name: NW3 CLT
Project No: 2102
Scale: 1:100 @A2
Drawn/Checked: NC/AC
Status: PRELIMINARY
Title: THIRD FLOOR PLAN
Drawing No.: 1803-SW-XX-04-DR-S-0104
Rev: P1
Date: 05/05/2023

MATERIALS

THE FOLLOWING MATERIAL GRADES ARE TO BE USED IN CONSTRUCTION U.N.O.

- BLOCKWORK = 10.4 N
- BRICKWORK = 7.3 N
- ENGINEERING BRICK = CLASS B
- MORTAR = M6
- STEEL = S355
- CONCRETE = C30/37
- REINFORCEMENT STEEL = B500B
- TIMBER = C24

STRUCTURE KEY

- CONCRETE WALL
- STEEL COLUMN
- STEEL BEAM
- TRANSFER STEEL BEAM
- DIRECTION OF TIMBER JOIST
- MOMENT CONNECTION
- SLANTED COLUMNS TO FOLLOW ROOF PITCH

STEEL COLUMN SCHEDULE

SC-02 UC 203x203x46

WALL SCHEDULE

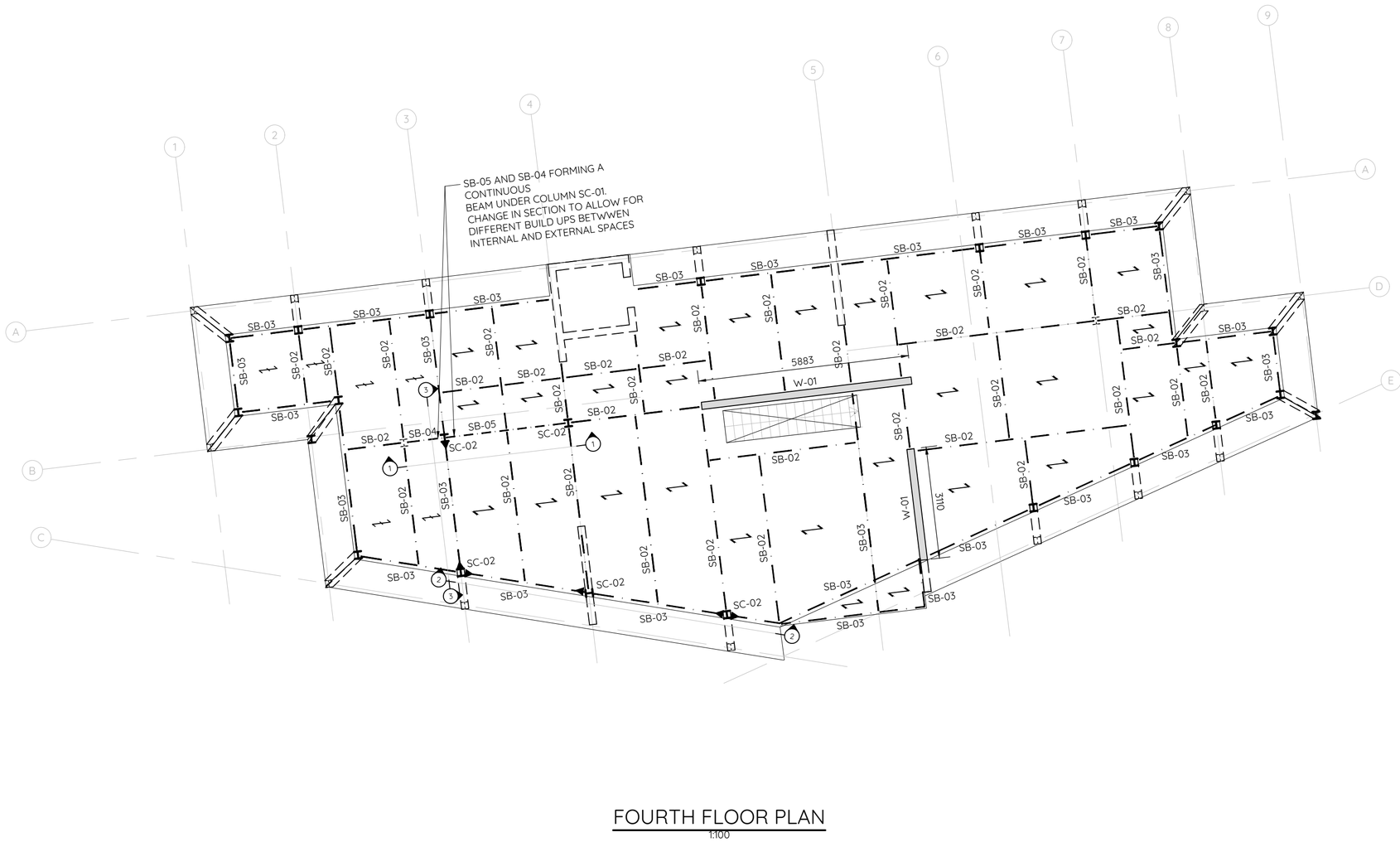
W-01 200 Thk.

STEEL BEAM SCHEDULE

SB-02 UB 254x146x31
SB-03 UB 254x146x43
SB-04 UB 203x203x60
SB-05 UB 356x171x51

TIMBER JOIST SCHEDULE

- 47x200mm @ 400mm C/C SPACING
- 47x150mm @ 400mm C/C SPACING



FOURTH FLOOR PLAN
1:100

NOTES:
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11. DETAILING OF REINFORCING STEEL BY OTHERS

NOT FOR CONSTRUCTION

Rev	Date	Desc.	By
P1	05.05.23	PRELIMINARY ISSUE	NC

Project name: DALEHAM GARDENS
Client name: NW3 CLT
Project No: 2102
Scale: 1:100 @A2
Drawn/Checked: NC/AC
Status: PRELIMINARY
Title: FOURTH FLOOR PLAN
Drawing No.: 1803-SW-XX-05-DR-S-0105
Rev: P1
Date: 05/05/2023

MATERIALS

THE FOLLOWING MATERIAL GRADES ARE TO BE USED IN CONSTRUCTION U.N.O.

- BLOCKWORK = 10.4 N
- BRICKWORK = 7.3 N
- ENGINEERING BRICK = CLASS B
- MORTAR = M6
- STEEL = S355
- CONCRETE = C30/37
- REINFORCEMENT STEEL = B500B
- TIMBER = C24

STRUCTURE KEY

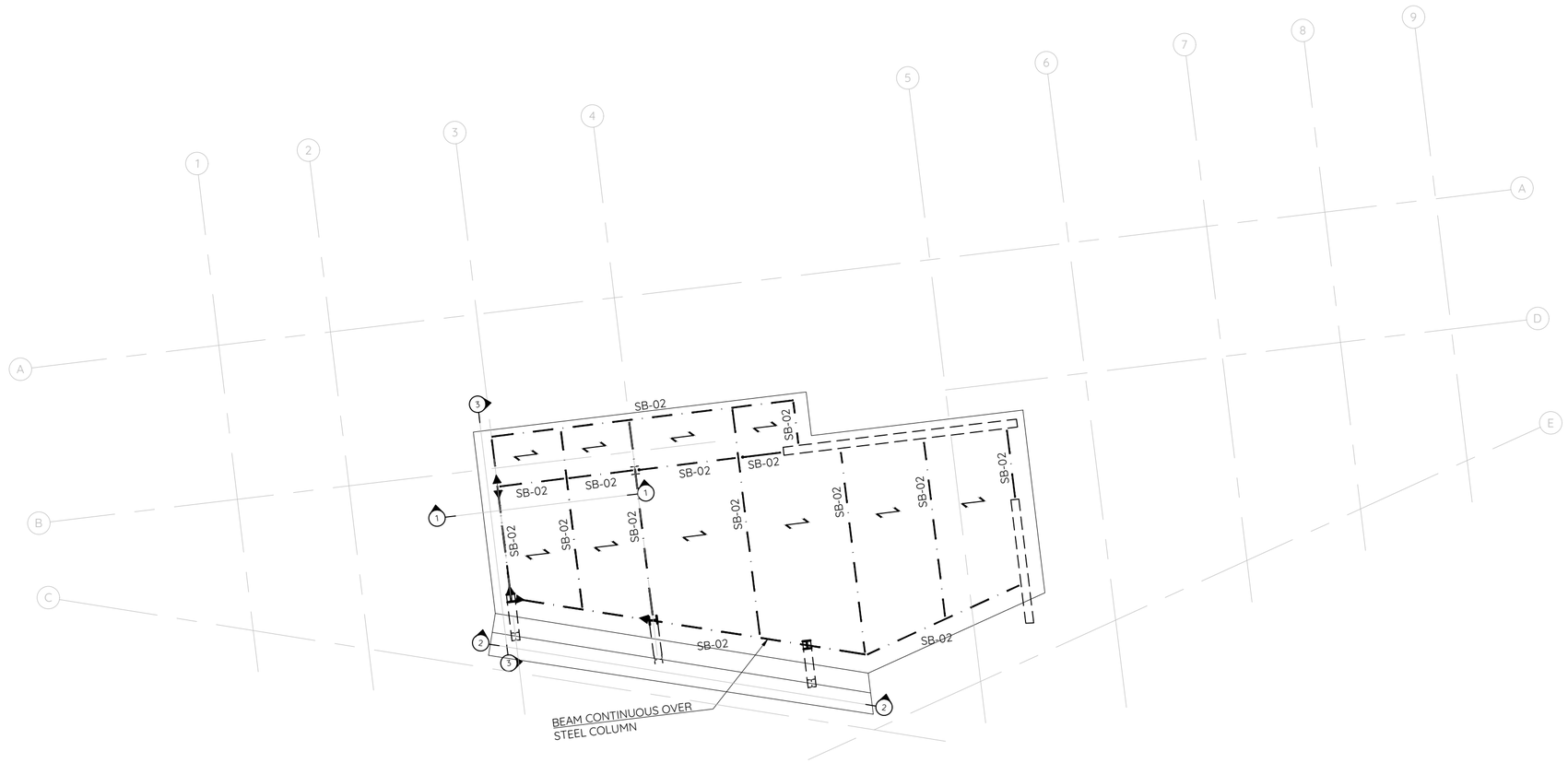
— · —	STEEL BEAM
⥂	DIRECTION OF TIMBER JOIST
▶	MOMENT CONNECTION

STEEL BEAM SCHEDULE

SB-02 UB 254x146x31

TIMBER JOIST SCHEDULE

⥂	47x200mm @ 400mm C/C SPACING
⥂	47x150mm @ 400mm C/C SPACING



ROOF PLAN

1:100

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NOT FOR CONSTRUCTION

simple works

Rev	Date	Desc.	By
P1	05.05.23	PRELIMINARY ISSUE	NC

Project name: DALEHAM GARDENS
Client name: NW3 CLT
Project No: 2102
Scale: 1:100 @A2

Drawn/Checked: NC/AC
Status: PRELIMINARY
Title: ROOF PLAN
Drawing No.: 1803-SW-XX-06-DR-S-0106
Rev: P1
Date: 05/05/2023

MATERIALS

THE FOLLOWING MATERIAL GRADES ARE TO BE USED IN CONSTRUCTION U.N.O.

- BLOCKWORK = 10.4 N
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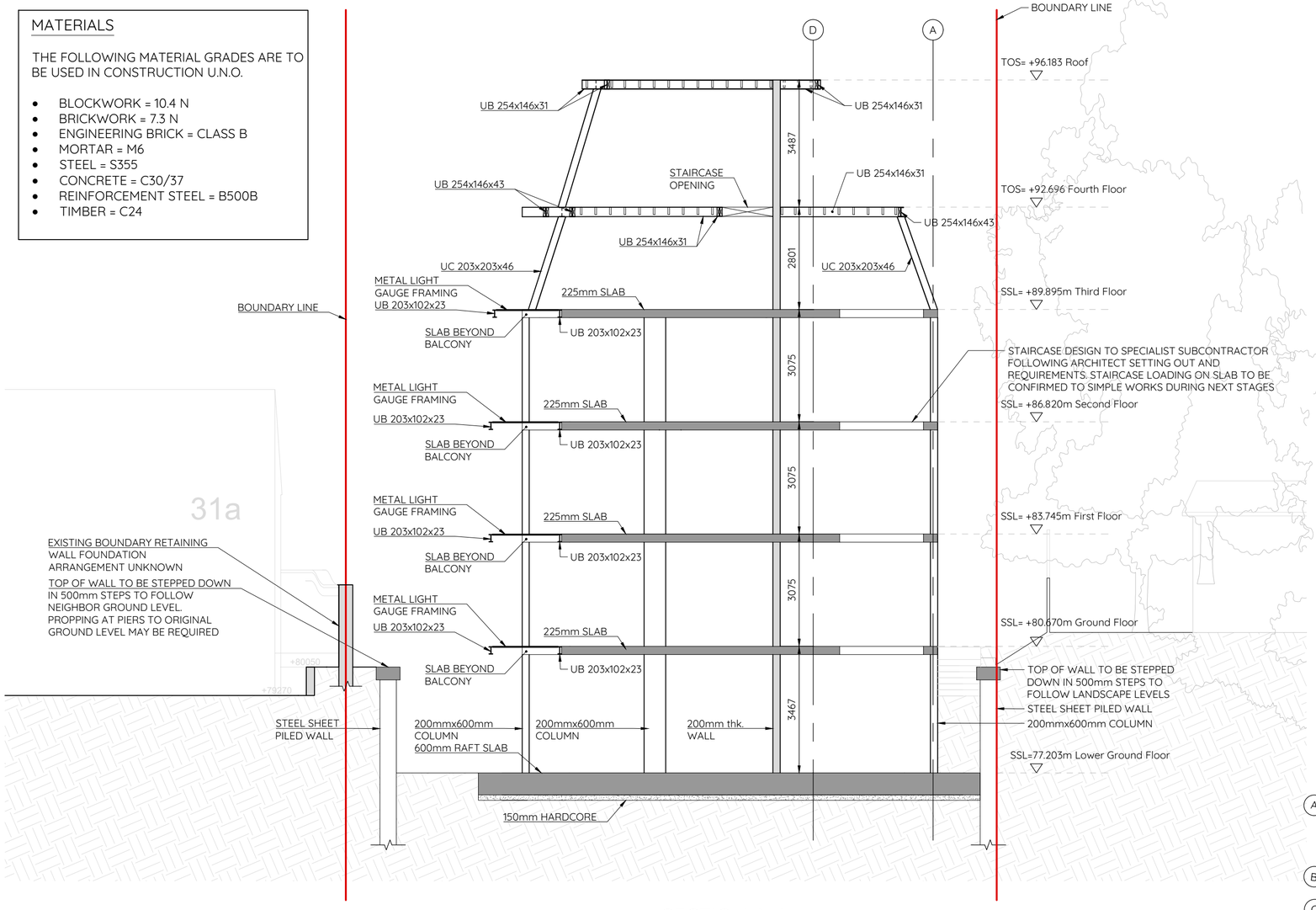
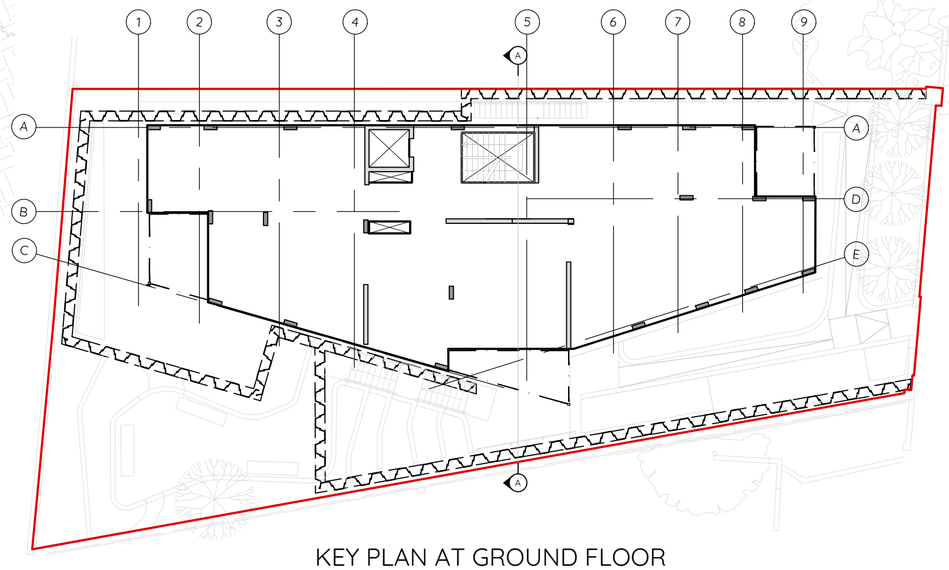
- CONCRETE = C30/37
- REINFORCEMENT STEEL = B500B
- TIMBER = C24



SECTION A-A
1:100

NOTE:
DEPTH OF MADE GROUND ON SITE IS SIGNIFICANT. FURTHER INVESTIGATIONS TO DETERMINE MORE ACCURATELY THE DEPTH ACROSS THE SITE MIGHT BE REQUIRED DURING THE NEXT STAGE

NOTE:
FURTHER SITE INVESTIGATION MIGHT BE REQUIRED TO INFORM DETAILED DESIGN OF RAFT SLAB FOUNDATION AND ASSESS FEASIBILITY OF GROUND IMPROVEMENT TECNIQUES



KEY PLAN AT GROUND FLOOR
1:200

simple works

NOTES:
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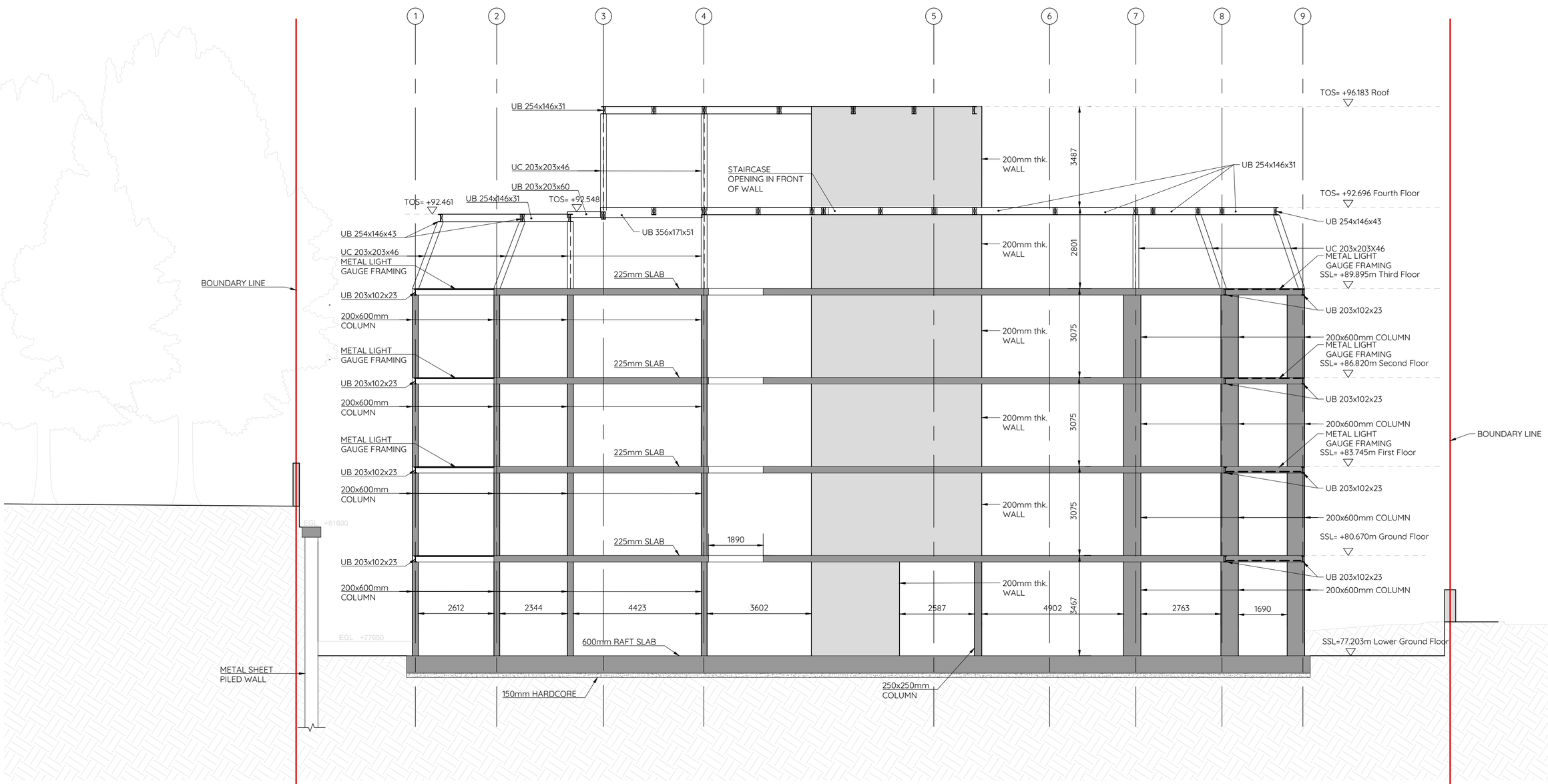
NOT FOR CONSTRUCTION

Rev	Date	Desc.	By
P1	05.05.23	PRELIMINARY ISSUE	NC

Project name: DALEHAM GARDENS
Client name: NW3 CLT
Project No: 2102
Scale: AS SHOWN @A2
Drawn/Checked: NC/AC
Status: PRELIMINARY
Title: SECTIONS SHEET 1
Drawing No.: 1803-SW-XX-XX-DR-S-0201
Rev: P1
Date: 05/05/2023



SECTION B-B
1:100

MATERIALS

THE FOLLOWING MATERIAL GRADES ARE TO BE USED IN CONSTRUCTION U.N.O.

- BLOCKWORK = 10.4 N
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- STEEL = S355
- CONCRETE = C30/37
- REINFORCEMENT STEEL = B500B
- TIMBER = C24

NOTE:

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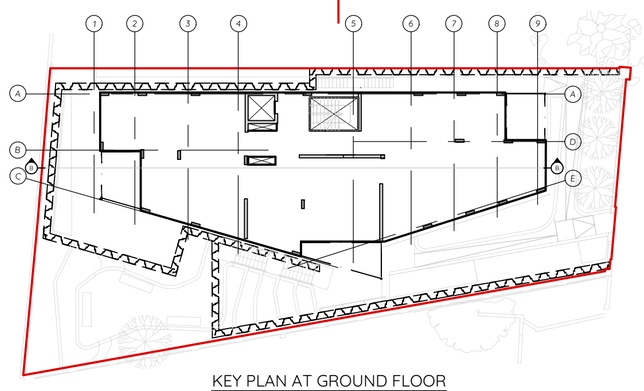

KEY PLAN AT GROUND FLOOR
1:300

simple works

NOTES:
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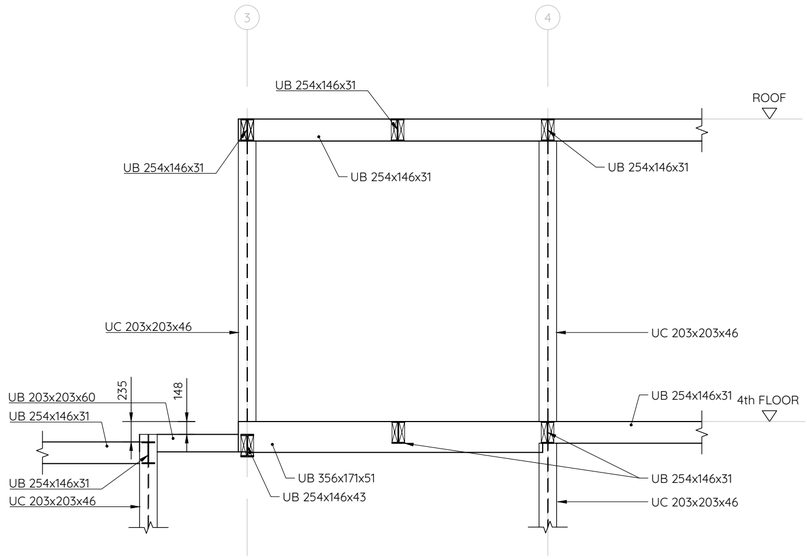
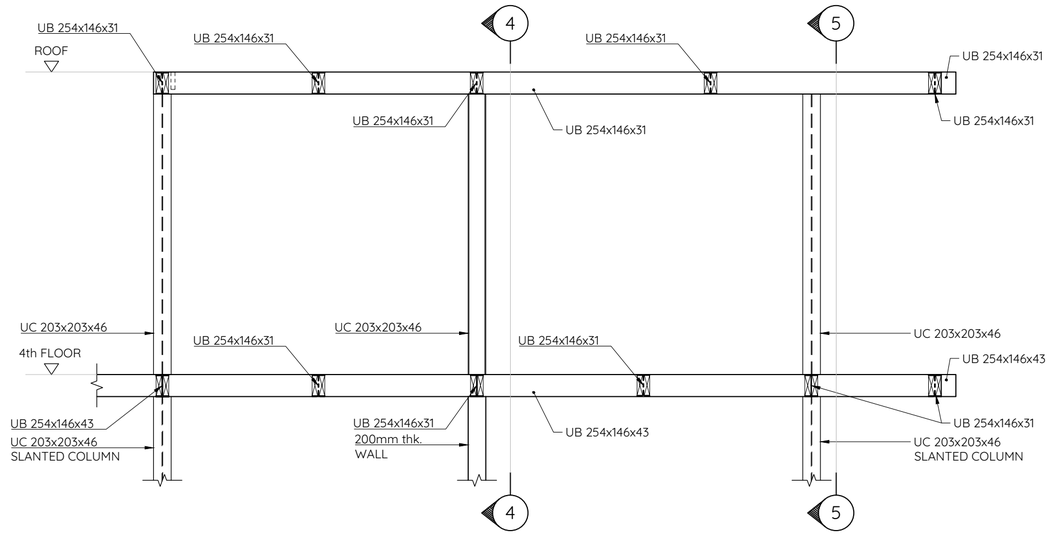
Rev	Date	Desc.	By
P1	05.05.23	PRELIMINARY ISSUE	NC

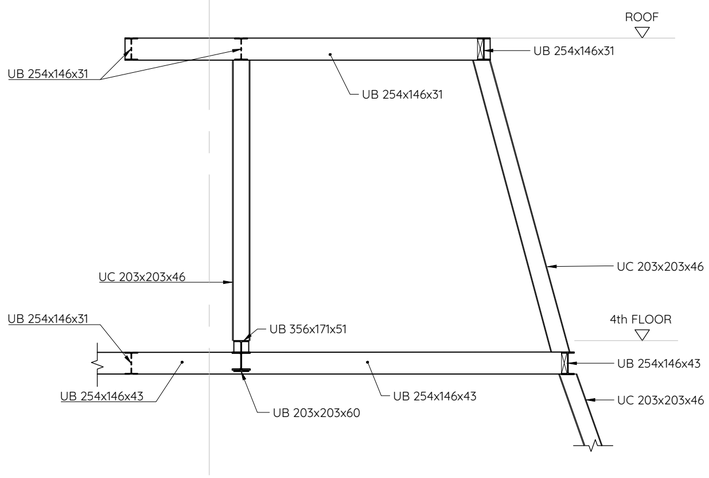
Project name: DALEHAM GARDENS
Client name: NW3 CLT
Project No: 2102
Scale: AS SHOWN @A2
Drawn/Checked: NC/AC
Status: PRELIMINARY
Title: SECTIONS SHEET 2
Drawing No.: 1803-SW-XX-XX-DR-S-0202
Rev: P1
Date: 05/05/2023



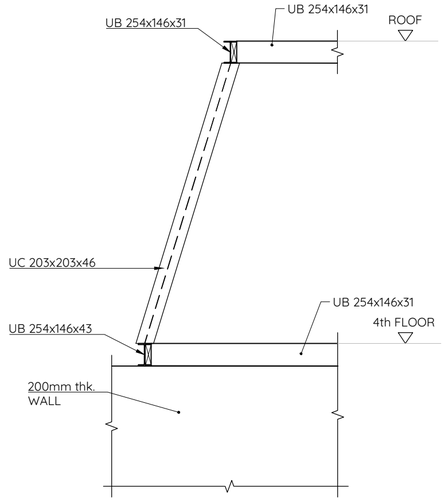
SECTION 1-1
1:50



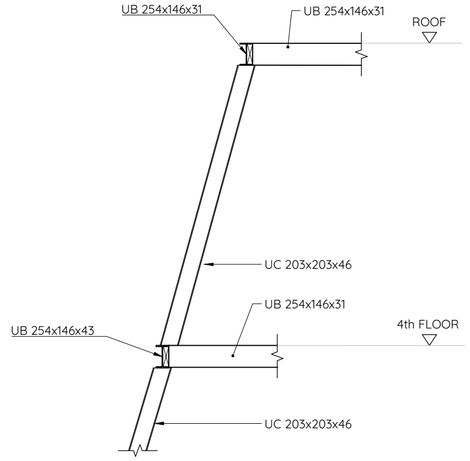
SECTION 2-2
1:50



SECTION 3-3
1:50



SECTION 4-4
1:50



SECTION 5-5
1:50

simple works

NOTES:
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11. DETAILING OF REINFORCING STEEL BY OTHERS

NOT FOR CONSTRUCTION

Rev	Date	Desc.	By
P1	05.05.23	PRELIMINARY ISSUE	NC

Project name: DALEHAM GARDENS
Client name: NW3 CLT
Project No: 2102
Scale: 1:50 @A2
Drawn/Checked: NC/AC
Status: PRELIMINARY
Title: STABILITY AND TRANSFER STRUSTURES ELEVATIONS
Drawing No.: 1803-SW-XX-XX-DR-S-0301
Rev: P1
Date: 05/05/2023

Appendix B - Flood Risk Assessment and Drainage strategy

SUBTENO ENGINEERING CONSULTANTS LTD

FLOOD RISK ASSESSMENT & DRAINAGE STRATEGY

DALEHAM GARDENS, LONDON

S221215-SUB-99-XX-FRA-C-00001

APRIL 2023

Suite FF1
Crafton House
Rosebery Business Park
Mentmore Way
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Approved By	Andrew Dye	Director	25 January 2023

Revision	Author	Date	Reason
01	Nathan Rowe	25/01/2023	Stage 2 Issue
02	Nathan Rowe	17/04/2023	Stage 3 Issue
02	Nathan Rowe	27/04/2023	Final Stage 3 Issue

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CONTENT

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1 INTRODUCTION

Subteno Engineering Consultants have been commissioned by Simple Works on behalf of NW3 CLT Community Land Trust to carry out a Flood Risk Assessment report (FRA) for a proposed development of a site off Daleham Gardens, London, NW3 5BU. A site location plan is enclosed in Appendix A.

With reference to the indicative flood maps published by the Environment Agency, the site appears to lie outside an area at risk of flooding. This FRA report has been prepared in accordance with the requirements contained within National Planning Policy Framework (NPPF, July 2021) and the associated Technical Guidance. The guidance refers to the Environment Agency's "standing advice" on flood risk. Based on requirements set by the Environment Agency, a Flood Risk assessment is needed to support the planning application.

This report has been prepared in accordance with (i) National Planning Policy Framework (NPPF), (Department for Communities and Local Government, July 2021) and the accompanying (ii) Planning Practice Guidance (Ministry of Housing, Communities and Local Government, May 2022); and (iii) Other statutory laws and local bylaws and rules.

It is stated in Paragraph 167 of the NPPF that:

"When determining any planning applications, local planning authorities should ensure that flood risk is not increased elsewhere. Where appropriate, applications should be supported by a site-specific flood-risk assessment. Development should only be allowed in areas at risk of flooding where, in the light of this assessment (and the sequential and exception tests, as applicable) it can be demonstrated that:

- *Within the site, the most vulnerable development is located in areas of lowest flood risk unless there are overriding reasons to prefer a different location;*
- *Development is appropriately flood resilient and resistant, such that, in the event of a flood, it could be quickly brought back into use without significant refurbishment;*
- *It incorporates sustainable drainage systems, unless there is clear evidence that this would be inappropriate;*
- *Any residual risk can be safely managed; and*
- *Safe access and escape routes are included where appropriate, as part of an agreed emergency plan.*

This report has been prepared to address the requirements of the NPPF and has derived the following data/information from various sources including:

- *Information published or explicitly provided by the Environment Agency;*
- *Information published on the Local Planning Authority website;*
- *London Borough of Camden Strategic Flood Risk Assessment (SFRA), July 2014 (including updated figure 6)*
- *Camden Flood Risk Management Strategy 2022-2027;*
- *LBC Section 19 Flood Investigation Report on 12th and 25th July 2021 Flood Incidents;*
- *Camden Flood-SuDS Pro Forma;*
- *British Geological Society Mapping*
- *A site specific topographical survey;*
- *Specific design works carried out for this report.*

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2 THE EXISTING SITE

2.1 Site Conditions

The proposed development is located at National Grid Reference (NGR) 526673, 185076 off Daleham Gardens, London NW3 5BU.

The site formally consisted of residential apartments but was subject to a fire in 2017. The building was subsequently demolished and is now vacant land.

Figure 2.1.1 – Satellite View of the site (approximate site boundary edged red) taken prior to demolition

2.2 Topography

A topographical survey was conducted in March 2022, after demolition of the structure.

The levels fall in an easterly direction by approximately 4m from the western to the eastern boundaries.

Details of the existing site levels are enclosed in Appendix B.

2.3 Geological Ground Conditions

The focus of an FRA study on geology is on the potential movement of water through Made Ground, Drift Geology and Solid Geology.

The British Geological Survey (BGS) Geology Viewer and GeoIndex has been referred to understand the superficial deposits and bedrock at the site:

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Formation	Description
Artificial Ground (Made Ground)	None identified on BGS Data
Superficial Deposits (Drift Deposits)	None identified on BGS Data
Bedrock	The Claygate Member – comprising dark grey clays with sand laminae, passing up into thin alternations of clays, silts and fine-grained sand, with beds of bioturbated silt. Average thickness of 16m in the London area.

Table 2.3.1 – Geological Ground Conditions

2.4 Hydrogeology

The hydrogeological features of the site are depicted below, and are taken from The Department for Environment, Food & Rural Affairs (Defra) Magic mapping records. The findings are summarised within Table 2.4.1.

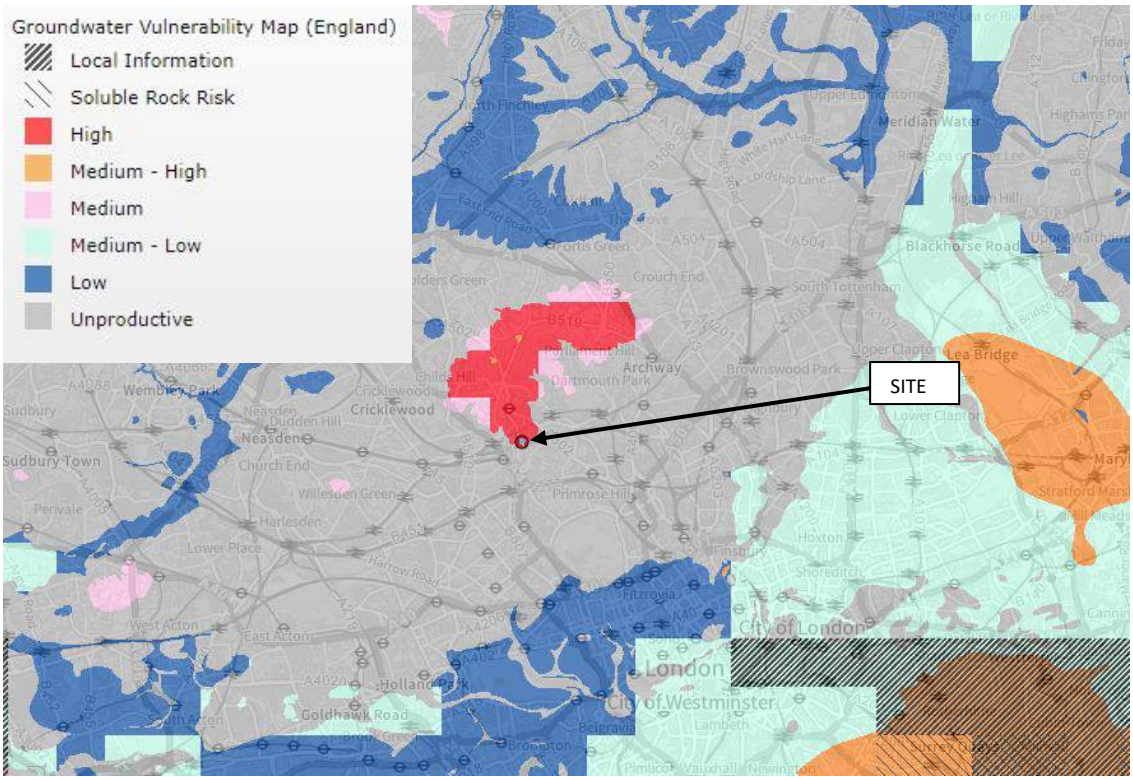

Figure 2.4.1 – Ground Water Vulnerability Zones (approximate site location marked)

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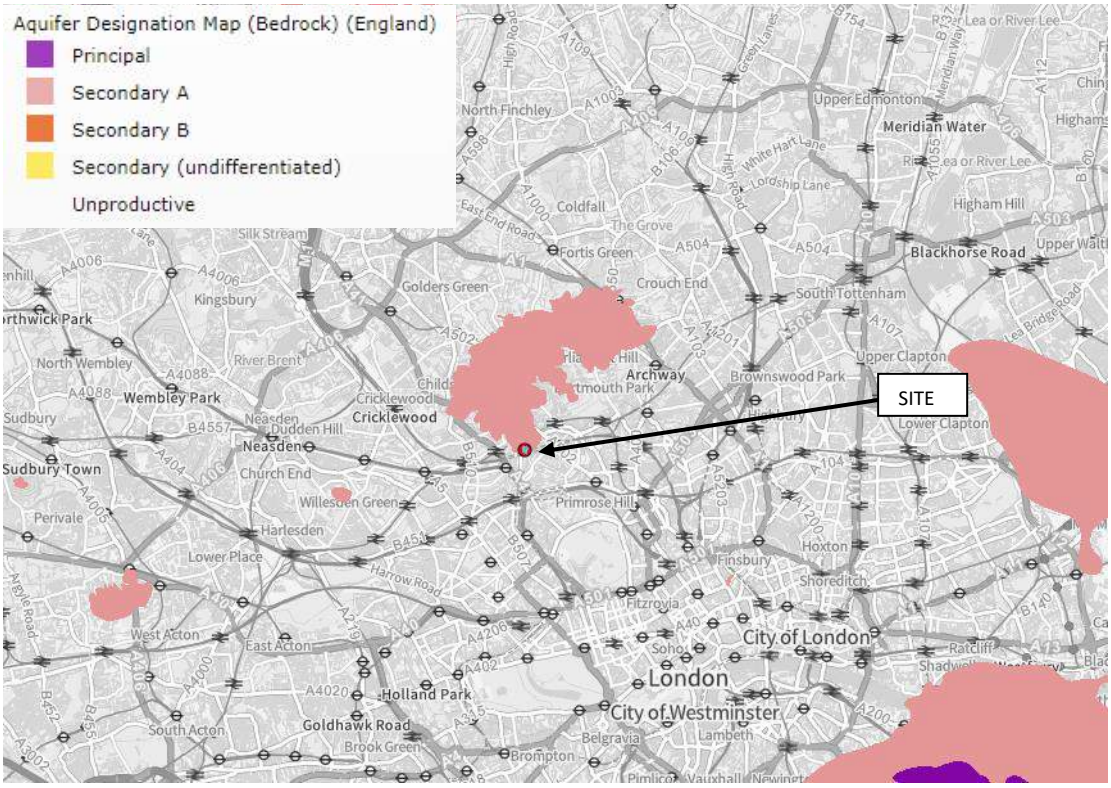

Figure 2.4.2 – Aquifer Designation Map (Bedrock) (approximate site location marked)

Figure 2.4.3 – Ground Water Source Protection Zone (approximate site location marked)

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Map Dataset	Designation	Comment
Groundwater Vulnerability	High	This category classifies the underlying groundwater in terms of vulnerability from activities carried out on the surface. Figure 2.4.1 identifies that the site has a 'High' designation characterised by the Secondary A aquifer with permeable leaching soils close to ground level, resulting in a high vulnerability to pollutants.
Aquifer Maps: Bedrock Deposits Designation	Secondary A	This category identifies the type of aquifer present in solid permeable formations. Figure 2.4.2 indicates that the superficial deposits are in the 'Secondary A' designation, consisting of permeable strata capable of supporting water supplies at a local rather than strategic scale and in some cases forming an important source of base flow to rivers.
Ground Water Source Protection Zone	N/A	Figure 2.4.3 shows the site is not located within a source protection zone.

Table 2.4.1 – Summary of Hydrogeological conditions

2.5 Existing Surface Water Management

The existing apartment building has been demolished at the time of writing this report. Associated building drainage was also removed during the demolition works.

A CCTV drainage survey of the external drainage was undertaken in September 2021, which confirms an existing 100mmØ combined outfall into the existing Thames Water sewer under Daleham Gardens.

Due to insufficient depth, the existing outfall is not suitable for re-use during the re-development and as such a new 150mmØ outfall will be required into the existing Thames Water sewer.

A copy of the CCTV survey drainage plan can be found within Appendix B.

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3 DEVELOPMENT PROPOSALS

The proposed development includes the construction of a new apartment building, comprising 14 flat apartments.

The proposed development plans are enclosed in Appendix C.

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4 PROBABILITY OF FLOODING

The NPPF identifies six potential sources of flooding:-

- *Flooding from rivers (fluvial flooding);*
- *Flooding from the sea (tidal flooding);*
- *Flooding from land;*
- *Flooding from sewers;*
- *Flooding from groundwater; and*
- *Flooding from reservoirs, canals, and other artificial sources.*

These are considered below.

4.1 Flooding from Rivers (Fluvial) & the Sea (Tidal)

The assessment of flood risk in this report is based on the definitions in Table 1 of the Flood Risk and Coastal Change, Planning Practice Guidance, which recognises the following Flood Zones:

- *Flood Zone 1 - little or no risk, with annual probability of flooding from rivers and the sea of less than 0.1% (1 in 1000-year)*
- *Flood Zone 2 - low to medium risk, with annual probability of flooding between 0.1% and 1.0% from rivers and between 0.1% and 0.5% from the sea*
- *Flood Zone 3a - high risk of flooding with an annual probability of flooding of 1.0% or greater from rivers, and 0.5% or greater from the sea*
- *Flood Zone 3b – the 'Functional Floodplain' with an annual probability of flooding of 5% or greater.*

An extract from the Environment Agency's online flood map published on the Government website is shown in Figure 4.1.1 below, with Flood Zone 3a & 3b denoted by dark blue hatch and Flood Zone 2 a light blue:

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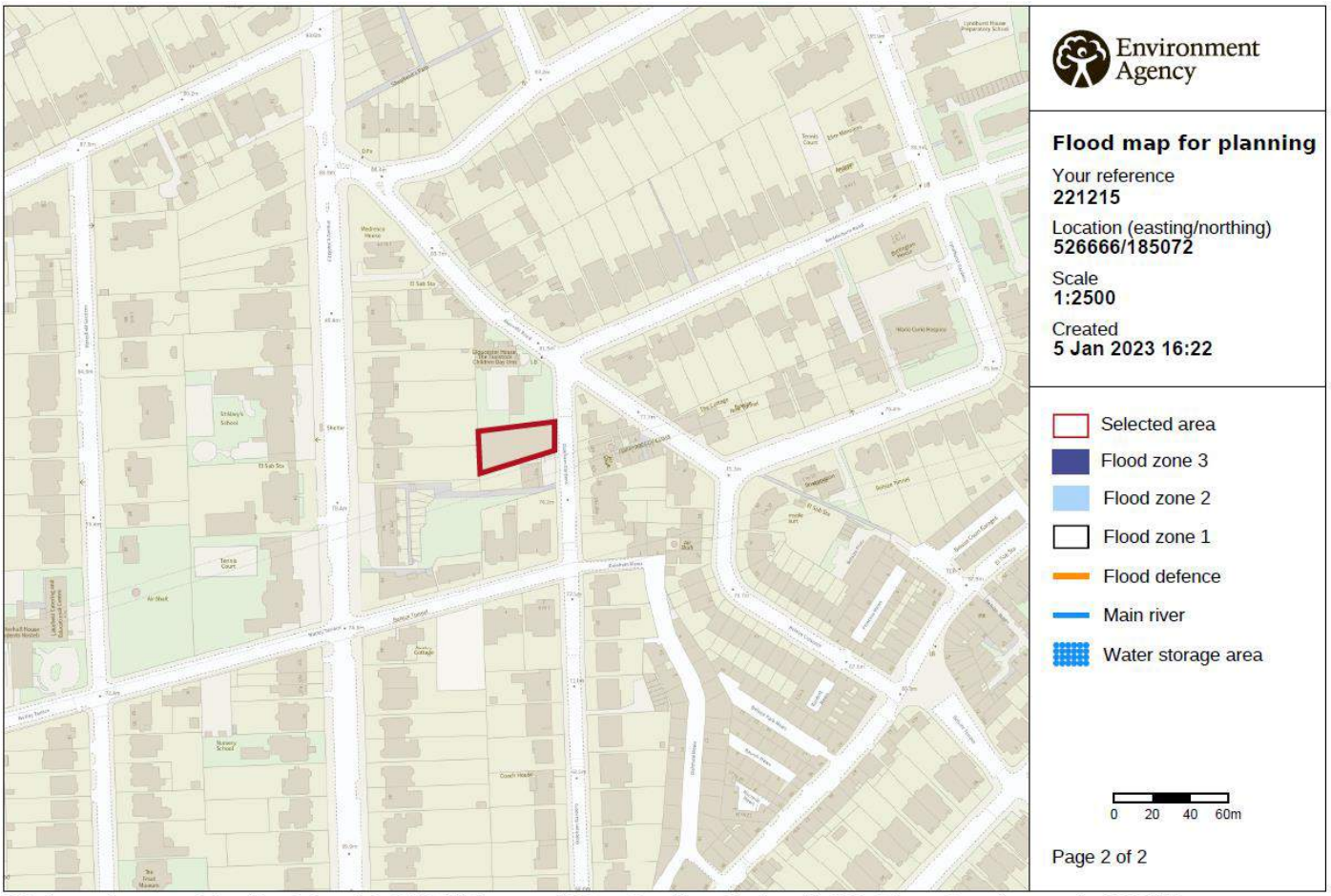

Figure 4.1.1 – Environment Agency Online Flood Map for Planning (Approximate Site Extents Edged Red)

The site is located within a Flood Zone 1 'Low Probability' area and therefore lies outside an area at risk of fluvial/tidal flooding.

4.2 Flooding from Land & Sewers

The potential for flooding as a result of existing local sewerage systems becoming overwhelmed during an extreme storm event is always a potential risk in urban areas. This can result in surface water run-off flows following the natural topography into neighbouring properties or land.

With reference to Environment Agency long term flood risk mapping, published on the Government website, the below extract shows the site in relation to indicative flood risk from surface water:

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Figure 4.2.1 – Environment Agency Online Surface Water Flood Map Extract (Site Marked)

The mapping does not take into consideration any positive drainage systems that may be present and provides an indication of flood risk based on topography. The mapping indicates a very low risk of surface water flooding on the site and does not indicate an overland flow pathway from neighbouring land.

The London Borough of Camden SFRA, Figure 5a Rev 1 shows areas with recorded internal flooding from sewers. The site is not located within one of these areas.

Figure 5b Rev1 shows areas with recorded external flooding from sewers. The site falls within an area with recorded external sewer flooding, area reference NW3_5, where one property was affected. This is likely due to the historic Thames Water combined sewers beneath the carriageway becoming overwhelmed during a rare storm event. As the site levels fall towards the Daleham Gardens carriageway, the site is unlikely to be affected as the proposed building will be higher than the carriageway, which falls south away from the site.

Based on the above, the site is deemed at low risk of flooding from these sources.

4.3 Flooding from Groundwater

Groundwater flooding occurs as a result of water rising to the surface from the ground and underlying aquifers. Flood risk from this source is more uncertain, difficult to predict and can occur sporadically. Excessive rainfall, impermeable strata and adjacent river/watercourse levels can all influence the water table. Flooding usually occurs in locally isolated areas and does not usually pose a significant risk to life due to the slow rate of the water level rising. It can however lead to significant damage to property, the environment and ground stability.

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A Phase 1 Contaminated Land Risk Assessment for the site was undertaken by STM environmental in August 2021, ref PH-2021-000087, prior to the demolition of the fire-damaged building. This advised that the groundwater level is "likely to be more than 5.0 metres below the ground surface throughout the year" (section 9.4, page 15) and that the "risk of groundwater flooding at the site is Negligible" (section 9.5.3, page 15). This is based on information obtained from the BGS and a Groundsure report.

The London Borough of Camden SFRA, Figure 4e Rev 1 shows areas within the borough with an increased susceptibility to elevated groundwater, as well as historic LBC and EA groundwater flooding incidents. The site is not located within an area of elevated groundwater and is not within proximity to a previous groundwater incident.

Based on the above, it is unlikely that groundwater levels would rise to the surface at the site and cause flooding and is therefore deemed low.

The geological and hydrogeological ground conditions have been investigated within section 2.3 and 2.4 of this report. Figure 2.4.1 shows a groundwater vulnerability class of High. This is likely due to the shallow nature of the Claygate Member soils to the surface. Given the nature of these soils and the existence of made ground from the demolition of the previous building, post-development surface water run-off is unlikely to utilise infiltration and will most likely discharge to sewer, thereby reducing the contamination risk to the underlying water table. As shown on figure 2.4.3, the site is not located within a groundwater protection zone.

4.4 Flooding from Reservoirs, Canals and other Artificial Sources

With reference to the Environment Agency long term flood risk mapping, published on the Government website, the below extract shows the Site is not at risk of flooding from reservoirs:

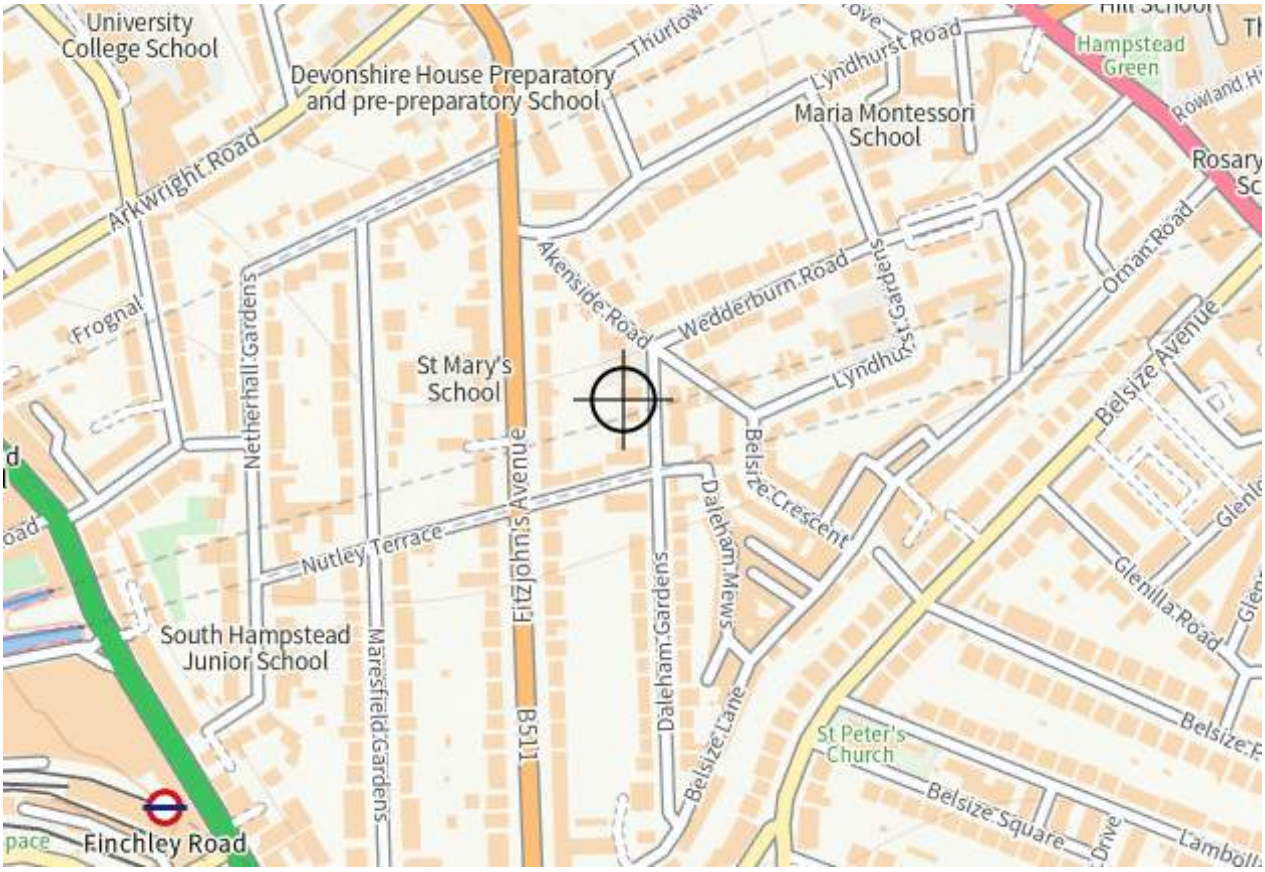

Figure 4.4.1 – Environment Agency Online Reservoir Flood Map Extract (Approximate Site Extents Edged Red)

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4.5 Critical Drainage Areas

The London Borough of Camden SFRA, figure 6a Rev 2 identifies a number of Critical Drainage Areas (CDA) within the borough. Section 4.2 of the SFRA describes these as hydrological catchments where “multiple and interlinked sources of flood risk cause flooding in one or more Local Flood Risk Zones during severe weather”. The site falls within a CDA - reference Group3_005.

An area within a CDA may not necessarily be at higher risk of flooding but falls within a catchment area that contributes to a flooding hotspot elsewhere. The LBC Section 19 Flood Investigation Report, into the Flood incidents on 12th and 25th July 2021, Revision 003 dated 20/06/2022 identifies local LBC Flood Hotspots. The Belsize Park Swiss Cottage Hotspot (figure 4-13) is close to the site. The site likely contributes to this flooding hotspot and as such the surface water management of the proposed development is crucial to ensuring flood risk elsewhere is not increased.

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5 POLICY STATUS FOR PROPOSED DEVELOPMENT

5.1 Vulnerability Classification

The proposed development complies with the following principles:

- *The proposed development lies within Flood Zone 1;*
- *The proposed development is classified as 'more vulnerable' in accordance with Annex 3 of the NPPF (reproduced as Table 5.1.1 below).*

Essential Infrastructure	Essential transport infrastructure (including mass evacuation routes) which has to cross the area at risk Essential utility infrastructure which has to be located in a flood risk area for operational reasons, including electricity generating power stations and grid and primary substations; and water treatment works that need to remain operational in times of flood Wind Turbines
Highly Vulnerable	Police stations, Ambulance stations, Fire stations, Command Centres and telecommunications installations required to be operational during flooding Emergency dispersal points Basement dwellings Caravans, mobile homes and park homes intended for permanent residential use Installations requiring hazardous substances consent
More Vulnerable	Hospitals Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels Buildings used for dwelling houses; student halls of residence, drinking establishments, nightclubs and hotels. Non–residential uses for health services, nurseries and educational establishments Landfill and sites used for waste management facilities for hazardous waste. Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.
Less Vulnerable	Police, ambulance and fire stations which are not required to be operational during flooding. Buildings used for shops; financial, professional and other services, restaurants and cafes, hot food takeaways, offices, general industry, storage and distribution, non-residential institutions not included in "more vulnerable", and assembly and leisure. Land and buildings used for agriculture and forestry. Waste treatment (except landfill and hazardous waste facilities). Minerals working and processing (except for sand and gravel working). Water treatment plants and sewage treatment plants (if adequate pollution control measures are in place). Sewage treatment works (if adequate measures to control pollution and manage sewage during flood events are in place).
Water-compatible Development	Flood control infrastructure. Water transmission infrastructure, pumping stations. Sewage transmission infrastructure and pumping stations. Sand and gravel workings.

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	Docks, marinas, wharves Navigation facilities. MOD defense installations. Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location. Water-based recreation (excluding sleeping accommodation). Lifeguard and coastguard stations. Amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms. Essential ancillary sleeping or residential accommodation for staff required by uses in this category, subject to a specific warning and evacuation plan.

Notes

1 - This classification is based partly on Defra/Environment Agency research on Flood Risks to People (FD2321/TR2)21 and also on the need of some uses to keep functioning during flooding.

2 - Buildings that combine a mixture of uses should be placed into the higher of the relevant classes of flood risk sensitivity. Developments that allow uses to be distributed over the site may fall within several classes of flood risk sensitivity.

3 - The impact of a flood on the particular uses identified within this flood risk vulnerability classification will vary within each vulnerability class. Therefore, the flood risk management infrastructure and other risk mitigation measures needed to ensure the development is safe may differ between uses within a particular vulnerability classification.

Table 5.1.1 – Flood Risk Vulnerability Classification

Vulnerability Classification		Essential Infrastructure	Water-compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Flood Zone	Zone 1	✓	✓	✓	✓	✓
	Zone 2	✓	✓	Exception Test	✓	✓
	Zone 3a	Exception Test	✓	×	Exception Test	✓
	Zone 3b	Exception Test	✓	×	×	×

Key

✓ Development is appropriate

× Development should not be permitted

Table 5.1.2 – Flood Risk Vulnerability and Flood Zone 'Compatibility'

The proposed development is appropriate in accordance with Table 3 of the Government Flood Risk and Coastal Change Guidance, reproduced in Table 5.1.2 above.

5.2 Sequential Test & Exception Test

The NPPF requires that all development is sequential tested to steer new development to areas at the lowest probability of flooding (Flood Zone 1). The Sequential Test would normally be completed by the Local Planning

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Authority (LPA) to inform the preparation of the Local Development Framework (LDF), where one exists. However, where this process has not yet been completed the onus for the provision of evidence demonstrating successful application of the Sequential Test falls to the developer, or promoter of the site. The NPPF also requires the layout of a site to be sequentially tested to locate the most vulnerable land uses in the areas at lowest risk of flooding.

The site was previously occupied by residential development and falls within Flood Zone 1, thus satisfying the sequential test.

The NPPF acknowledges that in some circumstances it may not be possible to locate development in areas of low or appropriate (considering development vulnerability) flood risk or that there may be other valid reasons for a development to take place within the floodplain. In these circumstances, it is necessary to apply the Exception Test to clearly demonstrate that the benefits for development of a site outweigh the flood risks to the development and its occupants. Table 3 of the Government Flood Risk and Coastal Change Guidance (reproduced in Table 5.1.2 above) indicates when the Exception Test is required.

The proposed development site falls entirely into Flood Zone 1. The site use is considered appropriate within this zone under NPPF guidance, meaning completion of the Exception Test is not required.

5.3 Local Policy

The Camden Local plan, adopted July 2017, has the following policy in relation to flood risk and drainage:

Policy CC3

> *"The Council will seek to ensure that development does not increase flood risk and reduces the risk of flooding where possible.*
>
> *We will require development to:*
>
> *a. Incorporate water efficiency measures;*
> *b. Avoid harm to the water environment and improve water quality;*
> *c. Consider the impact of development in areas at risk of flooding (including drainage);*
> *d. Incorporate flood resilient measures in areas prone to flooding;*
> *e. Utilise Sustainable Drainage Systems (SuDS) in line with the drainage hierarchy to achieve a greenfield run-off rate where feasible; and*
> *f. Not locate vulnerable development in flood-prone areas."*

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6 FLOOD RISK MANAGEMENT STRATEGY

6.1 Surface Water Discharge

With reference to Paragraph 80 of the Flood Risk and Coastal Change chapter within the Planning Practice Guidance and Part H3 of the Building Regulations, the disposal of surface water should be in accordance with the surface water hierarchy:

- *Infiltration*
- *Watercourse*
- *Sewer*

The geological and hydrogeological conditions have been investigated within section 2.3 and 2.4 of this report. Figure 2.4.1 shows a groundwater vulnerability of high in relation to activities undertaken at surface level. This is likely due to the shallow nature of the Claygate Member soils close to the surface. Given the impermeable nature of these soils and the existence of made ground from the demolition and past use of site, it is not proposed to discharge surface water run-off via the use of infiltration or soakaways. The site also affords little space for the positioning of a below-ground soakaway due to the site of the proposed building and the buffer required between foundations and soakaways.

Further to this, the Phase 1 Contaminated Land Risk Assessment (STM environmental, August 2021, ref PH-2021-000087) undertaken for the site prior to the demolition of the fire-damaged building identified potential contaminants within made ground and significant potential linkages to human health and property receptors. The report's recommendation was that an intrusive site investigation be undertaken to determine the presence and extent of any soil contamination at the site.

There is no watercourse within the site or within close proximity of the site, and as such it is proposed to discharge surface water run-off to the existing Thames Water combined sewer within Daleham Gardens.

Greenfield run-off rates for the 0.074Ha site have been determined as follows:

- *1-year return period – 0.3 l/s*
- *30-year return period – 0.6l/s*
- *100-year return period – 0.8l/s*
- *100-year 360-minute storm – 20m^3 volume*

Given the low nature of these flows and the practicality of flow control devices, it is proposed to restrict all surface water run-off from the site to 1.0 l/s for all storm events up to and including the 1 in 100-year return period including climate change allowance event. Therefore, the following is proposed to be adopted for the surface water drainage strategy at the site:

- *1-year return period – 1.0l/s*
- *30-year return period – 1.0l/s*
- *100-year return period including 40% c/c allowance – 1.0l/s*

Initial calculations for the 100-year, 360-minute return period event including 40% climate change allowance, show an approximate discharge volume of 25m^3.

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Whilst these are higher than the greenfield rates, these provide a significant betterment on the discharge rates that were present during the use of the now-demolished apartment building, which would not have been subject to any flow regulation or control.

A pre-planning enquiry was submitted to Thames Water in March 2023, which confirms that the existing sewer network under Daleham Gardens has capacity for the proposed flows, subject to satisfying the LLFA via the planning process as per normal process. A copy of the pre-planning enquiry can be found within Appendix G.

6.2 Surface Water Management Strategy and Sustainable Drainage Systems (SuDS)

Effective surface water management is crucial when dealing with flood risk on and off site. The use of SuDS on a development help reduce the flow of surface water leaving the site and can help improve water quality by filtering out contaminants.

With reference to Table 26.2 of Ciria C753 The SuDS Manual, the hazard class for the site is considered very low, consisting of residential roof areas and non-vehicularised, pedestrianised external areas.

It is proposed that the fourth-floor roof area (approximately 70m^2) be constructed as a blue roof, with a minimum 150mm layer for storage. The roof will consist of drainage layers and a cellular storage layer with a high void ratio to maximise the volume of temporary attenuation available.

Areas of planting on the site will be constructed as functioning raingardens, receiving areas of run-off. Raingardens provide bioretention areas that can withstand occasionally temporary flooding and also contribute to local biodiversity, surface water retention, attenuation, treatment and evapotranspiration. Due to unsuitable ground conditions for infiltration, the raingardens will have an impermeable liner with a positive overflow outlet into the below-ground drainage system.

Raingardens contribute significantly during the common storm events, particularly in warmer periods when soil moisture deficit is high, generating very little runoff during common intense short duration events. During rare intense storms such as the 1-100 return period, the raingardens are assumed as saturated and therefore do not contribute to peak run-off control or storage during these events.

To achieve the 1.0l/s maximum discharge rate for surface water run-off at the site, an on-site flow control device with storage is required prior to the final outfall to ensure run-off is safely held on-site. Approximately 20m^3 of storage is required to ensure the site does not flood up to and including the 1-100 year + 40% climate change allowance event. Due to site constraints, it is proposed to provide this storage in the form of below-ground cellular attenuation crates as part of the below-ground drainage network. The storage is designed as a maintenance-free solution to mitigate the risks of the crates silting up over time, which would otherwise result in reduced storage capacity and subsequent on-site flood risk. The flow control device will be situated immediately downstream of the storage crates to maximise storage potential.

The achieve the maintenance-free storage solution the distribution pipework is separated from the attenuation crates in stone-filled trenches, with the length of pipe adjacent the crate units perforated and fully wrapped in non-woven geotextile. When water volume exceeds pipe capacity, the perforated pipes will surcharge and enter the crates, before draining down in a controlled manner after the storm event. This ensures that nothing other than water can enter the tank, and so long-term siltation is prevented. Any silts or grits that remain in the pipework would largely be dispersed on the first flush, however the pipe can be accessed and jetted if required with periodic inspections of the pipework carried out. The whole system is to be fully wrapped in an impermeable membrane liner, thus ensuring no infiltration takes place.

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The entire on-site system is to remain in private ownership and under the future maintenance of the developer.

Outline proposed drainage drawings can be found within Appendix D.

6.3 Surface Water Pipe Network Design Parameters

Drainage calculations have been undertaken to the Modified Rational Method, with location specific FSR rainfall data used to simulate various rainfall event durations for the 1 year, 30 year and 100 year + Climate Change (C/C) allowance return periods. Causeway Flow+ software (v10.5.1) has been utilised to demonstrate capability of the surface water drainage system.

The surface water drainage network has been designed to suit the following conditions:

- *1:1 year pipe full.*
- *1:30 year surcharged.*
- *1:100 year + 40% C/C minor flooding acceptable but to be contained within the site boundary. Current calculations show no flooding during this return period.*

Whilst *controlled* flooding is typically accepted during the 1:100-year return period event with an allowance for climate change, due to the topography of the site the drainage design and storage provided ensures of no flooding during this event.

Surface water drainage calculations can be found with Appendix E.

6.4 Flood Risk Elsewhere

As the site is located within Flood Zone 1, flood compensatory storage is not required.

Whilst it is not achievable to restrict the surface water discharge to greenfield rates, the proposed maximum discharge rate of 1.0l/s is significantly lower than the demolished apartment building, which was not subject to flow regulation.

As such, the proposed drainage strategy is not considered to increase flood risk elsewhere.

6.5 Flood Exceedance Events

The proposed development will ensure that all falls are directed away from thresholds and building structures. This ensures that in the event of a drainage system failure or exceedance, run-off flows will be directed away from people and buildings.

The lower-ground lightwell area will be directed to the outer perimeter to mitigate exceedance flood risk.

Refer to Appendix F for the flood exceedance flows drawing.

6.6 Foul Water Drainage

The foul water drainage system is to drain by gravity to the site boundary, where it will connect into a new private combined drain on-site, downstream of the surface water flow regulator, before exiting the site and discharging into

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the existing Thames Water combined sewer within Daleham Gardens. The Thames Water pre-planning enquiry confirms capacity for the foul flows. This can be found within Appendix G.

The foul network will be fully designed in accordance with BS EN 752 and Building Regulations Part H, to self-cleansing velocities. The foul drainage system is fully accessible with the use of inspection chambers as well as full-size man-entry manholes.

The entire on-site system is to remain in private ownership and future maintenance of the developer.

The outline proposed drainage drawings can be found within Appendix D.

6.7 Existing Network Rail Tunnel

It should be noted that there is an existing Network Rail Tunnel, the Belsize Railway Tunnel, passing beneath the adjacent property. The below extract shows the proposed building footprint in orange, with the approximate alignment of the tunnel in salmon colour:

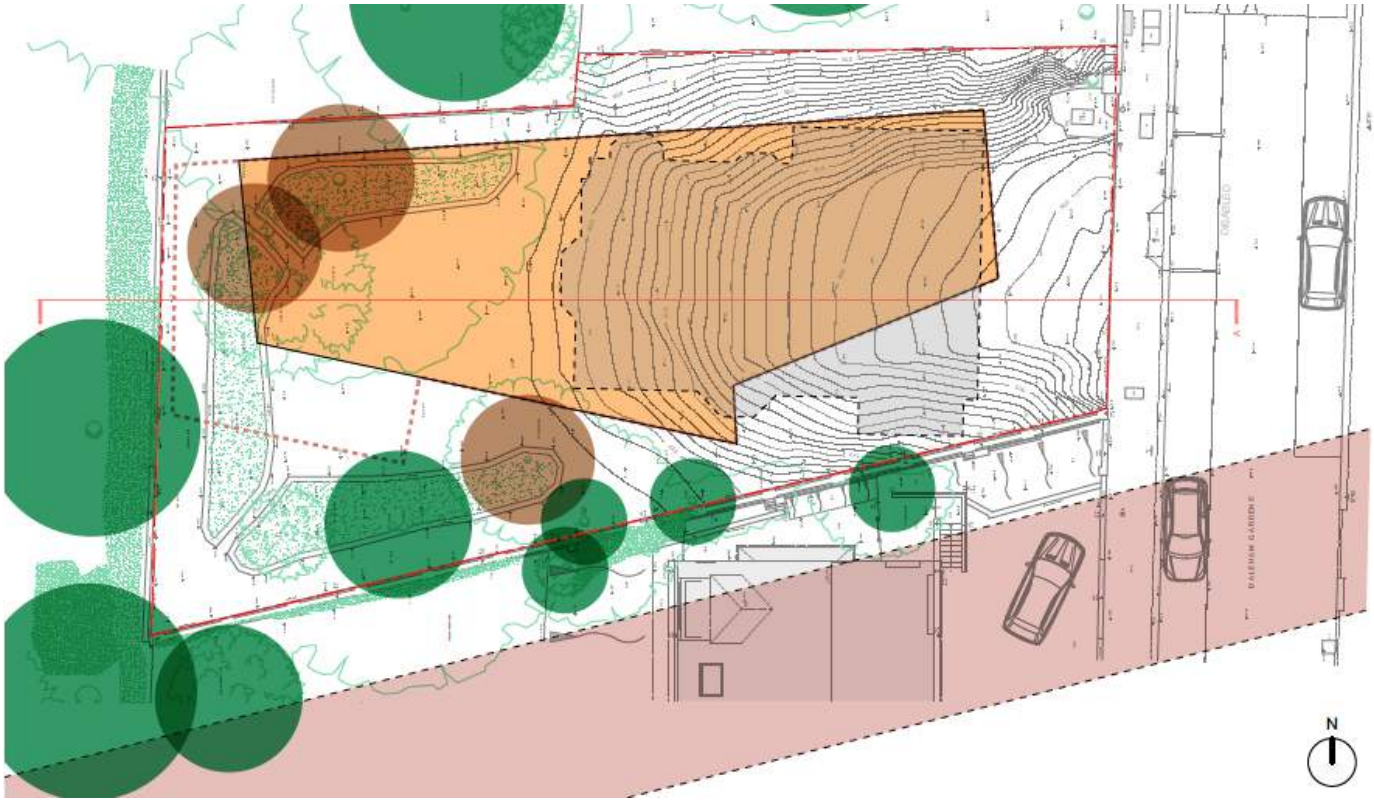

Figure 6.7.1 – Extract of Simple Works Constraints Plan (Drg 1803-XX-SK-01)

The exact alignment and depth of the tunnel is yet to be determined. The surface water drainage design on-site will need to comply with Network Rail's asset protection guidance and requirements.

These specific requirements are to be confirmed; dialogue with Network Rail is currently ongoing. It is understood that there are minimum proximity requirements for surface water attenuation and flow controls to their assets.

As such, it should be noted that the current drainage proposals are subject to amendment to suit any discussions yet to be held with Network Rail.

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7 MAINTENANCE SCHEDULE

7.1 Drainage channels and gullies

Channel sumps and gullies are to be inspected and cleaned if required every six months. Gratings are also to be checked during this operation to ensure adequate seating and fastening is maintained to prevent the forming of trip hazards and the impediment of water flow.

Channel inverts are to be inspected and jetted or rodded every twelve months. The sumps should also be cleared out following this operation to prevent blockages.

7.2 Surface water flow control device (Hydro-Brake)

Inspection is to be carried out every six months. Any silt accumulation is to be disposed of and any damage present should be reported to the manufacturer/supplier.

7.3 Catchpit manholes

The sump of each catchpit manhole is to be checked and emptied every six months.

7.4 Chamber covers and adjacent areas

Chamber covers, and abutting pavements are to be checked on an annual basis. Any damage or deformities are to be amended to prevent the formation of a trip hazard. Covers are to be replaced with similar performance products as those initially specified by the Civil Engineer.

7.5 Surface and foul water drainage pipes and chambers

The surface and foul water systems have been designed in accordance with current UK standards and good practice to ensure a self-cleansing regime. Any blockages that occur are to be rectified by rodding or jetting as required by a suitably certified organisation.

Chambers are to be visually inspected by lifting the covers every twelve months. Any silt or debris is to be removed. Anyone undertaking this task should ensure that they take relevant safety precautions before accessing the chambers.

For surface water, catchment areas should be well maintained, free of debris and excessive vegetation kept to a minimum to prevent the ingress of debris and silting up of the system.

7.6 Geocellular Attenuation storage tanks (In accordance with the SuDS Manual)

Inspect and identify any areas that are not operating correctly monthly for the first 3 months, then annually. If required, take remedial action in accordance with manufacturer recommendations.

Control Chambers upstream of infiltration tanks are to have catch pits to prevent any silt or debris from entering the system. These are to be checked and cleaned if required annually.

Trees and shrubbery are to be kept clear of any areas that contain storage tanks to prevent root damage. Landscaping/grass can be used effectively as these are not expected to have invasive roots.

During construction, special care is to be taken to not overload the storage tanks by moving plant over them. Any necessary imposed loads are to be checked with the supplier/manufacturer. Additional care to be taken to prevent

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any construction materials from penetrating the tanks while building is taking place. Prior to handing over the buildings, the system is to be jetted and inspected for damage by a suitably certified organisation. Any damage present is to be rectified as required.

Inlets, vents or overflows are to be inspected/checked annually to ensure that they are in good condition and operating as intended.

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8 CONCLUSION

With reference to the flood map for planning published by the Environment Agency, the development site is located within Flood Zone 1 'Low probability'. Flood risk from other sources has been assessed as low. This has been confirmed by the site specific flood risk assessment as detailed at Section 4.

From Table 5.1.1 the site is classified as 'More Vulnerable' (Flood Risk Vulnerability Classification), from Table 5.1.2 the development is classified as 'appropriate'.

As the site lies within Flood Zone 1, the Sequential Test is deemed passed and the Exception Test not required.

Due to unsuitable ground conditions and a constrained development footprint, the use of infiltration as a method of surface water disposable is not considered feasible. It is proposed to discharge to the existing Thames Water combined sewer within Daleham Gardens, at a maximum discharge rate of 1.0l/s for all storm events up to and include the 1-100 year return period event with an allowance for climate change.

SuDS are to be incorporated onto the site with a blue roof and functioning rain gardens, as well as below-ground attenuation and a flow control device to restrict surface water flows to 1l/s. The surface water drainage design ensures of no flooding up to and including the 1-100 year return period event with an allowance for climate change.

The current drainage proposals are subject to confirmation of any Network Rail asset protection requirements for the adjacent Belsize Tunnel under the neighbouring property.

Additional water quality measures will be provided by the inclusion of appropriate deep silt trapped gullies and silt boxes to all channel drains.

Foul water will discharge by gravity into the existing Thames Water combined sewer within Daleham Gardens.

Finished levels will ensure that any flood exceedance pathways are directed away from people and property.

The on-site foul and surface water drainage systems are to remain in private ownership, maintained by the developer in accordance with the maintenance schedule.

A completed Camden LLFA Pro-forma can be found within Appendix H.

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APPENDIX A – SITE LOCATION PLAN

Subteno
Engineering Consultants

PROJECT: Daleham Gardens, London, NW3 5BU	REF 221215-SLP	PAGE NO 1	REVISION 01
TITLE: Site Location Plan		BY NR	DATE JAN 2023

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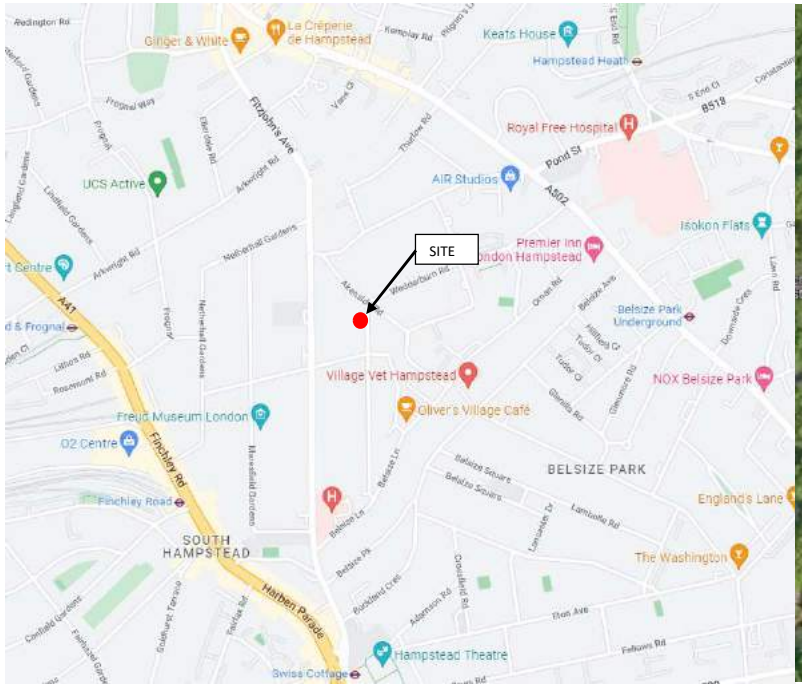

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APPENDIX B – TOPOGRAPHICAL SURVEY AND CCTV DRAINAGE SURVEY PLAN

0 2 4 6m

Key -

TOF	top of fence
TOW	top of wall
ic	inspection cover
cl	cover level
il	invert level
utl	unable to lift
bdg ht	building height
sv	stop valve
dp	depth
bt	telecom
catv	cable television
conc	concrete
rl	roof light
cbrd.	cupboard
fp	fireplace
RIDG	ridge level
GUTTER	gutter level
svp	soil and vent pipe
rwp	rain water pipe
fb	floorboard direction
DH 1990	door height
BH 2000	beam height
AH 2500	arch head
SPR 1800	spring point
FS 0780	floor to sill
SH 1850	sill to head
U/S 1950	underside
SC 2100	sloping ceiling
CH 2520	room height
	overhead slope
	radiator
A	section marker

A

DISABLED

DALEHAM GARDENS

ST02

ST01

indicative North

N

DALEHAM GARDENS

Datum 47.00m

Existing Site Section A-A

General notes -

1. All dimensions are in millimeters unless noted otherwise.
2. All dimensions shall be verified on site before proceeding with the work.

All levels are in meters related to ST01 (value 50.00m)
Coordinates related to a local grid

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E : ejjgardner@icloud.com
W : www.egsurveys.co.uk

client: NW3CLT Ltd.

project: 31 Daleham Gardens, Hampstead, London NW3 5BU

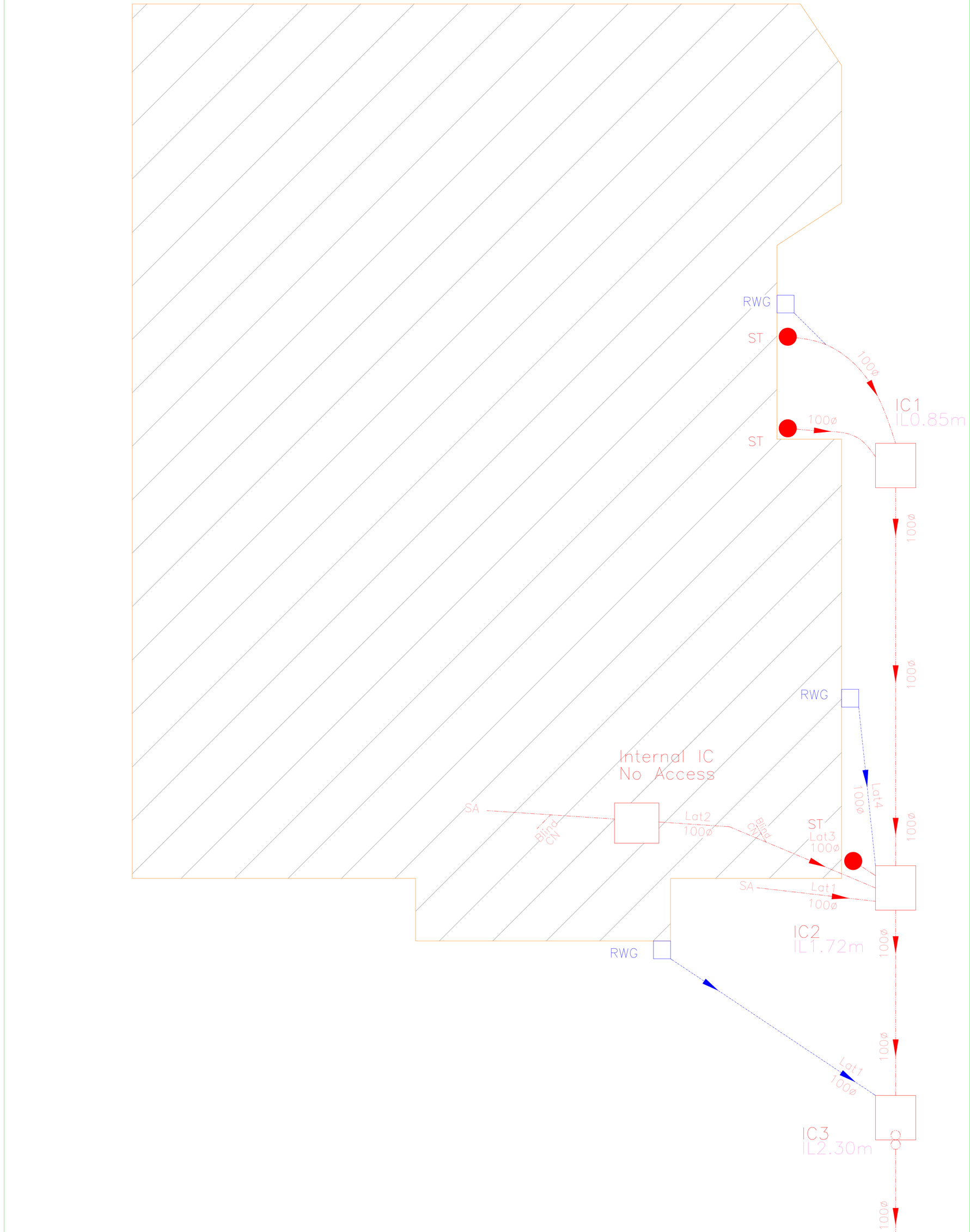
title: **Existing Topographical Survey**

date: March 2022

scale: 1:200 - Plan size A3

drawing: **22-010-1**

edwardgardner surveys



JOB No. 10443

LEGEND

FW MH/IC

SW MH/IC

INTERCEPTOR

FW GULLY

SW GULLLY

ST/VP:STACK

RWP

SW:SURFACE WATER
SURFACE WATER ROUTE

FW:FOUL WATER
FOUL WATER ROUTE

BUILDING OUTLINE

OVERHEAD BUILDING LINE

BOUNDARY LINE

ROAD

PROPOSED

BANK

BANK SYMBOL

UTS: Unable to Survey
UTL: Unable to Lift

TREE

W/C

NOT TO SCALE

Drawing Notes
EDS information shown in red

Rev.	Date	Description	By

EXPRESS SOLUTIONS GROUP

Chas Accredited

ROSPA Member

ISO 9001

ISO 14001

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Surrey
TW18 2QW
Tel 020 8979 5444
VAT 851970604
Company No 04935559

Client	Road Rock UK
Site Address	31 Daleham Gardens London NW3 5BU
Drawing title	SITE PLAN
Scales	NOT TO SCALE
Surveyor	DP
Drawn By	EA
Date	24.09.2021
JOB No.	10443