

Project Name:	Castlefield House	Job Number:	3776
Prepared By:	Harry Morton	Approved By:	Thomas Clark
Date:	22/11/2024	Revision No:	P01
Document No:	3776-CIV-XX-XX-R-C-30001		

Drainage Statement

1. Introduction

This technical note has been prepared by Civic Engineers to support a planning application for external improvements and public realm works at Castlefield House, Manchester (the 'Site'). The note intends to provide an overview of drainage proposals for the development, including information on:

- Existing drainage characteristics and flood risk.
- Effects of the proposed development on existing and future flood risk.
- Drainage infrastructure proposed as part of the development.

The full Site address is:

Castlefield House, Liverpool Road, Manchester, M3 4SB

The approximate centre of the Site has National Grid Reference:

SJ 83341 97764

The total area encompassed by the red line boundary of the proposals is 0.206 ha.

A site location plan (drawing no. CH_LP-01) is provided in Appendix A of this statement.

2. Planning Policy Context

The Environment Agency's (EA) Flood Map for Planning has been consulted and the Site is shown to lie within Flood Zone 1.

The National Planning Policy Framework (NPPF) 2023 states that a Flood Risk Assessment (FRA) is only required for sites within Flood Zone 1 where one or more of the following points apply:

“

- The development has a site area of 1 ha or more.
- The site lies within an area with critical drainage problems (areas of critical drainage problems are currently only located within Devon and Cornwall).
- The local planning authority's Strategic Flood Risk Assessment (SFRA) shows it will be at increased flood risk in future.
- The site is at risk from other sources of flooding and its development would increase its vulnerability classification.

”

Local planning authorities may stipulate individual requirements for FRAs for developments within their administrative area. Policy EN14 (Flood Risk) of the Manchester Core Strategy 2012 requires that developments with an area of greater than 0.5 ha residing in Critical Drainage Areas (CDA) identified in the Manchester, Salford, Trafford SFRA 2011 will require submission of an FRA.

Whilst the Site lies within the 'Conurbation Core' CDA, as the area of proposals encompasses only 0.206 ha, an FRA is not required as part of this planning application.

Sections of Policy EN14 and Policy EN17 (Water Quality) of the Manchester Core Strategy have been superseded by Places for Everyone (PfE) Policy JP-S4, outlined in the Places for Everyone Joint Development Plan Document for Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan 2022 to 2039, which was adopted by Manchester City Council on 21st March 2024.

The following points detailed in PfE Policy JP-S4 are relevant to this planning application:

“

- Locating and designing development so as to minimise the impacts of current and future flood risk, including retrofitting or relocating existing developments, infrastructure and places to increase resilience to flooding;
- Expecting developments to manage surface water run-off through sustainable drainage systems and as close to source as possible. Development should achieve greenfield run-off rates unless it is demonstrated to be impracticable. District local plans should consider setting more detailed surface water drainage policies to reflect local circumstances, including alternative surface water discharge rates, such as in areas with critical drainage issues;
- Ensuring that sustainable drainage systems:
 - i. Are designed to provide multifunctional benefits wherever possible, including for water quality, nature conservation and recreation;
 - ii. Avoid adverse impacts on water quality and any possibility of discharging hazardous substances to ground;
 - iii. Are delivered in a holistic and integrated manner, including on larger sites split into different phases; and
 - iv. Are managed and maintained appropriately to ensure their proper functioning over the lifetime of the development

”

3. Existing and Proposed Development

Existing Development Description

The existing Castlefield House building is situated between the Upper and Lower Campfield Market Halls and comprises approximately 32,000 sq. ft of office space. The construction date of the building is not known, however, the Site is understood to have been previously occupied by St. Matthew's Church until its demolition in 1951.

Topographical and measured building surveys of the Site were undertaken in April 2023 and are provided in Appendix B.

Access to land in the immediate surrounding of the building is restricted through the use of railings, with vehicular access provided via 2no. sliding gates. 30no. car parking spaces are present throughout the existing development. Byrom Street, to the northwest of the Site, is accessible by pedestrians only through the use of bollards, however, upstand kerbs delineating footways and the carriageway remain present.

A drainage survey of the Site has not yet been undertaken, however, it is believed to be drained by traditional gravity drainage, discharging unrestricted flows into adjacent drains and/or sewers. The car parking surrounding the building is currently drained through a mixture of gullies and linear channel drains.

Given the apparent age of the building and the fact that separated foul and surface water drainage systems were not commonplace until the 1970s, it cannot be conclusively discounted that drainage serving the building operates on a combined water system.

Proposed Development Description

In the proposed development, the façade of the building is to be modified through the installation of new aluminium coping and fins and repainting of cladding and spandrel panels. New signage is to be installed on the building's western elevation. An additional glazed door is to be installed on the building's southern elevation. No modifications are proposed to the internals of the building.

The external area to the south of the building is to be opened up to the public through the removal of car parking and existing railings, with new paving, trees and in-ground planting provided to create new public realm. Railings to the north and east of the Site are to be retained, with car parking provision reduced and replaced with a cycle store within the area bounded by the railings.

A proposed site plan is provided in Appendix C.

4. Flood Risk

Environment Agency datasets and mapping contained within the SFRA have been consulted to provide a brief overview of the Site's existing flood risk.

Fluvial

The nearest rivers to the Site are the River Irwell (470m away) and River Medlock (250m away). The EA's Risk of Flooding from the Rivers and Sea map shows the Site is at very low risk (i.e., less than 0.1% annual chance) from fluvial flooding.

Pluvial

The EA's Risk of Flooding from Surface Water map shows the Site is at very low risk of pluvial flooding. An area of low surface water flood risk (i.e., between 0.1% and 1% annual chance) is shown within the adjacent Liverpool Road, however, any flooding within this area is anticipated to be contained within the carriageway.

Groundwater

The SFRA does not identify the Site as an area at risk of groundwater flooding.

Reservoirs

The EA's Risk of Flooding from Reservoirs map does not identify the Site as an area at risk of flooding from reservoirs in either the dry-day or wet-day scenarios.

Canals

In comparison to rivers, canals are generally less susceptible to significant changes in water level due to rainfall. The Rochdale Canal is located approximately 190m from the site and based on this distance, the risk of flooding from canals is considered to be very low.

Sewer Flooding

The surrounding sewers are presumed to be adopted assets maintained by the statutory undertaker (United Utilities). No recorded incidents of flooding of these assets have been found. It is presumed that the risk of sewer flooding is very low provided United Utilities carry out their responsibilities to monitor and regularly maintain these assets.

Future Flood Risk

Climate change is anticipated to increase rainfall intensities, and the effects of urban creep may have impacts on how water flows throughout the catchment to which the development belongs. As such, the fluvial and surface water flood risk to the development can be expected to also rise throughout its lifetime. Without further site-specific 2D hydraulic modelling, these effects cannot be fully assessed, however, given the existing very low risk of flooding, there are not anticipated to be significant impacts on the future flood risk to the development.

5. Proposed Drainage Strategy

An outline drainage strategy for the Site is provided in Appendix D.

In the proposed strategy, runoff within the newly-created public realm in the south of the Site is to be conveyed via linear drainage to new SuDS infrastructure in the form of bioretention planting and tree pits. The linear drainage shall also prevent runoff from private areas flowing onto the public highway. The existing drainage channel in this area shall be removed. The SuDS components are proposed to be lined/non-infiltrating features and shall connect to existing drains serving the site, with a presumed ultimate outfall to the nearby highway drainage or public sewer network.

Whilst the feasibility of infiltration as a means of discharge should be explored through infiltration testing to BRE Digest 365 and suitable risk assessments, the use of infiltration will require the agreement of the Local Highway Authority due to the proximity of the proposed SuDS components to the public highway. It is noted that Building Regulations 2010 Approved Document H (Drainage and waste disposal) states in paragraph 3.25:

“

Infiltration drainage is not always possible. Infiltration devices should not be built:

- a. within 5m of a building **or road** or in areas of unstable land.

”

Acceptance of the use of infiltration by the Local Highway Authority is therefore deemed unlikely.

In the north of the Site, where only minor modifications are proposed to existing parking and the external landscaping is to remain largely unaltered, it is proposed that the existing drainage system is retained. Similarly, as no modifications are proposed to the internals of the existing Castlefield House, lateral drainage serving the building is proposed to remain as existing.

Specific betterments on existing runoff rates and volumes from the Site are not targeted as a significant reduction of these for more severe storm events will require larger scale interventions such as the provision of attenuation tanks, which do not form part of proposals. Nevertheless, the proposed scheme is anticipated to reduce the existing flow rate and runoff volumes from the Site in more frequent storm events due to slowing of flows and interception storage provided in the proposed bioretention systems.

The proposed bioretention and tree pits are also anticipated to enhance the quality of surface water runoff as vegetation and trees within these components will remove pollutants through the processes of sedimentation, filtration, sorption, reduction, vegetative uptake and microbial biomass assimilation; as well as providing improvements to amenity and biodiversity.

A management and maintenance plan should be developed and provided to the party responsible for the maintenance of proposed SuDS infrastructure to ensure the system continues to operate as designed.

Under the assumption that existing drainage from the Site is connected to the public sewer, a pre-development enquiry has been issued to United Utilities for their comment. A response to this enquiry is currently pending at the time of writing of this technical note.

Conclusion

This technical note has discussed drainage and flood risk information relating to proposed refurbishments of the existing Castlefield House building located at Liverpool Road, Manchester. Proposals include refurbishment and modification of the building façade and creation of new public realm external to the building. No modifications are proposed to the internals of the building.

The Site lies within Flood Zone 1 and does not require a Flood Risk Assessment under current guidelines published in the National Planning Policy Framework 2023, Manchester Core Strategy 2012 and Addendum to Manchester Core Strategy 2024. The existing flood risk to the Site from all known sources is shown to be very low and is not anticipated to significantly increase as a result of processes such as climate change and urban creep.

In the outline drainage strategy for the Site, SuDS components comprising bioretention areas and tree pits are proposed to drain surface water runoff from the newly-created public realm. Linear channel drains are proposed at the site boundary to direct runoff towards these features and prevent runoff draining onto the public highway. The SuDS components are to be lined/non-infiltrating features discharging to the Site's existing drainage connection, presumed to be the surrounding highway drainage or public sewer network, subject to confirmation via a drainage survey. Infiltration is not deemed to be feasible due to the proximity of SuDS components to the public highway. The remainder of the Site is proposed to drain as existing.

The proposed SuDS infrastructure is anticipated to provide a betterment to existing peak runoff rates and volumes from the Site as well as improvements to the quality of runoff in more frequent storm events. Tree pits and bioretention areas are also associated with numerous amenity and biodiversity benefits. The proposals are not anticipated to increase the existing flood risk to the Site.

Appendix A

Site Location Plan



PROJECT Castlefield House	DRAWING <i>LOCATION PLAN</i>	
	SCALE <i>1:1250 at A3</i>	PROJECT NUMBER <i>24-021</i>
	DATE <i>Aug 2024</i>	DRAWING STATUS <i>Planning</i>
	DWG No. <i>CH_LP-01</i>	REVISION <i>P1</i>

DRAFT

<i>P1</i>	<i>Planning</i>	<i>20/09/24</i>
STATUS	REVISION	DATE

General Notes:

All dimensions to be checked on site prior to commencement of any works, and/or preparation of any shop drawings.

Sizes of and dimensions to any structural elements are indicative only. See structural engineers drawings for actual sizes / dimensions.

Sizes of and dimensions to any service elements are indicative only. See service engineers drawings for actual sizes and dimensions.

This drawing to be read in conjunction with all other Architect's drawings, specifications and other Consultants' information.

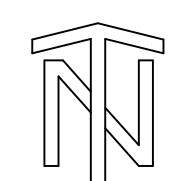
All proprietary systems shown on this drawing are to be installed strictly in accordance with the Manufacturers/Suppliers recommended details.

Any discrepancies between information shown on this drawing and any other contract information or manufacturers/suppliers recommendations is to be brought to the attention of the Architect.

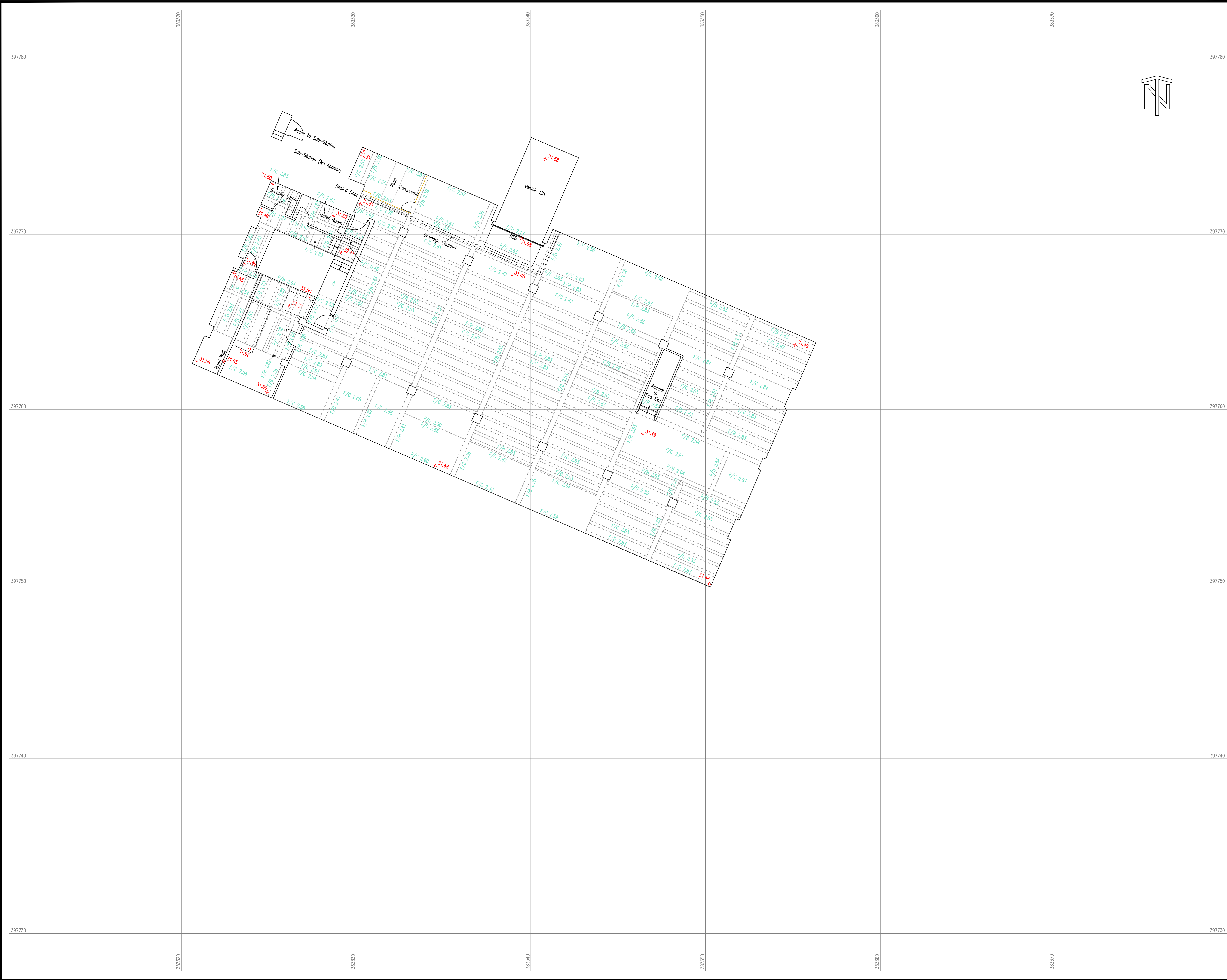
DO NOT SCALE FROM THIS DRAWING.

Appendix B

Topographical and Measured Building Surveys



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Drawing No	12322 / 001			Rev
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NOTES

KEY

Grid & Datum - Local Plane Grid related to OS National Grid & Datum
By GNSS RTK Observations

STANDARD ABBREVIATIONS

F/A - FLOOR TO APEX HEIGHT
F/B - FLOOR TO BEAM HEIGHT
F/C - FLOOR TO CEILING HEIGHT
F/FC - FLOOR TO FALSE CEILING HEIGHT
F/H - FLOOR TO HEAD HEIGHT
F/S - FLOOR TO SILL HEIGHT
F/SP - FLOOR TO SPRING HEIGHT

SYMBOLS

DOOR

TOILET

SINK & DRAINER

BATH

WASH BASIN

URINAL

STRUCTURAL

BLUICE SINK

Rev	Date	Drawn	Description	Chk'd	App'd

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E: mail@ndoliver.com www.ndoliver.com

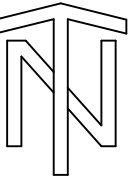
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ALLIED LONDON
7 - 8 SAVILE ROW
LONDON
W1S 3PE

Title

CASTLEFIELD HOUSE
LIVERPOOL ROAD
MANCHESTER M3 4SB
BASEMENT FLOOR PLAN
SHEET 1 OF 7

Surveyed	PK	Drawn	PK	Drawn Date:
Checked	AM	Approved	NDO	12/04/2023
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KEY

Grid & Datum - Local Plane Grid related to OS National Grid & Datum
By GNSS RTK Observations

	DOOR		TOILET		SINK & DRAINER
	BATH		WASH BASIN		URINAL
	STRUCTURAL		SLUICE SINK		

Rev	Date	Drawn	Description	Ch'k'd	App'd



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Title

CASTLEFIELD HOUSE
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SECOND FLOOR PLAN
SHEET 4 OF 7

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NOTES

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STANDARD ABBREVIATIONS

F/A - FLOOR TO APEX HEIGHT

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F/S - FLOOR TO SILL HEIGHT

F/SP - FLOOR TO SPRING HEIGHT

SYMBOLS

DOOR

BATH

STRUCTURAL

TOILET

WASH BASIN

SINK

SINK & DRAINER

URINAL

SLUICE SINK

Rev	Date	Drawn	Description	Chk'd	App'd

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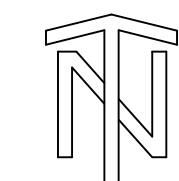
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7 - 8 SAVILE ROW
LONDON
W1S 3PE

Title

CASTLEFIELD HOUSE
LIVERPOOL ROAD
MANCHESTER M3 4SB

THIRD FLOOR PLAN
SHEET 5 OF 7

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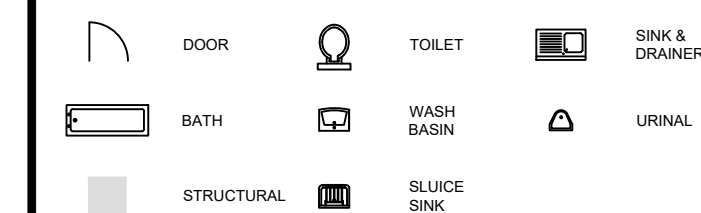
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By GNSS RTK Observations

STANDARD ABBREVIATIONS

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F/FC - FLOOR TO FALSE CEILING HEIGHT
F/H - FLOOR TO HEAD HEIGHT
F/S - FLOOR TO SILL HEIGHT
F/SP - FLOOR TO SPRING HEIGHT

SYMBOLS



Rev	Date	Drawn	Description	Chk'd	App'd



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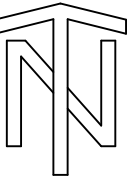
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7 - 8 SAVILE ROW
LONDON
W1S 3PE

Title	
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Title	CASTLEFIELD HOUSE LIVERPOOL ROAD MANCHESTER M3 4SB
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FOURTH FLOOR PLAN
SHEET 6 OF 7

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Grid & Datum - Local Plane Grid related to OS National Grid & Datum
By GNSS RTK Observations

	DOOR		TOILET		SINK & DRAINER
	BATH		WASH BASIN		URINAL
	STRUCTURAL		SLUICE SINK		

Rev	Date	Drawn	Description	Ch'k'd	App'd



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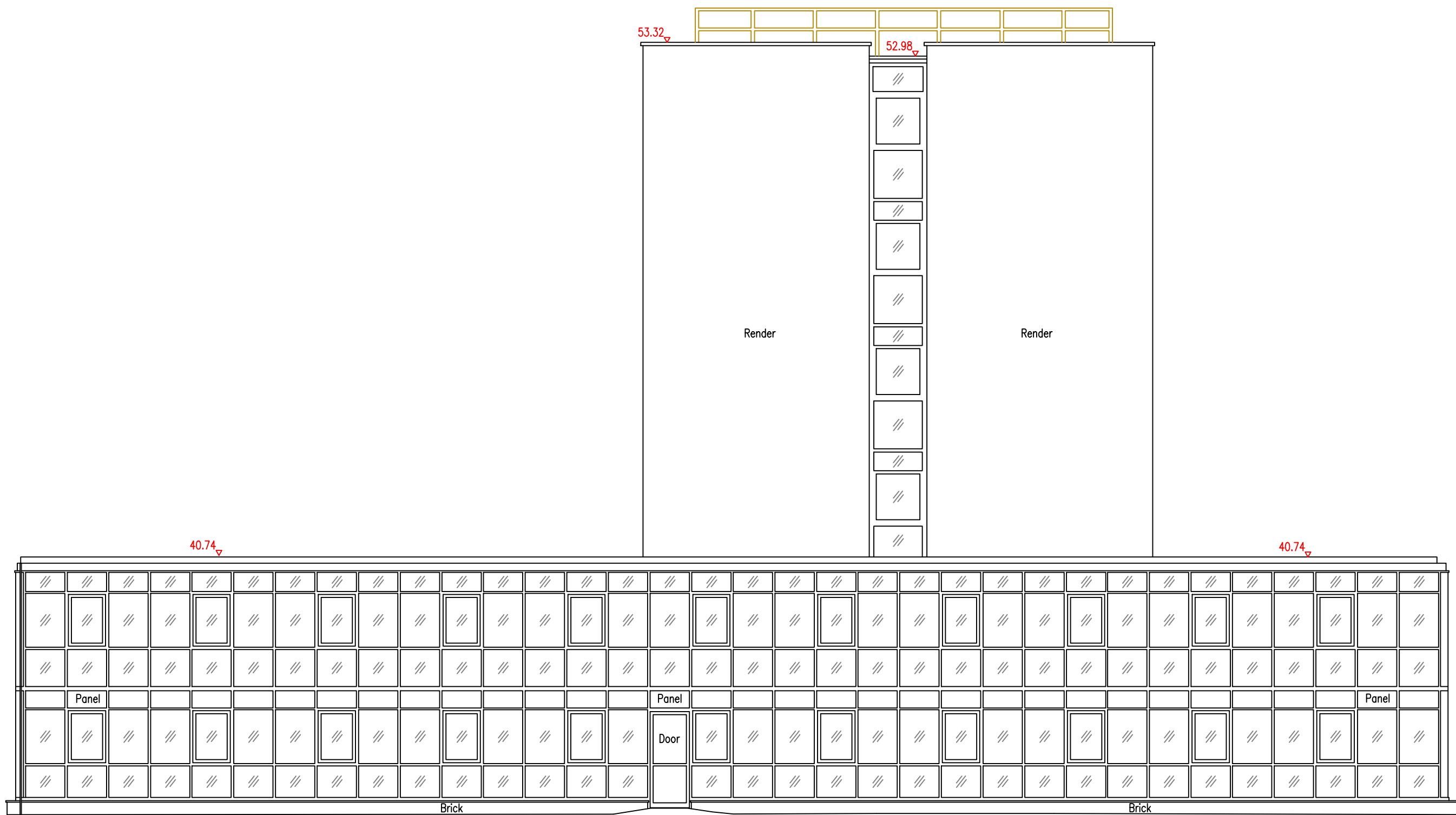
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7 - 8 SAVILE ROW
LONDON
W1S 3PE

Title

CASTLEFIELD HOUSE
LIVERPOOL ROAD
MANCHESTER M3 4SB
FIFTH FLOOR PLAN
SHEET 7 OF 7

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Datum 30.000m
Elevation 1

NOTES

REFERENCE DIAGRAM

KEY

Grid & Datum - Local Plane Grid related to OS National Grid & Datum
By GNSS RTK Observations

STANDARD ABBREVIATIONS

AC - AIR CONDITIONING
AE - AERIAL
AL - ALARM
AV - AIR VALVE
BL - BURNER LIGHT
BO - BOLLARD
CA - CABLE
CB - CONTROL BOX
CC - CLOSE CIRCUIT TV
CO - COLUMN
CT - CLOSE CIRCUIT TV POLE
DR - DOWN PIPE
DU - DUCT
EL - ELECTRIC
EP - ELECTRICITY POLE
FB - FLOWER BED
FL - FLOODLIGHT

FS - FLAG STAFF
GA - GAS
GM - GAS METER
GP - GATE POST
GV - GAS VALVE
HR - HANDRAIL
JB - JUNCTION BOX
LA - LADDER
LB - LITTER BIN
LC - LIGHTING COLUMN
LI - LIGHT
LP - LAMP POST
MO - MONUMENT
NP - NAME PLATE
PB - PILLAR BOX
PI - PIPE
PL - PLANT

PM - PARKING METER
PL - PLANTER
PO - POST
PS - ROAD SIGN
RWP - RAINWATER PIPE
SC - SPEED CAMERA
SD - SATELLITE DISH
SG - SIGNAL
SK - SIGN
SS - SECURITY SENSOR
SW - SWITCHGEAR
TA - TAP
TM - TICKET MACHINE
TP - TELEGRAPH POLE
VE - VENT
VP - VENT PIPE
WM - WATER METER
WP - WASTE PIPE

SYMBOLS

LEVEL
WINDOW
GLAZING

Rev	Date	Drawn	Description	Chk'd	App'd

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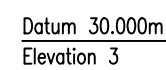
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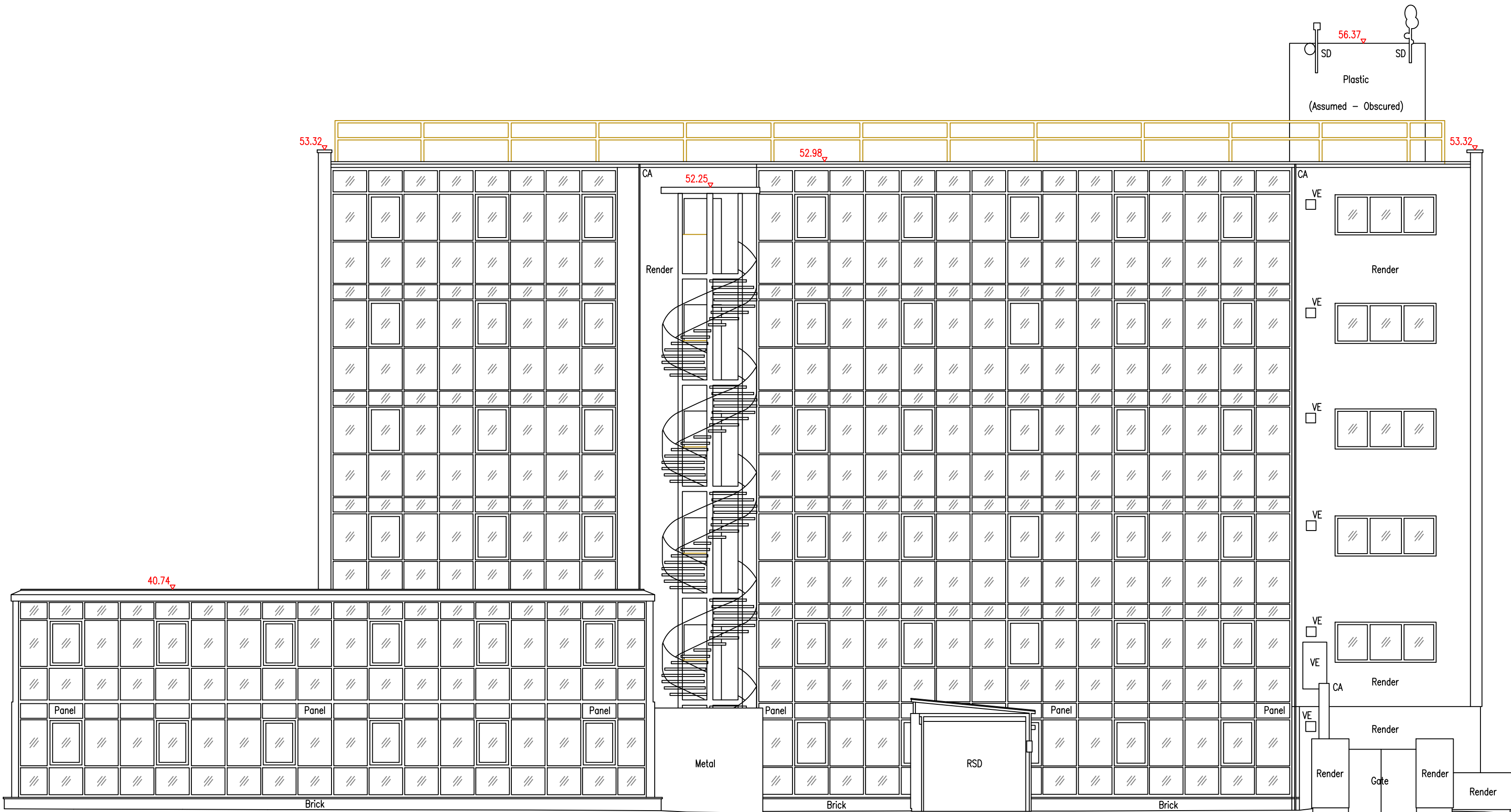
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CASTLEFIELD HOUSE
LIVERPOOL ROAD
MANCHESTER M3 4SB
ELEVATION 1
SHEET 1 OF 1

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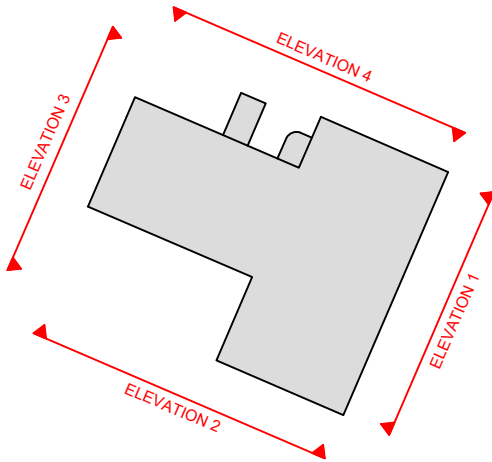
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Datum 30,000m
Elevation 4

NOTES

REFERENCE DIAGRAM



KEY

Grid & Datum - Local Plane Grid related to OS National Grid & Datum
By GNSS RTK Observations

STANDARD ABBREVIATIONS

AC - AIR CONDITIONING	FS - FLAG STAFF	PM - PARKING METER
AE - AERIAL	GA - GAS	PL - PLANTER
AL - ALARM	GM - GAS METER	PO - POST
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DN - DRAIN	LP - LAMP POST	TM - TICKET MACHINE
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FB - FLOWER BED	PI - PIPE	WM - WATER METER
FL - FLOODLIGHT	PL - PLANT	WP - WASTE PIPE

SYMBOLS

LEVEL WINDOW GLAZING

Rev	Date	Drawn	Description	Chk'd	App'd



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Client

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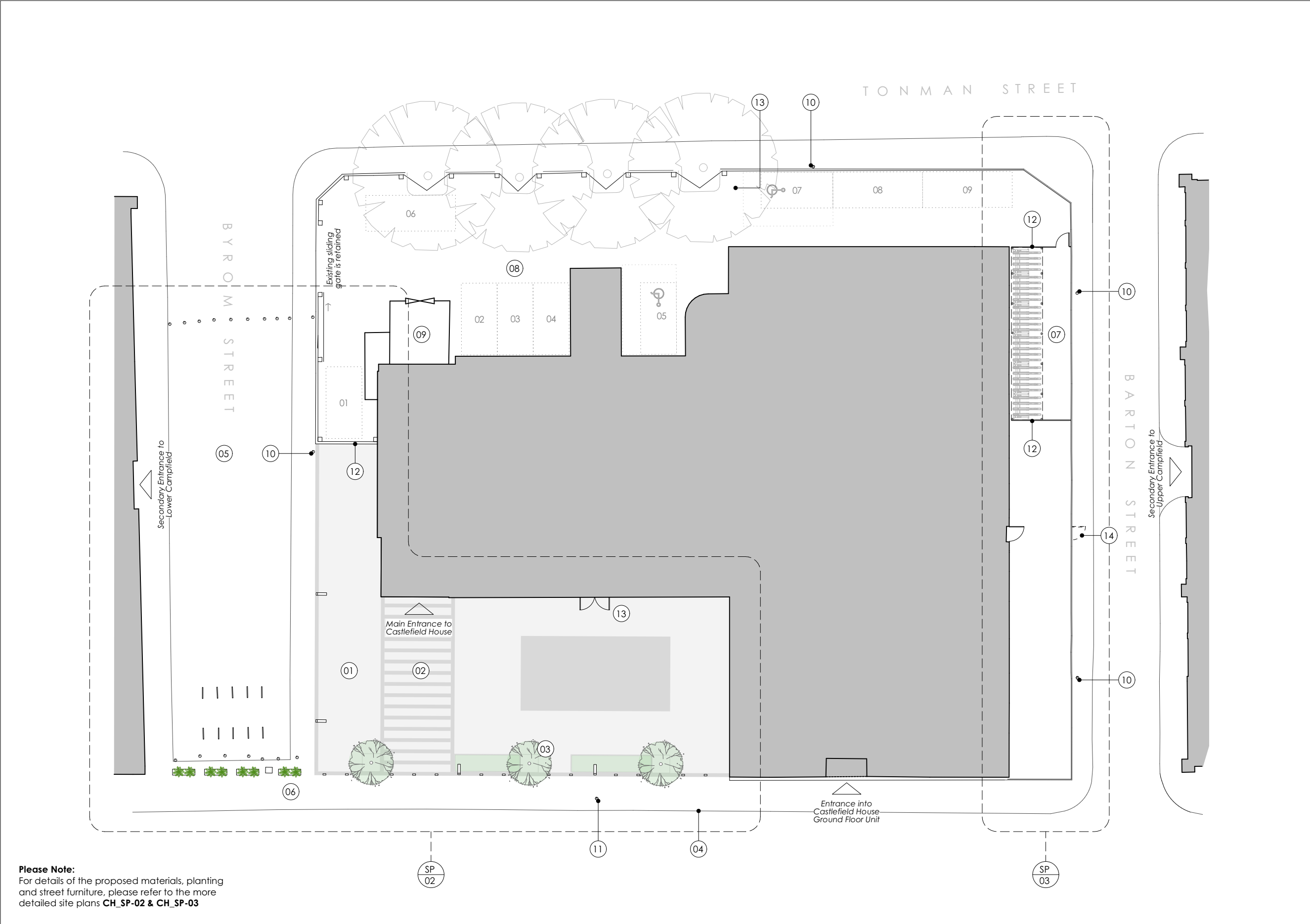
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CASTLEFIELD HOUSE
LIVERPOOL ROAD
MANCHESTER M3 4SB
ELEVATION 4
SHEET 1 OF 1

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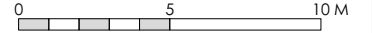
Appendix C

Proposed Site Plan



Please Note:
For details of the proposed materials, planting and street furniture, please refer to the more detailed site plans **CH_SP-02 & CH_SP-03**

- Drawing Key:**
- 01 Existing railings and parking to front yard removed, and a new public realm created, with level access from the surrounding pavements
 - 02 New paving to the public realm, laid in patterns to create interest and delineate the building entrance.
Please note that the patterns shown are indicative
 - 03 3no. New mature in-ground trees with square tree grilles
 - 04 Following removal of the vehicular access gate on Liverpool Road, the dropped kerb will be removed and the pavement level reinstated
 - 05 Byrom Street cobblestones retained as existing, with controlled vehicular access proposed via removable bollard (refer to CH_SP-02 for details)
 - 06 The pavement along Liverpool Road is retained as existing (and as noted above, will be reinstated in one area, due to the removal of the dropped kerb)
 - 07 New secure and covered cycle store, serving Castlefield House, as well as Upper and Lower Campfields
 - 08 Parking is retained to the rear enclosed yard
 - 09 Existing bin store retained
 - 10 Existing lamp post retained
 - 11 Existing bus stop retained
 - 12 Sections of removed railings are repurposed to enclose the reduced rear yard, and the cycle store
 - 13 New access door
 - 14 New gate in railings, for escape purposes



 Studio Hart Limited 7-8 Saville Row London, W1 SPE	DRAWING <i>PROPOSED SITE PLAN</i>	
	SCALE <i>1:250 at A3</i>	PROJECT NUMBER <i>24-021</i>
	DATE <i>Nov 2024</i>	DRAWING STATUS <i>Planning</i>
	DWG No. <i>CH-SP-01</i>	REVISION <i>P1</i>
PROJECT <i>Castlefield House</i>		

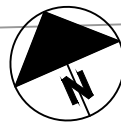
<i>P1</i>	<i>Planning</i>	<i>22/11/24</i>
STATUS	REVISION	DATE

General Notes:
All dimensions to be checked on site prior to commencement of any works, and/or preparation of any shop drawings.
Sizes of and dimensions to any structural elements are indicative only. See service engineers drawings for actual sizes / dimensions.
Sizes of and dimensions to any service elements are indicative only. See service engineers drawings for actual sizes and dimensions.
This drawing to be read in conjunction with all other Architect's drawings, specifications and other Consultants' information.
All proprietary systems shown on this drawing are to be installed strictly in accordance with the Manufacturers/Suppliers recommended details.
Any discrepancies between information shown on this drawing and any other contract information or manufacturers/suppliers recommendations is to be brought to the attention of the Architect.
DO NOT SCALE FROM THIS DRAWING.

Appendix D

Proposed Outline Drainage Strategy

FILE LOCATION PATH: P:\PROJECTS\HOT\3776 CASTLEFIELD HOUSE, MANCHESTER\004 BIM\CIVILS\DRAWINGS\3776-CIV-XX-ZZ-D-C-30001_PROPOSED OUTLINE DRAINAGE STRATEGY.DWG



EXISTING GULLIES/CHANNELS RETAINED WHERE
FEASIBLE AND SUBJECT TO CONFIRMATION OF
CONDITION VIA CCTV SURVEY

PROPOSED BIKE STORE TO DRAIN TO
EXISTING CHANNEL DRAIN

BUILDING DRAINAGE TO DRAIN
TO EXISTING DRAINAGE SYSTEM

INDICATIVE OUTFALL TO EXISTING DRAINAGE SYSTEM

DRAINAGE/CCTV SURVEY OF EXISTING DRAINAGE TO BE
UNDERTAKEN TO CONFIRM CONNECTIVITY AND
CONDITION OF EXISTING DRAINAGE AND CONFIRM
PROPOSED POINT OF CONNECTION TO DOWNSTREAM
DRAINAGE NETWORK

NON-RETURN VALVE INSTALLED IN CHAMBER WHERE
DOWNSTREAM DRAINAGE NETWORK IS A COMBINED SYSTEM

PROPOSED SUDS COMPONENTS TO BE LINED WITH
IMPERMEABLE GEOTEXTILE

EDGINGS TO PLANTING LAID FLUSH OR, WHERE
UPSTAND PROPOSED, GAPS LEFT AT 100mm
CENTRES TO ALLOW FLOW INTO BIORETENTION

CHANNEL DRAIN UNITS OR DRAINAGE CHANNEL FORMED
FROM CHANNEL BLOCKS/PAVING BLOCKS TO DRAIN INTO
TREE PIT/BIORETENTION SYSTEMS AT SURFACE

STANDARD NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT'S AND ENGINEER'S DRAWINGS AND THE SPECIFICATIONS.
2. THIS DRAWING SHOULD NOT BE SCALED.
3. ALL DIMENSIONS ARE TO BE VERIFIED BY THE CONTRACTOR ON SITE.
4. ALL DISCREPANCIES SHOULD BE REPORTED TO C.A./E.A. PRIOR TO THE COMMENCEMENT OF WORKS.

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NOTES

1. PROPOSED SITE PLAN BY STUDIO HART LIMITED, DRAWING NO. CH-SP-01, REV. P1, RECEIVED 21.11.2024 FROM ALLIED LONDON.7
2. THE PROPOSALS SHOWN ARE PRELIMINARY ONLY AND SUBJECT TO:
 - 2.1. SURVEY OF EXISTING DRAINAGE SYSTEM.
 - 2.2. APPROVAL OF PROPOSALS BY LOCAL HIGHWAY AUTHORITY UNDER SECTION 278 OF THE HIGHWAYS ACT 1980.
 - 2.3. APPROVAL OF PROPOSALS BY LEAD LOCAL FLOOD AUTHORITY.
 - 2.4. DETAILED COORDINATION WITH PROPOSED LEVELS AND PLANTING STRATEGY BY LANDSCAPE ARCHITECT.

KEY

- RED LINE BOUNDARY
- EXISTING RETAINED CHANNEL DRAIN
- EXISTING RETAINED GULLY
- EXISTING CHANNEL DRAIN TO BE ABANDONED/DEMOLISHED
- PROPOSED SURFACE WATER DRAIN (SOLID WALL)
- PROPOSED SURFACE WATER DRAIN (PERFORATED)
- PROPOSED BIORETENTION/TREE PIT
- PROPOSED INSPECTION CHAMBER
- PROPOSED RODDING EYE
- RUNOFF FLOW PATH

22.11.24	P01	INITIAL ISSUE	HCM	TC
DATE	REV	DESCRIPTION	DRAWN	CHKD

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PROJECT
CASTLEFIELD HOUSE
MANCHESTER

TITLE
PROPOSED OUTLINE DRAINAGE STRATEGY

DRAWING STATUS					STATUS CODE	
PRELIMINARY					-	
CE PROJECT No.	SCALE @ A1	DATE CREATED	DRAWN	CHECKED		
3776	1:100	NOV 24	HCM	TC		
DRAWING No.					REV	
3776-CIV-XX-ZZ-D-C-30001					P01	