

1. DO NOT SCALE FROM THIS DRAWING
2. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING IS FOR INFORMATION ONLY.
4. DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS AND CONSULTANTS DRAWINGS AND SPECIFICATIONS.
5. THIS DRAWING IS BASED ON:
 - TERRAIN TOPOGRAPHICAL SURVEY DATED DECEMBER 2021 - TS21-619-1

 SITE BOUNDARY = 4691m²
 EXISTING PERMEABLE AREA = 0m²
 EXISTING IMPERMEABLE AREA = 4691m²

CDM RESIDUAL CIVIL / STRUCTURAL DESIGN RISKS



PROJECT
BROAD STREET READING

CLIENT
MCLAREN LIVING

TITLE	EXISTING CATCHMENT PLAN
-------	-------------------------

DISCIPLINE CIVIL			SCALE 1:250
DRAWN SA	DESIGNED SA	CHECKED GB	APPROVED GB
DRAWING No 3104-MHT-XX-XX-DR-C-SK005			ISSUE 101

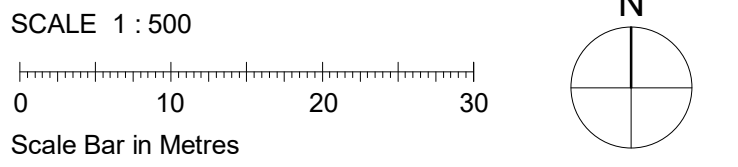
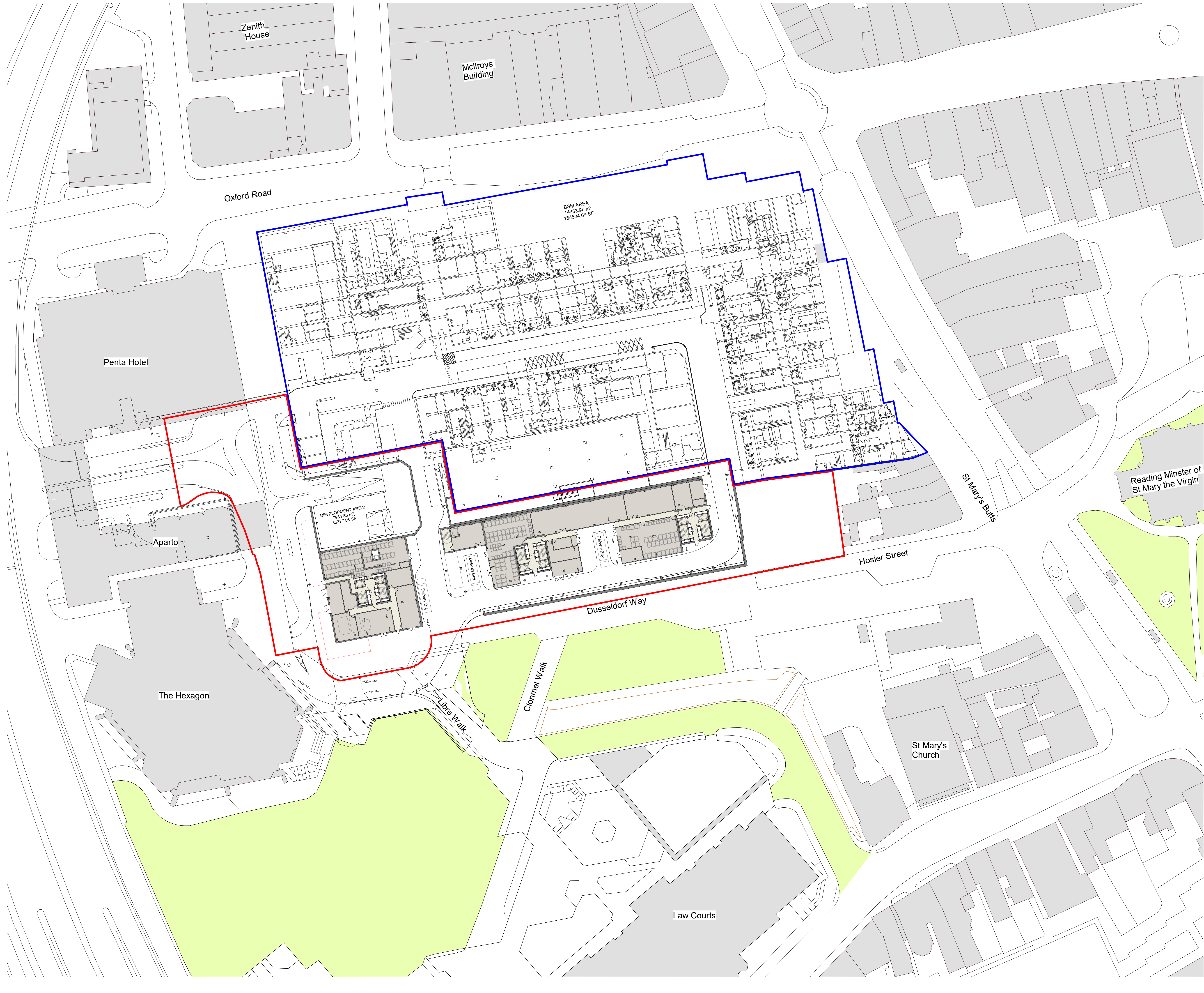
KEY:

	SITE BOUNDARY = 4691m ²
	PROPOSED PERMEABLE AREA = 0m ²
	PROPOSED IMPERMEABLE AREA = 4691m ²



CDM RESIDUAL CIVIL / STRUCTURAL DESIGN RISKS			
 10 Aldersgate Street, London EC1A 4JU Telephone: +44 (0)20 7831 7969 www.meinhardt.co.uk			
PROJECT BROAD STREET READING			
CLIENT MCLAREN LIVING			
TITLE PROPOSED CATCHMENT PLAN			
DISCIPLINE CIVIL			SCALE 1:250
DRAWN SA	DESIGNED SA	CHECKED GB	APPROVED GB
DRAWING No 3104-MHT-XX-XX-DR-C-SK006			ISSUE 101

Appendix G – Development Drawings



Key

Circulation

BOH

Key

Red Line Boundary

Area within boundary: 7931.83 m²

Applicants Ownership

Area within boundary: 14353.95 m²

Rev	Description	Date	Dr by	App by
original by		date created		
BS		29/11/23		DB

AHR

AHR Architects Ltd

5th Floor

55 Princess Street

Manchester

M2 4EW

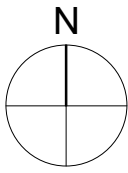
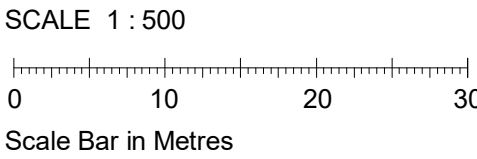
United Kingdom

T +44(0)161 8287900

E manchester@ahr.co.uk

www.ahr.co.uk

client name		
McLaren (Broad Street Mall) Ltd and UREF III LP		
project		
Broad Street Mall Residential		
drawing		
BSM Development Scheme Site Plan - Basement		
computer file		plot date
1/10.32.1.11DEM_Profile_Folder_redactorbethany.stewart/Documents/Ref_Plan/Local File/Rev/2023/BSM-AHR-ZZ-DR-A-08120		
project number		scale
2022.00307.000		1 : 500 @A1
drawing number		rev
BSM-AHR-ZZ-B1-DR-A-08120		issue status
		S2
This drawing is to be read in conjunction with all related drawings. All dimensions must be checked and verified on site before commencing any work or producing shop drawings. The originator should be notified immediately of any discrepancy. This drawing is copyright and remains the property of AHR.		



Key

- Amenities
- Circulation
- BOH
- Retail

Key

- Red Line Boundary
Area within boundary: 6238.61 m²
- Applicants Ownership
Area within boundary: 14353.95 m²

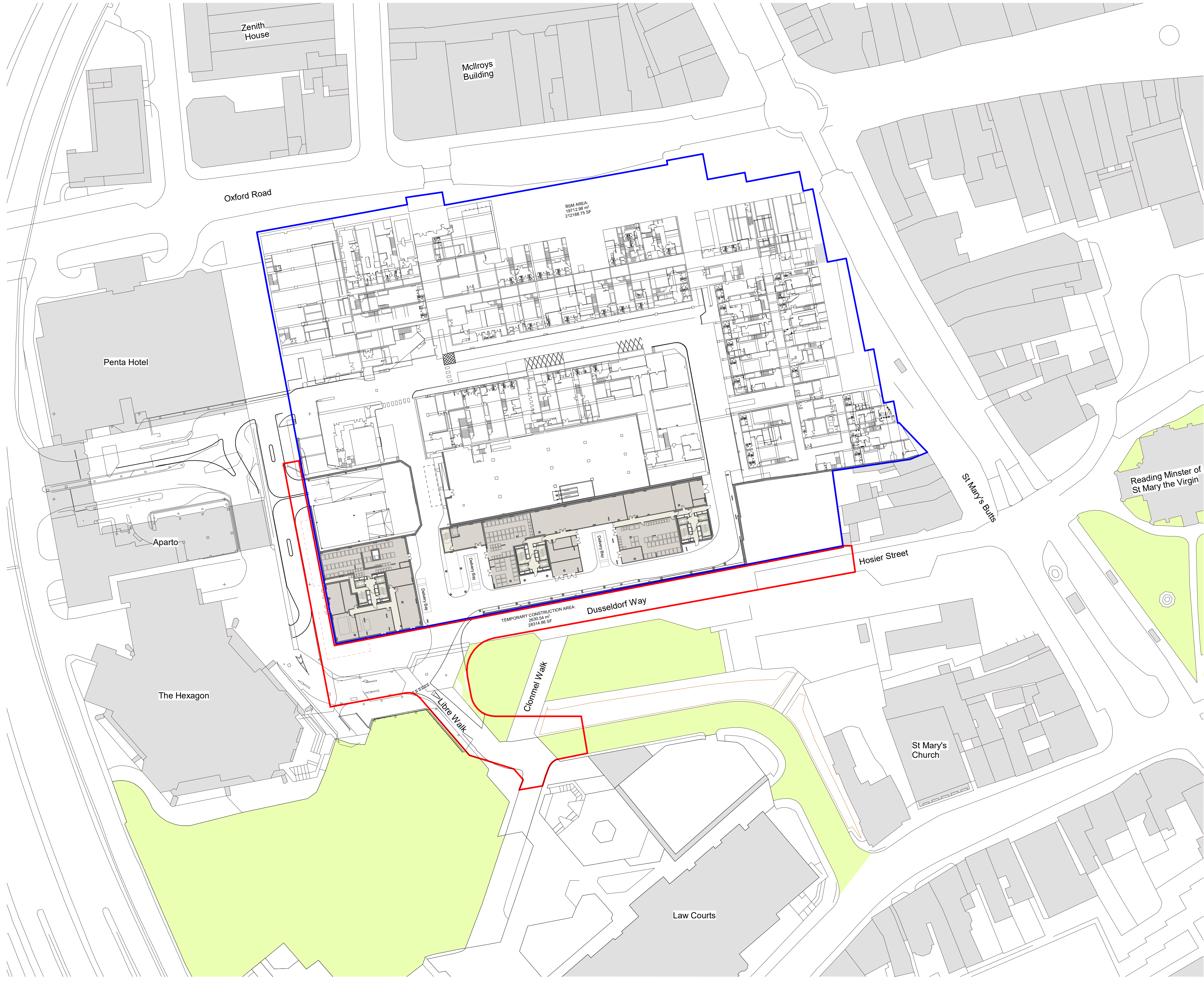
Rev	Description	Date	Dr by	App by
original by BS		date created 29/11/23		approved by DB



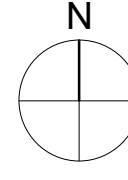
AHR Architects Ltd
5th Floor
55 Princess Street
Manchester
M2 4EW
United Kingdom

T +44(0)161 8287900
E manchester@ahr.co.uk
www.ahr.co.uk

client name	McLaren (Broad Street Mall) Ltd and UREF III LP		
project	Broad Street Mall Residential		
drawing	BSM Development Scheme Site Plan - Ground Floor		
computer file 1/10.32.1.1/DEM_Profile_Folder_redacted/bethany.stewart/Documents/Ret Final/CA/Plan/Rev/2023/BSM-AHR-ZZ-00-A-0001	plot date	17/02/2023	
project number 2022.00307.000	scale	1 : 500	@A1
drawing number BSM-AHR-ZZ-00-DR-A-08120	rev		issue status S2
This drawing is to be read in conjunction with all related drawings. All dimensions must be checked and verified on site before commencing any work or producing shop drawings. The originator should be notified immediately of any discrepancy. This drawing is copyright and remains the property of AHR.			



SCALE 1 : 500
0 10 20 30
Scale Bar in Metres



- Key**
- Circulation
 - BOH
- Key**
- Red Line Boundary
Area within boundary: 2630.54 m²
 - Applicants Ownership
Area within boundary: 19712.98 m²

Rev	Description	Date	Dr by	App by
original by BS		date created 29/11/23	approved by DB	

AHR

AHR Architects Ltd

5th Floor

55 Princess Street

Manchester

M2 4EW

United Kingdom

T +44(0)161 8287900
E manchester@ahr.co.uk
www.ahr.co.uk

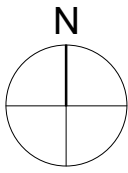
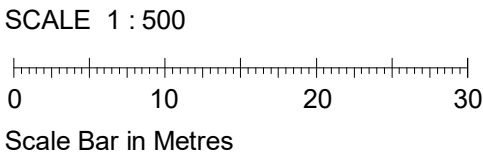
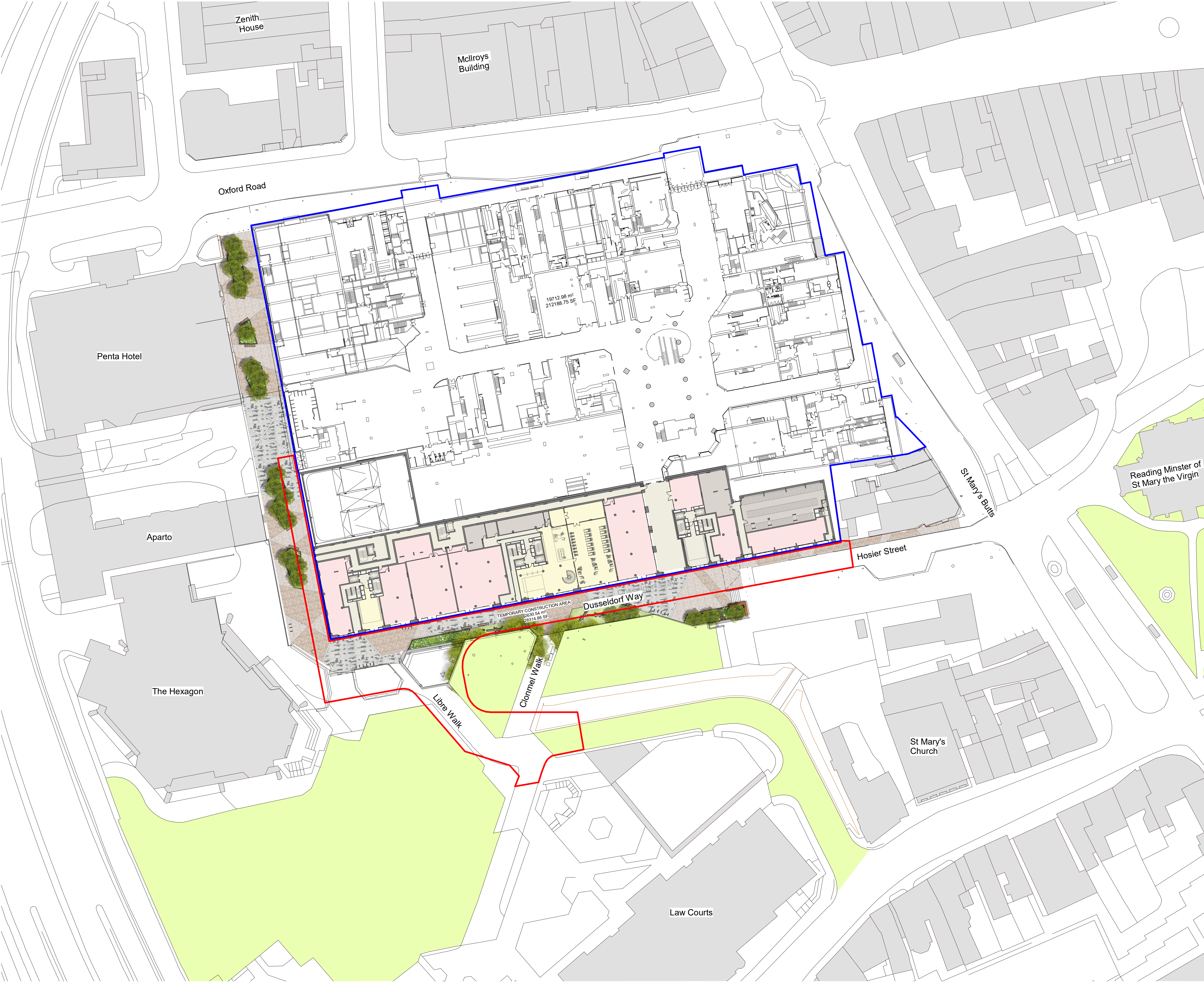
client name
McLaren (Broad Street Mall) Ltd and UREF III LP

project
Broad Street Mall Residential

drawing
BSM Temporary Construction Site Plan -
Basement

computer file 1/10.32.1.1/DEM_Profile_Folder_redactorbethany.stewart/Documents/Ref Project/FloorPlan/2023/BSM-AHR-ZZ-CZ-A1-A-2001	plot date
project number 2022.00307.000	scale 1 : 500 @A1
drawing number BSM-AHR-ZZ-B1-DR-A-08121	rev S2

This drawing is to be read in conjunction with all related drawings. All dimensions must be checked and verified on site before commencing any work or producing shop drawings. The originator should be notified immediately of any discrepancy. This drawing is copyright and remains the property of AHR.



Key

- Amenities
- Circulation
- BOH
- Retail

Key

- Red Line Boundary
Area within boundary: 2630.54 m²
- Applicants Ownership
Area within boundary: 19712.98 m²

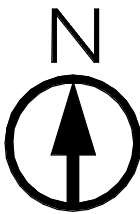
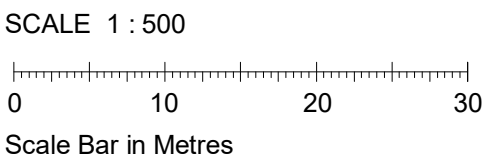
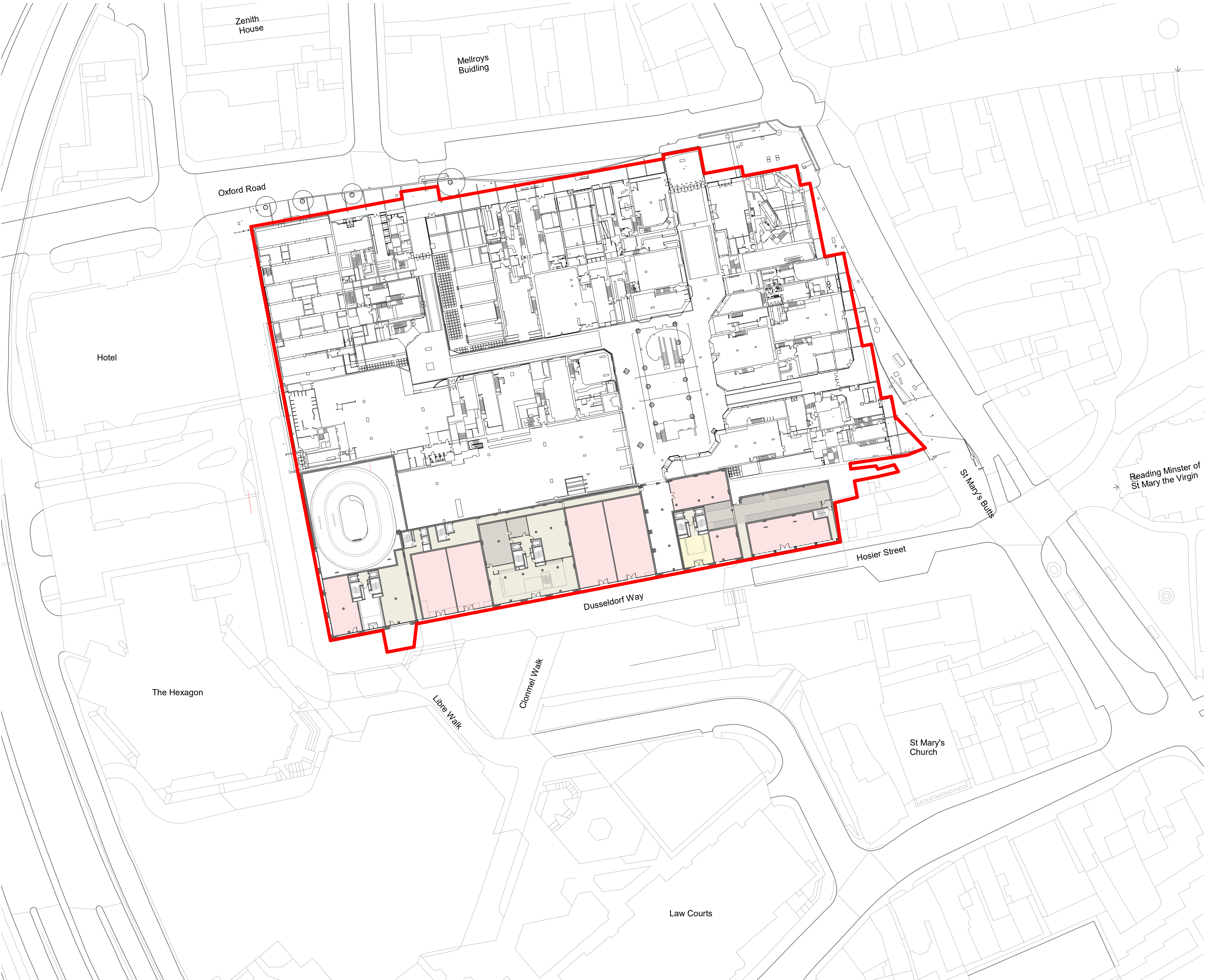
Rev	Description	Date	Dr by	App by
original by BS		date created 29/11/23		approved by DB



AHR Architects Ltd
5th Floor
55 Princess Street
Manchester
M2 4EW
United Kingdom

T +44(0)161 8287900
E manchester@ahr.co.uk
www.ahr.co.uk

client name McLaren (Broad Street Mall) Ltd and UREF III LP			
project Broad Street Mall Residential			
drawing BSM Temporary Construction Site Plan - Ground Floor			
computer file 1/0.32.1.1/DEM_Profile_Folder_redacted/bethany.stewart/Documents/Ret_Plan/Local Plan/Rev/2023/BSM-AHR-ZZ-00-A-0001		plot date 17/02/2023	
project number 2022.00307.000		scale 1 : 500 @A1	
drawing number BSM-AHR-ZZ-00-DR-A-08121		rev	issue status S2
This drawing is to be read in conjunction with all related drawings. All dimensions must be checked and verified on site before commencing any work or producing shop drawings. The originator should be notified immediately of any discrepancy. This drawing is copyright and remains the property of AHR.			



Key

- Amenities
- Circulation
- BOH
- Retail

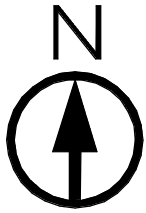
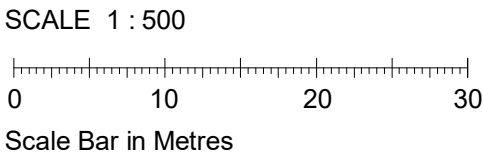
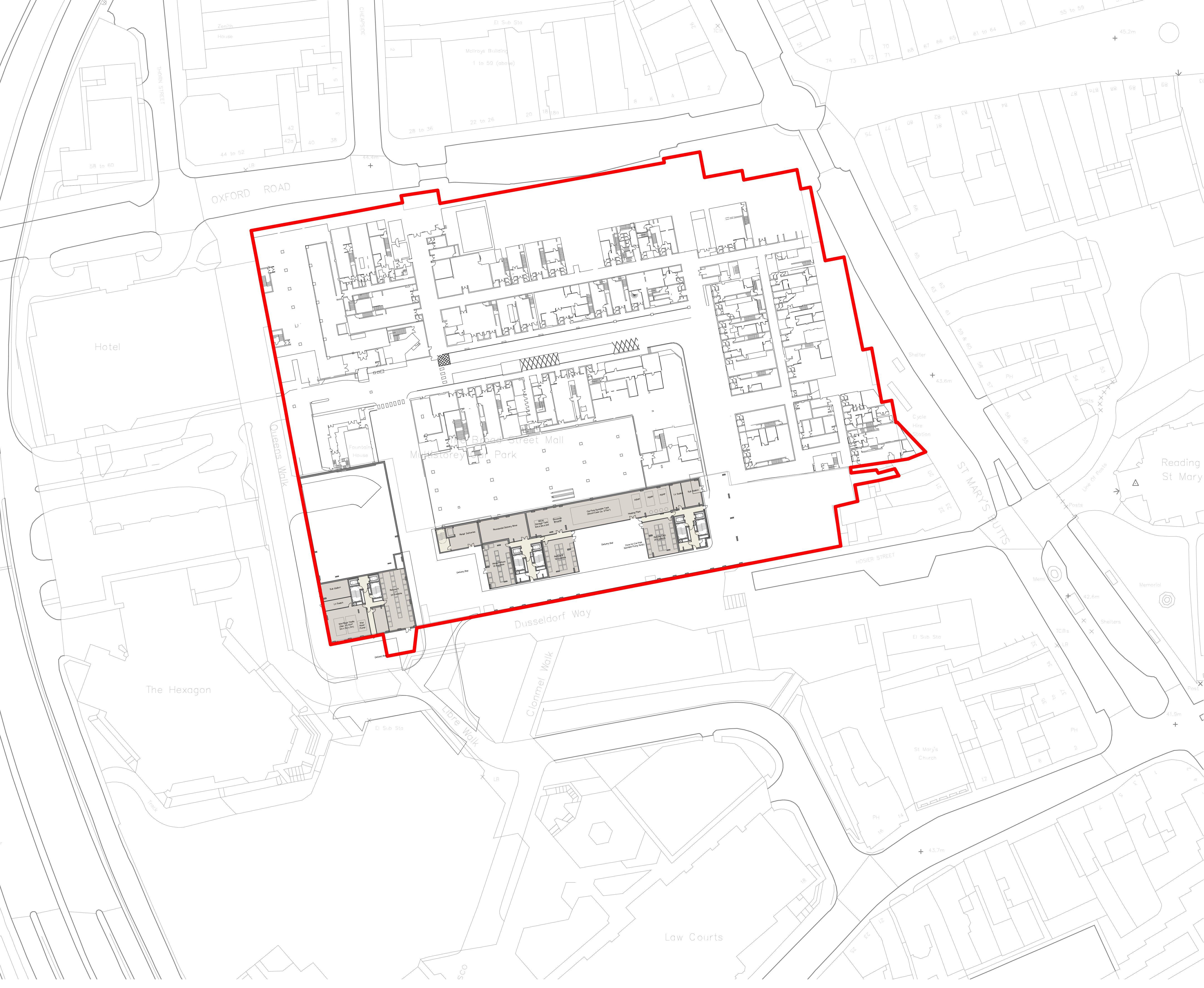
Rev	Description	Date	Dr by	App by
original by		date created		
YS		01/20/23		DB



AHR Architects Ltd
5th Floor
55 Princess Street
Manchester
M2 4EW
United Kingdom

T +44(0)161 8287900
E manchester@ahr.co.uk
www.ahr.co.uk

client name			
McIaren			
project			
Broad Street Mall Residential			
drawing			
Site Plan - Ground Floor			
computer file		plot date	
C:\Users\bethany.stewart\REVIT LOCAL FILES\BSM-AHR-ZZ-ZZ-A-00101 - Apartment_bethany.stewart.rvt			
project number		scale	
2022.00307.000		As indicated@A1	
drawing number		rev	issue status
BSM-AHR-ZZ-00-DR-A-06100			S2
This drawing is to be read in conjunction with all related drawings. All dimensions must be checked and verified on site before commencing any work or producing shop drawings. The originator should be notified immediately of any discrepancy. This drawing is copyright and remains the property of AHR.			



Key

- Circulation
- BOH

Rev	Description	Date	Dr by	App by
original by YS	date created 01/23/23		approved by DB	



AHR Architects Ltd
5th Floor
55 Princess Street
Manchester
M2 4EW
United Kingdom

T +44(0)161 8287900
E manchester@ahr.co.uk
www.ahr.co.uk

client name Mclaren			
project Broad Street Mall Residential			
drawing Site Plan - Basement			
computer file C:\Users\bethany.stewart\REVIT LOCAL FLESSIGN-AHR-ZZ-ZZ-A0011 - Apartment_bethany.stewart.rvt		plot date	
project number 2022.00307.000		scale As indicated@A1	
drawing number BSM-AHR-ZZ-B1-DR-A-06100		rev	issue status
			S2
This drawing is to be read in conjunction with all related drawings. All dimensions must be checked and verified on site before commencing any work or producing shop drawings. The originator should be notified immediately of any discrepancy. This drawing is copyright and remains the property of AHR.			

Appendix H – Modelling Results

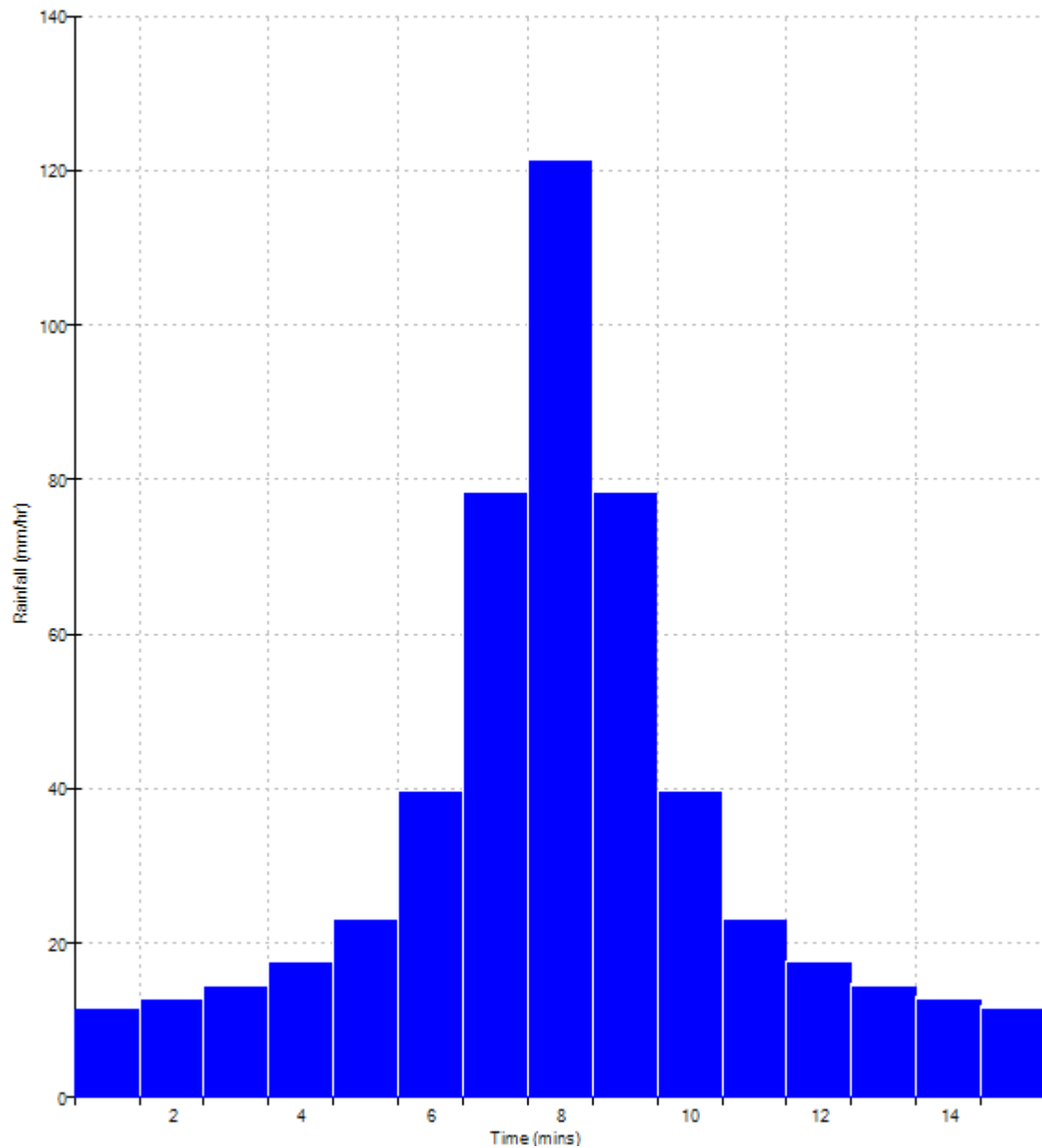
Meinhardt (UK) Ltd		Page 1
10 Aldersgate Street London EC1A 4HJ		
Date 03/11/2023 14:19	Designed by Sam.Ahmed	
File	Checked by	
Innovyze	Source Control 2020.1.3	

Rainfall profile

Storm duration (mins) 15

FEH Data

FEH Rainfall Version	2013
Site Location GB 471262 173364 SU 71262 73364	
Data Type	Point
Peak Intensity (mm/hr)	121.346
Ave. Intensity (mm/hr)	34.337
Return Period (years)	2.0



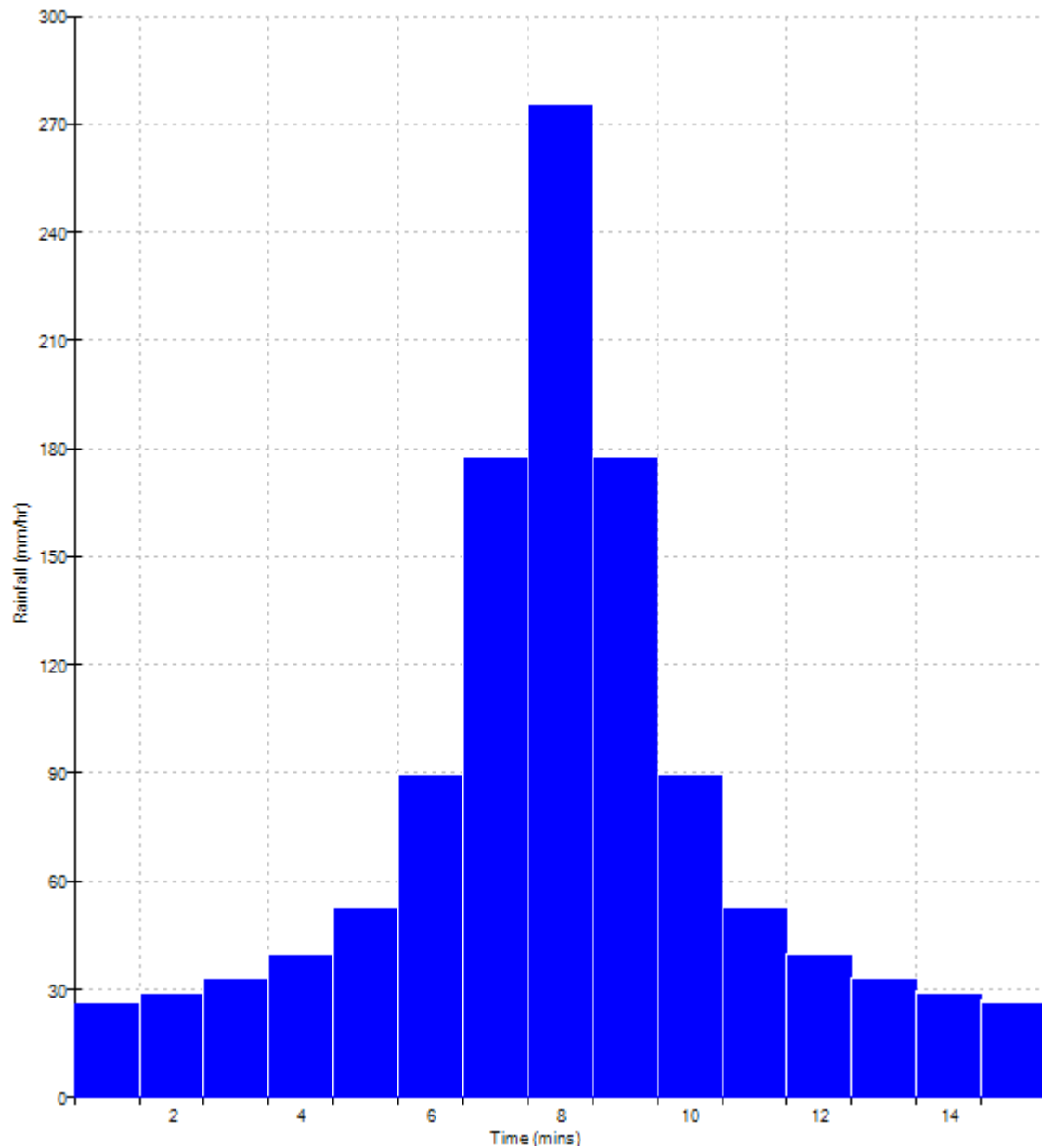
Meinhardt (UK) Ltd		Page 1
10 Aldersgate Street London EC1A 4HJ		
Date 03/11/2023 14:20	Designed by Sam.Ahmed	
File	Checked by	
Innovyze	Source Control 2020.1.3	

Rainfall profile

Storm duration (mins) 15

FEH Data

FEH Rainfall Version	2013
Site Location GB 471262 173364 SU 71262 73364	
Data Type	Point
Peak Intensity (mm/hr)	275.314
Ave. Intensity (mm/hr)	77.904
Return Period (years)	30.0



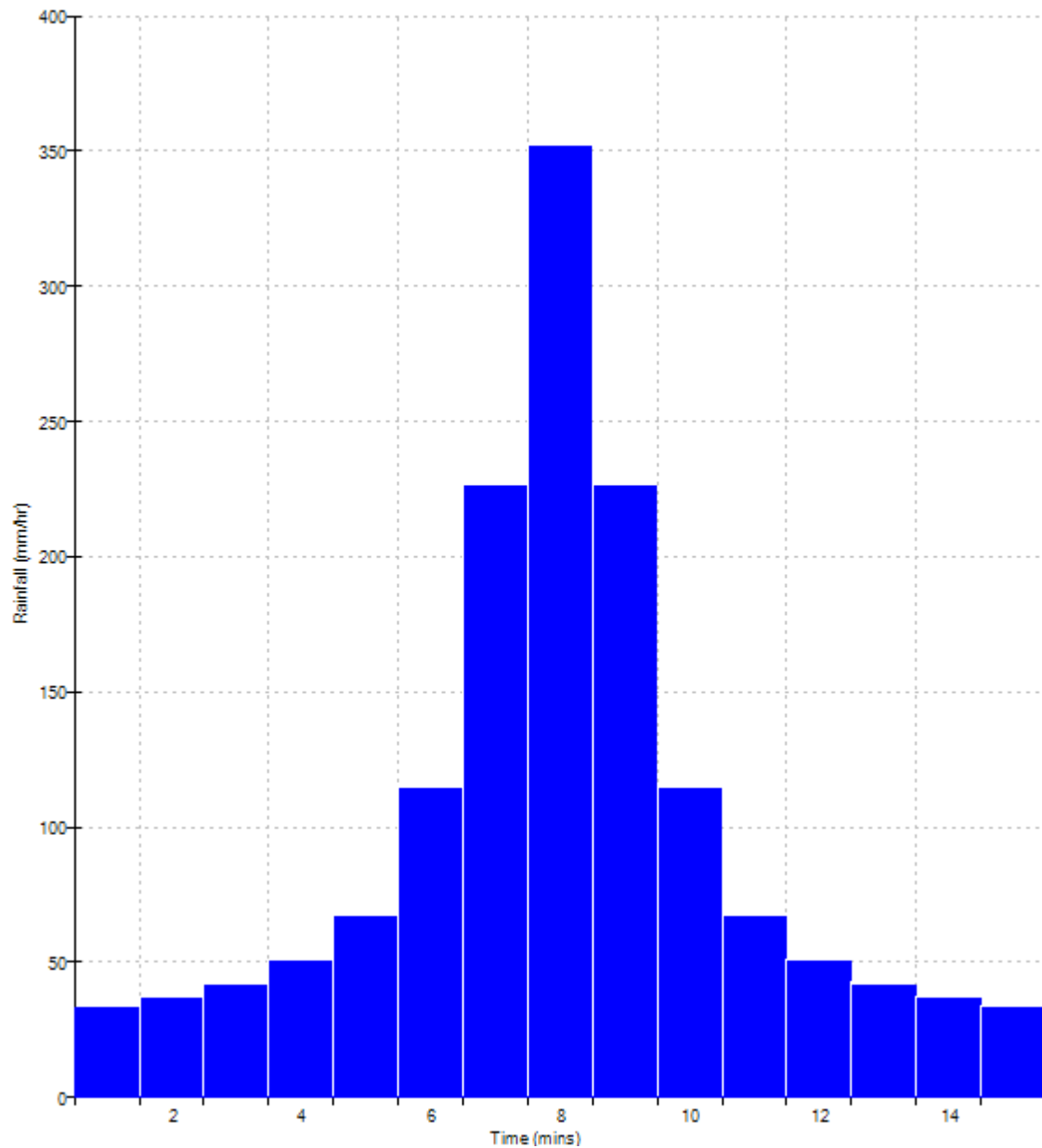
Meinhardt (UK) Ltd		Page 1
10 Aldersgate Street London EC1A 4HJ		
Date 03/11/2023 14:21	Designed by Sam.Ahmed	
File	Checked by	
Innovyze	Source Control 2020.1.3	

Rainfall profile

Storm duration (mins) 15

FEH Data

FEH Rainfall Version	2013
Site Location GB 471262 173364 SU 71262 73364	
Data Type	Point
Peak Intensity (mm/hr)	351.742
Ave. Intensity (mm/hr)	99.531
Return Period (years)	100.0



Date: 23/11/2023

Revision: B (1398)

Page: 1

Client:**Project:** 3104 - Broad Street Mall**Location:** Reading, RG1 7QE**Roof Location:** Level 1 Podium Blue Roof 1**Roof Details:**

BlueRoof	412 m ²	x 100 %
Additional Area	42 m ²	x 100 %
Effective Area	454 m ²	

Storage Details:

Length	412 m
Width	1 m
Depth	100 mm
Porosity	95 %
Slope	none

Rainfall Details - FEH Method:

Return Period	100 years
Climate Change Factor	40 %

Summer Storm Profile

Duration	Intensity		Required storage(m ³)
	mm	mm/h	
5 min	19.4	233.0	8.7
10 min	28.1	168.4	12.6
15 min	34.8	139.3	15.5
30 min	45.9	91.8	20.2
45 min	52.5	70.0	22.7
60 min	57.4	57.4	24.5
2 hours	67.1	33.5	27.2
6 hours	85.8	14.3	28.9
24 hours	107.3	4.5	23.0

Outflow Details:

Attenuation Control	BlueRoof Outlet
Control	Twist Std. Position 1
Sump Depth	None
Discharge rate	0.72 l/s
Outlet	1 No

Result:

Outcome	Pass
Critical Storm Duration	4.05 hrs
Hmax	74 mm
Required Volume	29.2 m ³
Time to half empty	5.6 hrs
Roof Loading	70.87 Kg/m ²

All results based on input data. Please check that input data has been correctly interpreted.

The Bauder Blue Flat Roof Rainwater Calculation Software will perform calculations in accordance with industry best practice for blue roof design based upon provided data relating to a specific building's dimensions geographical location and the flow rate performance of the selected Bauder rainwater outlet product.

Whilst the information contained herein is to the best of our knowledge true and accurate we specifically exclude any liability for errors omissions or otherwise arising therefrom.

Details practices principles values and calculations should be verified for accuracy and suitability for the required purpose for use.

NOTE: These calculations are valid for a zero fall roof with minimal variation in levels. Any significant variation will affect the volume of water stored and the roofs ability to attenuate extreme rain events. Typically variations in roof level should be less than 0 to +30mm with no back falls. The H-Max is measured from the mean roof level

Date: 23/11/2023

Revision: B (1398)

Page: 2

Client:**Project:** 3104 - Broad Street Mall**Location:** Reading, RG1 7QE**Roof Location:** Level 1 Podium Blue Roof 2**Roof Details:**

BlueRoof	412 m ²	x 100 %
Additional Area	42 m ²	x 100 %
Effective Area	454 m ²	

Storage Details:

Length	412 m
Width	1 m
Depth	100 mm
Porosity	95 %
Slope	none

Rainfall Details - FEH Method:

Return Period	100 years
Climate Change Factor	40 %

Summer Storm Profile

Duration	Intensity		Required storage(m ³)
	mm	mm/h	
5 min	19.4	233.0	8.7
10 min	28.1	168.4	12.6
15 min	34.8	139.3	15.5
30 min	45.9	91.8	20.2
45 min	52.5	70.0	22.7
60 min	57.4	57.4	24.5
2 hours	67.1	33.5	27.2
6 hours	85.8	14.3	28.9
24 hours	107.3	4.5	23.0

Outflow Details:

Attenuation Control	BlueRoof Outlet
Control	Twist Std. Position 1
Sump Depth	None
Discharge rate	0.72 l/s
Outlet	1 No

Result:

Outcome	Pass
Critical Storm Duration	4.05 hrs
Hmax	74 mm
Required Volume	29.2 m ³
Time to half empty	5.6 hrs
Roof Loading	70.87 Kg/m ²

All results based on input data. Please check that input data has been correctly interpreted.

The Bauder Blue Flat Roof Rainwater Calculation Software will perform calculations in accordance with industry best practice for blue roof design based upon provided data relating to a specific building's dimensions geographical location and the flow rate performance of the selected Bauder rainwater outlet product.

Whilst the information contained herein is to the best of our knowledge true and accurate we specifically exclude any liability for errors omissions or otherwise arising therefrom.

Details practices principles values and calculations should be verified for accuracy and suitability for the required purpose for use.

NOTE: These calculations are valid for a zero fall roof with minimal variation in levels. Any significant variation will affect the volume of water stored and the roofs ability to attenuate extreme rain events. Typically variations in roof level should be less than 0 to +30mm with no back falls. The H-Max is measured from the mean roof level

Date: 23/11/2023

Revision: B (1398)

Page: 3

Client:**Project:** 3104 - Broad Street Mall**Location:** Reading, RG1 7QE**Roof Location:** Level 21 Terrace Blue Roof 1**Roof Details:**

BlueRoof	186 m ²	x 100 %
Additional Area	34 m ²	x 100 %
Effective Area	220 m ²	

Storage Details:

Length	186 m
Width	1 m
Depth	100 mm
Porosity	95 %
Slope	none

Rainfall Details - FEH Method:

Return Period	100 years
Climate Change Factor	40 %

Summer Storm Profile

Duration	Intensity		Required storage(m ³)
	mm	mm/h	
5 min	19.4	233.0	4.2
10 min	28.1	168.4	6.0
15 min	34.8	139.3	7.4
30 min	45.9	91.8	9.4
45 min	52.5	70.0	10.4
60 min	57.4	57.4	11.1
2 hours	67.1	33.5	11.5
6 hours	85.8	14.3	11.1
24 hours	107.3	4.5	6.8

Outflow Details:

Attenuation Control	BlueRoof Outlet
Control	Twist Std. Position 1
Sump Depth	None
Discharge rate	0.69 l/s
Outlet	1 No

Result:

Outcome	Pass
Critical Storm Duration	3.17 hrs
Hmax	66 mm
Required Volume	11.6 m ³
Time to half empty	2.3 hrs
Roof Loading	62.37 Kg/m ²

All results based on input data. Please check that input data has been correctly interpreted.

The Bauder Blue Flat Roof Rainwater Calculation Software will perform calculations in accordance with industry best practice for blue roof design based upon provided data relating to a specific building's dimensions geographical location and the flow rate performance of the selected Bauder rainwater outlet product.

Whilst the information contained herein is to the best of our knowledge true and accurate we specifically exclude any liability for errors omissions or otherwise arising therefrom.

Details practices principles values and calculations should be verified for accuracy and suitability for the required purpose for use.

NOTE: These calculations are valid for a zero fall roof with minimal variation in levels. Any significant variation will affect the volume of water stored and the roofs ability to attenuate extreme rain events. Typically variations in roof level should be less than 0 to +30mm with no back falls. The H-Max is measured from the mean roof level

Date: 23/11/2023

Revision: B (1398)

Page: 4

Client:**Project:** 3104 - Broad Street Mall**Location:** Reading, RG1 7QE**Roof Location:** Level 25-28 Block A Blue Roof Terrace**Roof Details:**

BlueRoof	185 m ²	x 100 %
Additional Area	34 m ²	x 100 %
Effective Area	219 m ²	

Storage Details:

Length	185 m
Width	1 m
Depth	100 mm
Porosity	95 %
Slope	none

Rainfall Details - FEH Method:

Return Period	100 years
Climate Change Factor	40 %

Summer Storm Profile

Duration	Intensity		Required storage(m ³)
	mm	mm/h	
5 min	19.4	233.0	4.2
10 min	28.1	168.4	6.0
15 min	34.8	139.3	7.3
30 min	45.9	91.8	9.4
45 min	52.5	70.0	10.4
60 min	57.4	57.4	11.0
2 hours	67.1	33.5	11.5
6 hours	85.8	14.3	11.1
24 hours	107.3	4.5	6.7

Outflow Details:

Attenuation Control	BlueRoof Outlet
Control	Twist Std. Position 1
Sump Depth	None
Discharge rate	0.69 l/s
Outlet	1 No

Result:

Outcome	Pass
Critical Storm Duration	3.15 hrs
Hmax	66 mm
Required Volume	11.5 m ³
Time to half empty	2.3 hrs
Roof Loading	62.16 Kg/m ²

All results based on input data. Please check that input data has been correctly interpreted.

The Bauder Blue Flat Roof Rainwater Calculation Software will perform calculations in accordance with industry best practice for blue roof design based upon provided data relating to a specific building's dimensions geographical location and the flow rate performance of the selected Bauder rainwater outlet product.

Whilst the information contained herein is to the best of our knowledge true and accurate we specifically exclude any liability for errors omissions or otherwise arising therefrom.

Details practices principles values and calculations should be verified for accuracy and suitability for the required purpose for use.

NOTE: These calculations are valid for a zero fall roof with minimal variation in levels. Any significant variation will affect the volume of water stored and the roofs ability to attenuate extreme rain events. Typically variations in roof level should be less than 0 to +30mm with no back falls. The H-Max is measured from the mean roof level

Date: 23/11/2023

Revision: B (1398)

Page: 5

Client:**Project:** 3104 - Broad Street Mall**Location:** Reading, RG1 7QE**Roof Location:** Level 25-28 Block C Blue Roof Terrace**Roof Details:**

BlueRoof	185 m ²	x 100 %
Additional Area	34 m ²	x 100 %
Effective Area	219 m ²	

Storage Details:

Length	185 m
Width	1 m
Depth	100 mm
Porosity	95 %
Slope	none

Rainfall Details - FEH Method:

Return Period	100 years
Climate Change Factor	40 %

Summer Storm Profile

Duration	Intensity		Required storage(m ³)
	mm	mm/h	
5 min	19.4	233.0	4.2
10 min	28.1	168.4	6.0
15 min	34.8	139.3	7.3
30 min	45.9	91.8	9.4
45 min	52.5	70.0	10.4
60 min	57.4	57.4	11.0
2 hours	67.1	33.5	11.5
6 hours	85.8	14.3	11.1
24 hours	107.3	4.5	6.7

Outflow Details:

Attenuation Control	BlueRoof Outlet
Control	Twist Std. Position 1
Sump Depth	None
Discharge rate	0.69 l/s
Outlet	1 No

Result:

Outcome	Pass
Critical Storm Duration	3.15 hrs
Hmax	66 mm
Required Volume	11.5 m ³
Time to half empty	2.3 hrs
Roof Loading	62.16 Kg/m ²

All results based on input data. Please check that input data has been correctly interpreted.

The Bauder Blue Flat Roof Rainwater Calculation Software will perform calculations in accordance with industry best practice for blue roof design based upon provided data relating to a specific building's dimensions geographical location and the flow rate performance of the selected Bauder rainwater outlet product.

Whilst the information contained herein is to the best of our knowledge true and accurate we specifically exclude any liability for errors omissions or otherwise arising therefrom.

Details practices principles values and calculations should be verified for accuracy and suitability for the required purpose for use.

NOTE: These calculations are valid for a zero fall roof with minimal variation in levels. Any significant variation will affect the volume of water stored and the roofs ability to attenuate extreme rain events. Typically variations in roof level should be less than 0 to +30mm with no back falls. The H-Max is measured from the mean roof level

Calculated by:	Gurdeep Bansal
Site name:	Broad Street Reading
Site location:	Broad Street Reading

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SO030219 (2013) , the SuDS Manual C753 (Ciria, 2016) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Site Details	
Latitude:	51.45437° N
Longitude:	0.97676° W
Reference:	3337723624
Date:	Oct 10 2022 08:52

Runoff estimation approach	IH124
----------------------------	-------

Site characteristics

Total site area (ha):	0.469
-----------------------	-------

Methodology

Q _{BAR} estimation method:	Calculate from SPR and SAAR
-------------------------------------	-----------------------------

SPR estimation method:	Calculate from SOIL type
------------------------	--------------------------

Soil characteristics	Default	Edited
----------------------	---------	--------

SOIL type:	2	2
------------	---	---

HOST class:	N/A	N/A
-------------	-----	-----

SPR/SPRHOST:	0.3	0.3
--------------	-----	-----

Hydrological characteristics	Default	Edited
------------------------------	---------	--------

SAAR (mm):	642	642
------------	-----	-----

Hydrological region:	6	6
----------------------	---	---

Growth curve factor 1 year:	0.85	0.85
-----------------------------	------	------

Growth curve factor 30 years:	2.3	2.3
-------------------------------	-----	-----

Growth curve factor 100 years:	3.19	3.19
--------------------------------	------	------

Growth curve factor 200 years:	3.74	3.74
--------------------------------	------	------

Notes

(1) Is Q_{BAR} < 2.0 l/s/ha?

When Q_{BAR} is < 2.0 l/s/ha then limiting discharge rates are set at 2.0 l/s/ha.

(2) Are flow rates < 5.0 l/s?

Where flow rates are less than 5.0 l/s consent for discharge is usually set at 5.0 l/s if blockage from vegetation and other materials is possible. Lower consent flow rates may be set where the blockage risk is addressed by using appropriate drainage elements.

(3) Is SPR/SPRHOST ≤ 0.3?

Where groundwater levels are low enough the use of soakaways to avoid discharge offsite would normally be preferred for disposal of surface water runoff.

Greenfield runoff rates	Default	Edited
Q _{BAR} (l/s):	0.77	0.77
1 in 1 year (l/s):	0.66	0.66
1 in 30 years (l/s):	1.78	1.78
1 in 100 year (l/s):	2.46	2.46
1 in 200 years (l/s):	2.89	2.89

This report was produced using the greenfield runoff tool developed by HR Wallingford and available at www.uksuds.com. The use of this tool is subject to the UK SuDS terms and conditions and licence agreement , which can both be found at www.uksuds.com/terms-and-conditions.htm. The outputs from this tool are estimates of greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, CEH, Hydrosolutions or any other organisation for the use of this data in the design or operational characteristics of any drainage scheme.

Meinhardt (UK) Ltd

10 Aldersgate Street
London
EC1A 4HJ

Date 10/01/2024 11:10
File Attenuation Tank Calcs....

Innovyze

Designed by Sam.Ahmed
Checked by

Source Control 2020.1.3

Page 1



Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 73 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	9.716	0.716	0.0	18.9	18.9	106.7	Flood Risk
30 min Summer	9.886	0.886	0.0	23.3	23.3	132.1	Flood Risk
60 min Summer	9.984	0.984	0.0	25.9	25.9	146.7	Flood Risk
120 min Summer	9.988	0.988	0.0	26.0	26.0	147.4	Flood Risk
180 min Summer	9.973	0.973	0.0	25.6	25.6	145.1	Flood Risk
240 min Summer	9.942	0.942	0.0	24.8	24.8	140.5	Flood Risk
360 min Summer	9.863	0.863	0.0	22.7	22.7	128.8	Flood Risk
480 min Summer	9.790	0.790	0.0	20.8	20.8	117.9	Flood Risk
600 min Summer	9.727	0.727	0.0	19.2	19.2	108.5	Flood Risk
720 min Summer	9.674	0.674	0.0	17.8	17.8	100.5	O K
960 min Summer	9.588	0.588	0.0	15.5	15.5	87.7	O K
1440 min Summer	9.471	0.471	0.0	12.4	12.4	70.2	O K
2160 min Summer	9.366	0.366	0.0	9.6	9.6	54.5	O K
2880 min Summer	9.302	0.302	0.0	8.0	8.0	45.1	O K
4320 min Summer	9.229	0.229	0.0	6.0	6.0	34.2	O K
5760 min Summer	9.189	0.189	0.0	5.0	5.0	28.2	O K
7200 min Summer	9.163	0.163	0.0	4.3	4.3	24.3	O K
8640 min Summer	9.145	0.145	0.0	3.8	3.8	21.6	O K
10080 min Summer	9.132	0.132	0.0	3.5	3.5	19.6	O K
15 min Winter	9.716	0.716	0.0	18.9	18.9	106.9	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	139.343	0.0	118.4	20
30 min Summer	91.839	0.0	156.1	32
60 min Summer	57.428	0.0	195.2	52
120 min Summer	33.544	0.0	228.0	84
180 min Summer	24.693	0.0	251.8	118
240 min Summer	19.804	0.0	269.3	152
360 min Summer	14.303	0.0	291.7	218
480 min Summer	11.303	0.0	307.4	284
600 min Summer	9.394	0.0	319.3	346
720 min Summer	8.065	0.0	329.0	410
960 min Summer	6.323	0.0	343.9	532
1440 min Summer	4.470	0.0	364.6	780
2160 min Summer	3.156	0.0	386.2	1144
2880 min Summer	2.474	0.0	403.6	1504
4320 min Summer	1.776	0.0	434.7	2212
5760 min Summer	1.418	0.0	462.9	2944
7200 min Summer	1.201	0.0	490.0	3672
8640 min Summer	1.056	0.0	516.8	4408
10080 min Summer	0.952	0.0	543.6	5136
15 min Winter	139.343	0.0	118.4	20

©1982-2020 Innovyze

Meinhardt (UK) Ltd							Page 2
10 Aldersgate Street London EC1A 4HJ							
Date 10/01/2024 11:10 File Attenuation Tank Calcs....				Designed by Sam.Ahmed Checked by			
Innovyze				Source Control 2020.1.3			
Summary of Results for 100 year Return Period (+40%)							
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Outflow (l/s)	Max Volume (m³)	Status
30 min Winter	9.888	0.888	0.0	23.4	23.4	132.5	Flood Risk
60 min Winter	9.985	0.985	0.0	25.9	25.9	146.9	Flood Risk
120 min Winter	9.971	0.971	0.0	25.6	25.6	144.8	Flood Risk
180 min Winter	9.935	0.935	0.0	24.6	24.6	139.4	Flood Risk
240 min Winter	9.887	0.887	0.0	23.4	23.4	132.4	Flood Risk
360 min Winter	9.785	0.785	0.0	20.7	20.7	117.1	Flood Risk
480 min Winter	9.699	0.699	0.0	18.4	18.4	104.2	O K
600 min Winter	9.628	0.628	0.0	16.5	16.5	93.6	O K
720 min Winter	9.569	0.569	0.0	15.0	15.0	84.9	O K
960 min Winter	9.479	0.479	0.0	12.6	12.6	71.5	O K
1440 min Winter	9.364	0.364	0.0	9.6	9.6	54.3	O K
2160 min Winter	9.269	0.269	0.0	7.1	7.1	40.2	O K
2880 min Winter	9.216	0.216	0.0	5.7	5.7	32.2	O K
4320 min Winter	9.158	0.158	0.0	4.2	4.2	23.5	O K
5760 min Winter	9.127	0.127	0.0	3.4	3.4	18.9	O K
7200 min Winter	9.108	0.108	0.0	2.9	2.9	16.1	O K
8640 min Winter	9.095	0.095	0.0	2.5	2.5	14.2	O K
10080 min Winter	9.086	0.086	0.0	2.3	2.3	12.8	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)			
30 min Winter	91.839	0.0	156.1	32			
60 min Winter	57.428	0.0	195.2	54			
120 min Winter	33.544	0.0	228.0	90			
180 min Winter	24.693	0.0	251.8	126			
240 min Winter	19.804	0.0	269.3	162			
360 min Winter	14.303	0.0	291.7	230			
480 min Winter	11.303	0.0	307.4	298			
600 min Winter	9.394	0.0	319.3	362			
720 min Winter	8.065	0.0	329.0	426			
960 min Winter	6.323	0.0	343.9	552			
1440 min Winter	4.470	0.0	364.6	796			
2160 min Winter	3.156	0.0	386.2	1168			
2880 min Winter	2.474	0.0	403.6	1528			
4320 min Winter	1.776	0.0	434.7	2248			
5760 min Winter	1.418	0.0	462.9	2992			
7200 min Winter	1.201	0.0	490.0	3672			
8640 min Winter	1.056	0.0	516.8	4408			
10080 min Winter	0.952	0.0	543.6	5136			
©1982-2020 Innovyze							