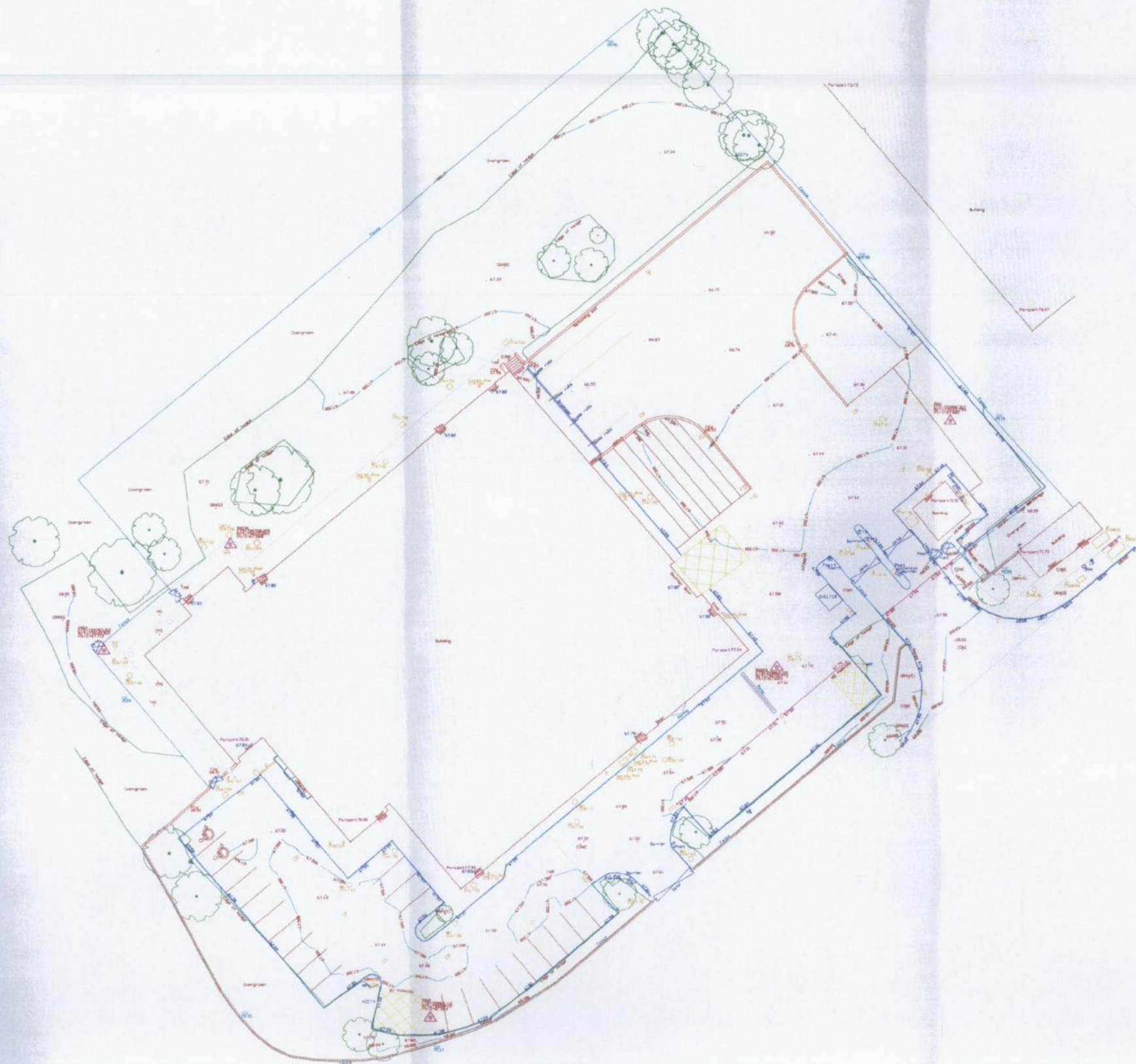




Project Number: 22_112
Project: Unit 1, M50 Business Park
Title: SuDS Management Plan Report

Appendix F Topographical Survey



KEY		Symbol		Description	
Blue line	Water edge	Blue line	Water edge	Water edge	Water edge
Blue line	Top of bank	Blue line	Top of bank	Top of bank	Top of bank
Blue line	Bottom of bank	Blue line	Bottom of bank	Bottom of bank	Bottom of bank
Blue line	Top of road	Blue line	Top of road	Top of road	Top of road
Blue line	Bottom of road	Blue line	Bottom of road	Bottom of road	Bottom of road
Blue line	Top of kerb	Blue line	Top of kerb	Top of kerb	Top of kerb
Blue line	Bottom of kerb	Blue line	Bottom of kerb	Bottom of kerb	Bottom of kerb
Blue line	Top of footpath	Blue line	Top of footpath	Top of footpath	Top of footpath
Blue line	Bottom of footpath	Blue line	Bottom of footpath	Bottom of footpath	Bottom of footpath
Blue line	Top of boundary	Blue line	Top of boundary	Top of boundary	Top of boundary
Blue line	Bottom of boundary	Blue line	Bottom of boundary	Bottom of boundary	Bottom of boundary
Blue line	Top of wall	Blue line	Top of wall	Top of wall	Top of wall
Blue line	Bottom of wall	Blue line	Bottom of wall	Bottom of wall	Bottom of wall
Blue line	Top of fence	Blue line	Top of fence	Top of fence	Top of fence
Blue line	Bottom of fence	Blue line	Bottom of fence	Bottom of fence	Bottom of fence
Blue line	Top of gate	Blue line	Top of gate	Top of gate	Top of gate
Blue line	Bottom of gate	Blue line	Bottom of gate	Bottom of gate	Bottom of gate
Blue line	Top of step	Blue line	Top of step	Top of step	Top of step
Blue line	Bottom of step	Blue line	Bottom of step	Bottom of step	Bottom of step
Blue line	Top of ramp	Blue line	Top of ramp	Top of ramp	Top of ramp
Blue line	Bottom of ramp	Blue line	Bottom of ramp	Bottom of ramp	Bottom of ramp
Blue line	Top of slope	Blue line	Top of slope	Top of slope	Top of slope
Blue line	Bottom of slope	Blue line	Bottom of slope	Bottom of slope	Bottom of slope
Blue line	Top of embankment	Blue line	Top of embankment	Top of embankment	Top of embankment
Blue line	Bottom of embankment	Blue line	Bottom of embankment	Bottom of embankment	Bottom of embankment
Blue line	Top of ditch	Blue line	Top of ditch	Top of ditch	Top of ditch
Blue line	Bottom of ditch	Blue line	Bottom of ditch	Bottom of ditch	Bottom of ditch
Blue line	Top of gully	Blue line	Top of gully	Top of gully	Top of gully
Blue line	Bottom of gully	Blue line	Bottom of gully	Bottom of gully	Bottom of gully
Blue line	Top of culvert	Blue line	Top of culvert	Top of culvert	Top of culvert
Blue line	Bottom of culvert	Blue line	Bottom of culvert	Bottom of culvert	Bottom of culvert
Blue line	Top of bridge	Blue line	Top of bridge	Top of bridge	Top of bridge
Blue line	Bottom of bridge	Blue line	Bottom of bridge	Bottom of bridge	Bottom of bridge
Blue line	Top of tunnel	Blue line	Top of tunnel	Top of tunnel	Top of tunnel
Blue line	Bottom of tunnel	Blue line	Bottom of tunnel	Bottom of tunnel	Bottom of tunnel
Blue line	Top of viaduct	Blue line	Top of viaduct	Top of viaduct	Top of viaduct
Blue line	Bottom of viaduct	Blue line	Bottom of viaduct	Bottom of viaduct	Bottom of viaduct
Blue line	Top of overpass	Blue line	Top of overpass	Top of overpass	Top of overpass
Blue line	Bottom of overpass	Blue line	Bottom of overpass	Bottom of overpass	Bottom of overpass
Blue line	Top of underpass	Blue line	Top of underpass	Top of underpass	Top of underpass
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Blue line	Bottom of tunnel	Blue line	Bottom of tunnel	Bottom of tunnel	Bottom of tunnel
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Blue line	Bottom of overpass	Blue line	Bottom of overpass	Bottom of overpass	Bottom of overpass
Blue line	Top of underpass	Blue line	Top of underpass	Top of underpass	Top of underpass
Blue line	Bottom of underpass	Blue line	Bottom of underpass	Bottom of underpass	Bottom of underpass

DATE	BY	CHKD BY	DATE
2022-11-15	2022-11-15
2022-11-15	2022-11-15
2022-11-15	2022-11-15

I hereby certify that the information contained in this report is true and correct to the best of my knowledge and belief.
 I am a member of the Institution of Surveyors (I.S.) and the Royal Institution of Chartered Surveyors (RICS).
 I am also a member of the Engineering Council (EC) and the Institution of Professional Engineers (IPE).
 I am also a member of the Institution of Mechanical Engineers (IMECH) and the Institution of Chemical Engineers (IChemE).
 I am also a member of the Institution of Civil Engineers (ICE) and the Institution of Structural Engineers (IStructE).
 I am also a member of the Institution of Mining Engineers (IMechE) and the Institution of Metallurgical Engineers (InstMet).
 I am also a member of the Institution of Electrical Engineers (IET) and the Institution of Engineering Technicians (IEng).
 I am also a member of the Institution of Mechanical Engineers (IMECH) and the Institution of Chemical Engineers (IChemE).
 I am also a member of the Institution of Civil Engineers (ICE) and the Institution of Structural Engineers (IStructE).
 I am also a member of the Institution of Mining Engineers (IMechE) and the Institution of Metallurgical Engineers (InstMet).
 I am also a member of the Institution of Electrical Engineers (IET) and the Institution of Engineering Technicians (IEng).

BALLYMOUNT DUBLIN 12
TOPOGRAPHIC SURVEY

TABLE OF SURFACE AREAS

SURFACE TYPE	AREA (m ²)
ROOF	2,212
GREEN ROOF	65
CONCRETE	2,164
GRAVEL	277
GRASSCRETE	1,466
RAINGARDEN	61
ROOF DRAINING TO RAINGARDEN	120

CALMOUNT ROAD

NOTES



KEYNOTES

LEGEND

SITE LEGEND:

- OUTLINE OF THE SITE SUBJECT TO THIS APPLICATION
- RETAINING WALLS
- EXISTING FENCE
- PROPOSED FENCE
- PROPOSED PLANT SCREEN
- LOW LEVEL BARRIER

SURFACING LEGEND:

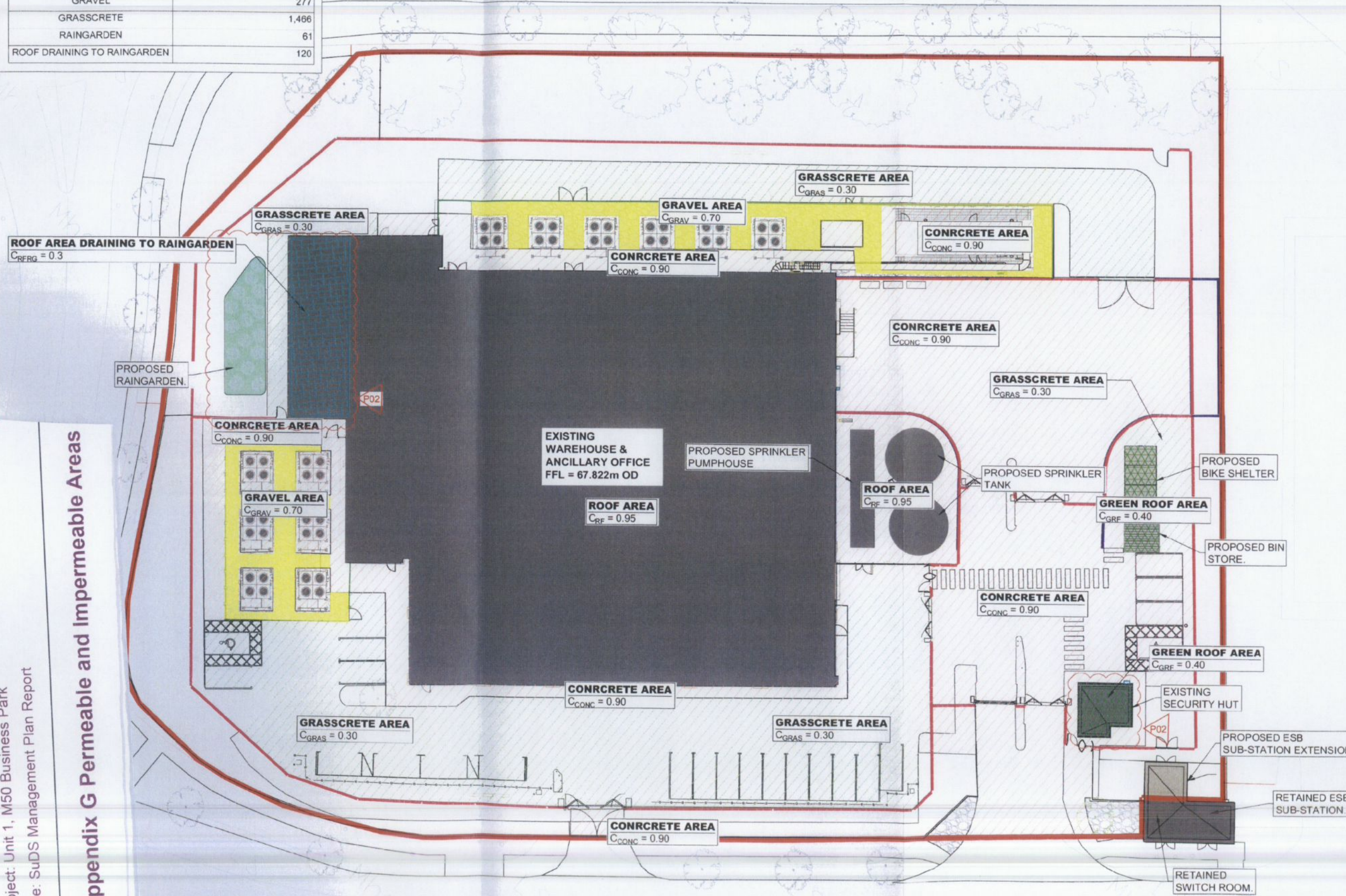
- ROOF AREA
- GREEN ROOF AREA
- CONCRETE PAVING
- GRAVEL AREA
- GRASSCRETE AREA
- ROOF AREA DRAINING TO RAINGARDEN
- RAINGARDEN

Appendix G Permeable and Impermeable Areas

Project Number: 22_112

Project: Unit 1, M50 Business Park

Title: SuDS Management Plan Report



REV	DATE	DESCRIPTION	DRN	ENG	CHK	APP
P02	29/08/23	INFORMATION				
P01	04/04/23	INFORMATION				

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MECHANICAL & ELECTRICAL ENGINEER	CIVIL & STRUCTURAL ENGINEER
Clifton Scannell Emerson Associates	BB7 BB7 Fire & Security Consulting
ARCHITECT KAVANAGH TUITE ARCHITECTS	OTHER ENGINEER CUNDELL

PROJECT:	Unit 1, M50 Business Park
TITLE:	COEFFICIENTS OF RUNOFF FOR IMPERMEABLE AREAS
DRAWING NO:	22_112-CSE-00-XX-SK-C-2111
SCALE:	A1 1:200
AGILE No:	
REV:	P02

Project Number: 22_112

Project: Unit 1, M50 Business Park

Title: SuDS Management Plan Report

Appendix H Treatment Train of SuDS

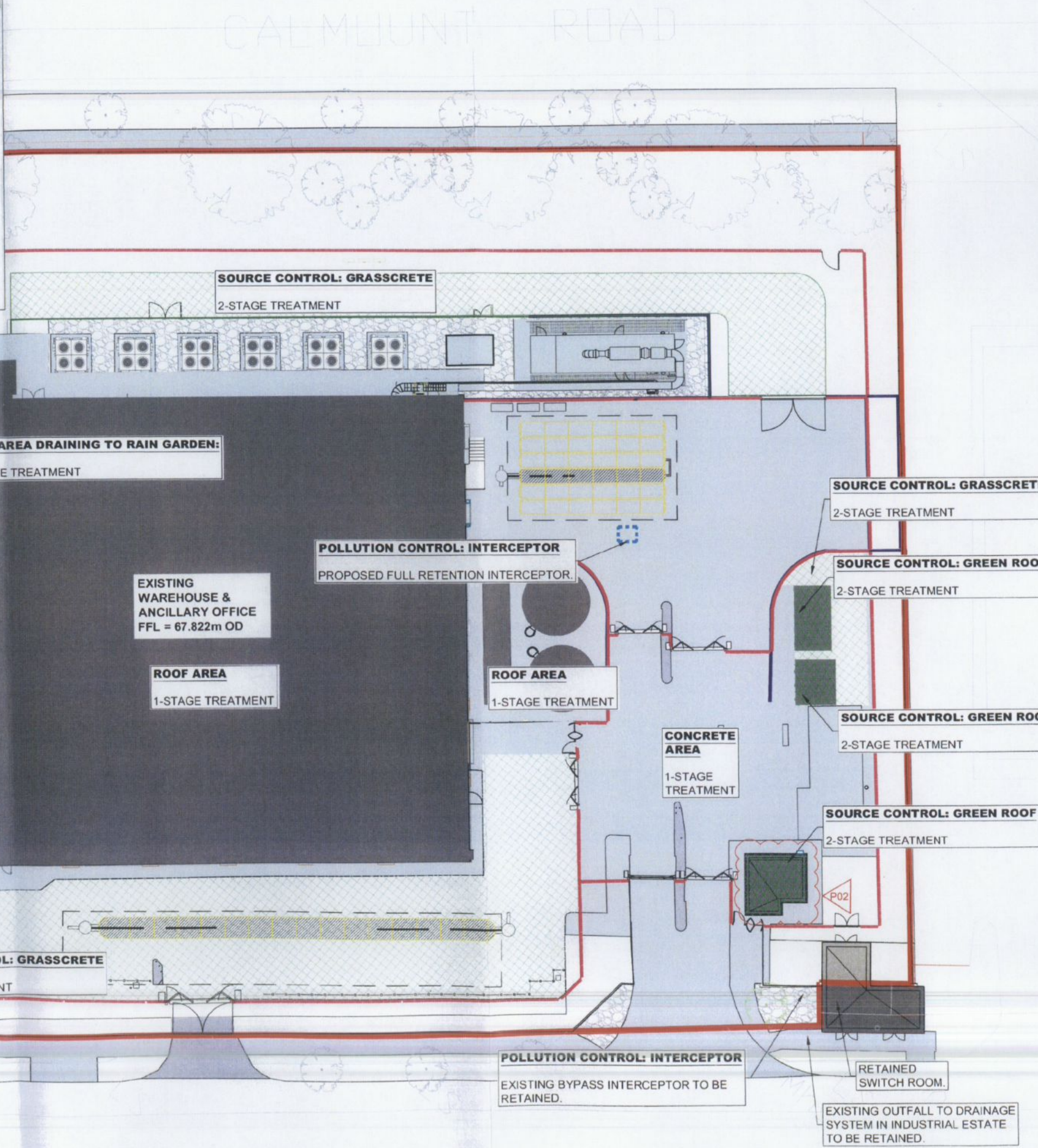
SUDS MANAGEMENT TRAIN AND FLOW CONTROLS DURING CRITICAL STORM

ROAD RUNOFF

- 2-STAGE TREATMENT: GRASSCRETE AREAS
- STAGE 1 - GRASSCRETE AND STAGE 2 - WITHIN THE BYPASS OR FULL RETENTION INTERCEPTOR
- 2-STAGE TREATMENT: GRAVEL AREAS
- STAGE 1 - GRANULAR PERMEABLE SURFACE AND STAGE 2 - RETENTION PETROL INTERCEPTOR
- 1-STAGE TREATMENT: CONCRETE AREAS
- STAGE 1 - WITHIN THE FULL RETENTION INTERCEPTOR OR THE BYPASS INTERCEPTOR

ROOF RUNOFF

- 2-STAGE TREATMENT: GREEN ROOF AREAS
- STAGE 1 - GREEN ROOF AND STAGE 2 - WITHIN THE BYPASS INTERCEPTOR
- 2-STAGE TREATMENT: RAINGARDEN
- STAGE 1 - RAINGARDEN AND STAGE 2 - WITHIN THE BYPASS INTERCEPTOR
- 1-STAGE TREATMENT: ROOF AREAS
- STAGE 1 - WITHIN THE FULL RETENTION INTERCEPTOR OR THE BYPASS INTERCEPTOR



NOTES

KEYNOTES

LEGEND

- SITE LEGEND:**
- OUTLINE OF THE SITE SUBJECT TO THIS APPLICATION
 - RETAINING WALLS
 - EXISTING FENCE
 - PROPOSED FENCE
 - PROPOSED PLANT SCREEN
 - LOW LEVEL BARRIER

REV	DATE	DESCRIPTION	DRN	ENG	CHK	APP
P02	2/10/23	INFORMATION				
P01	04/04/23	INFORMATION				

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MECHANICAL & ELECTRICAL ENGINEER CIVIL & STRUCTURAL ENGINEER

ARCHITECT **KAVANAGH TUITE ARCHITECTS**

SECURITY ENGINEER **CUNDALL**

Clifton Scannell Emerson Associates
 Fire Engineer **BB7**

PROJECT: Unit 1, M50 Business Park

TITLE: SUDS MANAGEMENT TRAIN AND FLOW CONTROL DURING CRITICAL STORM EVENT

DRAWING NO: 22_112-CSE-00-XX-SK-C-2112

SCALE: A1 1:200

SURFACE WATER CAPACITY FOR CRITICAL STORM EVENT
(REFER TO SECTION 5: SURFACE WATER NETWORK FLOODING CHECK FOR CRITICAL STORM EVENT)

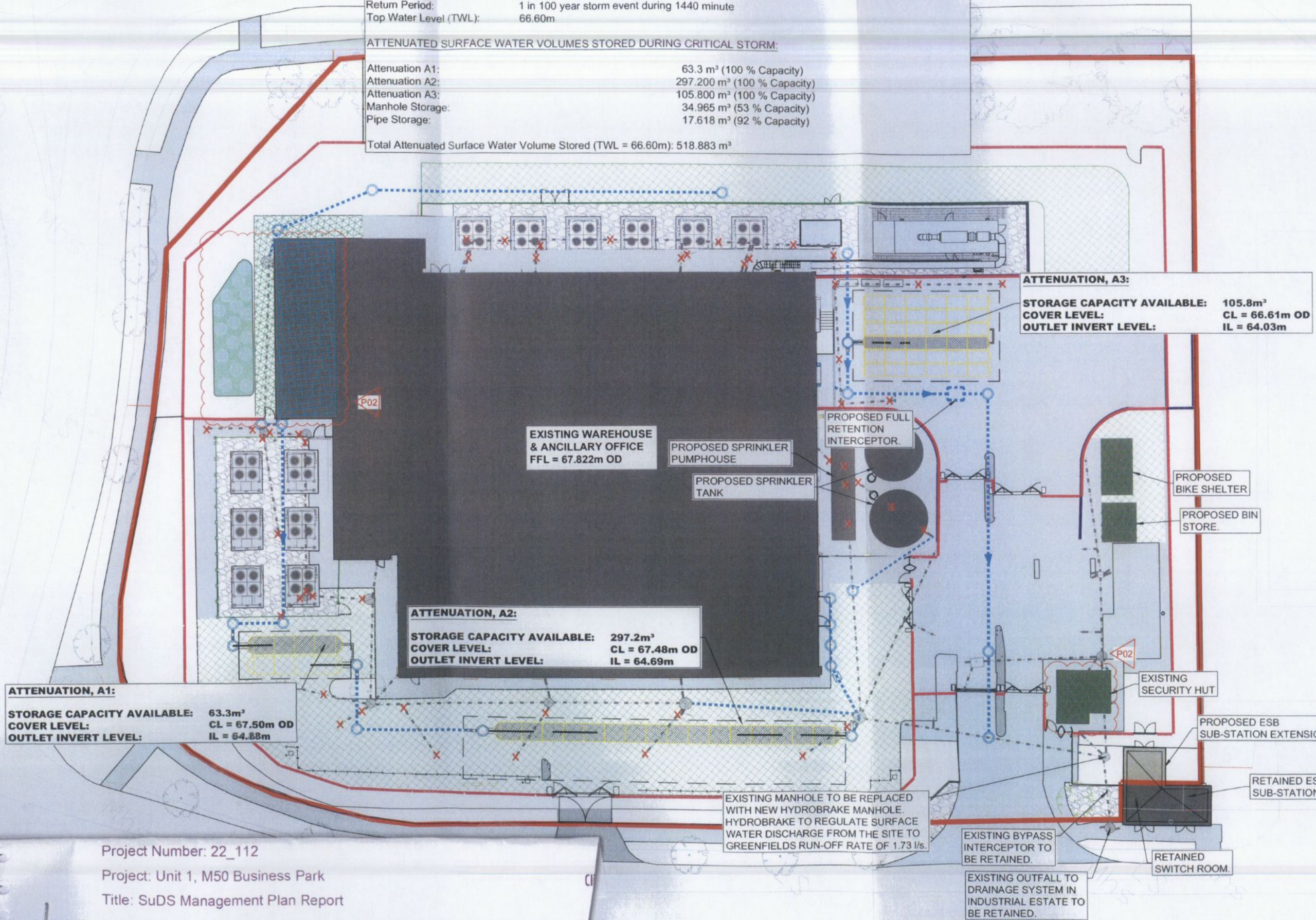
CRITICAL STORM EVENT:

Return Period: 1 in 100 year storm event during 1440 minute
Top Water Level (TWL): 66.60m

ATTENUATED SURFACE WATER VOLUMES STORED DURING CRITICAL STORM:

Attenuation A1: 63.3 m³ (100 % Capacity)
Attenuation A2: 297.200 m³ (100 % Capacity)
Attenuation A3: 105.800 m³ (100 % Capacity)
Manhole Storage: 34.965 m³ (53 % Capacity)
Pipe Storage: 17.618 m³ (92 % Capacity)

Total Attenuated Surface Water Volume Stored (TWL = 66.60m): 518.883 m³



ATTENUATION, A1:
STORAGE CAPACITY AVAILABLE: 63.3m³
COVER LEVEL: CL = 67.50m OD
OUTLET INVERT LEVEL: IL = 64.88m

ATTENUATION, A2:
STORAGE CAPACITY AVAILABLE: 297.2m³
COVER LEVEL: CL = 67.48m OD
OUTLET INVERT LEVEL: IL = 64.69m

ATTENUATION, A3:
STORAGE CAPACITY AVAILABLE: 105.8m³
COVER LEVEL: CL = 66.61m OD
OUTLET INVERT LEVEL: IL = 64.03m

NOTES

KEYNOTES

LEGEND

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- EXISTING FENCE
- PROPOSED FENCE
- PROPOSED PLANT SCREEN
- LOW LEVEL BARRIER

SURFACING LEGEND:

- ROOF AREA
- GREEN ROOF AREA
- CONCRETE PAVING
- GRAVEL AREA
- GRASSCRETE AREA
- ROOF AREA DRAINING TO RAINGARDEN
- RAINGARDEN

SURFACE WATER LEGEND:

- EXISTING SURFACE WATER PIPE TO BE RETAINED
- EXISTING SURFACE WATER PIPE TO BE REMOVED
- PROPOSED SURFACE WATER PIPE
- PROPOSED SURFACE WATER MANHOLE
- EXISTING SURFACE WATER MANHOLE
- PROPOSED SURFACE WATER ATTENUATION
- BASE OF ATTENUATION AREA
- INTERNAL DRAINAGE PIPE

REV	DATE	DESCRIPTION	DRN	ENG	CHK	APP
P02	29/06/23	INFORMATION		MM	KB	CD CD
P01	04/04/23	INFORMATION		KB	KB	CD CD

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MECHANICAL & ELECTRICAL ENGINEER: CIVIL & STRUCTURAL ENGINEER

Clifton Scannell Emerson Associates

ARCHITECT: KAVANAGH TUITE ARCHITECTS

BB7

SECURITY ENGINEER: CUNDALL

PROJECT: Unit 1, M50 Business Park

TITLE: SURFACE WATER ATTENUATION CAPACITY DURING 1 IN 100 YEAR EVENT CRITICAL STORM

DRAWING NO.: 22_112-CSE-00-XX-SK-C-2110

Project Number: 22_112
Project: Unit 1, M50 Business Park
Title: SuDS Management Plan Report

Appendix I Surface Water Attenuation Capacity

SCALE	AGLE No.	REV
A1 1:200		P02