

DRAINAGE STATEMENT

Mowbray, North Horsham, West Sussex
Reserved Matters Area 12



Prepared for: Legal & General (Strategic Land North Horsham) Limited
Ref: 291_8220585_JD_RM12_Drainage_Statement

Document History

Issue	Date	Description	Prepared By	Checked By
1	18 June 26	Text Draft	J Dunesby / W Nienaber	C Salt
2	29 June 26	Updated Following Client Comments	J Dunesby	W Nienaber

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1.0 Introduction

1.1 This Drainage Statement has been prepared by Glanville Consultants on behalf of Legal & General (Strategic Land North Horsham) Limited to support an application for the approval of reserved matters for a residential development on land identified as Reserved Matters (RM) Area 12 within the Mowbray development, North Horsham, West Sussex.

1.2 Outline planning permission was granted in March 2018 for the following development on Land North of Horsham (planning application reference: DC/16/1677):

"Outline planning application with all matters reserved except access for a mixed use strategic development to include housing (up to 2,750 dwellings), business park (up to 46,450m²), retail, community centre, leisure facilities, education facilities, public open space, landscaping and related infrastructure."

1.3 The first section of primary road leading eastwards from Ruser Road (called Bailey Road) was constructed as part of the initial infrastructure works undertaken for Phase 1 of the Mowbray development. The approval of reserved matters was subsequently granted for the extension of Bailey Road eastwards from Phase 1 through into Phase 2 and as far as the western boundary of land known as Sub-Phase 2B (application reference: DC/23/2328).

1.4 RM Area 12 is served from this section of primary road and comprises approximately 8.47 hectares of existing agricultural land, which will be developed to provide 278 residential dwellings together with associated access roads, parking, landscaping, public open space and supporting infrastructure.

1.5 The description of development is as follows:

"Application for approval of Reserved Matters (layout, scale, appearance, means of access and landscaping) pursuant to Condition 5 of Outline Planning Permission reference DC/16/1677 for RM Area 12 comprising 278 (C3 Use) residential units, car and cycle parking, play area, drainage, internal roads, and associated infrastructure."

1.6 This report provides details of the disposal of surface water run-off generated by the development parcel subject of this planning application, as well as adjacent residential parcels which will be subject to future separate reserved matters applications. This report also provides details of suitable foul drainage infrastructure to accommodate the disposal of foul effluent generated by this and future residential parcels in accordance with Conditions 54 and 55 of the decision notice.

1.7 Condition 17 of the outline planning consent (with wording as subsequently amended via a Section 96a application reference: DC/19/0984) related to the site-wide surface water strategy principles and was discharged in 2019 (application reference: DISC/19/0214).

1.8 Condition 54 of the outline approval states:

"Each Reserved Matters application shall be accompanied by a Detailed Surface Water Strategy demonstrating how the principles established in the approved Site Wide-Surface Water Strategy will be achieved within the area covered by that Reserved Matters Application and shall include details of all Sustainable Drainage Systems (SuDS) and their catchment areas and the location, size and appearance of all features such as ponds, basins and swales, details of critical stormwater storage, details of any surface water sewers, the timing of delivery of the infrastructure necessary to deliver the Detailed Surface Water Strategy and details of long-term management and maintenance of the surface water drainage systems, as well as any temporary measures necessary to facilitate development until the approved surface water drainage strategy is provided in full. The development shall be implemented in accordance with the approved Detailed Surface Water Strategy and thereafter managed and maintained in accordance with the approved details."

1.9 Condition 55 of the outline approval states:

"Each Reserved Matters application shall be accompanied by a foul water drainage scheme (including implementation timetable) for that Reserved Matters Area. The approved foul water drainage scheme shall be implemented for each Reserved Matters Area as approved and no development in that Reserved Matters Area shall be occupied until the foul water drainage system has been completed in accordance with the approved details."

2.0 Existing Situation & Proposed Development

Site Context

- 2.1 The wider Mowbray development at North Horsham is currently under construction with various applications for the approval of reserved matters for individual infrastructure elements and sub-phases, both under consideration and determined. Prior to development, the wider Mowbray site had a mix of uses, including agricultural land and associated buildings, and dwellings.
- 2.2 The application site is located to the north of the A264. A location plan showing the extent of the application site edged in red is provided in Appendix A.
- 2.3 The application site currently comprises previously undeveloped land used in the past for agricultural purposes.

Existing Drainage Infrastructure

- 2.4 No formal surface water drainage infrastructure exists within the application site boundary. There are unnamed watercourses that are located adjacent to the eastern and western parcel boundaries which flow in a southerly direction towards a watercourse flowing east to west along the parcel's southern boundary. The topographical survey (submitted as part of the outline planning application) confirms that surface water run-off from the undeveloped agricultural land within the application site drains overland to these watercourses.

Proposed Development

- 2.5 The proposals for which the approval of reserved matters is sought comprise the erection of 278 residential dwellings together with associated access roads, parking, landscaping, public open space and supporting infrastructure.
- 2.6 The proposed site layout is included in Appendix B.

3.0 Culverted Watercourse

- 3.1 The access road serving the relatively small catchment located to the south-west of RM Area 12 (Catchment 3) crosses the unnamed watercourse near the western boundary of the parcel. To ensure surface water flows conveyed by the watercourse are not obstructed by the access road, the watercourse will be culverted at this location.
- 3.2 The unnamed watercourse is classified as an Ordinary Watercourse and is a tributary of the Channells Brook. Channells Brook subsequently flows south-west through Horsham becoming classified as a Main River at Ruser Road, approximately 700m downstream of the site to the south of the A264. Channells Brook enters Warnham Mill Pond, on the Boldings Brook, approximately 2.6km downstream of the site. Downstream of the Warnham Mill Pond, the Bouldings Brook flows south-west and joins the River Arun a short distance upstream of the A24.
- 3.3 A catchment assessment for the proposed culvert has been undertaken and is shown in Table 1. The flow rates detailed in the table demonstrate that the proposed culvert has more than adequate capacity for the design flow rate (1 in 100 year plus 45% climate change event) generated by the upstream catchment in the post-development scenario. Culvert capacity assessment is provided in Appendix C.

Table 1: Culvert and Ditch Capacity Assessment

Culvert Reference	Catchment Area (m ²)	Proposed Culvert Diameter (mm)	Proposed Culvert Capacity ¹ (l/s)	1 in 100 year plus 45% climate change design flow ² (l/s)
C12	76,951	525	925	692

¹ Based on Manning's Equation

² Based on the Wallingford Procedure 60 min storm

4.0 Surface Water Drainage

- 4.1 This section provides details of the proposed disposal arrangements for surface water run-off generated by the application site in accordance with Condition 54 of the approval notice. This condition requires each Reserved Matters application to demonstrate the principles set out in the site wide surface water drainage strategy, approved under the discharge of Condition 17 of the outline approval (application reference: DISC/19/0214). As such, this strategy has been prepared with reference to the approved Site-Wide Surface Water Strategy Report (Rev. A, August 2019). The approved strategy drawings are included in Appendix D.
- 4.2 The surface water drainage infrastructure (pipework and basin) approved for Bailey Road Extension (planning application reference DC/23/2328) was designed to accommodate flows from the majority of RM Area 12, as well as future RM Area 13 to the north, collectively known as Catchment 2. As such, this strategy has been prepared with reference to the approved strategy for Bailey Road Extension. The approved Drainage Layout is also included in Appendix D.

Site-Wide and Bailey Road Extension Principles

Surface Water Outfall

- 4.3 The site-wide surface water drainage strategy established in accordance with the drainage hierarchy that all discharges from the development will be to the local network of watercourses running through and around the site.
- 4.4 Given the above, it is proposed to discharge surface water run-off generated by the application site to the watercourses running through the site, as per the existing situation.

Discharge Rate Approach

- 4.5 The site-wide surface water strategy employed a staged discharge approach to restrict discharge from the development to the greenfield run-off rates – Q1 for the 1 in 1 year event and Q100 for the 1 in 100 years plus climate change event. The strategy has been approved and Condition 17 discharged accordingly. The Bailey Road Extension application was also prepared and approved on this basis. As such, a staged discharge approach has been adopted for this application.

Greenfield Run-Off Rates

- 4.6 The approved site-wide surface water strategy calculated greenfield run-off rates are set out in Table 2, and these rates have been adopted for this application.

Table 2: Greenfield Rates

Return Period	Site-Wide Greenfield Rate
QBAR	5.2 l/s/ha
Q1	4.4 l/s/ha
Q30	11.8 l/s/ha
Q100	16.5 l/s/ha

Long Term Storage

- 4.7 Given the application of the staged discharge approach, long term storage will be provided to account for the additional volume of surface water discharged post-development. Given the lack of infiltration on-site, the additional volume will be discharged at a rate no greater than 2 l/s/ha.
- 4.8 Discharge rates will therefore be restricted via two flow control devices set at different heights within the flow control manholes. The lower flow controls are designed to restrict the discharge rate to 2 l/s/ha for the given catchment area. The higher flow controls are set at a level such that the necessary long-term storage volume can be provided in the proposed basins and geo-cellular attenuation crates below this level. This long-term storage volume will therefore be discharged at a maximum rate of 2 l/s/ha, since only the lower flow control will be in use at this time.

Rainfall Data and Climate Change

- 4.9 The latest FEH 2022 dataset will be adopted.
- 4.10 Condition 17 states each reserved matters application must provide: "details of an overarching scheme to demonstrate safe management of surface water, including critical storm water storage across the site up to the 1 in 100 year storm event, plus 20% climate change allowance, 40% exceedance".
- 4.11 As such, a 20% climate change allowance has been used to assess the surface water drainage system, and a 40% allowance has been modelled as an exceedance event. Outputs from both of these scenarios are discussed later in this section.

Impermeable Areas

- 4.12 The site-wide surface water drainage strategy calculated impermeable areas based on housing density within each drainage catchment, with an additional allowance for highway infrastructure where appropriate.
- 4.13 A further allowance for urban creep was also included for residential areas. The urban creep allowance is based on development density in each parcel and is calculated in-line with Table 5.2 of WSCC's LLFA Policy for the Management of Surface Water, i.e. with a maximum urban creep allowance of 10% for development densities of 25 dwellings per hectare or less, and a minimum of 2% for development densities of 50 dwellings per hectare or more. It should be noted that no urban creep has been applied to the highways / road networks serving the parcels, as these areas will not be subject to the potential for urban creep.

Surface Water Drainage Strategy

- 4.14 RM Area 12 is split into two catchments according to the topography and watercourse dividing the catchment in the western part of the parcel. Land to the east of the watercourse forms part of the wider Catchment 2, which also includes part of Bailey Road Extension and RM Area 13. Land to the west of the watercourse forms its own catchment area, Catchment 3.

Catchment 2

- 4.15 Following the principles set out in the approved site-wide and Bailey Road Extension strategy, the proposed surface water drainage strategy will discharge surface water run-off to the existing watercourse within the Bailey Road Extension application area. It utilises a staged discharge approach and on-site attenuation provided by one basin approved under the Bailey Road Extension application (Pond 2a), one basin located within RM Area 12 (Pond 2d), and two basins and geo-cellular attenuation crates located with RM Area 13 (Pond 2b, 2c, & Crates C13). The proposed surface water drainage strategy is illustrated on the drawings included in Appendix E. Ponds 2b and 2c will be approved under a separate reserved matters application, however, have been included in this report and modelled to consider the catchment as a whole.
- 4.16 The greenfield run-off rates for Catchment 2 were approved under the Bailey Road Extension application in accordance with the site-wide greenfield run-off rates and long-term storage requirements. They are included in Table 3. The flow control restricting flows to these rates formed part of the Bailey Road Extension application. The calculations included in Appendix F demonstrate that these requirements are met.

Table 3: Approved Discharge Rates

Return Period	Bailey Road Extension Approved Rate
2 year	15.6 l/s
30 year	92.2 l/s
100 year	128.9 l/s

- 4.17 As discussed previously, the site-wide surface water drainage strategy calculated impermeable areas based on housing density within each drainage catchment, with an additional allowance for the areas of highway infrastructure as appropriate.
- 4.18 Given that detailed site layouts are now available for both RM Areas 12 and 13, exact impermeable areas have been calculated for Catchment 2, which are set out in Table 4.
- 4.19 Urban creep has been applied in accordance with Table 5.2 of WSCC's LLFA Policy for the Management of Surface Water, which are set out in Table 4.

Table 4: Parcel Impermeable Areas

Contributing Parcels	Total Catchment Area (ha)	Impermeable Area (ha)	Urban creep allowance (%)	*Impermeable Area incl. Urban Creep (ha)
12 – A	7.542	3.959	7.2	4.102
13 – A	1.410	0.735	9.5	0.777
13 – B	1.014	0.313	10.0	0.333
13 – C	3.790	2.272	8.4	2.375
Bailey Road Extension	0.052	0.052	0	0.052
Total	13.808	7.331	N/A	7.639

*As part of determining the impermeable areas for the contributing parcels, urban creep has not been applied to the proposed areas of highway.

- 4.20 Given the staged discharge approach has been applied within the surface water drainage strategy, a suitable long-term storage provision must be included within the basin design. Long-term storage for all of Catchment 2 is wholly provided within Pond 2a which was approved under the Bailey Road Extension application, and as such is not considered further in this report.

Catchment 3

- 4.21 Following the principles set out in the approved site-wide strategy, the proposed surface water drainage strategy will discharge surface water run-off to the existing watercourse adjoining the parcel's southern boundary. It utilises a staged discharge approach and on-site attenuation provided by geo-cellular attenuation crates (Crates C12) located beneath the shared parking area serving the apartments to the south of the catchment. The proposed surface water drainage strategy is illustrated on the drawing included in Appendix E.
- 4.22 Using the impermeable areas for Catchment 3, the greenfield run-off rates were calculated in accordance with the site-wide greenfield run-off rates and long-term storage requirements and are included in Table 5. The calculations included in Appendix F demonstrate that these requirements are met.

Table 5: Proposed Discharge Rates

Return Period	Proposed Discharge Rate
2 year	0.7 l/s
30 year	4.4 l/s
100 year	6.1 l/s

- 4.23 As discussed previously, the site-wide surface water drainage strategy calculated impermeable areas based on housing density within each drainage catchment, with an additional allowance for the areas of highway infrastructure as appropriate.
- 4.24 Given that detailed site layouts are now available for both RM Areas 12 and 13, exact impermeable areas have been calculated for Catchment 3, which are set out in Table 6.
- 4.25 Urban creep has been applied in accordance with Table 5.2 of WSCC's LLFA Policy for the Management of Surface Water, which are set out in Table 6.

Table 6: Parcel Impermeable Areas

Contributing Parcels	Total Catchment Area (ha)	Impermeable Area (ha)	Urban creep allowance (%)	*Impermeable Area incl. Urban Creep (ha)
12 – B	0.807	0.371	7.1	0.384
Total	0.807	0.371	N/A	0.384

*As part of determining the impermeable areas for the contributing parcels, urban creep has not been applied to the proposed areas of highway.

- 4.26 Given the staged discharge approach has been applied within the surface water drainage strategy, a suitable long-term storage provision must be included within the geo-cellular attenuation crate design. Table 7 below details both the long-term storage volume that is required and that which can be provided within the storage structure below the first flow control, which confirms the storage volume provision within the geo-cellular attenuation crates exceed the long-term storage requirements. Therefore, sufficient long-term storage can be provided.

Table 7: Long Term Storage Volume and Storage Provided within Storage

Catchment	Long Term Storage Volume Required (m ³)	Storage Volume Provided Below First Flow Control (m ³)
3	36.4	166.2

Hydraulic Calculations

- 4.27 Hydraulic calculations for Catchment 2 and 3 included in Appendix F demonstrate that the pipe network and the storage features have been sized to provide attenuation storage for all storm events up to and including the 1 in 100 year storm event, with a 20% allowance for climate change. This demonstrates that the surface water drainage networks can accommodate the 1 in 100 year plus 20% climate change storm without flooding from surface water.
- 4.28 It should also be noted that "Surcharge" occurs in the 1 in 2 year event upstream of all flow controls; this is necessary due to water backing up upstream of the flow control.
- 4.29 Further to the aforementioned calculations, the hydraulic models have been run with a surcharged outfall in order to represent the condition that the watercourse would be in when in flood. The 1 in 100 year + 45% climate change flood level of 54.698mAOD and 54.237mAOD have been used for Catchments 2 and 3 respectively and the design 1 in 100 year + 20% climate change event modelled, as detailed in the attached calculations at Appendix G. The following results were found:
- no flooding of the network upstream of the basin(s) and attenuation crates occurs;
 - freeboard in the basin(s) reduce, however no flooding occurs;
 - localised flooding occurs around the outfall locations of Catchments 2 and 3, however this is expected when the watercourse is in flood and will be constrained to the public open space; and
 - localised flooding occurs at the respective low / exceedance point of the attenuation crates proposed within Catchment 3, however this will be contained within the proposed highway and appropriately conveyed, as illustrated on the levels strategy drawings provided in Appendix E.
- 4.30 As such, there is no risk to the proposed development in this scenario, and no increase in flood flows off-site.

Adoption and Maintenance Measures

- 4.31 All new surface water infrastructure will be designed and constructed in accordance with the Building Regulations, adoptable standards, and best practice, as appropriate.
- 4.32 The proposed surface water pipe network and associated drainage infrastructure serving the road and future residential parcels will be offered for adoption by the Advanced Water Infrastructure Networks (AWIN), while the basins and geo-cellular attenuation crates will remain private and be the responsibility of a management company. This follows the approach taken throughout Phase 1 of the development.

- 4.33 Gullies, gully connections and other surface water drainage infrastructure solely serving highway land will be offered for adoption to WSCC as highway authority.
- 4.34 The SuDS Management and Maintenance Plan included in Appendix H outlines typical maintenance tasks for drainage infrastructure constructed as part of Phase 2. This plan will be implemented by the management company upon completion of the related drainage works associated with this application.

Exceedance Flow Routes

- 4.35 Any surface flooding caused by system failure or during extreme events above the design event which may overload the system will be routed away from the proposed residential parcels. Levels on-site will be designed such that any exceedance flows from drainage infrastructure within the proposed highway will be contained within the highway, with exceedance flows from the proposed basins and geo-cellular attenuation crates following the existing topographical falls towards the south-west and the surrounding watercourses. Exceedance flow routes are illustrated within the levels strategy drawings provided in Appendix E.
- 4.36 In addition, an exceedance event of the 1 in 100 year + 40% climate change event has been run within the hydraulic models to determine how the proposed drainage infrastructure operates during exceedance and to validate this assessment, which is included in Appendix I. The following results were found:
- no flooding of the network upstream of the basin(s) and attenuation crates occurs;
 - freeboard in the basin(s) reduce, however no flooding occurs;
 - localised flooding occurs around flow control ref. S16.9.0 (FC), which restricts the discharge rate of the proposed attenuation crates within RM Area 13, however this will be contained within the proposed highway and appropriately conveyed;
 - localised flooding occurs around the outfall locations of Catchments 2 and 3, however this will be contained within the proposed highway and / or public open space and appropriately conveyed; and
 - localised flooding occurs at the respective low / exceedance point of the attenuation crates, however this will be contained within the proposed highway and appropriately conveyed, as illustrated on the levels strategy drawings provided in Appendix E.

Summary

- 4.37 This section demonstrates that a sustainable drainage strategy can be implemented on the site, in accordance with the approved site-wide and Bailey Road Extension surface water drainage strategy.

5.0 Foul Water Drainage

Site-Wide Principles

- 5.1 The site wide foul water drainage strategy, dated August 2016, submitted within the consented outline planning application (application ref. DC/16/1677) generally follows the topography of the site, draining within various natural catchments. This results in five main proposed pump stations (FWPS1 – FWPS5) indicated within the strategy being required due to an inability to gravitate to the existing Southern Water foul network. Further smaller (and some private) pump stations are located within the development, where required, pumping to these five main pump stations.
- 5.2 This Reserved Matters Application does not propose any changes to the principles of the approved site-wide foul water drainage strategy. Foul flow rates have been agreed with Southern Water as part of ongoing discussions and this planning applications does not seek to change the flow rates agreed with Southern Water in February / March 2024.
- 5.3 Southern Water have a statutory duty under Section 94 of the Water Industry Act 1991 to provide off-site sewerage for purposes and to accommodate growth.
- 5.4 As such, off-site network capacity is not an issue nor a reason to prevent or constrain development of the site.

Foul Water Drainage Strategy

- 5.5 The foul water drainage strategy proposed has been designed such that the foul water sewers have sufficient capacity to accommodate foul effluent generated by the upstream parcels of Phase 2.
- 5.6 The proposed foul water gravity sewers will convey flows generated by RM Area 12 and the upstream parcel (RM Area 13) and discharges into the foul gravity sewer network approved under the Bailey Road Extension application (reference: DC/23/2328) and approved by AWIN as the adopting sewer authority under a S.104 application.
- 5.7 The Bailey Road Extension network subsequently discharges into the downstream foul network serving Phase 1 via an existing spur constructed during the first section of Bailey Road and located upstream of manhole reference F202. This network has been technically approved by Southern Water under a S104 and has been constructed to adoptable standards. Foul flows will then drain to the adoptable pump station FWPS1 and be pumped off-site. FWPS1 is located adjacent to the PAW1 junction (Rusper Road roundabout) and was designed to take gravity flows from part of Phase 1 and part of Phase 2. FWPS1 was designed by TT Pumps, has subsequently been technically approved by Southern Water and has been constructed to adoptable standards.
- 5.8 As part of the proposals to connect into the existing foul network, a Section 106 (Water Industry Act) application was submitted to Southern Water (application reference: PAPER_19451). The submitted Section 106 application received approval in February 2023 as detailed in the Approval Letter included in Appendix J.
- 5.9 Given the main sewer works subject of this application will be completed prior to construction of RM Area 13, foul drainage spurs will be constructed up to the land parcel boundaries such that each parcel has a point of connection into the principal foul sewerage network.

Sewer Adoption

- 5.10 All new foul water infrastructure will be designed in accordance with the Building Regulation Part H, adoptable standards, and best practice, as appropriate.
- 5.11 The proposed foul water pipe network and associated drainage infrastructure will be offered for adoption by the Advanced Water Infrastructure Networks (AWIN).

Summary

- 5.12 Consideration has been given to the disposal of foul water from both the site and surrounding future development parcels which form part of the wider Mowbray development. This demonstrates that development these proposals will not prejudice or constrain the future development of the wider Mowbray site.
- 5.13 This demonstrates that a suitable foul water solution is possible for the development, and wider allocation, and should therefore not prevent permission being granted.



6.0 Summary and Conclusion

Summary

- 6.1 This Drainage Statement has been prepared by Glanville Consultants on behalf of Legal & General (Strategic Land North Horsham) Limited to support an application for the approval of reserved matters for a residential development on land identified as Reserved Matters Area 12 within the Mowbray development, North Horsham, West Sussex. The description of development is as follows:

"Application for approval of Reserved Matters (layout, scale, appearance, means of access and landscaping) pursuant to Condition 5 of Outline Planning Permission reference DC/16/1677 for RM Area 12 comprising 278 (C3 Use) residential units, car and cycle parking, play area, drainage, internal roads, and associated infrastructure."

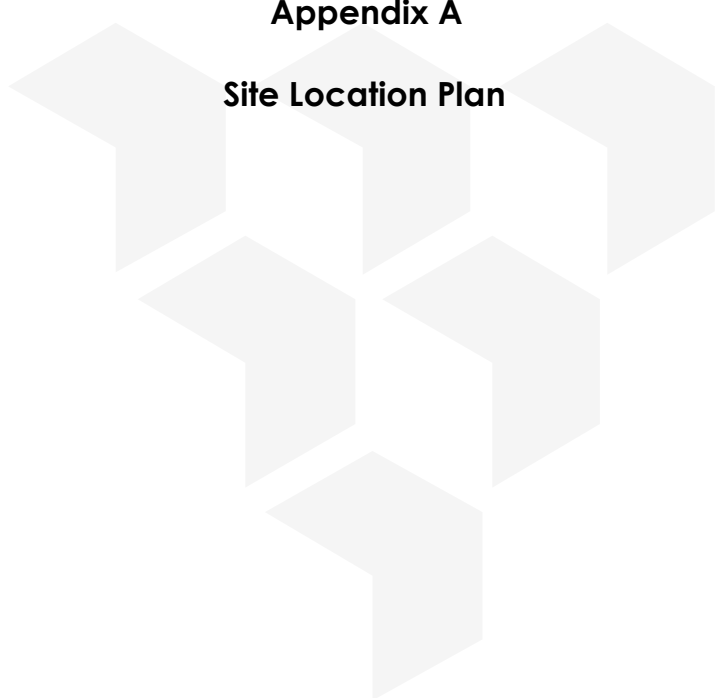
- 6.2 This report demonstrates how suitable measures will be implemented to deal with surface and foul water drainage from the application site and surrounding catchments, in compliance with Conditions 54 and 55 of the outline planning consent DC/16/1677.
- 6.3 The surface water drainage strategy demonstrates that there will be no flooding for all storm events up to and including the 1 in 100 year storm event, with a 20% allowance for the effects of climate change. Flood risk on-site will therefore not increase either on-site or elsewhere as a result of the development.
- 6.4 Foul effluent generated by the wider development will be conveyed via an adoptable system, which will discharge flows into the foul drainage network which will be built out under a separate planning application.

Conclusion

- 6.5 In conclusion, this report has demonstrated that the proposed works:
- will not increase flood risk elsewhere;
 - will employ a surface water drainage strategy based on the principles of sustainable drainage and the approved site wide drainage strategy; and
 - suitable provision for the disposal of foul effluent generated by the parcel and upstream catchments has also been demonstrated to be feasible.
- 6.6 On this basis, the proposals are considered to fully comply with National, Regional and Local planning policy such that the requirements of Conditions 54 and 55 of the outline planning consent are met.

Appendices



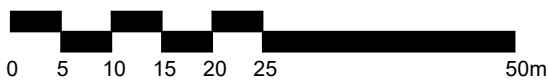
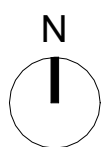


Appendix A

Site Location Plan



Bush
Lane



General Notes

1. This Drawing Represents the Design Intent ONLY.
2. Contractors and Consultants are, not to scale DIMENSIONS, from this Drawing.
3. All dimensions are shown in millimetres unless otherwise indicated.
4. Reproduced by permission of Ordnance Survey on behalf of HMSO © CROWN COPYRIGHT and database right 2008 All rights reserved Ordnance Survey Licence number AL 1000 22432 Broadway Malyan Limited.
5. Landscape shown is for illustrative purposes only. For detailed landscape information, please refer to the landscape information & documents.
6. The survey information shown on this drawing is based on a topographical survey prepared by a third party, and therefore Broadway Malyan Limited accepts no responsibility for the accuracy or completeness of the survey.
7. Drawings to be read in conjunction with the associated Design & Access Statement, associated consultant design team documents & reports, in addition to the landscape information.

— Site Boundary - RM12
8.46 Hectares

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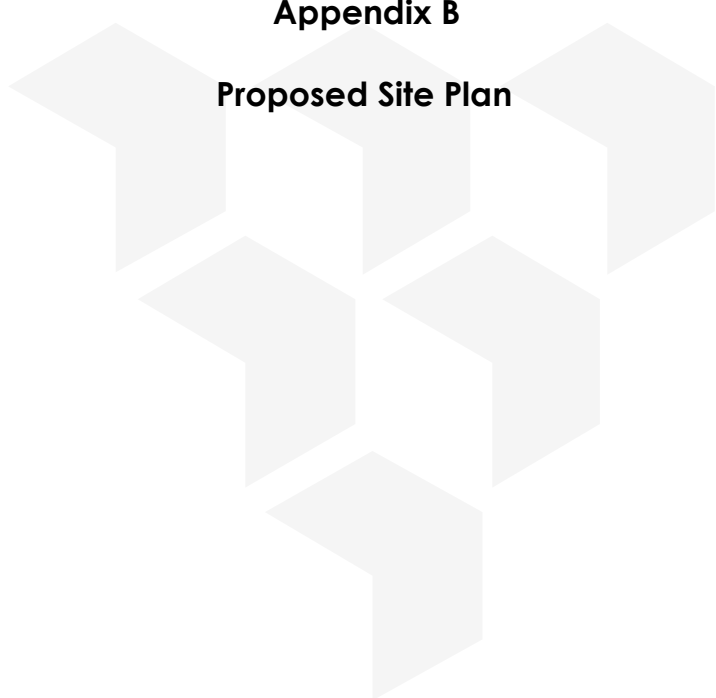
Project
Mowbray - RM12
North Horsham, West Sussex, UK

Drawing Title
Site Location Plan

Status Code
PL

Work Status
For Planning
Scale 1:1250@ A1 Drawn JV Checked SL Date 04.06.26
Drawing Number 34854-BM-12-ZZ-DR-A-00100
Revision

Rev. Description Date Issued Check



Appendix B

Proposed Site Plan



North Horsham - RM12			
Affordable - Houses			
Reference	Type	Area (ft²)	Count
A1	2b4p	856.8	22
A2	3b5p	1001.0	8
A3	4b6p	1160.3	4

Affordable - Apartments			
Reference	Type	Area (ft²)	Count
APT A1	1b2p	556.3 *	8
APT A2	2b4p	772.2 *	14
APT A3	2b3p WCH	767.8 *	3

BTR - Houses			
Reference	Type	Area (ft²)	Count
B5	3b5p-02	1229.2	1

BTR - Apartments			
Reference	Type	Area (ft²)	Count
APT B1	1b2p	557.8 *	37
APT B2	2b4p	790.5 *	38
APT B3	2b3p WCH	785.7 *	4

Private - Houses			
Reference	Type	Area (ft²)	Count
P1	2b3p	766.3	18
P2	2b4p	856.8	14
P3	3b4p	932.1	14
P4	3b5p-01	1079.6	16
P5	3b5p-02	1229.2	7
P6	3b5p-03	1355.2	34
P7	4b6p	1369.1	10
P8	4b7p-01	1598.2	8
P9	4b7p-02	1779.2	4
P10	5b8p	2006.4	3

Private - Apartments			
Reference	Type	Area (ft²)	Count
APT P1	1b2p	569.4	6
APT P2	2b4p	783.6	5

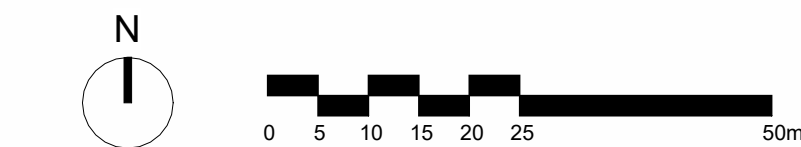
Affordable Total	49064.4	59
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BTR Total	55052.0	80
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Private Total	157189.1	139
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RM12 Total	261305.5	278
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* Average area
Refer to accommodation schedule & plot by plot schedule: 34854-BM-12-ZZ-SH-A-02600; 34854-BM-12-ZZ-SH-A-02601



- General Notes**
- This Drawing Represents the Design Intent ONLY.
 - Contractors and Consultants are, not to scale DIMENSIONS, from this Drawing.
 - All dimensions are shown in millimetres unless otherwise indicated.
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 - Landscape shown is for illustrative purposes only. For detailed landscape information, please refer to the landscape information & documents.
 - The survey information shown on this drawing is based on a topographical survey prepared by a third party, and therefore Broadway Malyan Limited accepts no responsibility for the accuracy or completeness of the survey.
 - Drawings to be read in conjunction with the associated Design & Access Statement, associated consultant design team documents & reports, in addition to the landscape information.

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Client
Legal and General

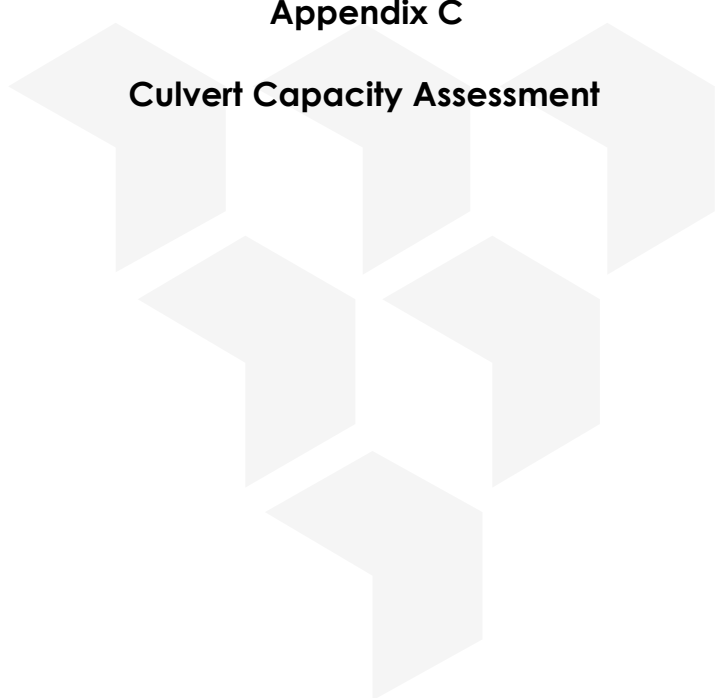
Project
Mowbray - RM12
North Horsham, West Sussex, UK

Drawing Title
Proposed site plan

Status Code
PL

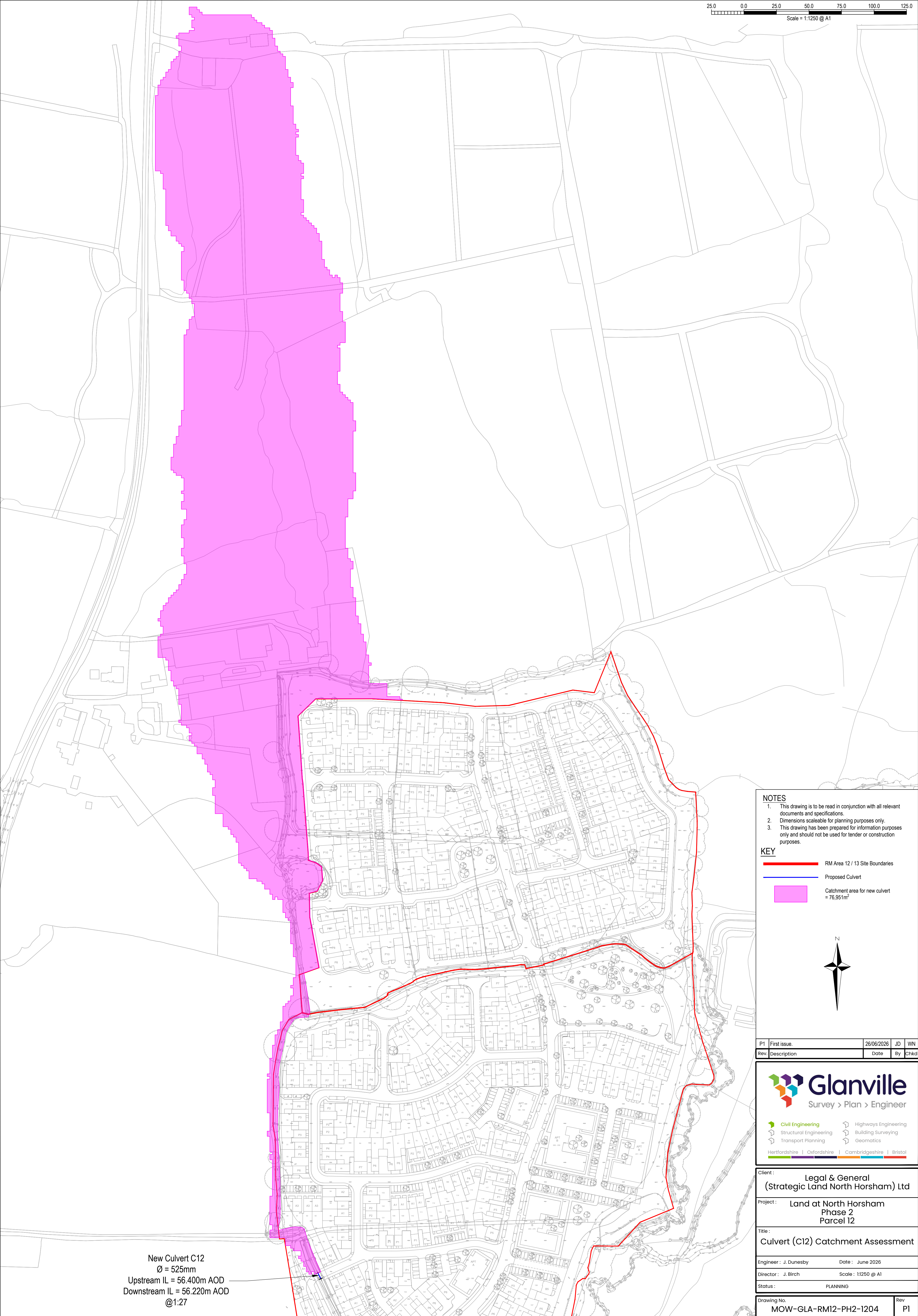
Work Status
For Planning

Scale	Drawn	Checked	Date
1:750@ A1	JV	SL	04.06.26
Drawing Number	Revision		
34854-BM-12-ZZ-DR-A-01100			
project - originator - function - approval - form - discipline - number			



Appendix C

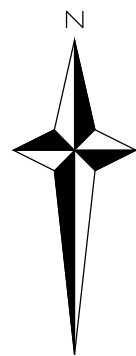
Culvert Capacity Assessment



New Culvert C12
Ø = 525mm
Upstream IL = 56.400m AOD
Downstream IL = 56.220m AOD
@1:27

- NOTES**
1. This drawing is to be read in conjunction with all relevant documents and specifications.
 2. Dimensions scaleable for planning purposes only.
 3. This drawing has been prepared for information purposes only and should not be used for tender or construction purposes.

- KEY**
- RM Area 12 / 13 Site Boundaries
 - Proposed Culvert
 - Catchment area for new culvert = 76.951m²



P1	First Issue.	26/06/2026	JD	WN
Rev	Description	Date	By	Chkd

**Glanville**
Survey > Plan > Engineer

 Civil Engineering

 Structural Engineering

 Transport Planning

 Highways Engineering

 Building Surveying

 Geomatics

Herfordshire | Oxfordshire | Cambridgeshire | Bristol

Client:	Legal & General (Strategic Land North Horsham) Ltd		
Project:	Land at North Horsham Phase 2 Parcel 12		
Title:	Culvert (C12) Catchment Assessment		
Engineer:	J. Dunesby	Date:	June 2026
Director:	J. Birch	Scale:	1:1250 @ A1
Status:	PLANNING		
Drawing No.	MOW-GLA-RM12-PH2-1204		Rev P1

Rainfall Run-Off Calculation
Mowbray, Horsham
RM Area 12 Culvert
(C12)

General Inputs

Site Location	Horsham	
Hydrological Region	6	
SAAR (mm)	800	
Soil Type	0.45	
SPR	0.45	
M5-60 (mm)	20	
r	0.35	
Total site area (m ²)	76,951	Post-development catchment area.
Runoff coefficient	0.55	Based on sloping clay soils.
Total site area (m ²)	76,951	

Rainfall Calculation

Method: Wall. procedure Z1 * M5-60 Wall. procedure Z2 * M5-D M100-D / D D * Q_{BAR}

1 in 1 YEAR

Storm Duration D (min)	Z1	M5-D (mm)	Z2 (1 in 1)	M1-D (mm)	Rainfall Intensity i (mm/hr)	Runoff (l/s)
60	1.00	20	0.64	12.8	12.8	150.5

1 in 2 YEAR

Storm Duration D (min)	Z1	M5-D (mm)	Z2 (1 in 2)	M2-D (mm)	Rainfall Intensity i (mm/hr)	Runoff (l/s)
60	1.00	20	0.81	16.2	16.2	190.5

1 in 30 YEAR

Storm Duration D (min)	Z1	M5-D (mm)	Z2 (1 in 30)	M30-D (mm)	Rainfall Intensity i (mm/hr)	Runoff (l/s)
60	1.00	20	1.54	30.8	30.8	362.1

1 in 100 YEAR

Storm Duration D (min)	Z1	M5-D (mm)	Z2 (1 in 100)	M100-D (mm)	Rainfall Intensity i (mm/hr)	Runoff (l/s)
60	1.00	20	2.03	40.6	40.6	477.3

1 in 100 YEAR +45% CLIMATE CHANGE

Storm Duration D (min)	Z1	M5-D (mm)	Z2 (1 in 100)	M100-D (mm)	Rainfall Intensity i (mm/hr)	Runoff (l/s)
60	1.00	20	2.03	40.6	58.87	692.1

PIPE CAPACITY

Diameter (mm)	Gradient	Capacity (l/s)
525	1:27	925.0