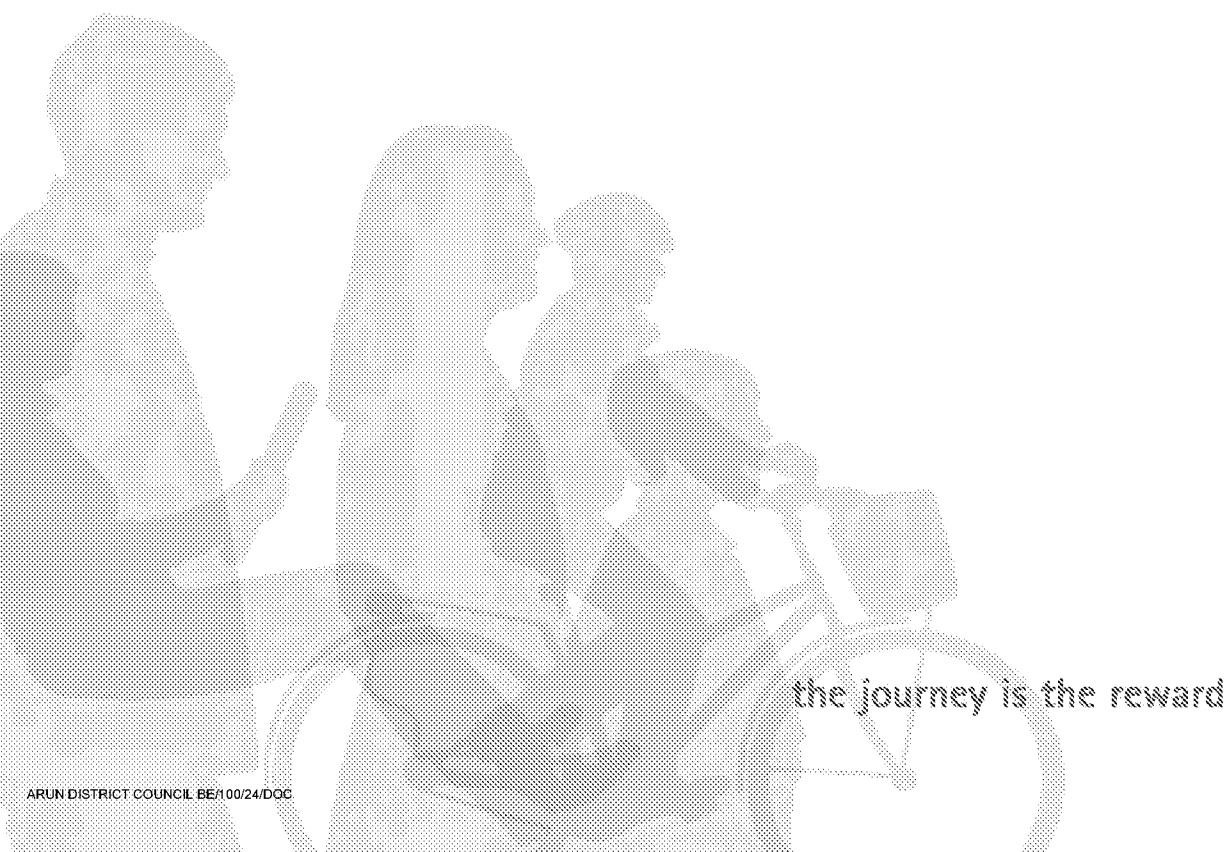




LIDL GREAT BRITAIN LTD
OLDLANDS FARM
BOGNOR REGIS

SURFACE WATER DRAINAGE,
CONDITION 6 RE-SUBMISSION

OCTOBER 2024



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OLDLANDS FARM
BOGNOR REGIS**

**SURFACE WATER DRAINAGE,
CONDITION 6 RE-SUBMISSION**

OCTOBER 2024

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Prepared by:	SF
Approved by:	PA
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Mayer Brown Limited, Lion House, Oriental Road, Woking, Surrey GU22 8AR



**Lidl Great Britain Ltd
Oldlands Farm
Bognor Regis
Surface Water Drainage, Condition 6 Re-Submission**

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1 Introduction

- 1.1 Mayer Brown Ltd (MBL) have been commissioned by Lidl Great Britain Ltd to compile this drainage report to accompany a 2nd re-submission to discharge planning condition 6 at their recently completed new store at Oldlands Farm in Bognor Regis.

Planning Background

Condition 6 – Surface Water Drainage Design

- 1.2 The new store obtained planning permission from Arun District Council in March 2020 under planning reference **BE/126/19/PL**. Contained within this decision notice is a pre-commencement **Condition 6** that relates to the surface water drainage design and reads as follows:

Condition 6

Development shall not commence, other than works of site survey and investigation, until full details of the proposed surface water drainage scheme have been submitted to and approved in writing by the Local Planning Authority. The design should follow the hierarchy of preference for different types of surface water drainage disposal systems as set out in Approved Document H of the Building Regulations, and the recommendations of the SuDS Manual produced by CIRIA. Winter groundwater monitoring to establish highest annual ground water levels. No building / No part of the extended building shall be occupied until the complete surface water drainage system serving the property has been implemented in accordance with the agreed details and the details so agreed shall be maintained in good working order in perpetuity

Reason: To ensure that the proposed development is satisfactorily drained in accordance with policies W SP1, W DM1, W DM2 and W DM3 of the Arun Local Plan. This is required to be a pre commencement condition because it is necessary to implement the surface water drainage system prior to commencing any building works.

- 1.3 Ramboll Consulting Engineers subsequently compiled a package of information to discharge most of the drainage related planning conditions under Arun planning reference **BE/70/20/DOC**.

- 1.4 The full submission can be viewed on the Arun DC planning portal under planning reference BE/70/20/DOC. The conditions that were discharged are as follows:
- ※ Condition 6 – Surface Water Drainage Design. The Ramboll design was considered acceptable and the decision notice and general arrangement plan is contained in Appendix A.
 - ※ Condition 7 – Discharge to Watercourses. The method and rate of discharge of 3.7 litres/second into and adjacent watercourse was considered acceptable and the decision notice is contained in appendix J.
 - ※ Condition 8 – maintenance and Management. The Ramboll Maintenance and Management report was considered acceptable and the decision notice report are contained in Appendix I.
 - ※ Condition 12 – Foul Water Drainage. The Ramboll design was considered acceptable and the decision notice and general arrangement plan is contained in Appendix A.
- 1.5 The new store and drainage system was subsequently constructed mostly in accordance with the approved Ramboll scheme. However, there are a few areas where the as-built drainage network is different to the planning approved design, hence the reason for re-discharging planning condition 6. This is discussed in more detail below and within the report.
- Drainage Verification Report and DOC10 Submission (February 2022)*
- 1.6 MBL were commissioned to compile a drainage verification report to discharge the only remaining drainage planning condition 10 and carried out a comparison between the Ramboll planning approved drainage strategy and the as-built drainage. The purpose was to confirm the scheme was constructed in accordance with the approved drawings and is fit for purpose, which would then enable the planning condition 10 to be discharged.
- 1.7 Having completed the comparison it was ascertained one of the planning approved design principles had changed. In the approved design all surface water remained below the surface. However, in the as-built design the northern section of the customer car park is to be used for attenuation purposes. The simulated flood depth in the customer carpark could reach up to 410mm for the critical 1in100yr+40% climate change storm event.
- 1.8 Lidl (the Applicant) accepted this flooding would have a negligible operational impact on the store because it would occur in an area that is remote from the main vehicular access and the store building. Therefore, a MBL verification report was submitted to Arun DC in

February 2022 to discharge planning condition 10 under planning reference **BE/13/22/DOC**.

- 1.9 Arun DC Engineering Services (AES) reviewed the submission and did not consider a simulated flood depth of up to 410mm in the car park to be acceptable. Their response is contained in Appendix C of this report. They requested the design to be amended so surface flooding is reduced and kept to moderate depths only. (CIRIA C635 car park flooding should be kept to an absolute maximum of 200mm). There were other minor comments from AES that are also addressed in this report.
- 1.10 AES also suggested the applicant **re-discharge** the surface water drainage design **condition 6**.
- 1.11 There is no need to re-discharge condition 7 because the method/location of discharge has not changed and rate of discharge has not increased.
- 1.12 There is no need to re-discharge condition 8 because maintenance and management requirement are almost identical. The only change is in relation to access to and maintenance of the detention basin, but this is covered in this report under condition 6.

Refused Re-submission to Discharge Condition 6 (Jan 2023 – April 2024)

- 1.13 MBL amended the drainage design so the flooding in the car park is reduced significantly (almost removed entirely). A new report, accompanying details and calculations were submitted to re-discharge Condition 6. This was refused and the timeline and reason for refusal is set out below.
- ❖ 30th January 2023: a revised DOC report, drainage plan and calculations were provided to Arun Planning team, which was uploaded onto the planning portal on 10th May 2023.
 - ❖ 28th July 2023: AES responded with comments that were relayed to the Applicant by the Planning Officer. The applicant responded to the comments on 1st August.
 - ❖ 10th August 2023: AES responded with more comments that were relayed to the Applicant by the Planning Officer. The applicant responded to the comments on 28th August with a full response.
 - ❖ AES responded circa 7 months later with more comments in March 2024. These comments were not relayed to the Applicant. The Applicant therefore was unaware that comments needed to be answered/addressed.
 - ❖ 16th April 2024 the application was refused and the reason for refusal is as follows:
“ADC Drainage Engineers have reviewed the application three times under this

application, and whilst some matters have been addressed some issues remain outstanding. The applicant has been provided the opportunity to address the remaining matters, however has not responded. Drainage Engineers therefore do not support the approval of this condition, and as such the application is refused

1.14 There are two AES comments posted in March 2024 that the Applicant did not have an opportunity to respond to. Both relate to access and maintenance. These comments are in the AES comment tracker in appendix C and are as follows:

- ✦ *Please provide a method statement explaining how the maintenance of the attenuation basin will take place. It should contain how the liner will be maintained/replaced, how the basin will be desilted and reprofiled. Also please update drawing 3025 – “Pond Cross Section” to show that the boundary fence will be easily demountable (ie. removable panels) to allow access through the perimeter.*
- ✦ *The maintenance strategy was contained on report “drainage and SUDS operation & maintenance strategy” by Ramboll 2020 not at the previously referenced document. This was uploaded in the portal in September 2023. Due to the lack of a 3m maintenance strip, we require a more detailed description of the maintenance of the pond. Please provide a method statement as part of the maintenance strategy.*

Re-submission to Discharge of Condition 6 (October 2024)

1.15 This re-submission report is almost identical to the 1st re-submission because the design has not changed. The only additional information relates to maintenance and access that is sufficient to answer/satisfy the final set of comments received by AES. These AES comments have been addressed in Section 5 of this revised report.

1.16 It is important to note/reiterate the store and drainage network has already been constructed and has followed almost all the design principles established in the previously approved Ramboll scheme (originally discharged condition 6). The only amendment to the design principles is the increased footprint of the existing detention basin. Hence the reason for comparing the approved and as-built schemes in sections 2 and 3 of this report, which is to prove the as-built system is not a complete departure from the approved design.

2 Planning Approved Surface Water Strategy

- 2.1 This section provides an overview of the planning approved surface water strategy contained in **Appendix A**. The full submission to discharge planning condition 6 can be viewed on the Arun DC planning portal under planning reference BE/70/20/DOC.

Approved Strategy

Outfall Location

- 2.2 The new store will have a single outfall into the existing Oldlands Farm ditch approximately 140 metres to the north-east of the new store.

Peak Discharge Rate (Condition 7)

- 2.3 Source control will be used in the form of a detention basin pond and hydro-brake to manage the flow discharging to Oldlands Farm ditch so that the drainage system replicates the natural drainage regime as closely as possible, thus reducing the impact on receiving watercourses.

- 2.4 The maximum discharge rate from impermeable areas shall be limited to **3.7 litres/second** as calculated from the ICP SuDS mean annual flood flow rate equation.

Attenuation & Flow Controls

- 2.5 The detention basin has been designed as a dry landscape feature that will attenuate most of the surface water for all storm events up to and including for the 1 in 100 year + 40% climate change event. The detention basin area, depth and side slopes and associated attenuation volume are all shown the approved drainage plan. The design **Top Water Level (TWL)** in the detention basin is **2.51m AOD**.

- 2.6 There is approximately 140 metres of 600mm diameter oversized pipe between the detention basin and the hydro-brake manhole that provides approximately 40m³ of attenuation.

- 2.7 There are two flow controls on the network:

- ✦ There is a 75mm orifice plate specified in the manhole immediately downstream of the detention basin, which slows the rate of surface water leaving the basin into the downstream 600mm oversized pipe.
- ✦ There is a final hydro-brake manhole approximately 140 metres to the north-west restricting the final discharge to 3.7 litres/second.

Surface Water Network

- 2.8 The surface water drainage network will consist of trapped gullies, linear drains and underground pipes that will direct flow towards the detention basin where flow will then be conveyed to Oldlands Farm ditch at the restricted flow rate of 3.7 litres/second.
- 2.9 The approved plans show oversized 600mm diameter pipes flowing into and out of the detention basin, running approximately 140 metres to the hydro-brake chamber before finally discharging into Oldlands Farm ditch via a 150mm outfall.
- 2.10 The approved plans show the roof drainage is split so it drains evenly towards the back and front of the store building.

Water Quality

- 2.11 A fuel separator will be used to treat contaminants picked up within surface water runoff from the car park and vehicle circulation areas. This is in conjunction with trapped gulleys, catchpits and the detention basin provide sufficient surface water treatment before discharging to a watercourse.

Surcharged Outfall

- 2.12 The micro drainage calculations in the planning approved scheme were modelled with a surcharged outfall. A surcharged outfall assumes the receiving watercourse is flooded and the outfall is under water, therefore making it more difficult for the on-site drainage network to empty. The surcharged water level in the calculation is 1.0m AOD.

Proposed Levels

- 2.1 The new store finished floor level is at 3.0m AOD, the ground level at the detention basin is 2.83m AOD.
- 2.2 The car park falls away from the store towards the north-western boundary where the levels range from 3.05m AOD to 2.83m AOD.

3 As-built Surface Water Drainage

- 3.1 The new store and associated surface water drainage have been constructed by Adston Construction (AD - Main Contractor), who were commissioned by Lidl GB under a design and built contract.
- 3.2 AD appointed SDS Design Engineers (SDS) as their Consulting Engineers to progress the planning approved drawings into a civil, drainage and structural package of information so the new store could be constructed. Included in their design is the progression of the planning approved Ramboll surface water strategy.
- 3.3 Adston Construction implement the SDS design and the resulting as-built surface water drainage plan is contained in Appendix B.
- 3.4 This section provides a review of the as-built surface water drainage network and how it compares to the planning approved drainage network described in section 2 of this report. The planning approved drainage network is referred to as the “approved scheme”.

As-built Surface Water Drainage

Outfall Location

- 3.5 The as-built design has a single outfall into the existing Oldlands Farm ditch approximately 140 metres to the north-east of the new store, which matches the approved scheme.

Peak Discharge Rate (Condition 7)

- 3.6 The as-built design has a maximum discharge rate of 3.7 litres/second, which matches the approved scheme.

Attenuation & Flow Controls

- 3.7 The as-built detention basin area, depth and side slopes and associated attenuation volume all match the approved scheme.
- 3.8 The 600mm diameter oversized pipe between the detention basin and the hydro-brake manhole is included in the as-built system, providing approximately 40m³ of storage.
- 3.9 There were two areas of additional attenuation designed into the as-built network:
- ✦ The delivery ramp. The bottom of the delivery ramp is at 1.8mAOD, which is 1.2 metres below the store finished floor level.

- » Customer Car Park. There is attenuation in the northern corner of the customer car park that is created by forming a 56 metre long berm set at a top level of 2.4m AOD. See paragraphs 3.16 to 3.19 below.

3.10 The two flow controls on the as-built network match the approved scheme.

- » A 75mm orifice plate is located the manhole immediately downstream of the detention basin.
- » A final hydro-brake manhole restricting the final discharge to 3.7 litres/second is located just upstream of the final outfall.

Surface Water Network

3.11 The as-built network design follows the design principles set out in the approved scheme. However, the exact configuration of the drainage elements has been amended to suit the more accurate information that comes about while undertaking a detailed civils and drainage design. The differences are as follows:

- » The roof of the store falls towards the rear, whereas the approved scheme split its evenly between front and rear.
- » The proposed car park levels design has altered so the gully positions, pipe layouts and diameters upstream of the detention basin have been amended.
- » The as-built final outfall into Oldlands Farm ditch is 150mm higher than the approved scheme, which has amended the final levels and gradients of the 600mm pipes downstream of the basin. This makes negligible difference to how the overall network operates.

3.12 Although the pipe runs do not exactly match the approved scheme, the pipe configuration, diameters and gradients for the as-built design network **are acceptable**.

Water Quality

3.13 The as-built design has specified a fuel separator to treat contaminants picked up within surface water runoff from the car park and vehicle circulation areas. This works in conjunction with trapped gullies, catchpits and the detention basin to provide a sufficient surface water treatment train for discharge to a watercourse.

3.14 The above matches the approved scheme.

Surcharged Outfall

- 3.15 The micro drainage calculations that informed the as-built design have matched the approved scheme by modelling a surcharged outfall. The surcharged water level in the calculations is also 1.0m AOD.

As-built Levels & Modelled Top Water Level

- 3.16 The as-built store finished floor level and ground level at the detention basin match the planning approved layout.
- 3.17 The as-built car park also falls away from the store towards the north-west boundary, but the finished levels are lower than the approved scheme and range from 2.90m AOD to 1.99m AOD.
- 3.18 The northern corner of the car park with a level of 1.99m AOD is the lowest point of the store car park, which was constructed at this level to tie in with the existing ground level at the site boundary. This car park level is **840mm lower** than the car park design on the approved scheme.
- 3.19 This low point of in the as-built car park (1.99m AOD) is below the design Top Water Level of 2.51m AOD in the detention basin. To overcome this a 56 metre long berm was proposed on the perimeter of this section of the car park to ensure surface water run-off is contained on site. The maximum simulated flood depth in the car park worked out at 410mm for the critical 1in100yr storm including 40% climate change.
- 3.20 This approach of flooding the car park to such a large depth was not considered acceptable to Arun Engineering Services, as discussed in the introduced of this report. Their response is contained in Appendix C.
- 3.21 The following section 4.0 describes the solution that will reduce the flood volume and flood depth in the car park to an acceptable level..

4 Revised Re-submission Drainage Design

- 4.1 As discussed in the previous section, and introduction, the approach of flooding the car park to a potential depth of 410mm is not considered acceptable to Arun Engineering Services (AES). Their response is contained in Appendix C.
- 4.2 This section describes the solution that will reduce the flood volume and flood depth in the car park to an acceptable level.
- 4.3 The proposal is to increase the size of the already constructed detention basin as shown on the SDS drawing in Appendix E. The depth and bed level of the basin will remain unaltered but it will be widened at the base and the bed by approximately 3.3 metres around the outside perimeter. The side slope will remain as already constructed.
- 4.4 The existing basin was accurately surveyed in order to inform this revision, see Appendix F.
- 4.5 The increased size of the detention basin will add a significant volume of attenuation that will bring the top water level down in the entire system. The **new Top Water Level** in the system has been simulated at **1.983m AOD**, which is just below (7mm) the lowest point in the northern corner of the as-built car park at 1.99m AOD.

Revised Micro Drainage Calculations

- 4.6 A new micro drainage model has been created that accurately models the as-built drainage network plus the proposed larger detention basin. The pipes within the modelled network have been extended to include the lowest point in the car park. The micro drainage network and results are contained in Appendix H.
- 4.7 The pipe numbers for the micro drainage model are shown on the drainage catchment area plan in Appendix E.

Modelled Areas

- 4.8 We note that AES identified a discrepancy in the modelled impermeable areas between the approved calculations and the as-built calculations (There was a shortfall of approximately 0.138 hectares in the as-built calculations)
- 4.9 The new micro drainage model includes all the impermeable areas, plus the increased detention basin. The drainage catchment plan in Appendix D shows the breakdown of

modelled areas that adds up to 0.946 hectares. 0.946 hectares has also been fed into the modelled drainage network.

Modelled Results

- 4.10 The micro drainage simulation results for the model with the new attenuation tank are contained in Appendix H.
- 4.11 The allowable final discharge rate is quite low at 3.7 litres/second so the critical duration storm for establishing attenuation volume and the top water level in the system is the long duration 1440 minute storm (This was also the same for the planning approved scheme). The peak allowable rate of 3.7 litres/sec is not actually achieved because the top water level and associated design head to push water through the hydro-brake are now circa 450mm lower. The maximum outfall rate is now 3.2 litres/sec.
- 4.12 The simulated water level at the low point in the car park (when the detention basin is increased) for the 1400 minute duration storms are as follows:
- ✧ 1in100yr Storm: 1.614m AOD
 - ✧ 1in100yr+40%CC Storm: 1.983m AOD, discharge @ outfall: 3.2 litres/sec, Zero Flooding
- 4.13 The above simulated figures show the following:
- ✧ The drainage network will **not flood** for up to the 1in100year event when 40% climate change is added. The modelled critical water level is 7mm below the lowest point in the car park.

5 Detention Basin Access & Maintenance

5.1 It is important the detention basin can be safely/adequately maintained. Ramboll produced a drainage operation and maintenance report in September 2020 that has previously been approved to discharge planning condition 8. The Ramboll report and decision notice are contained in Appendix I

5.2 This Ramboll report is still relevant because it is still a detention basin in the same location with the same number/size of inlet/outlet headwalls with 1in2 embankments. It is just a larger footprint.

Easement Width

5.3 The proposed increased footprint of the basin moves the top of the bank closer to the external wall of the building and the public footpath. This means it is not a perfect 3m wide easement entirely within the site boundary so a slight relaxation is required.

5.4 There will be a 2.4m wide space adjacent the store and at the other side of the basin the 3m easement extends onto the public path. This has been **agreed in principle with Arun DC's Principal Drainage Engineer** (Paul Cann) for this instance only. Refer to Appendix C (1st Page).

5.5 The reduced easement width is not a factor when it comes regular and occasional maintenance as set out below.

Regular & Occasional Maintenance - Method Statement

5.6 This is a detention basin, not an attenuation pond, so when it is not raining or during prolonged periods of no rainfall the basin will not contain any water. Regular and occasional maintenance, as described in the already approved Ramboll maintenance report, will only be undertaken when it is dry.

5.7 The basin has a side slope of 1in2 (18 degrees - already approved) so it will not be possible to use ride on mowers or tractors so the vegetation will be safely cut back using a trimmer or hand mowers (or similar) using an experienced landscape maintenance company. Cuttings will be removed to ensure they will not block the downstream drainage.

5.8 There will be a perimeter fence around the edge of the basin. For regular or occasional maintenance ride on machinery or excavator will not be required to maintain the basin

from the sides. There will be a gate on the northern perimeter to allow access. Therefore, the fence will not need to be taken down when undertaking regular or occasional maintenance.

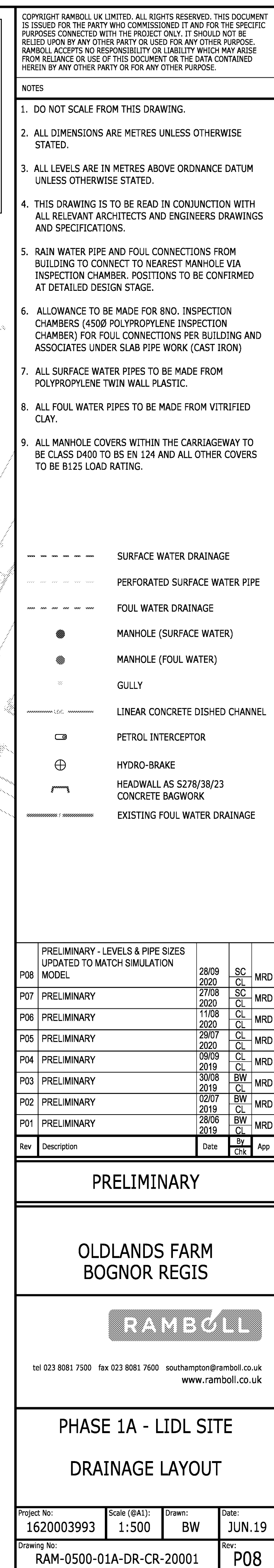
Remedial Actions & Reconstruction - Method Statement

- 5.9 The 1in2 embankments (already approved) are unsuitable for vehicular basin maintenance operations, but as set out above all regular and occasional maintenance will not require the use of a vehicle (ride on mower or excavator).
- 5.10 For major remedial or reconstruction works the reduced easement width and proximity to the store building reduces excavator accessibility along the northern boundary of the basin (ie. excavator use for desilting/reprofiling). This can be overcome because, if needed, an excavator can carry works from inside the basin.
- 5.11 Excavators should not be operated on a slope of greater than 35 degrees, which is considerably steeper than the 18 degree slope on a 1in2 embankment. Therefore, an excavator can safely access the bottom of the basin (when it is dry) and reconstruction, remedial or re-profiling works can be undertaken from inside the basin. If necessary it would be possible for the Contractor to create a temporary earth ramp into the basin, possibly for earth moving equipment when removing or depositing topsoil.
- 5.12 Replacing the liner would be a major undertaking because it is buried under 300mm of topsoil and it extends into an anchor trench at the top of the bank. To facilitate these works the fence and posts would need to be completely removed so a demountable fence is not appropriate in this instance. Therefore, the revised basin drawing in Appendix E has not been updated to show a demountable fence because it is not considered necessary.

6 Conclusion

- 6.1 Having completed a review of the as-built surface water drainage it is evident the design principles are the same as those agreed to discharge planning condition 6.
- 6.2 The only change to the originally approved design principles is to increase the size of the detention basin that removes the flooding to the northwest corner of the customer car park for the extreme rainfall event.
- 6.3 Although the car park levels have changed the as-built system plus the enlarged detention basin will ensure water will be contained within the surface water drainage network for all events up to and including the critical 100 year event plus 40% climate change.
- 6.4 The other changes in the as-built system such as the different configuration of pipes and gullies car park and slightly higher outfall into Oldlands Farms Ditch are minor changes resulting from the detailed design, as opposed to major changes to the design principles, and do not affect the overall suitability and safety of the drainage design.
- 6.5 The reduced easement width formed by the enlarged basin has been pre agreed in Arun DC and method statements have been added that adequately address this reduction.
- 6.6 Having completed this review it is MBL's recommendation that planning condition 6 can be re-discharged because the as-built drainage design and the proposed larger detention basin follow the design principles used to discharge planning condition 6 previously.
- 6.7 Taking into account the proposed amendments contained in this report, with accompanying plan and calculations, the surface water drainage system is fit for purpose because it will be safe for the lifetime of the store without increasing the risk of flooding to itself or downstream/surrounding properties.

APPENDIX A: Condition 6 Drainage Design & Decision Notice (2019 – 2020)





Arun District Council
Arun Civic Centre
Maltravers Road
Littlehampton
West Sussex BN17 5LF
Planning & Building Control General Enquiries
Tel: (01903) 737756 Fax: (01903) 730442
Dx: 57406 Littlehampton
Minicom: 01903 732765
e-mail: planning@arun.gov.uk
website: www.arun.gov.uk/planning

Lidl GB
Foxes Park
Brownhill Way
Nursling
SO16 0AW

Date: 16th October 2020

Please ask for: Raymond Cole
Tel: 01903 737598

Your Ref:

Our Ref: BE/70/20/DOC

Dear Mrs Burton,

Town & Country Planning Act 1990 (as amended)

Town and Country Planning (Development Management Procedure) (England) Order 2015

Application for details reserved by condition imposed under BE/126/19/PL relating to conditions 6-surface water drainage; 7-discharge of flows to watercourses or for the culverting, diversion, infilling or obstruction of any water course on our adjacent to site; 8-maintenance & management of surface water drainage system; 12-foul water & sewage disposal & 14-Construction Management Plan.

Land at Phase 1A Oldlands Farm Shripney Road Bognor Regis PO22 9NN

Notification regarding the above application:

Condition Number 6

Development shall not commence, other than works of site survey and investigation, until full details of the proposed surface water drainage scheme have been submitted to and approved in writing by the Local Planning Authority. The design should follow the hierarchy of preference for different types of surface water drainage disposal systems as set out in Approved Document H of the Building Regulations, and the recommendations of the SuDS Manual produced by CIRIA. Winter groundwater monitoring to establish highest annual ground water levels. No building / No part of the extended building shall be occupied until the complete surface water drainage system serving the property has been implemented in accordance with the agreed details and the details so agreed shall be maintained in good working order in perpetuity.

Reason: To ensure that the proposed development is satisfactorily drained in accordance with policies W SP1, W DM1, W DM2 and W DM3 of the Arun Local Plan. This is required to be a pre-commencement condition because it is necessary to implement the surface water drainage system prior to commencing any building works.

Decision:

Arun District Council have decided to **APPROVE details reserved by this condition**

This condition is discharged in so far as it relates to:

Drainage Strategy 3993-H-RP-1A-0500-201 Rev P03

Attenuation Pond Detail 1620003993-RAM-0500-01A-D-CR-20101-P04
Drainage Standard Details 1620003993-RAM-0500-01A-D-CR-20102-P02
Drainage Standard Details 1620003993-RAM-0500-01A-D-CR-20103-P01
Drainage Layout 1620003993-RAM-0500-01A-DR-CR-20001-P08
Drainage Catchment Layout 1620003993-RAM-0500-01A-DR-CR-20002-P04
MD Simulation Oldlands Farm 29.09.20
Drainage and SUDS Operation & Maintenance Strategy 1620010196-RAM-H-RP-1A-0500-002 Rev
P03
Drainage Gully A - Pre-Cast Concrete S278-38-11 Rev D
Drainage Type B Catchpit S278-38-13 Rev E
Vortex Flow Control Type B Manhole S278-38-14 Rev C
Headwall Detail for pipe sizes up to 600 diam Concrete Bagwork S278-38-23 Rev A
Drainage Pipe Bedding Details S278-38-33 Rev A

Please do not hesitate to contact the above officer if you require any further assistance.

Yours sincerely



Neil Crowther
Group Head of Planning



Arun District Council
Arun Civic Centre
Maltravers Road
Littlehampton
West Sussex BN17 5LF
Planning & Building Control General Enquiries
Tel: (01903) 737756 Fax: (01903) 730442
Dx: 57406 Littlehampton
Minicom: 01903 732765
e-mail: planning@arun.gov.uk
website: www.arun.gov.uk/planning

Lidl GB
Foxes Park
Brownhill Way
Nursling
SO16 0AW

Date: 16th October 2020

Please ask for: Raymond Cole
Tel: 01903 737598

Your Ref:

Our Ref: BE/70/20/DOC

Dear Mrs Burton,

Town & Country Planning Act 1990 (as amended)

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Land at Phase 1A Oldlands Farm Shripney Road Bognor Regis PO22 9NN

Notification regarding the above application:

Condition Number 12

Construction of the development shall not commence until details of the proposed means of foul water & sewerage disposal have been submitted to, and approved in writing by, the Local Planning Authority in consultation with Southern Water

Reason: To prevent development from contributing to or being put at unacceptable risk from or being adversely affected by unacceptable levels of water pollution in accordance with the NPPF, and to prevent pollution of groundwater in accordance with Policy D DM1 of the Arun Local Plan.

Decision:

Arun District Council have decided to **APPROVE details reserved by this condition**

This condition is discharged in so far as it relates to:

Drainage Strategy 3993-H-RP-1A-0500-201 Rev P03

Drainage Layout 1620003993-RAM-0500-01A-DR-CR-20001-P08.

Please do not hesitate to contact the above officer if you require any further assistance.

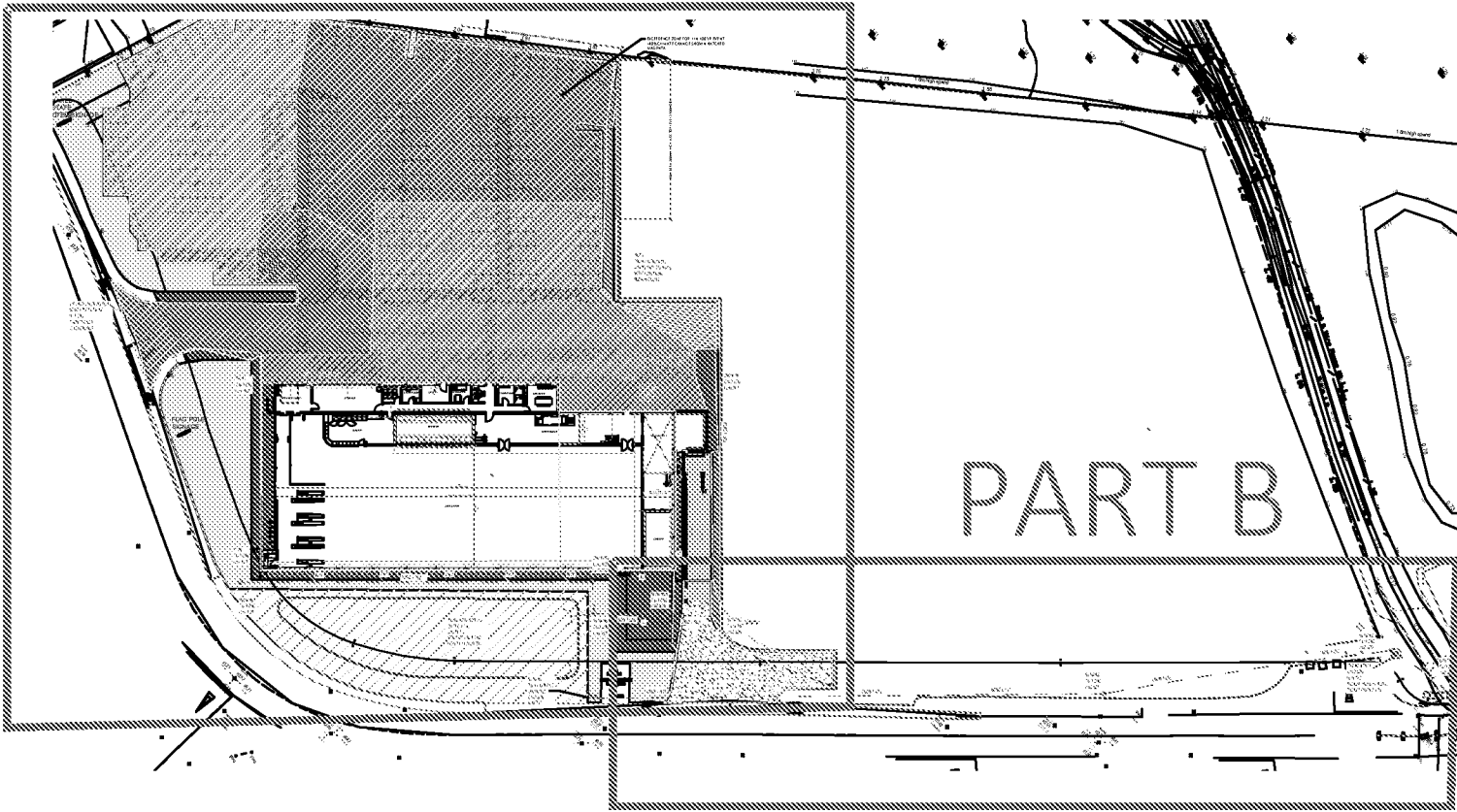
Yours sincerely



Handwritten signature of Neil Crowther, consisting of stylized initials 'NC' followed by a period.

Neil Crowther
Group Head of Planning

APPENDIX B: As Built Drainage & Levels Drawing



ISSUED	
SIGNED:	
on behalf of:	
Date:	
ACCEPTED	
Lidl PM:	
on behalf of:	
Date:	

LEGEND - PROPOSED SITE DRAINAGE	
ELEMENT	SHOWN AS
PROPOSED FOUL DRAINAGE EXTERNAL 150mm Ø	
PROPOSED FOUL DRAINAGE INTERNAL 100mm Ø	
EXISTING FOUL PUBLIC SEWER	
PROPOSED SW & FW FC RINGS MANHOLE	
PROPOSED SW DRAIN	
PROPOSED DRAINAGE CHANNEL	
PROPOSED LINEAR DRAIN	
PROPOSED SHALLOW CONSTRUCTION GULLY	
RAIN WATER PIPE	RWP
EXISTING MANHOLES (FOUL & SURFACE)	
EXISTING SURFACE WATER	
INSPECTION CHAMBER	
EXISTING FOUL SEWER	
ATTENUATION POND	

AS BUILT
DRAWING

[illegible]

SDS-UK (Structural Design Solutions) Ltd,
BRIDGE HOUSE, 25-27 THE BRIDGE,
WEALDSTONE, HARROW, HA3 5AB.

Tel: +353 (0)94-9034914 Fax: +353 (0)94-9034698
✉ info@structuraldesign.ie www/structuraldesign.ie

SDS SDS-UK (Structural Design Solutions) Ltd,

Client: **ADSTON CONSTRUCTION**

Project Title
**PROPOSED NEW LIDL FOODSTORE AT
OLDLANDS FARM,
STEYING WAY, BOGNOR REGIS, PO22 9NN**

Drawing Title: **SITE LAYOUT**
SURFACE WATER & FOUL DRAINAGE

Issue	1:250	Project Size	@ A1	Client	ASBUILT
Drawn By	JR	Checked	MM	Date	FEB 2021
Project No.	20144	Drawing No.	3021	Rev	AB2

APPENDIX C: Arun DC Correspondence

From: Sean Foley
To: Paul Cann
Cc: James Mitchell; Jessica Ross; Daniel Wheelwright; Paul Altham; Tom Cassidy; Sarah Burrow
Subject: RE: ENF/170/24 - Lidl, Bognor Regis, West Sussex (Easement on Detention Basin)
Date: 09 July 2024 13:56:36
Attachments: image005.png
image006.png
image007.png
image008.png
image009.png
image010.png
image011.png
image012.png
image013.png
image014.png
image015.png

Hi Paul,

Thanks, that is very helpful and gives us a lot of confidence now on the re-submission.

Kind Regards,

Sean Foley
[REDACTED]

From: Paul Cann <Paul.Cann@arun.gov.uk>
Sent: Tuesday, July 9, 2024 1:23 PM
To: Sean Foley [REDACTED]
Cc: James Mitchell [REDACTED]; Jessica Ross <Jessica.Ross@arun.gov.uk>; Daniel Wheelwright [REDACTED]; Paul Altham [REDACTED]; Tom Cassidy [REDACTED]; Sarah Burrow <sarahburrow@arun.gov.uk>
Subject: RE: ENF/170/24 - Lidl, Bognor Regis, West Sussex (Easement on Detention Basin)

Hi Sean

The principle of the 2.4m easement is acceptable in this instance only.

Please include this email in your submission, together with the method statement to reflect the fact that this bank is pretty much unusable for vehicular basin maintenance operations (ie. excavator use for desilting/reprofiling) due to its width/proximity of the building.

Regards

Paul Cann
Principal Drainage Engineer, Coastal Engineers and Flood Prevention

T: 01903 737819

E: paul.cann@arun.gov.uk

Arun District Council, Civic Centre, Maltravers Rd
Littlehampton, West Sussex, BN17 5LF
www.arun.gov.uk



-



From: Sean Foley <[REDACTED]>
Sent: Tuesday, July 9, 2024 12:54 PM
To: Paul Cann <Paul.Cann@arun.gov.uk>
Cc: James Mitchell <[REDACTED]>; Jessica Ross <[REDACTED]>; Daniel Wheelwright <[REDACTED]>; Paul Altham <[REDACTED]>; Tom Cassidy <[REDACTED]>; Sarah Burrow <[REDACTED]>
Subject: RE: ENF/170/24 - Lidl, Bognor Regis, West Sussex (Easement on Detention Basin)

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Hi Paul,

The problem is that your consultants recommended refusal on the previous DOC re-submission, when the only outstanding item was the agreement (or lack of) of an 3m wide easement

Hence the reason for trying to get ahead of this before we re-submit for a 2nd time.

It is not a perfect 3m wide easement entirely within our boundary, so we require a slight relaxation. As explained below it is 2.4m wide adjacent the store and at the other side of the basin the 3m easement extends onto the public path.

All we would like from you please is an “**agreement in principle**” that the easement as shown on the drawing will be acceptable subject to adequate maintenance measures being in place. I don't expect you to review any documents or reports.

We can then make our resubmission knowing the easement width or location will not be a problem.

I look forward to your response

Kind Regards,

Sean Foley
[REDACTED]

From: Paul Cann <Paul.Cann@arun.gov.uk>
Sent: Tuesday, July 9, 2024 9:59 AM
To: Sean Foley <[REDACTED]>
Cc: James Mitchell <[REDACTED]>; Jessica Ross <[REDACTED]>; Daniel Wheelwright <[REDACTED]>; Paul Altham <[REDACTED]>; Tom Cassidy <[REDACTED]>; Sarah Burrow <[REDACTED]>
Subject: Re: ENF/170/24 - Lidl, Bognor Regis, West Sussex (Easement on Detention Basin)

Hi Sean

The documents would need to be reviewed by our consultants and this will be done as part of your DOC resubmission.

Unfortunately, we do not currently have the resources to review outside of that process.

I would suggest that any method statement considers the need to re-profile and desilt the basin in the future. I appreciate that this will be a non regular event but needs to be accounted for. I would imagine that the contractor would create a temporary earth ramp into the basin to allow ease of access for machinery, due to the current bank slopes. This will all need to be detailed in the documents.

Regards

Paul Cann
Principal Drainage Engineer
01903 737819

From: Sean Foley <[REDACTED]>
Sent: Monday, July 8, 2024 7:23 PM
To: Paul Cann <Paul.Cann@arun.gov.uk>
Cc: James Mitchell <[REDACTED]>; Jessica Ross <[REDACTED]>
Daniel Wheelwright <[REDACTED]>; Paul Altham <[REDACTED]>;
[REDACTED]; Tom Cassidy <[REDACTED]> Sarah Burrow <[REDACTED]>
Subject: RE: ENF/170/24 - Lidl, Bognor Regis, West Sussex (Easement on Detention Basin)

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Hi Paul,

Many thanks for coming back to us so quickly, most appreciated.

We agree it is important the detention basin can be safely/adequately maintained. Ramboll produced the attached drainage operation and maintenance report in September 2020 that has previously been approved. This is still relevant because it is still a detention basin in the same location with the same number/size of inlet/outlet headwalls. It is just a larger footprint.

We'd like to emphasise it is a detention basin and not an attenuation pond, so when it is not raining or during prolonged periods of no rainfall the basin will not contain any water. Regular maintenance, as described in the already approved Ramboll maintenance report, will only be undertaken when it is dry. The basin has a side slope of 1in2 (already approved) so it will not be possible to use ride on mowers or tractors and the vegetation will be safely cut back using a strimmer (or similar) using an experienced landscape maintenance company. Cuttings will be removed to ensure they will not block the downstream drainage. There will be a perimeter fence around the edge of the basin. This fence will not be taken down when undertaking routine maintenance and there will be access gate on the northern perimeter. Machinery will not be used to maintain the basin from the side.

The only reason for maintenance access during a storm event, when water is in the basin, is if there is a blockage at the 75mm orifice SWMH07 (see image below). There is a 450mm pipe flowing from the basin

Subject: RE: ENF/170/24 - Lidl, Bognor Regis, West Sussex (Easement on Detention Basin)

Hi Sean

I note the constraints. The important thing will be to fully detail how the basin will be maintained in the future bearing in mind the reduced access width. This supporting document will need to take the form of a method statement.

Regards

Paul Cann

Principal Drainage Engineer, Coastal Engineers and Flood Prevention

T: 01903 737819

E: paul.cann@arun.gov.uk

Arun District Council, Civic Centre, Maltravers Rd
Littlehampton, West Sussex, BN17 5LF
www.arun.gov.uk



From: Sean Foley <[REDACTED]>

Sent: Friday, July 5, 2024 5:19 PM

To: Paul Cann <Paul.Cann@arun.gov.uk>

Cc: James Mitchell <[REDACTED]>; Jessica Ross <[REDACTED]>; Daniel Wheelwright <[REDACTED]>; Paul Altham <[REDACTED]>; Tom Cassidy <[REDACTED]>

Subject: FW: ENF/170/24 - Lidl, Bognor Regis, West Sussex (Easement on Detention Basin)

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Hi Paul,

I hope you are keeping well. I'd be grateful if we could make a technical request to assist with the re-discharge of drainage condition 6 on the recently constructed Lidl store at Bognor Regis. The request is to pre-agree an easement (under 3 metres) around the perimeter of a proposed increased detention basin at the store.

The original planning condition 6 was discharged in October 2020 and the store has been constructed and is operating. However, while undertaking the verification report (to discharge condition 11) we established

the already constructed detention basin needs to be increased in volume. Increasing the size of the basin means we need to re-discharge the original planning condition 6.

We made a re-submission last year and it was refused because we did not provide/show a 3m easement around the perimeter of the basin. All other questions/queries were answered satisfactorily. We're on the verge re-submitting to re-discharge condition 6 and this time we will show an easement around the perimeter of the large basin.

The reason for this E-mail is because we cannot achieve the full 3m easement around the perimeter, plus some of the easement is on the footpath of the public. We can't achieve the full 3m easement because there simply not enough space within the site boundary. (we're making it larger)

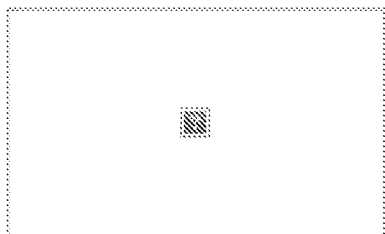
The attached drawing shows the proposed easement in yellow around the perimeter. It is 2.4m wide along adjacent the store and the other side of the basin the 3m easement extends onto the public path.

It could be great if you could confirm this will be acceptable prior to use re-submitting the application. It will then hopefully sail though the new application we hope to submit next week

Happy to discuss and I look forward to your response.

Kind Regards,

Sean Foley
Principal Engineer
Mayer Brown Ltd



Sean Foley
Principal Engineer, Mayer Brown Limited



Mind and Woking Foodbank are Mayer Brown's chosen charities



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From: James Mitchell <[REDACTED]>

Sent: Friday, July 5, 2024 12:55 PM

To: Jessica Ross <[REDACTED]>; Daniel Wheelwright <[REDACTED]>

Cc: Sean Foley <[REDACTED]>

Subject: RE: ENF/170/24 - Lidl, Bognor Regis, West Sussex

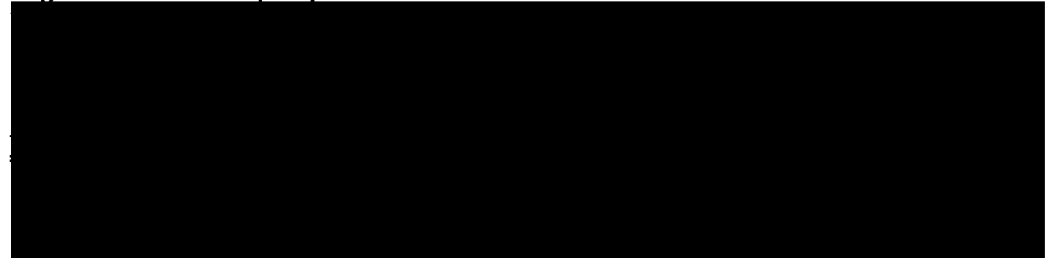
Hi Jessica,

Apologies for the delay, I am just finalising with land owner and drainage engineer we will have something to you shortly.



Kind Regards

James Mitchell
Regional Head of Property



From: Jessica Ross <jessica.ross@arun.gov.uk>
Sent: Friday, July 5, 2024 12:49 PM
To: James Mitchell <james.mitchell@lidl.co.uk>; Daniel Wheelwright <daniel.wheelwright@arun.gov.uk>
Subject: RE: ENF/170/24 - Lidl, Bognor Regis, West Sussex

You don't often get email from jessica.ross@arun.gov.uk. [Learn why this is important](#)

Good Afternoon James and Daniel,

I am just following up on my previous email to see if there are any further updates regarding the outstanding DOC application for conditions 6, 7, and 10 under reference BE/126/19/PL?

I look forward to hearing from you.

Kind Regards

Jessica Ross
Compliance Officer, Planning

T: 01903 737545
E: jessica.ross@arun.gov.uk

Arun District Council, Civic Centre, Maltravers Rd
Littlehampton, West Sussex, BN17 5LF
www.arun.gov.uk





From: Jessica Ross

Sent: Wednesday, May 22, 2024 10:58 AM

To: James Mitchell <[REDACTED]>; Daniel Wheelwright

[REDACTED] Sussex

Good Morning James and Daniel,

I hope you are both well.

I would like to introduce myself as the Compliance Officer who has been assigned the enforcement case regarding the drainage concerns through the breach of conditions 6, 7, and 10 under reference BE/126/19/PL.

Jessica Riches has kindly provided further information regarding your recent correspondence, and I understand that there have been some communication issues about the previous refusal.

I am also aware that we are awaiting the submission of a new discharge of conditions application for the outstanding concerns. If any assistance is required with application, please do not hesitate to contact me.

Kind Regards

Jessica Ross
Compliance Officer, Planning

T: 01903 737545

E: jessica.ross@arun.gov.uk

Arun District Council, Civic Centre, Maltravers Rd
Littlehampton, West Sussex, BN17 5LF
www.arun.gov.uk





<https://www.arun.gov.uk>

DX 57406 Littlehampton

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Arun Civic Centre
Maltravers Road
Littlehampton
West Sussex BN17 5LF
Planning & Building Control General Enquiries
Tel: (01903) 737756 Fax: (01903) 730442
Dx: 57406 Littlehampton
Minicom: 01903 732765
e-mail: planning@arun.gov.uk
website: www.arun.gov.uk/planning

Rapleys
York House
York St
Manchester
M2 3BB

Date: 16th April 2024

Please ask for: Jessica Riches
Tel: 01903 737852

Your Ref:

Our Ref: BE/95/22/DOC

Dear Mr Kettleborough,

Town & Country Planning Act 1990 (as amended)

Town and Country Planning (Development Management Procedure) (England) Order 2015

Approval of details reserved by condition imposed under ref BE/126/19/PL relating to Condition No 6 - surface water drainage.

Oldlands Farm Cottages Steyning Way Bersted PO22 9NN

Notification regarding the above application:

Condition Number 6

Development shall not commence, other than works of site survey and investigation, until full details of the proposed surface water drainage scheme have been submitted to and approved in writing by the Local Planning Authority. The design should follow the hierarchy of preference for different types of surface water drainage disposal systems as set out in Approved Document H of the Building Regulations, and the recommendations of the SuDS Manual produced by CIRIA. Winter groundwater monitoring to establish highest annual ground water levels. No building / No part of the extended building shall be occupied until the complete surface water drainage system serving the property has been implemented in accordance with the agreed details and the details so agreed shall be maintained in good working order in perpetuity.

Reason: To ensure that the proposed development is satisfactorily drained in accordance with policies W SP1, W DM1, W DM2 and W DM3 of the Arun Local Plan. This is required to be a pre-commencement condition because it is necessary to implement the surface water drainage system prior to commencing any building works.

Decision:

Arun District Council have decided to **REFUSE details reserved by condition for the following reasons:**

This application seeks to discharge condition 6 in relation to surface water drainage. The condition was originally discharge in full under application BE/70/20/DOC, however the submission of as-built drawings under planning reference BE/126/19/PL identified that the scheme was not built in accordance with those approved plans. Therefore this application seeks to re-discharge the condition

with a new Surface Water Scheme.

ADC Drainage Engineers have reviewed the application three times under this application, and whilst some matters have been addressed some issues remain outstanding. The applicant has been provided the opportunity to address the remaining matters, however has not responded. Drainage Engineers therefore do not support the approval of this condition, and as such the application is refused.

Please do not hesitate to contact the above officer if you require any further assistance.

Yours sincerely

A handwritten signature in black ink, appearing to be 'NC' followed by a flourish and a period.

Neil Crowther
Group Head of Planning

Engineers Comments Regarding Surface Water Drainage

Application Reference:	BE/95/22/DOC	Reviewer Reference:	ADC/EXT3/GK
Planning Officer:	Jessica Riches	Date of Review:	19-02-2024
Site Name:	Oldlands Farm Cottages Steyning Way Bersted PO22 9NN		
Application Description:	BE/95/22/DOC Approval of details reserved by condition imposed under ref BE/126/19/PL relating to Condition No 6 - surface water drainage.		
Assessment Number:	3		

Policy and Guidance Information

Arun District Council Surface Water Drainage Guidance - <https://www.arun.gov.uk/surfacewater>

WSCC Policy for the Management of Surface Water-

https://www.westsussex.gov.uk/media/12230/ws_ifa_policy_for_management_of_surface_water.pdf

Land Drainage Consent - <https://www.arun.gov.uk/land-drainage-consent/>

Arun District Council surface water pre-commencement conditions -

<https://www.arun.gov.uk/planning-pre-commencement-conditions>

Response

Condition 6: **Further information required**

Critical Items for Surface Water Drainage Design Conditions

This review focuses on the study of several reports, drawings and emails which attempt to discharge condition 6 (ref: BE/95/22/DOC). These documents are listed below:

- "Surface water drainage, condition 6", January 2023 by Mayer Brown.
- Drawing "Pond Cross Section", December 2022 by Adston Construction.
- "Oldlands Farm Phase 1A, LIDL Site, Bognor Regis, Drainage Strategy", July 2019 by Ramboll.
- "Oldlands Farm Phase 1A (LIDL Site) Drainage and SuDS Operation & Maintenance Strategy", July 2020 by Ramboll.
- Email from Sean Foley, dated 25 August 2023 10:36, titled: "BE/95/22/DOC – Re-discharge of Drainage Condition – Lidl, Oldlands Farm (Response to Drainage Engineers – 28 July 23)

Upon reviewing the information package submitted the scheme appears not to have provided enough detail. We would recommend that the following critical item is required. Please refer to document "BE-95-22-DOC Oldlands Farm Cottages - Comment Tracker 08.03.24" for further details.

Critical Item	Reason	Status
Plans	A 3m easement must be provided from all watercourses and open SuDS features for maintenance purposes. This easement must be clearly shown on all plans.	Insufficient

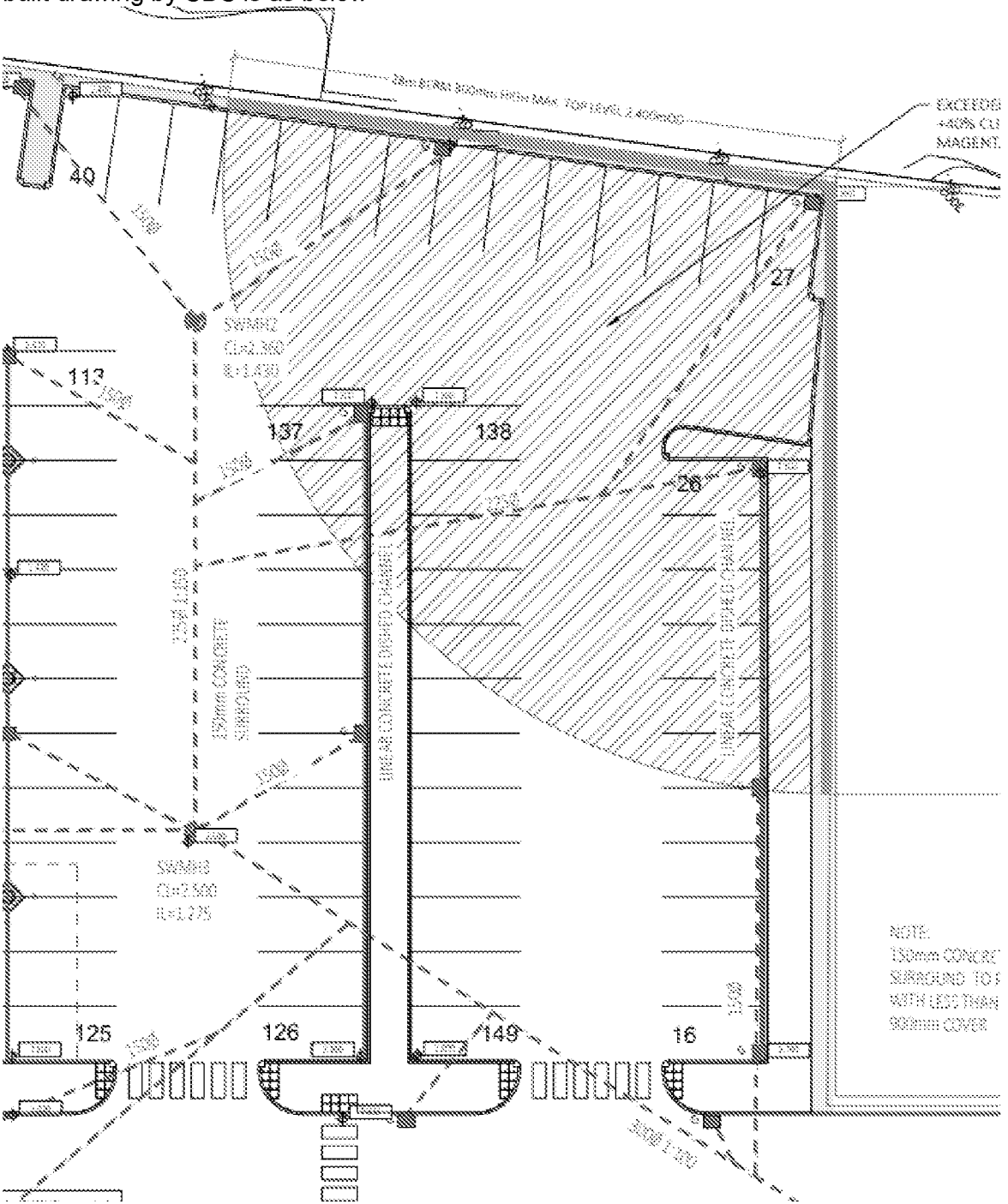
Additional comments to the planning officer

It is recommended that the applicant has not been responded satisfactory to the comment tracker that has been previously produced in response to this discharge of conditions application alongside the Arun District Council and West Sussex LLFA Policy for the management of surface water. We therefore not recommend the approval of reserved by condition imposed under ref BE/126/19/PL relating to Condition No 6 - surface water drainage.

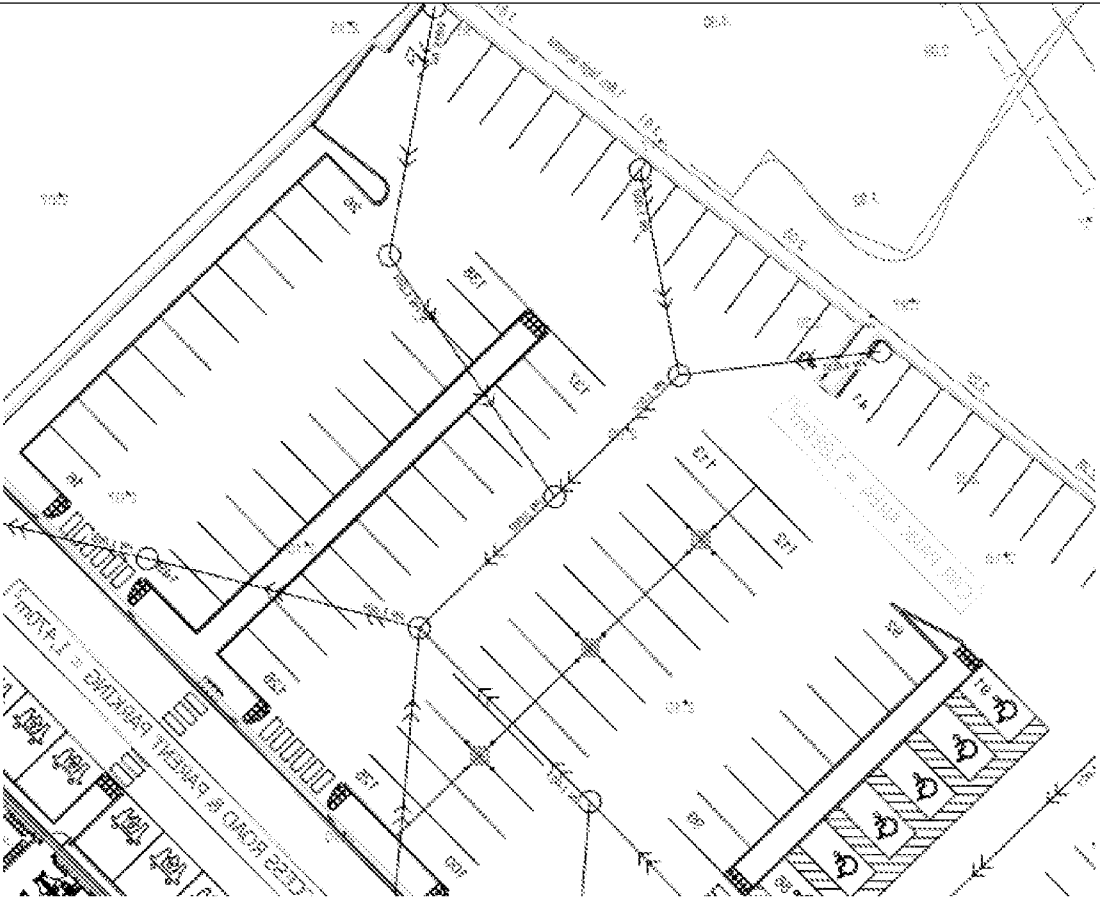
Application Reference: BE/95/22/DOC Site Name: LIDL GREAT BRITAIN LTD OLDLANDS FARM BOGNOR REGIS SURFACE WATER DRAINAGE, CONDITION 6	Initial Issue Date: Issue Date: 08/03/2024 Reviewer Reference: ADC/EXT3/GK
---	--

Summary and Recommendation:

	ADC Drainage Comments	Designer Response	ADC Response	Designer Response	ADC Response
Date	17 January 2023	10 May 2023			08/03/2024
Condition Number: 6					
1.	Submission of cross sections of the storage tank. Arun DC typically require two cross sections of any SuDS feature, including storage tanks, to be provided. Currently only the datasheet is included within the appendix of the revised report. Please can you provide these cross sections.	Revised report "Surface Water Drainage, Condition 6 – January 2023" submitted.	The revised report does not include the two cross-sections; this should be provided. Also the section through the attenuation basin does not provide the required safe/buffer distance along the top of the detention basin. We require a 3m easement from the top of the bank of the attenuation basin (on all sides).	Response at email from Sean Foley dated: 25/08/23.	Please provide a method statement explain how the maintenance of the attenuation basin will take place. It should contain how the liner will be maintained/replaced, how the basin will be desilted and reprofiled. Also please update drawing '3025 – Pond Cross Section' to show that the boundary fence will be easily demountable (ie. removeable panels) to allow easy access through the perimeter.
2.	Buoyancy calculations should be provided for the storage tank.	Revised report "Surface Water Drainage, Condition 6 – January 2023" submitted.	The proposals show attenuation – detention basin	Response at email from Sean Foley dated: 25/08/23.	Agreed and closed.
3.	For consistency, as Condition 6 included maintenance, the maintenance strategy must be updated and resubmitted in accordance with the changes to the design.	Revised report "Surface Water Drainage, Condition 6 – January 2023" submitted.	This has not been provided	Response at email from Sean Foley dated: 25/08/23.	The maintenance strategy was contained on report 'Drainage and SUDS operation & maintenance strategy' by Ramboll 2020 not at the previously referenced document. This was uploaded in the portal in September 2023. Due to the lack of a 3m maintenance strip, we require a more detailed description of the maintenance of the pond. Please provide a method statement as part of the maintenance strategy.

	We are also concerned about silt entering the tank, as the basin is designed to backflow into the tank, and we therefore request additional details on how siltation of the tank will be prevented.	Revised report "Surface Water Drainage, Condition 6 – January 2023" submitted.	This was not provided Please provide construction details for catch pits/silt traps/petrol interceptors and control structures	Response at email from Sean Foley dated: 25/08/23.	Agreed and closed.
	Comments not affecting DOC The scheme and revised calculations were based on the now known to be erroneous CV 0.84, however, as these values were previously agreed this will not affect these DOC comments. We do however recommend that the site occupant is made aware of this, as it is expected that this may lead to more frequent flooding of the carpark than stipulated in the calculations of the revised report.				
6.	Further comments on the verification Report The drainage calculation provided in report Mayer Brown report ref LIDLBOGNOR.10-DTN, does not accurately model the as built drainage installations. The snip of the As-built drawing by SDS is as below 				

Compared to the snip of the simulated model as below:

	 Of note is that the lowest level as presented in the as-built information is 1.99mAOD, however the level used in the micro drainage is approximately 100mm higher than this level. Also the node for 5.001 is using a higher level than the as-built level. The correct level needs to be revised to prove that this area isn't flooding.				
	The micro drainage calculation presents a Tank storage structure at the upstream end of simulated pipe 7.000. This storage structure is not shown on the drawing. As shown in drawing MBSK220512, there is a linear channel at the upstream end of pipe 7.000 shown at the base of the ramp.				
	The Microdrainage should be reprinted to include all Critical Result for all return period What was presented				

From: Nicola Oktay on behalf of Planning.Responses
Sent: 12 March 2024 09:22
To: Planning Scanning
Subject: FW: Planning Re-Consultation on: BE/95/22/DOC
Attachments: BE-95-22-DOC Oldlands Farm Cottages - Comment Tracker 08.03.24.docx;
BE-95-22-DOC Oldlands Farm Cottages - Consultation Template 08.03.24.docx

Engineers response

Nikki Oktay
Planning Receptionist, Planning Department

T: 01903 737965
E: Nicola.Oktay@arun.gov.uk

Arun District Council, Civic Centre, Maltravers Rd
Littlehampton, West Sussex, BN17 5LF
www.arun.gov.uk

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<https://www1.arun.gov.uk/planning-application-finder>



From: Paul Cann <Paul.Cann@arun.gov.uk>
Sent: Monday, March 11, 2024 11:33 AM
To: Planning.Responses <Planning.Responses@arun.gov.uk>
Cc: Sarah Burrow <Sarah.Burrow@arun.gov.uk>; Karl McLaughlin <Karl.McLaughlin@arun.gov.uk>
Subject: RE: Planning Re-Consultation on: BE/95/22/DOC

Please find enclosed our external consultants response.

Regards

Paul Cann
Principal Drainage Engineer, Coastal Engineers and Flood Prevention

T: 01903 737819

E: paul.cann@arun.gov.uk

Arun District Council, Civic Centre, Maltravers Rd
Littlehampton, West Sussex, BN17 5LF
www.arun.gov.uk



From: Land Drainage <Land.Drainage@arun.gov.uk>
Sent: Friday, September 1, 2023 2:34 PM
To: Paul Cann <Paul.Cann@arun.gov.uk>
Subject: FW: Planning Re-Consultation on: BE/95/22/DOC

From: Planning.Responses <Planning.Responses@arun.gov.uk>
Sent: Friday, September 1, 2023 1:33:45 PM (UTC+00:00) Monrovia, Reykjavik
To: Land Drainage <Land.Drainage@arun.gov.uk>
Subject: Planning Re-Consultation on: BE/95/22/DOC

To: **Engineers (Drainage)**

NOTIFICATION FROM ARUN DISTRICT COUNCIL

TOWN AND COUNTRY PLANNING ACT 1990

Application No: BE/95/22/DOC
Registered: 18th August 2022
Site Address: Oldlands Farm Cottages Steyning Way Bersted PO22 9NN
Grid Reference: 494384 101415
Category: Discharge of Condi
Description of Works: Approval of details reserved by condition imposed under ref BE/126/19/PL relating to Condition No 6 - surface water drainage.

I am able to inform you that I have received an amendment to the above application dated 1st September 2023 relating to: Additional drainage plans and statements.

[Click here to view the plans and documents](#)

If you should wish to make further representations as a result of this amendment you should click the link below and then click on 'Enter comment'.

[Click here to make further comments](#)

Please make any further comment by **15th September 2023**.

Please be aware that any comments you may make will be available on our website so please do not insert personal details or signatures on your reply.

Yours sincerely

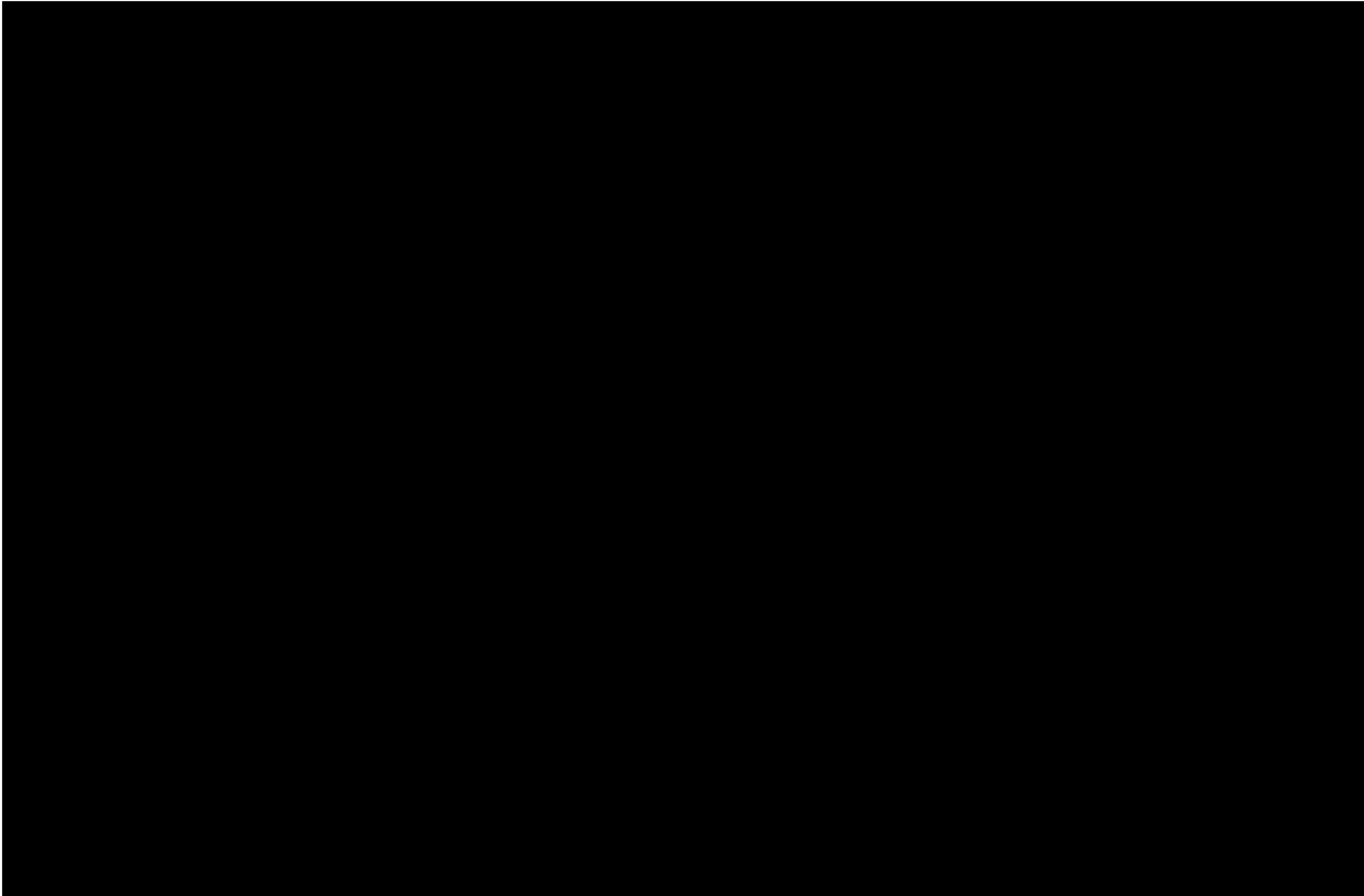
Jessica Riches

Planning Case Officer-Arun District Council

Telephone: 01903 737852

Email: jessica.riches@arun.gov.uk

PURECON_DOC (008) 0020



From: Laura Gibbons <Laura.Gibbons@arun.gov.uk>
Sent: 15 February 2022 11:52
To: Planning.Responses <Planning.Responses@arun.gov.uk>
Cc: David Easton <David.Easton@arun.gov.uk>
Subject: RE: Planning Consultation on: BE/13/22/DOC

Engineers Comments Regarding Condition 10

There are significant differences between design and construction, I suggest that the applicant will need to re discharge the surface water drainage design condition.

Our comments on the verification report and revised design are as follows:

1. Car park levels have been constructed nearly 1m lower than the approved design. Modelled surface water flood depths are over 400mm. As per CIRIA C635 car park flooding should be kept to an absolute maximum of 200mm. Furthermore, ADEPT guidance is clear that flooding over 300mm is not suitable in vehicular areas. We therefore request that the applicant re-designs and eventually re-constructs some areas to ensure that flooding is reduced and kept to moderate depths only, i.e. less than kerb level.
2. Calculated impermeable area for the revised design appears to be substantially less than the approved design. Please detail catchment areas on plan, and explain where this reduction in impermeable area has been achieved.
3. There are several inconsistencies between calculations and layout including the outfall, hydrobrake and pond.

4. With the level of information provided it is difficult to verify the storage volume modelled at the delivery ramp, greater levels information is required.
5. The verification report does not meet the requirements of this condition. Please see our verification condition guidance note which details the information which is required to discharge this condition, this document can be found here: <https://www.arun.gov.uk/drainage-planning-consultations>,

Given the unacceptable as constructed system we would recommend refusal of this application.

Kind regards,

Laura Gibbons

Drainage Engineer

Engineering Services

Please note that I work Tuesdays 08:00-16:00 for Arun only.



T: 01903 221374

E: laura.gibbons@arun.gov.uk

Arun District Council, Civic Centre, Maltravers Rd, Littlehampton, West Sussex, BN17 5LF

From: Planning.Responses <Planning.Responses@arun.gov.uk>

Sent: 11 February 2022 10:04

To: Land Drainage <Land.Drainage@arun.gov.uk>

Subject: Planning Consultation on: BE/13/22/DOC

To: **Engineers (Drainage)**

NOTIFICATION FROM ARUN DISTRICT COUNCIL

TOWN AND COUNTRY PLANNING ACT 1990

Application No: BE/13/22/DOC

Registered: 8th February 2022

Site Address: Oldlands Farm Cottages Steyning Way Bersted PO22 9NN

Description of Works: Approval of details reserved by condition imposed under BE/126/19/PL relating to condition 10-surface water drainage system.

The Council have received the above application to discharge conditions. I shall be pleased to receive any observations you may wish to make in respect of those conditions relating to your field of expertise.

[Click here to view the Discharge of Condition application](#)

[Click here to view conditions on original application - click on decision tab](#)

Should you wish to make any comments click on the link www.arun.gov.uk/planning and click into ?Enter Comment? or if this is not possible email your response to planning.responses@arun.gov.uk by **25th February 2022**.

Please be aware that any comments you may make will be available on our website so please do not insert personal details or signatures on your reply.

In the absence of a reply within the period stated, I shall assume that you have no observations to make.

Yours sincerely

Mr D Easton

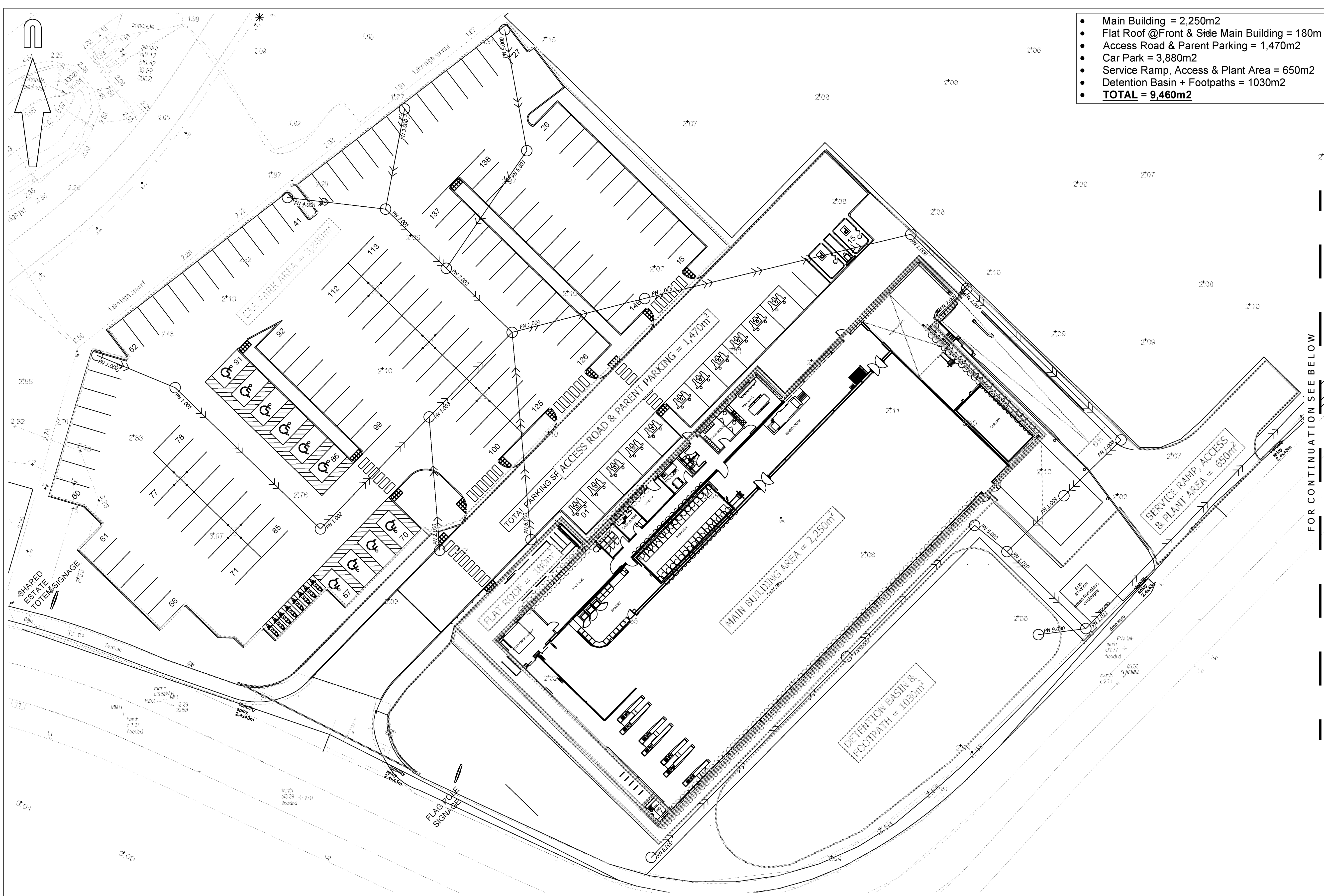
Planning Case Officer- Arun District Council

Telephone: 01903 737500 ex37361

Email: david.easton@arun.gov.uk

PLCOND00 (ODS) 2020

APPENDIX D: Drainage Catchment Areas



- Main Building = 2,250m²
- Flat Roof @Front & Side Main Building = 180m²
- Access Road & Parent Parking = 1,470m²
- Car Park = 3,880m²
- Service Ramp, Access & Plant Area = 650m²
- Detention Basin + Footpaths = 1030m²
- **TOTAL = 9,460m²**

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A1 ORIGINAL

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KEY:

- >—>—> SURFACE WATER NETWORK MODELED IN MICRODRAINAGE
- PN 1.007 MICRODRAINAGE PIPE NUMBER

FOR CONTINUATION SEE BELOW

FOR INFORMATION NOT FOR CONSTRUCTION

P2	Pond outline and area updated. PN 9.000 to PN 9.002 removed. (TC)	SF	20/01/2022
P1	Initial Issue. (TC)	SF	12/05/2022

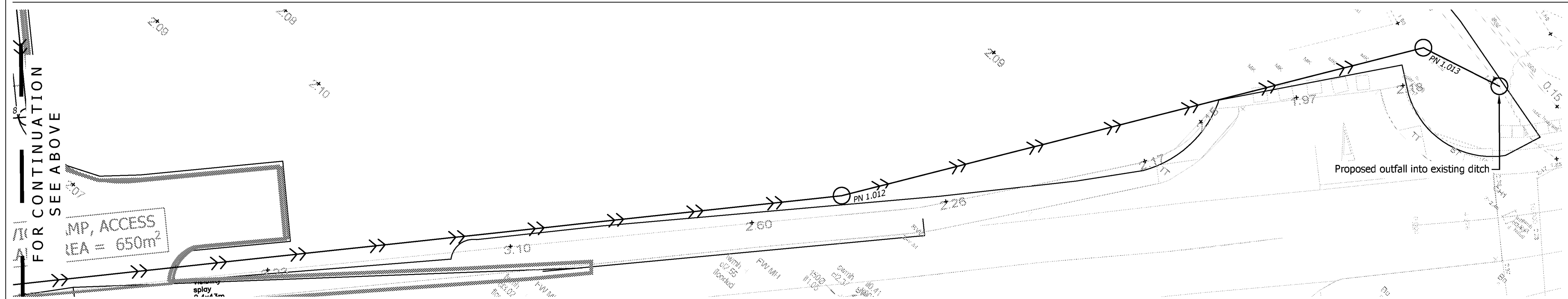
rev.	amendment	checked	date
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mb mayer brown

Mayer Brown Limited
Lion House, Oriental Road, Woking, Surrey GU22 8AR
Telephone 01483 750 508 Fax 01483 750 437
wokingoffice@mayerbrown.co.uk www.mayerbrown.co.uk

client		
LIDL UK GmbH		
project		
PROPOSED LIDL FOODSTORE SHRIPNEY ROAD, BOGNOR REGIS		
scale	drawn by	checked by
1:250	TC	SF
date	cad file	
MAY 2022	MBSK220512.DWG	
title		

Mayer Brown Limited jobcode	suitability	revision
-	-	P2
drawing number	MBSK220512-1	

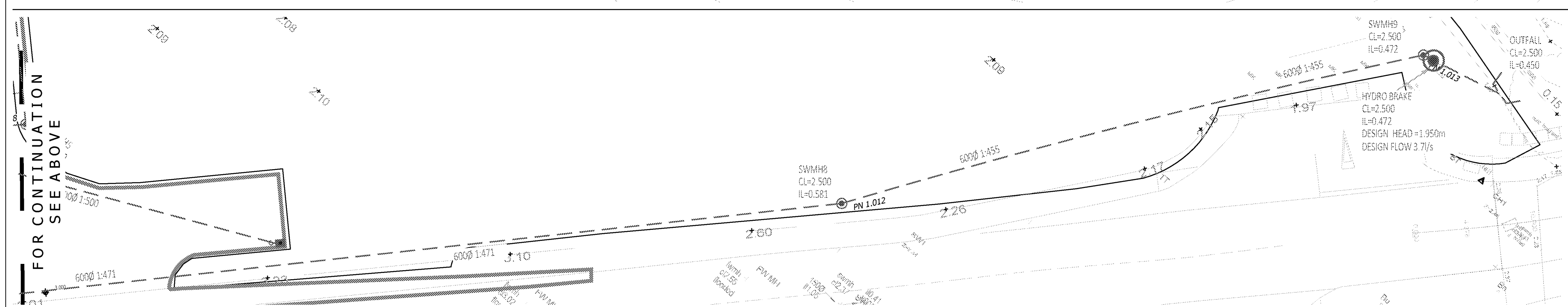


FOR CONTINUATION SEE ABOVE

APPENDIX E: Proposed Increased Basin Plan & Section

APPENDIX F: Survey Existing Basin

APPENDIX G: Revised Drainage Plan & Easement (July 2024)



 mayer brown			
Mayer Brown Limited Lion House Oriental Road Woking Surrey GU22 8AR Telephone 01483 750 508 Fax 01483 750 437 workingoffice@mayerbrown.co.uk www.mayerbrown.co.uk			
client			
LIDL GREAT BRITAIN LTD			
project			
PROPOSED LIDL FOODSTORE SHRIPNEY ROAD, BOGNOR REGIS			
scale	drawn by	checked by	
1:250	TC	IC	
date	cad file		
AUGUST 2022	20.DWG		
title			
PROPOSED SURFACE WATER DRAINAGE STRATEGY			
Mayer Brown Limited jobcode		suitability	revision
		-	P4
mayer brown			

APPENDIX H: Micro Drainage Network Details and Simulation Results (Aug22)

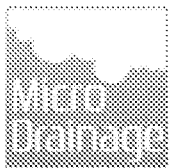
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Date 20/01/2023 11:48 File MBL Drainage_Baseline_W...	Designed by ED Checked by CD	
Innovyze	Network 2020.1	

Existing Network Details for Storm

* - Indicates pipe has been modified outside of System 1

FN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type
* 1.000	11.224	0.185	60.7	0.035	5.00	0.600	o	150	Pipe/Conduit
* 1.001	26.700	0.178	150.0	0.035	1.00	0.001	o	225	Pipe/Conduit
* 1.002	18.216	0.122	149.3	0.035	0.00	0.001	o	225	Pipe/Conduit
* 2.000	16.049	0.385	41.7	0.050	5.00	0.001	o	150	Pipe/Conduit
* 1.003	18.216	0.123	148.1	0.035	0.00	0.001	o	225	Pipe/Conduit
* 3.000	13.800	0.095	145.3	0.035	5.00	0.001	o	150	Pipe/Conduit
* 4.000	13.027	0.145	89.8	0.035	5.00	0.001	o	150	Pipe/Conduit
* 3.001	11.181	0.075	149.1	0.035	5.00	0.001	o	225	Pipe/Conduit
* 5.000	16.502	0.103	160.2	0.035	5.00	0.001	o	150	Pipe/Conduit
* 5.001	18.538	0.092	201.5	0.035	5.00	0.001	o	225	Pipe/Conduit
* 3.002	12.242	0.080	153.0	0.035	1.00	0.001	o	225	Pipe/Conduit
* 6.000	26.296	0.180	146.1	0.070	5.00	0.001	o	150	Pipe/Conduit
* 1.004	27.224	0.182	149.6	0.035	0.00	0.001	o	300	Pipe/Conduit
* 1.005	27.224	0.179	152.1	0.050	0.00	0.001	o	300	Pipe/Conduit
* 1.006	11.104	0.023	482.8	0.021	0.00	0.001	o	600	Pipe/Conduit
* 7.000	3.631	0.200	18.2	0.000	5.00	0.001	o	150	Pipe/Conduit

FN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
* 1.000	Gully A	2.905	1.950	0.805	2.780	1.765	0.865		450
* 1.001	SWMH 1A	2.780	1.690	0.865	2.875	1.512	1.138		1200
* 1.002	SWMH 1B	2.875	1.512	1.138	2.800	1.390	1.185		1200
* 2.000	Gully B	2.850	1.850	0.850	2.800	1.465	1.185		450
* 1.003	Branch	2.800	1.390	1.185	2.500	1.267	1.008		450
* 3.000	Gully C+Kerb	2.180	1.600	0.430	2.360	1.505	0.705		450
* 4.000	Gully D	2.400	1.650	0.600	2.360	1.505	0.705		450
* 3.001	SWMH 2	2.360	1.430	0.705	2.360	1.355	0.780		1200
* 5.000	Gully E_Low Point+Kerb	2.090	1.550	0.390	2.300	1.447	0.703		450
* 5.001	Branch+Kerb	2.300	1.447	0.628	2.360	1.355	0.780		450
* 3.002	Branch	2.360	1.355	0.780	2.500	1.275	1.000		450
* 6.000	Gully & RWP Building	2.900	1.605	1.145	2.500	1.425	0.925		150
* 1.004	SWMH 3	2.500	1.275	0.925	2.750	1.093	1.357		1200
* 1.005	Branch	2.750	1.093	1.357	2.750	0.914	1.536		450
* 1.006	SWMH 4	2.750	0.914	1.236	3.000	0.891	1.509		1500
* 7.000	Service Ramp	3.000	1.500	1.350	3.000	1.300	1.550		450

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Lion House Oriental Road Woking, GU22 8AR					Lidl Bognor Regis						
Date 20/01/2023 11:48					Designed by ED						
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Innovyze					Network 2020.1						
Existing Network Details for Storm											
PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type		
* 1.007	27.903	0.056	498.3	0.000	0.00	0.001	o	600	Pipe/Conduit		
* 1.008	9.027	0.017	531.0	0.021	0.00	0.001	o	600	Pipe/Conduit		
* 1.009	12.281	0.024	511.7	0.021	0.00	0.001	o	600	Pipe/Conduit		
* 8.000	30.725	0.154	199.5	0.075	1.00	0.001	o	225	Pipe/Conduit		
* 8.001	30.744	0.146	210.6	0.075	0.00	0.001	o	225	Pipe/Conduit		
* 8.002	5.600	0.026	215.4	0.075	0.00	0.001	o	225	Pipe/Conduit		
* 1.010	14.649	0.005	2929.8	0.000	0.00	0.001	o	600	Pipe/Conduit		
* 9.000	6.344	0.000	0.0	0.103	5.00	0.001	o	600	Pipe/Conduit		
* 1.011	89.026	0.191	466.1	0.000	0.00	0.001	o	600	Pipe/Conduit		
* 1.012	50.726	0.112	452.9	0.000	0.00	0.001	o	600	Pipe/Conduit		
* 1.013	7.191	0.065	110.6	0.000	0.00	0.001	o	225	Pipe/Conduit		
PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)		
* 1.007	Branch	3.000	0.891	1.509	3.260	0.835	1.825		600		
* 1.008	SWMH 5	3.260	0.836	1.824	3.050	0.819	1.631		1500		
* 1.009	SWMH 5A	3.050	0.824	1.626	2.800	0.800	1.400		1500		
* 8.000	SWMH 6B	3.000	1.120	1.655	3.000	0.966	1.809		1200		
* 8.001	Dummy Node	3.000	0.966	1.809	3.000	0.820	1.955		1200		
* 8.002	SWMH 6A	3.000	0.820	1.955	2.800	0.794	1.781		1200		
* 1.010	SWMH 6	2.800	0.794	1.406	2.830	0.789	1.441		1500		
* 9.000	Detention Basin	2.800	0.771	1.429	2.830	0.771	1.459		1200		
* 1.011	SWMH 7 (OrificeMH)	2.830	0.771	1.459	2.500	0.580	1.320	Orifice	1500		
* 1.012	SWMH 8	2.500	0.581	1.319	2.500	0.469	1.431		1500		
* 1.013	SWMH 9 (H-BrakeMH)	2.500	0.469	1.806	2.500	0.404	1.871	Hydro-Brake®	1500		
Surcharged Outfall Details for Storm											
Outfall Pipe Number		Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)				
1.013		SWOutfall	2.500	0.404	0.000	0	0				
Datum (m) 0.000 Offset (mins) 0											
Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)
60	1.000	240	1.000	420	1.000	600	1.000	780	1.000	960	1.000
120	1.000	300	1.000	480	1.000	660	1.000	840	1.000	1020	1.000
180	1.000	360	1.000	540	1.000	720	1.000	900	1.000	1080	1.000
1140	1.000	1260	1.000	1380	1.000	1440	1.000				
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File MBL Drainage_Baseline_W...	Checked by CD	
Innovyze	Network 2020.1	

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
Hot Start (mins)	0	Inlet Coefficient	0.800
Hot Start Level (mm)	0	Flow per Person per Day (l/per/day)	0.000
Manhole Headloss Coeff (Global)	0.300	Run Time (mins)	2880
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	24

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 2 Number of Storage Structures 2 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Winter
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.000	Storm Duration (mins)	1440
Ratio R	0.350		

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Innovyze		Network 2020.1

Online Controls for Storm

Orifice Manhole: SWSWMH 7 (OrificeMH), DS/PN: 1.011, Volume (m³): 8.8

Diameter (m) 0.075 Discharge Coefficient 0.600 Invert Level (m) 0.771

Hydro-Brake® Optimum Manhole: SWSWMH 9 (H-BrakeMH), DS/PN: 1.013, Volume (m³): 17.5

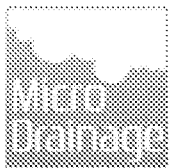
Unit Reference	MD-SHE-0079-3700-1950-3700
Design Head (m)	1.950
Design Flow (l/s)	3.7
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	79
Invert Level (m)	0.469
Minimum Outlet Pipe Diameter (mm)	100
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.950	3.7	Kick-Flo®	0.702	2.3
Flush-Flo™	0.343	2.9	Mean Flow over Head Range	-	2.9

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	2.3	0.800	2.5	2.000	3.7	4.000	5.2	7.000	6.7
0.200	2.7	1.000	2.7	2.200	3.9	4.500	5.5	7.500	7.0
0.300	2.9	1.200	3.0	2.400	4.1	5.000	5.7	8.000	7.2
0.400	2.9	1.400	3.2	2.600	4.2	5.500	6.0	8.500	7.4
0.500	2.8	1.600	3.4	3.000	4.5	6.000	6.3	9.000	7.6
0.600	2.7	1.800	3.6	3.500	4.9	6.500	6.5	9.500	7.8

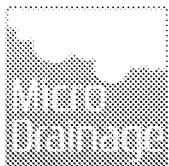
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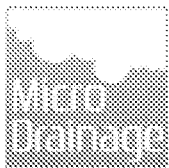
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Lion House Oriental Road Woking, GU22 8AR				Lidl Bognor Regis					
Date 20/01/2023 12:04				Designed by ED					
File MBL Drainage_Baseline_W...				Checked by CD					
Innovyze				Network 2020.1					
<u>Summary of Critical Results by Maximum Level (Rank 1) for Storm</u>									
<u>Simulation Criteria</u>									
Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000									
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000									
Hot Start Level (mm) 0 Inlet Coefficient 0.800									
Manhole Headloss Coeff (Global) 0.300 Flow per Person per Day (l/per/day) 0.000									
Foul Sewage per hectare (l/s) 0.000									
Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0									
Number of Online Controls 2 Number of Storage Structures 2 Number of Real Time Controls 0									
<u>Synthetic Rainfall Details</u>									
Rainfall Model FSR M5-60 (mm) 19.000 Cv (Summer) 0.750									
Region England and Wales Ratio R 0.350 Cv (Winter) 0.840									
Margin for Flood Risk Warning (mm) 300.0									
Analysis Timestep 2.5 Second Increment (Extended)									
DTS Status ON									
DVD Status ON									
Inertia Status OFF									
Profile(s) Winter									
Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480									
Return Period(s) (years) 2									
Climate Change (%) 0									

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Lion House Oriental Road Woking, GU22 8AR	Lidl Bognor Regis	
Date 20/01/2023 12:04 File MBL Drainage_Baseline_W...	Designed by ED Checked by CD	
Innovyze	Network 2020.1	

Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Surcharged	Flooded	Flow / Overflow		Half Drain	Pipe	Status	Level Exceeded
		Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	Time (mins)	Flow (l/s)		
1.001	SWSWMH 1A	-0.152	0.000	0.22			11.6	OK	
1.002	SWSWMH 1B	-0.136	0.000	0.33			16.0	OK	
2.000	SWGully B	-0.101	0.000	0.23			8.2	OK	
1.003	SWBranch	-0.101	0.000	0.59			29.1	OK	
3.000	SWGully C+Kerb	-0.091	0.000	0.32			5.7	OK	
4.000	SWGully D	-0.099	0.000	0.25			5.7	OK	
3.001	SWSWMH 2	-0.111	0.000	0.44			16.9	OK	
5.000	SWGully E_Low Point+Kerb	-0.090	0.000	0.33			5.6	OK	
5.001	SWBranch+Kerb	-0.131	0.000	0.26			11.2	OK	
3.002	SWBranch	-0.065	0.000	0.79			31.6	OK	
6.000	SWGully & RWP Building	-0.064	0.000	0.60			11.2	OK	
1.004	SWSWMH 3	-0.111	0.000	0.71			76.3	OK	
1.005	SWBranch	-0.068	0.000	0.76			80.4	OK	
1.006	SWSWMH 4	-0.281	0.000	0.39			79.6	OK	
7.000	SWService Ramp	-0.150	0.000	0.00			0.0	OK	
1.007	SWBranch	-0.272	0.000	0.24			77.0	OK	
1.008	SWSWMH 5	-0.249	0.000	0.38			77.4	OK	
1.009	SWSWMH 5A	-0.247	0.000	0.40			78.8	OK	
8.000	SWSWMH 6B	-0.107	0.000	0.32			14.6	OK	
8.001	SWDummy Node	0.040	0.000	0.44			19.1	SURCHARGED	
8.002	SWSWMH 6A	0.162	0.000	0.81			24.2	SURCHARGED	
1.010	SWSWMH 6	-0.233	0.000	0.69			98.5	OK	
9.000	SWDetention Basin	-0.249	0.000	0.02			4.0	OK	
1.011	SWSWMH 7 (OrificeMH)	-0.246	0.000	0.01			2.1	OK	
1.012	SWSWMH 8	-0.109	0.000	0.00			1.1	OK	
1.013	SWSWMH 9 (H-BrakeMH)	0.377	0.000	0.03			1.1	SURCHARGED	

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Lion House Oriental Road Woking, GU22 8AR			Lidl Bognor Regis					
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Innovyze			Network 2020.1					
<u>Summary of Critical Results by Maximum Level (Rank 1) for Storm</u>								
<u>Simulation Criteria</u>								
Areal Reduction Factor		1.000	Additional Flow - % of Total Flow		0.000			
Hot Start (mins)		0	MADD Factor * 10m³/ha Storage		2.000			
Hot Start Level (mm)		0	Inlet Coefficient		0.800			
Manhole Headloss Coeff (Global)		0.300	Flow per Person per Day (l/per/day)		0.000			
Foul Sewage per hectare (l/s)		0.000						
Number of Input Hydrographs		0	Number of Offline Controls		0			
Number of Online Controls		2	Number of Storage Structures		2			
			Number of Time/Area Diagrams		0			
			Number of Real Time Controls		0			
<u>Synthetic Rainfall Details</u>								
Rainfall Model		FSR M5-60 (mm)		19.000 Cv (Summer)		0.750		
Region England and Wales		Ratio R		0.350 Cv (Winter)		0.840		
Margin for Flood Risk Warning (mm)		300.0						
Analysis Timestep		2.5 Second Increment (Extended)						
DTS Status		ON						
DVD Status		ON						
Inertia Status		OFF						
Profile(s)		Winter						
Duration(s) (mins)		15, 30, 60, 120, 240, 360, 480						
Return Period(s) (years)		30						
Climate Change (%)		0						
PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surchage	First (Y) Flood	First (Z) Overflow	Overflow Act.
1.000	SWGully A	15 Winter	30	+0%				
1.001	SWSWMH 1A	15 Winter	30	+0%	30/15 Winter			
1.002	SWSWMH 1B	15 Winter	30	+0%	30/15 Winter			
2.000	SWGully B	15 Winter	30	+0%	30/15 Winter			
1.003	SWBranch	15 Winter	30	+0%	30/15 Winter			
3.000	SWGully C+Kerb	15 Winter	30	+0%	30/15 Winter			
4.000	SWGully D	15 Winter	30	+0%	30/15 Winter			
3.001	SWSWMH 2	15 Winter	30	+0%	30/15 Winter			
5.000	SWGully E_Low Point+Kerb	15 Winter	30	+0%	30/15 Winter			
5.001	SWBranch+Kerb	15 Winter	30	+0%	30/15 Winter			
3.002	SWBranch	15 Winter	30	+0%	30/15 Winter			
3.003	SWGully 6 SWP Building	15 Winter	30	+0%	30/15 Winter			
1.004	SWSWMH 3	15 Winter	30	+0%	30/15 Winter			
1.005	SWBranch	15 Winter	30	+0%	30/15 Winter			
1.006	SWSWMH 4	15 Winter	30	+0%				
7.000	SWService Ramp	15 Winter	30	+0%				
1.007	SWBranch	15 Winter	30	+0%				
1.008	SWSWMH 5	15 Winter	30	+0%				
1.009	SWSWMH 5A	15 Winter	30	+0%				
8.000	SWSWMH 6B	15 Winter	30	+0%	30/15 Winter			
8.001	SWDummy Node	15 Winter	30	+0%	30/15 Winter			
8.002	SWSWMH 6A	15 Winter	30	+0%	30/15 Winter			
1.010	SWSWMH 6	480 Winter	30	+0%				
9.000	SWDetention Basin	480 Winter	30	+0%				
1.011	SWSWMH 7 (OrificeMH)	480 Winter	30	+0%				
1.012	SWSWMH 8	480 Winter	30	+0%	30/360 Winter			
1.013	SWSWMH 9 (H-BrakeMH)	480 Winter	30	+0%	30/15 Winter			
PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Overflow Cap.	Half Drain Time (mins)	Pipe Flow (l/s)	Status
1.000	SWGully A	2.076	-0.024	0.000	0.51		10.8	OK
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Lion House Oriental Road Woking, GU22 8AR				Lidl Bognor Regis					
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<u>Summary of Critical Results by Maximum Level (Rank 1) for Storm</u>									
PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
1.001	SWSWMH 1A	2.047	0.132	0.000	0.41			21.6	SURCHARGED
1.002	SWSWMH 1B	2.026	0.289	0.000	0.52			25.5	SURCHARGED
2.000	SWGully B	2.048	0.048	0.000	0.42			14.9	SURCHARGED
1.003	SWBranch	1.998	0.383	0.000	0.86			42.3	SURCHARGED
3.000	SWGully C+Kerb	2.085	0.335	0.000	0.45			8.0	FLOOD RISK
4.000	SWGully D	2.084	0.284	0.000	0.37			8.5	SURCHARGED
3.001	SWSWMH 2	2.058	0.403	0.000	0.62			23.9	SURCHARGED
5.000	SWGully E_Low Point+Kerb	2.033	0.333	0.000	0.47			8.0	FLOOD RISK
5.001	SWBranch+Kerb	2.004	0.332	0.000	0.38			16.3	FLOOD RISK
3.002	SWBranch	1.977	0.357	0.000	1.08			43.1	SURCHARGED
6.000	SWGully & PWT Building	2.050	0.355	0.000	1.01			18.3	SURCHARGED
1.004	SWSWMH 3	1.880	0.301	0.000	1.02			108.5	SURCHARGED
1.005	SWBranch	1.707	0.314	0.000	1.14			100.0	SURCHARGED
1.006	SWSWMH 4	1.514	0.000	0.000	0.60			123.1	OK
7.000	SWService Ramp	1.500	-0.150	0.000	0.00			0.0	OK
1.007	SWBranch	1.484	-0.007	0.000	0.37			118.0	OK
1.008	SWSWMH 5	1.385	-0.051	0.000	0.59			120.3	OK
1.009	SWSWMH 5A	1.362	-0.062	0.000	0.63			124.1	OK
8.000	SWSWMH 6B	1.644	0.299	0.000	0.52			23.3	SURCHARGED
8.001	SWDummy Node	1.609	0.418	0.000	0.94			41.2	SURCHARGED
8.002	SWSWMH 6A	1.481	0.436	0.000	2.12			63.5	SURCHARGED
1.010	SWSWMH 6	1.358	-0.036	0.000	0.20			28.5	OK
9.000	SWDetention Basin	1.355	-0.016	0.000	0.02			4.1	OK
1.011	SWSWMH 7 (OrificeMH)	1.356	-0.015	0.000	0.01			4.1	OK
1.012	SWSWMH 8	1.245	0.064	0.000	0.01			4.0	SURCHARGED
1.013	SWSWMH 9 (H-BrakeMH)	1.248	0.554	0.000	0.08			2.8	SURCHARGED
PN	US/MH Name	Level Exceeded							
1.000	SWGully A								
1.001	SWSWMH 1A								
1.002	SWSWMH 1B								
2.000	SWGully B								
1.003	SWBranch								
3.000	SWGully C+Kerb								
4.000	SWGully D								
3.001	SWSWMH 2								
5.000	SWGully E_Low Point+Kerb								
5.001	SWBranch+Kerb								
3.002	SWBranch								
6.000	SWGully & PWT Building								
1.004	SWSWMH 3								
1.005	SWBranch								
1.006	SWSWMH 4								
7.000	SWService Ramp								
1.007	SWBranch								
1.008	SWSWMH 5								
1.009	SWSWMH 5A								
8.000	SWSWMH 6B								
8.001	SWDummy Node								
8.002	SWSWMH 6A								
1.010	SWSWMH 6								
9.000	SWDetention Basin								
1.011	SWSWMH 7 (OrificeMH)								
1.012	SWSWMH 8								
1.013	SWSWMH 9 (H-BrakeMH)								
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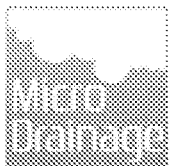
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Innovyze		Network 2020.1						
<u>Summary of Critical Results by Maximum Level (Rank 1) for Storm</u>								
<u>Simulation Criteria</u>								
Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000								
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000								
Hot Start Level (mm) 0 Inlet Coefficient 0.800								
Manhole Headloss Coeff (Global) 0.300 Flow per Person per Day (l/per/day) 0.000								
Foul Sewage per hectare (l/s) 0.000								
Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0								
Number of Online Controls 2 Number of Storage Structures 2 Number of Real Time Controls 0								
<u>Synthetic Rainfall Details</u>								
Rainfall Model FSR M5-60 (mm) 19.000 Cv (Summer) 0.750								
Region England and Wales Ratio R 0.350 Cv (Winter) 0.840								
Margin for Flood Risk Warning (mm) 300.0								
Analysis Timestep 2.5 Second Increment (Extended)								
DTS Status ON								
DVD Status ON								
Inertia Status OFF								
Profile(s) Winter								
Duration(s) (mins) 120, 240, 360, 480, 960, 1440								
Return Period(s) (years) 100								
Climate Change (%) 0								
PN	US/MH Name	Storm	Return Period	Climate Change	First (X) SurchARGE	First (Y) Flood	First (Z) Overflow	Overflow Act.
1.000	SWGully A	120 Winter	100	+0%				
1.001	SWSWMH 1A	120 Winter	100	+0%				
1.002	SWSWMH 1B	120 Winter	100	+0%	100/120 Winter			
2.000	SWGully B	120 Winter	100	+0%				
1.003	SWBranch	120 Winter	100	+0%	100/120 Winter			
3.000	SWGully C+Kerb	120 Winter	100	+0%	100/120 Winter			
4.000	SWGully D	120 Winter	100	+0%				
3.001	SWSWMH 2	120 Winter	100	+0%	100/120 Winter			
5.000	SWGully E_Low Point+Kerb	120 Winter	100	+0%	100/120 Winter			
5.001	SWBranch+Kerb	120 Winter	100	+0%	100/120 Winter			
3.002	SWBranch	120 Winter	100	+0%	100/120 Winter			
6.000	SWGully & RWP Building	120 Winter	100	+0%				
1.004	SWSWMH 3	120 Winter	100	+0%	100/120 Winter			
1.005	SWBranch	1440 Winter	100	+0%	100/120 Winter			
1.006	SWSWMH 4	1440 Winter	100	+0%	100/480 Winter			
7.000	SWService Ramp	1440 Winter	100	+0%				
1.007	SWBranch	1440 Winter	100	+0%	100/360 Winter			
1.008	SWSWMH 5	1440 Winter	100	+0%	100/240 Winter			
1.009	SWSWMH 5A	1440 Winter	100	+0%	100/240 Winter			
8.000	SWSWMH 6B	1440 Winter	100	+0%	100/120 Winter			
8.001	SWDummy Node	1440 Winter	100	+0%	100/120 Winter			
8.002	SWSWMH 6A	1440 Winter	100	+0%	100/120 Winter			
1.010	SWSWMH 6	1440 Winter	100	+0%	100/240 Winter			
9.000	SWDetention Basin	1440 Winter	100	+0%	100/240 Winter			
1.011	SWSWMH 7 (OrificeMH)	1440 Winter	100	+0%	100/120 Winter			
1.012	SWSWMH 8	1440 Winter	100	+0%	100/120 Winter			
1.013	SWSWMH 9 (H-BrakeMH)	1440 Winter	100	+0%	100/120 Winter			
PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Overflow Cap.	Half Drain Time (mins)	Pipe Flow (l/s)	Status
1.000	SWGully A	1.998	-0.102	0.000	0.23		4.9	OK
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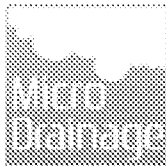
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Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
1.001	SWSWMH 1A	1.767	-0.148	0.000	0.19			9.7	OK
1.002	SWSWMH 1B	1.758	0.021	0.000	0.30			14.6	SURCHARGED
2.000	SWGully B	1.895	-0.105	0.000	0.20			7.0	OK
1.003	SWBranch	1.747	0.132	0.000	0.53			26.4	SURCHARGED
3.000	SWGully C+Kerb	1.761	0.011	0.000	0.27			4.9	SURCHARGED
4.000	SWGully D	1.761	-0.039	0.000	0.21			4.9	OK
3.001	SWSWMH 2	1.753	0.098	0.000	0.38			14.6	SURCHARGED
5.000	SWGully E_Low Point+Kerb	1.761	0.061	0.000	0.28			4.9	SURCHARGED
5.001	SWBranch+Kerb	1.752	0.080	0.000	0.23			9.7	SURCHARGED
3.002	SWBranch	1.744	0.164	0.000	0.73			29.0	SURCHARGED
6.000	SWGully & RWP Building	1.750	-0.005	0.000	0.52			9.7	OK
1.004	SWSWMH 3	1.727	0.152	0.000	0.65			69.8	SURCHARGED
1.005	SWBranch	1.637	0.244	0.000	0.11			11.7	SURCHARGED
1.006	SWSWMH 4	1.634	0.120	0.000	0.06			12.0	SURCHARGED
7.000	SWService Ramp	1.631	-0.019	0.000	0.00			0.0	OK
1.007	SWBranch	1.637	0.146	0.000	0.04			11.6	SURCHARGED
1.008	SWSWMH 5	1.639	0.203	0.000	0.06			11.7	SURCHARGED
1.009	SWSWMH 5A	1.641	0.217	0.000	0.06			12.1	SURCHARGED
8.000	SWSWMH 6B	1.615	0.270	0.000	0.03			1.5	SURCHARGED
8.001	SWDummy Node	1.621	0.430	0.000	0.07			3.1	SURCHARGED
8.002	SWSWMH 6A	1.632	0.587	0.000	0.16			4.6	SURCHARGED
1.010	SWSWMH 6	1.644	0.250	0.000	0.12			16.6	SURCHARGED
9.000	SWDetention Basin	1.614	0.243	0.000	0.02			4.1	SURCHARGED
1.011	SWSWMH 7 (OrificeMH)	1.646	0.275	0.000	0.01			3.6	SURCHARGED
1.012	SWSWMH 8	1.501	0.320	0.000	0.01			3.2	SURCHARGED
1.013	SWSWMH 9 (H-BrakeMH)	1.501	0.807	0.000	0.08			2.9	SURCHARGED

PN	US/MH Name	Level Exceeded
1.000	SWGully A	
1.001	SWSWMH 1A	
1.002	SWSWMH 1B	
2.000	SWGully B	
1.003	SWBranch	
3.000	SWGully C+Kerb	
4.000	SWGully D	
3.001	SWSWMH 2	
5.000	SWGully E_Low Point+Kerb	
5.001	SWBranch+Kerb	
3.002	SWBranch	
6.000	SWGully & RWP Building	
1.004	SWSWMH 3	
1.005	SWBranch	
1.006	SWSWMH 4	
7.000	SWService Ramp	
1.007	SWBranch	
1.008	SWSWMH 5	
1.009	SWSWMH 5A	
8.000	SWSWMH 6B	
8.001	SWDummy Node	
8.002	SWSWMH 6A	
1.010	SWSWMH 6	
9.000	SWDetention Basin	
1.011	SWSWMH 7 (OrificeMH)	
1.012	SWSWMH 8	
1.013	SWSWMH 9 (H-BrakeMH)	

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Innovyze			Network 2020.1					
<u>Summary of Critical Results by Maximum Level (Rank 1) for Storm</u>								
<u>Simulation Criteria</u>								
Areal Reduction Factor		1.000	Additional Flow - % of Total Flow		0.000			
Hot Start (mins)		0	MADD Factor * 10m³/ha Storage		2.000			
Hot Start Level (mm)		0	Inlet Coefficient		0.800			
Manhole Headloss Coeff (Global)		0.300	Flow per Person per Day (l/per/day)		0.000			
Foul Sewage per hectare (l/s)		0.000						
Number of Input Hydrographs		0	Number of Offline Controls		0	Number of Time/Area Diagrams 0		
Number of Online Controls		2	Number of Storage Structures		2	Number of Real Time Controls 0		
<u>Synthetic Rainfall Details</u>								
Rainfall Model		FSR M5-60 (mm)		19.000	Cv (Summer)	0.750		
Region England and Wales		Ratio R		0.350	Cv (Winter)	0.840		
Margin for Flood Risk Warning (mm)		300.0						
Analysis Timestep		2.5 Second Increment (Extended)						
DTS Status		ON						
DVD Status		ON						
Inertia Status		OFF						
Profile(s)		Winter						
Duration(s) (mins)		120, 240, 360, 480, 960, 1440						
Return Period(s) (years)		100						
Climate Change (%)		40						
PN	US/MH Name	Storm	Return Period	Climate Change	First (X) SurchARGE	First (Y) Flood	First (Z) Overflow	Overflow Act.
1.000	SWGully A	120 Winter	100	+40%				
1.001	SWSWMH 1A	120 Winter	100	+40%	100/120 Winter			
1.002	SWSWMH 1B	1440 Winter	100	+40%	100/120 Winter			
2.000	SWGully B	1440 Winter	100	+40%				
1.003	SWBranch	1440 Winter	100	+40%	100/120 Winter			
3.000	SWGully C+Kerb	120 Winter	100	+40%	100/120 Winter			
4.000	SWGully D	120 Winter	100	+40%	100/120 Winter			
3.001	SWSWMH 2	1440 Winter	100	+40%	100/120 Winter			
5.000	SWGully E_Low Point+Kerb	1440 Winter	100	+40%	100/120 Winter			
5.001	SWBranch+Kerb	1440 Winter	100	+40%	100/120 Winter			
3.002	SWBranch	1440 Winter	100	+40%	100/120 Winter			
6.000	SWGully & RWP Building	1440 Winter	100	+40%	100/120 Winter			
1.004	SWSWMH 3	1440 Winter	100	+40%	100/120 Winter			
1.005	SWBranch	1440 Winter	100	+40%	100/120 Winter			
1.006	SWSWMH 4	1440 Winter	100	+40%	100/120 Winter			
7.000	SWService Ramp	1440 Winter	100	+40%	100/240 Winter			
1.007	SWBranch	1440 Winter	100	+40%	100/120 Winter			
1.008	SWSWMH 5	1440 Winter	100	+40%	100/120 Winter			
1.009	SWSWMH 5A	1440 Winter	100	+40%	100/120 Winter			
8.000	SWSWMH 6B	1440 Winter	100	+40%	100/120 Winter			
8.001	SWDummy Node	1440 Winter	100	+40%	100/120 Winter			
8.002	SWSWMH 6A	1440 Winter	100	+40%	100/120 Winter			
1.010	SWSWMH 6	1440 Winter	100	+40%	100/120 Winter			
9.000	SWDetention Basin	1440 Winter	100	+40%	100/120 Winter			
1.011	SWSWMH 7 (OrificeMH)	1440 Winter	100	+40%	100/120 Winter			
1.012	SWSWMH 8	1440 Winter	100	+40%	100/120 Winter			
1.013	SWSWMH 9 (H-BrakeMH)	1440 Winter	100	+40%	100/120 Winter			
PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Overflow Cap.	Half Drain Time (mins)	Pipe Flow (l/s)	Status
1.000	SWGully A	2.018	-0.082	0.000	0.32		6.8	OK
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Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
1.001	SWSWMH 1A	1.996	0.081	0.000	0.25			12.9	SURCHARGED
1.002	SWSWMH 1B	1.991	0.254	0.000	0.06			3.1	SURCHARGED
2.000	SWGully B	1.986	-0.014	0.000	0.04			1.5	OK
1.003	SWBranch	2.000	0.385	0.000	0.12			5.7	SURCHARGED
3.000	SWGully C+Kerb	1.993	0.243	0.000	0.36			6.4	FLOOD RISK
4.000	SWGully D	1.992	0.192	0.000	0.28			6.4	SURCHARGED
3.001	SWSWMH 2	1.991	0.336	0.000	0.08			3.1	SURCHARGED
5.000	SWGully E_Low Point+Kerb	1.987	0.287	0.000	0.06			1.0	FLOOD RISK
5.001	SWBranch+Kerb	1.996	0.324	0.000	0.05			2.1	SURCHARGED
3.002	SWBranch	1.999	0.419	0.000	0.16			6.3	SURCHARGED
6.000	SWGully & RWP Building	1.990	0.235	0.000	0.11			2.1	SURCHARGED
1.004	SWSWMH 3	2.005	0.430	0.000	0.14			15.1	SURCHARGED
1.005	SWBranch	2.007	0.614	0.000	0.16			16.6	SURCHARGED
1.006	SWSWMH 4	2.007	0.493	0.000	0.08			17.2	SURCHARGED
7.000	SWService Ramp	1.980	0.330	0.000	0.03			0.8	SURCHARGED
1.007	SWBranch	2.007	0.516	0.000	0.05			17.2	SURCHARGED
1.008	SWSWMH 5	2.009	0.573	0.000	0.09			18.3	SURCHARGED
1.009	SWSWMH 5A	2.009	0.585	0.000	0.09			18.7	SURCHARGED
8.000	SWSWMH 6B	1.985	0.640	0.000	0.05			2.2	SURCHARGED
8.001	SWDummy Node	1.990	0.799	0.000	0.10			4.4	SURCHARGED
8.002	SWSWMH 6A	2.001	0.956	0.000	0.22			6.6	SURCHARGED
1.010	SWSWMH 6	2.014	0.620	0.000	0.17			25.0	SURCHARGED
9.000	SWDetention Basin	1.983	0.612	0.000	0.02			4.4	SURCHARGED
1.011	SWSWMH 7 (OrificeMH)	2.016	0.645	0.000	0.01			4.0	SURCHARGED
1.012	SWSWMH 8	1.873	0.692	0.000	0.01			3.4	SURCHARGED
1.013	SWSWMH 9 (H-BrakeMH)	1.873	1.179	0.000	0.09			3.2	SURCHARGED

PN	US/MH Name	Level Exceeded
1.000	SWGully A	
1.001	SWSWMH 1A	
1.002	SWSWMH 1B	
2.000	SWGully B	
1.003	SWBranch	
3.000	SWGully C+Kerb	
4.000	SWGully D	
3.001	SWSWMH 2	
5.000	SWGully E_Low Point+Kerb	
5.001	SWBranch+Kerb	
3.002	SWBranch	
6.000	SWGully & RWP Building	
1.004	SWSWMH 3	
1.005	SWBranch	
1.006	SWSWMH 4	
7.000	SWService Ramp	
1.007	SWBranch	
1.008	SWSWMH 5	
1.009	SWSWMH 5A	
8.000	SWSWMH 6B	
8.001	SWDummy Node	
8.002	SWSWMH 6A	
1.010	SWSWMH 6	
9.000	SWDetention Basin	
1.011	SWSWMH 7 (OrificeMH)	
1.012	SWSWMH 8	
1.013	SWSWMH 9 (H-BrakeMH)	

**APPENDIX I: Condition & Maintenance & Management: Decision Notice &
Report**



Arun District Council
Arun Civic Centre
Maltravers Road
Littlehampton
West Sussex BN17 5LF
Planning & Building Control General Enquiries
Tel: (01903) 737756 Fax: (01903) 730442
Dx: 57406 Littlehampton
Minicom: 01903 732765
e-mail: planning@arun.gov.uk
website: www.arun.gov.uk/planning

Lidl GB
Foxes Park
Brownhill Way
Nursling
SO16 0AW

Date: 16th October 2020

Please ask for: Raymond Cole
Tel: 01903 737598

Your Ref:

Our Ref: BE/70/20/DOC

Dear Mrs Burton,

Town & Country Planning Act 1990 (as amended)

Town and Country Planning (Development Management Procedure) (England) Order 2015

Application for details reserved by condition imposed under BE/126/19/PL relating to conditions 6-surface water drainage; 7-discharge of flows to watercourses or for the culverting, diversion, infilling or obstruction of any water course on our adjacent to site; 8-maintenance & management of surface water drainage system; 12-foul water & sewage disposal & 14-Construction Management Plan.

Land at Phase 1A Oldlands Farm Shripney Road Bognor Regis PO22 9NN

Notification regarding the above application:

Condition Number 8

Development shall not commence until full details of the maintenance and management of the surface water drainage system is set out in a site-specific maintenance manual and submitted to, and approved in writing, by the Local Planning Authority. The manual is to include details of financial management and arrangements for the replacement of major components at the end of the manufacturer's recommended design life. Upon completed construction of the surface water drainage system, the owner or management company shall strictly adhere to and implement the recommendations contained within the manual.

Reason: To ensure that the proposed development is satisfactorily drained in accordance with policies W DM1, W DM2 and W DM3 of the Arun Local Plan. It is considered necessary for this to be a pre-commencement condition to ensure that the future maintenance and funding arrangements for the surface water disposal scheme are agreed before construction commences.

Decision:

Arun District Council have decided to **APPROVE details reserved by this condition**

This condition is discharged in so far as it relates to:

Drainage and SUDS Operation & Maintenance Strategy 1620010196-RAM-H-RP-1A-0500-002 Rev P03.

Please do not hesitate to contact the above officer if you require any further assistance.

Yours sincerely

A handwritten signature in black ink, appearing to be 'NC' followed by a flourish, with a small dot below it.

Neil Crowther
Group Head of Planning

Intended for
Lidl Great Britain Ltd.

Document type
Drainage Maintenance Strategy

Date
June 2020

OLDLANDS FARM - PHASE 1A (LIDL PLOT) DRAINAGE AND SUDS OPERATION & MAINTENANCE STRATEGY



DRAINAGE AND SUDS OPERATION & MAINTENANCE STRATEGY

Revision **P03**
Date **28/09/2020**
Made by **Cynthia Conger-Thompson**
Checked by **Chris Leigh**
Approved by **Mark Dewson**
Description **Drainage Operation & Maintenance Strategy**

Ref 1620010196-RAM-H-RP-1A-0500-002

Ramboll
Carlton House
Ringwood Road
Woodlands
Southampton
SO40 7HT
United Kingdom

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APPENDICES

Appendix 1

FOUL AND SURFACE WATER DRAINAGE PLAN

1. INTRODUCTION

1.1 General Introduction

- 1.1.1 This document considers the surface water and foul water drainage systems for the Oldlands Phase 1A (Lidl Plot) development. A layout plan of the drainage systems is shown on Ramboll drawing 1620003993-RAM-0500-01A-DR-CR-20001 which is included as Appendix 1 to this report.

This document outlines each aspect of the surface water and foul water drainage systems, a brief description, issues to be aware of and any required maintenance. This document should form part of the Operation and Maintenance Manual for the scheme. The manual is to also include details of financial management and arrangements for the replacement of major components at the end of the manufacturer's recommended design life.

- 1.1.2 The balancing pond and SUDS system will be paid for through a service charge, administered by the landlord and this will include a 'sinking fund' allowance for large expenditure items.

1.2 System Synopsis

- 1.2.1 Surface water run-off from the new building and paved areas of the site will discharge to the Oldlands Farm ditch to the northeast of the site via a new headwall outfall. A balancing pond is utilised to attenuate the site run-off prior to discharge and a hydrobrake is provided upstream of the final outfall location to limit the discharge to greenfield rates (3.7 l/sec.). The majority of the site drainage is through traditional piped drainage system and proprietary units.
- 1.2.2 Foul drainage from the new buildings will be collected in a simple gravity drainage system and connected into the existing foul drainage network at manhole ref. EX FMH13, as shown on drawing 1620003993-RAM-0500-01A-DR-CR-20001. The existing private drainage network following this leads to the foul pumping station situated to the southwest of the site.

1.3 Access

- 1.3.1 The site estate's management team will coordinate and ensure maintenance requirements are met and allow suitable access for all required maintenance outlined in this document.

1.4 Sub-catchments & Exceedance Routing

- 1.4.1 The entire catchment drains via standard carrier pipe drainage network and the balancing pond. The site has been designed to contain all flow up to and including the 1 in 100 year storm + 40% for climate change. Overland flow direction is generally towards the kerb lines / drainage points within the car parks and towards the balancing pond. As such the 100 year return period plus climate change will not prohibit access and egress.

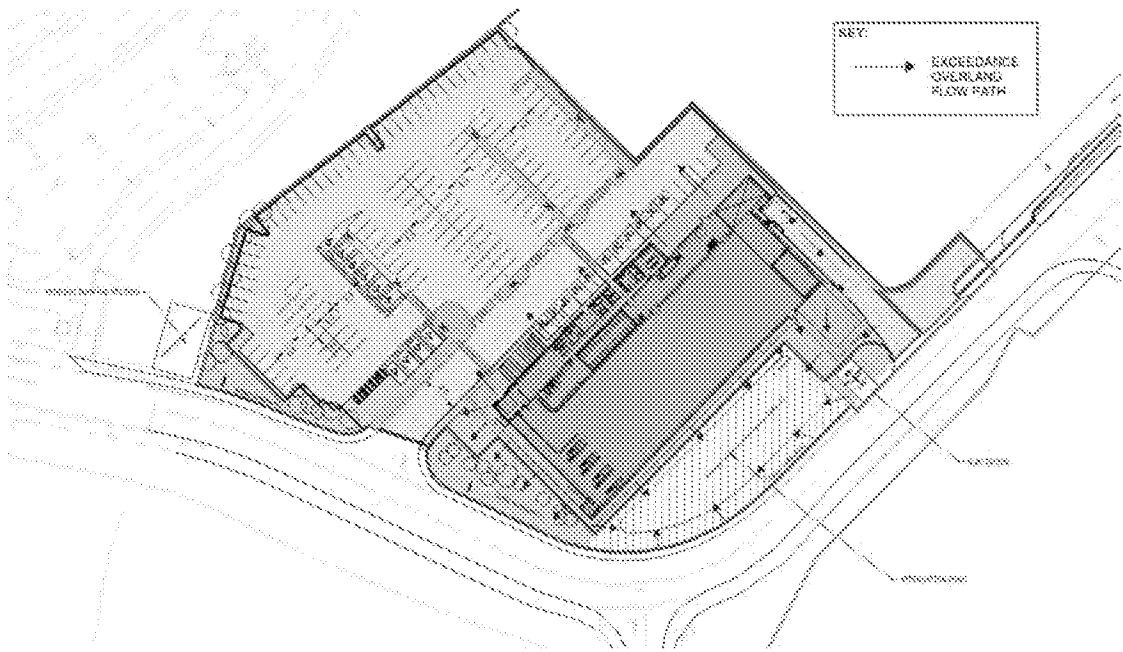


Figure 1. Flood Exceedance Flow Path/Routing

2. ROUTINE INSPECTION AND MAINTENANCE SCHEDULE

2.1 Surface Water Drainage Components

Item No.	Item	Description	Maintenance Issues	Details of Inspection/Maintenance Activity/Plant Requirements
1.1	Gullies	Surface water is drained from impermeable areas through grated gullies located at low points and conveyed to discharge points.	Gullies can become blocked by excessive build up in silt and debris. Grating openings can become obstructed.	Inspection and maintenance at 6 month intervals. Clearing of gullies using a gully sucker to be determined upon inspection.
1.2	Catchpit/Manhole Chambers	Manholes and catchpit chambers provide rodding and jetting access to pipework.	Manholes/catchpits can become blocked by excessive build up in silt and debris.	Manhole chambers should be inspected annually and catchpit chambers should be inspected every spring and autumn after leaf fall and after heavy storm events. Silt and debris should be removed using a gully sucker if required.
1.3	Carrier Drains	Carrier drains convey surface water across junctions.	Pipes can become blocked with silt/debris.	Inspection and maintenance at 12 month intervals. Water jetting to be undertaken when required. CCTV equipment to inspect pipe runs may be needed where necessary.
1.4	Channel/Slot Drains	Surface water is drained from impermeable areas through narrow linear openings on the surface and conveyed to discharge points along a channel section.	Slot openings and channels can become congested with silt/debris.	Inspection and maintenance at 6 month intervals is required to ensure slot openings and channels are clear. Should a blockage occur, rodding or jetting from an access point will be required.
1.5	Flow control chambers and devices (i.e. hydrobrake and orifice manholes)	Manholes/catchpits containing flow control device (orifice/hydrobrake)	Manholes/catchpits can become blocked by excessive build up in silt and debris. This could cause the flow control to function incorrectly	<u>Regular Maintenance</u> Inspect and identify any areas that are not operating correctly. If required take remedial action. Monthly for 3 months, then every 6 months.

Item No.	Item	Description	Maintenance Issues	Details of Inspection/Maintenance Activity/Plant Requirements
				Operation testing and jetting of debris to bypass door/orifice opening, monthly check required. Debris removal from catchment surface that could potentially cause blockages, monthly check required. Remove sediment from control chambers and gullies as per items 1.1 and 1.2. <u>Remedial actions</u> Repair/rehabilitation of inlets, outlets, overflows and vents as required. <u>Monitoring</u> Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed. Annually and after large storm events.

2.2 Surface Water Attenuation

Item No.	Item	Maintenance Schedule	Required Actions	Typical Frequency
1.1	Balancing Pond/ Detention Basin	Regular maintenance	Remove litter and debris	Monthly
			Cut grass – for spillways and access routes	Monthly (during growing season), or as required
			Cut grass – meadows grass in and around basin	Half yearly (spring-before nesting season, and autumn)
			Manage other vegetation and remove nuisance plants	Monthly (at start, then as required)
			Inspect inlets, outlets and overflows for blockages, and clear if required	Monthly
			Inspect water body for signs of poor water quality	Monthly (May- October)
			Inspect banksides, structures, pipework etc for evidence of physical damage	Monthly
			Inspect inlets and facility surface for silt accumulation. Establish appropriate silt removal frequencies.	Monthly (for first year), then annually or as required
			Check any penstocks and other mechanical devices	Annually
			Tidy all dead growth before start of growing season	Annually
			Remove sediment from inlets, outlets and forebay	Annually (or as required)

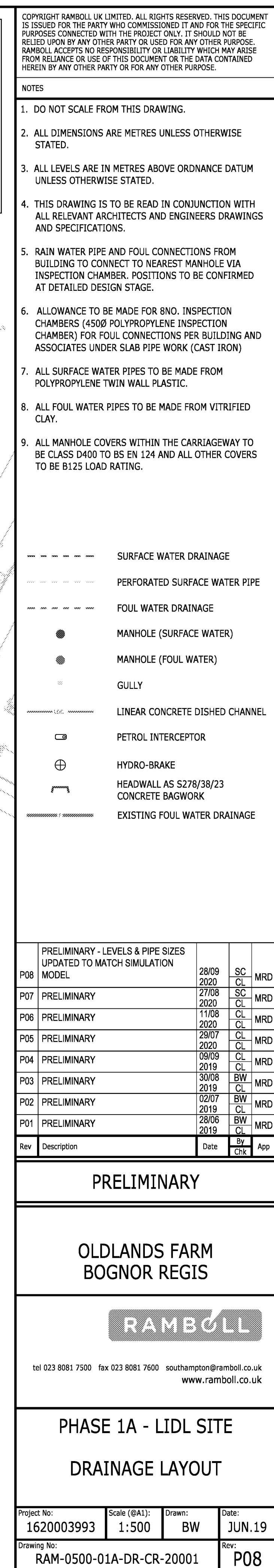
		Occasional Maintenance	Manage wetland plants in outlet pool – where provided	Annually (as set out in chapter 23 of CIRIA 753)
			Reseed areas of poor vegetation growth	As required
			Prune and trim any trees and remove cuttings	Every 2 years, or as required
			Remove sediment from inlets, outlets, forebay and main basin when required	Every 5 years, or as required (likely to be minimal requirements where effective upstream source control is provided)
		Remedial actions	Repair erosion or other damage by reseeding or re-turfing	As required
			Realignment of rip-rap	As required
			Repair/rehabilitation of inlets, outlets and overflows	As required
			Relevel uneven surfaces and reinstate design levels	As required

*Also refer to CIRIA 753 SUDS Manual 2015 Table 22.1 and Table 23.1 for good practice operation and maintenance procedures

2.3 Foul Water Drainage Components

Item No.	Item	Description	Maintenance Issues	Details of Inspection/ Maintenance Activity/Plant Requirements
1.1	Foul Carrier Drains	Carrier drains convey foul water across junctions.	Pipes can become blocked particularly on bends	Inspection and maintenance at 12 month intervals. Water jetting or rodding to be undertaken when required.
1.2	Foul Manhole Chambers	Manholes chambers provide rodding and jetting access to pipework.	Unlikely to experience issues, provide access to maintain pipework.	Manhole chambers should be inspected annually, debris should be removed if required.
1.3	Foul sewer stacks/sewer vent pipes	Provide a connection between appliances within the building that emit foul waste and the foul drainage network.	Pipes can become blocked particularly on bends	Inspection and maintenance at 12 month intervals. Water jetting or rodding to be undertaken when required.

APPENDIX 1 FOUL AND SURFACE WATER DRAINAGE PLAN



APPENDIX J: Condition 7 Discharges to Watercourses: Decision Notice



Arun District Council
Arun Civic Centre
Maltravers Road
Littlehampton
West Sussex BN17 5LF
Planning & Building Control General Enquiries
Tel: (01903) 737756 Fax: (01903) 730442
Dx: 57406 Littlehampton
Minicom: 01903 732765
e-mail: planning@arun.gov.uk
website: www.arun.gov.uk/planning

Lidl GB
Foxes Park
Brownhill Way
Nursling
SO16 0AW

Date: 16th October 2020

Please ask for: Raymond Cole
Tel: 01903 737598

Your Ref:

Our Ref: BE/70/20/DOC

Dear Mrs Burton,

Town & Country Planning Act 1990 (as amended)

Town and Country Planning (Development Management Procedure) (England) Order 2015

Application for details reserved by condition imposed under BE/126/19/PL relating to conditions 6-surface water drainage; 7-discharge of flows to watercourses or for the culverting, diversion, infilling or obstruction of any water course on our adjacent to site; 8-maintenance & management of surface water drainage system; 12-foul water & sewage disposal & 14-Construction Management Plan.

Land at Phase 1A Oldlands Farm Shripney Road Bognor Regis PO22 9NN

Notification regarding the above application:

Condition Number 7

The development shall not proceed until details have been submitted to and approved in writing by the Local Planning Authority for any proposals: to discharge flows to watercourses; or for the culverting, diversion, infilling or obstruction of any watercourse on or adjacent to the site. Any discharge to a watercourse must be at a rate no greater than the pre-development run-off values. No construction is permitted, which will restrict current and future land owners from undertaking their riparian maintenance responsibilities in respect to any watercourse or culvert on or adjacent to the site.

Reason: To ensure that the proposed development is satisfactorily drained in accordance with policies W DM1, W DM2 and W DM3 of the Arun Local Plan. And to ensure that the duties and responsibilities, as required under the Land Drainage Act 1991, and amended by the Flood and Water Management Act 2010, can be fulfilled without additional impediment following the development completion. It is considered necessary for this to be a pre-commencement condition to protect existing watercourses prior to the construction commencing.

Decision:

Arun District Council have decided to **APPROVE details reserved by this condition**

This condition is discharged in so far as it relates to:

Drainage Strategy 3993-H-RP-1A-0500-201 Rev P03

Attenuation Pond Detail 1620003993-RAM-0500-01A-D-CR-20101-P04

Drainage Standard Details 1620003993-RAM-0500-01A-D-CR-20102-P02
Drainage Standard Details 1620003993-RAM-0500-01A-D-CR-20103-P01
Drainage Layout 1620003993-RAM-0500-01A-DR-CR-20001-P08
Drainage Catchment Layout 1620003993-RAM-0500-01A-DR-CR-20002-P04
MD Simulation Oldlands Farm 29.09.20
Drainage and SUDS Operation & Maintenance Strategy 1620010196-RAM-H-RP-1A-0500-002 Rev
P03
Drainage Gully A - Pre-Cast Concrete S278-38-11 Rev D
Drainage Type B Catchpit S278-38-13 Rev E
Vortex Flow Control Type B Manhole S278-38-14 Rev C
Headwall Detail for pipe sizes up to 600 diam Concrete Bagwork S278-38-23 Rev A
Drainage Pipe Bedding Details S278-38-33 Rev A

Please do not hesitate to contact the above officer if you require any further assistance.

Yours sincerely

A handwritten signature in black ink, appearing to be 'NC' followed by a flourish and a period.

Neil Crowther
Group Head of Planning

