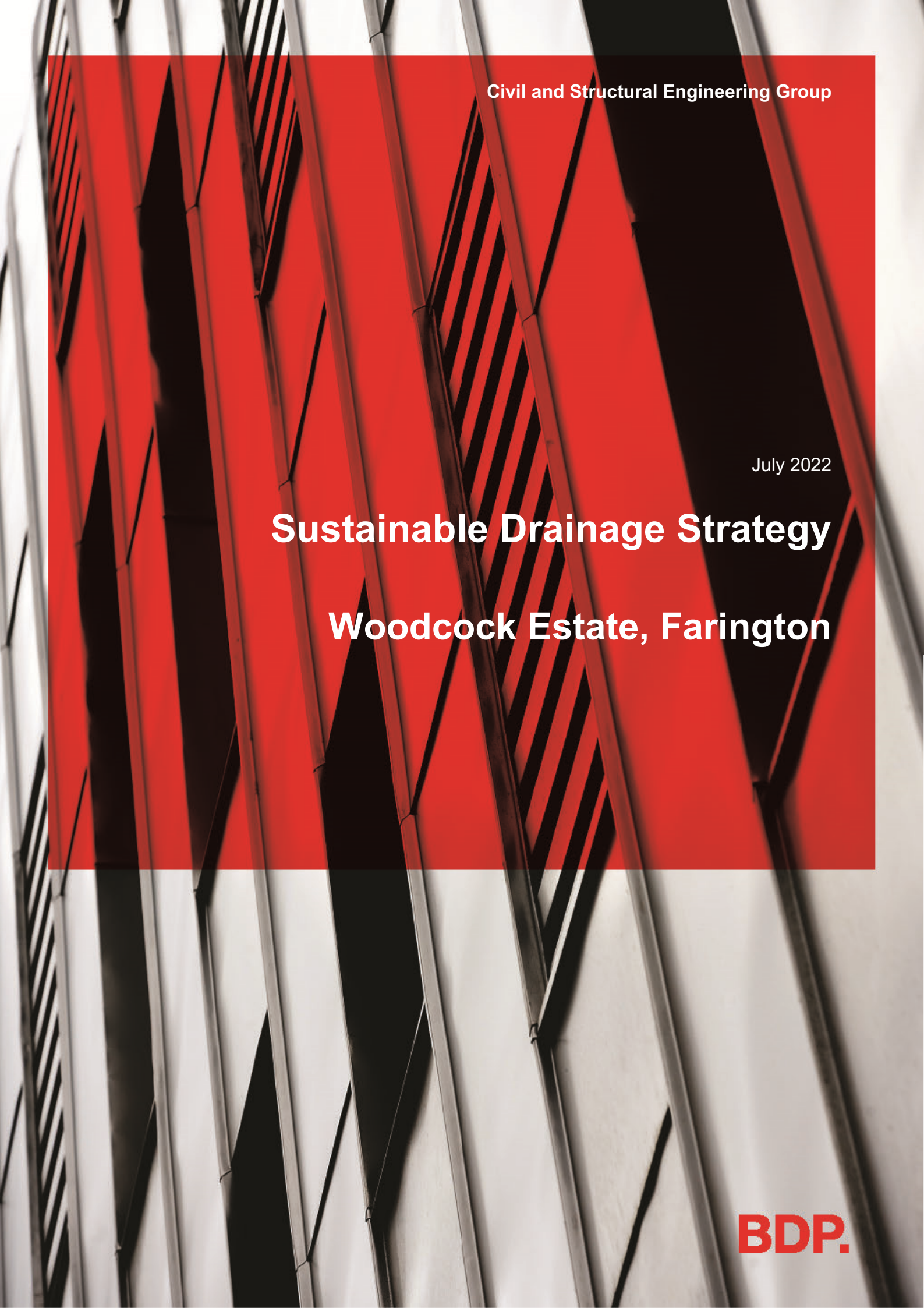

Civil and Structural Engineering Group

July 2022

Sustainable Drainage Strategy

Woodcock Estate, Farington

BDP.

Document Control

Revision	Description	Issued by	Date	Reviewed
-	First Issue	ARJ	12.01.22	PS
P01	Updated Masterplan	NC	21.02.22	DN
P02	LLFA Comments Incorporated	ARJ	11.03.22	PS
P03	Barton Willmore Comments Incorporated	NC	19.04.22	DN
P04	Updated Masterplan	EH	22.07.22	DN

Author

Elanna Herod

Senior Civil Engineer

Signature E. Herod

Date **22.07.22**

Approved

David Nicholls

Civil & Structural Engineering Associate

Signature

Date **22.07.22**

This report is prepared for the sole benefit of our clients Lancashire County Council

Contents

1.0 Introduction

1.1 Appointment & Brief

BDP was appointed to prepare a Masterplan for the proposed establishment of a Lancashire County Cricket Club Academy and ancillary development at the Woodcock Estate site in Farington.

The high-level brief for the development comprises:

Proposed Cricket Facility comprising 2No. cricket ovals and associated pavilion building and spectator seating, covered cricket nets, access, parking, landscaping and associated works (including temporary event overlay facilities on ticketed match days.

The site lies to the west of the 'Lancashire Central' strategic site, which will be developed as a regionally significant employment hub.

1.2 Objective of the Strategy

As part of the scope of work to inform the development of the masterplan for the site, a Sustainable Drainage Strategy has been produced to advise on a potential solution for foul and surface water drainage.

This report is intended to provide information and present proposals relating to the following:

- The existing surface and foul water drainage systems within and in the vicinity of the site;
- Proposed surface water and foul water flows;
- Proposed surface water and foul water discharge points;
- Proposed surface water storage volumes & attenuation features.

1.3 Limitations

This report has been prepared to inform the development of the masterplan for the site and in support of a planning application. It is based on information available at the time of writing and further site survey work, investigations and consultations will be required to verify the information contained herein.

2.0 Site Context

2.1 Site Characterisation/ Land Use

The Woodcock Estate currently comprises a network of agricultural grassland and fields, divided by hedgerows and avenues of trees, with around 10 clusters of farmhouses and associated buildings.

A number of existing public rights of way cross the site, many of which run parallel to the existing hedgerows. In addition, the site contains a number of existing land drainage ditches/ ordinary watercourses which generally flow in a northerly direction towards the River Lostock where they are culverted below the A582 Farington Road which forms the northern boundary of the site.

An area of land within the site and adjacent to the A582 is designated as Flood Zone 2 on the Environment Agency Flood Map.

The A582 Farington Road is subject to a package of improvement works which is being undertaken by the Local Authority. As part of these proposals, a surface water attenuation pond is to be constructed just outside the northern boundary and within the area of Flood Zone 2 noted above.

The A5083 Stanifield Lane forms the western boundary of the site which junctions onto the A582 via a roundabout at the north western corner.

2.2 Topography

Topographical information in the form of detailed survey was obtained for the site. This suggests that the site falls generally from the south east to the north west towards the A582 and the River Lostock. Levels in the south are in the region of 37.0m AOD with levels along the A582 at around 32.0m AOD.

2.3 Existing Drainage

Sewer Records were obtained from United Utilities for the site and surrounding area.

There are no public sewers identified within the development site or in the immediate vicinity. The only public sewers within a reasonable distance are located to the north beyond the A582 and River Lostock. This generally comprises a network of combined sewers of varying size ranging from 150mm to 450mm diameter. Some of this network is shown to be pumped from Sherdley Road up to Watkin Lane where it flows in a northerly direction, presumably to the Walton-le-Dale WWTW.

The records also indicate a number of Sewer Overflows in the area which discharge into the River Lostock. This would suggest potential capacity issues with the public sewer network in the area.

In addition to the public sewers surrounding the site, an existing 600mm diameter Highways England surface water drain crosses the development in a north westerly direction and discharges to the River Lostock on the northern side of Farington Road. A drainage survey of this feature was undertaken to establish the precise alignment and level, a copy of which can be found in Appendix C. It is intended that this feature will be retained along its current alignment with existing manholes adjusted as necessary to suit new levels and new manholes provided at suitable locations to facilitate potential future access.

Initial discussions have been held with Highways England who confirmed they were comfortable with this solution providing that at least 1m of cover is provided to the pipe and that a further survey is undertaken following completion of construction works to confirm no damage has been sustained.

A long section has been produced along the pipe where it crosses through the development which demonstrates that a minimum 1m of cover is achievable. A copy of this is also contained in Appendix C.

2.4 Existing Watercourses

As noted above, the River Lostock is located to the north of the development site on the northern side of the A582 Farington Road. This is served by a network of ditches and ordinary watercourses, some of which are located within the development site. Information obtained in relation to the A582 highway improvement works indicates that

these watercourses are culverted below Farington Road ranging from 225mm diameter to 700mm diameter. Some of these culverts will be upgraded as part of the proposed highway improvements to provide additional capacity.

A Flood Screening report was obtained from Envirocheck which details the river and watercourse network in the area. This was used in conjunction with the topographic survey to conduct a site walkover and survey to try and establish the connectivity of these features through the site.

Where necessary, some of the ditches within the site boundary will be abandoned as they will become redundant as a result of the development proposals. Where any connectivity exists through the site, these ditches will be culverted as necessary subject to agreement with the LLFA and formal land drainage consent,

3.0 Foul Water Drainage

3.1 Introduction

A new foul water drainage system will be installed to serve the proposed Pavilion.

The foul water system will be designed and constructed in accordance with the current Building Regulations, BS EN:752 drainage and sewer systems outside buildings and the local authority building control specifications and requirements.

3.2 Foul Water Discharge Rates

At such an early stage of the development, accurate calculation of the design Dry Weather Flow for the development is not possible. Foul water flow rates would need to be determined at future design stages as more information becomes available. However, based on the layout of the Pavilion it is anticipated that foul flow rates would be less than 5.0 l/s.

3.3 Foul Water Capacity & Point of Connection

The nearest available outfall would be the public combined sewer system in Lostock View to the north of the site. Any connection would require circa 400m of pipework from the Pavilion which would require works within third party land, along the public highway and would also require crossing both Farington Road and the River Lostock.

United Utilities manhole 6101 is located in Lostock View off Sherdley Road. This is the final manhole before discharge to an adopted pumping station which pumps flows up to Watkin Lane. The invert of this manhole, based on record information, is 30.59m AOD.

Connection to the public sewer network would require foul flows to be pumped. This is based both on the invert level of the sewer along with the requirement to cross the River Lostock via the existing bridge structure.

Based on the above, a connection to the public sewer network is not considered to be practicable for the development due to the significant technical challenges along with the costs associated with installing this connection.

It is therefore intended that foul water flows will be treated on site using a package treatment facility. The treated wastewater would then be discharged into the new on-site surface water drainage infrastructure before ultimately being discharged to the River Lostock via the existing ordinary watercourse network. It is considered that by discharging treated flows into the proposed surface water drainage network, prior to outfall to the River Lostock, the effluent will receive further treatment and dilution as it passes through the attenuation pond.

Correspondence has been issued to the Environment Agency to enquire whether this would be acceptable. At the time of writing a response was awaited.

The addition of the anticipated foul flows into the proposed Surface Water network has also been taken into consideration as part of the volume calculations for the design of the attenuation basin.

3.4 Adoption & Maintenance.

It is understood that the development site would be considered a single curtilage/ property under the ‘Transfer of Private Sewers Regulations (2011)’, therefore, it is unlikely that any new foul drainage would be adopted as a public lateral drain or sewer by United Utilities.

This provides further justification for the treatment and disposal of foul flows on site.

Subject to this being acceptable to the Environment Agency, it is intended that the foul drainage system would remain in private ownership and a suitable maintenance regime put in place with a specialist third party contractor.

Notwithstanding the above, discussions will be held with United Utilities to determine whether adoption of the treatment plant by them would be an option.

4.0 Surface Water Drainage

4.1 Introduction

The National Planning Policy Framework (NPPF) and accompanying Technical Guidance indicate surface water run-off should be controlled as near to its source as possible through a sustainable drainage approach to surface water management.

Consideration should therefore firstly be given to using sustainable urban drainage (SUDS) techniques including soakaways, infiltration trenches, permeable pavements, grassed swales, ponds and wetlands to reduce flood risk by attenuating the rate and quantity of surface water run-off from a site. This approach can also offer other benefits in terms of promoting groundwater recharge, water quality improvement and amenity enhancements. Approved document Part H of the Building Regulations sets out a hierarchy for the disposal of surface water which encourages a SUDS approach.

4.2 Consultation

An enquiry in the form of Pre-Application advice was submitted to the LLFA (Lancashire County Council) and a meeting held with them on the 04th March 2022. Formal correspondence was subsequently issued providing detailed comments on the preliminary information issued, a copy of which can be found in Appendix M.

Amendments to the drainage strategy report and FRA have been made to ensure that any queries/ comments raised have been adequately addressed.

4.3 Methods of Surface Water Management

4.3.1 Discharge to Ground

Intrusive site investigation in the form of trial pits and boreholes indicate that the site is underlain by circa 400mm of TOPSOIL over significant depths of CLAY. Infiltration testing was undertaken at six different locations and five of these did not record a sufficient drop in water level to allow the infiltration rate to be calculated. The only test that did yield a rate measured 5.74 x 10-7 m/s which is not considered suitable for infiltration-based drainage solutions.

A copy of the Phase 2 SI Executive Summary can be found in the appendices.

4.3.2 Discharge to Watercourse

The nearest main river to the site is the River Lostock which is located to the north beyond Farington Road. However, the site contains a number of existing land drainage ditches/ ordinary watercourses some of which have connectivity to the River via culverts beneath Farington Road.

Based on the topography of the site and the development proposals, the most appropriate outfall for the site would be the existing culverted watercourse to the northwest. This measures 450mm diameter and is intended to be upsized to 750mm diameter as part of the Farington Road highway improvements.

4.3.3 Discharge to Sewer

As noted earlier in this report, there is very little in the way of public sewers within the vicinity of the site. The closest to the development are located to the north beyond the River Lostock. Based on their proximity and the availability of other water features this option has not been considered further for the discharge of surface water.

4.4 Pre-development Surface Water Runoff

The existing site is currently undeveloped and is therefore considered to be Greenfield for the purposes of runoff estimation.

The existing runoff rate for the site has therefore been calculated using the Institute of Hydrology Report 124 Flood Estimation for Small Catchments (1994) via the greenfield runoff estimation tool on the UK SuDS Website www.uksuds.com.

The IH124 publication provides the essential design elements for determining the estimated Greenfield runoff rate which is based on the site area, soil type, and average annual rainfall, which is influenced by the location of the site within the United Kingdom. This methodology is recommended within the joint DEFRA & Environment Agency Technical Report SC030219 'Rainfall runoff management for development' (2013).

The IOH 124 equation to calculate runoff is:

Qbar = $0.00108.AREA^{0.89}.SAAR^{1.17}.SOIL^{2.17}$

Where:

Qbar = Mean Annual Flood (m^3/s). A return period in the region of 2.3 years.

Area = The area of the Catchment in km^2

SAAR = Standard Average Annual Rainfall (mm) for the period 1941 to 1970

SOIL = Soil index value obtained from soil maps in the Flood Studies Report or the WRAP map of the Wallingford Procedure.

The analysis for determining the peak Greenfield discharge rate uses 50 ha in the formula and linearly interpolates the flow rate value based on the ratio of the development to 50ha (Interim Code of Practice for Sustainable Urban Drainage Systems, 2004).

The table below summarises the greenfield runoff rate generated by the development for a range of storm return periods. It should be noted that the net area is based on the anticipated measured 'drained area' and not on the total development area as there are some significant areas of green space that have been ignored on the basis that these will continue to drain as the pre-development scenario.

A plan showing these areas can be found in the appendices.

Gross Area (ha)	Net Area (ha)	Existing Greenfield Runoff (l/s)				Restricted Discharge (l/s)
		Q_1	Q_{bar}	Q_{30}	Q_{100}	
13.7	11.35	71.26	81.91	139.25	170.37	81.91

The calculated greenfield runoff rate (Qbar) has been used to define the limiting discharge flow rate requirements for the development.

The net drained area along with the greenfield runoff rate is INDICATIVE ONLY and will be subject to change as the scheme is developed. Final figures will be agreed with the LLFA as part of a future condition discharge application for the drainage post planning.

4.5 Attenuation Requirements

The proposed restricted discharge rate above and development runoff generated by proposed impermeable and permeable areas results in a storage requirement during periods of intense rainfall.

The proposed drainage system has been modelled in Microdrainage to enable both piped systems and attenuation storage to be sized correctly. A copy of these calculations can be found in the appendices to this report. The contributing drainage catchments can be found on a plan in the appendices and measure circa 3.72ha. It should be noted that this is less than the Net Greenfield catchment area above as proposed landscaped areas have been factored accordingly to represent their greenfield characteristics i.e., they will not generate run-off in the same manner as proposed impermeable hardstanding areas.

The total volume of attenuation storage required is $1845m^3$. Approximately **$1520m^3$** is to be stored within the proposed attenuation basin with the remaining volume being provided in the piped network, permeable pavements

and filter drains. This includes an allowance of 40% for climate change in accordance with local and national standards.

No specific allowance has been made for any urban creep as it is not considered to be appropriate given the type of development proposed. However, an allowance has been made for future expansion of the car park area in the north east of the site. It is proposed that any future development in this area is restricted to 5 l/s and additional attenuation is to be provided beneath the car park.

Finally, additional storage is provided within the 300mm depth of freeboard above the permanent water level. This equates to approximately **500m³**.

4.6 Surface Water Runoff Volume

Additional runoff volumes from development can cause increases in flood risk downstream of the site, even when peak flows are controlled to greenfield rates. Therefore, for extreme events, in addition to the standard for controlling the peak rate there is also a requirement to control the runoff volume for the 100-year, 6 hour event.

As noted above, it is intended that discharge rates will be restricted to Qbar for all events up to the 100 year return period. This is primarily due to the constraints of the site which make the provision of long-term storage not practicable.

The pre-development greenfield runoff volume for the development has been calculated at **3,602m³** based on a Net area of 11.35ha (Appendix H). For the same event, plus a 40% allowance for climate change, the maximum discharge volume generated by the development is **2,584m³** as evidenced in the Microdrainage calculations appended to this report and extracted below.

Summary of Results for 360 minute 100 year Winter I+40%

Pipe Number	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Discharge Vol (m³)	Pipe Flow (l/s)	Status
1.000	1.0	360 minute 100 year Winter I+40%	35.500	34.057	-0.168	51.708	6.1	OK
1.001	1.1	360 minute 100 year Winter I+40%	35.300	33.874	-0.226	125.553	14.7	OK
2.000	1.2	360 minute 100 year Winter I+40%	34.600	33.629	-0.200	165.313	20.8	OK
1.002	1.3	360 minute 100 year Winter I+40%	34.650	33.199	-0.168	352.959	42.7	OK
3.000	1.4	360 minute 100 year Winter I+40%	34.400	33.473	-0.177	959.026	115.3	OK
3.001	1.5	360 minute 100 year Winter I+40%	34.500	33.281	-0.311	958.723	115.3	OK
1.003	1.6	360 minute 100 year Winter I+40%	33.900	32.236	-0.230	1610.456	192.8	OK
1.004	1.7	360 minute 100 year Winter I+40%	33.150	31.805	-0.225	1659.069	198.4	OK
1.005	1.8	360 minute 100 year Winter I+40%	33.500	31.372	-0.208	1689.943	202.0	OK
4.000	1.9	360 minute 100 year Winter I+40%	32.575	31.484	-0.191	258.647	30.3	OK
1.006	1.10	360 minute 100 year Winter I+40%	33.850	31.038	-0.332	1948.529	232.1	OK
5.000	P1	360 minute 100 year Winter I+40%	31.400	31.373	0.273	291.522	33.4	FLOOD RISK
6.000	1.11	360 minute 100 year Winter I+40%	33.200	32.452	-0.148	339.919	39.8	OK
6.001	1.12	360 minute 100 year Winter I+40%	35.400	32.244	-0.236	339.824	39.8	OK
6.002	1.13	360 minute 100 year Winter I+40%	35.400	32.139	-0.223	424.656	49.7	OK
6.003	1.14	360 minute 100 year Winter I+40%	35.500	31.982	-0.185	424.649	49.7	OK
6.004	1.15	360 minute 100 year Winter I+40%	35.500	31.929	-0.207	509.450	59.6	OK
6.005	1.16	360 minute 100 year Winter I+40%	35.400	31.741	-0.209	509.582	59.6	OK
6.006	1.17	360 minute 100 year Winter I+40%	35.400	31.423	0.548	509.566	59.4	SURCHARGED
5.001	1.18	360 minute 100 year Winter I+40%	31.800	31.366	0.542	800.987	88.3	SURCHARGED
5.002	1.19	360 minute 100 year Winter I+40%	31.600	31.358	0.575	825.963	90.9	FLOOD RISK
5.003	1.20	360 minute 100 year Winter I+40%	32.400	31.259	0.590	825.544	90.4	SURCHARGED
5.004	1.21	360 minute 100 year Winter I+40%	32.900	31.168	0.572	1062.859	97.3	SURCHARGED
5.005	1.22	360 minute 100 year Winter I+40%	33.500	31.069	0.568	1060.949	96.8	SURCHARGED
5.006	OF1	360 minute 100 year Winter I+40%	31.600	30.965	0.597	1056.598	96.0	SURCHARGED
1.008	1.26	360 minute 100 year Winter I+40%	31.600	30.841	0.741	2584.516	81.6	SURCHARGED

This demonstrates that by reducing the proposed site discharge rate to Qbar, the post development runoff volume does not exceed the pre-development scenario.

4.7 Climate Change

There are indications that the climate in the UK is changing significantly, and it is widely believed that the nature of climate change will vary greatly by region. Current expert opinion indicates the likelihood that future climate change would produce more frequent short duration and high intensity rainfall events with the addition of more frequent

periods of long duration rainfall. The environment Agency recommend both the central and upper end allowances are assessed to understand the range of impact.

The proposed drainage strategy includes an allowance of 40% for climate change.

4.8 Surface Water Drainage Strategy

As described above, the hierarchy for surface water disposal as set out in Part H of the Building Regulations indicates that priority should be given to the use of infiltration systems, second priority to discharge to a watercourse and third priority to discharge to the public sewer network.

Based on intrusive investigations and infiltration testing undertaken at the site, infiltration-based SuDS solutions are not considered to be suitable as a method of surface water disposal.

On the basis that infiltration is not feasible then it is intended that surface water would be discharged to one of the local ordinary watercourses present within the development site. Discharge rates would be restricted to greenfield rates (Qbar: 81.9 l/s) subject to agreement with the LLFA.

The restricted flow generates a storage requirement during periods of intense rainfall. The resultant storage volume for the 1 in 100 year return period with a 40% allowance for climate change is estimated as **1845m^3**. This is based on the measured catchment areas from the masterplan as shown in Appendix L which are subject to change as the scheme is developed. The estimated volume also takes into account the potential storage requirements as a result of foul water flows discharging from the package treatment plant.

Areas of hardstanding and roof have been taken as 100% impermeable with landscaped areas taken at 15% to mimic their greenfield characteristics. The total drained catchment area for the site is **3.7 ha.**

A connection to the public sewer network has been discounted on the basis of the limited infrastructure in the vicinity and the availability of other water features which offer a more sustainable approach.

Attenuation is proposed in the form of an attenuation basin located to the northwest close to the outfall. The size and shape of this is indicative and will be subject to further design development. The provision of a permanent water level and appropriate planting to provide biodiversity and water quality enhancements will be explored further at detailed design stage in conjunction with Lancashire County Council.

It is intended that a number of the hard surfaces around the site will be provided with permeable surfacing which will provide both attenuation and water quality benefits. Due to the poor infiltration encountered these areas will be positively drained through provision of outfall points within the sub-base. Other parts of the site such as the overflow car parks, media compound etc will be unsurfaced and provided with a reinforced mesh system to stabilise the natural grass surfaces.

Where considered necessary, areas of soft landscaping and proposed footpaths will be drained by gravel filter drains which will convey run-off to the primary attenuation facility.

A drawing detailing the current proposed drainage strategy can be found appended to this report.

As detailed in the Flood Risk Assessment, existing ground levels across the site will need to be raised to accommodate the new cricket pitches and Pavilion. As a result, the existing ditch in the east of the site will need to be diverted. The option to divert the open channel through the site was explored, however, due to the increase in proposed levels in this area, the width and depth of the channel would need to increase significantly to meet the required gradients for the side slopes. In addition, the open channel would be required to cross underneath the main pedestrian access from the car park to the Pavilion, which posed a health and safety issue due to its increased size. It is therefore proposed that the ditch is culverted through the site, returning to an open channel beyond the northern boundary.

4.9 Gravity or Pumped Connection

Based on the proposed development levels and existing topography, it is not possible to achieve a gravity connection to the existing ordinary watercourse and therefore a surface water package pumping station will be required after the flow control to lift flows up to a higher level.

Other outfall points have been considered during the development of the drainage strategy, alongside utilising more than one discharge point for the site with a view to draining part by gravity, however all options would ultimately require pumping due to the shallow nature of the on-site land drainage network or other constraint.

A direct connection to the River Lostock was also considered but this was discounted due to levels on the opposite side of Farington Road being broadly similar to the lowest levels on site and the constraints associated with constructing this connection.

It is therefore considered that no other practicable solution exists that would enable the site to drain by gravity.

Taking the above into consideration, to mitigate the risk of flooding due to pump failure, an additional **500m^3** of storage has been provided above the maximum design water level. This is equivalent to **125m^3/ha** of drained area (i.e., 15 minutes of rainfall at 50mm/hr).

4.10 Sustainable Drainage Systems

Current policy and best practice encourage the use of Sustainable Drainage Systems (SuDS) and in particular, infiltration systems.

The Environment Agency recommends that “surface water run-off should be controlled as near to its source as possible through a sustainable drainage approach to surface water management. This approach involves using a range of techniques including soakaways, infiltration trenches, permeable pavements, grassed swales, ponds and wetlands to reduce flood risk by attenuating the rate and quantity of surface water run-off from a site. This approach can also offer other benefits in terms of promoting groundwater recharge, water quality improvement and amenity enhancements. Approved document Part H of the Building Regulations sets out a hierarchy for surface water disposal which encourages a SuDS approach”.

As noted above the ground conditions and testing have confirmed that the site is not suitable for infiltration-based SuDS solutions. However, other SuDS measures such as positively drained permeable pavements, filter drains and an attenuation basin have been included which provide water quality, amenity and bio-diversity benefits.

It is intended that planting of the attenuation basin and introduction of a permanent water level will be explored at detailed design stage to further enhance the sites SuDS credentials.

5.0 Summary

The proposed development includes a Proposed Cricket Facility comprising 2No. cricket ovals and associated pavilion building and spectator seating, covered cricket nets, access, parking, landscaping and associated works (including temporary event overlay facilities on ticketed match days).

The site is located across the Woodcock Estate, Farington on greenfield land which comprises a network of agricultural grassland and field, with a small number of farmhouses and associated buildings.

The site is in an area identified as having a low probability of flooding on the Environment Agency Flood Map and is primarily located in Flood Zone 1. A separate Flood Risk Assessment has been prepared by BDP which should be read in conjunction with this report.

The primary option for the disposal of surface water from the development is via an existing land drainage ditch/ culverted watercourse to the northwest which connects into the River Lostock on the opposite side of Farington Road. Infiltration based methods have been discounted due to the poor ground conditions and a connection to the public sewer network has also been discounted given the severe lack of infrastructure in the vicinity of the site. A gravity connection for surface water drainage is not feasible and therefore flows will need to be pumped via a private package pumping station which will be maintained by the site operator.

Discharge from the site will be restricted to the existing pre-development greenfield run-off rate (Qbar). This has currently been calculated at **81.9 l/s** based on the proposed drained area of the site. However, this can be considered indicative at this stage and the discharge rate will be finalised as part of a future reserved matters application post-planning.

Surface Water attenuation is proposed in the form of an open basin which is located to the northwest close to the outfall. The total volume of storage required for storm events up to and including the 100 year return period plus a 40% allowance for climate change is **1845m^3**. It is proposed that **1520m^3** is stored within the attention pond with the remaining volume being provided in the piped network, permeable pavements and filter drains. An additional **500m^3** of storage is available above the maximum water level to mitigate any risk of flooding due to pump failure.

The maximum post-development discharge volume for the 360 minute 100 year event (plus climate change) is **2,584m^3** which is less than the pre-development figure of **3,602 m^3**.

As a result of the very limited public sewerage infrastructure in the vicinity, it is intended that foul water flows generated by the Pavilion will be treated on site using a package treatment facility before then discharging the treated effluent to the proposed on-site surface water drainage network. This treated flow will eventually discharge to the River Lostock via the proposed attenuation facility which will provide further water quality and dilution benefits.

Consultation has been issued to the Environment Agency with respect to the above and at the time of writing a response was awaited.