Power Park Exeter
Drainage Strategy

Document Reference: 210054-WDK-ZZ-SI-RP-C-33300

Revision 03

OXENWOOD
REAL ESTATE

Waldeck

Contents

Waldeck

01 - PROJECT BACKGROUND

01

01 Drainage Strategy
Introduction

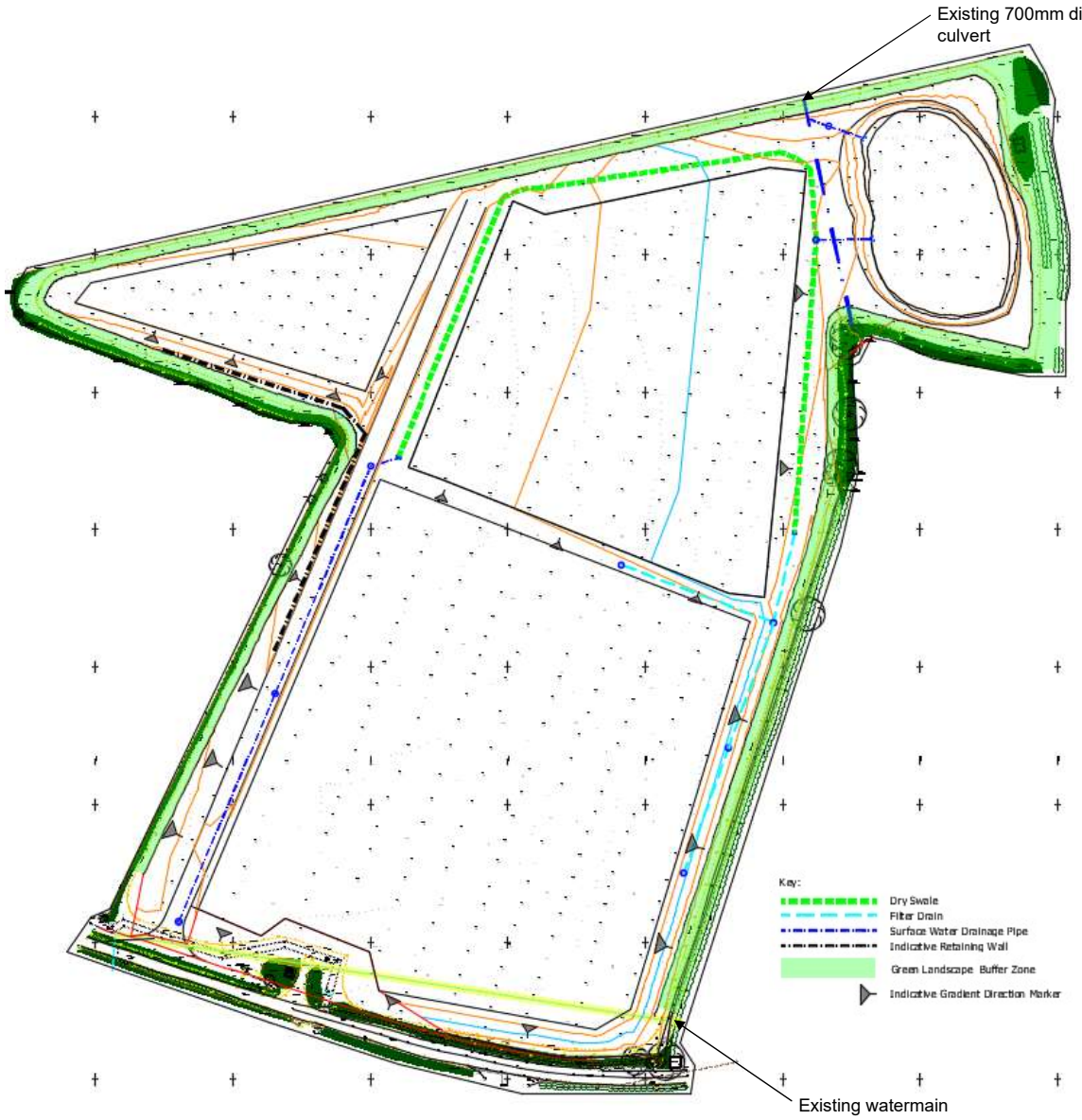

Figure 1 – Outline Surface Water Drainage Plan (Not to Scale)

Introduction

This document sets out the drainage strategy for the long term management and maintenance of both the surface water and foul water drainage systems proposed for the Exeter Power Park Development. The proposed development is located to the south of Exeter International Airport, a site plan is shown in Figure 1 and the site location is outlined in red in Figure 2.

Figure 2 - Exeter Power Park Site Location

Development details are summarized in Table 1:

Site Name	Power Park Development
Location	Exeter
Grid Reference	SY 00851 93414
Development Area	7.67 Ha
Development Type	Commercial
Flood Zone	1
Surface Water Flood Risk	Rivers/Sea – Low Rainfall – Low to High
Local Water and Sewage Undertaker	South West Water
Planning Authority	East Devon District Council
Lead Local Flood Authority	Devon County Council

Table 1 – Development Details

Waldeck

02 – Foul Drainage Strategy

02 Drainage Strategy

Foul Water

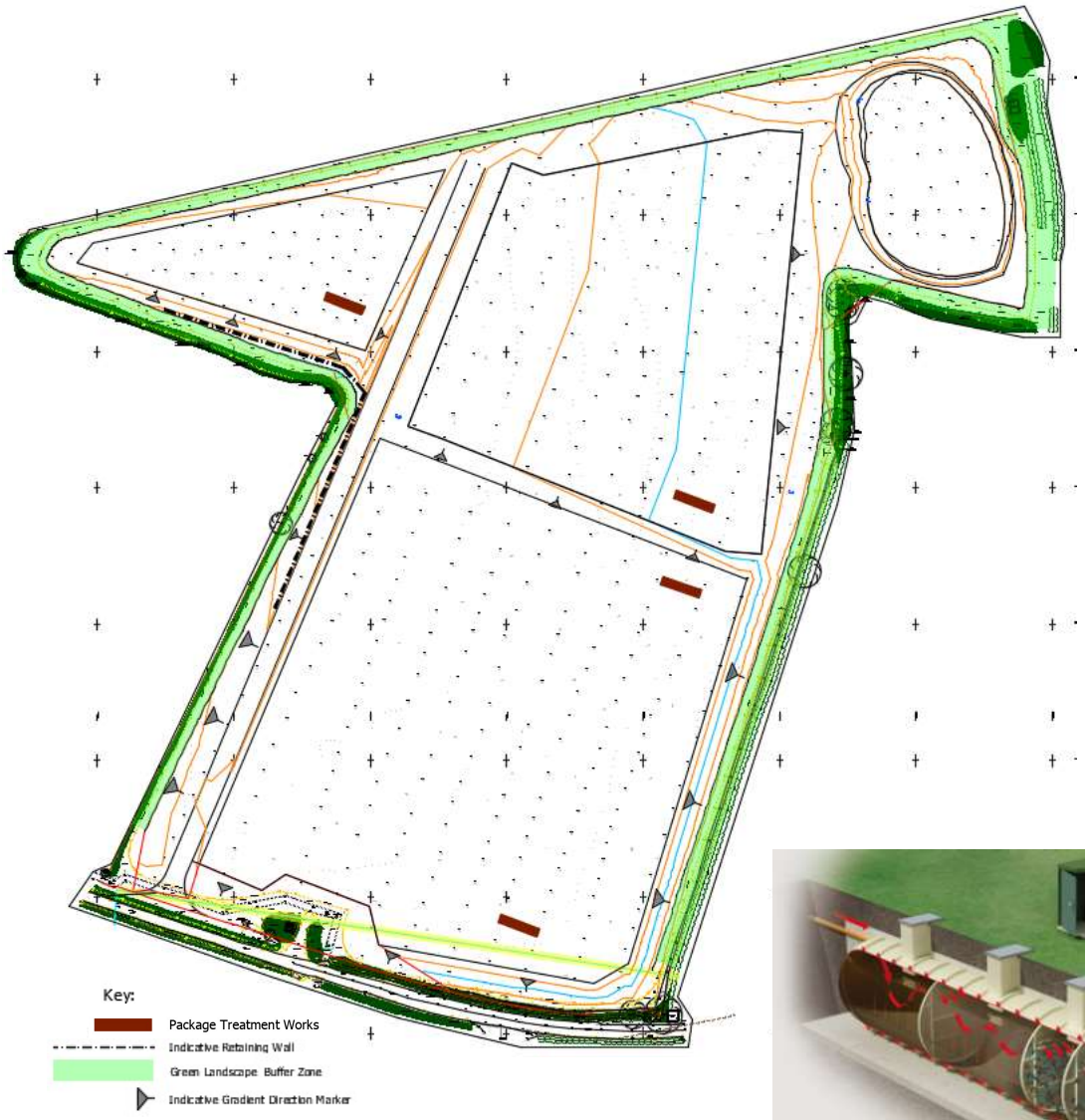

Figure 3 - Outline Foul Water Package Treatment Plants Plan (Not to scale)

Foul Water Drainage Strategy

Pre-development enquiries with South West Water revealed no public foul water connection within the vicinity of the proposed development, nor are there any plans to install foul water drainage as part of the road improvements adjacent to the development. SWW sewer mapping is shown in Appendix A.

On South West Water's recommendation, contact was made with Exeter Airport to investigate the option of connecting into their private foul water system but Exeter Airport have advised that they do not have any capacity to accept additional foul water flows. However, it is acknowledged that there are ongoing discussions to progress a pumping station requisition with South West Water and construct a new sewer running north east of the airfield towards Cranbrook. This is not yet a feasible strategy for the development, predominantly due to timescales. Furthermore, a foul drainage assessment has been undertaken to satisfy the guidance set out by the Environment Agency, see appendix B.

It is therefore proposed to utilise package treatment works to capture and treat foul water drainage on site, treated effluent will then be discharged to the watercourse in the north east corner of the site. Provisional locations of package treatment works are presented in Figure 3. Examples of package treatment works are presented in Figure 4.

Based on Design and Construction (DCG) guidance by Water UK, a foul water discharge of 0.5 l/s/ha has been proposed, based on an impermeable area of 4.54 ha a contribution of 2.27l/s of treated foul water flows from the development site into the watercourse.

Foul Water Maintenance Requirements

Maintenance requirements of package treatment plants will vary dependent on the type of package treatment plant and size; typical maintenance will include:

- Cleaning of pipework, air diffusers (for aerated treatment systems), air blower inlet (for aerated systems) on a 6 to 12 monthly basis (dependent on use and flows received).
- Regular emptying as required by certified waste carriers.
- Serviced annually as a minimum.

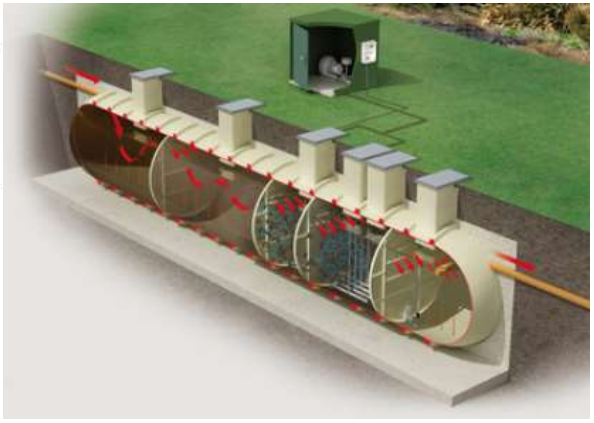

Figure 4 – Package Treatment Plants

Waldeck

03 – Surface Water Drainage Strategy

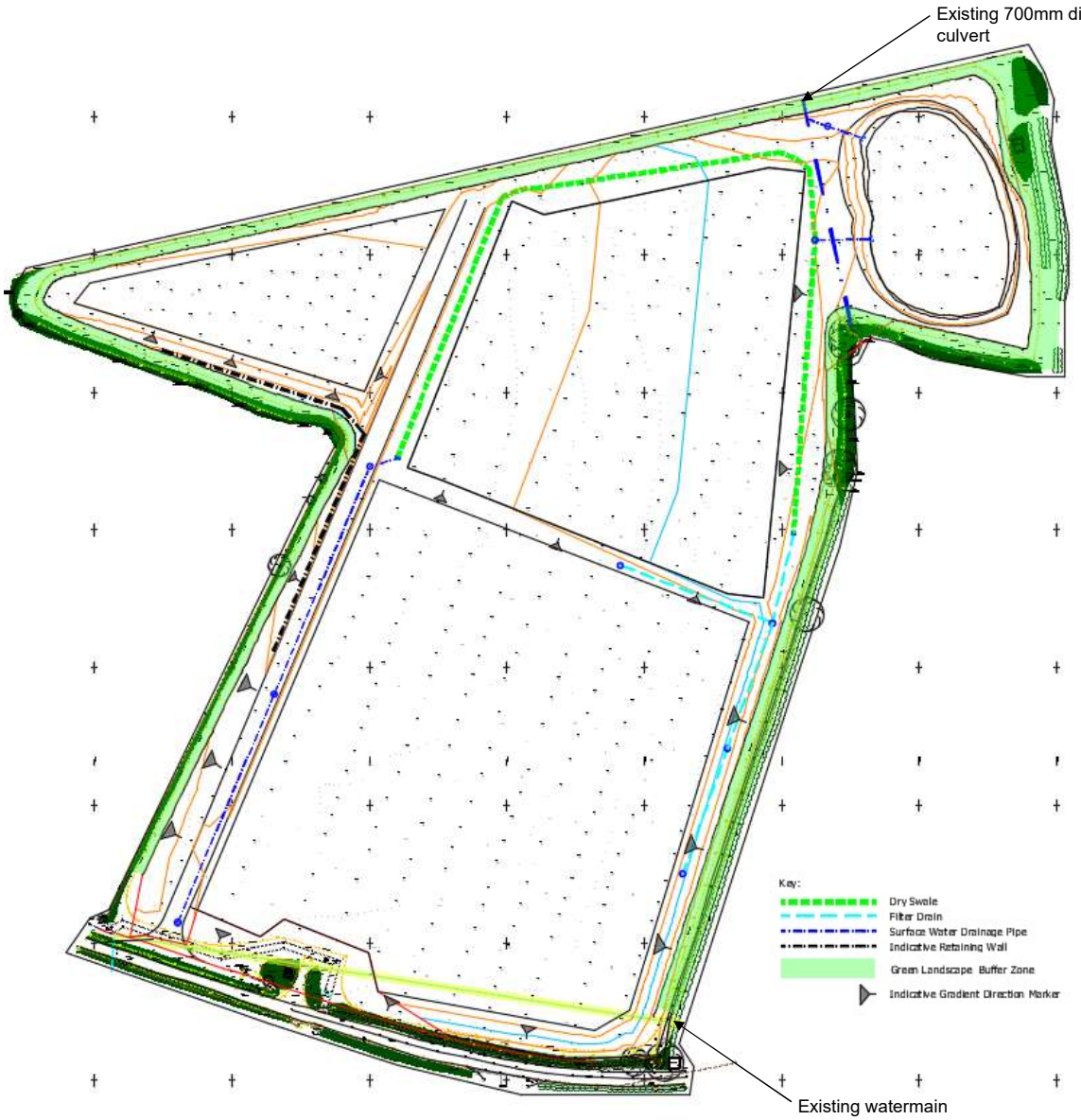

Figure 5 – Outline Surface Water Drainage Plan (Not to Scale)

Surface Water Drainage Strategy

The surface water drainage proposals for the Power Park development comply with the Surface Water Drainage Hierarchy where surface water must be managed in the following preferential order:

1. Infiltration to ground
2. Discharge to watercourse (ditch, river etc)
3. Connection to surface water sewer
4. Connection to a combined sewer

Groundwater was encountered close to the surface during the ground investigation. As per the Phase 2 Ground Investigation (Appendix B of Design Code), groundwater was measured at 0.68 to 1.12m below ground level in the north east corner, thus it Is not feasible to infiltrate surface water run off to the ground; discharge to watercourse is the next preferred option.

A 700mm diameter culvert is located to the north east of the development and current information indicates that this culvert discharges to watercourses to the north of Exeter Airport runway. It is assumed riparian rights to discharge exist through this culvert for the development; flows from the development are currently assumed to be restricted to greenfield run off rate which will need to be agreed with the Lead Local Flood Authority (LLFA) and Environment Agency (EA). This means that surface water run off from the proposed development will be no greater than existing and therefore there is no increase in risk of downstream flooding.

Surface water is conveyed from development plateaus to a detention basin via a combination of filter drains and/or swales; surface water discharges are restricted via Hydrobrake from the detention basin to the surface water culvert. A provisional outline of the surface water drainage plan is shown in Figure 5.

Preliminary Surface Water Modelling

Preliminary results from surface water drainage modelling detailing discharge rate, detention basin size and maximum resulting water level from the 1 in 100 Year plus 40% Climate Change event are shown in Table 2. Design and Construction Guidance (Water UK) gives a number of estimates for foul water flows dependent on type of industry with 0.5 litres per second per hectare given for normal industry. The discharge rates below have been agreed with the LLFA, on the basis that existing greenfield run off rate is 8.9l/s.

Surface Water Management	Parameter
Existing Greenfield Run-off Rate (2l/s/ha x 4.45ha)	8.9l/s
Proposed Surface Water Discharge Rate	5.0 l/s
Pond Size	Base Level – 26.000m AoD Top of Embankment Level – 27.400m AoD Freeboard – 300mm Total Storage Volume – 3881.1m^3
Maximum Water Level (1 in 100 + 40% Climate Change)	27.083m AoD
Estimated Additional (Treated) Foul Water Flows Discharging to Watercourse	2.27l/s

Table 2 – Preliminary Surface Water Modelling Results

Detailed modelling of the drainage system should highlight areas of efficiency, for example swales and filter drains will provide minor additional surface water attenuation and slow the time of entry compared to traditional surface water sewer systems.

The existing watercourse shall be surveyed prior to construction to assess the condition of the existing culvert.

Surface Water Flood Risk

The proposed development is predominantly at very low risk of flooding from surface water run off however; a small area of low to medium risk areas are present in the central southern area and an area of medium to high risk exist in the north eastern corner of the development. This information is presented in Figure 6 and Figure 7.

The discharge rates above offer a betterment to the existing arrangement and therefore reduces the risk to flooding downstream of the development.

Figure 6 – Surface Water Flooding Risk

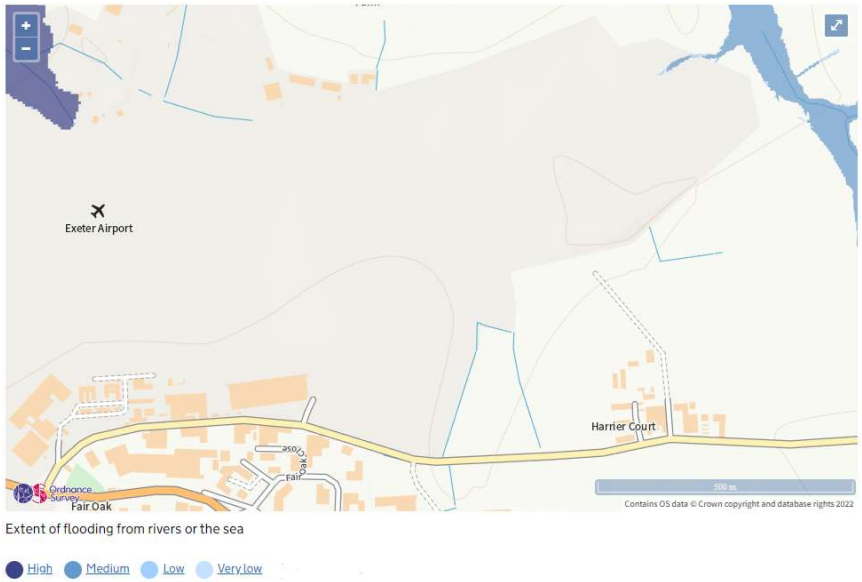

Figure 7 – Rivers and Sea Flooding Risk

Airport Safeguarding

Exeter Airport is subject to "Safeguarding of Aerodromes" and any proposed development located within the vicinity of Exeter Airport will have a number of factors and restrictions to account for in the development.

SuDS features can provide habitats for wildlife and birds, this is of particular concern to Exeter Airport. Advice Note 3 for "Safeguarding of Aerodromes" covers Wildlife Hazards around Aerodromes and has the below table noting the specific bird species concerns dependent on development type which is presented in Table 3.

Development Type	Specific	Species concerns
Waste Management	Landfill Composting Recycling Treatment	Feeding opportunities for potentially large numbers of scavenging birds e.g. Gulls, Corvids, Starlings, Pigeons, Raptors.
Water	Nature Reserves Reservoirs Ponds River diversions Sewage/Water Treatment	Diversity of feeding, loafing, breeding and roosting opportunities for Waterfowl, waders and Gulls e.g. Swans, Geese, Gulls, Ducks, Herons and Egrets, Wading birds such as Lapwing, Oystercatcher etc.
Wetland	Nature Reserves Marshland Reedbeds Swales SUDS Schemes Drainage schemes Flood Alleviation Works Managed retreat	Feeding, roosting, breeding and loafing for Waterfowl, passerines, *hirundines* e.g. Swans, Geese, Ducks, Herons and Egrets, Gulls, Wading birds etc and potential for large Starling or Swallow roosts to form (e.g. Reedbeds).
Sports Facilities	e.g. Golf course open grassland, watercourses, fishing lakes, sailing clubs	Landscape developments risking feeding, loafing and breeding opportunities for different species such as Canada Geese, Gulls, Pigeons, Corvids, Starlings, Herons and Egrets etc.
Developments	Housing, Factories Industrial Estates / Units Mineral extraction Green roofs	Diverse human factors and built environment providing food and shelter for urban species such as Pigeons, Gulls, Corvids, Starlings etc.
Rural	Woodland plantations Pig rearing facilities Poultry facilities	Potential feeding, nesting and cover for species such as Pigeons, Gulls, Corvids, Starlings, Game birds etc.
Energy	Solar farms Tidal barrage Energy plantations	Potential perching opportunities and feeding for raptors. Changes to waterfowl and passerines distribution

Table 3 – Safeguarding of Aerodromes – Advice Note 3 Development Type Table

Airport Safeguarding is not just concerned with the finished construction project, it needs to be considered throughout the lifespan of the project; Advice Note 3 offers and example of concerns typically associated with Industrial Estate Developments as per Table 4.

Development	Type	Attraction
e.g. Industrial Estate Development	Development site - ground works	Corvids, Gulls & Scavenging birds feeding on soil invertebrates
	Development site - standing water	Loafing or bathing Gulls and dabbling ducks (Mallard). Potential for fish eating birds (e.g. Grey Heron)
	Development site - human factors	Workers cafeteria or mobile food outlet; waste food attracting Feral Pigeons, Starlings, Corvids or Gulls.
	Construction works	As above
	Construction works - buildings	Unfinished buildings providing nesting grounds for Feral Pigeons
	Completed works - rooftops	Open flat roofs – breeding grounds for roof nesting Gulls
	Completed works - landscaping	Tree planting or hedgerows presenting nesting opportunities for Woodpigeon / Rook and berry, fruit or nut provision providing food for Thrushes, Starlings, Pigeons etc.
	Completed works - SUDS	Drainage swales resulting in streams, ponding / open grassland etc. suitable for waterfowl.

Table 4 – Safeguarding of Aerodromes – Advice Note 3 Industrial Estate Development Risks

As part of the Wildlife Management required for "Safeguarding of Aerodromes", Sustainable Drainage Systems (SuDS) need to have no permanent water level present and the following storm events must drain within specified timeframes to avoid the need for bird exclusion measures:

- 1 in 100 year storm event to drain within 14 days
- 1 in 1 year storm event to drain within 1 to 4 days

SUDS will require continual monitoring to ensure water does not persist beyond these requirements. Further engineered bird mitigation measures will be needed if the above is not achieved; it is our current intention for SuDS features on the development to be dry and comply with the required drain down times stated above.

03 Drainage Strategy

Water Quality and SuDS Maintenance

Water Quality

Surface water drainage proposals need to ensure suitable water quality is achieved prior to the development discharging to a watercourse. CIRIA 753 - The SuDS Manual details the “Simple Index Approach” to managing water quality on developments, this approach assigns an index value to risk factors dependent on land use classifications.

Further mitigation index values are assigned to sustainable drainage features such as detention basins and swales; provided the total mitigation indices exceed the risk factor indices then suitable water quality is achieved.

The proposed surface water drainage strategy incorporates filter drains, swales and a detention basin which should provide adequate mitigation indices for the proposed development.

Drainage System Maintenance

The drainage system including the detention basin, filter strips/drains, pipework, manhole chambers/catch pits, Hydrobrake and associated inlet/outlet headwalls will be subject to a routine monitoring and maintenance schedule as part of the general site management.

Surface water drainage systems will be maintained in accordance with guidance and recommendations from CIRIA 753 – The SuDS Manual and where applicable any relevant manufacturer information (e.g. Hydrobrake).

Foul water treatment systems are to be maintained in accordance with manufacturer instructions and recommendations.

Conclusion

This document illustrates that it is feasible to provide both foul water and surface water drainage to the proposed Power Park Development located south of Exeter International Airport.

Preliminary modelling shows suitable storage capacity for surface water flows with treated foul water flows from development treatment plants discharging directly to the watercourse. Sustainable drainage features ensure water quality for surface water flows from the development, package treatment works will treat effluent to agreed Environment Agency standards prior to discharge to the watercourse.

Waldeck

04 – Appendix

04 Drainage Strategy

Appendix A – South West Water Sewer Mapping

Waldeck

Foul Drainage Assessment Form (FDA)

Please note: You should only use this form for planning related queries. You cannot use it to apply for an Environmental Permit but you may submit a copy of the information you have provided for planning purposes in support of your Environmental Permit application. Further information on how to apply for an environmental permit and general binding rules applicable to small discharges of domestic sewage effluent is available on the gov.uk website.

APPLICANT DETAILS
Name: Joseph Wild
Address: Waldeck, 21 Cross Street Court, Peterborough, PE1 1XA
Telephone No: 08450 990285
e-mail: joseph.wild@waldeckconsulting.com

We will use the information you provide on this form to establish whether non-mains drainage, either a new system or connection to an existing system, would be acceptable. It is important that you provide full and accurate information. Failure to do this will delay the processing of your application.

You must provide evidence that a connection to the public sewer is not feasible.

Other than in very exceptional circumstances, we will not allow the use of non-mains drainage as part of your Planning or Building Regulation application unless you can prove that a connection to the public sewer is not feasible. We do not consider non-mains drainage systems to be environmentally acceptable in locations where it is feasible to connect to a public sewer. Please note that a lack of capacity in, or other operating problems with, the public sewer are not valid reasons to use a non-mains drainage system where it is otherwise feasible to connect to a public sewer.

Where connection to the public sewer is feasible, you may need to get the agreement of either the owners of any land through which the drainage will run or, if you intend to connect via an existing private drain, the owner of that private drain.

The National Planning Practice Guidance and Building Regulations Approved Document H give a hierarchy of drainage options that must be considered and discounted in the following order:

1 Connection to the public sewer
2 Package sewage treatment plant (which can be offered to the Sewerage Undertaker for adoption)
3 Septic Tank
4 If none of the above are feasible a cesspool

You must respond to all the following questions. If you wish to submit additional information please do so, marked clearly “Additional Information”. **In some cases you will be required to provide further information in order to demonstrate that any non-mains foul drainage system proposed is acceptable.**

Feasibility of mains foul sewer connection	YES	NO
Have you provided a written explanation of why it is not feasible to connect to the public foul sewer with this form? *This must include a scaled map showing the nearest public foul sewer connection point - check with your local sewerage undertaker.*	✔	
Is the distance from your site to the closest connection point to the public foul sewer less than the number of properties to be built on the site multiplied by 30m? *(see Guidance Note 2)*		✖
Does your proposal form part of a phased development or planned development of a wider area? *If YES, please provide further details including references of any planning permissions already granted.*		✖

Non-mains connection

Please provide a plan with dimensions that clearly shows the location of the whole system in relation to the proposed development and the position of the key elements e.g. septic tank, drainage fields and points of discharge.

1. Existing system	YES	NO
Do you intend to use an existing non-mains foul drainage system?		**No**
If YES, does the system already have an Environmental Permit issued by the Environment Agency? *(In the case of a cesspool write N/A)* If YES, please provide Environmental Permit reference number……		

2. Discharge	YES	NO
Do you propose to use a package treatment plant?	✔	
Do you propose to use a septic tank?		✖
Do you propose to use a cesspool? *If YES go to Q4*		✖
Have you considered having your system adopted by the sewerage undertaker? *(see Guidance Note 7).*	N/A	
Will all, or any part of, the discharge go to a drainage field or soakaway*? (see Guidance Note 3)* - this includes systems that combine a drainage field with a high level overflow to watercourse *If YES go to Q3.*		✖
Do you intend to use a system that discharges solely to watercourse? *(see Guidance Note 3) If YES go to Q9.*	✔	

3. Water abstraction	YES	NO
Do you receive your water from the public mains supply?	✔	
If not, where do you get your water supply from?		

4. Cesspools *(For methods other than cesspools write N/A)*	YES	NO
Have you provided written justification for the use of a cesspool in preference to more sustainable methods of foul drainage disposal? *(see Guidance Note 4)*		N/A

5. Drainage field design *(For cesspools write N/A)*	YES	NO
Will the system discharge to a drainage field designed and constructed in accordance with British Standard BS6297:2007? If not, why not?		N/A
Will the discharge from the system be located in a Source Protection Zone 1 (SPZ1)?		N/A

6. Ground Conditions *(For cesspools write N/A)*	**YES**	**NO**
6a. Have you submitted a copy of the percolation test results with this form *(see Guidance Note 6)?* 6b. If NO please explain the justification for not undertaking or submitting these tests.		**N/A**
6c. Is any part of the system in land which is marshy, water logged or subject to flooding?		**N/A**
6d. Will the soakaway be located on artificially raised, made-up ground or ground likely to be contaminated? *If YES please provide details as additional information.*		**N/A**
6e. Have you submitted the results of a trial hole at the site to establish that the proposed drainage field will be above any standing groundwater *(see Guidance Note 6)?*		**N/A**

7. Available Land	**YES**	**NO**
Is the application site plus any available area for a soakaway less than 0.025 hectares ($250m^2$)?		✗

8. Siting of drainage field/soakaway discharge from a septic tank or package treatment plant or other secondary treatment. *You may need to make local enquiries to get a full answer to these questions*.	**YES**	**NO**
Will it be at least **10m** from a watercourse, permeable drain or land drain?		N/A
Will it be at least **50m** from any point of abstraction from the ground for a drinking water supply (e.g. well, borehole or spring)? *This includes your own or a neighbour's supply.*		N/A
Will the discharge be within a groundwater Source Protection Zone 1? *If yes, you will need to apply for an environmental permit*		N/A
Are there any drainage fields/soakaways within **50m**? *This includes any foul drainage discharge system (other than the subject of this application) or surface water soakaway on either your own or a neighbour's property.*		N/A
Will it be at least **15m** from any building?		N/A
Will there be any water supply pipes or underground services within the disposal system, other than those required by the system? *(For cesspools write N/A)*		N/A
Will there be any access roads, driveways or paved areas within the disposal area? *(For cesspools write N/A)*		N/A

9. Siting of treatment plant, septic tank or cesspool	**YES**	**NO**
Is it at least **7m** from the habitable part of a building?		**N/A**
Will there be vehicular access for emptying within **30m?**		N/A
Can the plant, tank or cesspool be maintained or emptied without the contents being taken through a dwelling or place of work?		N/A

10.Expected flow

Please estimate the total flow in litres per day *(see Guidance Note 5).*	***18480***

11. General Binding Rules for Small Sewage Discharges	**YES**	**NO**
Does the system meet the requirements of the General Binding Rules for small sewage discharges?		✗

12. Maintenance

How do you propose to maintain the system?

The packaged treatment works are proposed to be maintained by private maintenance companies.

13. Declaration

I declare that the above information is factually correct.

Name	Signature	Date
Joseph Wild		

GUIDANCE NOTES:

1) This form is for use with *the National Planning Practice Guidance, British Standard BS6297:2007 and Building Regulations Approved Document H.* It is intended to help Local Planning Authorities establish basic information about your non-mains drainage system and decide whether you need to submit a more detailed site assessment. If a detailed site assessment is requested but not submitted, your planning application might be refused.

2) Where the distance from a site to the closest point of connection to the foul sewer is less than the number of properties that are proposed to be built on that site multiplied by 30m an Environmental Permit will be required and an applicant will need to demonstrate as part of any application for such a permit why connection to the public foul sewer is not feasible.

Number of domestic properties served by the sewage treatment system [ ] x 30 metres = Answer [ ] metres

3) In addition to Planning Permission and Building Regulation approval **you may also require an Environmental Permit from the Environment Agency (EA). Please note that the granting of Planning Permission or Building Regulation approval does not guarantee the granting of an Environmental Permit. Upon receipt of a correctly filled in application form the EA will carry out an assessment. It can take up to 4 months before the Agency is in a position to decide whether to grant a permit or not**.

4) The use of cesspools is an option of last resort as set out in the non-mains drainage hierarchy of preference in Building Regulations Approved Document H. In principle, a properly constructed and maintained cesspool, being essentially a holding tank with no discharges, should not lead to environmental, amenity or public health problems. However, in practice, it is known that such problems occur as a result of frequent overflows due to poor maintenance, irregular emptying, lack of suitable vehicular access for emptying and even through inadequate capacity. In addition to this the requirement for frequent emptying is usually carried out by a contractor involving road transport with associated environmental costs. For these reasons, the use of cesspools will not normally be considered to be a long-term foul sewage disposal solution. In view of the environmental risks associated with their use, any proposal to use cesspools must be fully justified to the Local Planning Authority

5) Package treatment plants and septic tanks should be designed and sized according to the advice given in the current edition of Flows and Loads, published by British Water. Volumes for larger systems should be calculated based on expected flows arising from the development.

6) You should refer to Building Regulations Approved Document H2 with regard to the general requirements for construction of non mains sewerage systems. **Sections 1.33 to 1.38** deal

with the test requirements for trial holes and percolation tests and for convenience the text of these sections is repeated below:

1.33 A trial hole should be dug to determine the position of the standing groundwater table. The trial hole should be a minimum of 1m^2 in area and 2m deep, or a minimum of 1.5m below the invert of the proposed drainage field pipework. The ground water table should not rise to within 1m of the invert level of the proposed effluent distribution pipes. If the test is carried out in summer, the likely winter groundwater levels should be considered. A percolation test should then be carried out to assess the further suitability of the proposed area.

1.34 Percolation test method – A hole 300mm square should be excavated to a depth 300mm below the proposed invert level of the effluent distribution pipe. Where deep drains are necessary the hole should conform to this shape at the bottom, but may be enlarged above the 300mm level to enable safe excavation to be carried out. Where deep excavations are necessary a modified test procedure may be adopted using a 300mm earth auger. Bore the test hole vertically to the appropriate depth taking care to remove all loose debris.

1.35 Fill the 300mm square section of the hole to a depth of at least 300mm with water and allow it to seep away overnight.

1.36 Next day, refill the test section with water to a depth of at least 300mm and observe the time, in seconds, for the water to seep away from 75% full to 25% full level (i.e. a depth of 150mm). Divide this time by 150mm. The answer gives the average time in seconds (Vp) required for the water to drop 1mm.

1.37 The test should be carried out at least three times with at least two trial holes. The average figure from the tests should be taken. The test should not be carried out during abnormal weather conditions such as heavy rain, severe frost or drought.

1.38 Drainage field disposal should only be used when percolation tests indicate average values of V_p of between 12 and 100 and the preliminary site assessment report and trial hole tests have been favourable. This minimum value ensures that untreated effluent cannot percolate too rapidly into groundwater. Where V_p is outside these limits effective treatment is unlikely to take place in a drainage field. However, provided that an alternative form of secondary treatment is provided to treat the effluent from the septic tanks, it may still be possible to discharge the treated effluent to a soakaway.

N.B. When determining whether a discharge may be made under statutory General Binding Rules one of the requirements is that any drainage field must be designed and constructed in accordance with BS6297:2007. This specifies that the minimum percolation rate under that standard is 15s/mm and any discharge made to ground where the percolation rate is less than 15s/mm is subject to the granting of an Environmental Permit.

7) Developers may requisition a sewer from the Sewerage Undertaker to connect their development to the public sewer. Should this not be feasible on the grounds of cost and practicability, on site treatment in the form of package plants and their associated sewers (if constructed to an acceptable standard) can be offered to the sewerage undertaker for adoption. This approach is in support of advice from the Government contained in the National Planning Practice Guidance Developers are urged to discuss their requirements with the Sewerage Undertaker at the earliest possible opportunity.

8) Glossary

Package treatment plant

A package treatment plant is a system which offers varying degrees of biological sewage treatment and involves the production of an effluent which can be disposed of to ground via a drainage field or direct to a watercourse. There are many varieties of package treatment plant but all involve settling the solids before and/or after a biological treatment stage and almost all use electricity. Package treatment plants usually treat sewage to a higher standard than septic tanks but are vulnerable in the event of power failures and require more regular servicing and maintenance to ensure that they work effectively. The type of system chosen should be appropriate to the type of development proposed and take account of variations in flow and

periods of inactivity, for example where the system will serve holiday accommodation where occupation and maintenance may be more irregular.

Septic tank

A septic tank is a two or three chamber system, which retains sewage from a property for sufficient time to allow the solids to form into sludge at the base of the tank, where it is partially broken down. The remaining liquid in the tank then drains from the tank by means of an outlet pipe.

Effluent from a septic tank is normally disposed of to ground via a drainage field and receives further treatment in the soils surrounding that drainage field, so that it does not generate a pollution risk to surface waters or groundwater resources (underground water). The most commonly used form of drainage field is a subsurface irrigation area, comprising a herringbone pattern of interconnecting dispersal pipes laid in shallow, shingle filled trenches. The dispersal pipes within the drainage field should be located at as shallow a depth as possible, usually within 1 metre of the ground surface. A septic tank typically needs to be desludged at least once a year in order to ensure that it continues to work effectively.

Cesspool

A cesspool is a covered watertight tank used for receiving and storing sewage and has no outlet. It relies on road transport for the removal of raw sewage and is therefore the least sustainable option for sewage disposal. It is essential that a cesspool is, and remains, impervious to the ingress of groundwater or surface water.

Waldeck

emery planning

OXENWOOD REAL ESTATE

paragon

pHp architects

The Old Rectory
31 Rectory Lane
Milton Malsor
Northampton
NN7 3AQ

t.01604 858 916

pHp architects