TECHNICAL NOTE

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Alison Park, Buxton

Job Number: LE21477	**Date**: 02.06.2023	**Client**: Amos Group Ltd.
Prepared By: MM	**Approved By**: CH	**Ref:** AP-LE-GEN-XX-TN-CE-TN02

Discharge of Conditions

1 Introduction

1.1 This technical note has been prepared in response to conditions raised by High Peak Borough Council in relation to the full planning submission for the proposed development at 3 Temple Road, Buxton, Derbyshire, SK17 9BA. Conditions 13 and 14 in relation to the Proposed Drainage Strategy have been addressed in full.

1.2 This Technical Note should be read in conjunction with the supporting documents as outlined below:

- 001-PL_17 C Site Plan as Proposed **(Appendix A)**
- High Peak Borough Council Planning Conditions **(Appendix B)**
- AP-LE-GEN-XX-DR-CE-500-C-A1-RevH – Drainage Layout **(Appendix C)**
- AP-LE-GEN-XX-DR-CE-501/502-C-A1-A – Drainage Construction Details **(Appendix D)**
- Rainsava-Eco-Pro-WH-Installation-low-res **(Appendix E)**
- PT1387 – Alison Park **(Appendix F)**
- downstream-defender-design-data-sheet-p0222 **(Appendix G)**

2 Condition 13

"No development shall take place until a detailed design and associated management and maintenance plan of the surface water drainage for the site, have been submitted to and approved in writing by the Local Planning Authority, in accordance with the principles outlined within:

a. *Link Engineering (September 2021) Flood Risk And Drainage Design Statement, Ref: AP-LE-GEN-XX-TN-CE-TN01-S5-RevB & Link Engineering (January 2022) Addendum to Flood Risk And Drainage Design Statement, Ref: AP-LE-GEN-XX-TN-CE-TN02, including any subsequent amendments or updates to those documents as approved by the Flood Risk Management Team*
b. *And DEFRA's Non-statutory technical standards for sustainable drainage systems (March 2015)*

Reason: To ensure that the proposed development does not increase flood risk and that the principles of sustainable drainage are incorporated into this proposal, and sufficient detail of the construction, operation and maintenance/management of the sustainable drainage systems are provided to the Local Planning Authority, in advance of full planning consent being granted."

2.1 Detailed Drainage Design

2.1.1 Please refer to Appendix C and the drainage proposals, including construction details and rainwater harvesting specification.

2.2 Maintenance Responsibility

2.2.1 The developer of the proposed development, Amos Group Ltd, shall be responsible for the maintenance and operation of the shared drainage system, including any SuDS features and the rainwater harvesting tank. Infrastructure within the domain of individual plots shall be the responsibility of the plot owners

2.3 Maintenance of Pipe Networks

2.3.1 Maintenance and management of main storm sewers and chambers inclusive of pipework from paved areas and buildings (but excluding internal building drainage) should be visually inspected and jetted/cleaned as required. As a minimum, this should be carried out every 5 years. Methods of inspection to give indications of blockages etc. may include:

- Pulling a mandrel through the pipe to identify physical faults (e.g. disjointed pipes).
- Flushing/jetting.
- CCTV.
- Measurement of water depths in pipe entries along a drain run may identify blocked pipes.

1.1.2 Gully and manhole gratings shall be visually inspected at least once every year and replaced or re-set if damaged or dislodged. Gullies and drain pipes should be inspected at least once every year, ideally during spring time as the autumn and winter seasons produce the most detritus build up in the form of

leaves, litter and silt. This material should be removed and disposed of at a licensed tip. This material should not be tipped in other areas of the development as it may pose a pollution threat to the surrounding drainage system.

1.1.3 Jetting should only be carried out after removal of the silt and debris, as jetting alone will simply wash the debris further downstream without removing the problem.

2.4 Maintenance of SuDS Features

- The regular and correct maintenance of the SuDS feature is essential to the continued performance. The SuDS Manual C753 provides advice on the management of the system. The recommended maintenance regimes for the permeable paving is given in Table 20.15 in the SuDS Manual C753, which will form the basis of the strategy for the provided development. The installation, operation and maintenance processes of the rainwater harvesting tank can be found in the file named Rainsava-Eco-Pro-WH-Installation-low-res.

TABLE 20.15 Operation and maintenance requirements for pervious pavements

Maintenance schedule	Required action	Typical frequency
Regular maintenance	Brushing and vacuuming (standard cosmetic sweep over whole surface)	Once a year, after autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging or manufacturer's recommendations – pay particular attention to areas where water runs onto pervious surface from adjacent impermeable areas as this area is most likely to collect the most sediment
Occasional maintenance	Stabilise and mow contributing and adjacent areas	As required
	Removal of weeds or management using glyphospate applied directly into the weeds by an applicator rather than spraying	As required – once per year on less frequently used pavements
Remedial Actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50 mm of the level of the paving	As required
	Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users, and replace lost jointing material	As required
	Rehabilitation of surface and upper substructure by remedial sweeping	Every 10 to 15 years or as required (if infiltration performance is reduced due to significant clogging)
Monitoring	Initial inspection	Monthly for three months after installation
	Inspect for evidence of poor operation and/or weed growth – if required, take remedial action	Three-monthly, 48 h after large storms in first six months
	Inspect silt accumulation rates and establish appropriate brushing frequencies	Annually
	Monitor inspection chambers	Annually

Table 1: Permeable pavements operation and & maintenance

3 Condition 14

"No development shall take place until a detailed assessment has been provided to and approved in writing by the Local Planning Authority, to demonstrate that the proposed destination for surface water accords with the drainage hierarchy as set out in paragraph 80 reference ID: 7-080-20150323 of the planning practice guidance. The assessment shall demonstrate with appropriate evidence that surface water runoff is discharged as high up as reasonably practicable in the following hierarchy:

I. into the ground (infiltration);

II. to a surface water body;

III. to a surface water sewer, highway drain, or another drainage system;

IV. to a combined sewer.

Reason: To ensure that surface water from the development is directed towards the most appropriate waterbody in terms of flood risk and practicality by utilising the highest possible priority destination on the hierarchy of drainage options."

3.1 As required by Part H of Building Regulations and the paragraph 7-080 in Planning Policy Guidance of the NPPF and Condition 14 of the High Peak Borough Planning Conditions, the required Drainage Hierarchy has been considered in the development of this strategy as summarised below.

Outfall Option	Available Option	Comment
Infiltration Drainage	✓	Infiltration testing has been completed to BRE365 in two locations, as shown in the provided percolation test report. These indicate infiltration rates between 6m/hr and 2.0m/hr. The site sits on the border of the Core Protection Zone and the Extended Protection Zone of the Buxton, and as such it is necessary to assess the risk of installing a soakaway. This is discussed further in Section 4.
Watercourse	✘	No watercourse exits within 220m of the site. The nearest watercourse is the River Wye, approximately 225m to the north of the site. All of the land in between is owned by third parties, and as such this is not considered a suitable outfall.
Surface Water Sewer	✓	It is proposed that the sewer connections serving the existing site are reused as part of this development. The outfall locations have been marked on the Drainage Layout Drawing.
Combined Sewer	n/a	Not considered

Table 2: Outfall Assessment

4 Condition 14 Addendum – Source Protection Zones

4.1 A map taken from MAGIC Maps shows that the site sits on an area designated as Source Protection Zone 1 – Inner Protection Zone. See Figure 1 below for reference. This demonstrates that additional treatment measures will be required prior to infiltration into the ground. Figure 3.2 of the Water in Buxton Planning Guidance has been included in Figure 2 below, which demonstrates that the site is within the Extended Protection Area. As such, no additional measures are required when excavating for the soakaway.

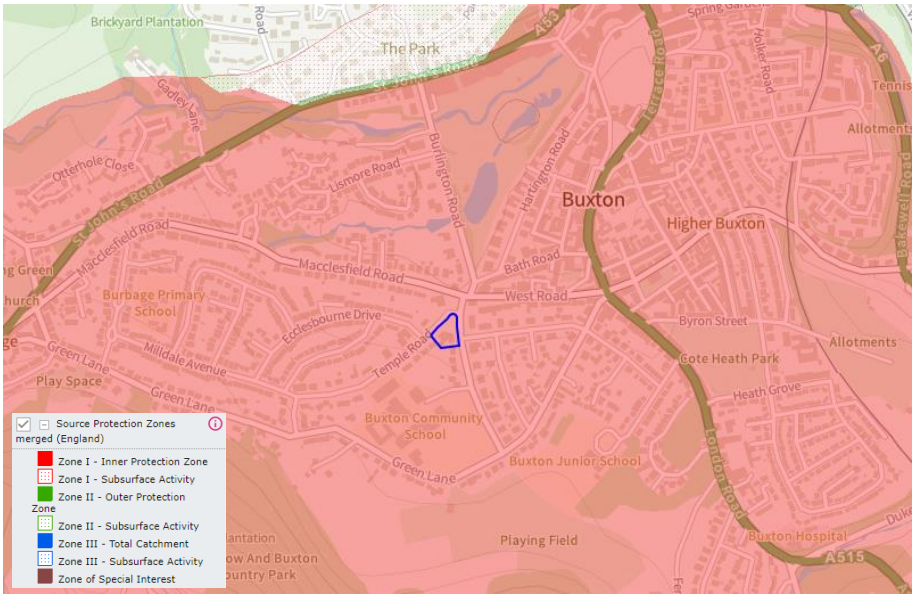

Figure 1: Groundwater Source Protection Zones

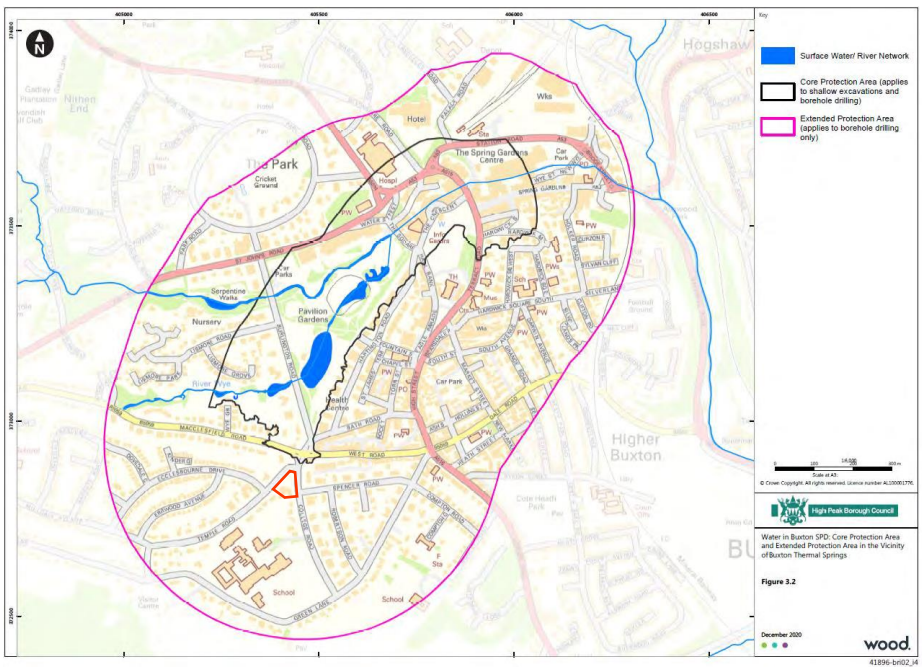

Figure 2: Core Protection Area and Extended Protection Area of Buxton Thermal Springs

4.2 To assess the feasibility of the proposed surface water treatment measures for the site, the Simple Index Method has been used to compare the site use against the treatment quality. Following Table 26.2 of the SuDS Manual C753, included as Table 3 below, the proposed site pollution hazard level is classed as low – individual property driveways, residential car parks.

4.3 The mitigations features proposed to improve the water quality are permeable paving, a downstream defender and an infiltration trench soakaway. All drainage features ensure that silt and debris, as well as hydrocarbons are trapped and captured before entering the surface water network. For effective pollution prevention, the mitigation indices from Table 26.4 of the SuDS manual C753, included as Table 4 overleaf, must be greater than or equal to the corresponding pollution indices from Table 26.2 – **Total Mitigation Index ≥ Pollution Hazard Index**. The mitigation indices for the proposed Downstream Defender are shown on the datasheet included in **Appendix G**. A summary of the pollution and mitigation indices is provided in Table 12 overleaf.

TABLE 26.2 Pollution hazard indices for different land use classifications

Land use	Pollution hazard level	Total suspended solids (TSS)	Metals	Hydro-carbons
Residential roofs	Very low	0.2	0.2	0.05
Other roofs (typically commercial/ industrial roofs)	Low	0.3	0.2 (up to 0.8 where there is potential for metals to leach from the roof)	0.05
Individual property driveways, residential car parks, low traffic roads (eg cul de sacs, homezones and general access roads) and non-residential car parking with infrequent change (eg schools, offices) ie < 300 traffic movements/day	Low	0.5	0.4	0.4
Commercial yard and delivery areas, non-residential car parking with frequent change (eg hospitals, retail), all roads except low traffic roads and trunk roads/motorways[1]	Medium	0.7	0.6	0.7
Sites with heavy pollution (eg haulage yards, lorry parks, highly frequented lorry approaches to industrial estates, waste sites), sites where chemicals and fuels (other than domestic fuel oil) are to be delivered, handled, stored, used or manufactured; industrial sites; trunk roads and motorways[1]	High	0.8[2]	0.8[2]	0.9[2]

Table 3: Pollution hazard indices for different land use classifications

TABLE 26.4	Indicative SuDS mitigation indices for discharges to groundwater			
	Characteristics of the material overlying the proposed infiltration surface, through which the runoff percolates[1]	**TSS**	**Metals**	**Hydrocarbons**
	A layer of dense vegetation underlain by a soil with good contaminant attenuation potential[2] of at least 300 mm in depth[3]	0.6[4]	0.5	0.6
	A soil with good contaminant attenuation potential[2] of at least 300 mm in depth[3]	0.4[4]	0.3	0.3
	Infiltration trench (where a suitable depth of filtration material is included that provides treatment, ie graded gravel with sufficient smaller particles but not single size coarse aggregate such as 20 mm gravel) underlain by a soil with good contaminant attenuation potential[2] of at least 300 mm in depth[3]	0.4[4]	0.4	0.4
	Constructed permeable pavement (where a suitable filtration layer is included that provides treatment, and including a geotextile at the base separating the foundation from the subgrade) underlain by a soil with good contaminant attenuation potential[2] of at least 300 mm in depth[3]	0.7	0.6	0.7
	Bioretention underlain by a soil with good contaminant attenuation potential[2] of at least 300 mm in depth[3]	0.8[4]	0.8	0.8
	Proprietary treatment systems[5, 6]	These must demonstrate that they can address each of the contaminant types to acceptable levels for inflow concentrations relevant to the contributing drainage area.		

Table 4: Indicative SuDS mitigation indices for discharges to groundwater

Hazard based on Land use	TSS	Metals	Hydrocarbons
Low – individual property driveways, residential car parks	0.5	0.4	0.4
Pollutant hazard index	**0.5**	**0.4**	**0.4**
Mitigation based on SuDS Components			
Permeable pavement	0.7	0.6	0.7
Downstream Defender	0.5	0.4	0.8
Infiltration Trench (Soakaway)	0.4	0.4	0.4
Total SuDS Mitigation Index	**0.9**	**0.8**	**0.95**

Table 5: Hazard index vs mitigation index

4.4 As shown in Table 5, the mitigation systems used pass the simple index method. It is demonstrated here that each individual mitigation measure provides sufficient treatment for the identified hazard, but multiple features are proposed. All SuDS features are to be installed in a management treatment train, as required by Policy G13 of the Environment Agency's Approach to Groundwater Protection, providing the highest level of treatment possible. Based on this information, a soakaway can be installed in the site without contaminating the underlying groundwater and without the need for further hydrogeological assessments, as the site pollution risk is managed on site before it comes in contact with groundwater.

Appendix A: Proposed Site Plan Drawing No. 001-PL_17 C

Notes:

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C	REVISED TO CLIENTS COMMENTS.	RS	02.03.22
B	REVISED TO CLIENTS COMMENTS.	RS	31.08.21
A	SITE PLAN & LANDSCAPING REVISED.	RS	31.08.21
REV:	DESCRIPTION:	BY:	DATE:

STATUS: PLANNING

CLIENT: AMOS GROUP

SITE: ALISON PARK HOTEL
3 TEMPLE ROAD
BUXTON
SK17 9BA

BRIEF: CONVERSION / RENOVATION

TITLE: SITE PLAN AS PROPOSED

SCALE AT A1:	DATE:	DRAWN:	CHECKED:
1:200	APR 2021		

PROJECT NO:	DRAWING NO:	REVISION:
001	PL_17	C

Appendix B: High Peak Borough Council Planning Conditions for Application HPK/2021/0347

High Peak Borough Council

working for our community

Amos Home (Buxton) Ltd
St Johns House
54 St Johns Street
Ashbourne
DE6 1GH

Application no: HPK/2021/0347

Determined on: 29/03/2023

Town and Country Planning Act 1990
Town and Country Planning (Development Management Procedure) (England) Order 2015

FULL PERMISSION FOR DEVELOPMENT

This permission does not carry any approval or consent which may be required under any enactment, bylaw, order or regulation (e.g. in relation to Building Regulations or the Diversion of Footpaths etc) other than Section 57 of the Town and Country Planning Act, 1990 (as amended).

Location of Development:
3 Temple Road Buxton Derbyshire SK17 9BA

Description of Development:
Conversion, alterations and extensions to existing hotel/residential building to form a total of 10 new apartments, 3 cottages and 2 townhouses including an extension to building to create one of new townhouse, demolition of existing garage; and improvements to existing access points on Temple Road and College Road; formation of new car park; hard and soft landscaping; and other associated works, including engineering operations.

In pursuance of their power under the above mentioned Act, High Peak Borough Council Planning Authority, **HEREBY GRANTS PLANNING PERMISSION** for the development described above subject to the following condition(s):

1. The development hereby permitted shall be begun before the expiration of three years from the date of this permission.
Reason:- To comply with Section 51 of the Planning and Compulsory Purchase Act 2004.

2. The development hereby permitted shall be carried out in accordance with the following approved plans:

- Drawing ref: 001-PL_08 Rev H – Elevations as Proposed
- Drawing ref: 001-PL_09 Rev E – Elevations as Proposed
- Drawing ref: 001-PL_10 Rev A – Cottage Elevations and Plans as Proposed
- Drawing ref: 001-PL_11 Rev C – Basement Floor Plan as Proposed
- Drawing ref: 001-PL_12 Rev E – Ground Floor Plan as Proposed

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- Drawing ref: 001-PL_13 Rev D – First Floor Plan as Proposed
- Drawing ref: 001-PL_14 Rev F – Second Floor Plan as Proposed
- Drawing ref: 001-PL_15 Rev F – Roof Plan as Proposed
- Drawing ref: 001-PL_17 Rev C – Site Plan as Proposed
- Drawing ref: AP-LE-GEN-XX-DR-CE-500-S5-A1 Rev F – Proposed Drainage Layout
- Drawing ref 2019-29-004 – Location Plan
- Drawing ref PL-40 Roof Plan – Area of Rainwater Harvesting

Reason:- For the avoidance of doubt and in the interests of proper planning, in accordance with the National Planning Policy Framework.

Materials

3. Prior to the installation of any rainwater goods, details of profile, material, colour and decorative finish, shall be submitted to and approved in writing by the Local Planning Authority. The work shall be completed in strict accordance with the agreed details.
Reason:- In the interests of the character and appearance of the conservation area in accordance with Policies EQ6 and EQ7 of the High Peak Local Plan 2016 and the National Planning Policy Framework.

4. No new windows shall be installed until a plan including cross sections of glazing bars, to a scale not less than 1:10, materials and colour for all new windows has been submitted to and approved in writing by the Local Planning Authority. The work shall be completed in strict accordance with the agreed details.
Reason:- To In the interests of the character and appearance of the conservation area in accordance with Policies EQ6 and EQ7 of the High Peak Local Plan 2016 and the National Planning Policy Framework.

5. Prior to the erection of the new dwellings hereby approved, samples of the materials to be used in the construction of external walls and roofs of the buildings shall have been submitted to and approved in writing by the Local Planning Authority. Development shall be carried out in complete accordance with the approved materials. The work shall be completed in strict accordance with the agreed details.
Reason:- In the interests of the character and appearance of the conservation area in accordance with Policies EQ6 and EQ7 of the High Peak Local Plan 2016 and the National Planning Policy Framework.

Biodiversity

6. No development works shall commence until details of swift boxes/bricks, along with timescales for implementation, has been submitted to and approved in writing by the Local Planning Authority. The scheme shall include the location of all swift nest boxes/bricks, and shall be installed within the development prior to its first occupation.

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Reason: In the interests of biodiversity and in accordance with Policy EQ5 of the High Peak Local Plan 2016 and paragraph 174 of the National Planning Policy Framework.

Highways

7. Before any other operations are commenced, space shall be provided within the site for storage of plant and materials, site accommodation, loading, unloading and manoeuvring of goods vehicles, parking and manoeuvring of employees and visitors vehicles, laid out and constructed in accordance with detailed designs first submitted to and approved in writing by the Local Planning Authority. Once implemented the facilities shall be retained free from any impediment to their designated use throughout the construction period.

Reason:- In the interests of highway safety and in accordance with Policy CF6 of the High Peak Local Plan 2016 and the National Planning Policy Framework.

8. Prior to occupation of the town houses the existing access to College Road shall be modified in accordance with the revised application drawings, laid out, constructed and provided with visibility splays of 2.4m x maximum achievable over the site frontage in both directions, the area in advance of the sightlines being maintained clear of any object greater than 1m in height (0.6m in the case of vegetation) relative to the adjoining nearside carriageway channel level.

Reason:- In the interests of highway safety and in accordance with Policy CF6 of the High Peak Local Plan 2016 and the National Planning Policy Framework.

9. Prior to the first occupation of the development hereby approved, any redundant vehicular accesses shall be permanently closed with a physical barrier and the existing vehicle crossover reinstated as footway in accordance with a scheme first submitted to and approved in writing by the Local Planning Authority.

Reason:- In the interests of highway safety and in accordance with Policy CF6 of the High Peak Local Plan 2016 and the National Planning Policy Framework.

10. No dwelling shall be occupied until space has been laid out within the site in accordance with the revised application drawings for the parking of cars and for vehicles to turn so that they may enter and leave the site in a forward gear. Once provided, such spaces shall be maintained free from any impediment to their designated use for the life of the development.

Reason:- In the interests of highway safety and in accordance with Policy CF6 of the High Peak Local Plan 2016 and the National Planning Policy Framework.

11. There shall be no gates or other barriers on the vehicle accesses to the site.

Reason:- In the interests of highway safety and in accordance with Policy CF6 of the High Peak Local Plan 2016 and the National Planning Policy Framework.

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12. The development hereby permitted shall not be commenced until details of secure cycle parking facilities for the occupants of, and visitors to, the development hereby approved have been submitted to and approved in writing by the Local Planning Authority. These facilities shall be fully implemented and made available for use prior to the occupation of the development hereby permitted and shall thereafter be retained for use at all times.

Reason:- In the interests of highway safety and in accordance with Policy CF6 of the High Peak Local Plan 2016 and the National Planning Policy Framework.

Drainage

13. No development shall take place until a detailed design and associated management and maintenance plan of the surface water drainage for the site, have been submitted to and approved in writing by the Local Planning Authority, in accordance with the principles outlined within:

a. Link Engineering (September 2021) Flood Risk And Drainage Design Statement, Ref: AP-LE-GEN-XX-TN-CE-TN01-S5-RevB & Link Engineering (January 2022) Addendum to Flood Risk And Drainage Design Statement, Ref: AP-LE-GEN-XX-TN-CE-TN02, including any subsequent amendments or updates to those documents as approved by the Flood Risk Management Team
b. And DEFRA's Non-statutory technical standards for sustainable drainage systems (March 2015)

Reason: To ensure that the proposed development does not increase flood risk and that the principles of sustainable drainage are incorporated into this proposal, and sufficient detail of the construction, operation and maintenance/management of the sustainable drainage systems are provided to the Local Planning Authority, in advance of full planning consent being granted.

14. No development shall take place until a detailed assessment has been provided to and approved in writing by the Local Planning Authority, to demonstrate that the proposed destination for surface water accords with the drainage hierarchy as set out in paragraph 80 reference ID: 7-080-20150323 of the planning practice guidance. The assessment shall demonstrate with appropriate evidence that surface water runoff is discharged as high up as reasonably practicable in the following hierarchy:
I. into the ground (infiltration);
II. to a surface water body;
III. to a surface water sewer, highway drain, or another drainage system;
IV. to a combined sewer.
Reason: To ensure that surface water from the development is directed towards the most appropriate waterbody in terms of flood risk and practicality by utilising the highest possible priority destination on the hierarchy of drainage options.

15. Prior to the first occupation of the development hereby approved, the approved surface water drainage scheme, the subject of condition 13 & 14, shall be installed in accordance with the approved plans.
Reason:- To ensure that the proposed development does not increase flood risk and that the principles of sustainable drainage are incorporated into this proposal, and sufficient detail of

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the construction, operation and maintenance/management of the sustainable drainage systems are provided to the Local Planning Authority.

16. Prior to the commencement of the development, the applicant shall submit for approval to the Local Planning Authority details indicating how additional surface water run-off from the site will be avoided during the construction phase. The applicant may be required to provide collection, balancing and/or settlement systems for these flows. The approved system shall be operating to the satisfaction of the Local Planning Authority, before the commencement of any works, which would lead to increased surface water run-off from site during the construction phase.
Reason: To ensure surface water is managed appropriately during the construction phase of the development, so as not to increase the flood risk to adjacent land/properties or occupied properties within the development.

17. Prior to the first occupation of the development, a verification report carried out by a qualified drainage engineer must be submitted to and approved in writing by the Local Planning Authority. This must demonstrate that the drainage system has been constructed as per the agreed scheme (or detail any minor variations), provide the details of any management company and state the national grid reference of any key drainage elements (surface water attenuation devices/areas, flow restriction devices and outfalls).
Reason: To ensure that the drainage system is constructed to the national Non-statutory technical standards for sustainable drainage and CIRIA standards C753.

Landscaping and boundary treatment

18. No operational development shall take place until a scheme for the protection of the retained trees (the tree protection plan) and the appropriate working methods (the arboricultural method statement) in accordance with British Standard BS 5837 (2012): Trees in relation to design, demolition and construction - Recommendations (or in an equivalent British Standard if replaced) have been submitted to and approved in writing by the local planning authority. The scheme for the protection of the retained trees shall be carried out as approved and prior to the commencement of development, and shall be retained for the duration of the works.

In this condition “retained tree” means an existing tree which is to be retained in accordance with the approved plans and particulars.

Reason: To protect the health and amenity of the trees in accordance with Policies EQ2 and EQ9 of the High Peak Local Plan 2016 and the National Planning Policy Framework.

19. The development hereby approved shall be carried out strictly in accordance with the Aboricultural Survey and Impact Assessment by Focus Environmental Consultants dated April 2021.

Reason: In the interests of retaining the existing trees and landscaping on the site and in accordance with Policy EQ9 of the High Peak Local Plan 2016 and National Planning Policy Framework.

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20. No development shall commence until full details of soft landscaping works have been submitted to and approved in writing by the Local Planning Authority. The details shall include species type, location and size.

Reason:- In the interest of visual amenity, in the interests of visual amenity, in accordance with Policies S1 and EQ6 of the High Peak Local Plan 2016 and the National Planning Policy Framework.

21. All soft landscaping comprised in the approved details of landscaping shall be carried out in the first planting and seeding season following the first occupation of the building(s) or the completion of the development whichever is the sooner. All shrubs, trees and hedge planting shall be maintained free from weeds and shall be protected from damage by vermin and stock. Any trees or plants which, within a period of five years, die, are removed, or become seriously damaged or diseased shall be replaced in the next planting season with others of a similar size and species, unless otherwise agreed in writing by the Local Planning Authority. All hard landscaping shall also be carried out in accordance with the approved details prior to the occupation of any part of the development or in accordance with a programme to be agreed in writing with the Local Planning Authority.

Reason:- To ensure a satisfactory landscaped setting for the development and the protection of existing important landscape features, in the interests of visual amenity, in accordance with Policies S1 and EQ6 of the High Peak Local Plan 2016 and the National Planning Policy Framework.

22. No development shall take place until there has been submitted to and approved in writing by the Local Planning Authority a plan indicating the positions, design, materials and type of boundary treatment to be erected. The boundary treatment shall be completed before first occupation of the development hereby approved or in accordance with a timetable agreed in writing with the Local Planning Authority. Development shall be carried out in accordance with the approved details.

Reason:- In the interest of visual and residential amenity, in accordance with Policies S1 and EQ6 of the High Peak Local Plan 2016 and the National Planning Policy Framework.

23. Prior to the installation of any hard surfacing shown on the approved plans, details including material type and colour shall be submitted to and approved in writing by the Local Planning Authority. All hard surfacing shall comprise permeable materials. Thereafter the development shall be completed in accordance with the approved materials.

Reason:- In the interest of visual amenity and Nutrient Neutrality, in accordance with Policies S1, EQ1 and EQ6 of the High Peak Local Plan 2016 and the National Planning Policy Framework.

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Environmental Health

24. The noise mitigation measures as detailed in the approved noise impact assessment (Peak Acoustics, "*Environmental Noise Assessment, Site: Alison Park Hotel, Temple Road, Buxton, SK17 9BA"* (ref: NM1310206NR Rev 1.0) dated 29 April 2021) shall be completed prior to the occupation of any individual dwelling unit.
Reason:- In the interest of residential amenity, in accordance with Policies S1 and EQ6 of the High Peak Local Plan 2016 and the National Planning Policy Framework.

25. All construction works and deliveries activities shall be restricted to the following times of operations.

- 08:00 - 18:00 hours (Monday to Friday);
- 08:00 - 13:00 hours (Saturday)
- No working is permitted on Sundays or Bank Holidays.

Reason:- In the interest of residential amenity, in accordance with Policies S1 and EQ6 of the High Peak Local Plan 2016 and the National Planning Policy Framework.

26. Any waste material associated with the demolition or construction shall not be burnt on site but shall be kept securely for removal to prevent escape into the environment. There shall be no fires lit on the site for purpose of disposing of demolition materials. Any open fires that arise shall be extinguished without delay.
Reason:- In the interest of residential amenity, in accordance with Policies S1 and EQ6 of the High Peak Local Plan 2016 and the National Planning Policy Framework.

27. If during development any contamination or evidence of likely contamination is identified that has not previously been identified or considered, then the applicant shall submit to the Local Planning Authority a written scheme to identify and control that contamination. This shall include a phased risk assessment carried out in accordance with the procedural guidance of the Environmental Protection Act 1990 Part IIA, and appropriate remediation proposals, and shall be submitted to the Local Planning Authority and approved in writing. The approved remediation scheme shall be implemented prior to the first occupation of the development.
Reason:- In the interest of residential amenity, in accordance with Policies S1 and EQ6 of the High Peak Local Plan 2016 and the National Planning Policy Framework.

28. Prior to the first occupation of the development hereby approved, a scheme for electric vehicle charging points, to include, type, number and location shall be submitted to and approved in writing by the Local Planning Authority. Thereafter the electric vehicle charging points shall be installed and made available for use prior to the occupation of the development hereby approved.

Reason:- In the interests of sustainability and in accordance with Policy EQ1 of the High Peak Local Plan 2016 and the National Planning Policy Framework.

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Informatives

1.Pursuant to Section 184 of the Highways Act 1980 and Section 86(4) of the New Roads and Streetworks Act 1991 prior notification shall be given to the Department - Place at County Hall, Matlock regarding access works within the highway. Information, and relevant application forms, regarding the undertaking of access works within highway limits is available via the County Council's website

https://www.derbyshire.gov.uk/transport-roads/roads-traffic/licences-enforcements/vehicular-access/vehicle-accesses-crossovers-and-dropped-kerbs.aspx

E-mail highways.hub@derbyshire.gov.uk or

Telephone Call Derbyshire on 01629 533190.

2.The Highway Authority recommends that the first 5m of accesses should not be surfaced with a loose material (i.e. unbound chippings or gravel etc.). In the event that loose material is transferred to the highway and is regarded as a hazard or nuisance to highway users, the Authority reserves the right to take any necessary action.

3.Pursuant to Sections 149 and 151 of the Highways Act 1980, steps shall be taken to ensure that mud or other extraneous material is not carried out of the site and deposited on the public highway. Should such deposits occur, it is the applicant's responsibility to ensure that all reasonable steps (e.g. street sweeping) are taken to maintain the roads in the vicinity of the site to a satisfactory level of cleanliness.

4.Pursuant to Section 127 of the Highways Act 1980, no work may commence within the limits of the public highway to close any redundant accesses and to reinstate the footway without the formal written Agreement of the County Council as Highway Authority. It must be ensured that public transport services in the vicinity of the site are not adversely affected by the development works. Advice regarding the technical, legal, administrative and financial processes involved in Section 127 Agreements may be obtained by contacting this Authority via email – highways.hub@derbyshire.gov.uk. The applicant is advised to allow approximately 12 weeks in any programme of works to obtain a Section 127 Agreement.

5.Construction works are likely to require Traffic Management and advice regarding procedures should be sought from Mr J Adams, Traffic Management, 01629 538628. All road closure and temporary traffic signal applications will have to be submitted via the County Councils web-site; relevant forms are available via the following link - http://www.derbyshire.gov.uk/transport_roads/roads_traffic/roadworks/default.asp

6.The applicant should be aware that any necessary diversion/protection/relocation of Statutory Undertakers apparatus or street furniture will be at their expense.

7. The applicants attention is drawn to the obligations set out in the completed Section 106 agreement dated 22nd March 2023.

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High Peak Borough Council

working for our community

X B.J. Haywood

Signed by: Ben Haywood

On behalf of High Peak Borough Council

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NOTES

1. Approval under the Building Regulations may also be required. Advice in this respect can be obtained by contacting the Councils Building Control Section.

2. Where a vehicle is often driven across a grass verge or kerbed footway to and from premises adjoining a highway, the occupier of the premises may, be required to pay the cost of construction of a crossing, and/or may be required to comply with conditions, imposed by the Authority. You should contact the Highway Authority at Derbyshire County Council.

3. This consent is granted subject to conditions and it is the owner(s) and the person(s) responsible for the implementation of the development who will be fully responsible for their compliance throughout the development and beyond. **A fee is payable to us for the discharge of condition. Please refer to our web site : www.highpeak.gov.uk for details.** If there is a condition that requires work to be carried out or details to be approved prior to the commencement of the development this is called a "condition precedent". The following should be noted with regards to conditions precedent:
   (a) If a condition precedent is not complied with, the whole of the development will be unauthorised and you may be liable to enforcement action.
   (b) Where a condition precedent is breached and the development is unauthorised, the only way to rectify the development is the submission of a new application.

4. Other conditions on this permission must also be complied with. Failure to comply with any condition may render the owner(s) and the person(s) responsible for the implementation of the development liable to enforcement action.

5. The permission is granted in strict accordance with the approved plans. It should be noted however that:
   (a) Any variation from the approved plans following commencement of the development irrespective of the degree of variation will constitute unauthorised development and may be liable to enforcement action.
   (b) Variation to the approved plans will require the submission of a new planning application.

6. If you are aggrieved by the decision of your local planning authority to refuse permission for the proposed development or to grant it subject to conditions, then you can appeal to the Secretary of State under section 78 of the Town and Country Planning Act 1990.

7. If the decision to refuse planning permission is for a householder application, and you want to appeal against your local planning authority's decision then you must

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do so within 12 weeks of the date of this notice. All other types of development have a 6 month deadline for submission of appeals. Appeals must be made using a form which you can get from the Planning Inspectorate at Temple Quay House, 2 The Square, Temple Quay, Bristol BS1 6PN or online at https://www.gov.uk/appeal-planning-inspectorate#other-ways-to-apply. The Secretary of State can allow a longer period for giving notice of an appeal, but he will not normally be prepared to use this power unless there are special circumstances which excuse the delay in giving notice of appeal. The Secretary of State need not consider an appeal if it seems to him that the local planning authority could not have granted planning permission for the proposed development or could not have granted it without the conditions they imposed, having regard to the statutory requirements, to the provisions of any development order and to any directions given under a development order. In practice, the Secretary of State does not refuse to consider appeals solely because the local planning authority based their decision on a direction given by him.

8. If either the local planning authority or the Secretary of State refuses permission to develop land or grants it subject to conditions, the owner may claim that he can neither put the land to a reasonably beneficial use in its existing state nor render the land capable of a reasonably beneficial use by the carrying out of any development which has been or would be permitted. In these circumstances, the owner may serve a purchase notice on the Council (District Council, London Borough Council or Common Council of the City of London) in whose area the land is situated. This notice will require the Council to purchase his interest in the land in accordance with the provisions of Part VI of the Town and Country Planning Act 1990.

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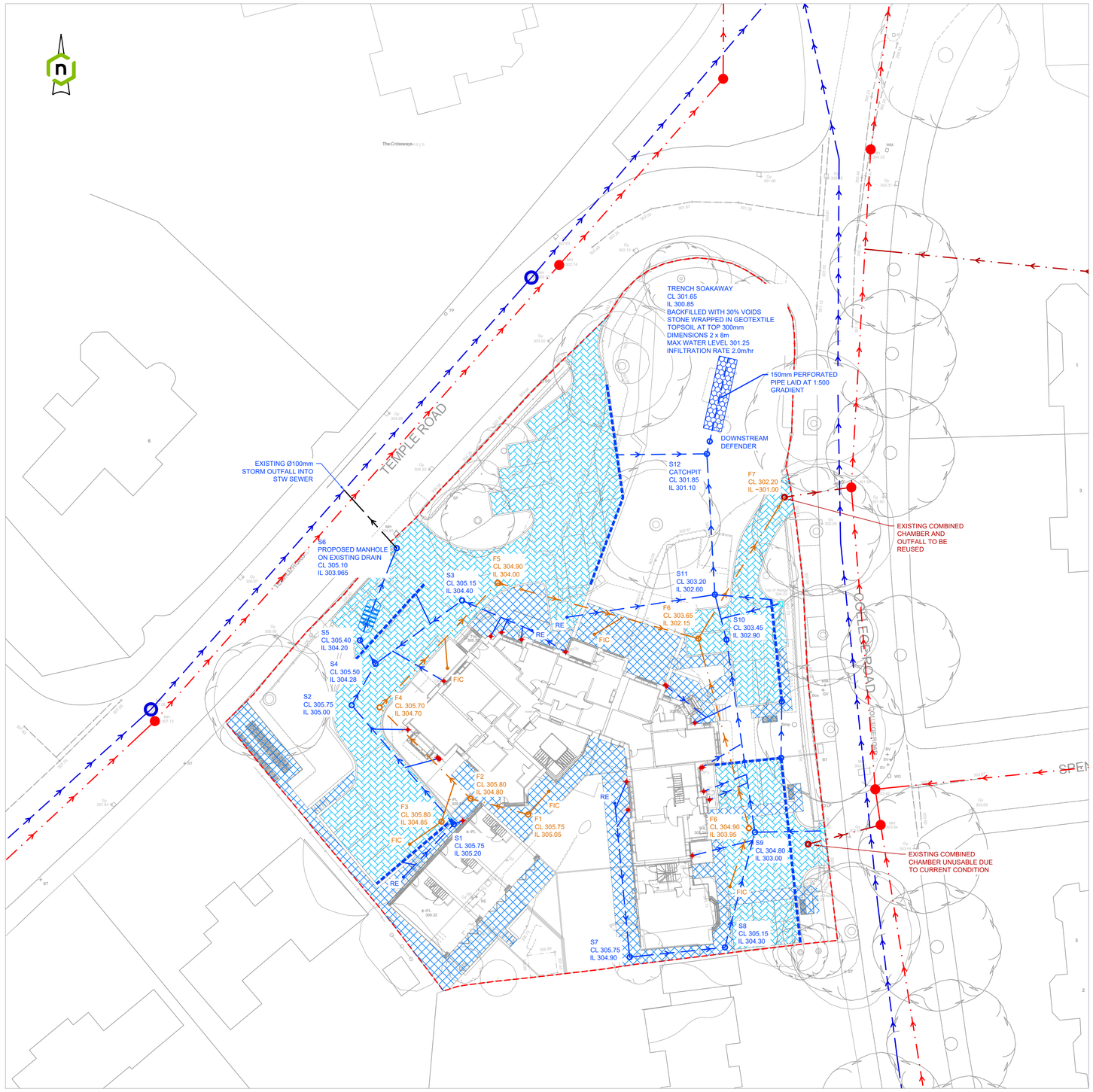
Appendix C: Drainage Layout Drawing No. AP-LE-GEN-XX-DR-CE-500-C-A1



GENERAL KEY

- SITE BOUNDARY

DRAINAGE KEY

- EXISTING STW COMBINED MANHOLE AND SEWER
- EXISTING STW STORM MANHOLE AND SEWER
- EXISTING PRIVATE COMBINED WATER DRAIN AND MANHOLE TO BE REUSED
- EXISTING PRIVATE STORM WATER DRAIN TO BE REUSED
- PROPOSED FOUL WATER DRAIN (100mm DIA UNLESS OTHERWISE STATED)
- F1 CL 46.000 IL 45.350 — PROPOSED FOUL MANHOLE, 450mm SHAFT DIAMETER, UP TO 1200mm MAX DEPTH
- PROPOSED FOUL BACKDROP TO MINIMISE DEPTH OF FOUL NETWORK
- FIC — PROPOSED FOUL INSPECTION CHAMBER, 300mm SHAFT DIAMETER, UP TO 600mm MAX DEPTH
- PROPOSED STORM WATER DRAIN (150mm DIA UNLESS OTHERWISE STATED)
- S1 CL 46.100 IL 45.265 — PROPOSED STORM WATER MANHOLE, 450mm SHAFT DIAMETER, UP TO 1200mm MAX DEPTH
- RE — PRIVATE RODDING EYE. TO BE 600 DEEP
- RAINWATER CONNECTION (TO BE REUSED)
- PROPOSED 100mm PERFORATED PIPE OUTFALL TO THE CAR PARK VOIDED SUBABASE
- PRIVATE CAR PARKING AREAS OF PERMEABLE ASPHALT AND FREE-DRAINING VOIDED SUB-BASE, SEE POROUS ASPHALT DETAIL.
- PEDESTRIAN AREAS OF PERMEABLE PAVING AND VOIDED SUB-BASE, SEE POROUS PAVING DETAIL.
- PRIVATE SURFACE WATER SOAKAWAY, SEE DRAWING FOR DIMENSIONS, SEE SOAKAWAY DETAIL
- PROPOSED RAINWATER HARVESTING TANK, SEE PRODUCT SPEC
- DRIVE GULLY

GENERAL NOTES

1. THIS DRAWING SHOULD NOT BE REPRODUCED IN WHOLE OR PART WITHOUT THE WRITTEN CONSENT OF LINK ENGINEERING.
2. DO NOT SCALE FROM THIS DRAWING. UNITS ARE IN METRES UNLESS OTHERWISE SPECIFIED.
3. THE CONTRACTOR IS TO CHECK ALL INFORMATION PROVIDED PRIOR TO COMMENCING WORKS AND SEEK CLARIFICATION FROM THE ENGINEER IN RESPECT TO ANY AMBIGUITIES FOUND.
4. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH ALL OTHER SCHEME SPECIFIC DRAWINGS.
5. FOUL AND SURFACE WATER DRAINAGE STRATEGIES, INCLUDING SURFACE WATER ATTENUATION AND WATER QUALITY REQUIREMENTS, SHALL BE DESIGNED IN STRICT ACCORDANCE WITH THE SITE SPECIFIC FLOOD RISK ASSESSMENT RECOMMENDATIONS.
6. ALL ADOPTABLE DRAINAGE WORKS SHALL BE DESIGNED IN ACCORDANCE WITH "SEWERS FOR ADOPTION" 6th EDITION, THE "CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY" 6th EDITION AND ANY SUBSEQUENT AMENDMENTS TO THESE DOCUMENTS AS ADVISED.
7. ALL ADOPTABLE DRAINAGE WORKS SHALL BE ADOPTED VIA THE WATER INDUSTRY ACT 1991 BY THE REGIONAL WATER COMPANY.
8. HIGHWAY DRAINS TO BE ADOPTED UNDER SECTION 38 OF THE HIGHWAYS ACT 1980 SHALL COMPLY WITH THE WATER UK GUIDE 'SEWERS FOR ADOPTION 6TH EDITION'.
9. NON-ADOPTED DRAINAGE, TO BUILDING REGULATIONS PART H, (INCLUDING DITCHES AND PONDS) ARE TO REMAIN THE RESPONSIBILITY OF THE DEVELOPER/SITE OWNER UNLESS OTHERWISE TRANSFERRED.
10. PIPE MATERIALS SHALL BE AS FOLLOWS:
    DIAMETER
    150ø TO 225ø - CLAYWARE CLASS 120 TO TO BS EN 295
    300ø AND ABOVE - CLASS 120 CONCRETE TO BS EN 1916
    PLASTIC PIPEWORK MAY BE PROPOSED AND IS SUBJECT TO APPROVAL BY THE DESIGN ENGINEER AS APPROPRIATE
11. BACKFILL TO TRENCHES MAY BE SUITABLE EXCAVATED MATERIAL IN LANDSCAPED AREAS. GRANULAR MATERIAL BACKFILL IS TO BE USED UNDER HARDSTANDINGS AND ROADS.
12. ALL DRAINAGE UNDER THE PROPOSED ADOPTABLE ROADS MUST BE BACKFILLED WITH AN APPROVED GRADED GRANULAR MATERIAL.
13. ALL MANHOLE COVER, AND GULLY TOPS ARE TO COMPLY WITH THE STRENGTH / GROUP REQUIREMENTS OF BS EN 124 AND KITE MARKED.
14. COVER LEVELS FOR MANHOLES ARE TO BE ADJUSTED TO MATCH SURROUNDING FINISHED LEVELS ONSITE.
15. ALL TRAPPED GULLIES POTS TO BS 5911 SHALL HAVE A MINIMUM SIZE OF 900mm X 450mm.
16. ALL DRAINAGE LAID WITHIN THE HIGHWAY SHOULD HAVE A MINIMUM COVER OF 0.9m MEASURED FROM THE TOP OF THE PIPE BARREL TO THE FINISHED ROAD SURFACE.
17. WHERE PIPE WORK HAS LESS THAN 1.2m COVER BENEATH ROADS AND 0.9m COVER BENEATH LANDSCAPING, THE PIPES ARE TO BE SURROUNDED WITH 150mm OF CLASS ST4 CONCRETE WITH FLEXIBILITY OF JOINTS MAINTAINED AS STATED IN CLAUSE 5.2.26 OF THE WATER UK GUIDE.
18. CONCRETE BED AND SURROUND TO PIPE WORK SHALL USE SULPHATE-RESISTING CEMENT UNLESS ADVISED OTHERWISE WITHIN THE SITE INVESTIGATION REPORT.
19. ALL DRAINAGE UNDER PROPOSED ADOPTABLE ROADS AND FOOTWAYS TO BE MINIMUM 150mm DIAMETER. ALL MANHOLES TO BE PRECAST CONCRETE.
20. ALL CONNECTIONS TO HIGHWAY DRAINS MUST BE MADE WITH FACTORY MADE JUNCTIONS.

Rev.	Amendments	Date	By
I	UPDATED FOR INFILTRATION TESTING	31.05.23	CH
H	UPDATED FROM SITE VISIT	26.04.23	MM
G	DETAILED DESIGN	18.04.23	MM
F	OUTFALL ARRANGEMENTS CLARIFIED	07.10.22	CH
E	RAINWATER HARVESTING TANK ADDED	01.09.22	CH
D	PACKAGE TREATMENT PLANT ADDED	05.04.22	CH
C	SITE LAYOUT UPDATED.	11.03.22	WJT
B	SITE LAYOUT UPDATED.	24.09.21	WJT
A	DRAINAGE LAYOUT REVISED.	23.08.21	WJT
-	INITIAL ISSUE.	09.08.21	WJT

Revisions

Client: Arnos GROUP Ltd

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Project: LE21477 - ALISON PARK, BUXTON

Drawing: PROPOSED DRAINAGE LAYOUT

Drawing No: AP-LE-GEN-XX-DR-CE-500

Status: APPROVAL (S4)

Scale @ A1	Drawn	Checked	Rev
1:250	WJT	CH	I

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales

Return Period (years)	1	Foul Sewage (l/s/ha)	0.000	Maximum Backdrop Height (m)	1.500
M5-60 (mm)	20.000	Volumetric Runoff Coeff.	0.750	Min Design Depth for Optimisation (m)	1.200
Ratio R	0.284	PIMP (%)	100	Min Vel for Auto Design only (m/s)	1.00
Maximum Rainfall (mm/hr)	50	Add Flow / Climate Change (%)	0	Min Slope for Optimisation (1:X)	500
Maximum Time of Concentration (mins)	30	Minimum Backdrop Height (m)	0.200		

Designed with Level Soffits

Time Area Diagram for Storm at outfall (pipe 1.002)

Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.038	4-8	0.009

Total Area Contributing (ha) = 0.047

Total Pipe Volume (m³) = 0.930

Time Area Diagram at outfall (pipe 2.005)

Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.041	4-8	0.004

Total Area Contributing (ha) = 0.045

Total Pipe Volume (m³) = 1.180

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Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
1.000	12.301	0.090	136.7	0.016	5.00	0.0	0.600	o	150	Pipe/Conduit	
1.001	20.240	0.710	28.5	0.014	0.00	0.0	0.600	o	150	Pipe/Conduit	
1.002	20.095	0.201	100.0	0.017	0.00	0.0	0.600	o	150	Pipe/Conduit	
2.000	10.379	0.600	17.3	0.008	5.00	0.0	0.600	o	150	Pipe/Conduit	
2.001	14.608	0.120	121.7	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
2.002	18.856	1.280	14.7	0.013	0.00	0.0	0.600	o	150	Pipe/Conduit	
2.003	5.038	0.300	16.8	0.007	0.00	0.0	0.600	o	150	Pipe/Conduit	
2.004	16.846	1.500	11.2	0.012	0.00	0.0	0.600	o	150	Pipe/Conduit	
2.005	1.039	0.007	150.0	0.005	0.00	0.0	0.600	o	150	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	45.21	5.24	305.200	0.016	0.0	0.0	0.0	0.86	15.2	1.9
1.001	44.62	5.42	305.110	0.029	0.0	0.0	0.0	1.89	33.5	3.5
1.002	43.55	5.75	304.400	0.047	0.0	0.0	0.0	1.00	17.8	5.5
2.000	45.79	5.07	304.900	0.008	0.0	0.0	0.0	2.43	43.0	1.0
2.001	44.88	5.34	304.300	0.008	0.0	0.0	0.0	0.91	16.1	1.0
2.002	44.48	5.46	304.180	0.021	0.0	0.0	0.0	2.64	46.6	2.5
2.003	44.37	5.49	302.900	0.028	0.0	0.0	0.0	2.47	43.7	3.4
2.004	44.07	5.58	302.600	0.040	0.0	0.0	0.0	3.02	53.4	4.8
2.005	44.01	5.61	301.100	0.045	0.0	0.0	0.0	0.82	14.5	5.3

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Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
1	305.750	0.550	Open Manhole	450	1.000	305.200	150				
2	305.960	0.850	Open Manhole	450	1.001	305.110	150	1.000	305.110	150	
3	305.000	0.600	Open Manhole	450	1.002	304.400	150	1.001	304.400	150	
	304.570	0.371	Open Manhole	450		OUTFALL		1.002	304.199	150	
4	305.750	0.850	Open Manhole	450	2.000	304.900	150				
5	305.150	0.850	Open Manhole	450	2.001	304.300	150	2.000	304.300	150	
6	304.800	0.620	Open Manhole	450	2.002	304.180	150	2.001	304.180	150	
7	303.450	0.550	Open Manhole	450	2.003	302.900	150	2.002	302.900	150	
8	303.200	0.600	Open Manhole	450	2.004	302.600	150	2.003	302.600	150	
9	301.850	0.750	Open Manhole	450	2.005	301.100	150	2.004	301.100	150	
	301.800	0.707	Open Manhole	450		OUTFALL		2.005	301.093	150	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
1	405403.204	372812.554	405403.204	372812.554	Required	
2	405395.194	372821.890	405395.194	372821.890	Required	
3	405407.868	372837.671	405407.868	372837.671	Required	
	405395.467	372853.484			No Entry	



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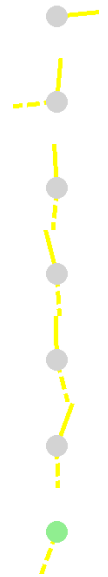
Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
4	405422.276	372798.138	405422.276	372798.138	Required	
5	405432.600	372799.200	405432.600	372799.200	Required	
6	405433.901	372813.749	405433.901	372813.749	Required	
7	405432.767	372832.571	405432.767	372832.571	Required	
8	405431.510	372837.449	405431.510	372837.449	Required	
9	405431.002	372854.288	405431.002	372854.288	Required	
	405431.357	372855.265			No Entry	



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PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	150	1	305.750	305.200	0.400	Open Manhole	450
1.001	o	150	2	305.960	305.110	0.700	Open Manhole	450
1.002	o	150	3	305.000	304.400	0.450	Open Manhole	450
2.000	o	150	4	305.750	304.900	0.700	Open Manhole	450
2.001	o	150	5	305.150	304.300	0.700	Open Manhole	450
2.002	o	150	6	304.800	304.180	0.470	Open Manhole	450
2.003	o	150	7	303.450	302.900	0.400	Open Manhole	450
2.004	o	150	8	303.200	302.600	0.450	Open Manhole	450
2.005	o	150	9	301.850	301.100	0.600	Open Manhole	450

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	12.301	136.7	2	305.960	305.110	0.700	Open Manhole	450
1.001	20.240	28.5	3	305.000	304.400	0.450	Open Manhole	450
1.002	20.095	100.0		304.570	304.199	0.221	Open Manhole	450
2.000	10.379	17.3	5	305.150	304.300	0.700	Open Manhole	450
2.001	14.608	121.7	6	304.800	304.180	0.470	Open Manhole	450
2.002	18.856	14.7	7	303.450	302.900	0.400	Open Manhole	450
2.003	5.038	16.8	8	303.200	302.600	0.450	Open Manhole	450
2.004	16.846	11.2	9	301.850	301.100	0.600	Open Manhole	450
2.005	1.039	150.0		301.800	301.093	0.557	Open Manhole	450

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Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	User	-	20	0.013	0.003	0.003
	User	-	100	0.013	0.013	0.016
	User	-	20	0.000	0.000	0.016
1.001	User	-	20	0.017	0.003	0.003
	User	-	100	0.010	0.010	0.014
1.002	User	-	20	0.028	0.006	0.006
	User	-	100	0.012	0.012	0.017
2.000	User	-	20	0.006	0.001	0.001
	User	-	100	0.006	0.006	0.008
2.001	-	-	100	0.000	0.000	0.000
2.002	User	-	100	0.009	0.009	0.009
	User	-	20	0.021	0.004	0.013
2.003	User	-	20	0.004	0.001	0.001
	User	-	100	0.006	0.006	0.007
	User	-	20	0.003	0.001	0.007
2.004	User	-	20	0.005	0.001	0.001
	User	-	100	0.009	0.009	0.010
	User	-	20	0.009	0.002	0.012
2.005	User	-	20	0.025	0.005	0.005
				Total	Total	Total
				0.197	0.091	0.091

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.002		304.570	304.199	0.000	450	0

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Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
2.005		301.800	301.093	0.000	450	0

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.750	Manhole Headloss Coeff (Global)	0.500	Inlet Coeffiecient	0.800
Areal Reduction Factor	1.000	Foul Sewage per hectare (l/s)	0.000	Flow per Person per Day (l/per/day)	0.000
Hot Start (mins)	0	Additional Flow - % of Total Flow	0.000	Run Time (mins)	60
Hot Start Level (mm)	0	MADD Factor * 10m³/ha Storage	2.000	Output Interval (mins)	1

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 1	Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	M5-60 (mm)	20.000	Cv (Summer)	0.750
Return Period (years)	1	Ratio R	0.284	Cv (Winter)	0.840
Region	England and Wales	Profile Type	Summer	Storm Duration (mins)	30

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Online Controls for Storm

Orifice Manhole: 3, DS/PN: 1.002, Volume (m³): 0.4

Diameter (m) 0.150 Discharge Coefficient 0.600 Invert Level (m) 304.400

Orifice Manhole: 9, DS/PN: 2.005, Volume (m³): 0.4

Diameter (m) 0.001 Discharge Coefficient 0.600 Invert Level (m) 301.100

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Storage Structures for Storm

Filter Drain Manhole: 9, DS/PN: 2.005

Infiltration Coefficient Base (m/hr)	2.00000	Trench Width (m)	2.0	Slope (1:X)	0.0
Infiltration Coefficient Side (m/hr)	2.00000	Trench Length (m)	8.0	Cap Volume Depth (m)	0.000
Safety Factor	2.0	Pipe Diameter (m)	0.150	Cap Infiltration Depth (m)	0.000
Porosity	0.30	Pipe Depth above Invert (m)	0.000		
Invert Level (m)	300.085	Number of Pipes	1		

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