

Project Details

- The site is located on Latham Road, Huntingdon. The postcode for the site is PE29 6YG and the approximate centre of the site at National Grid Reference is TL 2350774272.
- The site size is 0.67 ha. and is currently the car parking spaces partially infilled with greenfield.
- The proposed development consists of commercial buildings with permeable parking areas, footpath, tarmac access roads, soft landscaping. The site is loacated in Flood Zone 1.
- Trial holes have shown the Site is underlain with Clay.

Proposed Development

- The proposed development includes the following impermeable areas:
  - New building : 1,849m²
  - New Permeable Parking Areas : 505m²
  - New Access Road & Footpath : 4,195m²
  - Total Impermeable Area : 6130m² (Approx 91% of the Site)

Drainage and SUDS Strategy

As stated in CIRIA SuDS Manual 2015 the objective of sustainable drainage systems is to maximize the benefits and minimize the negative impacts of surface water runoff from developed areas. By applying SuDS methodology, storm runoff from the Site is controlled to ensure that flow rates in downstream watercourses are not increased and the water is appropriately treated to remove any contaminants, thus ensuring the quality of the water in the natural environment downstream.

Drainage Hierarchy	Y/N	Comment
1. Infiltration to max extent	N	Clay soils have very low permeability
2. Discharge to Surface Water	N	None Available
3. Surface Water Sewer	Y	Discharge to the Anglain Water Sewer System
4. Combine Sewer discharge	N	No combined sewers exist

Proposed Storm Drainage

- A private drainage system is to be provided to collect storm runoff from roofs, parking spaces and the forecourt for all storms up to 1 in 100-year event plus 40% climate change.
- Water from the main car-park and access road A shall drain through permeable paving in the parking spaces.
- Private Road Gullies are provided to drain water from the main access into the site.
- Attenuation Storage shall be provided in Type 3 sub-base below all permeable car parking spaces and attenuation crates provided upstream of flow control device as marked on the plan.
- Discharge from the site is limited to 1.2l/s which is Greenfield Runoff Rate via Hydrobrake.
- The proposed system will discharge into the existing private surface manhole then discharge into the Anglain Water Surface Sewer System (5151) which is on the southern side of the site.

Storm Drainage System Performance:

- Attenuation Volume Provided : 347.4m³
- Attenuation Volume used in 1 in 30 yrs storm event : 52%
- Attenuation Volume used in 1 in 30 yrs storm event + 35% Climate Change : 75%
- Attenuation Volume used in 1 in 100yrs storm event : 68%
- Attenuation Volume used in 1 in 100 yrs storm event + 40% Climate Change : 100%

Simple Pollution Indices:

Area	Pollution Indices			Proposed Treatment	Mitigation Indices			Residual Indices		
	TSS	Metals	Hydro-Carbons		TSS	Metals	Hydro-Carbons	TSS	Metals	Hydro-Carbons
Industrial Roofs	0.3	0.4-0.8	0.05	Rain Garden	0.8	0.8	0.8	0.0	0.0	0.0
Non-Residential	0.7	0.6	0.7	Permeable paving Permeable paving	0.7 0.7	0.6 0.6	0.7 0.7	0.0	0.0	0.0
Car Park										
Low Traffic Road	0.5	0.4	0.4	Permeable paving	0.7	0.6	0.7	0.0	0.0	0.0

Water Quality
Runoff from proposed industrial units shall be collected with rainwater pipes which will also be filtered through the silt traps upstream of attenuation features . Foul water will be discharged into the proposed Anglian Water sewer on the southern side of the site.

Water Quantity
Green field Runoff Rates have been calculated according to HR Wallingford Tool system, and flows discharged to Existing sewer are to be controlled using a Hydrobrake.
Rain Gardens may be used to treat rainwater first flush.

The Four Pillars of SuDS

Bio-diversity
Rain Gardens can provide opportunity for bio-diverse habitats

Amenity
Variety of surface finishes at the front of the building provides an appealing residential setting.
Drainage features are unobtrusively included in the Site.

Foul Water

- A positive Foul water system should be provided discharging to the existing Anglain Water Foul Sewer System (5100).

Exceedence Flows

- Storm Water System is designed to receive and contain within the site boundary all rainfall up to & including 1:100 +40% Climate Change. Exceedence flows are expected to discharge into the Gullies on the proposed access road.
- Exceedence Flows in exceptional events or due to blockages or storm events greater than 1 in 100-yr +40% CC Storm Event will be routed away from all buildings towards the existing lake at the southern side of the site without risk of flooding of any building as indicated on 22178-002 Exceedence Flows.

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NOTES

1. All dimensions are in millimetres unless stated otherwise.
2. This drawing to be read in conjunction with all other relevant drawings and specifications.
3. All proprietary items to be installed in strict compliance with manufacturers instructions and recommendations.
4. All Existing Drainage in the proposed site have to be removed.

STANDARD DRAINAGE NOTES:

1. Except where specifically shown otherwise all below ground pipes / connections shall be 100mm dia PVC (to BS 4660) or VC (to BS 5481) with flexible joints and laid to minimum falls of 1 in 40, except where connected to WC when falls may be 1 in 80.
2. All gravity pipe runs to be tested to a standing head of 1500mm head of water above the invert at the head of the pipe run (but not exceeding 4000mm at the lower end)
3. For details of bed and surround requirements refer to long-sections and standard details. In all other situations provide 150mm of 10mm single-sized rounded gravel bedding and surround.
4. Except where specifically shown otherwise, pipes to be a minimum of 900mm below roads/driveways and 600mm below gardens/fields.
5. Ventilating pipes to be provided at the head of each drain and to any branch longer than 6m where a single appliance is connected, or 12m where a group of appliances is connected.
6. Step-irons shall not be fitted in any chambers unless specified otherwise.
7. Manhole/Gully covers shall be regulated to suit finished levels and crossfalls
8. All proprietary items to be installed in strict compliance with manufacturers instructions and recommendations
9. Drains passing beneath buildings to have minimum 100mm granular fill or flexible filling around pipe. Where the pipe crown is within 300mm of the underside of the slab, pipe shall be encased in concrete integral with the slab.
10. Drains passing through walls below ground level to have minimum 50mm clearance all round and opening in walls to be masked all round with rigid sheet material to prevent ingress of fill or vermin. Openings in walls for pipes shall have concrete lintels to support wall construction above
11. Unless stated otherwise, pipes to be 150mm Diameter.
12. Unless Stated otherwise car parking spaces subbase to be 350mm type 3 granular material

STANDARD ROADS / FOOTPATH NOTES:

1. Existing structures to be broken out to minimum 450mm below top of finished surface level. Existing footpath to be broken out and rubble and existing subbase to be removed off-site.
2. Subgrade to be proof rolled with one pass of a smooth-wheeled roller having a mass per M-width of roll of not less than 2,100-kg or a Vibrating Roller having a mass per M-width of roll of not less than 700-kg or a Vibrating Plate Compactor having a mass per m2 of not less than 1400-kg. Any soft spots shall be removed and replaced with Type 1 compacted in layers not exceeding 150mm thickness.
3. All formations are to be treated with an approved herbicide before placing sib-base material on a geotextile separation membrane (Terram 1000 or similar approved)
4. All sub-base material is to be non-frost-susceptible. All concrete to be sulphate resisting

C3	Reduced Flow Rate & Amended SW Drainage Design as per comments	EP	04/25
C2	General Amendments	EP	03/25
C1	Drawing revised to 'Construction'	EP	02/25
P07	Updated Locations of Rain Gardens	EP	12/24

Client
Billingford Ltd

Project
Latham Road

Title
Drainage Strategy

Job No	22178		
Drawing No	22178-001		
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Project Engineer	TBP	Drawn By	EP
		Checked By	TBP
		Approved By	

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