

HG1 KS1 - LAND AT NORTH WEST BARRY

RLDP public consultation feedback

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Reference: RLDP-OBJ-RVN-006

Objection re: HG1 KS1: Flood Risk and Sustainable Drainage

I object to the proposed development at Weycock Cross, Barry because the developer's own *Preliminary Drainage Strategy* (May 2025, Persimmon) shows that the site has major flood-risks and future drainage problems that have not been resolved.

Existing surface-water flood risk remains unresolved due to missing data: Although the site lies within Flood Zone 1, the drainage report confirms that:

- certain areas of the development land are already at risk of surface water flooding
- NRW flood mapping shows local watercourse flooding within parts of the developable area
- critically, NRW's detailed Product 6 flood data is not available, meaning there is no numerical assessment of depth, velocity, or hazard rating.

This omission makes it impossible to determine if there is safe access/egress during a flood event, whether proposed levels will displace water, or whether the attenuation system is correctly sized. Without this essential dataset, no defensible flood-risk assessment can be completed.

Significant inaccuracies exist between NRW flood maps and surveyed ground levels: the drainage report acknowledges differences of up to 2.5 metres between the site's topographical survey and NRW flood model outputs. Such a discrepancy is extreme - flood models typically operate within tolerances of 0.10–0.25 m, not 2.50 m.

This means:

- the modelled flood outlines may be wholly incorrect
- flooding could be *far greater* or *extend into additional areas* of the site
- the identified development platform may not be safe.

A site with such substantial mapping errors should not be advanced to allocation.

The central watercourse must accommodate up to 70.4 litres per second of discharge, yet its capacity is unknown. The strategy proposes discharging all surface water from the development into the on-site watercourse at a controlled rate of 70.4 litres per second (l/s). However:

- the downstream culvert has not been surveyed
- no hydraulic modelling has been completed
- no evidence exists to show that either the open channel or culvert(s) can take an additional 70.4 l/s, let alone the exceedance flows during extreme rainfall.

If this watercourse lacks capacity, the result would be flooding of new homes, existing homes, or both. **Allocating a site before verifying its outfall capacity is unsafe and contrary to PPW drainage principles.**

Soil conditions make the effectiveness of infiltration SuDS highly unlikely - forcing all runoff into a constrained ditch. Soilsclapes and strategy data show the site is comprised of slowly permeable, seasonally wet loamy and clay soils, with impeded drainage.

As a result, infiltration rates are expected to be too low to meet BRE365 standards:

- 100% of the developable area's runoff must be attenuated and discharged to the watercourse. This places huge pressure on the ditch and culvert, especially during high-intensity storms.

Reliance on a single outfall in these conditions is high-risk and non-compliant with SuDS hierarchy best practice.

The development requires extremely large attenuation volumes: over 9,580 cubic metres; the drainage strategy calculates the required storage for the 100-year + 40% climate-change storm event as:

- Attenuation volume: 9,580.7 m³
- Storage basin footprint: 8,926 m² (approximately the size of a football pitch)
- Storage base dimensions: 163.6 m × 54.5 m
- Design depth: up to 1.14 m for the 200-year event

The need for such enormous attenuation demonstrates that the land naturally produces high runoff, that the site is hydrologically sensitive and also that the developable area must be dramatically reshaped. Such significant engineering intervention is a strong indicator that the land is not suitable for housing development.

Overland flow from neighbouring farmland already enters the site - the report confirms that runoff from land outside of the proposed site boundary flows onto the development area. This means the drainage design must intercept and reroute external water **as well as** onsite runoff. Any mis-calculation in flow direction, levels, or attenuation capacity could:

- push this water towards existing housing
- increase flood risk on site
- cause contaminated exceedance flows to migrate toward sensitive receptors, including the nearby Ancient Semi-Natural Woodland (ASNW).

This represents a major and unmanaged risk.

Foul drainage is entirely unconfirmed - with all options requiring major off-site works. The strategy presents multiple foul disposal options, all of which are speculative and depend upon:

- pumping stations and rising mains as long as 650 metres

- the need for third-party land agreements
- possible network upgrades
- pending confirmation of capacity from Welsh Water.

This means that even if surface water solutions were viable (which they are not), the foul network may be unable to support the development, creating further delays, uncertainty and risk.

In conclusion, the flood risk management strategy is incomplete, with many critical elements remaining “to be confirmed”.

Key required data and assessments are missing, including:

- BRE365 infiltration testing
- Downstream culvert surveys
- Watercourse capacity assessment
- Full SAB pre-application review
- Confirmation of foul capacity from Welsh Water
- Flood hazard data (NRW Product 6).

A site cannot be allocated when its fundamental drainage viability is still unproven.

The numerical evidence within the developer’s own drainage report confirms that:

- flood mapping is unreliable
- flood-risk data is missing
- outfall capacity is untested
- infiltration is unlikely
- over 9,580 m³ of attenuation is required
- a discharge rate of 70.4 l/s must be imposed on an unmodelled watercourse
- overland flows enter the site from surrounding farmland
- foul drainage has no confirmed solution.

These issues are significant, unresolved, and represent fundamental constraints that cannot be conditioned away or resolved later. The site should therefore not be allocated within the RLDP.