

FLOOD RISK ASSESSMENT

Proposed permeable/unbound tarmac chippings hardstanding and vehicle parking area

Site: 172 Broadgate, Weston Hills, Spalding, Lincolnshire, PE12 6DQ

Local Planning Authority: South Holland District Council

Application area: approximately 1,500 m² (0.15 hectares)

Proposed use: parking and manoeuvring for one HGV with trailer, two cars and one domestic vehicle/transport trailer.

1. Purpose of this Assessment

This proportionate Flood Risk Assessment (FRA) accompanies the planning application for the proposed hardstanding and vehicle parking area. It considers flood risk to the development and potential changes in flood risk arising from the development. The assessment considers tidal, fluvial (river), groundwater, drainage/sewer systems, reservoir, canal and ordinary watercourse sources, together with surface-water runoff and the potential effects of climate change.

The proposed surface comprises an unbound layer of tarmac chippings/asphalt planings. The chippings will not be sealed or deliberately compacted into an impermeable pavement. The voids between the chippings will allow rainfall to infiltrate through the surface and reduce the rate and volume of surface-water runoff.

The precise infiltration performance will depend on the grading, thickness, underlying ground conditions and degree of natural consolidation. The surface is therefore not described as fully permeable unless confirmed by site testing. The drainage approach is designed to maximise infiltration and temporary attenuation while retaining adjacent grassed areas as an additional drainage route.

2. Site and Development Description

The proposal relates to approximately 1,500 m² of land at 172 Broadgate, Weston Hills. The proposed surface will comprise tarmac chippings/asphalt planings laid over the existing prepared/hardcore area. The material will remain unbound rather than being sealed or compacted into a conventional impermeable tarmac pavement.

The area will be used for parking and manoeuvring and will accommodate one HGV with trailer, two cars and one domestic vehicle/transport trailer. No new building, basement or dwelling is proposed and no works to a watercourse are proposed.

Adjacent grassed areas will be retained. Rainfall will be allowed to infiltrate through the voids within the unbound chippings into the underlying ground where ground conditions permit.

During intense rainfall, any runoff that is not immediately infiltrated will be directed towards the adjacent grassed areas for further infiltration and temporary attenuation.

3. Flood Risk Context

National planning guidance requires flood risk to be considered from all relevant sources, including rivers and the sea, surface water, groundwater, overwhelmed drainage systems, reservoirs, canals and other artificial sources. Climate-change allowances should also be considered.

The site is in the low-lying South Holland area. The exact Environment Agency Flood Map for Planning and the South Holland Strategic Flood Risk Assessment should be treated as the controlling sources for the precise application boundary. The site area is approximately 0.15 hectares.

4. Assessment of Flood Sources

Flood source	Risk to development	Risk from development	Management / mitigation
Tidal flooding	Potentially relevant because South Holland is a low-lying area influenced by tidal drainage. The exact site-specific Flood Map for Planning should confirm the applicable tidal Flood Zone and future climate-change extent.	The proposal does not alter flood defences, obstruct tidal flows or create occupied accommodation.	The open parking surface does not create a barrier to floodwater. Existing drainage routes will remain clear. No land raising or flood-defence works are proposed.
Fluvial / river flooding	River and watercourse flooding must be considered because of the low-lying setting. The exact Flood Zone and design flood level should be confirmed from the Environment Agency Flood Map for Planning / local SFRA.	No culverting, infilling, narrowing or obstruction of a watercourse is proposed.	No works to a watercourse are proposed. Existing watercourses and drainage routes will remain unobstructed. Any future works affecting a watercourse will obtain the appropriate consent.

Surface water / pluvial flooding	Heavy rainfall can generate rapid runoff. This is the principal source potentially affected by the proposed hardstanding.	An unbound layer of tarmac chippings is expected to allow substantially more infiltration than a sealed conventional tarmac surface. This reduces, but does not guarantee elimination of, additional runoff.	The chippings will remain unbound and will not be sealed with asphalt. Rainfall will infiltrate through the surface into the underlying ground where practicable. Adjacent grassed areas will provide additional infiltration and temporary attenuation for rainfall that does not immediately infiltrate. The drainage arrangement will be kept clear and maintained.
Groundwater	Groundwater flooding can occur in low-lying areas, particularly after prolonged wet weather.	The proposal is not expected to materially alter groundwater levels. Increased infiltration may increase local groundwater recharge, but the open nature of the surface avoids concentrated discharge.	No basement or below-ground structure is proposed. The surface will remain at appropriate existing levels. If persistent groundwater or waterlogging is encountered, the drainage arrangement should be reviewed before further works.
Drainage / sewer systems	Overwhelmed, blocked or defective drainage systems can cause localised flooding.	The proposed surface is not intended to discharge additional runoff directly into the public sewer.	No direct surface-water connection to the public sewer is proposed. The permeable/unbound chippings and adjacent grassed areas will manage rainfall at source as far as practicable. Existing drains and drainage routes should remain clear and accessible.
Reservoir flooding	Reservoir flooding is a low-probability residual risk but is considered as	The proposal does not affect reservoir capacity, dams or water-retaining	No reservoir-specific works are proposed. The open parking area does not create

	required by national guidance.	structures.	a significant obstruction to emergency floodwater movement.
Canals / artificial watercourses	Canal or artificial-watercourse flooding is considered as a potential source where hydraulically connected to the local drainage network.	No works are proposed to a canal or artificial watercourse.	No obstruction or alteration of canal banks or artificial watercourses is proposed. Relevant consent will be obtained before any future works affecting them.
Ordinary watercourse	An ordinary watercourse, drain or ditch could flood during intense rainfall or high local water levels.	The proposal does not involve alteration, culverting or infilling of an ordinary watercourse. The unbound surface also reduces the volume and rate of runoff compared with a sealed surface.	Runoff will be managed at source through infiltration through the tarmac chippings and, where necessary, the adjacent grassed areas. Existing watercourses and drainage routes will remain unobstructed.

5. Surface-Water Drainage and Infiltration Strategy

The principal drainage measure is the use of unbound tarmac chippings/asphalt planings rather than a sealed conventional tarmac pavement. The material will be laid without a binding/sealing layer and will not be deliberately compacted into an impermeable surface. The voids between the chippings will allow rainfall to pass through the surface and infiltrate into the underlying ground, subject to local soil and groundwater conditions.

The hardstanding will be formed so that rainfall is not concentrated towards neighbouring buildings or properties. Adjacent grassed areas will be retained as secondary infiltration and temporary attenuation areas. If rainfall temporarily exceeds the infiltration capacity of the chippings and underlying ground, excess water can spread towards the grassed margins rather than being discharged directly to a public sewer or watercourse.

The drainage arrangement will be inspected and maintained. Silt, mud, vegetation and other debris will be removed where necessary so that the voids between the chippings remain available for infiltration. If natural consolidation or vehicle use reduces infiltration performance materially, the surface will be loosened, regraded or supplemented with an appropriate SuDS measure where necessary.

6. Climate Change

Climate change is expected to increase the intensity of extreme rainfall and may increase river and tidal flood risk over the lifetime of the development. The Environment Agency requires appropriate climate-change allowances to be considered in flood-risk assessments.

The use of an unbound, infiltrating surface provides additional resilience to increased rainfall intensity compared with a sealed tarmac surface because rainfall can be managed closer to where it falls. The adjacent grassed areas provide additional storage and infiltration during periods when rainfall exceeds the immediate infiltration capacity of the surface.

The drainage arrangement should be reviewed if future climate-change information or local flood-risk information identifies a material change in the site's risk. Any site-specific design flood level or climate-change flood extent provided by the Environment Agency or Local Planning Authority should be used in any subsequent detailed drainage design.

7. Flood Risk During Construction

Construction materials and temporary stockpiles will be kept clear of drainage routes and watercourses. Temporary excavations will not be left open where they could collect or divert floodwater. Existing drainage routes will remain operational throughout construction.

Care will be taken not to contaminate adjacent grassed areas or drainage routes with excessive fines, oil, fuel or construction materials.

8. Residual Risk and Emergency Arrangements

Residual flood risk cannot be eliminated entirely. The proposed use is primarily open vehicle parking and manoeuvring, so people are not expected to remain on site during severe flood conditions. In the event of a flood warning or rapidly rising water, vehicles should be moved to a safe location where practicable and people should leave the site using the safest available route.

The parking layout will be managed so that access and escape routes are not deliberately blocked by parked vehicles.

9. Conclusion

The proposed 1,500 m² hardstanding will use unbound tarmac chippings/asphalt planings rather than a sealed conventional tarmac surface. This is intended to maximise infiltration at source and reduce both the rate and volume of surface-water runoff compared with an impermeable pavement.

The principal potential impact of the development is therefore reduced by the proposed surface treatment. Rainfall will be allowed to infiltrate through the chippings into the underlying ground where conditions permit, with adjacent grassed areas providing additional infiltration and temporary attenuation. No direct surface-water discharge to a public sewer or watercourse is proposed.

The proposal does not involve a building, basement, culverting, infilling or alteration of a watercourse. Subject to the drainage arrangement described above, maintenance of the surface and drainage margins, and confirmation of any site-specific requirements identified by the Environment Agency or South Holland District Council, the development is considered capable of being managed so that it does not materially increase flood risk elsewhere.

10. Information Sources

- Environment Agency / GOV.UK – Flood risk assessments: applying for planning permission.
- Environment Agency / GOV.UK – Flood risk assessment: Flood Zones 1, 2, 3 and 3b.
- Environment Agency / GOV.UK – Flood risk and coastal change.
- Environment Agency / GOV.UK – Flood risk assessments: climate change allowances.
- Environment Agency – Flood Map for Planning and long-term flood-risk information.
- South Holland District Council – Local List / planning validation requirements.

Important note: This is a proportionate desktop FRA based on the information available for the planning application. It does not claim that the tarmac chippings are fully permeable or provide a guaranteed infiltration rate. The actual infiltration performance will depend on the underlying ground conditions, grading, thickness and subsequent consolidation. If the Local Planning Authority or Lead Local Flood Authority requires site-specific infiltration testing, hydraulic modelling or a formal drainage strategy, that requirement should take precedence.