

FLOOD CONSEQUENCES ASSESSMENT (FCA)

Site:

Seven Sisters RFC
Dulais Road
Seven Sisters
Neath Port Talbot
SA10 9EL

1. Introduction

This Flood Consequences Assessment (FCA) has been prepared in support of a planning application for the installation of sports floodlighting at Seven Sisters RFC.

The assessment considers the potential flood risk to and from the proposed development and demonstrates compliance with Technical Advice Note 15 (TAN15): Development and Flood Risk (Wales).

2. Development Description

The proposed development comprises:

- Installation of **4 no. 15m high steel lighting columns**
- LED floodlighting luminaires
- Reinforced concrete foundations
- Underground cabling and associated electrical infrastructure

Foundation Specification

Each column will be supported by a reinforced concrete base measuring:

- 1.4m x 1.4m x 1.4m
- Volume per base: 2.744 m³
- Total volume (4 bases): 10.976 m³ (~11 m³)

The development is ancillary to the existing rugby club and does not introduce new buildings or habitable accommodation.

3. Site Description

The site is an existing rugby club located within the Dulais Valley. The site comprises playing fields and associated facilities situated on relatively flat ground within a wider valley floor.

The surrounding topography is characterised by steep valley sides, with the River Dulais flowing through the settlement.

4. Sources of Flood Risk

The application site is identified as being within a **Surface Water and Small Watercourses Flood Risk Zone – Flood Zone 3**, indicating a high probability of flooding.

4.1 Fluvial Flooding

The primary source of flood risk is from the River Dulais and associated small watercourses. Valley floor locations such as the site are susceptible to floodplain inundation during extreme rainfall events.

4.2 Surface Water Flooding

The site is specifically identified within a surface water flood risk zone. Due to the steep surrounding topography, there is potential for rapid overland flow during intense rainfall events.

4.3 Groundwater & Drainage

Groundwater flooding risk is considered low to moderate and not significant for the proposed development.

5. Flood Risk Vulnerability (TAN15)

The proposed development is classified as less vulnerable infrastructure under TAN15, comparable to outdoor sports equipment and ancillary infrastructure.

Such development is generally acceptable within flood risk areas, subject to demonstrating:

- No increase in flood risk
 - Acceptable consequences of flooding
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6. Assessment of Flood Consequences

6.1 Risk to People

The development does not introduce permanent occupancy or sleeping accommodation. Users are present only intermittently.

Conclusion: No risk to life.

6.2 Impact on Floodplain Storage

The total volume of concrete introduced is approximately 11 m³.

This volume is negligible when compared to the overall floodplain storage capacity of the site and surrounding valley.

The foundations are predominantly below ground level and therefore do not materially displace floodwater.

Conclusion: No measurable loss of flood storage.

6.3 Impact on Flood Flow (Hydraulics)

- Lighting columns are slender vertical structures
- Foundations are buried

The development will not obstruct or alter flood flow paths.

Conclusion: No impact on flood conveyance or flood levels.

6.4 Structural Stability

The 1.4m cube concrete foundations are appropriate for supporting 15m lighting columns and provide adequate resistance to:

- Wind loading (primary design factor)
- Saturated ground conditions during flood events

Given the grassed nature of the site, the risk of scour is low.

Conclusion: Development remains structurally stable during flood events.

6.5 Electrical Infrastructure

Electrical equipment presents the main potential flood-related risk.

Mitigation measures include:

- Installation of IP-rated waterproof electrical components
- Raising control cabinets above predicted flood levels (plus freeboard)

- Use of armoured and sealed cable ducts
- Provision of RCD protection and isolation systems

Conclusion: Risks can be effectively mitigated through design.

6.6 Access and Egress

Safe access is not required during flood events as the development does not rely on continuous occupation.

Conclusion: No safety dependency on site access.

6.7 Off-Site Flood Risk

The development:

- Does not significantly increase impermeable area
- Does not displace floodwater
- Does not obstruct flow paths

Conclusion: No increase in flood risk elsewhere.

7. Climate Change

Future climate change is expected to increase rainfall intensity and flood frequency.

Due to the nature of the development (minimal footprint and non-vulnerable use), the proposal remains acceptable under future climate scenarios.

8. Mitigation Measures

The following measures will be implemented:

Engineering

- Foundations designed for saturated ground conditions
- Durable, corrosion-resistant materials

Electrical

- Elevated control equipment

- Waterproof enclosures (IP65+)
- Safe isolation systems

Operational

- Inspection following flood events
- Ability to isolate electrical systems during extreme weather

9. TAN15 Compliance Statement

The application site lies within **Flood Zone 3**, representing a high probability flood area.

Under TAN15, development in Zone 3 must demonstrate that:

- The consequences of flooding are acceptable
- The development is of an appropriate vulnerability classification
- Flood risk is not increased elsewhere

The proposed development:

- Is classified as **less vulnerable infrastructure**
- Has no permanent occupancy and poses no risk to life
- Results in negligible floodplain displacement (~11 m³ total volume)
- Does not impede flood flows or alter flood routing
- Incorporates appropriate mitigation for electrical equipment

Given the nature of the development, the consequences of flooding are considered acceptable, and the proposal fully complies with TAN15 despite its location within Flood Zone 3.

10. Conclusion

The proposed installation of four 15m lighting columns at Seven Sisters RFC represents low vulnerability development within a floodplain environment.

The scheme has:

- Negligible physical impact on floodplain storage (~11 m³ total volume)
- No impact on flood flow or levels
- No risk to people

- Appropriate mitigation for electrical infrastructure

Overall, the development is acceptable in flood risk terms and suitable for planning approval.

11. Key Planning Statement

The proposed lighting columns constitute low vulnerability infrastructure with minimal below-ground foundations and no impact on floodplain storage or conveyance. The development will not increase flood risk on or off site and incorporates appropriate resilience measures. The proposal is fully compliant with TAN15.