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# Flood Risk Assessment (FRA)

**Site:** Aberafan Shopping Centre, Port Talbot  
**Location:** Adjacent to the River Afan  
**Date:** 1st April 2025  
**Prepared by:** Chris Morgan MBE

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## 1. Introduction

This Flood Risk Assessment (FRA) has been prepared for the Aberafan Shopping Centre in Port Talbot, which is located adjacent to the River Afan. Due to its proximity to the river and the surrounding low-lying topography, the site has a potential risk of fluvial (river) flooding and flash flooding during periods of heavy rainfall.

The purpose of this assessment is to:

- Identify and assess flood risks to the site.
  - Outline existing mitigation measures in place.
  - Recommend additional actions to reduce flood impacts and ensure business continuity.
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## 2. Site Description

- **Property Name:** Aberafan Shopping Centre
  - **Adjacent Watercourse:** River Afan
  - **Topography:** The shopping centre lies on low-lying ground near the River Afan floodplain.
  - **Primary Access Points:** Western entrance via Riverside Walk; service access via Service Yard (Loading Bay B).
  - **Flood Monitoring Equipment:** Flash Flood Monitor located in **Store B Service Yard Loading Bay**.
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## 3. Sources of Flood Risk

| Flood Source         | Description                                                   | Likelihood | Potential Impact                                                 |
|----------------------|---------------------------------------------------------------|------------|------------------------------------------------------------------|
| Fluvial (River Afan) | Overtopping or breaching of riverbanks during heavy rainfall. | Medium     | Flooding of service yards, access roads, and ground-floor units. |

| Flood Source                   | Description                                                            | Likelihood | Potential Impact                                       |
|--------------------------------|------------------------------------------------------------------------|------------|--------------------------------------------------------|
| <b>Surface Water (Pluvial)</b> | Heavy rainfall exceeding drainage capacity leading to surface ponding. | High       | Temporary flooding in car parks and service areas.     |
| <b>Groundwater</b>             | Rising groundwater following prolonged rainfall.                       | Low        | Minor seepage into lower ground areas.                 |
| <b>Drainage System Failure</b> | Blockage of culverts or storm drains.                                  | Medium     | Localised flooding in service areas and access routes. |

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#### 4. Existing Flood Mitigation Measures

- **2000 Sandbags:**
    - Stored on-site for emergency deployment.
    - Can be used to protect service entrances, key internal doorways, and critical infrastructure areas.
  - **Flash Flood Monitor:**
    - Located in **Store B Service Yard Loading Bay**.
    - Provides real-time alerts of rapid water level increases.
    - Linked to store management and facilities control systems for early warning.
  - **Site Drainage:**
    - Existing surface water drains and gullies maintained on a regular schedule.
  - **Flood Response Plan:**
    - Includes staff flood awareness training.
    - Clear communication chain with store managers and security.
    - Identified flood assembly points and evacuation routes.
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#### 5. Flood Warning and Response

- **Early Warning Systems:**
    - River Afan monitored by Natural Resources Wales (NRW) flood alert service.
    - Flash Flood Monitor triggers local alarms and notifications.
  - **Communication:**
    - Facilities Manager to coordinate with local authorities and emergency services.
    - On-site radio and SMS alerts distributed to all tenant managers.
  - **Evacuation and Access Control:**
    - Evacuation routes clearly marked on all floor plans.
    - Service Yard and car park access controlled during flood events.
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#### 6. Residual Risks

Despite mitigation measures, residual risks remain, including:

- Unexpected river surges due to upstream blockage or debris.
  - Severe storm events exceeding historical rainfall intensities.
  - Potential failure of drainage systems during prolonged rainfall.
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## 7. Recommendations

1. **Maintain Flash Flood Monitoring System** — ensure sensors are tested quarterly and alerts are functional.
  2. **Regular Sandbag Inspections** — check for deterioration and replace damaged bags annually.
  3. **Flood Response Training** — conduct staff refresher training every 6 months.
  4. **Liaison with NRW** — remain registered for flood alerts and receive river level updates.
  5. **Update Drainage Maintenance Logs** — clear gullies and drains before and after major storms.
  6. **Review FRA Annually** — particularly following any flooding incident or site modification.
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## 8. Conclusion

The Aberafan Shopping Centre faces a **medium risk of flooding**, primarily from the River Afan and surface water runoff during intense rainfall. However, existing mitigation measures — including the availability of 2000 sandbags, a functioning flash flood monitor, and a structured flood response plan — significantly reduce the risk to property, tenants, and the public.

Continued vigilance, maintenance, and staff preparedness will ensure that flood risks remain manageable and that the site is resilient to adverse weather events.

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