### Lower Swansea Valley Flood Risk Management Scheme

#### Key Issues –
- Need to effectively engage with the local authority (City and County of Swansea) from an early stage, understand their aspirations, requirements and landscape management / maintenance constraints
- Need to secure an early agreement of approach and design principles with the local authority
- Design of effective mitigation for potential adverse landscape and visual impacts
- Environmental enhancements required but without increasing future maintenance liabilities, but aiming to actually reduce them, for example through a package of ‘accelerated maintenance works’
- Close integration required between landscape architects, design engineers, environmental specialists and contractor.
- Extensive presence of Japanese knotweed and Himalayan balsam. Need not only to develop effective Invasive Species management Plan, but to

#### Purpose of the project
The project’s purpose is to deliver improved flood protection for over 300 businesses and homes. The project is predicted to generate £28 million of benefits to the wider economy as a result of the reduced flood risk.

In association with the improved standard of flood protection, the project aimed to contribute to the local authority’s regeneration objectives and deliver a range of environmental enhancements.

#### Description of the project
The project is located along the River Tawe, just north of Swansea City Centre. It affects a densely wooded river corridor flanked with public footpaths / cycleways and linear green spaces, which connect a series of enterprise parks, industrial estates, residential areas and economic development sites. The works included setting back existing defences to increase capacity, improving and raising flood embankments and walls, and removing three redundant bridges.
Lessons learnt
It was critical to develop a collaborative partnership relationship with the City and County of Swansea (CCS), as the project’s primary landowner and stakeholder. A CCS liaison officer representing Economic Regeneration and Planning met with the project team regularly from start to finish, and co-ordinated consultation with other CCS officers. Landscape and environmental design principles were agreed with CCS at an early stage, and included a contribution to local regeneration and landscape strategies, particularly the ‘Swansea Vale Development Strategy’ (City & County of Swansea Council, June 2012).

A key area was to minimise the landscape and visual impacts of new defence structures, for example reducing the definition of embankment toe and crest lines. This worked well largely because Landscape and Visual Impact Assessment (LVIA) was timed early in the programme to allow influence on design development, and because the landscape team was well integrated in the engineering design team.

Landscape mitigation and enhancement were closely related to other environmental issues considered in the EIA. A landscape objective for example was to replace the extensive tree losses using new woodland planting to integrate new structures into the landscape and control views. Ecologically, this created an opportunity to create BAP habitat in the form of new wet woodland.

Both the formation of new embankments and the delivery of the landscape scheme required considerable volumes of topsoil, all of which needed to be sourced from on-site resources, for reasons of cost and sustainability. Due partly to extensive contamination from Japanese knotweed, there was an apparent shortfall in available material. A Soil Resource Plan was developed in line with the Defra Code of Practice for Sustainable Use of Soils on Construction Sites. This led to the discovery of sufficient resources in the form of alluvium, buried under made ground.

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