

North Inch, Perth



SuDS used

- *Retention pond*

Benefits

- *Reduced runoff flow rate*
- *Reduced local flooding*
- *Enhanced park environment*
- *Amenity*
- *Biodiversity*
- *Improved receiving water quality*
- *Restored historic pond*

1. Location

North Inch, Hay St., Perth, PH1 5HS

56.4019° N, 3.4364° W

2. Description

The SuDS scheme has been designed to enhance the park landscape by ensuring that the design of the pond and surrounding embankment does not involve the use of harsh geometric lines. This is complemented by the informal manner in which trees, shrubs and other vegetation have been grouped.

Muirton is a pre-war Council housing estate to the north of Perth city centre and adjacent to the North Inch public park. The neighbourhood is undergoing a seven phase regeneration programme, within the context of a master plan, which will ultimately result in a comprehensive redevelopment scheme based on affordable housing. Phase 1 of the programme is complete and planning consent is in place for phases 2 and 3.

From phase two onwards, surface water drainage from the new housing will be dealt with by means of sustainable drainage systems (SuDS) and the current application seeks consent for the associated retention pond. This will be located to the east of Muirton on land owned by the Council. The entire site for the SuDS scheme extends to 0.42 ha and lies on the edge of a municipal golf course which forms part of the North Inch Park. Bounded on the west by a footpath, the site is used as public open space and is generally flat.

The pond will have a curved edge and will be excavated to a maximum depth of 1 m. A low profile landscaped embankment will be constructed around the perimeter of the pond, varying in width from 4 m to 10 m, comprising a mix of trees, shrubs and wildflower. In addition there will be planting on the bed of the pond to create an attractive habitat for wildlife and combat algal bloom. Surface water run-off from Muirton will be taken to the site by means of an existing drainage pipe which traverses the new St Columba's campus. An outfall at the southern end of the pond will discharge to an existing open channel which collects drainage from the golf course and runs into the River Tay.

3. Main SuDS components used

Retention pond

4. How it works

The longer term objective of the SuDS strategy is to control run-off in order to reduce the potential for flooding problems in the future. All development imposes extra demands on surface water drainage infrastructure that should be mitigated by the use of sustainable drainage solutions and SEPA is of the view that this design meets the appropriate technical standards.

Surface water from the development drainage network is conveyed to the inlet manhole which has a bypass line to direct flows around the pond to the outlet chamber during maintenance or emergency operations. During normal operation the flows are directed to the inlet dissipation channel to reduce energy of the inlet flow rates and thereby minimising erosion during high flows. The pond is divided by a submerged gabion rock berm into two sections, the inlet forebay and the main pond area. Regular desilting of the forebay is required to ensure adequate storage. Flows which have passed through the forebay are directed to the

outlet headwall and are restricted by a Hydro-Brake chamber to greenfield runoff rates prior to discharging to the River Tay.

5. Maintenance and operation

- Remove litter weekly
- Cut wildflower areas twice per year (August and February)
- Cut grass edges and remove arisings 14x a year
- Check on stake and ties of trees every two months, prune twice a year and leave branches in habitat piles
- Thin out water plants once a year, remove non-natives twice a year

6. Benefits and achievements

- Improved biodiversity of the golf course
- Improved water quality reaching the River Tay SSSI
- The Inch historically had a pond which was infilled and is now reinstated.

7. Lessons learnt

The original design created by the Civils Contractor to shape the banks of the pond was very uniform and was amended by onsite instruction from the landscape architect. Careful guidance on the setting-out of the banks and shape of the pond is required at construction stage and supervision by an independent third party is recommended.

8. Project details

Planning permission submitted 31 July 2009

Cost: £88,110

Extent: 2235 m²

Project team

Funders	<ul style="list-style-type: none"> • Scottish Government + Private funding through Caledonia Housing Association (CHA).
Clients	<ul style="list-style-type: none"> • CHA (formerly Perthshire Housing Association Ltd.
Designers	<ul style="list-style-type: none"> • Landscape designer - Mike Hyatt • Civil Designer – Allen Gordon LLP
Contractors	<ul style="list-style-type: none"> • Stewart Milne Construction

