Scheduled Monument Consent:
Report on Handling

Case information

Reference/Case ID	201603004

Scheduled Monument	Overton reservoirs 1-8 and associated channels, Clyde Muirshiel Park		
Index no	M12810	**Grid Ref**	NS239732 224000.0000 673100.0000

Date of Application	01 September 2016	**Application Received**	02 September 2016
Summary of proposed works	Erection of handrails and replacement trash screen at the Alum Dam, and repairing and upgrading Reservoir No.8 overflow channel and rock armour		

1. Summary recommendation

This report recommends approval without conditions.

2. Background

The monument is a significant part of an early 19th-century civil hydraulic engineering scheme. The system was devised to supply enough water for the burgeoning population of Greenock and to provide power for the rapidly developing industries of the area. The well-preserved aqueduct, sluices, reservoirs and associated structures are an important survival of a defining period in industrial and civic history, not only in Inverclyde but across Scotland and further afield.

Reservoir 8, of irregular plan, is centred on NS 2648 7462. The reservoir measures around 170m NE-SW by up to 85m transversely. There is a stone-clad earth dam on the NE side and a secondary bank around the NW corner. There is no visible sluice mechanism and the water appears to flow into a concealed pipe with inspection covers near the centre of the dam. A small, empty, holding reservoir is located 45m to the NE. This measures around 40m NE-SW by up to 30m transversely and has a concrete dam (the 'Alum Dam') on the NE and NW side. An area of hard-standing and the remains of a rectangular filter structure, measuring 10m NE-SW by 5m transversely, are located between the two reservoirs. A stone-lined spillway channel 0.5m wide runs from the NE corner of Reservoir 8 to the E side of the holding reservoir. From the holding reservoir, the spillway channel continues under a tarmac road and underground N for around 60m to the main Greenock Cut aqueduct.

The locations of the proposed works are:

- the retaining wall of the Alum Dam and its spillway, which require the erection of safety railing and the replacement of a trash screen
- the upstream part of Reservoir no. 8, where the embankment, stone pitching of the reservoir embankment and parts of the adjacent spillway require repairs due to erosion

No pre-app site meeting was carried out, but the detailed outline of a SMC application for the above works was agreed by email between the applicant and HES.

Scottish Water are carrying out other maintenance works and upgrades to the water cut and its reservoirs (see case 201602990). No other SMCs have been received for this part of the monument since 2009.

3. Proposals

The proposed works include the following programme. The applicant notes that the works would avoid the risk of the failure of retaining structures and the flooding and loss of water supply which could occur as a result.

No. 8 Reservoir

- In order to maintain the capacity of the reservoir, spillways and overflow channels, vegetation will be removed and debris cleared from the channels by machine, back to the historic depth of the channel.
- An area of failed slope (caused by water spilling onto the bank from higher ground above) on the west side will be cut back by tracked excavator, and reprofiled at a stable angle.
- A raised bank will be constructed along the west side at the same location. New stone pitching to match existing would be laid on this bank, and reused topsoil and grass would be overlaid on the crest of the bank.
- Repair, reinstate and grout areas of missing stone pitching along the channel for about 34m.
- Repair upstream rock armour protection on upstream face of the embankment over an area of 30m².

Alum Dam

- Installation of approximately 48m of galvanised steel tube handrail along the top of Alum Dam.
- Installation of approximately 22m galvanised steel tube handrail and replacement trash screen at the overflow channel outlet.

4. Representations received

No representations were received. Scottish Water are sole applicants and site owners.

5. Report

a) Policy considerations

The application should be viewed with the following legislative and policy considerations in mind:

Ancient Monuments and Archaeological Areas Act 1979 (as amended)

- Part 1 Section 2 - Control of works affecting an ancient monument. This is what you will have used to decide if SMC is required for the works described.
- Part 1 Section 2 (3) – authorises works where Scottish Ministers or Historic Environment Scotland have granted consent (scheduled monument consent) for the execution of the works where the works are executed in accordance with the terms of the consent and of any conditions attached to the consent.

Historic Environment Scotland Policy Statement

3.4. Scheduled monument consent is required for any works that would demolish, destroy, damage, remove, repair, alter or add to the monument or to carry out any flooding or tipping on the monument. It is a criminal offence to carry out any of these works without consent.

3.16. Works on scheduled monuments should therefore normally be the minimum level of intervention that is consistent with conserving what is culturally significant in a monument.

3.20. Where change is proposed, it should be carefully considered, based on good authority, sensitively designed, properly planned and executed, and where appropriate in the context of an individual monument, reversible.

b) Assessment

The monument is of national importance because it has an inherent potential to make a significant addition to our understanding of the past, in particular to the study of hydraulic engineering and development of water provision for drinking and industry in 19th-century Greenock. Understanding and appreciating how the original and modified structures work is a key element in the cultural significance of the monument.

The reservoir and the (now-emptied) Alum Dam are all original features constructed in stone, but which have seen extensive modern repair. Map regression suggests that the present structures are largely original, and of similar dimensions to the original features. The present form of the monument is partly of modern derivation, but it closely resembles the original appearance. It is possible to understand and appreciate how Thom envisaged the functions of the water system.

The maintenance and repair of the reservoir will have involved significant excavation of the surrounding ground and repair/partial replacement of the masonry pitching. It is believed that much of the repair work was carried out between the 1950s and c.1971. There are concrete elements observable in the fabric from this period. The Alum Dam

had been dewatered prior to that point and taken out of use, with only its spillway and overflow channel maintained, so it is largely original in appearance.

Several elements of the proposed works outlined above seek to faithfully repair masonry that has already seen a previous substantive phase of consolidation work. As such, the impact on the cultural significance of much of the works would not be adverse in nature, as it would maintain the fabric of the structure while mitigating a risk to health and safety. However, several elements of the works would involve some level of change to the monument.

The removal of soil and debris from the channels and spillway. This material is likely to be material that postdates the modern repair works, and the deepening of the channel would simply restore it to its condition in the 1970s. In neither case does this material contribute to a detailed understanding and appreciation of the cultural significance of the monument. Therefore, while the interventions will involve the removal of material, this would not constitute a significant adverse impact on the monument.

Cutting back failing west bank of the spillway and reprofiling of the bank. This would alter the present appearance of this part of the monument, as it would remove a feature which may be original. However, this loss would not be substantial, as the channel is certainly original and would be maintained as a result. Without the creation of a new bank on the west side, there is a risk of failure which would represent an adverse impact on the monument through damage to the channel itself. On balance, the potential impact of this item would therefore be of a slight adverse nature but justified through the protection of the key element of this part of the monument.

Creating new area of pitching on the new bank of the spillway. The bank would be altered in appearance through the introduction of stone pitching on this renewed section. However, the water levels would largely conceal this new masonry, and in most views, the bank would still appear to be of a homogenous earthen construction and to fulfil its original function. It would therefore be faithful to the cultural significance of the monument, and the potential impact of this item would therefore not be of an adverse nature.

Repair of stone pitching and rock armour. In both cases, failing areas of masonry would be repaired to match existing. While the repairs would initially be very obvious, it would be expected that these would weather down with time and fit in visually with the undisturbed masonry. The impact on the cultural significance of the monument would therefore not be adverse.

Creation of handrails and replacement of trash screen. The steep drops from the Alum Dam and its overflow channel are a health and safety risk which is presently unmitigated except by signage. The applicant argues that this signage inadequately mitigates the risk. The proposed galvanised steel tube railings would alter the overall appearance of this section, but would not significantly impact on the ability to understand how the Alum Dam and its overflow channel function. The trash screen replacement will match existing, and will not have an adverse impact.

No mitigation is proposed other than a detailed topographical survey and a photo record by on-site Scottish Water staff. This would mean that any archaeological material would be lost without recording, and this is largely likely to mean small finds deposited

accidentally or deliberately during the 1820s or 1950s-1970s. This material is not an important element in the cultural significance of the monument. Moreover, it would not be likely that any such finds would contribute to the well-documented history of the water cut or to enhance our understanding of the scheduled monument. On balance, the loss of this material would not have an adverse impact.

c) Other material considerations, including impact of the works on Protected Species and Places

No other considerations are required. The separate Protected Species and Places Assessment demonstrates that no biodiversity or natural environment issues would transpire, based on our GIS information and the type of works undertaken.

d) Conclusion

While some elements of the proposed works would have a slight adverse impact, they would not significantly affect the ability to understand and appreciate the function of the overall water system. These works will be crucial to maintaining the overall appearance of the water cut and its functions. As these elements are primary to the cultural significance of the monument, it is concluded that the proposed works do not conflict with paragraph 3.16 of the HES Policy Statement. The works are also carefully considered, based on good authority, sensitively designed, and properly planned, and are therefore also consistent with paragraph 3.20.

The applicant wishes to commence works in the first week of October and envisages that the work will take one week. It is unlikely that we would need to either inspect the works or see a detailed report as a consequence of this application. On that basis, no notification or reporting conditions are recommended, as this would not be proportionate or reasonable in this case.

6. Recommended decision

The works proposed are considered acceptable in meeting the terms of national policy for scheduled monuments, and also accounting for other material considerations.

I recommend **consent is granted, without conditions**.

7. Conditions

None.

8. Approval

Officer	**John Malcolm**	**Date**	**26/09/2016**
Approved by	**John Raven**	**Date**	**26/09/2016**

Annex A – list of supporting documents

- 109053_Scope of Works_Issue02
- SSoW Greenock No.8 and Alum Dam