WATERWAY RECOVERY GROUP

Works on the Maesbury Storm Water Weir - February 2003

SITE

Storm water overflow on offside 600 metres north of Navigation in Bridge at Maesbury Marsh. The site is on private land and has a stock proof fence. There is no general access. The general management and conduct of the site will follow the procedures laid down in the Inland Waterways Association's Practical Restoration Handbook (PRH). The site has been cleared of vegetation and trees. All stumps have been pulled. Four separate areas of the site are identified for inspection and, where required, remedial works.

A. Overflow Weir

This is a 30 metre structure of blue engineering brick bonded with a very hard mortar. There are a number of lateral cracks in the structure. Proposed works are:-

- 1. Clear and inspect COMPLETED
- 2. Cut out all broken bricks and replace with reclaimed imperial engineering brick. COMPLETED
- 3. Remove all tree roots from behind the structure, inspect and make good the rear wall as necessary. COMPLETED
- 4. Remove reed growth from the front of the weir. COMPLETED
- 5. Pile off, inspect and repair front of weir as necessary.

B. Outflow Channel

This is 60 metres long, sloping at an average of 1 in 60. The bed is earth or gravel with a dry stone wall to either side. Bed width is 1.2 metres. The stone wall is collapsed or unsafe over much of its length. Proposed works are:-

- 1. Rake out and point wing walls. COMPLETED
- 2. Lay back banks to a safe angle.
- 3. Lay new bed: 150mm RC35 concrete with A393 mesh reinforcement. Bed width to be equal to top width of channel. (2-2.5 metres).
- Replace wall with original appearance. Stone to be mortared but not pointed to retain appearance. 25mm outside diameter weep tubes to be placed at 1 metre centres in the lowest course. Walls to be laid back at an angle of 5 10^o.
 SECTION 1 COMPLETED, SECTION 2 COMPLETED, SECTION 3 COMPLETED, SECTION 4 BASE LAID, SOME RECONSTRUCTION COMPLETED, SECTION 5 SOME DEMOLITION ACHIEVED.
- 5. Replace dangerous plank footbridge with a new structure BRIDGE REPLACED, FINAL LOCATION TO BE CONFIRMED.

C. Canal Drain and Paddle Culvert

This structure needs considerable refurbishment to make it serviceable. Proposed works are:-

- 1. Rake out and point wing walls. COMPLETED
- 2. Remove, recover and re-lay any necessary brickwork. COMPLETED
- 3. Remove and re-lay stone outwash pan on gravel base. COMPLETED
- 4. Remove cast iron gear and covering. Remove, recover and re-lay all necessary brickwork. COMPLETED
- 5. (BW) Pile of entrance culvert to stop leakage.

- 6. (BW) Fit stop plank grooves behind paddle.
- 7. (BW) Refurbish or replace paddle, frame and connecting rod.
- 8. Any further necessary works to culverts pipes.

D. Main Culvert Below Canal - COMPLETED

This appears to be in generally good condition. Proposed works are:-

- 1. Clean wing walls.
- 2. Rake out and re-point if necessary.
- 3. Remove, recover and relay any brickwork if required.

PROCEDURE / METHOD STATEMENT

The site will be managed in accordance with PRH Chapter 6. All volunteers will receive the full WRG safety talk before being allowed on site and personal safety will be managed as laid down in PRH Chapter 1. The site will be fully fenced before works begin. Work will proceed simultaneously in Areas 1 - 3 identified above.

Area 1

Repairs to brickwork will be completed before the back of the wall is excavated. Removed spoil will be stacked and stored safely. Reeds and dredgings removed from the front of the weir will be placed on the area behind the rear wall. Brickwork and mortar removed will be replaced to a similar specification. The mortar mix will be 3.5 sand : 1 OPC.

Area 2

The walling will be removed by hand in 15 metre sections. Removed stones will be stored safely. Where necessary, the channel sides will be laid back or propped to prevent collapse. The bed will be excavated using a 0.8 tonne mini-digger to a profile which follows the original. A bed slab will be cast in 15 metre sections, 150mm deep, width 2.0 metres, widening to 2.5 metres at the lower end. Ready mixed C35 concrete will be used with A393 reinforcing mesh, coverage 65mm minimum. Access for plant and vehicles will be negotiated with the landowner, Mr. Lowther Barratt. The concrete will be allowed to cure properly before significant load is put on it. The walls will be rebuilt to a close approximation of the original appearance. The stones will be mortared into place using a 5:1 sand:OPC mix, but will not be pointed to retain a 'dry stone' appearance. 25mm outside diameter weep tubes will be placed at 1 metre intervals in the first course. The walls will be backfilled with earth, compacting every 250mm of vertical rise. The walls will be laid back at an angle of 5-10°. The existing footbridge will be removed and replaced with a similar structure with handrails. The original surface level will be restored and seeded.

Area 3

The stone outwash pan will be removed and the stone stored safely. A gravel bed will be laid and the stones re-laid to approximately the original appearance, grouted in with a 5:1 sand:OPC mix. Wing walls will be raked out to 7mm using an angle grinder and re-pointed with a 3.5:1 sand:OPC mix. Any loose brickwork will be removed, reclaimed or replaced and re-laid. The iron cover will be removed, and any loose brickwork dealt with as above Other works will be planned and scheduled following an inspection at this point in the work. All excavations will be filled and site made safe before leaving.

RISK ASSESSMENT

There are few risks specific to the site. The outflow channel is some 2.5 metres deep at the lower end, and volunteers will be given specific instructions concerning work in a location with personnel overhead. The footbridge will be replaced by a temporary structure with hand rails. The channel will be treated as an earthwork excavation and managed in accordance with PRH Chapter 2.

Falling items: edges of channel and the footbridge will be kept clear of debris, materials and tools at all times.

Close proximity working with hand tools: Site leaders to control.

- Concrete Pouring: All work will follow the procedures laid down in PRH Chapter 17. Safety and COSHH consideration are covered in PRH Chapter 1. Particular care will be given to concrete placement, and volunteers working with concrete will be given detailed safety instructions.
- Mortar: All volunteers mixing mortar will be given full safety instructions and appropriate Personal Protective Equipment (PPE).
- Plant Operators: Only WRG Authorised operators will be allowed to use mechanical plant (See PRH Chapter 2). Strimmers, brick saws, and angle grinders all volunteers using this equipment will be given full training and appropriate PPE will be mandatory.

STORAGE OF MATERIALS

Spoil will be stored in low heaps on the site perimeter. Bricks will be safely stacked at no more than 600mm high. Cement will be covered or in closed bags. Fuel will be stored in appropriate containers well away from ignition risks.

SERIOUS ACCIDENTS

Full first aid kit including eyewash will be on site at all times. The leaders will be in contact with all parts of the site using private mobile radio and there will be a mobile phone available on site at all times. An emergency vehicle will be kept as close as possible to the site at all times.

COSHH

The following items are identified as potentially hazardous:-Petrol / 2 stroke mixture Diesel Fuel Hydraulic Oil Cement Powder Cement Mortar

All the above will be stored and handled in accordance with PRH Chapter 4. COSHH sheets are included in this publication.

All volunteers will be given all necessary instruction in the storage, handling and use of the above will be provided with suitable PPE as necessary.

CONTACT INFORMATION

The project leaders for Waterway Recover Group are:-

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