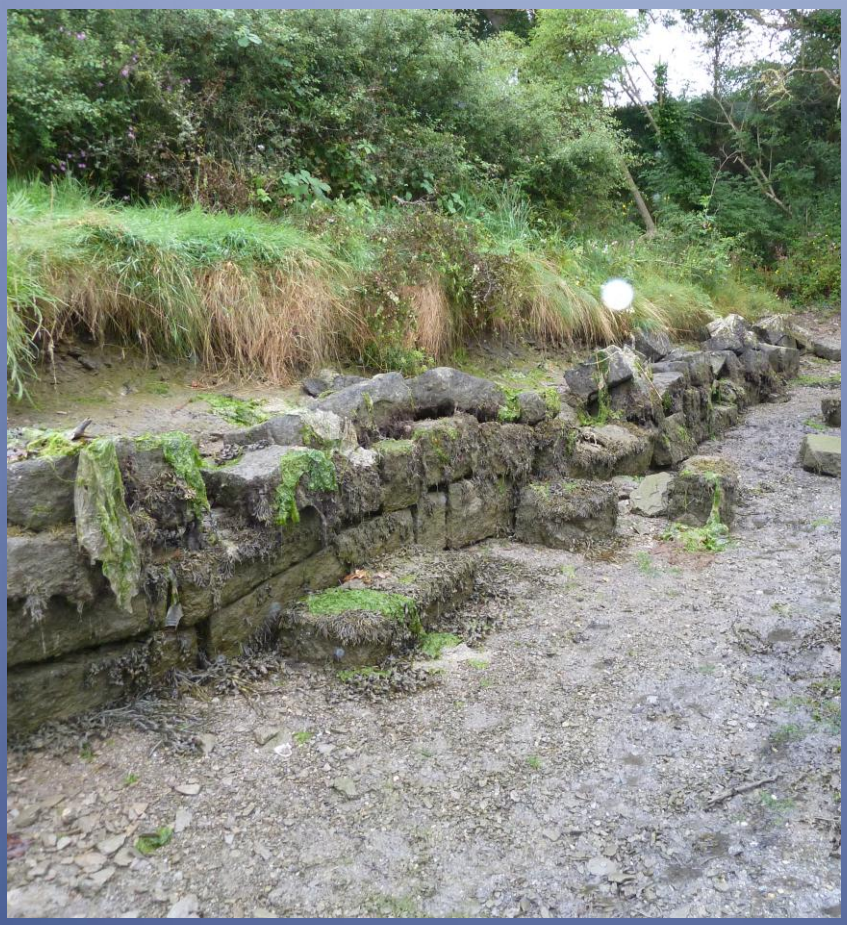

Scott's Quay Structural Survey Report, 20th October 2012

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A condition survey of the quay wall was undertaken in August 2012. This report records the observed condition and makes recommendations for maintenance and reinstatement with associated cost estimates.

Contents

1. Executive Summary

A visual inspection of Scotts Quay Wall was undertaken on 7th August 2012 following archaeological work undertaken by Archaeological Consultancy.

There are a variety of problems with the structure of the wall, primarily the absence of a foundation.

To properly reinstate the quay with high confidence in the result will require complete removal and reconstruction of the wall, including the construction of a proper foundation. To remove the existing wall within archaeological and environmental constraints, construct a foundation and rebuild the wall to its original condition, would cost up to £30,000.

There are repair options which will extend the life of the structure. However, without construction of a foundation the quay will remain at risk of failure through undermining. The various repair options proposed in this report cost in the range of £5,000 to £15,000.

2. Introduction

Scott's Quay on Polwheveral Creek was first built in the first half of the 19th century to ship granite from the Constantine quarries. The original quay face now survives as a low section of walling visible at low tide. The present quay face appears to have been rebuilt after c1907 (Second Edition Ordnance Survey), set behind the original quay wall.

The farm has entered into the Higher Level Stewardship scheme (Agreement Number AG00315681) and the quay is to be consolidated under the scheme. The present quay is in a state of disrepair.

This report assesses the structural condition and feasibility of outline options to repair this quay as required by the HLS scheme agreement

3. Survey

The following key observations were made:

I. The walls have no foundation.
II. The walls are of mortarless construction
III. The upstream and downstream flanking walls are founded on estuarine muds which are easily eroded and have been undermined in the past.
IV. The walls are vertical and in places the erosion of the foundation has resulted in forward rotation and associated failures
V. The backfill immediately behind the wall is not suitable drainage media.
VI. There is evidence of vandalism to the coping stones.
VII. Repair works to date have been ad hoc using the stones to hand, this means that the wall is no longer built well (i.e. no running bond etc.)

Image 1

Image 2

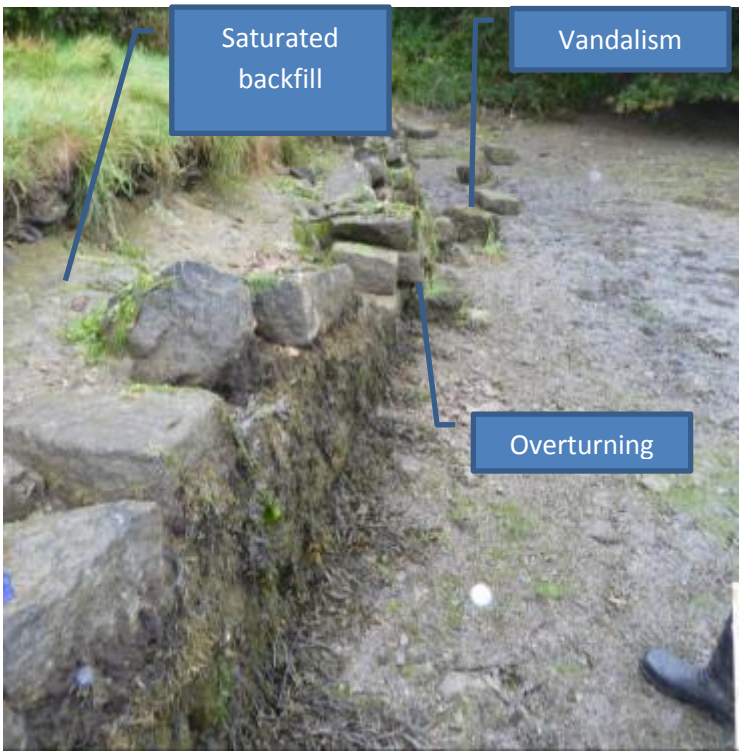

Image 4

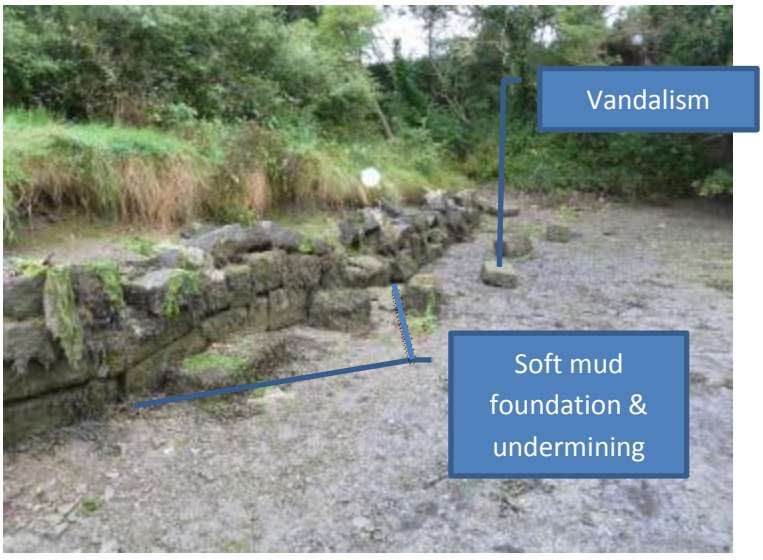

Image 4

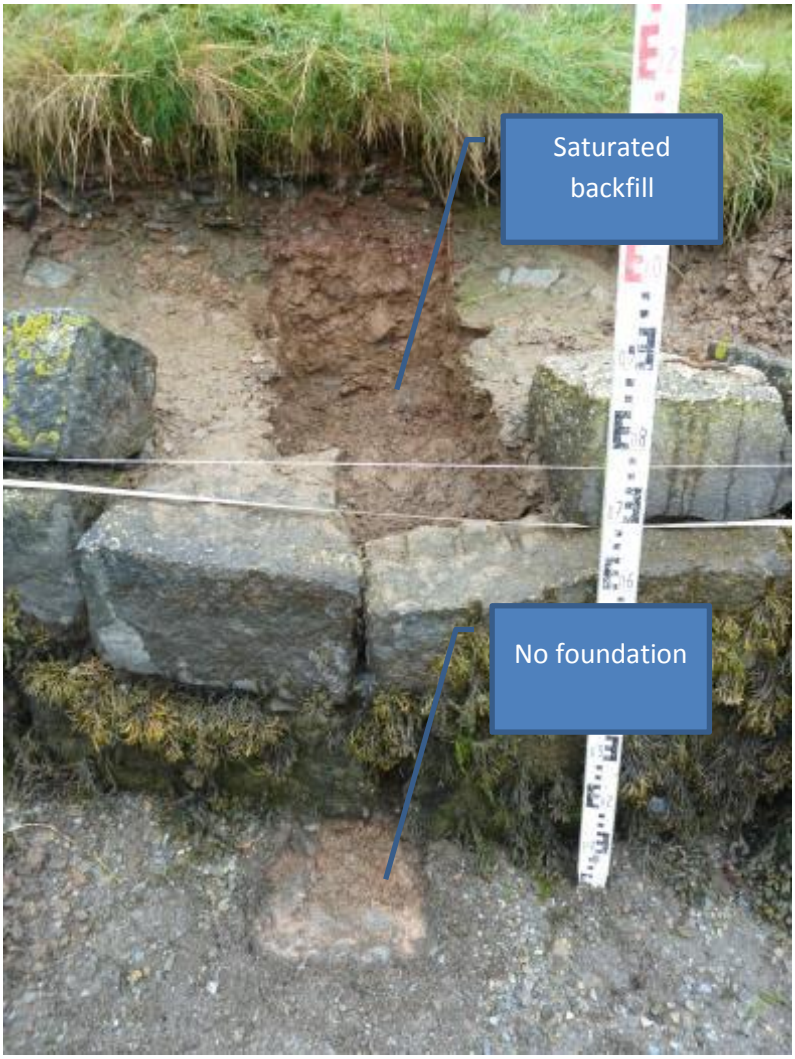

Image 5

4. Notable Issues & Constraints

The backfill enclosed by the present quay wall appears to be a mixture of construction waste (brick etc.) and estuarine bed material and although there is no visual evidence of contamination, its quality is unknown. The backfill material should be tested to confirm it is inert and of low pollution risk prior to any significant intrusive works.

The site is within the Helford Estuary Special Area of Conservation and all works must comply with the Habitats Regulations and all subsiduory legislation. This is likely to affect the approach to repair works as follows:

a. Works area (may be limited to avoid mudflats and other key habitats)
b. Timing (to avoid ecological disturbance)
c. Increased pollution control contingency measures/ constraints
d. Prior approvals and Habitats Regulations Assessment.

5. Reinstatement Options

a. Do Nothing

The quay wall is high up the estuary shoreline and not significantly exposed to erosion. In short, the structure will not collapse quickly if no works are undertaken. The primary risk to the structure in this scenario is vandalism.

Estimated residual life:	<5years
Benefits:	Nil investment, nil environmental disturbance.
Costs:	£0
Issues:	Structure is not restored and continues to be exposed to full failure. Structure not available for local enjoyment. Vandalism not controlled. Health & Safety issues remain.

b. Do Minimum

Clean off existing masonry. Remove collapsed sections of the wall and recut the foundations locally. Recover, clean and allocate the displaced granites. Rebuild sections of wall within the constraints of the available masonry on site. Backfill with clean material. Signage and interpretation boards to inform visitors of the quay's heritage value to improve visitor appreciation and reduce vandalism.

Estimated residual life:	5<10 years
Benefits:	Low cost. Minimal material import. No plant required. Limited approval required.
Costs:	£5,000
Issues:	Structure is not fully restored. Vandalism not physically controlled & may recur. Some Health & Safety issues remain.

c. Repair

Clean off existing masonry. Remove all sections of the wall which are in poor condition (approx. 70%). Recover, record, clean and reallocate all displaced granites. Identify additional granites required to restore the quay fully. Excavate and remove backfill from a 1m wedge behind the quay wall line. Excavate and sympathetically form new foundations on sections of failing wall with faggots or gabions below estuary bed level.

Rebuild the quay wall with a 70-80° batter in morterless running bond. Carefully select appropriate coping stones & anchor in place (ironwork/ ties to ground anchors etc.). Backfill excavated area behind wall with free draining material. Reinstate surface with suitable turf/ seeded biodegradeable geotextile. Include appropriate interpretation boards and signage.

Estimated residual life:	20+ years
Benefits:	Structure restored. Minimum cost for maximum improvement. Vandalism controlled
Costs:	£15,000-20,000
Issues:	Repairs cannot be guaranteed as some structure will not have a proper foundation. Cost potentially exceeds budget. Plant required and materials imported and exported triggering more complex approvals and upfront costs.

d. Reconstruction

Survey and record current wall construction and blockwork positions. Remove existing wall and clean masonry.

Excavate and cast new concrete foundation with mechanical ties for masonry. Excavate and remove backfill from a 1m wedge behind the quay wall line. Rebuild the quay wall with a 70-80° batter in morterless running bond. Carefully select appropriate coping stones & anchor in place (ironwork/ ties to ground anchors etc.). Backfill excavated area behind wall with free draining material. Reinstate surface with suitable turf/ seeded biodegradeable geotextile. Include appropriate interpretation boards and signage.

Estimated residual life:	40+ years
Benefits:	Structure fully reinstated. Vandalism controlled
Costs:	£25,000-30,000
Issues:	High confidence reinstatement of quay wall. Cost exceeds budget, high cost for limited benefit asset. Plant required and materials imported and exported triggering more complex approvals and upfront costs. Concrete foundation within the SAC.