

**Report to Salcombe Harbour Board****THE RESIDENTS PONTOON REPLACEMENT PROJECT****Report of Head of Service Salcombe Harbour****Statutory Powers: Pier and Harbour Order (Salcombe) Confirmation Act 1954**

**Financial Implications:** The financial estimate for the project is £325,000, consisting of Harbour reserves (£175,000) and a loan from the Council (£150,000) which was approved by Council 58/05 10 November 2005. Repayment of the loan would be at an interest rate of 6% for 25 years and would cost £11,734 pa.

**Purpose**

To present the Harbour Board with options for the Resident's Pontoon project which will ensure a project completion date of December 2007.

**Recommendations****That Harbour Board RESOLVES to:**

- a. **Select the most suitable method of securing the replacement Residents' Pontoons.**
- b. **Approve the letting of a contract, subject to a satisfactory appraisal of the proposed contractor's financial position, with a completion date of December 2007.**

**Background**

1. The Residents Pontoons were introduced in 1982 to provide a high density berthing solution. The current facilities provide berthing for sixty vessels on three groups of pontoons and have provided a valuable asset to the harbour; however they have reached the end of their planned life expectancy and are beyond economic repair.
2. A project to replace the Residents Pontoons was approved by the Harbour Board (Minute Ref SH 04/05) on 4 October 2005 and a loan of £150,000 was approved by Council (Minute Ref 58/05) on 10 November 2005.
3. The replacement project is designed to deliver sixty berths in the same footprint as the current facility. The replacement pontoons will be orientated north south to facilitate berthing and un-berthing in strong tides. At this stage it is not intended to install any services or utilities to the pontoon but improvements and enhancements will be considered to upgrade the facility in the future.
4. The closing date for tenders' was 17 November 2006 and a report was presented to the Board on 18 December 2006. At this meeting the Board directed the Harbour Master to investigate further the use and cost of Seaflex, prior to a final design being agreed (Min. SH30/06).

5. To satisfy the Board's request for information, all of the companies that tendered to the initial pile specification were given the opportunity to re-tender using Seaflex as the means of securing the pontoons, with a closing date of 29 January 2007.

## **Seaflex**

6. Of the four companies that re-tendered there was only one compliant bid. From the other three bids received one company quoted for Seaflex but did not include installation costs, assuming the Harbour Authority would undertake that work. Another company provided an innovative mixture of piles and a tensioning device such as Seaflex and the final company quoted for piles, having modified their tender from their initial submission.
7. It is apparent that Seaflex is an option; however there is not a great deal of experience of installing Seaflex within the UK and contractors are clearly nervous and cautious about its use.
8. In an attempt to understand the characteristics of Seaflex, the Harbour Master and Assistant Harbour Master (Logistics and Maintenance) visited Mylor Harbour to view and discuss with the Marina Manager their experiences of operating a Seaflex. Mylor's pontoon system has been in operation for seven years and has required more maintenance than the marina operators expected. Most notably, the system at Mylor has suffered an alarming degree of corrosion of the stainless steel fittings and a number of the rubber expanding links have parted. It is impossible to ascertain the reason for these failures, but it is probably a combination of incorrect tension on the system at installation, galvanic corrosion, large tidal range (5.5 m similar to Salcombe), exposure to easterly winds (Salcombe would be exposed to northerlies), strong tidal streams (1-2 knots similar to Salcombe) and straightforward product failure. The findings have been incorporated into the table comparing a variety of pontoon securing methods below.
9. Seaflex has been successfully used in many regions of Europe, but they appear best suited to fresh water lakes and sheltered marinas with a small tidal range. The fact that Seaflex requires regular routine maintenance consisting of annual diving inspection and repair by replacement with the entire system potentially having to be replaced after 15 years, suggest that it will be an expensive system to operate. A compromise would be to install new pontoons with chains, similar to the current system securing arrangements. Although the capital expenditure is less, the harbour would have to find an additional 4-6 weeks in an already full maintenance schedule to install the pontoons and then shoulder the ongoing annual maintenance costs.

## The Options

10. Having requested tenders for piles and Seaflex, it would be timely to compare both systems, but to include the use of heavy chains, the system currently employed. The Board may wish at this stage to discuss the advantages and disadvantages of all the available methods of securing the replacement pontoons and decide which system suits Salcombe's circumstances best, before considering the cost of each system from tenders received. The comparison of costs is in Appendix 1 which is an exempt agenda item:

	Advantages	Disadvantages
Piles	<ul style="list-style-type: none"> <li>– Proven Technology</li> <li>– Minimal Maintenance</li> <li>– Most Secure</li> <li>– Low impact on seabed</li> <li>– Life expectancy of 20-25 years</li> <li>– Most cost effective option over 25 years</li> </ul>	<ul style="list-style-type: none"> <li>– Visual impact of piles</li> <li>– FEPA licence required</li> </ul>
Seaflex	<ul style="list-style-type: none"> <li>– Low impact on Seabed</li> <li>– No adverse visual impact</li> <li>– No special licences or permissions required</li> </ul>	<ul style="list-style-type: none"> <li>– Potentially high maintenance costs</li> <li>– Annual diving requirement</li> <li>– 3hrs diving /maintenance to repair Seaflex by replacement</li> <li>– Highest capital cost</li> <li>– Life expectancy of 10-15 years</li> <li>– High risk of emerging technology</li> </ul>
Chains	<ul style="list-style-type: none"> <li>– No adverse visual Impact</li> <li>– Lowest capital cost leaving an element of reserves available for other capital projects</li> <li>– Proven technology</li> <li>– No special licences or permissions required</li> </ul>	<ul style="list-style-type: none"> <li>– High maintenance costs</li> <li>– High maintenance load on harbour staff compounding busy winter maintenance programme</li> <li>– Annual diving requirement</li> <li>– Life expectancy of 7-11 years</li> <li>– Seabed scour from chains</li> </ul>

## Preferred Option and Way Ahead

11. It is the Harbour Master's view that the best option would be piles as they offer proven technology, strong secure anchor points for the pontoons with minimal maintenance and a life expectancy of 20-25 years.

## Value for Money

12. The cost of purchasing and installing the Residents' pontoons from companies who have tendered for both piling and Seaflex and the costs of purchasing pontoons for the harbour staff to install with chains is provided at Appendix 1, where the through life costs are compared to assist members in identifying the system that provides the best value for money.

## Risk Assessment

Risk	Mitigation
Catastrophic failure of resident's pontoons causing damage to boats and possible serious injury.	Annual maintenance of pontoon facility reduces risk of facility failure. The current facility, if not replaced, will have to be modified to reduce capacity and consequent strain on structure. Up to 4 berths could be lost. Ideally facility should be replaced.
By reducing capacity, income will be reduced and waiting lists for moorings will not be reduced.	Safety and reputation of Salcombe Harbour Authority will be maintained, despite decreased income. Public explanation of reasons for project delay and impact on facility availability will be made.
If project does not proceed, sunk costs will be lost. Expenditure has been made on Consultant fees to prepare invitation to Tender and for a FEPA licence.	This expenditure was necessary and data and experience gained will be used and useful in the future. FEPA licence covers 12 month period.
There is a financial risk if Seaflex is specified and maintenance costs escalate.	This is an unknown
Piling is an inappropriate method of securing pontoons in Bag region of harbour.	The completion of test bores will confirm the geology is suitable for piles and the correct length can be stipulated in the contract
Health and safety	Replacing the pontoons would considerably reduce the risk of collision and injury for customers berthing, also reduce the risk of facility failure.
Impact on Councils reputation	Facility failure would be disastrous for the Harbour Authority. Replacement is the best way to mitigate that risk. Replacing the pontoons would also send a clear message to the stakeholders that long awaited improvements to their facilities were being delivered.
Impact on environment	Replacing the current pontoons, which are secured by chains, will dramatically reduce sea bed scour and improve the sea bed environment.

## **Conclusion**

13. Having fully debated the advantages and disadvantages of pile, Seaflex and chain as possible means of securing the replacement residents pontoons, the Board should make a decision which system they wish to pursue.
14. Having made the decision, the potential contractors can be considered and a contract let to deliver the proposed harbour improvements.

I A Gibson  
Head of Service Salcombe Harbour

Harbour Board  
20 March 2007

## **Background Documents:**

None

Appendix:

1. Comparison of costs for replacement Residents' Pontoons.