



Report No: **2012** Public Agenda Item: **Yes**

Title: **The Creation of an Artificial Reef in Tor Bay Harbour**

Wards Affected: **All Wards**

To: **Harbour Committee** On: **17<sup>th</sup> September 2012**

Key Decision: **No**

Change to Budget: **No** Change to Policy Framework: **No**

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## **1. What we are trying to achieve and the impact on our customers**

1.1 To consider whether to facilitate the creation of an artificial reef, by the laying of man-made reef balls, inside Tor Bay Harbour limits, involving an agreement to take a new lease of the seabed from the Crown Estate (or amend the existing lease) and then granting a sublease to a local charitable organisation called 'The Torbay Reef Restoration Project'. This is expected to lead to environmental benefits and potentially economic benefits in the future.

## **2. Recommendation for decision**

2.1 **Subject to item 2.2. below that the Committee considers whether to recommend to the Mayor that he authorise the Head of Commercial Services, in consultation with the Executive Head of Tor Bay Harbour Authority and the Chief Executive of the Torbay Development Agency, to accept a new lease, or amend the existing lease, for part of the seabed from the Crown Estate on acceptable terms, and that, in determining the acceptable terms, the Mayor is recommended to seek further legal advice as to the level of the Council's risk exposure at the end of any subsequent sub-lease.**

2.2 **That, the Committee considers whether the Mayor be recommended to authorise the Head of Commercial Services, in consultation with the Executive Head of Tor Bay Harbour Authority and the Chief Executive of the Torbay Development Agency, to grant a sub-lease (and if considered appropriate an agreement for that lease) for part of the seabed to a local charitable organisation on acceptable terms.**

**2.3 That, the Committee considers whether the Mayor be recommended to authorise the Head of Commercial Services, in consultation with the Executive Head of Tor Bay Harbour Authority and the Chief Executive of Torbay Development Agency, to enter into such other legal documentation on acceptable terms as deemed necessary.**

**2.4 That the exact position of the artificial reef within Tor Bay Harbour limits will be determined by the Executive Head of Tor Bay Harbour Authority in his capacity as Harbour Master, following consultation with harbour users and the Harbour Committee.**

### **3. Key points and reasons for recommendations**

3.1 The Harbour Authority has been in discussions with a local businessman for a number of years regarding the concept of building an artificial reef within the limits of Tor Bay Harbour. The Crown Estate will need to grant a new lease or amend the existing lease of part of the seabed and they have previously indicated that they will not lease the seabed directly to a charitable organisation.

3.2 It is the intention that a local charitable organisation (The Torbay Reef Restoration Project) is formed and the Council is being asked to take a new lease from the Crown Estate, or amend the existing lease and then grant a sub-lease to the Torbay Reef Restoration Project.

3.3 The Torbay Reef Restoration Project will also need to obtain a marine licence from the Marine Management Organisation (MMO). Depending upon their requirements the Harbour Authority/Local Authority may also need to be party to any conditions attached to the MMO consent, if granted.

**For more detailed information on this proposal please refer to the supporting information attached.**

**Kevin Mowat  
Executive Head of Tor Bay Harbour Authority  
Torbay Harbour Master**

## Supporting information to Report

### A1. Introduction and history

A1.1 In September 2011 the Harbour Committee and the Mayor (via a full Council meeting) agreed, in principle, to accept a 125-year lease for part of the seabed from the Crown Estate to facilitate the sinking of HMS Ark Royal. A number of conditions were attached to this decision including the recommendation that the lease should be on acceptable terms, and that, in determining the acceptable terms, the Mayor was advised to seek further legal advice as to the level of the Council's risk exposure. From a landlord and tenant perspective this report and its recommendations are in many ways very similar.

A1.2 The Torbay Reef Restoration Project has submitted a proposal to create an artificial reef (see Appendix 1). The project will deploy and monitor an artificial reef within the limits of Tor Bay Harbour with the intention to create a new, high quality marine habitat for resident reef species. It is expected that the reef will be created out of concrete structures using a tried and tested design. Once the structures are deployed it is hoped that the site might be considered as a marine sanctuary, and initially the site would only be visited for scientific monitoring purposes. The proposal is that the site would be monitored for a short period, after which it would be handed over to the marine community of Torbay who would be responsible for its future stewardship. Details on this aspect of the proposal clearly need further exploration.

A1.3 The proposition is based on the belief that the end product will be a restored and resilient reef which will benefit marine life in the Tor Bay area. It is expected that the reef will protect rare and important reef species, with anglers, divers and commercial fishermen benefitting from the eventual spill over effects.

A1.4 Appendix 1 outlines the 'Torbay Reef Restoration Project' proposal and in particular it provides information on the following :-

- Project Outline
- The problem
- Artificial reefs
- Case studies
- Developing the plan
- The reef design
- Reef Location
- Project Management aims and objectives
- Behind the project
- A partnership approach
- Monitoring
- Key Milestones
- Intended impact
- Legal consents
- Publicity
- Supporters of the project

- A1.5 It is understood that countries such as China, Japan and Korea have been constructing and installing artificial reefs for more than 100 years. The proposal states that they have been shown to have up to 12 times the abundance of a natural reef. Also, that in North America, artificial habitats have been used to support recreational fishing and diving and in Hong Kong they have been used as a way of reversing the effects of overfishing. Whereas in Europe it is said that artificial reefs are seen as a management tool for sustaining coastal fisheries and compensating for the effects of stock depletion.
- A1.6 Natural reefs provide habitat for many different species of algae, sponge, crustacean, fish and mollusc. The hard surface and array of nooks and crannies provides protection for many of these species, which are in turn sought out by predators. Charter boats and professional fishermen operating nets, lines and pots will seek out reefs and wrecks since they are known to harbour fish and crustacean species. However, many reef areas have now become too degraded to hold healthy populations and the inshore wrecks are too accessible to cope with such a high level of human activity.
- A1.7 The main focus of the Torbay Reef Restoration Project is to create new reef habitat that is man-made and monitor its progress as new species colonise and grow in and around it. Specially designed concrete structures will be deployed on the seabed and the area will be voluntarily designated and self-enforced as a marine sanctuary for the first four years of its existence. This will allow scientists to monitor its progress as reef animals colonise, grow, breed and establish new communities. At the end of this trial period the reef could be handed over to the community to decide whether it should remain a sanctuary or have part or all of the area opened up for some recreational and commercial use.
- A1.8 The Torbay Reef Restoration Project has chosen the Reef Ball structures. They are licensed by the Reef Ball Foundation, an international NGO that has deployed over 500,000 Reef Balls in over 70 countries. The project proposes to use a patented mould design to create over 1000 units for the reef in Tor Bay. Reef balls are shaped to optimise protective void spaces for fish and include features such as rough surface textures to enhance invertebrate settlement. Holes designed to create turbulent vortices help bring nutrients to organisms living on the Reef Ball surface.

The Goliath unit has the following dimensions :-

Width at base	1.83m (6 ft)
Height	1.52m (5 ft)
Weight	1,818 - 2,727 kg
Concrete volume	1.19m <sup>3</sup>
Surface area	21.4m <sup>2</sup> (230ft <sup>2</sup> )
Number of holes	25 – 40



Although it is suggested that a thousand units will be deployed on the site, the exact number will be dependent on the size of site that is ultimately selected and whether the reef is developed in phases. If the area of one unit occupies 4m<sup>2</sup>, 1000 units will equate to 4.004km<sup>2</sup> or 1.166nm<sup>2</sup>.

A1.9 The proposal in Appendix 1 suggests 4 options for the size and location of an artificial reef. All of these options can be found in the area immediately north and east of Hope's Nose, Anstey's Cove, Long Quarry Point, Babbacombe Bay and Oddicombe Beach. Each of the options occupies different sized areas as set out below :-

- Option 1 approximately 2.714 km<sup>2</sup> - 671 acres (272 hectares)
- Option 2 approximately 3.202 km<sup>2</sup> - 791 acres (320 hectares)
- Option 3 approximately 3.689 km<sup>2</sup> - 912 acres (369 hectares)
- Option 4 approximately 4.177 km<sup>2</sup> - 1,032 acres (418 hectares)

A1.10 Option 4 would accommodate all of the proposed 1000 units but this represents a significant size of site. The Loch Linnhe Artificial Reef example used in Appendix 1 is less than half the size of option 2 and option 3 is nearly ten times the size of the Protection Reef in Portugal. The eventual size of any reef site will need further discussion and the MMO consent will be a controlling factor.

A1.11 The locations have been chosen carefully by the Torbay Reef Restoration Project, with consideration given to the potential impact to navigation, tourism, recreation, fishing, aquaculture, nature conservation and port activities. However, the suggested sites will clearly have a negative impact on the current activity of some local fishermen. Although any future reef will never be used for commercial fishing, it is believed that the extra life it homes will spill out into other areas and create a more productive fishery in the adjacent area.

A1.12 There are no real concerns regarding hazards to navigation in the proposed area.

A1.13 Although the project hopes to deliver a vibrant new marine habitat that will eventually attract divers, it is clearly not a proposal to sink a ship and therefore it is not expected to generate the same level of interest and immediate economic benefit as has been seen with HMS Scylla which was sunk near Plymouth.

A1.14 The creation of the reef has the potential to improve angling success around the area through the effects of overspill.

A1.15 In the Council's policy document ***A Tor Bay Harbour and Maritime Strategy (2007 – 2017) ~ 'Catching the Wave'*** it states "we will consider the possibilities of developing facilities for recreational diving to ensure that Tor Bay has the widest offer for all water based recreation. Options could include the strategic placement of man-made wrecks and/or artificial reefs". This proposal fits in with this aspiration and with the other approved strategies which seek to improve the breadth of experiences that Torbay offers to visitors.

A1.16 If the proposed artificial reef area extended outside of Tor Bay Harbour limits, the Council has the power to acquire land outside its area by virtue of s120 of the Local Government Act 1972. This states that, for any of their functions under this or any other enactment or for the benefit, improvement or development of their area, a Council may acquire by agreement any land, whether situated inside or outside their area.

## **A2. Risk Assessment**

### **A2.1 Outline of significant key risks**

A2.1.1 The Crown Estate, if agreeable, would wish to grant the main (head) lease of the seabed to the Local Authority so that, when the Torbay Reef Restoration Project ceased to operate/exist, then there is an accountable body that will be liable under the terms of that lease. i.e. the Council.

A2.1.2 (a) The Harbour Authority/Council should also be aware that, even with the sub-lease in place, if there is an accident / incident / fatality, then the Council could have a claim made against it especially if the claimant considers that the organisation or any visitor to the site has insufficient financial resources to settle the claim. To be successful the claimant would need to show that the Harbour Authority/Council had been negligent. Whilst the sub-lease is in place this risk is considered to be manageable and the Council could also be exposed to a claim if the organisation's insurance arrangements fail for some reason or the limit of indemnity for any one event is exhausted.

(b) The risks set out at (a) above are lower than that for a wreck.

(c) The above risks can be reduced and controlled through; the provisions of the sub-lease; ensuring that the Reef Ball structures are installed safely and properly; and monitoring of the sub-tenant's operation once the sub-lease is in place.

A2.1.3 When the sub-lease comes to an end the Council will be regarded as occupier of the area leased from the Crown Estate and become responsible for that area (and potentially liable for accidents, incidents or fatalities in that area where caused by the Council's negligence). The Council would need to put in place such measures / procedures to minimise this risk and such could have cost implications. This particular risk is higher for a wreck than for a man-made reef.

A2.1.4 The location of the artificial reef is not likely to present any significant risk to navigation but this matter will be dealt with via the consent process associated with the marine licence issued by MMO. As part of the licence application process the MMO will need to consult with a number of bodies (see A6.2 below) and organisations such as the Maritime and Coastguard Agency, Trinity House and the local Harbour Authority will provide significant input into the decision making process. If MMO consent is granted for the artificial reef then the licence conditions will stipulate whether or not there is a need for any navigational marks but in this case this requirement seems unlikely.

A2.1.5 It is expected that the Crown Estate will request that it is indemnified against all costs, claims, or demands, actions, proceedings or liabilities which may arise as a result, or in connection with the placing and retention of an artificial reef on the seabed with the liability being limited to £5 million, linked to RPI. If, for whatever reason, the Council does become liable then its policy is currently for £50 million for any one incident. The Council's liability insurance policy will respond to negligent acts or errors where legal liability exists on the part of the Council.

It is considered that Torbay Council should be more limited than this and only indemnify the Crown in respect of sums which the Council may become legally liable to pay as damages, costs and expenses.

If, however, the Crown insist on the broader wording as they have previously indicated, if the Torbay Reef Restoration Project ceases to exist or fails then any costs/damages etc, that arise and which are not as a result of the Council's legal liability, will not be funded by an insurance policy but would directly fall on the Council's budget.

A2.1.6 The Torbay Reef Restoration Project will be set up to oversee the artificial reef project. It is therefore possible that this charitable organisation may have limited financial resources and, as with any new business, if their income and expenditure is different than their business plan, the venture may fail.

The sub-lease will be to the Torbay Reef Restoration Project and it is currently unclear whether this is an incorporated company. If so, then the Council could require the Directors to act as guarantors. If not, then the sub-lease would be granted to the Trustees of that organisation with them being personally liable. However, it is entirely possible that being a charity the Trustees would prefer not to accept this liability and even if they did then the Council's recourse would be limited to the financial status of those individuals. This type of scenario is not unusual and is often met by asking for a security deposit but the difficulty faced here is ascertaining the level at which this could be set. However, the concept is considered worthy of further investigation.

A2.1.7 The Crown Estate has previously issued the Council with draft heads of the terms for such a lease (HMS Ark Royal proposal 2011). Whilst it is intended that these will be replicated in the sub-lease to the Torbay Reef Restoration Project, if the Council become liable, as well as the insurance issues mentioned above, there are a number of other key risks.

Likewise, there are a number of risks if the Council becomes liable under the terms of any marine licence :-

- a) Rent – This is expected to be a peppercorn for the first five years with a review to market value. Whilst not an immediate risk, if the rent were increased after five years then the Council would need to identify a budget to fund this payment. As the project does not propose to generate a direct income, or go beyond a five year lease, it is unlikely that the rent will ever become a significant figure. However, there clearly is a risk that the Council may become liable to pay whatever rent is payable and the Council would need to identify a financial resource to pay it.
- b) Navigation buoys and signage – It is possible, although unlikely, that the Marine Management Organisation will require that the reef is marked by buoys, which will have cost implications.
- c) Environmental monitoring – It is possible that the Marine Management Organisation will require an environmental monitoring programme, which could have cost implications.

d) Any other licences and inspections which may be required.

A.2.1.8 It will be necessary for the Torbay Reef Restoration Project to undertake various surveys and procure reports before they are granted permission from the MMO to create an artificial reef. This will involve them in the risk of incurring significant expenditure before any documentation is in place and which might cause risks to the Council if it subsequently decided not to enter into the relevant agreements.

This risk could be reduced by a process known as an 'agreement for lease' with the grant of the lease being contingent upon all relevant permissions and consents being obtained. Such a process may also ensure that such permissions are in place before the lease with the Crown is completed. Clearly this process would need to be acceptable to both the Crown and the Torbay Reef Restoration Project but nevertheless it is considered to be worth investigating and pursuing further.

## **A2.2 Remaining risks**

A2.2.1 There is the risk that the artificial reef could sit on an existing environmentally important feature or habitat, or it might be sited in a conservation area. In reality there is zero risk of this happening because of the MMO's thorough licensing process. In any event it is anticipated that after 6-12 months corals, fauna and flora will have adhered to the reef balls, creating a new habitat.

A2.2.2 In the event of a diving related fatality on the artificial reef there might be subsequent Court cases that could result in negative publicity and damage to the Council's reputation. This is considered to be a low risk.

## **A3. Other Options**

A3.1 The Harbour Authority/Council could decide not to support this proposal or defer any decision.

## **A4. Summary of resource implications**

A4.1 The Asset Management team in the Torbay Development Agency, the Executive Head of Tor Bay Harbour Authority and Commercial Services would all be involved with the negotiation and preparation of the legal documentation.

A4.2 The Council will also be required to monitor the sub-lease to ensure that the sub-tenant is complying with the terms. No budget currently exists for this work.

A4.3 When the sub-lease comes to an end then it would appear that the Council will become fully liable and it might then be necessary to put in place such measures / procedures to minimise the risk of diving related incidents/accidents and such would have cost implications with no budget currently available. It might be possible to negotiate with the Crown Estate to avoid any significant residual liability.

A4.4 The costs identified in A2.1.7 above will fall to the Council when the sub-lease ends and no budget currently exists for this work.



**A5. What impact will there be on equalities, environmental sustainability and crime and disorder?**

A5.1 It is not considered that the proposal will have an impact on equalities or crime and disorder.

A5.2 This project is expected to significantly enhance the marine ecology through the creation of a new marine habitat and ecosystem.

**A6. Consultation and Customer Focus**

A6.1 The outline of the artificial reef proposal has been discussed at the recent Harbour Liaison Forum meetings. Also, the proposal at Appendix 1 lists the following supporters :-

- Torbay Coast & Countryside Trust
- English Riviera Tourism Company
- Living Coasts
- Finding Sanctuary
- Marine Energy Matters
- Plymouth University
- Devon & Severn Inshore Fisheries and Conservation Authority

A6.2 The MMO strongly advise that any proposal is, as far as is practical, the subject of extensive consultation locally. Furthermore the MMO suggest that applicants for a marine licence consult with the MMO's standard consultees prior to making the application. The consultees at present are :-

- Natural England
- Environment Agency
- The Crown Estate
- English Heritage
- Maritime and Coastguard Agency
- Trinity House
- Department for Transport
- Centre for Environment, Fisheries and Aquaculture Science (Cefas)
- Highways Agency
- Network Rail
- Local Authorities
- Neighbouring Harbour Authorities

A6.3 The MMO will consult with the bodies listed in A6.2 above, in any event, before

considering the granting of a marine licence.

**A7. Are there any implications for other Business Units?**

A7.1 No

**Appendices** Appendix 1 – Artificial Reef Project Appraisal

**Documents available in members' rooms** None

**Background Papers:**

The following documents/files were used to compile this report:

The Creation of an Artificial Reef off Torbay (HMS Ark Royal) – report to the Harbour Committee & Council, September 2011.