

CHAPTER 7

The Costs and the Funding of Consolidation as a Ruin

7.1 **Mr Drummond stated** that HS had estimated the cost of consolidation at £1.25 million to be spread over a period of 7-10 years. No detailed breakdown was given, although it was made clear that archaeological costs were anticipated as modest. It was assumed that this is based on second quarter 1997 prices and would require revision. It was contended that HS's architect's report of January 1998 underestimated or overlooked key areas of work, in particular failing to address the archaeological issues posed by aspects such as scaffolding the site or the damage being caused by footpaths. Regard must also be had to interpretation and the presentation of the site to the public, a normal requirement of grant assistance from both the Heritage Lottery Fund (HLF) and HS. Further work would be required including, for example, the provision of handrails to unguarded dangerous drops.

7.2 It was considered that consolidation as a ruin would not be a "once and for all" solution. In addition to the cyclical nature of such work, there would be an ongoing level of running and maintenance costs.

Capital Costs

7.3 It was stated that the figures within *Outline Cost Plan No. 1: Consolidation as a Ruin* were based on the information contained in application Drawing Numbers 5439/3 to 5439/25 and an outline specification for the consolidation as a ruin prepared by the project team.

7.4 The rates used in Outline Cost Plan 1 were based upon second quarter 2000 prices for labour and materials. Provisional allowances had been incorporated for the archaeological works based upon the wider programme of research-led work proposed by the applicant. Allowances had also been made for:

- the formation of the pier
- rock stabilisation
- the grouting of wall cores
- overall contingency allowance (10%)
- Main Contractor's general preliminary items

On this basis, the construction cost of consolidation as a ruin was estimated at £1.83 million with a total project cost (i.e. including fees and VAT) of £2.61 million. Research and investigation undertaken in the development of the proposals to date as well as extraordinary costs arising from the procurement of statutory consents were excluded, as was the cost of acquisition. Historic Scotland's estimate of costs was stated to be low.

Revenue and Running Costs

7.5 As *BS7913: 1998* makes clear, appropriate ongoing maintenance together with regular inspections are essential in the care of historic buildings. It was stated that annual costs had been calculated to amount to £7,700. If permanent on-site supervision were provided from April to October an annual cost in the region of £12,000 to £15,000 would not be unreasonable. Quinquennial costs could be reasonably expected to be the equivalent of over £2000 per annum, giving a total annual cost of £14,000 - £17,000 plus

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VAT. It was concluded that consolidation as a ruin would result in significant ongoing costs which must be met from some source, be it grant funding or the imposition of a charging structure. Marketing and increased numbers, which would in themselves have financial implications, would be required to meet costs. A significant increase in numbers would create difficulties with infrastructure and compromise the peace and tranquility currently enjoyed by visitors and the local community.

The Funding of Conservation Work

7.6 Mr Drummond reviewed the sources of grant aid for conservation work which included HS, HLF and a number of smaller organisations. He concluded that there could be little doubt that the capital costs for the consolidation of Tioram as a ruin would be considered eligible under both the HS and HLF schemes. Such funding could not, however, be guaranteed and would always depend upon the availability of funds at the time of application and the case made. There was stated to be clear doubt over how quickly such resources could be made available.

7.7 Mr Drummond stated that the applicant was willing and able to make funding available for consolidation, conservation, and re-roofing now, and to guarantee it through the provision of the performance-bond type system detailed in a Section 75 being agreed with HC. Both HS and HLF assess grant eligibility on the basis of need. If the applicant has sufficient funds to undertake re-roofing, then clearly there are the monies to undertake consolidation as a ruin (The desire to implement such an option is another issue). Unless ownership of Tioram was vested in another, presumably penniless body, it was difficult to see how grants could be made.

7.8 It was stated that HLF and HS prefer that major capital projects are phased. Given that requirement for phasing and the widely acknowledged over-subscription of grant schemes, the question must therefore be how long it would be before such a scheme could be completed. HS envisage a period of up to 10 years, and during this period it would not be unreasonable to assume that the majority or all of the castle would be closed to the public.

7.9 It was concluded that consolidation as a ruin would be expensive, would lead to the closure of Tioram for many years due to funding restrictions, and raised serious questions about the sustainability of running/maintenance costs.

7.10 **Mr Dean stated**, in support of Mr Drummond, that a remote site poses a number of problems for a contractor that would result in greater costs than, for example, a construction or conservation project nearer centres of population. Rarely do local contractors with the necessary capacity or skills exist, resulting in the use of firms from a much wider area. Transport costs, including travel to site and the delivery of materials, would therefore be greater. Often operatives would require to be temporarily relocated, with consequent subsistence expenses. Management supervision is more difficult. In Scotland there are relatively few contractors with the necessary experience to manage the logistics of such work, knowing that it is a specialist skill and therefore charging accordingly.

7.11 General access to Dorlin and Loch Moidart is restricted to a single track road unsuitable for heavy construction vehicles or large amounts of works related traffic. There is insufficient clear space either on the immediate mainland or on the island for parking,

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material storage, or other normal site-related facilities which would consequently have to be located elsewhere resulting in cost implications.

7.12 Access to Eilean Tirim is dependent on tidal access, at some times of the month cut-off for several hours at a time. It is not accessible by vehicle. This would have an adverse impact on the programming of the works. Labour would only be able to reach the site at specific times unless boat access is provided, health and safety obligations would require a means of access (for example an emergency boat which would, in turn, need a pier or pontoon throughout the working day, whilst at certain times of the year adverse weather conditions may prevent access completely (resulting in lost time and additional costs).

7.13 The need to protect the important archaeological remains covering Eilean Tirim would result in special methods of working, such as the provision of protected footpaths for operatives and (as part of a wider strategy dealing with the limited road access) the need to deliver bulk materials by boat or helicopter (as with the emergency works undertaken in 2000).

7.14 It was stated that it is clear that wide-scale consolidation of the historic fabric is required, and that in order to do so safely and efficiently a full structural scaffold would be required. This may be required to give some support to masonry during consolidation. As the castle is located upon cliffs, which in themselves require rock anchoring in areas, a significant quantity of such scaffold would be required. Moreover, the footprint of the scaffold would impinge upon archaeological deposits, for example the potentially unstable midden deposits along the north-west cliff faces. It would consequently be necessary to carry out archaeological excavation in all or part.

7.15 Scaffolding is likely to be required for several years, although there may be scope for some phasing to suit the works programme. Given the complex and difficult nature of the scaffolding required, suitably experienced contractors would charge a premium for such work, as happened during the emergency stabilisation of the north west curtain wall, and these operations are likely to be comparatively expensive.

7.16 The castle is in a dangerous condition and there would be a need for appropriate safety measures both during erection of the scaffold and implementation. On other projects, this had included designing the scaffold in such a manner to ensure that sections are semi-independent to limit the risks posed by masonry collapse and the provision of crash protection in areas where there is a risk of overhead collapse. Those archaeological surfaces which are not excavated would require suitably robust protection to prevent damage. During emergency work this comprised geotextile, hardcore, and a layer of plywood to the ground surface. In such an exposed site all new masonry work would require temporary protection from adverse weather such as would affect the mortar set.

7.17 The extensive consolidation of the masonry which is required would result in extensive duntaking of loose and unsound masonry, large-scale grouting of the widespread voiding confirmed by the borescope survey, rebuilding to the high standards commensurate with a building of Tioram's importance, raking out and repointing of lime mortar throughout the castle in order to reduce the amount of water absorbed by the masonry. This is highly specialist work, drawing upon a limited pool of masons experienced in such high-quality

careful operations. It is, by its very nature, a time-consuming and labour-intensive undertaking which must be carried out in conjunction with scrupulous recording and survey.

7.18 It was stated that, in work of this nature there are other, significant additional or enhanced costs which would be reflected in tenders received. There would be an allowance for (potentially extensive) down-time following the discovery of archaeological deposits such as those discovered under the northwest curtain wall in 2000, or the likelihood of enhanced costs associated with contractor's risk factor, adverse weather, and the method and sequence of operations generally. An appropriate contingency allowance to cover unforeseen circumstances is essential in any construction project, and would typically be greater for the kind of highly complex work being undertaken here than for less sensitive sites - 10% to 15% is not unreasonable.

7.19 Many of these issues were demonstrated by the temporary stabilisation works undertaken on the north-west curtain wall during the summer of 2000. Due to the access difficulties, all material - around 20 tonnes - had to be delivered by helicopter. The archaeologically sensitive courtyard solum had to be protected with geotextile, hardcore, then a layer of ply boarding which was returned up all vulnerable vertical surfaces. Scaffolding had to be self-supporting, cantilevered through DDOO9 in order to prevent damage to masonry or external archaeology. Masonry was time-consuming, and delayed following the discovery of a previously unidentified midden at its base. These works cost £60,108 plus VAT and professional fees. Overall this figure equates to some £15,000 per square metre of rebuilt masonry. Whilst larger works offer important economies of scale, it should be appreciated that the proper consolidation and conservation of Tioram would require significant and extraordinary resources.

7.20 Mr Dean concluded that consolidation of the existing fabric, whether or not part of a wider scheme of re-roofing, would be an expensive and time consuming undertaking. This could be undertaken in one large tranche of work, or less efficiently as part of a programme of smaller phased operations over an extended period which would inevitably attract significantly increased general preliminaries.

7.21 Evidence led by HS suggests that - prior to the extensive research undertaken as part of the project and therefore without the benefit of the borescope survey and other investigation) - it estimated the cost of consolidation as a ruin at £1.25 million. There is no breakdown of this figure, and it is therefore unclear (for example) as to whether VAT and fees are included. Mr Dean was of the view that it may underestimate the total cost of such operations.