



The 7 Most Endangered 2016

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Patarei Sea Fort in Tallinn, Estonia

Technical Report

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1. Summary

The objective is to conserve, restore, develop and put into use the Patarei sea fort and its site on the outskirts of Tallinn.

The Patarei fort was completed in 1840. Later it was converted to a military barracks and from 1920 into a prison, from which it gained notoriety during the Soviet and Nazi occupations. The complex by its location, architectural uniqueness and history is an exceptional heritage both nationally and for the wider Baltic region. It is a protected monument under Estonian Law but despite this it has been neglected since 2005 and is now badly degraded and virtually abandoned.

The Authorities are proposing to sell the whole complex to the private sector which will be responsible for its development under a Zoning Plan. This Zoning Plan, currently being finalised, implicitly retains the main fort buildings, the “heritage” components, and allows further new developments on the site, within certain limits. Meanwhile the Authorities have commissioned an outline development for the site which has been used as an example, awaiting new proposals.

While accepting the idea for some new developments of multi-functional use on the site so as to facilitate the restoration works, serious concerns exist on many levels, notably:

There is very little detailed information available, or has been made available by the Authorities, which suggests that the project is not yet adequately prepared for public tendering.

The main concern is that the proposed sale to a private sector developer may well not succeed as a commercial proposition in view of the responsibility and risks associated with restoring the “heritage” components. Thus either the sale will not attract interest from suitable developers or the developer may delay or omit restoring the heritage components, concentrating instead on the more lucrative new buildings. Both outcomes would be unsatisfactory. It is indicative that the Authorities’ agent managing the sale process is the State Real Estate Ltd, whose expertise is in real estate.

A key unknown is the detailed state of the buildings to be restored and the costs and their use potential. The most recent technical survey dates from 2005 and identified major problems of water infiltration. The restoration costs are roughly estimated at 65 M €. Also unknown and awaiting the proposals is the scope of the new constructions. These could comprise apartment dwellings, car parking, office and small business space, recreation and restauration, maybe museums or a hotel. Their cost might be about 45 M €. The total cost could be about 110 M €, phased over several years.

Some detailed concerns exist on the restoration of the existing buildings as well as the protection of the site which need special attention to retain its heritage character.

The financial viability of the whole development for the private sector is very doubtful without a large injection of equity or grant. This is because of the high comparative cost and lower revenue potential of the heritage components which out-weigh the more profitable new developments.



If the Authorities wish to proceed with the sale then a number of essential safeguards should be introduced into the contract or acted upon being summarised as follows:

- Ensure contractually that the appropriate restoration of the “heritage” components proceeds in line with the other developments.
- Introduce some mechanism to approve the final design proposals so that the Zoning Plan criteria are respected and also that a coherent balanced development results.
- It is recommended to undertake a new technical survey and preliminary cost estimates of the restoration works prior to tender. This would help reduce the risk for all parties.
- It is recommended to establish a “Steering Committee” to oversee the strategic progress of the development and to include all the relevant Authorities as well as representative NGOs. Lack of transparency with the public and the exclusion of contributions from responsible experienced NGOs have been weaknesses in the past and an on-going concern.
- It is suggested to have a pre-selection stage in any tender process. This would not only screen candidates but test the potential interest prior to launching a full tender.

The preferred option would be to retain overall control by the Authorities and to undertake further preparation in investigations and studies before implementation.

The first action would be to undertake the essential further studies which are necessary to define and prepare any development. These, in addition to the technical study cited above, should include market studies into potential uses of the facilities (dwellings, car parking, offices, workshops, restaurants, hotels, museums), and a strategic study on how to develop the various components, with the assistance of the private sector as appropriate. In parallel the essential and urgent roof repairs should be carried out as soon as possible.

The key issue in any option is finance.

The overall cost could be above 100 M € for the full development as currently proposed, spread over several years. Most of the new constructions could be self-financed but due to the heritage restoration obligation, the overall financial equilibrium almost certainly requires a substantial equity or grant contribution. Equity could be available from a private developer (but unlikely in view of the risks) and grant assistance could be available from the EU. Extra funds from Government or elsewhere may be required to complete the financing. A further study into financing options is necessary once the outline costs and the strategy have been firmed up and this would be an iterative process.

In summary:

This complex is an important heritage asset, in need of urgent attention.

The outline proposals may need adjustments and some additional studies.

However the proposed sale is considered unviable and with undue risk and this should be reviewed critically before proceeding further.

An alternative approach is proposed with more preparation and with overall control retained by the Authorities.

Finance will be a problem for any option, with significant grants required.



2. Purpose, location

Conserve, restore, develop and put into use an historically important building complex comprising a former fort and its site.

Tallinn, about 1.5 km west of the old city centre, Estonia

3. The Context

3.1 The historical context

Tallinn, the capital city of Estonia, is strategically positioned to command the southern shore of the Gulf of Finland. During the Russian occupation in the early 19th century protecting St. Petersburg was deemed a priority and forts were built on the north side, at Suomenlinna in Finland, and also on the south side at Tallinn. Fort Kalarand (later termed the Battery – Patarei) was conceived principally for the defence of Tallinn and situated outside the old city boundary. It was to form part of a series of four such structures but was the only one actually completed.

The construction was carried out on the instructions of Czar Nicolas I between 1829 and 1840. It was conceived to be a sea fort but defensible from a land attack. It comprises a substantial stone building with a crescent shape façade facing the sea and supporting wing corridors making an appropriate symbolic “sextant” shaped building overall. The landside was protected by a redoubt, ramparts, a moat and a caponier (now known as the Mortar battery). The main building facing seawards comprised some 90 casemates on three levels with two canons in each, protected by a 1.8 metre thick wall.

The maximum complement was about 2000 soldiers. The fort was never tested in battle and the buildings were converted to military barracks in 1880 and used as such until 1920. To effect this change to barracks the wing corridor sections were heightened to three storeys and separate buildings were added for stables, bakery and a music centre.

From 1920, when Estonia achieved independence, Patarei became a prison with part being used as a prison hospital. These uses required further changes mainly to the interior and also most external apertures were bricked up. An additional linking corridor was added in 1934 which required the removal of the well which supplied water to the complex.

The period from 1920 covered turbulent times: the Russian revolution and its aftermath with independence, the Second World War with an initial Soviet period, then the German invasion and occupation, followed by the return of the Soviet Union at the end of the war. It became the main Estonian prison and over the years interned many political prisoners out of favour with the ruling authorities, including several eminent Estonian politicians and writers as well as Jews during the Nazi era, many of whom came from elsewhere in Europe.

Patarei therefore has a strong emotional link for Estonians to its recent history and in particular the difficult times of the Soviet and Nazi periods.



In 2005 the prison was closed. By then it was already in a rundown state lacking investment or proper maintenance. It has been largely neglected since and has fallen into grave disrepair. Some residual activity continues in parts of the complex under a local NGO, allowing visits and occasional cultural events and some other activities. A growing number of sections are unsafe and closed to normal access.

The complex is Government owned and has become the responsibility of the State Real Estate Ltd (RKAS) of Estonia under the aegis of the Ministry of Administrative Affairs. The Patarei Sea Fort is formally a State protected monument which implies that its owner (the State) has a responsibility to preserve it. This duty it has significantly neglected of late.

The Patarei fort is important architecturally being the best preserved intact fort in Estonia and an example for the wider Baltic region. In view of its changed use many adaptations to the original fort have taken place internally and on the land-facing side but the main original external sea-facing façade is still largely intact. It is located not far from the UNESCO recognised Tallinn Old City centre and adjacent to the recently renovated Seaplane Hangars and Maritime Museum, both of which are major tourist attractions.

The Patarei Sea Fort by its location, architectural uniqueness and history is an exceptional heritage which must be preserved as an integral part of the development of Tallinn City.

3.2 The development context

There has been much discussion over the years on how to develop the Patarei site.

Heritage groups such as the Estonian Heritage Society place emphasis on preserving and re-establishing much of the original fort complex as well as respecting the memorial aspect of the prison era. The general consensus seems to be that, while supporting as much preservation and re-statement as possible, practically it is accepted to have an appropriate multi-functional use in order to make any restoration possible and to bring life back into the complex.

The Estonian War Museum is under the aegis of the Ministry of Defence. It has shown an active interest in the developments at Patarei as it is in need of greater space for its exhibits and considers that the fort would be an ideal location, much better than its present one. It has undertaken a feasibility study on such a move which concludes positively that it would be able to use about 5000 m² of floor space, an expansion on its existing 500 m². It is to be noted that the Ministry of Defence seems uninterested and the Ministry of Culture with overall responsibility for most museums is overstretched with limited resources and too many museums already so it is not keen to expand. More work is thus required to clarify the issues in the wider context. It would seem however that the War Museum would be a very appropriate candidate to move into the Patarei Fort.

The Government would like to develop the site but is constrained by a shortage of funds. Its agent, the RKAS, has currently the intention to sell the property and its development to the private sector, with the hope that this would solve the problem of funding and bring new ideas forward. Such a sale to the private sector has been tested over the last 10 years or so without success. A new initiative is



imminent and the activities in the buildings, such as tourist visits have been stopped from October 2016 to prepare for this.

This approach clearly raises serious issues on how to control and manage the process of introducing successfully the private sector and in assuring adequate safeguards. The State would be obliged to pass on to the private sector its responsibility to preserve and renovate the fort itself. Some concerns on this crucial point remain for the “heritage” community who seek and require firm assurances.

In preparation for the approach to the private sector, an outline proposal has been worked up by architects to test and illustrate the development potential of the site. Also and most importantly Planning Conditions are being prepared (termed the Zoning Plan) which will control and strongly influence any proposed development. This Zoning Plan has been formally submitted and has recently been discussed in public. Numerous concerns were expressed critical of the proposals and these are now being considered by the Authorities before a revised version is finalised and adopted probably in early 2017. Further consultation with the public seems unlikely although it would be desirable.

The outline proposal implicit in the Zoning Plan comprises the following:

The overall site has a total area of 3.7 hectares. It abuts the Seaplane Hangars to the west and is bounded by the new road to the south. It allows a narrow pedestrian pathway to remain for the Municipality to the north on the sea shore and excludes several buildings of relevance in the south-east quarter. The site is thus rather confined. It has been divided into five sections with different characteristics summarised below and shown in Appendix 3 (note that the dimensions given are best estimates as the situation is not always clear, assumptions taken are given in Appendix 2).

Section 1: The main fort building (except for Section 5, see below). This will be renovated within the existing confines (maximum four floors, 18 m height, 26 500 m² floor space). Mixed usage is envisaged with offices, shops and public buildings being > or = 70% and the remainder could be dwelling apartments < or = 30%.

Section 2: The open plot located to the west of the fort, towards the Seaplane Hangars. The outline envelope has been defined as a maximum of five floors above ground with two floors underground giving a maximum height of 18 m in line with the top level of the fort. The built gross area is limited to 20 600 m² on a plot area of 5300 m². Mixed usage with offices and shops > or = 50% and the remainder could be dwelling apartments. It is presumed that car parking is included underground.

Section 3: The Mortar battery. The existing building could be extended with the new extension limited to one floor. The existing building has a maximum of three floors, maximum height 8 m and all may have a total floor area of 1900 m². Use could be for offices and shops.

Section 4: The Music building. The existing building could be extended with the new extension limited to one floor. The existing building has a maximum of two floors, maximum height 7 m and all may have a total floor area of 1800 m². Use could be for offices and shops.



Section 5: This is a small section of the main crescent-shaped fort at its eastern end. It will be renovated within the existing confines of four floors, 18 m height and 4300 m² floor space. It is considered to be an especially sensitive location as the executions took place here so it may be suitable as a memorial area to the prison era. Mixed usage is envisaged with either public buildings or offices and shops.

There are a number of concerns about this Zoning Plan, both in general and in detail and the main ones are given below. However it has been competently and professionally produced and can be a useful basis for advancing.

The splitting into sections may be convenient to identify different uses. It would be unfortunate if these sections were to be considered as separate projects and developed independently with the risk that the more favoured sections (the unencumbered new build) might advance to the detriment of the equally (or more) important heritage restoration work. Also the splitting off of Section 5 from Section 1 may be confusing unless its different use was the reason; even so this seems an unnecessary restriction. Many of these concerns can be handled by proper management and control of the contract with the developer. RKAS have given assurances that the whole site with its five sections would be developed together under one contract which gives some comfort but this needs to be verified and then followed up in practice.

A related concern is the over-crowding and over-building of the site by the new constructions, especially on Section 2, the new west plot. The maximum height of any new development has been set at the level of the main fort building and this is an essential condition which must be applied. The concern is that if the maximum allowable area and height under the Zoning Plan for all sections are adopted then the final result might well be unsatisfactory due to over-building. A way to limit this is to impose a “Detailed Planning” approval stage before final approval is given and this two-stage approach is usual in many countries. Thus the Zoning Plan has an outline planning role to be complemented by the Detailed Planning approval when proposals are being finalised.

The Zoning Plan concentrates more on the new developments and less on protecting the heritage aspects. It is always difficult to decide to which era or use the buildings or elements should be restored as most sites have a history of development during the different phases of their life. The special points of this complex are the original fort itself and its fortification and the need to respect the memory of the atrocities committed here (the memorial dimension).

The sea façade of the fort is in a poor state of conservation and was modified particularly when the fort was converted to a prison. Thus attention is required to restore it appropriately especially at the detailed level. The land side fortification is much less well retained overall with little sign left of the original fortifications (the escarpment and moat). Much has been changed with the Mortar battery replacing the Caponier and the Music building encroaching on the outer fortifications. Some effort seems to have been made to retain the line of the fortification in the new developments in the Zoning Plan but more should be done to retain the historical significance of this important part of the fortification, difficult as it may be.

In addition proper consideration to good access both to and within the complex as well as adequate parking for visitors may need further attention.



4. Description

The exact nature and extent of the proposed development is still not decided although the constraints on it are now firming up with the Zoning Plan as described above. The Zoning Plan gives a clear idea of the desired nature of the site's development but these are maximum allowable conditions for each section and are not necessarily all to be taken up. However if the sale to the private sector is adopted, as currently proposed by the RKAS, this may well be attractive to the developer to maximise his benefits and so it may need to be controlled to avoid any excess.

The outline proposals worked up by the architects M.Aunin /M.Kahu at the request of the RKAS and dated 2013 are still the most relevant ideas, according to the RKAS. These proposals, using the same zones as defined by the Zoning Plan, are summarised as follows:

Sections 1 & 5 (no distinction between these two in the 2013 proposal): The total floor area to restore would be 30 800 m², which would comprise the main fort building with four existing floors. A significant innovation is that the main (north) courtyard of some 2500 m² would be covered with a glass dome providing all weather protection. The lower courtyard would be cleared of the present cells and made into an outdoor zone. (These proposals generally agree with the Zoning Plan except that Section 5 is now considered separately.)

Section 2: Two proposals have been outlined. The earlier comprised a car parking block for some 400 cars on five floors, two floors being underground. The more recent one, comprises two imaginatively shaped blocks to house mixed developments of housing, offices and galleries and car parking for about 170 cars. Total floor areas for the two blocks without the parking would be 5050 m² and 4130 m² respectively, a total of 9180 m².

Section 3: The existing Mortar battery would be renovated (560 m²), heightened by additional floors and a new extension of one floor would be added to follow the line of the original fortifications (260 m²). The extension could house galleries and shops, with a total area of 960 m².

Section 4: As in Section 3 the existing Music building would be renovated (650 m²), heightened by one floor and a new long building added following the external fortifications (540 m²). The new building could house galleries and shops, with a total area of 1740 m².

It is important that the heritage of the site is adequately conserved amongst any new build that is proposed. Thus as already mentioned above the fort, its façades and the fortifications need due attention, especially in detail. The siting of additional tourism paraphernalia such as ticket offices, cafeterias and bookshops should be done with due care to be appropriate.

This is a very substantial programme which would have to be planned in several phases.

In particular in view of the poor state of the existing buildings and the lack of recent knowledge on their condition, several preliminary actions are essential. This should include a full assessment and survey of the technical state of the existing buildings, which should have been done already in preparation for inviting proposals for the works. Some immediate repair works are also eminently



desirable (notably to the roofs) to prevent further deterioration. Also later detailed surveys and planning are required to achieve the final agreed concept, perhaps assisted by “pilot tests” to check some critical conservation or other actions. Phased main construction works and commissioning would then follow.

5. Technical aspects

The fort building facing the sea is strongly built of limestone masonry blocks as befits a fort. Dampness and humidity are major problems, from below through the foundations and from above through the defective roofing.

A technical review was undertaken by Professor Roode Lias in 2005 which identified these and other problems.

The water-table is close to the surface and is partly saline which exaggerates its effect on the limestone blocks. The limestone’s strength has reduced with advanced carbonation in places but in view of its dimensions it remains structurally adequate. The dampness and humidity in the lowest storey make this zone uninhabitable. A small section of the fort was used as a prison hospital and may harbour infections within the damp mould adding to the problems. A more detailed survey is required to update and extend that done in 2005 and proposals need to be developed to solve the dampness problem by creating a waterproof barrier below the structure and other measures. The drying out process may take some time. It should be noted that a ground water well existed in the courtyard to supply water to the fort but the water table has dropped in recent years (Estonia is still rebounding after the overload of the glaciers of the last Ice Age) and the well has been blocked off.

The condition of the roofs, which are made partly of steel sheeting and tiles, is very poor. The roofs have been patched and repaired in a reactive manner when problems have become serious with no overall long term plan. The resulting leakage is now a matter of urgent concern as rain continues to enter the buildings with obvious negative effect on the structure and the internal decoration. The roof structure supporting the cladding is of timber and steel and is also badly deteriorated in places and in need of replacement or major repair. Temporary repairs to address the worst leaks are strongly recommended while waiting for the complete re-roofing which is eventually needed, and could conveniently await the main renovation; this would ensure a coherent approach compatible with the new use of the building. The technical issues of the roofing are less complicated to resolve than the dampness from the groundwater but do need some preventive action as soon as possible.

Several changes to the buildings have taken place to adapt to the revised use over time such as an additional floor being added and the blocking up of windows (for prison use); due consideration of the history of these changes is necessary for a sound restoration.

The technical review carried out in 2005 also found that the buildings were extremely degraded in almost every respect with most floors in bad condition as was most of the timber and metal work. Particular attention needs to be paid to the heating and ventilation which will be required to modern standards in the restored buildings.



The proposals for the new construction and the potential restoration works are still only suggestions but some general points of concern are:

- The covered glass roofing in the courtyard is a very flat structure in order to be within the height restrictions and so will not act much as an arch thus requiring a significant structure. The supports may need to be independent of the existing buildings as these may not be able to support the loads. These problems can be solved but attention will need to be paid to them and there may be cost implications.
- Ground water protection may need to be considered for the proposed underground parking in Section 2. This is not a major problem but could again have cost implications.
- The configuration of the main fort building with its thick walls and numerous cross walls may place restrictions on its use.
- It may be useful to consider “pilot tests” before starting the full scale restoration works on the façades, the roofs and for the moisture control. This would allow the techniques to be tested and perfected before full contractual commitment.

6. Implementation

Much of the implementation is still unclear and undecided. Key issues are how to proceed and who is responsible and for what – in other words the overall strategy and its management in practice.

The Owner is the State acting through the RKAS which is thus nominally the Promoter, responsible for defining the strategy and follow-up of the implementation.

RKAS’s intention is to prepare the “project” for sale to the private sector. The details including the legal form of this intervention appear still to be decided. The private sector entity (or developer) would presumably become the Owner of the site and its assets (and its responsibilities). Whether this is in perpetuity or for some period of time (maybe say a 50 years’ concession or longer) is still unknown. (It is understood that the concept of Leasehold is not known in Estonia, which could have provided some control by the ultimate owners (the Freeholder – the State) on the developments.) The conditions of any resale of all or parts of the project buildings or site would need to be clarified and regulated.

The legal form of the transfer to the private sector entity of ownership and responsibilities is crucial and needs to be negotiated with great attention and care. In particular the responsibilities and conditions on the eventual developments need to be explicitly expressed. A special concern is the timely and full restoration of the heritage components, which should not be left as an afterthought but should be carried out in parallel with the new works.

Over recent years in Europe much emphasis has been placed on introducing the private sector into infrastructure and other projects to improve efficiency and to provide innovation and new finance. The considerable experience in UK and elsewhere has shown that good preparation, a strong promoter and a clearly defined contract are essential for success; it is not an easy option.

The RKAS has attempted for some 10 years to interest the private sector in Patarei without any apparent success. During this time it has developed its ideas with the help of consultant



architect/planners M.Aunin & M.Kahu who recently updated these into the proposal discussed under §4. Presumably the RKAS will set up a team including consultants to manage the process of implementation, starting with the process of preparing for tendering for the sale.

The public and NGOs have been concerned about the future of Patarei but there has been little interaction between them and the RKAS, although recently the Zoning Plan has been discussed in an open meeting. The NGOs actively interested in Patarei include the Estonian Heritage Society and a new organisation SA Kalaranna Patarei which has been set up specifically to be involved with Patarei. It is a private legal body with several reputable and experienced members who are knowledgeable about Patarei and its history and problems. The RKAS would be advised at an early stage in any developments to benefit from the potential inputs from the NGOs, in particular those from SA Kalaranna Patarei. There is a great potential of enthusiasm, knowledge and experience which could contribute significantly to advancing and improving the outcome.

The establishment of a Steering Group to guide the process of developing Patarei with direct contributions from relevant NGOs and other experts outside the Government would thus seem pertinent. It would improve and facilitate a better coordination with obvious benefits to the project and its progress. There is a concern that the RKAS is acting too much alone without adequate feed-back from others and this may not lead to valid and optimum decisions.

The possible stages of implementation, with an indicative duration and assuming the current RKAS approach, are presented below. This is a tentative suggestion just to fix ideas. As mentioned elsewhere a strategic review before any further action is recommended:

- Prepare the dossier and proposals for tendering to the private sector. Maybe introduce a pre-selection stage in the tender (4-6 months).
In parallel await the final approval of the Zoning Plan and incorporate its conclusions.
- Receive proposals and assess these (4-6 months).
- Proceed to agreement and start of construction (3 months).
- Phased construction and restoration (several years).

The alternative scenario (the non-sale option) could envisage the following stages:

- Carry out a detailed survey of the existing buildings (4 months).
- Make urgent repairs to the roof awaiting more detailed proposals (4 months).
- Undertake a number of further studies e.g. on potential uses (4 months).
- Reassess the strategy in the light of new information from studies (4 months).
- Assess financing needs and seek appropriate phased funding.
- Proceed to activate the strategy, probably with several separate actions coordinated by a single “non-private sector” entity (several years).

It is understood that RKAS proposes to start the process soon as the premises of the Fort have been vacated and visits and other activities have been stopped from early October 2016.



The above outline programme shows that any action will be long and take many years and this should be recognised in the planning, the contractual arrangements and the financing.

7. Procurement

The procedures followed for the awarding of contracts should be according to the appropriate EU directives. This includes the tender to the private sector to award the sale / concession for the development as currently envisaged. Consultants or other organisations which are given significant roles in the preparation, management or long term supervision of the developments may also be required to follow the EU procurement procedures. Legal advice should be sought.

It may be interesting to introduce a pre-selection stage prior to the main tender in view of the possible lack of valid interest. This would ensure the quality and seriousness of the eventual bidders and allow the Authorities to gauge the interest before launching the tender.

8. Environment, sustainability, social

The wider environmental impact should be limited as the site is already developed and its further development should generally only have local effects. These local impacts should be taken into consideration by the planning procedures and notably the Zoning Plan. This Plan is currently under discussion and concerns have been raised on the extent of over-building proposed, the configuration of linking the Fort complex to the Seaplane Hangars and the access, and all of these need to be addressed.

The past experience of quasi abandonment has led to the poor state of the buildings. Any proposal for redevelopment must ensure that there are adequate funds and an effective organisation to ensure proper and regular maintenance of the buildings, especially the older heritage ones.

In general the restoration and renovation of historical buildings in degraded condition and putting them into sustainable use is very positive and to be encouraged.

Upgrading the complex together with viable developments such as dwellings, offices, leisure centres, cafés, restaurants, and museums will provide an important and mixed product for residents and visitors and generally add to the social activities on a local and also wider scale. The result should be positive if a balanced final development is achieved, without excess crowding and over-development, notably in the zone between the Fort and the Seaplane Hangars.

9. Use, market, demand

The Zoning Plan has given guide lines of the potential use of the different sections. It proposes a multi-functional use for the complex with offices, shops, dwelling apartments, leisure and restaurants as well as “public buildings” and car parking.

The main interest for a developer would be the dwelling apartments and the commercial areas. In view of its history a strong case could be made to have a museum in the fort to illustrate its history and



this could be situated in Section 1 and/or Section 5. As previously mentioned it is understood that the Estonian War Museum would be very interested to move to more spacious and better located premises. It has already carried out a preliminary study and could use 5000 m² of space.

Section 1 has authorisation in the Zoning Plan to have up to 30% in dwellings, which presumably means apartments but maybe also a hotel. In view of the physical constraints of the sea facing section and the distressing history of Patarei the attraction for dwellings or hotels might be limited in this section. It might be envisaged however to have a small boutique hotel installed in part of Section 1.

The hotels and restaurants depend on the tourist trade in the wide sense. Tourism is an important sector in Tallinn with its many attractions, notably the Old City as an UNESCO designated site. Patarei could be an added attraction.

Without access to a specialist study, an indicative idea of the potential number of visitors to a renovated Patarei fort can be gauged by the interest in the adjacent Seaplane Hangars and Maritime Museum. This only opened in 2012 but in 2014 received 190 000 visitors and this number is expected to grow in future years. The visitors' revenue could be estimated at about 1.9 M €.

By comparison the existing War Museum, with its present very limited space and poor access received 17 000 visitors in 2015, with a reported revenue of 60 000 €.

Despite its very limited facilities and with no publicity the Patarei fort reportedly receives some 30 000 visitors per year, yielding a revenue of about 90 000 €.

With a renovated Patarei fort and a War Museum and other facilities it is not unreasonable to envisage say 200 000 visitors per annum in the medium term, with annual revenue of say 2 M €.

The housing market in the Kalaranna area around the Fort is reportedly buoyant as the area is being enhanced with new roads and improved services. The renovated Seaplane Hangars and the proposed improvements to the Patarei fort will contribute to this renaissance. There should be no problem to sell or let new dwellings on the site, despite the rather confined location.

The market for offices and shops is not known but should be relatively sound providing useful additional revenue to the new Owner.

These estimates are very preliminary and anecdotal but show a likely positive potential. A detailed study should be carried out to estimate the potential demand for the various proposed facilities so as to optimise the scale, nature and timing of the related proposals.

10. Investment cost

As mentioned above, the scale and timing of the development are still unknown. Basic data such as the extent of the repairs needed to the existing buildings and their costs are also vague.



A very preliminary estimate of costs (effectively a reasoned guess) is attempted here to help fix ideas, and this will be firmed up later by more detailed work. In the same way to fix ideas, the outline proposals put forward by K-Projekt are used as the reference case.

As a guide average building costs in Tallinn have been taken at 2500 €/m² (based on the 2373 €/m² quoted by SPONS as cost of general buildings in Estonia).

The existing Patarei fort:

1. Preliminary preservation phase and studies: say 2 M €
2. Restoration, probably in several phases – old fort/façade, interior sections:
Take existing buildings at 30 800 m² x 1500 € = 46.2 M €
3. Renewal for new functions - museum, cafeteria, hotel, dwellings: say 10 M €

Total costs existing buildings 58.2 M € (+10% engineering & contingencies) say 65 M €.

The new developments:

1. Preliminary work on concept, studies: say 2 M €
2. Design and construction of new works.
Take 14 950 m² x 2500 € = 37.5 M €

Total costs new developments 39.5 M € (+10% engineering & contingencies) say 45 M €.

Thus an indicative Total cost of about 110 M €.

A figure of 100 M € has been cited informally in discussions so this “guesstimate” may be in the correct range.

11. Financial considerations and potential sources

The nature of the project with a significant and costly heritage component complicates its financial viability.

This is illustrated below taken from the Property Owner’s viewpoint:

The cost of the full development could be 110 M €, spread over say 10 years.

The potential income could be hypothetically as follows:

Gross revenue from museums and visitors, say 2.0 M € /annum.

Assume 25% accrues to the Property owner in rents being 500 000 €/annum.

Net revenue from shops, parking etc., (5% of cost of 25 M€) say 1.25 M €.

Net revenue from housing (10% of cost of 25 M €) say 2.5 M €.

Thus a total revenue of 4.25 M €, say optimistically, 5 M € per annum.



From this should be deducted the Owner's maintenance and servicing costs, say optimistically, at 1% of investment so 1 M €/annum.

Thus a net surplus of 4 M €/annum could accrue.

Setting this 4 M € annual benefit against the investment cost over, say, 25 years yields a zero (or negative) financial rate of return, unacceptably low for any private investor. The situation is aggravated by the timing of investments and revenues requiring substantial initial funding and a long time lag before revenues build up.

Alternatively assuming that the revenues from all except the housing broadly cover the expenditure on maintenance and other costs, the investment balance would be as follows:

Total cost 110 M €

Potential sale value of dwellings (50% x 9180 m² x 5000 €/m²) = 23 M €.

These are very approximate estimates but illustrate the difficulty in establishing a sound business case for the project to stand alone without a very substantial grant contribution.

A much more detailed study is required to understand the financial limits and requirements so that these can be optimised.

Possible sources of funding are the EU, the Government and the private sector.

EU funding could come from the European Structural and Investment Funds ESIF. The total amount allocated to Estonia over the period 2014-20 is 4890 M € with EU contributing 3530 M€. The key is the agreed Operational Programme for Cohesion Policy Funds. However of the thematic objectives agreed for Estonia none seems directly aimed at cultural heritage. A potential justification for this project might be found through other objectives such as improvement to urban development, tourism development and employment potential (both short and long term). Much of the detailed decisions and interpretations are in the hands of the Estonian Administration. However it is clear that many competing needs are seeking these same funds and that prioritisation becomes difficult, which is partly why the private sector is being sought for project financing. It is understood that limits exist on the application of EU grant funds to "small" heritage projects, with a maximum grant of 5 M € per scheme, but this is still under discussion and may be revised. It is not clear whether "large" heritage projects could benefit from more than this limit now or in the future and this also merits further clarification internally and with the EU Commission.

European Investment Bank (EIB) funds might be eligible for part of this development. A large loan would be difficult to support as already shown above, but some blending of finance with an EU grant might be appropriate but would need careful review.

In view of the difficulties outlined above, it is clear that more study is required to find a sound financing plan. It seems very unlikely that the private sector would be willing to take over the full responsibility of the financing (and there are other reasons expressed elsewhere why this is undesirable). A mixed solution will probably be the most suitable, ideally with a significant EU grant,



perhaps enhanced by an EIB or other loan and with some contribution from the private sector, all topped up with Government support.

The example of the adjacent Seaplane Hangars and Maritime Museum is relevant. The total cost was of the order of 30 M €, with about 20 M € being in the sophisticated building renovation, A significant EU grant was obtained to finance this and the result has been very successful.

As mentioned above a Financial Study would be needed once the key data on likely costs and potential benefits are better established by the recommended studies.

12. Conclusions: Proposed Action Programme and recommendations

The objective to restore the Patarei fort and to develop its site is an excellent initiative. While some of the details of the proposals or ideas put forward may be disputable and in need of improvement or optimisation, the main concern is the manner in which the development is being advanced with inadequate preparation and with the idea of selling the whole to a private developer.

There is certainly a role for the private sector in the project at all stages. This would be not only as contractors and consultants but also as operators of the various facilities. It may be that some parts are sold but these should be under the strict control of the Administration or its representative.

The concern with involving a private sector developer is the inevitable commercial view he would take on any development. This could well result in rapid progress on the simpler new constructions with the commercial space and the dwelling houses all to the detriment of the rather more costly, complicated and less commercially attractive “heritage” items such as the Fort itself. In addition, a simple financial analysis has shown that it would entail a considerable risk as the costs to be incurred greatly exceed the expected benefits. Thus to balance the finances a substantial grant or equity contribution would be essential, which may not be easy for a private sector developer.

Compounding this general concern on financial viability is the poor information on the physical condition of the extensive existing buildings. This information is based on a preliminary study carried out in 2005. Expecting the private sector to base a valid bid on such out-dated and weak data is unreasonable and will result either in an excessively cautious and conditioned proposal or one that is over optimistic and impossible later to achieve; both are unsatisfactory for the present owner.

Several studies, other than the updated and extended technical survey of the fort, are also necessary to support a sound and ordered programme of action. These should include studies into the potential market for the various facilities (e.g. the dwellings, restaurants, shops, workshops, offices and museums – especially the War Museum) and estimates of likely revenues. When these are available an overall financial study should be carried out to explore financing options and their phasing.

In view of the above, it is clear that proceeding with the sale to the private sector is not supported. However if it is decided to persist with this approach then the following points should be considered:



- Before finally deciding to launch bids to the private sector, carry out a preliminary financial study to ascertain if there is a credible “business case” which would interest a bidder and also to determine the interest from potential bidders. A decision on how to proceed should await these initial check studies.
- As soon as possible carry out emergency temporary repairs on the most damaged parts of the roofs. This would help to reduce further deterioration but would obviously not resolve the problems fully, which would have to come at a later stage.
- If a bid for the purchase of the whole site is envisaged then any contract must absolutely guarantee that the Fort and its associated works (the “heritage” components) are restored and renovated to clear criteria together with a firm timetable.
- A pre-selection stage for the tender might be appropriate to ensure the quality of bidders and especially to gauge the depth of valid interest before launching the tender.
- It is recommended to set up a Steering Group to advise on actions and progress. This should comprise not only the RKAS team but also other potential partners such as the Tallinn Municipal Technical Department (who may later supervise the contracts), representatives of the local community and actively interested NGOs.
- As early as possible undertake a comprehensive technical survey of the Fort and other existing buildings. This should not only identify the present condition but also outline proposals for reinstatement, including preliminary cost estimates. Pilot tests may be appropriate to confirm the restoration techniques.
- An experienced team of professionals is required to manage the whole process and maybe the RKAS team will need reinforcing in some specialist areas.

If however the alternative approach recommended in this report is decided upon then, as well as the points above, the following actions should be implemented:

- Undertake further detailed studies on the potential users and uses notably for museums (the War Museum), hotels and restaurants, offices and workshops and dwellings to assess their potential and the detailed needs.
- On the basis of these new updated data, undertake a financial study to understand the real needs and options and then begin to optimise the financing, including seeking funds.
- Prepare a sound development strategy in agreement with the NGOs and other parties, and then proceed to implementation.



In summary:

This is an important heritage complex, in need of urgent attention.

The approach towards a multi-purpose use with restoration of the heritage components is broadly appropriate but further studies and data are required.

The currently proposed sale is considered probably unviable and with undue risk. Thus it is recommended to review this critically before proceeding further.

An alternative approach is proposed with additional advance preparation and with overall control retained by the Authorities.

Finance will be a problem for any option, with significant grants being essential.



Appendix 1

References, mission details.

Reference documents:

Nomination form “7 most endangered 2016”. Estonian Heritage Society.07/15.
Merekindlus Kalaranna Preliminary designs. Architects Aunin/Kahu. 01/13.
Detailed planning outline. K-Projekt, 2013 but revised 03/16.
Various clarifications from the Estonian Heritage Society.

Mission details:

Participants: Piet Jaspaert, vice-president Europa Nostra
Patrizia Valle, Europa Nostra Scientific Council’s Architect
Peter Bond, Consultant for EIB Institute

Programme:

16 September. International conference Okomass – “Facing the sea”.
17 September. Meeting at War Museum.
18 September. Patarei site visit. Discussions with NGOs.
Seaplane hangars visit, maritime museum.
Visit to monuments at Haapsalu.
19 September. Meeting with Minister of Public Administration and RKAS.
Meeting with North Tallinn Administration.
Meeting with Minister of Culture and National Heritage Board.
Press Conference.
20 September. Meeting with acting Mayor of Tallinn.

List of main persons met:

Estonian Heritage Society: Peep Pillak, Chairman. Helle Solnask, vice Chair.
Tarmo Elvisto, Head of Sustainable Renovation.

Estonian War Museum: Hellar Lill, Director. Trivimi Velliste. Patrick Rang.

NGOs and experts: Robert Treufeldt, Architect. Andrus Villem, Patarei operator.
Roode Liias, Professor of Building, Tallinn University of Technology.
Andrus Koresaar, Director Koko Architects (Seaplane hangars).

Government:

Minister of Public Administration: Arto Aas.

RKAS: Urmas Somelar, Director. Timo Aarmaa, Development director.

Minister of Culture: Indrek Saar.

National Heritage Board: Siim Raie, Director General.

Tallinn City Government: Taavi Aas, Acting Mayor.

North Tallinn Administration: Raimond Kaljulaid, Director.

Peter Bond wishes to acknowledge and thank all the above for their much appreciated assistance.



Appendix 2

Patarei fort site

Building Areas:

Existing / proposed by Zoning Plan / proposed by Architects Aunin/Kahu.

Existing buildings

Section	Plot area m ²	Plot area used m ²	Floor area m ²	Height m	No. floors	
1	22052	11000	26500	18	3-4	assumed not yet developed
2	6427	na	na	na	na	
3	1839	560 *	560*	8	1	
4	3487	650*	650*	7	1	
5	2735	1500	4300	18	3-4	
Totals	36540	12500	30800			

(3.71 ha)

* estimated

Max. proposed by Authorities (Zoning Plan)

Section	Plot area m ²	Plot area used m ²	Floor area m ²	Height m	No. floors	Notes
1	22052	11000	26500	18	4	5 floors above ground, 2 below ground
2	6427	5300	20600	18	7	
3	1839	800	1900	8	3	
4	3487	1200	1800	7	2	
5	2735	1500	4300	18	4	
Totals	36540	19800	55100			

Proposed by Architects (January 2013)

Section	Plot area m ²	Plot area used m ²	Floor area m ²	Height m	No. floors	Notes
1	22052	11000	26500	18	4	19330 m ² net, 2630 covered area 5 floors above ground, 1 floor below ground 700 m ² gross existing, +260 m ² gross new 1200 m ² gross existing + 540 m ² gross new
2	6427	5300	14950	18	7	
3	1839	800	960*	8	3	
4	3487	1200	1740*	7	2	
5	2735	1500	4300	18	4	
Totals	36540	19800	45750			

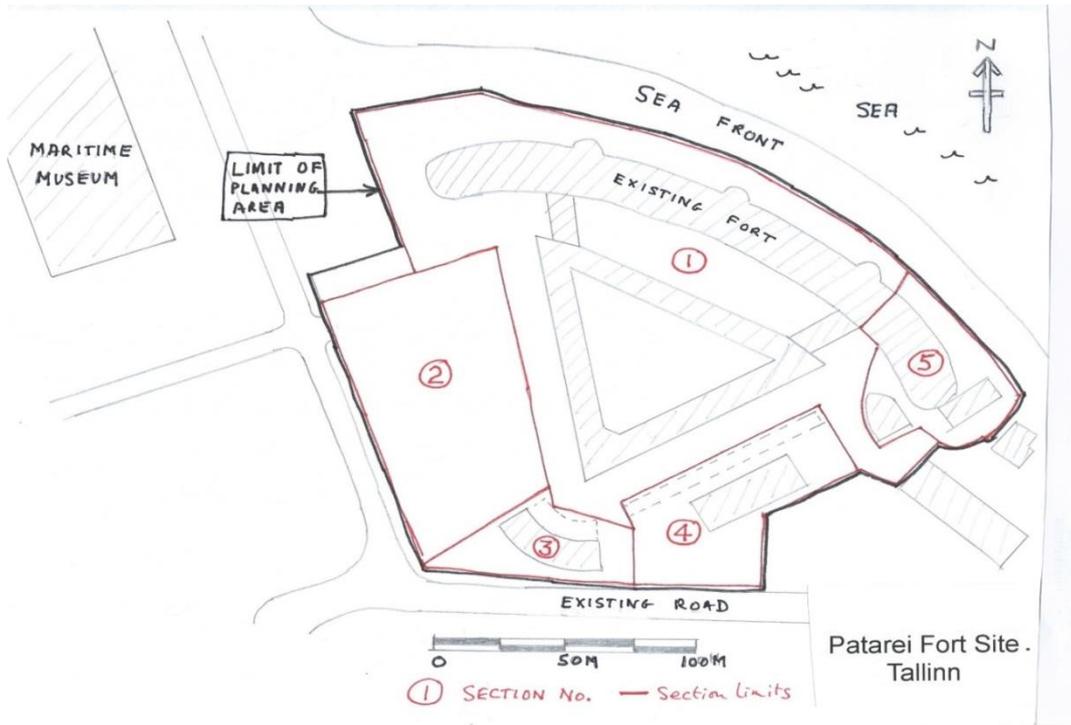
*estimated

PS. These figures are based on data provided but may be incorrect and in need of validation.

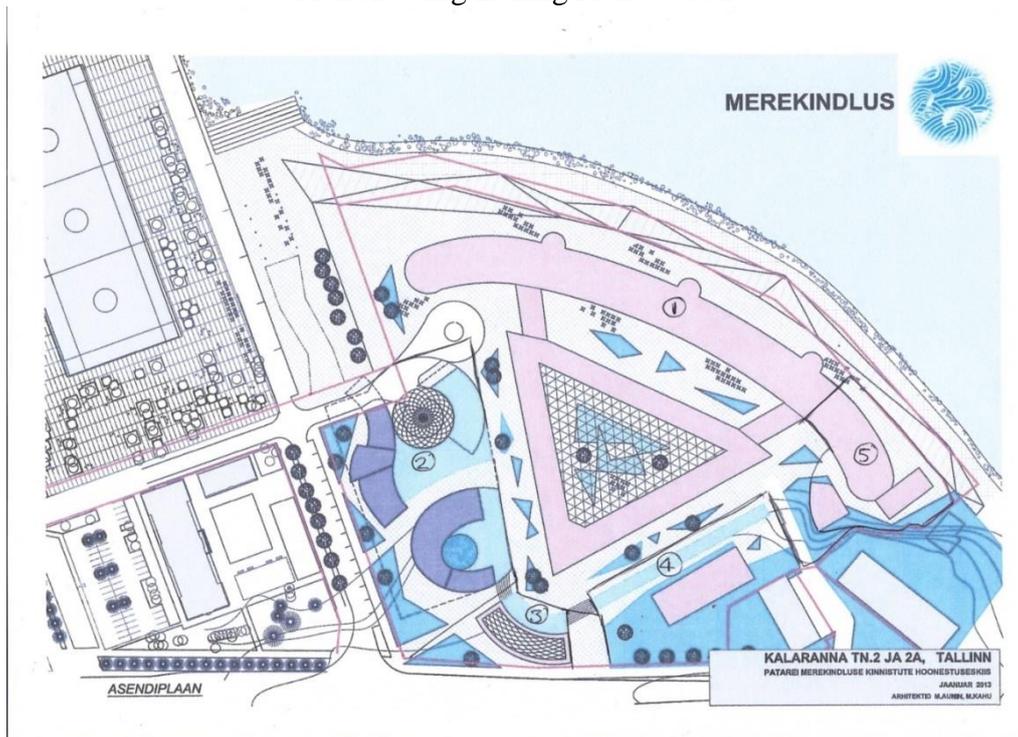


Appendix 3.1

Patarei fort plans



Plan showing Zoning Plan sections





Proposed development by Architects M.Aunin, M.Kahu

Appendix 3.2

Patarei fort photographs



View from the land side





View from the sea