Facing the Inevitable Change – Does Conservation Still Make Sense? The Case of the Helsinki Olympic Stadium

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The Helsinki Olympic Stadium and its ongoing conversion, with the existing floor area being more than doubled, is a prime example of the conference theme: *The Heritage of the Modern Olympic Games. Historic Sports Facilities between Conservation and Conversion.* The sheer scale of the conversion goes beyond anything that has happened in the course of the history of a building that after all is a protected National Sports Monument. When facing the inevitable change, the question arises if conservation still makes sense?

At the time of its construction, the stadium with its 72-metre-high tower became a major symbol for the young nation. Finland had become an independent nation only 20 years earlier, in 1917. Even today, the tower is also one of the great symbols of the City of Helsinki. Until this day the status of the Helsinki Olympic Stadium has endured as one of the key works of Finnish Modernism and as a National Sports Monument. The Olympic Stadium, together with other Olympic sports heritage in Helsinki, has also been included in the do.co.mo.mo. register since the mid-1990s.

The Helsinki Olympic Stadium of 1938

Based on an architectural competition, the Helsinki Olympic Stadium was built for the 1940 Olympic Games and inaugurated in 1938 with the main arena, the slender and elegant tower with sportscaster spaces, the museum annex and low curved stands in the Functionalist Style. In this first construction phase the Eastern Stand remained unbuilt (Fig. 1). The Olympic Stadium was built at the southern end of the Central Park, where the minimalistic and stylishly white building landed like a rocket from the cosmos.

The architects were Toivo Jäntti and Yrjö Lindegren, who were familiar with contemporary stadiums in Europe since they had visited many of them, including those in Berlin, Paris, Amsterdam, Turin and Florence. Compared with some rather daring contemporary constructions, the Olympic Stadium in Helsinki became elegantly simple and rather small in scale – suitable for the sparse resources of the young nation. The construction material was reinforced concrete. The bold construction that was made as monolithic cast was the work of Finnish structural engineer Unto Varjo. However, Helsinki did not win the bid for the 1940 Olympic Games, but lost to Tokyo. The 1940 Summer Olympics, officially known as the Games of the XIIth Olympiad, were originally scheduled to be held from September 21 to October 6, 1940 in Tokyo, Japan.

Fig. 1 The Helsinki Olympic Stadium in 1938

The Helsinki Olympic Stadium of 1940

One characteristic of the Helsinki Olympic Stadium and its history is that the stadium has been continuously changed and modified according to changing times and needs. The only permanent thing has been the change itself. Actually, quite soon after it was completed, the first temporary and permanent extensions took place. The Games were planned for Tokyo in Japan, but Tokyo could not host them and the Japanese organisers withdrew in 1938 because of the Second Sino-Japanese War. In 1938, the International Olympic Committee decided to hold the Games in Helsinki, which

Fig. 2 The Helsinki Olympic Stadium in 1940

Fig. 3 The Helsinki Olympic Stadium in 1952

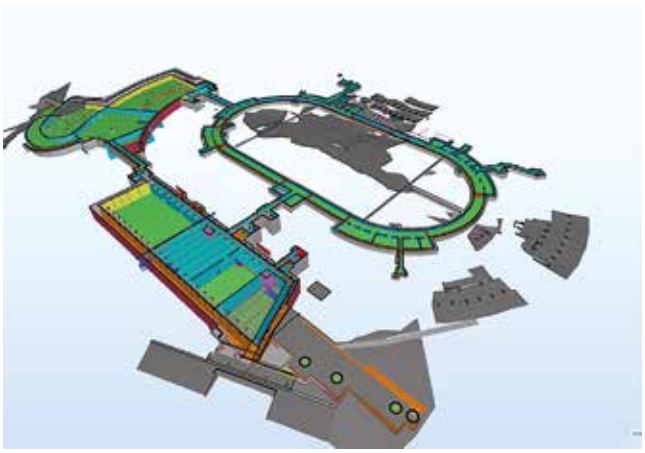

Fig. 4 The new underground spaces indicated in red

had now only two years to prepare for the Games. For this task, the Olympic Stadium was enlarged by a new reinforced concrete east stand and the low stands were extended by temporary wooden stands. Compared to the original 1938 stadium, the extension was quite dramatic: the number of seats was doubled from 23,000 to 46,000. The capacity of the 1940 Olympic Stadium was even 62,000 seats (Fig. 2). Since 1940, wooden panelling became the permanent facade material for the enlarged stands.

The wooden facade of 1940 was innovative and in its circular minimalistic shape very similar to the 1938 stadium's purist and abstract style. Despite the dramatic changes and increase in seats, the 1940 Olympic Stadium continued the avant-garde spirit of the original 1938 stadium. But again, just before the Games were to begin, a military conflict between the Soviet Union (USSR) and Finland broke out and Finland had to cancel the Games because the country was entering the war, the so-called Winter War of 1939–1940.[1]

The Helsinki Olympic Stadium of 1952

The next time a major transformation began was when Helsinki finally was able to host the 1952 Olympic Games after the Second World War. The temporary wooden stand structures of 1940 were demolished in 1948 to be replaced by even larger stands built partly of reinforced concrete and partly as temporary wooden constructions. New reinforced-concrete Olympic stands were completed in 1949. In addition, for the 1952 Games temporary upper stands were built as wooden constructions. During this Olympic phase, the Helsinki Olympic Stadium had as many as 74,000 seats, more than three times as many as the original 1938 Olympic Stadium!

Also, the outer appearance of the Olympic Stadium was radically changed. During the modifications made for the 1952 Games, the facades received their now iconic wooden fan shape, widening outwards. In its spirit, the new Olympic facade was quite different from the pre-war purist style (Fig. 3). The architects were the same, but times had changed in the meantime. After the 1952 Olympic Games, the wooden temporary extensions were demolished and the facade was once more modified – now with lower proportions than the 1952 Olympic shape. Under the stands, modern office space such as the State tax office and a youth hostel (1961) were built. This was the outer appearance of the Helsinki Olympic Stadium practically up to the present day, until the conversion started. It was also this facade that 50 years later, in 2006, was protected by the National Building Protection Law.

Renovation 1991–1994 and new canopy for the eastern stand in 2005

After the 1952 Olympic Games, minor changes and adjustments were made to the building throughout the years. However, until the 1970s most of the changes were designed by the original architects. There was no threat to the preservation of the Helsinki Olympic Stadium until the early 1990s when the decay of the reinforced concrete parts became a serious threat to the building. First renovations and interventions were made in 1991–94.

A problem of selecting the most suitable method of repair regrettably led to the replacement of the stand tiers with prefabricated elements whose upper level was raised by 15 cm. Through this intervention the original bold structural idea changed in a remarkable way. As Maija Kairamo, one of the co-founders of do.co.mo.mo Finland and the supervising architect in the Finnish National Board of Antiquities stated: "Because of the tight time frame, it was not possible to look for alternative renovation and conservation methods, but based on the earlier experience of the contractee and the building committee with prefab elements, the project was completed with the renewal of the stand tiers as prefab elements. The original elegant constructional idea and avant-garde technical solution was completely lost".[2] In the structural sense the reinforcing capacity of the prefabricated elements was weaker than that of the original monolithic cast, thus complicating for instance the present conversion with expensive and difficult structural strengthening works.

Since 2005, voices for a better adjustment of the Olympic Stadium to contemporary sports venue and mass event requirements became louder. In 2002 Helsinki was allowed to host the 2005 World Championship and pressure to have a larger number of roofed seats increased. On the other hand,

Fig. 5 The new canopy, 2019

there was wide consensus of the national importance of the Stadium building, although the monument was not yet officially protected. Based on an architectural competition a new elegant canopy was added in the demanding environment of the eastern stand in 2005, designed by young architects Kimmo Lintula, Niko Sirola and Mikko Summanen – the same architectural firm K2S that is now designing the ongoing conversion in cooperation with the NRT Architectural Office.

First Protection Act in 2006

In 2006, the Olympic Stadium was finally protected by the *Act on the Protection of Buildings* as a National Monument with the highest protection status in Finland. That the building is protected on the national level means that the strictest Finnish conservation standards apply. In the protection order the historically most valuable parts were listed and the Act was influential not only in how the building should be conserved, but the Finnish National Board of Antiquities was also given the right to guide repairs and even give permission to make minor exceptions and changes to the building.

But again, by 2014 the situation changed dramatically. The Olympic Stadium as a large-scale international sports and event arena technically and functionally had come to the end of its life cycle and drastic intervention and repair were necessary if the building was to be used as a modern monumental sports and event arena at all. The Olympic Stadium did not fulfil the contemporary requirements for public safety and mass event logistics, nor other contemporary standards, such as the dimensioning of the curving radii of the running tracks, the number of emergency exits, the exiting time and the standard of seating in the stands. In addition, the technical infrastructure of the building was outdated and the bearing concrete construction parts were alarmingly deteriorated and needed immediate repair. In addition, the Olympic wooden facade had come to the end of its use age.

Conversion in 2012 and revised protection order in 2014

The conversion began in 2012 and is still going on. The initial project plan, “Hankesuunnitelma”, was published in 2014. The main task of the conversion is to guarantee the function of the Helsinki Olympic Stadium so that it can continue to serve as a large-scale national sports and mass-events arena, even far in the future. Compared to the 17,076 gross square metres of floor space in the existing stadium building, the conversion includes 19,290 new gross square metres of floor space. In other words, the conversion more than doubles the floor area of the Olympic Stadium! Practically all new floor area space is situated underground, including the new logistics courtyard, new exercise spaces, changing rooms and toilet and storage spaces. Under the running track there is a new logistics tunnel and a new exercise running track (Fig. 4). The only addition on the ground floor is the new annex building for event-catering at the north side of the Olympic Stadium, where a new gate building demarcates a new ceremonial urban square.

By placing all the new floor space underground, the impact of the conversion on the surrounding landscape and the traditional setting of the Olympic Stadium and on the building itself has been minimised. The concrete decks above the un-

derground spaces follow the contours of the terrain and the Central Park and the forest form – as before – an important background for the Olympic Stadium. The most visible and irreversible change in the stadium's interior is the roofing of the stands. The new canopy is a new layer and a contemporary addition in the history of the building. Unlike the rather small-scale 2006 eastern stand canopy, it is a radical change and a radically new element that transforms the traditional views and the experience of the open sky from the bowl of the stadium.

On the other hand, the addition has been made with great care and developed to work in harmony with the existing interior. Now that the canopy can already be seen there, in spite of the three million kilos of steel, the mass of 400 elephants, necessary for this structure, the new canopy looks surprisingly light – as if floating in the air. With its wooden surface and rather thin profile it is clearly discernible as a new element, but developed to work in harmony with the existing building, not "competing but complementing it", as for instance the Madrid Document advises (Fig. 5).

For the re-dimensioning of the running tracks it was necessary to cut space from the eastern side of the stadium's interior in two spots. Furthermore, all original wooden benches were changed to individual seats. The new seats were made of wooden composite. The wooden lathing's horizontal design is similar to that of the old benches, thus emphasising the traditional visual impact of the stands. Despite the massive increase in gross square metres of floor space, the number of seats itself has not increased. One regrettable minor loss is the historic scoreboard, the traditional focus of the Olympic Stadium's interior view.[3]

The sheer scale of the conversion was so massive that the flexibility that was inscribed in the original protection order did not provide any conditions for its feasibility. Therefore, it was necessary to also revise the protection order. The revised protection order (2014) stresses the right kind of use as a necessary prerequisite for conservation and protection. Its aim is to enhance the protection order so that conservation supports use and serves as a starting point not only for protection and conservation but also for necessary changes. The functionality of the sports building and its architectural and cultural-historical values must be reconciled. In other words, the emphasis is on the functional requirements of the sports monument. The roofing of the stands and the new canopy must be seen in this light.

Fig. 6 The Olympic facade after its conversion, 2019; the new exit staircase 3rd bay

Fig. 7 The preserved western grandstand

Between conservation and conversion

The more drastic the change is, the more important it is to understand what the essential values and significant elements of the monument are and how these values are best preserved. This places high demands not only on the renovation and conservation work, but also – and especially – on the methods of change and intervention. Prof. Wessel de Jonge, who was invited to work as a consultant in the initial planning phase of the project, was influential in defining the key principles of the conversion. He called his approach a "flower basket" method. Instead of looking for a solution for each individual requirement, he aimed to provide a comprehensive vision for the future of the Helsinki Olympic Stadium, even if it would mean radical interventions and even demolishing some original parts in favour of a more enduring solution. In Helsinki, this meant among other things that the original stepped shape of the earthen embankment below the eastern stand – until then one of the protected elements – had to be demolished to make way for new underground service spaces, mainly new toilets.

Functional demands such as the roofing of the stadium building had an immediate effect on the bearing structure and its method of renovation, for instance the potential strengthening needs. Contemporary dimensioning demands and loads from the new canopy have necessitated the strengthening and coating of all 80 bearing pillars – an ex-

pensive and technically extremely demanding task and also highly controversial from the conservation point of view. A municipal conservation report that was published soon after the first interventions and renovation in 1996 and made in cooperation with the City Museum to guide the future renovations of the Helsinki Olympic Heritage stressed the conservation-ethical approach. This approach to strengthening and coating bearing parts was cautious.[4]

Due to the intervention, the dimensions of the pillars grew 15 cm on both sides and caused a re-adjustment of all window rows. The coating had to be carried out largely without machines as manual work. The window rows that were part of the protected facades were adjusted to the new dimensions by moving them nearer to each other or by cutting from window sashes and frames – a real *tour de force*! Furthermore, the iconic wooden fan-shaped facade had to be raised two and half metres to hide the new canopy from outside. Due to this operation, the proportions of the renovated facade have actually come close to the appearance of the 1952 Olympic Stadium with its conspicuously higher wooden part. The raising also compensates for the more compact proportions caused by the stabilisation of the bearing pillars (Fig. 6). Another change in the facade is the new exit staircases that were added during the conversion. In an emergency situation the building can now be emptied in eight minutes instead of the previous 13 minutes.

Unlike more traditional materials and structures, concrete has a shorter life span, and concrete structures need to be repaired and renewed time and again. In the original construction work, there were structural weaknesses and defaults, for instance the moulding was not always of the best possible quality. There were also problems regarding the steel brackets and seams. The temptation or urge to reconstruct was great, even though the building is a nationally protected monument, especially when the deterioration of original building parts is well advanced. The Olympic Stadium was no exception. One such case was the badly deteriorated but historically valuable western grandstand (1938) that instead of being demolished and reconstructed – as initially suggested by the client – was preserved using a new reinforcement technique with carbon fiber. Today, when we see the conservation work completed, we can only congratulate on this decision (Fig. 7). The smooth texture and slightly transparent appearance of the canopy surface was tested through several sample repairs. The sample repair method was systematically used also in other building parts to test and anticipate the quality of the repair and conservation work.

Another critical testing field for conservation were the original windows and doors. For instance, the reconstruction option was discussed for the preserved original steel windows in the A-block on the third floor, but finally and luckily they were not reconstructed but kept and repaired in Finland by a Finnish steel company – Karkkilan metalli. Likewise, most of the original wooden doors and windows were preserved, carefully unmounted and sent to Estonia to be cleaned and conserved there. Throughout the conversion, despite the gigantic modifications, the emphasis has been on conservation and cautious change.

In the course of the conversion the Helsinki Olympic Stadium received back much of its spatial clarity, which had been lost in earlier changes and transformations. One of the most important examples of this is the new gallery space under the stands, thanks to which the whole building can now be circumambulated on the first floor (Fig. 8). The 1938 elegant entrance aula of the western stand is one of the historically valuable and significant building elements that has received new life through conservation (Fig. 9). Even the original 1938 circular wall can still be found there, inside the later additions (Fig. 10).

Fig. 8 The new gallery space under the stands

Fig. 9 The conserved aula of the grandstand

Conclusion

One characteristic of the Helsinki Olympic Stadium and its history is that it has been continuously changed and modified with temporary and permanent extensions according to changing times and needs. The only permanent thing has been the change itself.

The ongoing conversion of the Helsinki Olympic Stadium is a powerful expression of the capacity not only to reinterpret traditional conservation values but also to make enduring decisions and necessary interventions to keep the National Sports Monument alive. With its enhanced functionality, the Olympic Stadium in its expanded form will

Fig. 10 The original 1938 circular wall inside the stadium building

perhaps serve its original function better than ever before. At the same time, there will still be key spaces, structures and building parts that have been preserved, the most historically significant and strictly protected and conserved being those from 1938. In spite of the massive conversion and interventions – or precisely because of them – the conservation does not only make sense, but it is an indispensable tool for dealing with change in a sensible and historically respectful manner.

Abstract

Das Olympiastadion von Helsinki und sein laufendes Umbauprojekt entsprechen der Konferenzthematik: Das Erbe der modernen Olympischen Spiele. Historische Sportstätten zwischen Konservierung und Konversion. Das schiere Ausmaß des Umbaus geht über alles hinaus, was im Laufe der Geschichte in einem Gebäude geschehen ist, das immerhin ein geschütztes nationales Sportdenkmal ist. Angesichts des unvermeidlichen Wandels stellt sich die Frage, ob Konservierung noch Sinn macht. Ein Charakteristikum des Olympiastadions von Helsinki ist, dass es kontinuierlich durch temporäre und dauerhafte Erweiterungen entsprechend den sich ändernden Zeiten und Bedürfnissen verändert wurde. Das einzig Dauerhafte war die Veränderung selbst. Der laufende Umbau ist ein starkes Beispiel für die Fähigkeit, nicht nur die denkmalpflegerischen Werte neu zu interpretieren, sondern auch nachhaltige Entscheidungen zu treffen, um das nationale Sportdenkmal am Leben zu erhalten. Mit seiner verbesserten Funktionalität wird das Olympiastadion in seiner erweiterten Form seiner ursprünglichen Funktion vielleicht besser als je zuvor dienen. Gleichzeitig wird es wichtige Bereiche und Gebäudeteile geben, die erhalten werden, wobei die bedeutendsten aus dem Jahr 1938 stammen. Trotz des massiven Umbaus und der Eingriffe – oder gerade deswegen – ist die Erhaltung nicht nur sinnvoll, sondern auch ein unverzichtbares Instrument, wie man mit dem Wandel sinnvoll und historisch respektvoll umgeht.

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Fig. 1 Neittamo Oy. MV
Fig. 2 Otso Pietinen, MV
Fig. 3 U. A. Saarinen, MV
Figs. 4, 8, 9 K2S/NRT
Figs. 5, 7, 10 RS
Fig. 6 NRT

Abbreviations

MV The Finnish National Board of Antiquities, Collection and Information Services
RS Author's picture archive
K2S/NRT renderings Architecture Office K2S and Architecture Office NRT

[1] The Winter War broke out on November 30, 1939.

[2] Kairamo, Rakennusvalvonta 2/93, pp. 15–17.

[3] The scoreboard has been replaced by an up-to-date contemporary digital panel system.

[4] Salastie (ed.), Olympiarakennusten korjausperiaatteet, 1996.