

# Redevelopment of Old Industrial Sites as a Resource for Urban Development

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**Key words:** Redevelopment of Old Industrial Sites, Impact Assessment.

## ABSTRACT

The starting point for this presentation is derived from experiences gained from planning old industrial sites in the urban planning of the City of Tampere during recent decades. Tampere is the third largest city in Finland with a population of 190,000 people. Tampere sprang up on the banks of the Tammerkoski Rapids along with the industrial plants established in the area. This presentation will use the planning of the Tampella industrial site as an example. The site is being redeveloped into a residential and working area as part of the city centre. The alternative ways of implementing the site have been studied since 1990 and the latest phase has involved investigation into land-use opportunities in the northern part of the area bordered by Lake Näsijärvi. The plan is for the site to accommodate 3,000–4,000 inhabitants and to provide a working environment for about 1,000 people.

The most important work phase of the planning process was the impact assessment, which included extensive assessment of the environmental, urban planning economic and social impacts of the alternatives. The alternatives were then compared on the basis of the results of the impact assessments. An essential result of the comparison between the alternatives was that a road tunnel implemented at the Tampella site would provide by far the best opportunities to develop the site as an integral part of the city centre. However, it has not as yet been possible to reach a consensus on the financing of the road tunnel and the application for a PPP (Public Private Partnership). The City is not willing to continue planning the site until the implementation of the road tunnel can be guaranteed. The primary objective is to ensure that the implementation of the road tunnel will be possible at a later stage, should immediate implementation not be possible.

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## 1. INTRODUCTION

In Finland, old industrial sites almost invariably have city centre locations. As a result, opportunities to redevelop them are very diverse and they are a significant resource in the development of our cities. This presentation is derived from experiences gained from planning old industrial sites in the urban planning of the City of Tampere during recent decades. The presentation uses the planning of the Tampella industrial site as an example. The site is being redeveloped into a residential and working area as part of the city centre.

Tampere is the third largest city in Finland with a population of 190,000 people. Tampere sprang up on the banks of the Tammerkoski Rapids along with the industrial plants established in the area, and the upper stretch of the Rapids forms an essential part of the history of Finnish industry. The building of the Tampella industrial site on the eastern bank of the Rapids got underway in 1843. Ever since, there have been diverse industrial production activities in the area, the most significant of which have included the linen and engineering industries.



Caption: Location of the Tampella industrial site

The structural change in industry in the 1980's meant a gradual transformation of the use of the 40-hectare Tampella industrial site and the start of the planning of the area's redevelopment at the end of the decade. The alteration of the use of the Tampella site has had far-reaching impacts on the structure, functions and appearance of the city centre. Changes in the city centre's functions, functional priorities, traffic arrangements and cityscape will contribute to the steering of the development of the city as a whole over the decades to come.

## **2. PLANNING OBJECTIVES FOR THE TAMPELLA SITE**

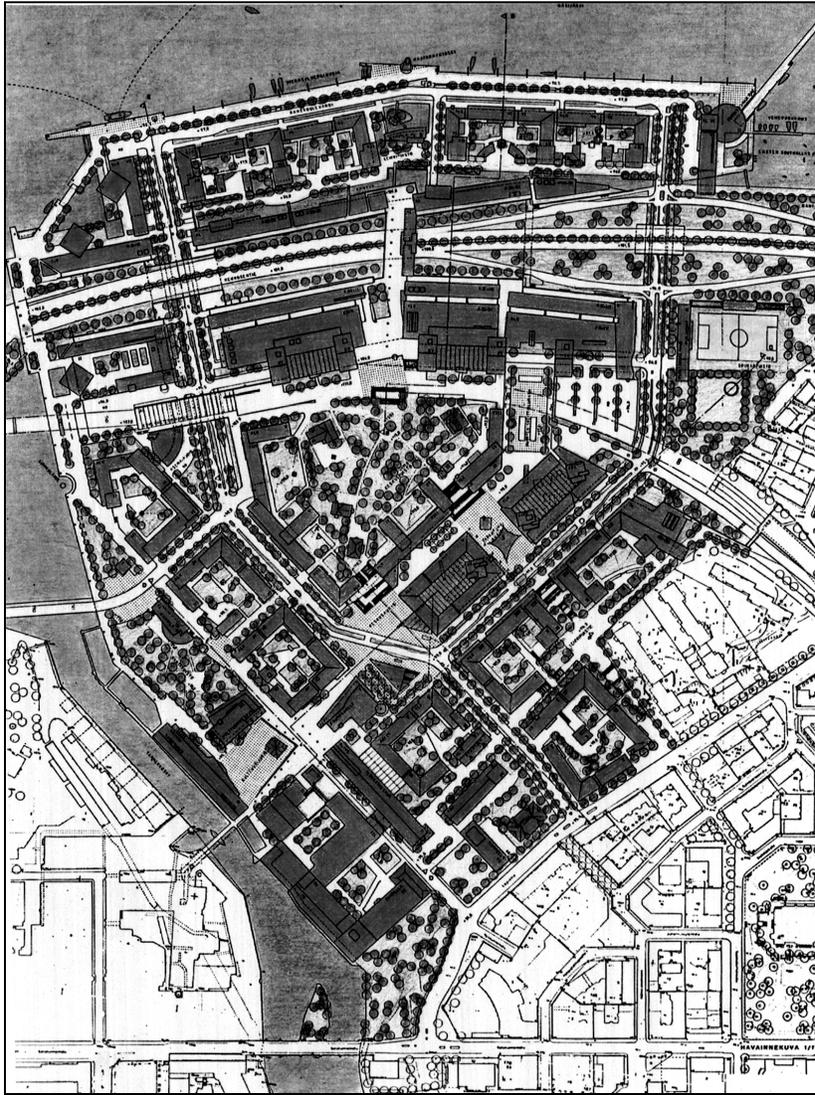
The objectives for the planning of the city centre approved in the strategy of the City of Tampere and in the master plan covering the city centre include the following points:

- To increase the prerequisites for habitation, in particular the habitation of families, in the city centre.
- To increase the opportunities of Tampere city centre as an attractive location for business and commercial activities.
- To improve the pleasantness, healthiness and cityscape in the central environment of Tampere.
- To develop Tampere city centre as a service centre for the metropolitan area that is within easy reach by different means of transport.
- To link changing industrial sites in Tampere city centre as part of the city centre in terms of functions, traffic arrangements and cityscape.

## **3. PLANNING STAGES**

### **3.1 Architectural Competition**

The planning of the Tampella site started with an architectural competition, which closed in 1991. The starting point of the competition was the total gross floor area of 420,000 m<sup>2</sup>, approximately half of which, i.e. about 200,000 m<sup>2</sup>, was reserved for residential use. The competition was won by the proposal entitled 'Shouts or Whispers?' (by architects Keijo Heiskanen and Professor Erkki Helamaa). The verdict of the jury commended items in the proposal such as its successful integration into the existing urban structure, the area's flexible implementation opportunity due to a meticulously defined urban structure, the successful waterfront boulevard solution and the location of high-rise buildings sufficiently far away from the old urban environment.



Caption: Lay out map of the winning proposal of the architectural competition

### **3.2 Master Plan**

On the basis of the architectural competition, master planning work was launched to form a foundation for site planning work and for other gradual alteration of the site. The master plan was completed in 1992. In connection with the master planning process, it was noted that the part of the Tampella site located to the north of the railway required further planning measures, examination of fundamental alternatives and, in particular, investigation of the impacts of the possible construction of a road tunnel. This further investigation project was completed in 1997.

### **3.3 Site Plan for the Southern Part of the Area**

The site plan for the southern part of the area (located to the south of the railway) was completed in 1995 and its solutions were largely built on the principles already presented in

the architectural competition and later investigated in the master planning process. The permitted building volume proposed in the site plan was 200,000 m<sup>2</sup> of floor area for 2,000 inhabitants and 2,000 jobs. Construction of the site then started in 1996.

### 3.4 Site Plan for the Northern Part of the Area

The site planning work for the northern part of the Tampella site started in 1999 with an impact assessment project, which aimed to determine the prerequisites for planning work, the starting points for setting the objectives of future land use and the restrictions influencing the plans. This first stage of site planning work was completed in the summer of 2000, after which financial negotiations relating to the implementation of the area were launched. Site planning work will be completed once the financial issues have been solved.

## 4. COMPARISON OF THE IMPLEMENTATION ALTERNATIVES OF THE TAMPELLA SITE

### 4.1 Initial Alternatives and Their Comparison

The first phase of this process involved the creation of four initial alternatives, in order to determine the guidelines for further planning by comparing them with each other. None of the drafts represented a complete scheme that would form a basis for site planning, but they were intended to facilitate the assessment of the opportunities, properties and impacts of the site. The aspect that has the most essential impact on land-use planning of the northern part of the Tampella site is the approach adopted towards the Kekkossentie road that divides the area.

The initial alternatives were as follows:

- **Park alternative:** In this plan, the Kekkossentie road maintains its current route, splitting the area in two. The Aspinniemi Point is set aside for a high-quality lakeside park between the lake and the office zone.
- **Ground-level alternative:** In the Ground-level alternative, the Kekkossentie road maintains its current route and the noise zone between the traffic routes has been reserved for office and business buildings. The urban structure is extended to the shore of Lake Näsijärvi and there is a waterfront boulevard – this is something that has really been lacking in Tampere – running in front of the ‘buffer’ of buildings forming part of the urban façade.
- **Deck alternative:** The alignment of the Kekkossentie road will remain unchanged in the Deck alternative as well, but it will be covered with a deck structure. By covering this section of the Kekkossentie road, it is possible to reduce its fragmenting impact on the urban structure and to choose residential buildings as the main application for the area. The building masses have been terraced and the residential blocks open out towards the lake in a fan-like pattern, which means that views over the lake can be enjoyed from most flats.

- **D. Tunnel alternative:** In the Tunnel alternative, the Kekkosen tie road dives underground at the site of the Soukkapuisto Park and there is no need to route any inner-city traffic through the lakeside part of the Tampella site. The plan has also extended the construction area into a relatively extensive filling area of Lake Näsijärvi.

In the comparison of the alternatives, it was noted that the Deck and Tunnel alternatives (C and D) were clearly more cost-effective than the Park and Ground-level alternatives (A and B). Consequently, further planning efforts have focused on more in-depth investigation and comparison of the Deck and Tunnel alternatives. At the same time, it was noted that the so-called short road tunnel, which formed the basis of alternative D, would not be a satisfactory solution in all respects – in particular in economic and environmental terms. This is why there has been cause to investigate a solution where the road tunnel alignment would be extended further to the east. The new plan has been entitled alternative E, the ‘Long Tunnel alternative’.

#### 4.2 Final Alternatives

As a result of the comparison between the initial alternatives, the further planning work focused on investigation into and comparison of the Deck and Long Tunnel alternatives. The key planning solutions of the new Long Tunnel alternative (E) included the following aspects:

- The plan extends the co-ordinate system and semi-open block structure used in the site plan of the area south of the railway to cover the part located to the north of the railway.
- The treatment of the shoreline resembles an urban park
- The intended average height of buildings is 6–8 storeys.

The following numerical data illustrates the alternatives included in the last phase of the planning work:

<b>Alternatives</b>	<b>C. Deck</b>	<b>E. Long Tunnel</b>
• Dwellings, floor m <sup>2</sup>	91,300	130,000
• Office and business space, floor m <sup>2</sup>	47,500	20,000
<b>Total, floor m<sup>2</sup></b>	<b>138,800</b>	<b>150,000</b>
• Dwellings	1,200	1,700
• Inhabitants	2,700	3,700
• Jobs	1,600	700



Caption: Deck alternative



Caption: Long tunnel alternative

### 4.3 Impact Assessment and Comparison of Alternatives

According to the Land Use and Building Act, when drawing up a plan, the environmental, urban planning economic, social and cultural impacts of the implementation of the plan shall be sufficiently investigated. The impact assessments have been divided as follows:

- I. Impacts on the environment
  - cityscape, urban structure
  - filling up of water areas, water ecology
  - polluted land areas
- II. Impacts on the urban planning economy
  - perspective of the municipal economy
  - overall economic perspective
- III. Impacts on people
  - Social impacts
    - from the viewpoint of the inhabitants of the planning area and adjacent areas; from the viewpoint of people visiting central Tampere
    - quality of the living environment, pleasantness, likelihood of social problems
  - Cultural impacts
    - the planning area as part of Tampere city centre, the city's image
  - Traffic-related impacts
    - noise
    - emissions
    - road safety
- IV. Other impacts
  - impacts during the construction phase

All the impacts described above have been assessed in terms of each alternative and the alternatives have also been compared with each other. At the same time, this has involved the determination of the significance of the impacts and the drawing up of a summary of the most significant positive and negative impacts and the risks and uncertainties related to the assessments.

The following matrix presents the summary of the most significant impacts:

TAMPELLA SITE PLAN IMPACT ASSESSMENTS		Summary of the most significant impacts	
	C. Deck alternative	E. Long Tunnel alternative	
<b>+</b> <b>positive impacts</b>	<ul style="list-style-type: none"> <li>Supports the residential objectives of the city centre well, depending on the solution.</li> <li>Cost-effective as a residential area and as an office and business area in terms of the urban planning economy.</li> </ul>	<ul style="list-style-type: none"> <li>The best solution in terms of the urban structure; forms an integrated and balanced whole together with the southern part of the site, linking to the city centre in a natural manner.</li> <li>The most favourable solution in terms of the development of the cityscape.</li> <li>The smallest vehicle mileage; cost-effective in terms of the urban planning economy.</li> <li>The Kekkosen tie road area will be released for construction purposes.</li> </ul>	
<b>-</b> <b>negative impacts</b>	<ul style="list-style-type: none"> <li>Problematic in terms of the cityscape; the highest number of deck structures and changes of levels, which produce a maze of 'below-deck' areas.</li> </ul>	<ul style="list-style-type: none"> <li>Requires a considerable 'threshold cost', i.e. the implementation of the road tunnel in the early stages of the construction phase.</li> </ul>	
<b>?</b> <b>risks, uncertainties</b>	<ul style="list-style-type: none"> <li>Requires careful planning and high-quality construction to prevent a negative image.</li> <li>The pedestrian and bicycle traffic environment is problematic.</li> <li>Accidents on the Kekkosen tie road under the deck.</li> </ul>	<ul style="list-style-type: none"> <li>Financing of the road tunnel.</li> <li>Tunnel mouths present a problem in terms of the cityscape.</li> <li>Accidents in the road tunnel.</li> </ul>	

#### 4.4 Conclusions from the Comparison between the Alternatives

The impact assessments and the comparison between the alternatives resulted in conclusions and recommendations for further measures. All impacts considered, it was assessed that the Long Tunnel alternative would be the most advantageous in terms of its overall impacts. This alternative is the only one that fulfils criteria for both the urban structure and the cityscape set in the planning objectives of the city centre. The Long Tunnel alternative is based on a road tunnel, which involves construction costs of about €50 million, based on preliminary reports. The construction of the tunnel will be scheduled at the initial stages of the implementation of the entire area, which means that this investment will form a considerable 'threshold cost'. Organising the financing for the tunnel is an essential issue in terms of the feasibility of this alternative.

However, the road tunnel would not only serve the Tampella area, but it would be a significant solution for Tampere city centre as a whole in terms of its urban structure and cityscape. The Kekkosen tie road, with a traffic volume that will exceed 50,000 vehicles per day in the future, separates the lakeside area from the rest of the urban structure, while also presenting a disadvantage in terms of scenery and the cityscape.

The construction of the road tunnel would lead to the elimination of the adverse effects on the urban structure and the cityscape caused by the Kekkosen tie road, as well as those related to traffic noise and emissions. At the same time, the city centre would be naturally extended up to the Lake Näsijärvi shoreline and the tunnel would restore a direct functional connection to the lakeside areas. Consequently, the implementation of the tunnel would support the traditional identity of Tampere and the solution would have a significant impact on the city centre as a whole, on the development of its cityscape and on its pleasantness.

## **5. FURTHER MEASURES**

In terms of the site planning of its northern part, the planning process of the Tampella site has been suspended. The first stage of the site planning work – impact assessments and comparisons of the alternatives – was completed towards the end of the year 2000. The City then started negotiations on the division of the costs of the road tunnel and other infrastructure investments as well as on their financing. In addition to the City, the most important parties in the implementation of the area include the owner of the site (a construction company) and the State of Finland, which is responsible for the road dividing the area.

The most essential issue in terms of the implementation of the area is the financing for the construction of the road tunnel. The construction costs of the road tunnel amount to about € 50 million. From the State's perspective, the traffic conditions or their development do not require a road tunnel for the Tampella site. The need to build the tunnel is primarily based on land-use development needs and on considerations related to the urban structure and the cityscape. For this reason, it is likely that the construction costs of the tunnel will have to be covered either by the land owner or by the City, or by both parties together.

For the time being, it has not been possible to reach a consensus on the financing of the road tunnel and the application for a PPP (Public Private Partnership). The City is not willing to continue planning the area until the implementation of the road tunnel can be guaranteed. The primary objective is to ensure that the implementation of the tunnel will be possible at a later stage, should immediate implementation not be possible.

## **6. SUMMARY**

The redevelopment of the old Tampella industrial site to form part of the residential, office and business area of Tampere city centre is one of the most significant projects in terms of the development of the entire city. The alternative ways of implementing the area have been under investigation ever since 1990 and the latest phase has involved investigation into land-use opportunities in the northern part of the area bordered by Lake Näsijärvi. The environmental, urban planning economic and social impacts of the alternatives have been broadly assessed and the alternatives have been compared with each other.

An essential result of the comparison between the alternatives was that a road tunnel

implemented at the site of the Tampella area would provide by far the best opportunities to develop the area into an integral part of the city centre. The road tunnel would eliminate the adverse effects of the Kekkosen tie road on the urban structure and the cityscape as well as those related to traffic noise and emissions. The solution would have a considerable bearing on the entire city centre, on the development of its cityscape and on its pleasantness.

Implementation of the road tunnel will require joint efforts from different parties – the City, the land owner and the State. For the time being, negotiations have not led to a decision about the conditions for the implementation of the area and about the division of costs and benefits between the parties.

## **BIOGRAPHICAL NOTES**

**Mr. Pertti Tamminen** was born in 1950 and graduated from the Department of Surveying at Helsinki University of Technology in 1975. Since 1976, he has been employed at the Tampere Branch Office of Plancenter Ltd. as a planner and project manager in town and land-use planning tasks. Plancenter Ltd. is an international consultancy office, which provides a wide range of services and is the largest in the fields of town planning and land-use planning in Finland. Since 1985, Mr. Tamminen has been Head of Branch Office. His tasks have included extensive master planning and urban planning projects both in the capacity of planner and project manager. He specialises in master planning and town planning economic issues, and has worked as a consultant to major Finnish cities and to the Ministry of the Environment in diverse planning and research projects.

Mr. Tamminen is member of the Finnish Association of Consulting Engineers (SNIL), the Finnish Association of Surveyors, the Finnish Association of Urban and Regional Planners, and the Finnish Association of Environmental Impact Assessment.