

A Great Utopian and Sharp-eyed Observer – Architect Olavi Laisaari and his Plans and Planning Theories in Post-war Finland, especially in Lahti

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The post-war times in the late forties and early fifties were a special era in Finland. The heavy and traumatic war was over. It had ended in an enormous defeat with territorial losses and war reparations but it had also united the Finnish people in front of the common enemy.

People worked hard for reconstruction. The time was full of hope and joy of life. Many cultural fields experienced powerful and creative regeneration, especially Finnish literature, design and architecture. This was also an era for great urban plans and utopias. For example Tapiola, a celebrated Finnish garden city was planned and built in the forties and fifties.

Among the famous Finnish urban theorists and planners there was a less known architect Olavi Laisaari who made his civil career in three towns, Vyborg, Lahti and Turku. In addition to this he made several plans for other towns and boroughs in Finland in the years 1935 - 1970. During these years and especially after them he devoted himself to sciences and published articles dealing for example with the growth of urban centres and traffic problems.

Laisaari was a thoroughbred functionalist who regarded practicality, fluency of functions and utility principles as the most important values in planning. If the plan did not fulfil these demands, it was not beautiful either. But occasionally his plans also turned to utopian visions that had nothing to do with reality and everyday life. The Lahti general plan from the year 1949 included for example four airports, two new railway stations, highways which were broader than anywhere else in Europe, the multiple functions of the port as well as wide industrial areas around the whole town. There were 38 000 inhabitants in Lahti at that time.

My paper deals with Laisaari's visions particularly against the background of the atmosphere of the post-war time, an era of great optimism and conviction of bright prospects ahead.

1 Post-war Finland

The Second World War was a complex turning point for Finland. It caused irreplaceable mental and material losses, far-reaching trauma and a new political and social balancing act but also a profound cultural revival, artistic bloom and internationality.

The war began in autumn 1939 when the Soviet Union attacked Finland. The first phase of the war is called the Winter War. After a short period of peace the Continuation War broke out and then the Lapland War. Peace came after difficult negotiations in the year 1945, which marked the beginning of reconstruction in Finland.

More than 90 000 Finnish people lost their lives in the Winter, Continuation and Lapland Wars. That was about 2.5 percent of the population. Almost 190 000 people were wounded and over the quarter of them was invalidated for the rest of the life. The peace conditions included wide area assignments and rental areas for the Soviets. They were about 12 percent of the total area of Finland, population and timber stocks. Resettling the evacuees also required enormous efforts and called for a lot of money, ingenuity and adaptability. After the war Finland paid 15 percent of its budget to the Soviet as war indemnities annually, mainly in the form of mechanical engineering. In the last years the sum decreased to five percent. During the war and for almost a decade thereafter the economy was dominated by the state of emergency, different restrictions, purchase cards and the black market. It is typical that for instance in the year 1946 only one tenth of the building permits were admitted for stone buildings because there was a huge lack of steel used to reinforce concrete. The use of purchase coupons finally came to an end in 1954 when coffee was released from regulation.¹

Those were hard times but common difficulties increased the feeling of solidarity. The war indemnities were a heavy task that united the people and proved a blessing in the end. More capital, labour and technical innovations were directed to the wood processing industry than would have been allocated there in normal times. The economy began to recover rapidly. New consumer products, such as cars and household appliances, came onto the market and Finnish people began to get acquainted with more versatile foods in addition to the basic ingredients like corn, potatoes and milk. Consumption got a completely new meaning during and after the depression. Also the concept of leisure time and how to spend it took new forms when cars, record players and televisions were no longer beyond the budget of most people.²

In the years 1944-1950 the so-called big age groups were born in Finland - that is age groups that are decidedly bigger than the former and the latter ones. In Finland the post-war age groups were proportionally bigger than in other parts of the world. This phenomenon is explained by the recovery after the war and new courage of life.³

Home and family dominated life in post-war Finland. There was a real home cult that was common to all social classes. The number of marriages increased. The state saw family as the core of society and contributed to its welfare for instance by passing a number of family laws and creating the child benefit system. Cosiness and home-like comfort were the dominating themes in housing construction and efforts were made to ensure children healthy and safe surroundings. A clean and peaceful countryside was regarded a better living environment than a noisy and dusty town.⁴

The American way of life gained ground especially in the entertainment. During the war and throughout the 40's the foreign exchange regulations were tight and when they were cancelled, the barriers preventing the avalanche of mass culture disappeared. After the war two thirds of the movies came to Finland from the US, and Finns were really eager to go to the cinema. The three quarters of the TV program imports came from the US, and especially the commercial TV channel that was founded in 1957 favoured American series.⁵ Donald Duck and The Readers' Digest were the most-read American magazines in Finland and through them the

American way of life, everyday phenomena and products became familiar to Finns. The American heroes of newspapers and magazines like The Superman were popular.⁶

Internationalisation had other shades as well. The year 1952 marked a turning point in internationalisation with the Olympic Games being held in Helsinki and the Finnish Maid, Armi Kuusela being crowned Miss Universe. In honour of the Olympic Games there was a massive media happening where the Mayor of Helsinki and the chairman of the organizing committee of the games, Mr Erik von Frenckell drank the first bottle of Coca Cola in Finland. The sports event and the world success of Finnish female beauty were important inspirers of self-esteem in post-war Finland.⁷

Finnish artists became well known in the Western science and art world. Especially the 50's were a time of victories but as early as 1945 the Nobel Prize in chemistry brought publicity for Finland and of course for the winner himself, A. I. Virtanen.⁸ Applied arts rushed to Europe with the conscious background of a national mission: it had to be shown that Finland was a mental winner of the war. The triennials of Milan in the 50's were a success. Architecture, and especially Alvar Aalto, created Finland an image of a creative individual culture.⁹

Post-war Finland was at the dawn of a new day. After the war people had high hopes of the future, hopes that they believed could be fulfilled. Joy and the faith in life returned.

2 Lahti in the 40's and 50's

When peace returned, there were about 38 000 inhabitants in Lahti. Almost 10 000 of them were evacuees, who had come from the areas ceded to the Soviet Union. They came just to Lahti because there had traditionally been active connections between Lahti and eastern Finland since the 1860's, when the railway to St. Petersburg was built.¹⁰ The Mayor stood at the railway station persuading possible inhabitants and especially companies to Lahti from the evacuee trains passing by.¹¹ The volume of new constructions needed after the war almost equalled that of the decades preceding the war. During and immediately after the war the number of the inhabitants in Lahti grew more quickly than in any other town of about the same size in Finland.¹²

The post-war increase in the number of inhabitants was enormous and it caused big problems in the town. The shortage of flats was severe: in the most difficult times people had to be settled even in outbuildings. People lived in the town as they did in the country: they kept cattle in and mostly grew useful plants in their garden plots. There was also lack of sites for public, business and industrial buildings. The evacuees brought with them for instance 119 shops and factories, two hospitals, three insurance companies, a chamber of commerce, several basic and vocational schools, institute of music, museum collections and sports and other clubs.¹³ The number of the business enterprises doubled.¹⁴ All of them needed premises.

There was an acute shortage of building materials and it was not easy to find any substitute materials. The municipalities had to manage on their own because the supportive actions of the state were directed to Lapland, which had been destroyed by the Germans.¹⁵

Town planning was in confusion. The planning systems and the profession of architect were quite young and unsettled in Lahti. There had been some private architects for short periods in Lahti but the town recruited one only in 1929 when there was a very vivid construction period and the town elders had to face the fact that there was no purposeful land policy, reliable building instructions nor professional, artistically high level town planning in Lahti.¹⁶ The town architect got down to work and began a powerful developing period in town planning. In 1945 a planning architect was employed and he began to clear the planning chaos that had resulted from the war.¹⁷ The increase in professional labour was quick: in 1947 the town employed five

architects and there were also three private architects in Lahti.¹⁸

A lot of plans had piled up and that is why the plot delivery had almost stopped and the town could not react to the demand for plots.¹⁹ Some one-family housing areas had already been planned as if in panic during the interim peace and immediately after the war. For instance the gift houses that the Swedish sister city, Västerås, gave to the suffering town had to be situated. Some suburbs were built in a hurry in areas where the town owned the land but where the soil was not suitable for construction. Housing estates were erected without any services and with defective surroundings for a long time. They were situated scattered and separate from the town centre. The law on plot delivery which had been passed after the war to serve as a basis for the resettling work, confused town planning because the free land was given to the evacuees who were entitled to obtain land. There was not enough land for the others. Because of the law some land had to be delivered for instance for cultivation from areas which were not good for it in the light of the general plans and which later hindered planning and construction.²⁰

3 The 1946 general plan of Lahti and the new townscape

As his first assignment town planner Olavi Laisaari was to draw up the first general plan of Lahti. The project was modern because in Finland general planning was quite unstable, new and obviously unpopular at the time. It is said that in Helsinki University of Technology untalented students were advised to seek a career as planners.²¹ Laisaari himself said that he had only five colleagues in Finland.²²

The first planning professorship is young, too: in Helsinki University of Technology the chair had only been founded in 1940. It was held by Otto-livari Meurman, "the father of Finnish planning". His book called Town Planning was published in 1947 and became a classic. Some general plans had already been made in the 40's, for instance the regional plan of Kokemäki lower course in 1942, the general plan of Rovaniemi, which had been destroyed by war, in 1945, both by Alvar Aalto, the very effective reconstruction plan of Vyborg in the early 1940's by Otto-livari Meurman, and the overall land plan of Helsinki from the mid 40's. Laisaari knew Meurman's plan well because he had to evaluate it during the war when he was the town planner in Vyborg. As a planning method the general plan had not been researched extensively and the municipalities had not been very eager to the challenges of general planning.²³ The architects with Otto-livari Meurman as their spokesman demanded, however, that it was just their task, right and duty to take care of the post-war reconstruction and planning of the damaged communities.²⁴

The first task of the Lahti general plan was to draw up population growth estimate. Because the plan had to be ready very quickly, other preparatory work was limited. Preparatory studies had not been carried out nor was there time to perform them during the work. Town planner Laisaari used general sources and common principles of planning in his work. There had not been time to assess their suitability for the circumstances in Lahti. The plan was finished in summer 1946 after barely more than one year of work.²⁵

Laisaari considered that Lahti would at least double its population in over thirty years. So the target number of inhabitants was set at 80 000, which the planner considered to be the number the town would certainly reach. The target had to be realistic because the town could not be left half-completed and scattered for a long time. Laisaari pursued a compact, "always ready" community with efficient municipal engineering evolving around the centre.²⁶

An exceptionally big part, some 50 per cent, of the inhabitants in Lahti worked in industry, when the corresponding number for the country as a whole was only 25 and for towns one

third. Laisaari estimated that the share of industrial workers would stay the same in Lahti. Most people, a good quarter of the industrial population worked for the sawmill and wood processing industries. About a fifth of them worked in engineering industry and their number seemed to grow most effectively. The development prospects of industry were reflected in the general plan as enormous area reservations. The objective was to surround the city centre with industrial zones in the north, west and east and to have fluent traffic connections to highways, railway, harbours and airports. Laisaari thought that industry would require proportionally wider areas in the future because mechanisation and production increases would increase demand. The small scale industry was situated near the population around the town. The traditional small workshops and repair shops were doomed to disappear as an undesired phenomenon.²⁷

The area needs of the traffic were estimated to grow continuously. Lahti had developed from a little main street village to an industrial centre just because of the traffic policy decisions of the 1860's. The railway to St. Petersburg had been lined through Lahti and the canals of the lakes around Lahti had opened the northern parts of Finland for the timber transports. This was the beginning of the sawmill industry, which continued to grow into the 1940's when more land area was allocated for it.

Since old times the harbour had been in a favourable location, not too far from the centre. The area was allowed its extension. The railways were seen to be the future form of transport and new railway yards were expected to be needed. The area reservations amounted to over one hundred hectares. Also highways were needed for the increasing stock of cars. But air transport was considered to be the main traffic form by 1980. That meant four airports for a town of 80 000 inhabitants, one for international flights, one for domestic ones, one for the cargo and one or more for the helicopters, all of them as near to the centre as possible. Trolleybus traffic was thought to cover the centre, five routes which would split the centre and a circular-one connecting the others.²⁸

The centre was reserved for business and its immediate surroundings for public buildings. The idea was that most of the inhabitants, about 70 per cent, would move away from the city and the families would live in the suburbs called daughter towns. Effective services like schools, kindergartens, youth clubs, libraries, cinemas, club houses and parish centres would be organised there. The parks required large area reservations because they had to be situated near the inhabitants. The playgrounds for little children had to be built at the most 400 metres from the blocks of flats and the play grounds of schoolboys and girls 600 metres from them. There had to be so many play grounds that nobody had to walk more than 1200 metres. Also beaches, camping areas and allotments were needed. A total of four theatres were expected to be needed but only one museum. The daughter towns were individual entities that were intended to be scattered around the city.²⁹

The idea was to modernise the townscape completely. The town of that time had developed from a little village that burnt down in 1877. The following year a new town was drawn up along the same principles. The plan was a modest grid that included 22 quarters and their 113 plots. After a relatively short wooden house phase, a stone town grew that was allowed to develop quite peacefully and steadily about half a century. Thanks to its favourable traffic connections Lahti attracted a lot of industry.³⁰ It was traditionally situated a little separate from the centre but in its immediate vicinity. Outside this zone there were the one-family housing areas that were quite scattered as well as some farmhouses.

The typical qualities of a town and townscape like the square plan of the centre with its buildings and the various industrial areas around it were meant to be changed with new planning into a modern effective town as the slogans of the time were. Laisaari propagated strongly for the new architecture. He was of the opinion that the width of a street should no

longer dictate the height of the houses along it. Other factors, especially economic ones had to be settled before it. The town architecture that had come to Finland in the late 1800's, the solid stonewalls and closed quarters, had to give way to separate houses.³¹ The corner plots were not allowed more building right than the middle of the quarter and so the traditional highpoints of the streetscape were abandoned. The lighting conditions of the streets could be improved by forbidding wings toward the yards and the houses were drawn slightly away from the street line. The greater the distance of the houses from the street line the higher houses were allowed to be built. All in all the light conditions of the flats were paramount and they had to be one of the foremost things in planning.³²

The townscape changed, too. The old centre of Lahti was based on the hierarchy of the square plan and the main streets. The business street built on a medieval road and the so-called ceremony axis, which connected the main church and the town hall, were the broadest, about 30 metres. The streets that marked the limits of the square plan and the street in front of the church were about 24 metres and the other streets 15 metres. Naming them after the ruling couple of the planning time, namely Russian tsar Alexander II and tsarina Mary, had put a special emphasis on the significance of the main streets.³³ Laisaari thought that the square plan was not functional, old-fashioned and ugly. A modern town could not be built on an old plan.³⁴

Architect Laisaari expected enormous invasion of motor cars. The roads and streets had to be widened and parking areas had to be increased considerably. the widening of the streets began in Lahti in the early 50's. Laisaari was already in Turku at the time and worked as a town planner. He reported on the widening of the streets there: it was possible to obtain from three up to nine metres more street area. The loss of building right was compensated by adding the building height. Laisaari said that the street area could look wild but it was a necessary phase in historic development.³⁵ Laisaari was strict in his opinions. He thought that the objective set had to be achieved and no compromises would be allowed.³⁶ The development in Lahti was the same as in Turku. Many heterogeneous street areas developed at that time and it has not been possible to repair them because two decades later those old buildings had become objects to be protected and that prevented uniform street widths.

Laisaari thought that cars needed more space and the town had to be more spacious. According to Laisaari the result would not be very aesthetic but he stated it would be even more disproportionate in scale than an Empire town but functionality had to be guaranteed. Old buildings and their overloaded yards had to be removed for the most part but in some cases the valuable facades could be saved. The planner thought that the price was high: efficiency requirements make the life-cycle of a townscape short and quickly changing. The local features of the towns disappear.³⁷

When Laisaari gathered his life work as a synthesis to his licentiate's and doctor's dissertation in the 60's, he wrote that buildings more than forty years old had to be demolished and the space be taken up by a business centre. A pearl of its time gets helplessly old and in its new surroundings it is nothing but garbage. The loss of cultural values could be replaced with the benefits of a new effective and functional town.³⁸ Laisaari thought that Lahti was not even very old. It had developed rapidly and its roots were quite different from the semi-agrarian surroundings that were still so typical in post-war Finland. Laisaari said that at that time there were many people in Lahti who had seen all its development phases and a town like that could not have great cultural significance in Finland.³⁹ Old buildings had to give way. The 50's and 60's were an era of considerable demolition and reconstruction in Lahti.

The city centre also changed especially in its outskirts due to new roundabouts, or 'twists' as they were called in Lahti. There was heated debate about them in the newspapers because the citizens thought they were extravagant and inconvenient in a small town. Especially the mayor of the time was very keen on roundabouts. He had seen the traffic systems in Central Europe on

his summer holiday in 1949 and he wanted to adapt them to the circumstances in Lahti. He especially liked the London underground but he did not hope to have one in Lahti. But the roundabouts really were the basis of a traffic system in a new urban town. If the Parisians and Londoners relied on them, they have to be good enough for Lahti, he stated in a newspaper interview.⁴⁰ The biggest roundabout soon got the nickname 'Kajala's Cabbage Patch' after the mayor.

Laisaari thought that there had to be a lot of parks in a town, about 60 square metres per inhabitant.⁴¹ He proposed for instance that a little lake cove and its surroundings situated to the west of the centre would be planned as a park and recreational oasis. It had earlier been sewer drainage outlet. It should be equipped with promenades, play grounds, boats and ball parks.⁴² This idea was put to practice in the early 50's and this park is nowadays one of the most popular recreation areas among the citizens of Lahti.

Also the mayor was in favour of parks. He had seen a lot of them during his trips abroad and reported in the local paper that in London a lot of attention had been paid to the satisfaction of the inhabitants especially by increasing the number of playgrounds. The townscape in Paris was the most beautiful he had ever seen. He said that it was one big art collection because there was extensive co-operation between architects and sculptors.⁴³

Many parks were built in Lahti in the 50's and by the beginning of the 60's the park area per capita was the largest in Finland.⁴⁴ Public art such as sculptures and fountains were bought more than in any other decade earlier or later. The image of the town as a whole was an object of concern and interest shared by the mayor and the town planner, which gave visible results, too.

Laisaari thought that townscape should not be an entity of ideal buildings achieved by an ideal town plan but a product of economical and functional planning. It was the buildings from quite different eras that caused the problem. To solve this, the town plans should be made for such small area that they would be realized soon enough not to get out of date.⁴⁵ According to Laisaari the town was a means to an end in the same way as a car, telephone or a house.⁴⁶

4 Olavi Laisaari as a town planner - background and sources of inspiration

After the war against the Soviet Union, Finland turned to the west in its search for town planning models.⁴⁷ Many researchers have pointed out that especially Lewis Mumford's book *The Culture of Cities*, published in 1938, had a great impact on Finnish planners. The book became known in Finland after Otto-livari Meurman had introduced it in the professional magazine of architects in 1942. The book was translated into Finnish in 1949. The suburb theory and daughter city idea were applied in Finland after Mumford and Meurman, who developed Mumford's ideas; with Tapiola as the best known example.⁴⁸ It is also possible that these ideas came to Finland indirectly as a result of Finnish architects' journeys abroad because Mumford's book had a great impact in the post-war Europe as a whole.⁴⁹

Architect Alvar Aalto's regards from his journey to the US in 1941 were also a novelty in Finland. Their impact on post-war planning has been strongly emphasized. Aalto suggested a city model based on spaciousness and closeness of nature. The model was an intermediate form of urban and country-side community. Also architect Viljo Revell's American impressions were important.⁵⁰

The Swedish example was obviously effective. Finnish architects made study visits to the neighbouring country and Laisaari took part in them. The architectural exhibition in Stockholm in 1930 was a breakthrough of Swedish modernism and many Finnish architects got acquainted with it, for example Laisaari. Le Corbusier pointed out the ideas of modernism also in the

reorganization plan of Stockholm in 1932-1933. He proposed that the old town structure would have been demolished almost completely and it had been replaced by scattered multi-storey towers. The plan was not realized.⁵¹ The Swedish enthusiasm to adopt American models of community planning was great in the 40's and 50's. Swedish architects' inspiration sources can be seen in the suburbs, traffic plans and for instance in Europe's probably first skyscrapers, 'Kungstorns', in Stockholm.⁵² Swedish architecture may well have been one of the most important impulses to their eastern neighbours.

The Soviet town experiments were also well known in Finland, although they did not at least become conscious models for post-war Finnish planners. The most imposing descriptions of the Soviet megalomaniac community planning were written by Göran Schildt, a good friend of Alvar Aalto's, who had a personal opportunity for a rare visit to the Soviet Union in 1953. The theoretical models put into practice made an impression through their utopia.⁵³

Olavi Laisaari himself pointed out that his ideas were based on the theories of German Bauhaus. He said that he knew Bauhaus so well that no information concerning it was new to him. Everything had to be modern, also the thoughts, the architect said and shared here the Bauhaus idea of the relation between man and time. Tradition as a connector of the past and future was strange to Bauhaus. Laisaari also greatly admired the US and the Americans way of life. The Stockholm architectural exhibition in 1930 made a great impact on him. Laisaari also visited Estonia some times in his youth. Its strong 1930's functionalism was inspiring.⁵⁴

The Bauhaus theories of light, air and vegetation may be seen most clearly at the background in Laisaari's planning ideas. The new functionalist model of the town house with its low business wings and high towers of flat, the parks and the demands for wide planning were based on the Bauhaus planning ideals. Laisaari certainly knew Le Corbusier's theories because he had been introduced in the Finnish trade papers. Le Corbusier's book *Manière de penser l'urbanisme* was published in 1946. It did not probably spread among Finnish architects in its original language as French was not spoken widely in Finland. The ideas of the book were instead known through magazines. Laisaari often uses the same terms as Le Corbusier in his writings.

Growth and new construction began to become an end in itself and ideal for public image in Lahti. The town engineer described Lahti and its construction in his own trade paper in 1943: "... the end result is the modern town of Lahti, a youth boasting in sixth place in the order of size among Finnish towns".⁵⁵ The Americanisation that had been descriptive of Lahti from the 30's became an ever more characteristic feature which was developed purposefully. For more than half a century Lahti was the youngest of the Finnish towns. Beside this egoistic and pimply-faced boy struggling in his puberty - as the town has been described later - the old towns certainly seemed authoritative but also helplessly old-fashioned. This image was regarded as important and one worth exploiting.⁵⁶ The political parties were confusingly unanimous in this matter.⁵⁷ The growth and youth had to be seen in the townscape. It renewed strongly after the war and Lahti became a stone town finally.

The late 40's and the 50's were the golden era of Lahti. People dreamt, created new, made their dreams come true and built purposefully. At times the dreams could reach utopian proportions but the new ideologies and the optimism after the traumas of war, joy and desire of living explain the exaggerations. Many researches have stated that the wake of the war and the growth expectations caused megalomaniac visions. Foreign models were applied without criticism and the Finnish living and natural circumstances and limited urbanization would not have required community-planning solutions developed for bigger and more urbanized surroundings. The planning skills of Finnish architects were clearly insufficient and the foreign ideas were not analysed sufficiently in the ecstasy of new life. People thought that modernism was a synonym to progress.⁵⁸

It is interesting that as late as in the 80's the cover of the book called The History of Lahti shows a 'twist', the big roundabout in the junction of the southern entrance road and the city with a typical element house of the 60's next to it. This house is a tower with a well and a low business wing along the street, both characteristic features of the new post-war planning ideology and construction. The town hall by architect Eliel Saarinen built in 1912 that has become an established symbol of the town over the decades stands very small in this picture in the horizon.⁵⁹

- 1 Mansner 1992, 200-201; Tarkka J. 1992, 195, 199-200; Tarkka J. - Manninen 1992, 148.
- 2 Jalonen 1985, 170; Maula, Johanna 1995, 12-16, 23-27, 30, 35; Tarkka J. 1992, 210.
- 3 oral information, Antti Karisto 25 Nov 2003.
- 4 Auvinen 1991, 187-188; Jallinoja 1984, 49-50, 60.
- 5 Jalonen 1985, 54-56, 60, 170, 182; Knuuttila 1992, 117-118.
- 6 Knuuttila 1992, 119, 121; Niskanen 1996, 145.
- 7 Karisto - Takala 1990, 43; Knuuttila 1992, 118-119.
- 8 Leikola 1992, 151.
- 9 Tarkka P. 1992, 189, 192.
- 10 Laisaari s.a., 7; Turpeinen 1980, 124-126.
- 11 oral information, Marja Huovila 25 Nov 2003.
- 12 Niemi 1958, 525, 527.
- 13 Huovila 1996, 9, 64, 67-70, 73-81.
- 14 oral information, Marja Huovila 25 Nov 2003.
- 15 Järventaus 1967, 441.
- 16 Kertomus Lahden kaupungin kunnallishallinnosta vuonna 1929 1931, 17-18.
- 17 Kertomus Lahden kaupungin kunnallishallinnosta vuonna 1945 I 1948, 291-292.
- 18 Laisaari 1947, 117.
- 19 Kertomus Lahden kaupungin kunnallishallinnosta vuonna 1945 I 1948, 291.
- 20 Laisaari s.a., 17; Niemioja 1949, 257-258.
- 21 Maula, Jere 1992, 179.
- 22 oral information, Anu Mansikka 12 Sep 2003.
- 23 Maula, Jere 1994, 111-113; Meurman 1976, 110; Meurman - Huovinen 1989, 173; Salokorpi 1990, 32; Schulman 2000, 33.
- 24 Korvenmaa 1992, 115.
- 25 Laisaari s.a., 2-3, 52.
- 26 Laisaari s.a., 8-9.
- 27 Laisaari s.a., 10-11, 19-23.
- 28 Laisaari s.a., 23-25, 45.
- 29 Laisaari s.a., 28-30; Niemioja 1949, 257.
- 30 Janhunen 1943, 46-47.
- 31 Laisaari 1939a, 175.
- 32 Laisaari 1937, 173-174.
- 33 Niskanen 2000, 9.
- 34 Laisaari 1962, 81.
- 35 Laisaari 1957, 373.
- 36 Laisaari 1962, 35.
- 37 Laisaari 1962, 25-26, 35.
- 38 Laisaari 1962, 26; Laisaari 1969, 69, 189-190.
- 39 Laisaari 1947, 117.
- 40 "Krinkuloitu liikenne yleistä ulkomaiden kaduilla", Lahti 14.8.1949.
- 41 Laisaari s.a., 28.
- 42 Kertomus Lahden kaupungin kunnallishallinnosta vuonna 1946 I 1948, 502-503.
- 43 "Ruotsi kunnallishallinnonkin mallimaa", Etelä-Suomen Sanomat 14.8.1949.
- 44 Niskanen 2000, 60.
- 45 Laisaari 1939b, 30-32.
- 46 Laisaari 1962, 92.
- 47 Sundman 1991, 85-86.
- 48 Hall 1991, 251-252; Kairamo 1998, 65; Maula, Jere 1994, 111; Salokorpi 1990, 32; Sundman 1991, 86, 89.
- 49 Ward 2003, 93.
- 50 Kairamo 1998, 65; Maula, Jere 1994, 111; Sundman 1991, 88.
- 51 oral information, Tarina Lounasmaa 8 Sep 2003; Rudberg 1998, 182, 184.
- 52 Ward 2003, 94.

- 53 Schildt 1954, 50-60.
- 54 oral information, Tarina Lounasmaa 8 Sep 2003; Lehtonen 1997, 12.
- 55 Janhunen 1943, 51.
- 56 Karisto 1990, 12-13.
- 57 Anttila 1980, 193.
- 58 Hall 1991, 251; Maula, Jere 1994, 109; Nordin 1980, 59; Ward 2003, 84.
- 59 Anttila - Heikkinen - Pihkala - Turpeinen 1980 (the cover).

