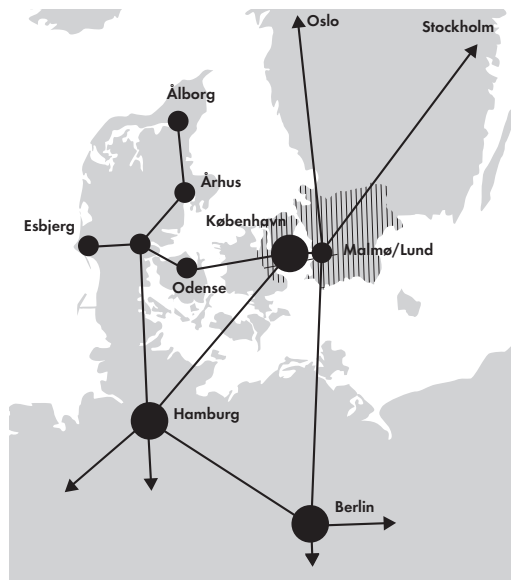


COPENHAGEN

Evolution of the Finger Structure

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Introduction

Copenhagen's *Fingerplan* is depicted in many books on urban planning, and indeed although this *leitbild* is almost half a century old, it is still possible to trace its influence on urban and regional planning, and the green wedges between the fingers are still perceivable on maps, and "on the ground". Even though, the Fingerplan did not have any juridical status and never was approved politically it has played an important role as a planning guideline and furthermore it influenced not only the City Regulation Act from 1949 but also subsequent regional plans for the Copenhagen metropolitan region.

Fig 1: Copenhagen's Fingerplan

Copenhagen's *Fingerplan*, which was elaborated by a group of town planners associated with the Danish Town Planning Institute during WW2, was published in 1947 as a proposal for a master plan for Greater Copenhagen.

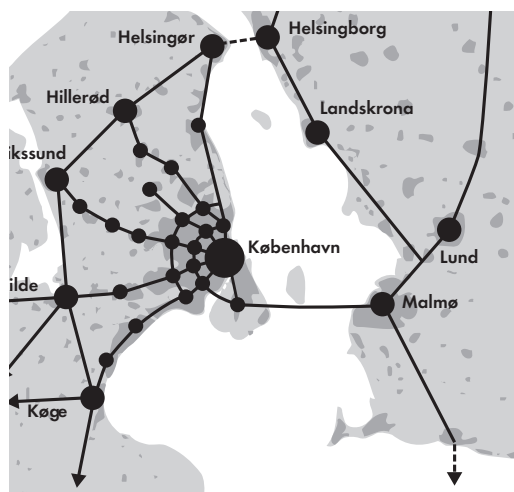
The main principle of the *Fingerplan* implying that the layer-upon-layer growth should stop and that most of the future city should develop in narrow town fingers along existing and future railways was adopted in later, official regional plans.

The suburbs developed as pearls on a string, i.e. the suburbs developed around the commuter train stations. Notice that the City of Copenhagen covers most of the palm of the hand.

It is also remarkable that the island of Amager to the south-east, is somewhat neglected.



Copenhagen - from centre of gravity to a radial city-region



Copenhagen is a prime city. The City of Copenhagen has half a million inhabitants - a tenth of Denmark's population - and the Greater Copenhagen metropolitan area has 1.8 million inhabitants - a third of Denmark's population. Scandinavian headquarters of international businesses, governmental offices, and other functions of national importance are over-represented in Copenhagen. Until WW2 Copenhagen's unchallenged position in the national urban hierarchy (even when it came to industrial activities) was enforced by the concentric urban development around the city centre. Copenhagen acted as a centre of gravity.

Fig 2: Copenhagen's development in four steps**1: The medieval city**

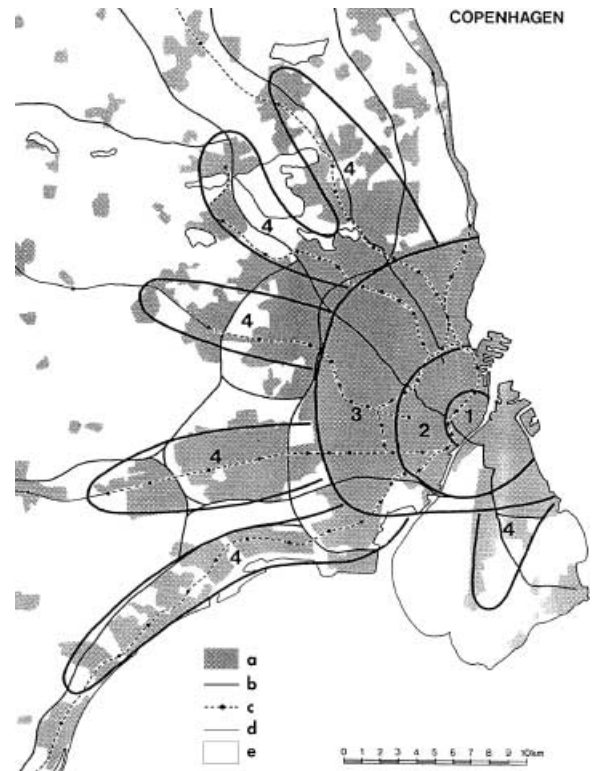
Until mid 19th century the city was surrounded by ramparts and 130,000 inhabitants were living on just 3 Km² in the fortified city.

2: The Tram City

In the beginning of the 20th century Copenhagen incorporated some of its neighbouring towns and the working and middle class areas that was developing there was subsequently served by an extended network of trams.

3: The pre-WW2 city served by S-trains

In the 1930s the population of the capital passed one million making further layer-by-layer growths impossible.

4: The post-WW2 radial, suburban development
The *Fingerplan*-city.**a:** Built-up area**b:** Motorways**c:** S-trains**d:** Regional trains**e:** Undeveloped land, including forests, agricultural and recreational areas

In the post-war period Copenhagen's role in the national urban hierarchy has changed, although its primacy is un-changed. From the 60s and onwards more and more industrial activities have surfaced in other parts of the country, especially in Jutland, and from the 70s the evolving welfare state has become more and more decentralised enabling second and third-order cities to strengthen their positions vis-à-vis Copenhagen. Symbolically, as Copenhagen loosened its grip, the process of suburbanization manifested itself physically in the development of a more radial built-up area (according to the *Fingerplan* the suburbanization has primarily taken place along the

railway lines). Also, the City of Copenhagen lost some of its attraction to high-income groups, which largely moved to the north of the city. Furthermore, in the 80s and 90s, not only back-office functions, but also headquarters of national service functions (such as mortgages companies and insurance companies) moved outside the city. The City of Copenhagen has become one (albeit an important one) of the fifty municipalities in a wider city-region. In the later years the City of Copenhagen has regained some of its attraction to investors and households – not only capital but also people are moving back into the city, cf. figure 3.

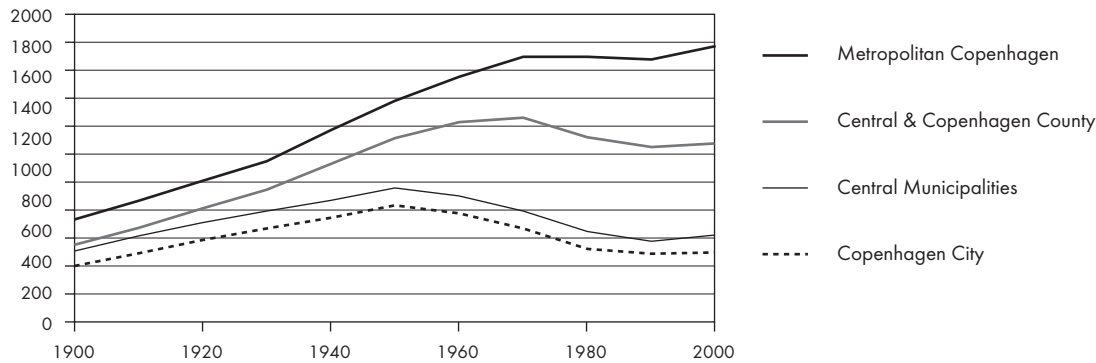


Fig 3: Metropolitan Copenhagen, population 1901 - 2000 (1,000 persons)

The suburbanization process from 1950 to 1980 has somewhat ironically been described as the Great Migration, and indeed the population growth of Copenhagen's suburbs amounted to almost three-quarter of a million people (many of whom originated from the central parts of the city). The Fingerplan gave the direction for the city's expansion.

Urban and regional planning in Copenhagen

At the point in time when the *Fingerplan* was proposed the integration of physical planning in the political administrative system was in its very early phase. In 1938-39 the first Danish town planning act had been approved. This act obliged the towns with more than 1,000 inhabitants to make a land use plan for the city within 5 years (Gaardmand, 1993). It meant that only about 1/6 of the municipalities were forced to prepare a physical plan. Obviously because of the war the implementation was very slow. Furthermore, there was no legislative basis for planning at a supra-municipal level.

The City Regulation Act from 1949 made it possible to exert a certain amount of control over city growth by co-ordinating land use planning. The land use planning, practiced as a kind of zone planning, was directed by a committee of state officials and municipal politicians, dominated by the state. The regulation was especially needed in the case of Greater Copenhagen, but as the City of Copenhagen had its own "planning law" the very dominant central municipality was not very well integrated in the attempts to co-ordinate the planning in the region as a whole. Generally stated, the physical plan-

ning system was rudimentary and there was a mismatch between its strong basis in the municipality and the need for planning at a broader spatial scale. This mismatch was especially felt in the Greater Copenhagen region, where the urbanisation process was fast and where the big central municipality had a special legal status.

The urbanisation process, and subsequently sub-urbanisation, created another problem for the bigger city regions including the metropolitan region. The central municipalities needed space for further expansion and the mismatch between the real urban region, the commuting area and the administrative division was growing. In the other Danish regions, the problem was solved, by enlarging the space of the central city. This was not possible in the case of Greater Copenhagen. Therefore the government tried to reform the administrative division instead. In 1948 a metropolitan commission (established in 1938) proposed such a reform but it was never approved by the Parliament. Instead, a committee of municipal co-operation was set up in 1956, but none of its proposals was agreed upon by the municipalities (Indenrigsministeriet 1995, Betænkning 1307, Ingvarsen, 1991). And indeed, when a major reform was introduced in the country as a whole in the 1970s the local authorities in the Greater Copenhagen area was largely unaffected by it. Hence urban and regional planning in the Greater Copenhagen area has had to overcome the inconsistency between the political-administrative structure and the functional city-region.

Fig 4: Generations of regional plans

Schematic representation of the regional plans from 1948 to 1989.

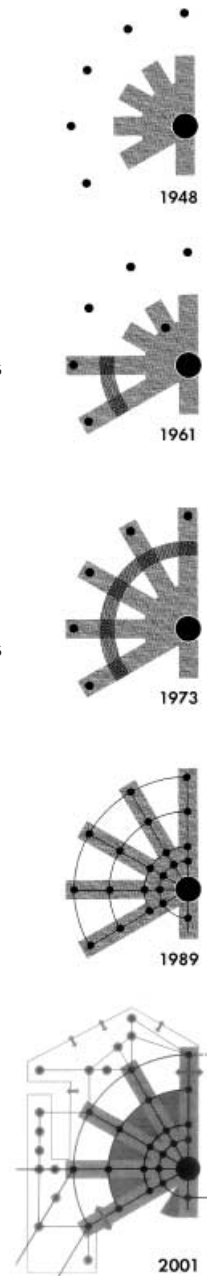
The five dots in 1948 are the provincial towns of Helsingør (Ellsinore), Hillerød, Frederikssund, Roskilde and Køge – counted from north to southwest.

In the 1960s the expansion was primarily directed towards the forefinger (Roskilde) and the thumb (Køge) – the latter through a special law.

In the 1970s the regional plan foresaw an integration of the other provincial towns as well as an inner ring (motorway).

In the plan from the late 1980s the "tangential" development and a re-centralised localization strategy, was in focus (for an example enabled through express buses between the major nodes in the urban fabric).

The Regional Plan from 2001 is a more elaborated version of the latter – especially when it comes to the "sixth" finger, the island of Amager. In the nineties the island of Amager has been integrated in the urban structure (establishment of a metro and a fixed link to Sweden, including train stops at Amager's main international function: the airport).



Hence, in the Greater Copenhagen Region where the planning problems were the most severe, during the 1960s the problems were still solved by ad-hoc institutions and plans. In 1960 a regional plan for the 3 counties around Copenhagen was published by an informal secretariat, *Egnsplanrådet*. After a public debate a committee of technicians and government officers evaluated the plan for the ministry of housing. The committee, however, was unable to achieve agreement except for a first phase of the plan. This was in turn accepted by the central government (byplannævnet). But a lack of a planning authority for the region as a whole was thereby revealed (Gaardmand, 1993). This was also stressed by the fact that the thumb of the *Fingerplan* was made possible through separate law for the south-west of Copenhagen ("Køge Bay Plan"), cf. figure 4. The Køge Bay area was implemented by involving municipalities and counties in collaboration with some ministries. Although the area was developed as "pearls on a string" it is obvious that some of the pearls became more shiny than others: In some instances the local politicians opted for a composition of housing that attracted wealthier groups compared to municipalities who was mixing their housing stock, which is more in tune with the proposal of the *Fingerplan* (the later has made Andersen, 1991 to talk about a "political suburbanization"). The whole development of the forefinger and thumb was assisted by the plantation of the so-called Westwood (a "neighbourwood" in the green wedge) and the construction of a beach park with dunes, lagoon and marinas in a former swampy coastal area. Hereby the segregation pattern of the metropolitan region (with a

concentration of higher income groups to the north) was sought to be influenced.

In 1966 the 3 counties together with the two central municipalities voluntarily decide to set up a regional planning authority. Thus, the 60s is a period of many governmental experiments and many commissions to bring up ideas in effort to reform the political administrative system and the physical planning system.

In the beginning of the 1970s an administrative as well as a planning reform was approved by the Parliament, but it did not create significant changes in the Copenhagen region. It is widely believed that the government refrained from establishing a strong coordinating, metropolitan authority because the very size of the capital region, roughly a third of the national population, would give raise to an administrative unit that would be too dominant.

Nevertheless, the need for some kind of reform of the capital region remained, i.e. the problem to provide the necessary coordination of urban and infrastructural development. The growing wealth was reflected in a fast, suburban rise followed by an accelerating number of private cars during the 1960s and 1970s. The pressure for better coordination and planning of urban development thus appeared highly urgent during these years and was the main drive behind the construction of a metropolitan organization. On demand of the opposition, the national government set a reform commission to investigate possible metropolitan solutions. This resulted in a new metropolitan wide council, the Greater Copenhagen Council, which should have the responsibility of regional planning, the general planning of

traffic, plan and operating public transport, developing an environmental planning for the densely populated region and finally produce an overall plan for the hospitals in Metropolitan Copenhagen.

The final solution to the metropolitan challenge ended up with a construction quite similar to the hitherto voluntarily cooperation: Egnspanrådet, i.e. the regional planning council, but now with a formal status. However, the new Greater Copenhagen Council was given a few more obligations; first of all public transport. The council was put in operation from 1974. The weakness of the council was the implicit demand for consensus; the council was made up by 37 mostly local mayors of which the mayor of Central Copenhagen and the counties had clear prominence. Thus all major decisions suffered from lack of priorities against the will of these dominant politicians. As an example, the regional plan was basically a catalogue of local wishes; it hardly rejected any demands from local authorities. Nevertheless, this "club of mayors" ended up as the final solution as it acknowledged the left wing desires of an overall planning authority, but on the other hand had so limited competence, that it could not threaten the independency of local governments. The council suffered furthermore from relying upon financial support from counties and municipalities, it thus had very limited financial power to accomplish coordination programmes or secure strategic developments. This is not to say that the Greater Copenhagen Council didn't have any regional planning power: Greater Copenhagen Council had, contrary to all other regional planning authorities, a right to initiate the

planning process. It therefore could put an efficient pressure on local planning. Second, the council had furthermore the right to dictate time tables for the advancement of the planning process. Third, the council was authorized to make plans that involved more than one municipal authority.

Inspired by the Thatcherite climate of the 1990s, the Greater Copenhagen Council was abolished in 1989. According to the government, simplify decision making and reduce the number of local governmental officers. The regional planning obligations were decentralized to the counties, yet at the same time the national government watched over the regional plans and ensured metropolitan coordination.

It may seem as a paradox, but in the years from 1988 to 1991, i.e. in the period where Greater Copenhagen Council was abolished, major decisions were taken at the national level to ensure Copenhagen's position economically:

- construction of a combined bridge and tunnel from Copenhagen to Malmö/ Sweden,
- improvement of access to the airport by a rail and motorway,
- expansion and modernization of public transport system of the region,
- prevention of state institutions are relocated to the provinces,
- attraction of more international organisations and firms,
- investments in high tech, research, education and tourism, culture and congress activities,
- reconsidering existing municipal equalisation system.

During the 1990s the central government led by social democrats took a number of initiatives, indicating that the economic performance of Copenhagen was conceived as a matter of national, political importance. For an example

- the City was forced to sell off most of its land and dwellings in return of a major reduction of its debt,
- more than 25.000 dwellings were sold off as housing associations and hereby contribute to local economic improvement,
- the government established a special company, Freja, to develop and sell the former naval base area to investors,
- the government sat up a new tourist organization (*Wonderful Copenhagen, WoCo*) to develop and promote tourism,
- the government formed a development corporation to plan and develop a city-annex (Ørestaden) with complete infrastructure (including a new metro system).

The abolition of Greater Copenhagen Council led to the creation of a multitude of organizational forms some of which are continuing the coordinating activities in the same area covered by the Greater Copenhagen Council. Most notably, the regional transport authority, *Hovedstadens Trafikselskab* (HT) and coordination of regional plans, although two different models were used here. In the case of regional planning the coordination of activities was transferred to the national level, e.g., the Ministry of the Environment. So, in 1993-94 when the regional authorities adopted regional plans and again in 1997 when revisions of the regional plans were decided on, the ministry would ensure that the regional plans were in

accordance with each other while not jeopardizing overall planning goals. The processes leading to the adoption of the regional plans and the revisions hereof were not without conflicts. On the one hand it was expected that the regional authorities would consult each other to negotiate and to come to some sort of agreement on metropolitan matters, but on the other hand the planners from the various regional authorities were also representing the electorate of the counties, which might have interests that couldn't be considered using measures defined at the metropolitan scale. This meant that the ministry in some cases had to be rather restrictive, influencing the legitimacy of the elected bodies. This led many politicians and researchers to believe that the responsibilities of the counties were inflicted and indeed in the white Paper issued in 1995 by the ministry of the Interior its was seen as an obstacle to the formulation of a comprehensive coordinated physical plan for the whole of the metropolitan region (Indenrigsministeriet, 1995)

Although the white Paper from 1995 warned against indirectly elected bodies the building up of needs for a coordinating body, namely within the area of physical planning and public transport led the government to decide that a new metropolitan development council, *Greater Copenhagen Authority, Hovedstadens Udviklingsråd* (HUR) should be established. It began its activities in 2000. HUR is responsible for traffic planning for the whole of the metropolitan region as well as the operation of HT-buses and some local train lines and coordination of regional planning for the region (cf. figure 5 and 6). Furthermore the coordination of economic development, tourism and culture, mostly theatres, and the

Fig 5: Master Plan, Regional Plan, County of Copenhagen, 2001

In the Regional Plan for County of Copenhagen (more or less the three first rings of municipalities around the City of Copenhagen) the basic idea from the *Fingerplan* is easily recognized (HUR, 2001).

The dark grey areas are the built-up areas, whereas the light grey areas are the recreational areas, the "green wedges".

In only three instances (1-3) a rezoning is called for, hence the "fingered" structure is preserved.

The circles around the stations (indicating distances of 500 metres and 1 kilometre from the stations respectively) are the areas where the planning authorities would want urban functions to locate. Some of those areas adjacent to stations are designated as nodes in the wider urban structure. The same goes for two major bus terminals (R & G) lying outside the fingers.



Fig 6: Location of offices and service functions, Regional Plan, County of Copenhagen, 2001

Most of the areas dominated by offices and service functions (dark grey areas) are located within one kilometre from a train station or major bus terminals, (cf. figure 4). Service functions are allowed to locate in other areas as well, however, which weakens the planning authorities' attempts to fulfil the ideas of the *Fingerplan*.



co-operation across Øresund is under HUR's auspices. HUR is led by a board of 11 politicians, the mayors being ex-officio members, appointed by the five constituting bodies (municipalities of Copenhagen and Frederiksberg and the counties of Copenhagen, Frederiksberg and Roskilde). This organisational "innovation" resembles the two tier government model, and is basically not much different from the volunteer bodies in the 1950s or 1960s in terms of power or obligations.

At this stage it can be observed, however, that HUR holds some of the same weaknesses as the old HR that operated from 1974 to 1989: indirectly elected bodies operating

within areas where the need for metropolitan coordination seems most needed, namely regional planning and public transport. Furthermore, areas of activity that carry more weight, financially and politically, for an example welfare oriented policies, such as primary and secondary education, hospitals and health care, and local social policies, are not included in the newly established council. This means that some of problems that are confronting today's' decision makers, such as distribution and integration of immigrants, "export" of excluded persons to other jurisdictions, can not be negotiated within the organizational structure sat up.

Concluding statements

To sum up, it seems that the metropolitan government has returned to the past. The inauguration of HUR has been very "path dependent": it is in accordance with the two tier model of HR from 1974 to 1989 and it preserves the strong Danish tradition for local democracy - a tradition that was further strengthened in the 1970s through the building up of a decentralised welfare state. On this basis one might conclude that it is almost a paradox that the national, political interest in enhancing the economic performance of Copenhagen in the 90s, inter alia implying a new institutional landscape within economic governance, actually didn't lead to any substantial reformation of metropolitan government. Although problems of social and

political exclusion have to be solved at a metropolitan scale the establishment of HUR doesn't appear as a reformulation of the solutions to metropolitan problems.

On the other hand national control with regional planning, irrespectively of whether metropolitan, coordinating authorities have been in place or not (and irrespectively of their coordinating strength when they are in place), have ensured that the overall urban structure have been protected. By the use of zoning, and in a period of the 1990s to have a ban on out-of town-shopping centres, and by following the *Leitbild* of the *Fingerplan*, green and open spaces have been protected from urban development.

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THE GREAT URBAN TRANSFORMATIONS OF THE CITY OF FLORENCE

From compactness to sprawl

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Abstract

The pre-modern and the modern town developed a continuous tissue albeit with relevant morphological and socio-economic changes.

The contemporary town, influenced by new standards of architectural and urban quality, the use of private automobiles and the increasing power of the local authorities, was characterised in the 1980s and 1990s by extensive urbanisation, expanding suburban areas and the creation of large infrastructures. In recent years, with much emphasis on sustainability and curbing pollution, a new attitude towards land use is guiding the policies of the local administration.

Public transport policy, renewed attention to pedestrian mobility and, in general, concern with non-polluting systems of mobility and the role of green areas as connecting spaces between built-up areas, are now the main planning instruments of sustainable development.

Keywords

Pre-modern town, modern town, contemporary town, morphological continuity, socio-economic change, periphery, suburbia, gardens, green areas, compactness, sprawl, sustainability, participation.

1 The evolution of the Florence area



Fig 1: Fantozzi's map 1843

1.1 The pre-modern town characterised by high compactness

Fantozzi's map, from 1843, represents the town inside the wall. The wall was built in the 14th century and demolished according to Guiseppe Poggi's plans in 1865, during Florence's brief spell as capital of Italy.

This was the pre-modern town. Its heart was the medieval and renaissance city built on the ruins of the Roman town.

The central places were located in a small square and the surrounding network of narrow medieval roads (the market place), a large civic square in front of the Signoria Palace, also to a major extent in the large square in front of the Duomo and the important churches linked to the main convents.

Most of public ceremonies, both religious and civic, took place in these squares, emphasizing a coherent relationship between spatial morphology and public use.

The green spaces were important but as private gardens or large agricultural areas located near the walls and owned by the monks.

The street grid network had main roads linking the gates and a tight medieval tissue without hierarchical organisation. The street blocks formed a compact tissue in the city centre that gradually became less compact towards the walls. At this time the city had the shape of a star.

Today the built-up area corresponds to 84% to 90% of the plots and the construction ratio is between 10 to 16 m³/m².

1.2 The modern town

The 1955 IGM map shows the development of the modern town.

The modern town was created by the demolition of the city-walls and the establishment of the bourgeois town according to the Guiseppe Poggi's plans (1865).

The street network had a hierarchical organisation, connected with earlier tissues, both inside and outside the 19th century ring.

The avenues were the new link between the pre-modern town and the modern town that had developed in the plain. To the south of the Arno, the avenues reached the hill and some urbanisation occurred in this green area which, however, was mainly devoted to agriculture.

The landscape of the hill was properly designed and the river too was embellished with a walkway, gardens and terraces and fine architecture. The hill and the river became urban spaces for the leisure activities of the new bourgeois class.

As in the pre-modern town, the central places maintained a coherent design with respect to morphological and functional characteristics but the dominant activities changed completely. It was no longer churches and civic palaces that predominated. There were now shopping and business arcades and cafés all around the main squares, gardens were laid out in the squares placed in the centre of the new residential areas and market-places (both central and local) were housed in buildings set up for this purpose in the middle of

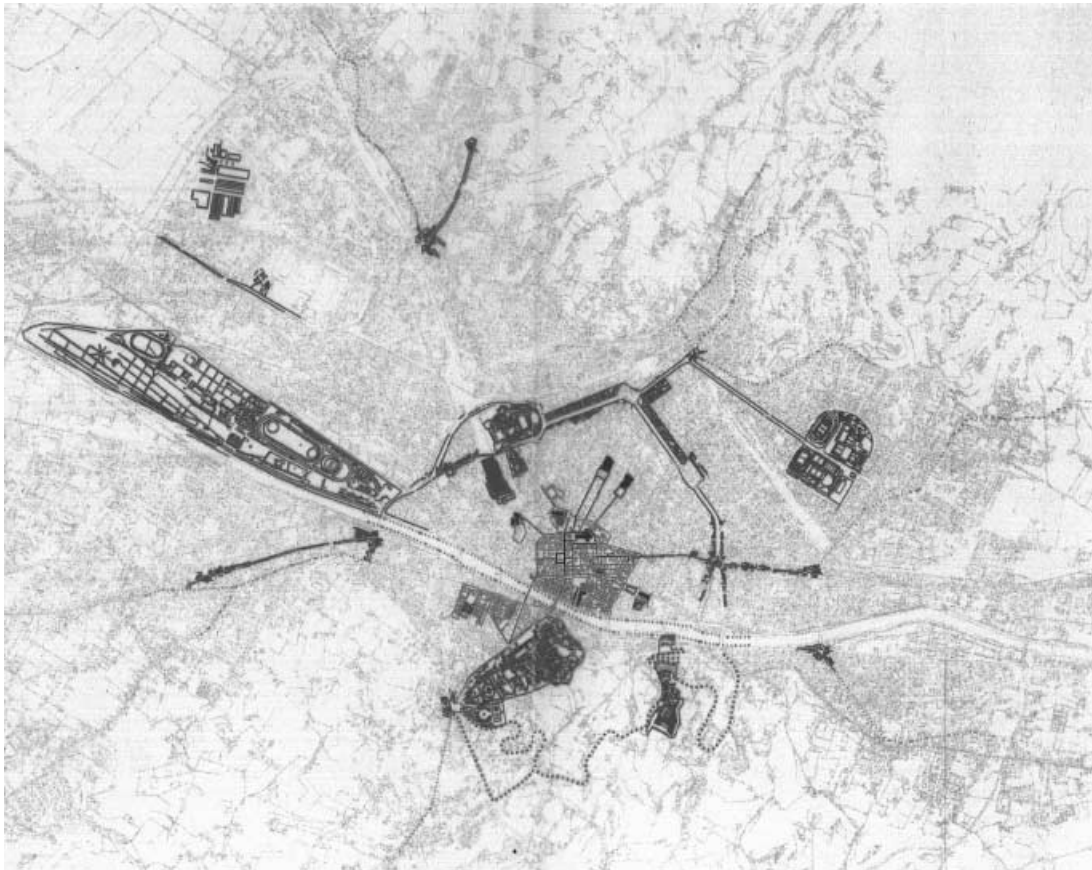


Fig 2: IGM map 1955

the new square next to the residential areas. Large scale facilities (a stadium, new railway station, a race course and so on) and factories sprang up between the two world wars in green park areas and in the new residential areas beyond the previous limits of expansion in the nineteenth century. The built-area corresponds now to 55% of the plots and the construction index is $7 \text{ m}^3/\text{m}^2$. The density is lower than in the pre-modern town but the town still has a compact shape.

1.3 The contemporary town

The map of the Florence metropolitan area in the 1990s shows the development of the contemporary town whose expansion is due to three main factors:

- new standards of architectural and urban quality associated with the principles of the Modern Movement;
- the use of private automobiles;
- the growing power of the local authorities.

The 1962 urban plan was the basic instrument for achieving strategic control over new urban development.

The main aim of the plan was to:

- organise residential peripheries around the new urban central areas;
- move the railway line below the hill to the north of the town;
- build a new railway station outside the city centre and create a new urban motorway on the route of the old railway line;
- set up new business and public administration headquarters along the new urban motorway.

Since these major infrastructural projects were not implemented, the national motorway (A1), built at the beginning of the 1960s, together with its four exits and connecting roads, became the only suitable axis for the new urbanisation in both working and residential areas.

The physical result of this policy has been extensive development in the metropolitan area all around the A1 motorway. The growth of urbanisation took the form of an assembling of spots of varying sizes depending on the different local policies geared to specialised residential and working activities or as linear strips developing along the main national roads.



Fig 3: Development in the metropolitan area 1990

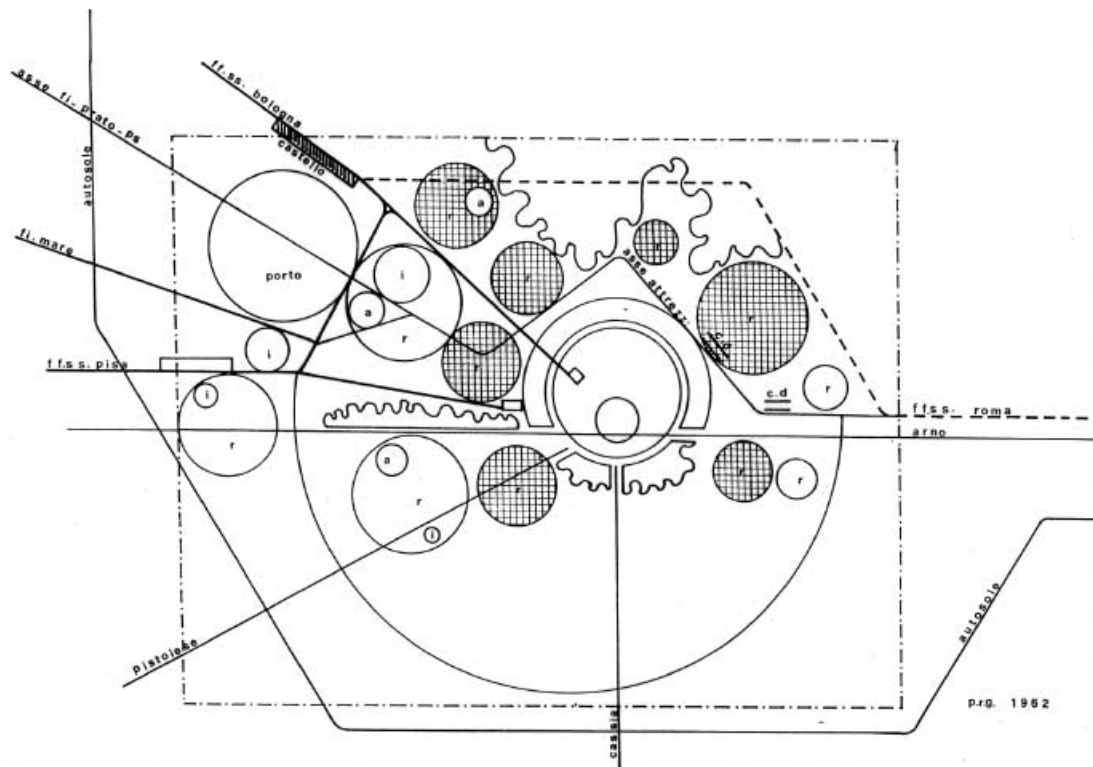


Fig 4: PRG '62

All this was followed by continuous growth in private automobile traffic, rising pollution and the sprawling of suburban areas.

In the metropolitan area of Florence in 1951, the urbanised area was 3600 ha. At the beginning of the 1990s, the figure exceeded 11.000 ha. in a total area of 43000 ha. including rivers and roads. Almost 20% of the urbanised area was occupied by firms.

There are five settlement contexts (figure 3):

1. The historic city with its functional and morphological complexity, where there is a growing population with temporary residence along with a economy fulfilling the typical touristic functions of an art city as well as those of conference and shopping tourism. At the same time, the traditional functions, related to residence and work, are on the decline. All this is mainly due to limitations on private vehicles and a shortage of parking places.
2. The administrative structures of the 19th

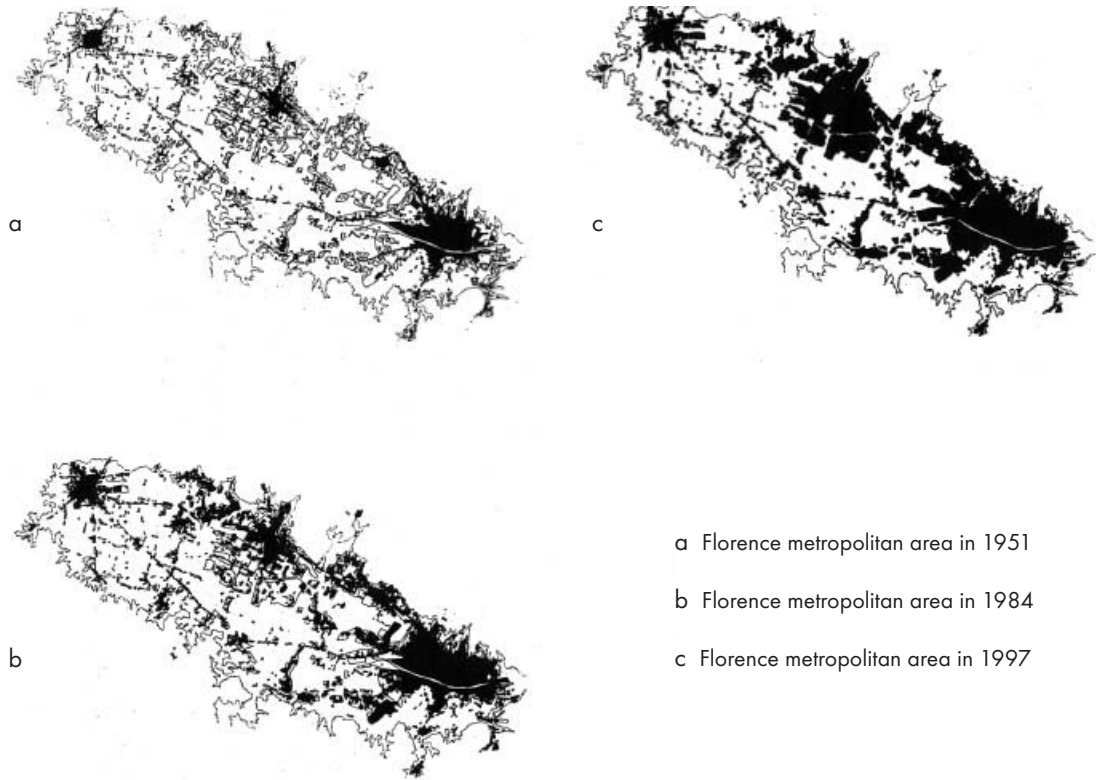


Fig 5: Evolution of Florence metropolitan area

century town have been reinforced mainly in the area along the boulevards, while the 20th century town has seen a growth of residential building in former industrial areas. More recently this renewal has been based also on shopping and business centres giving shape to new squares.

3. The suburbs with low-level urbanization and a functional, residential or working specialisation where the built-up area corresponds only to 16% of the plots and the construction index is 2-4 m³/m². The polarisation of some of these suburbs is due to

a concentration of activities attracting working people and/or users, without any specific morphological design.

4. The satellite towns which, initially were only residential areas, were later provided with workplaces and nowadays even have universities near the metropolitan infrastructural hubs.
5. Areas in the middle of the suburbs are used as built-up areas (urban fringes) and also as green areas devoted to cultivation or are laid out as urban parks, with the aim of controlling urbanisation.

2 A new emerging town

Do these additional developments of industrial areas, university campuses and large shopping malls, which are gradually shrinking the boundaries of the park, express the quality of a new emerging city? Is this the city's best way of being coherent with respect to the use of motorcars? Has car traffic not reached saturation point, calling for ever-increasing investments which would have a negative influence both on the environment and on function?

Some experts (G. Imbesi 1990, C. Beguinot 1998, B. Secchi 1999) believe that the recent transformations have brought a clear improvement in life-styles and have created new requirements in terms of specialised residential suburbs, head offices, headquarters, additional settlements, and the renovation of villages to set up second and third houses. Such variety is typical of the metropolitan area.

Although these settlements often have one or more central functions, they are in a morphologically peripheral zone.

The above-mentioned authors assert that the quality of these areas should be judged by standards different from those applied to the historic and consolidated settlements.

The evaluation should be based not only on the life-style within each of the settlements, but also on the standard of life outside them. In other words, there should be a comparison with the entire metropolis.

Finally, the experts suggest that the metropolitan periphery cannot be seen as a place with low standards of living and urban quality as against the old town which is seen as a better place to live in. Rather, the periphery is a place of opportunities due to the incompleteness of a tissue made up of empty and full spaces which can be preserved, restored and transformed.

For Florence, the new metropolitan urbanisation has created enormous traffic problems for the A1 motorway between the north and south exits where a third lane has to be built. Broadly speaking, it can be said that there is difficulty in moving from the main roads to the local ones.

Public opinion has shown contradictory approaches to the question of the development of contemporary settlements:

- there is an increasing interest in the sprawling town because: it expresses an environmental balance and it affirms a new life-style;
- however, it is clear that new infra-structural investments are also coming under increasing criticism because of: rising pollution caused by growth in traffic, and an uncontrolled growth of urbanized areas.

Is a return to the compact town the only alternative ?

The Dutch, who are the most involved in working for sustainable urban planning, have spoken about what is called the "paradox" of the compact city:

- The target of guaranteeing high standards of quality of life and security of the urban environment has caused a number of areas (wide areas along the motorway and around the airports, areas bordering industrial plants) to be declared off limits for building purposes, thus considerably reducing the possibility of new action close to the urban centres;
- The policy of reinforcing existing urban centres is having a negative effect on urban quality since the no-building areas are potentially set aside for residences and, at the same time, include areas devoted to urban parks and public green areas.
- The further use of abandoned areas involves high costs for environmental reclamation and for the subsequent creation of ecologically compatible infrastructures.
- The present phase of decline in public investment for residential buildings means

that the majority of the demand for new housing is private and therefore characterized by a demand for space, quiet, silence, security and easy accessibility by automobile. These features are not quite as same as those offered by the compact city.

- The difficulties of planning for control of the relationship between place of work and place of residence are reflected in the limited efficiency of policies seeking to reduce commuter traffic flows.

In the past few years, urban policy in Florence has been oriented towards the creation of dynamic balances between compactness and sprawl, in moving towards the fostering of morphological and functional diversity in different settlement contexts. This should be done without disregarding objectives related to the environment and sustainability which have to be considered at every step of the designing process and at different levels.

3 The new projects for Florence

3.1 Three type of projects are underway:

Environmental projects such as a park on the left bank of Arno river extending from the old gate (S. Niccolò) up to the hill (Belvedere Fort), across the Poggi gardens, the Vegni Palace and the Bardini Villa. The park will form an easy connection from the river to

the Boboli Gardens, the Pitti Gallery and the Piazzale Michelangelo and then to an unusual countryside.

The "*Le Cascine* Programme" involving a reorganisation of historic *Le Cascine* park on the right bank of Arno as well as the development of the large empty area on the opposite bank.

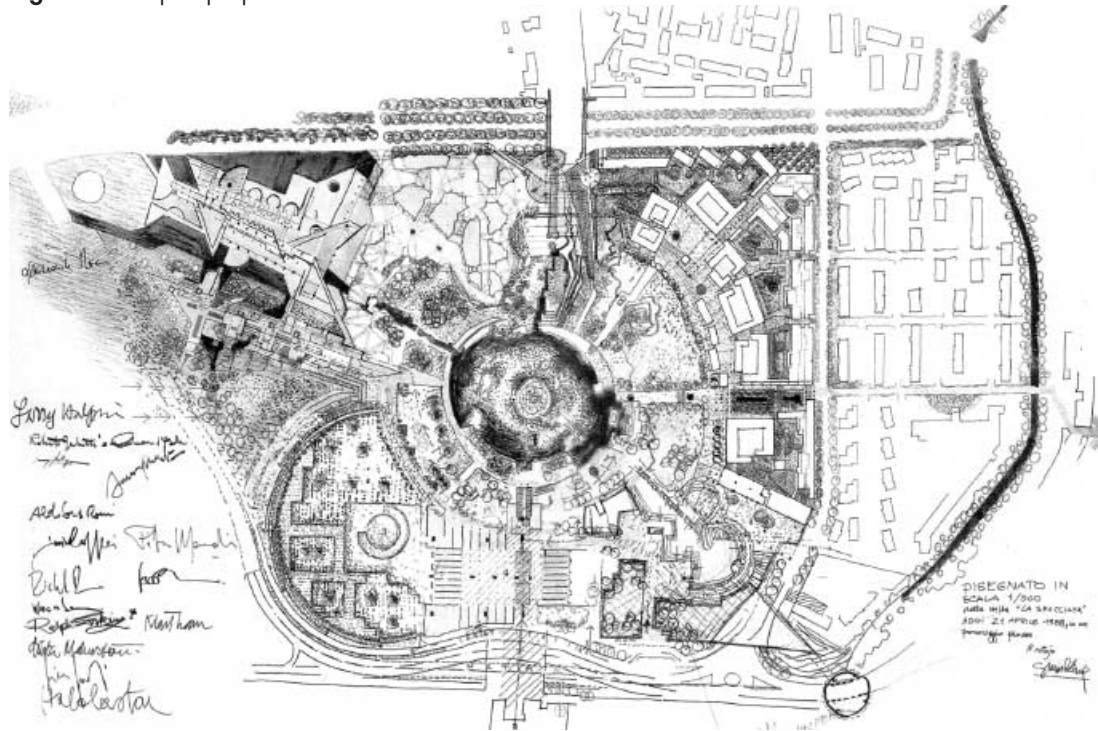
Three parks within the contemporary town. The first park is in the residential area of Cintoia and is designed as a 27-acre (11 hectare) leisure park for the south-west 27; the second is in Novoli, in the central area of Florence's most important renewal project with an area of 30 acres (12 hectares); the third in Castello is a 200-acre (80-hectare) park in the metropolitan area in the plains west of Florence.

Mobility infrastructures such as the new high-speed railway station will be integrated into the Florence transportation system, serving the centre and the outskirts.

The project includes the improvement of the public transportation network with a suburban railway net, new tramway lines connecting satellites towns to the old centre of Florence and the new transport hubs (the airport) to the new location of the "science pole" of the University of Florence and to the regional hospital.

It also includes the enlargement of the A1 motorway crossing the entire metropolitan area to make national and local traffic safer and smoother and the building of a first ring of free parking areas to keep automobiles out of town and provide easy access to the public transportation system.

Fig 6: The Halprin project for Novoli



The relocation of activities from the pre-modern and modern town to the contemporary one. This relocation involves factories, public services, the relevant faculties of the University of Florence and other facilities and structures, leaving an impressive spread of empty urban sites with an area of almost 400 acres.

These *brown fields* are a most important resource for relocating many activities. For the Administration, the key to mastery over this renewal lies in its coherence with the project for building public transport systems in the Florentine metropolitan area.

3.2 Novoli, a new urban centrality

Novoli is an urban renewal site built on a former Fiat factory. Located on the main Florence-Prato axis, near the airport and the main national and regional highways, it is strategically placed. In the 1980s, the municipality allowed the Fiat company to use the area. The company built up the same amount of space in terms of cubic metres as there had been in the original pavilions. The administration was allocated space for the new Law Courts. The Fiat-appointed coordinator of the first project was the American landscape designer, Lawrence Halprin, who conceived the idea of an imaginatively designed park with streams, lake and trees. The park was to be the backbone of the entire composition, it was in the centre of the area and was the point of linkage among all the buildings, the Law Courts included.



Fig 7: The Novoli plan by L.Krier

In the 1990s the new administration worked on the new master plan and wanted to include the renewal of Fiat area in a renewal of the entire Novoli context. Thus, a new team of architects, led by Leon Krier, considered to be the founder of "new urbanism", was put in charge of designing a guide plan for the entire Novoli area.

Leon Krier's main idea was to push traffic away from the roads crossing the area and restore the patterns of the old towns, especially the medieval one with its irregular texture of spaces, and to make it possible for

every place to be reached on foot. In his Plan he divided the area in quarters, with a maximum areas of 20/40 hectares, with a local place in the centre of each individual area.

In the Fiat area, in the executive plan prepared by Gabetti and Isola, the central place was occupied by a 12-hectare park in between the two built-up areas where residential buildings are not permitted to be higher than four storeys and where all the proportions of elements, details, colours and materials of the architecture are defined to control the final product and obtain a pleasant and lively town.

3.3 "I Gigli" a shopping centrality in the metropolitan area

More linked to the tradition of the contemporary town is the shopping precinct "I Gigli" located in a former industrial area near the Prato exit, east of the highway connecting Florence to the sea. The covered area is equal to 46,644 and the volume is 429,500 cubic



Fig 9: The "I Gigli" shopping mall



Fig 8: The Novoli project by Gabetti and Isola

metres. The shopping mall is one of Italy's largest and takes up two levels, one with a hypermarket (12,000 m².) and the other with some small and medium-sized shops. The building is a long arcade with shops and large specialised shopping surfaces distributed on two levels. A very large parking place (131,143 m²) stands before the arcade separating the shopping mall from a small river considered as a place needing regeneration from the environmental viewpoint. The place, although located in a kind of "desert", seems to be successful also as a meeting place for young people coming from the various towns and villages of the regional metropolitan area.

3.4 "Multi-hall" Centre

Not far away from the shopping mall, a multi-hall leisure centre has been built for the non-stop screening of movies. Here the main

activity of watching films is related to the complementary activity of eating: both go on in the same place in self-contained buildings.

3.5 Scientific University Pole

Again on the Florence-Prato axis, on the opposite edge of the metropolitan park area in the plains containing the shopping mall and the "Multi-hall" centre, the 1990s saw the building of the the university pole assembling all the science faculties. The location is a large area, 420.000 m². covered for a total of 360,000 square metres, with a regular road network dividing large plots each with its building in a relevant green area. Once more the idea of the settlement is one of self-sufficiency but without considering the relationship with the context.

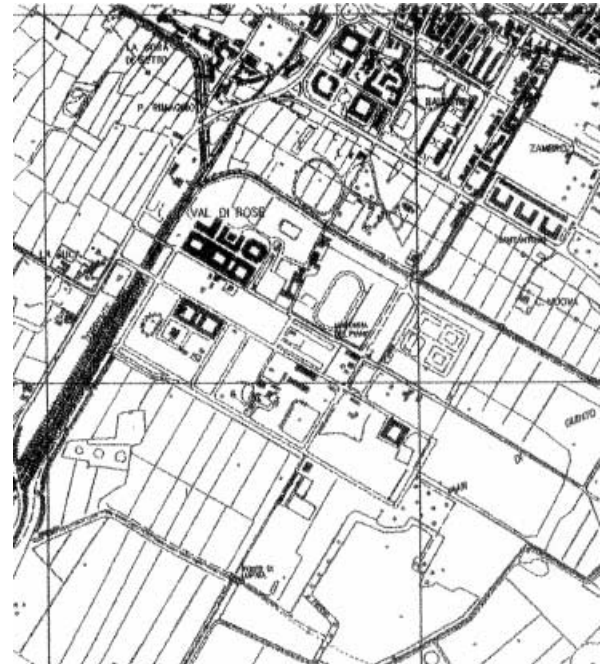


Fig 10: The university campus in the metropolitan area

4 Countryside changes in the metropolitan area

Nowadays sprawl is the most frequent development pattern. The main critical effect of sprawl is the increase of urbanised land in a "fractal" spatial system with a growth of demand for infrastructures for private automobiles. Every year in Italy 30,000 hectares of agricultural land are lost. In order to describe the effects of the sprawl, three types of indicators are pro-

posed by the architect G. Paolinelli:

- indicators of the "degree of disintegration of land structure" particularly relating to urbanization,
- indicator of the degree of morphological compactness at the municipal level relating to the outskirts,
- classification index of agriculture.

Looked at in greater detail, some patterns can describe the fragmentation of the landscape into a mosaic:

- perforation: spatial processes produce limited and discontinuous transformations due to buildings and group of buildings,
- dissection: spatial processes produce networks of continuous transformation due to roads, motorways and generally to infrastructures,
- fragmentation: the land mosaic is generally transformed through artificial and natural agents,

- shrinkage: the fragmentation process produces a total loss of some types of components,
- attrition: the fragmentation process may produce the loss of the last differences in the land mosaic.

The sprawled landscape can be classified under three categories: matrix, patch and corridor which may contribute to controlling and improving changes and dynamics of outskirts through strategic policies on open spaces.

5 The governance of Florence metropolitan area

In December 2000, the Florence Town Council decided to draft a Strategic Plan setting up a Committee comprising three Working Groups on Innovation and Culture, Activities and Territory and Urban Quality respectively. The task of these Working Groups was to propose "Project ideas" and determine the sources of funding necessary to implement them. Some of these project ideas concerned not only the territory of the municipality of Florence but also the metropolitan area as a whole. Therefore some important municipalities were integrated into the working process.

The strategic plan put forward the idea of a comprehensive plan of coherent and compatible transformations on disused areas, infrastructures and green spaces based on agreements between the local institution and private entrepreneurs.

A new important step has been taken towards metropolitan coordination in order to implement sustainable development.

This paper was prepared with the contribution of the following papers presented at the COST meeting in Florence 3/10/2002:

Biagi Gianni: *Compact City and sprawl, which future?*

Di Benedetto Gaetano: *The new projects for Florence*

Giovannini Paolo: *Florence and the conurbation*

Innocenti Raimondo: *Florence strategic plan*

Paolinelli Gabriele: *Countryside changes in the Florence metropolitan area*

Pizziolo Giorgio: *The empty spaces*

Potestà Giovanna: *Novoli, a new urban centrality*

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THE ZURICH LIMMATTAL

Steps of a servant valley towards emancipation

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1 Introduction

The following description of the Zurich Limmattal (Limmat valley) reports the results of a research embedded in the COST C10 action Outskirts of European Cities: "Les territoires intermédiaires: modalités de régulation de l'urbanité désanctée, à partir d'analyses morphologiques et phénoménologiques", financed by the Swiss Federal Office for Education and Science. The following people collaborated with the named authors in the Cost C10 research group and in the "Ladenburger Kolleg zur Zwischenstadt der Gottlieb-Daimler- und Karl-Benz-Stiftung": Christian Schubarth (Département de géosciences de l'Université de Fribourg), Doris Sfar, Barbara Pfister, Camille Erbetta (C.E.A.T. Lausanne), Oliver Bormann and Martin Schröder (Bergische Universität Wuppertal / process yellow, Berlin).



2 The urban situation

2.1 Geographical context

The upper Limmattal belongs to the metropolitan area of greater Zurich, the most important economic area of Switzerland. The river valley forms the natural extension space along the river Limmat, together with the Glattal (another valley north-east of the city) and the two lakeshores. The pronounced valley-form morphologically and functionally determines the settlement area. It covers over 24 km between the city of Baden and the city of Zurich, bridges a border between the cantons Zurich and Aargau and includes 14 municipalities (6 in Canton Aargau and 8 in Canton Zurich) with very different profiles regarding population and job structure, and growth.

The Limmattal is the western gateway into the city of Zurich. Every day an enormous number of cars through-squeezes this bottleneck. Most Swiss people know the Limmattal as a transit corridor, not for being a place to go or to stay in. Nevertheless, the misjudged valley has an impressive history waiting to be explored.

As the most important supplying and disposal channel, the Limmattal serves as "gastro-intestinal tract" for the greedy city of Zurich. From the point of view of the close-by metropolis, the Limmattal does not have to please but to serve.¹

The Limmattal is an intensively and variously used space, stamped by mobility and traffic infrastructures (public transport as well as individual transport); it contains numerous service and shopping centres, very diversi-



Greater Zurich Area

fied forms of housing (multi-storey buildings, smaller blocks of flats, single family housing, rural village-cores, etc.) and offers numerous economical activities in service and industry. With the Limmat River meandering through the valley, the forests on top of the hills, the vineyards, fields and acres, nature likewise is always present.

Today's situation, with urban sprawl being omnipresent in the whole valley, is the result of a long ongoing process. In the 1970s the new built motorway and the huge shopping mall "Shoppi" in Spreitenbach consolidated and ensured the continuous development of the region as well as the valley's reputation of being a typical suburban part of Switzerland. When talking of the Limmattal hardly any Swiss thinks of the rural idyll it used to be for a long time.

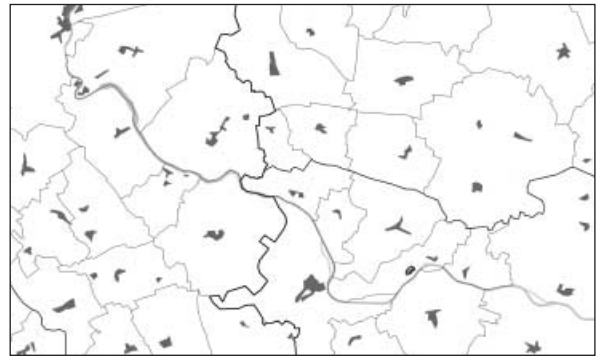
2.2 Historical development

At the beginning of the 19th century the Limmattal is a picturesque valley with only

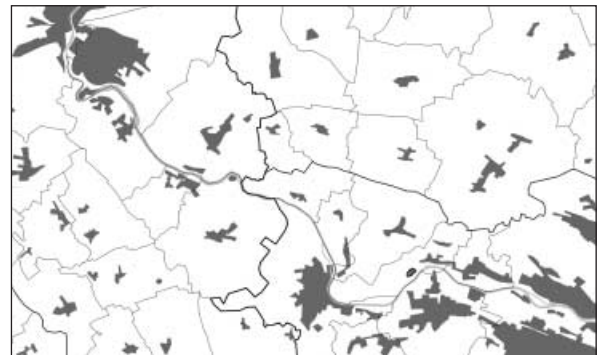
few small settlements. In 1847, the opening of the first railway line section triggers the rapid industrial development. Only 15 years later the valley communes were home to the textile, construction and machine-building industries. An extensive correction of the river harnessed the force of the water to generate electricity. One hydroelectric power plant is built in Baden in 1909, and in 1930 the Wettingen electricity works follow. At the end of the 19th century, settlements are still positioned clearly in the centre of the municipal jurisdiction like the yolk in a fried egg.

On the left side of the Limmat River, the economic boom and the planning-euphoria of the 1950s transformed, within the following decades, these separated settlements into one continuous structure meandering through the valley. On the right side of the riverbank, next to the infrastructures but on the sunny side of the valley, the villages developed not as fast. Today they are appreciated by the middle- and upper class as residential communities.

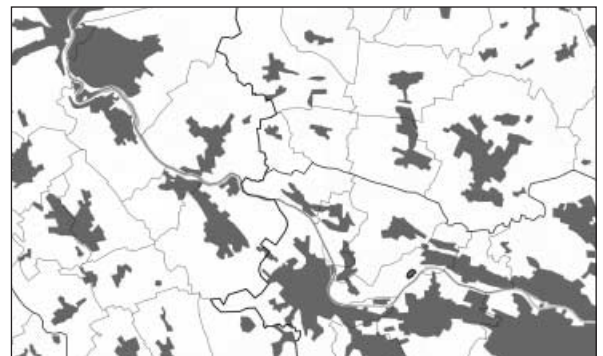
In the 1970s the boom came to an end and building activities slowed down. Nevertheless, the generously dimensioned building-zones generated an ongoing development of disperse settlement resulting in an enormous land consumption. The railway, in particular the large marshalling yard and the motorway have a strong influence on the whole structure of the Limmattal. Since these infrastructures run so close to the river, the settlements can hardly relate to the water. Nevertheless, diverse ecological and recreational spaces developed along the Limmat.



Settlement area around 1880



Settlement area around 1955



Settlement area around 1970



Settlement area around 1995

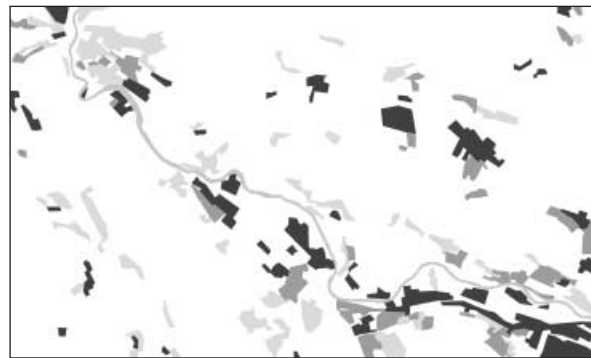
If one compares today's settlement structure with the structure hundred years ago, the former structure can hardly be recognized. The municipality borders lost the relation to the settled area that grew together and now forms a hardly interrupted urban "ribbon". "Limmattal-city" complies with forces going beyond political borders and institutional planning strategies. Only about 10 years ago planners and municipalities changed their concepts and started to focus on densification and development to the inside of the already settled area. New planning instruments like "settlement separation belts" (*Siedlungstrennquertel*) help to prevent further sprawl.

2.3 Settlement area

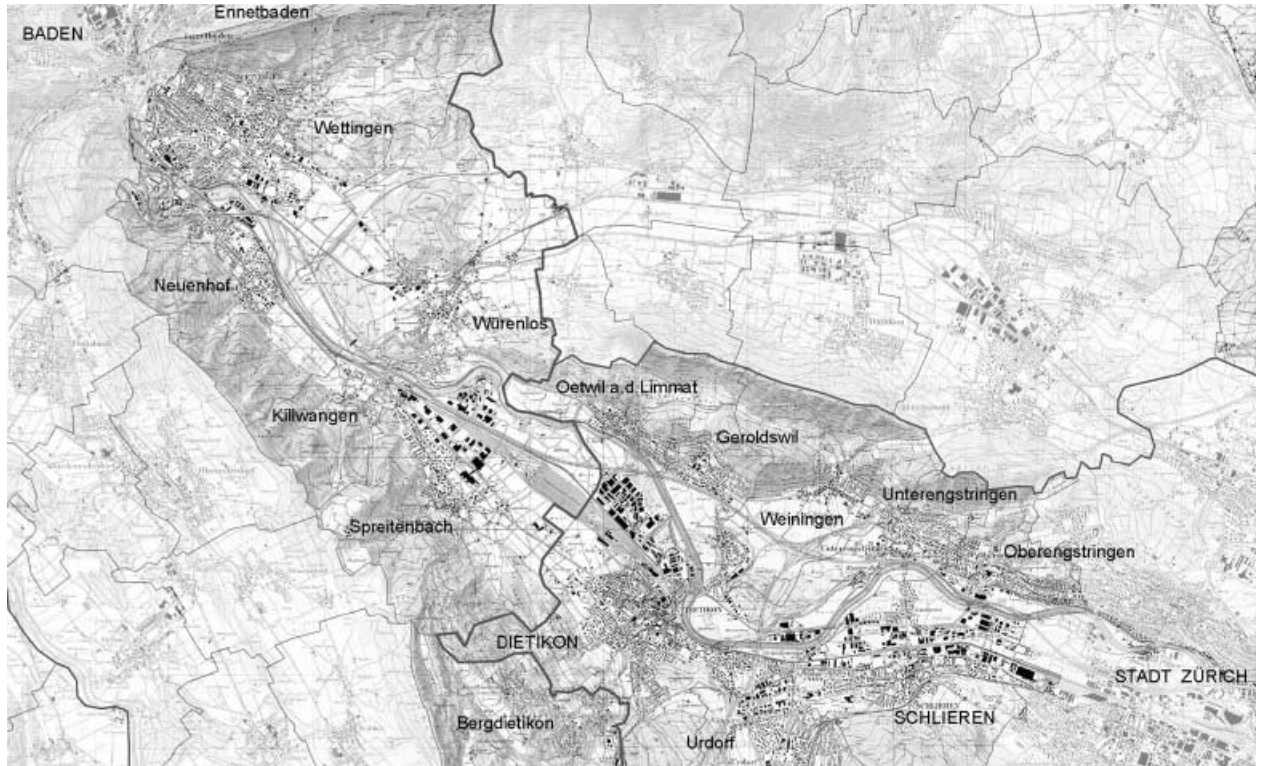
The modernists' dream of the linear "Ribbon-city" (*Bandstadt*) seems to dominate the development in the Limmat valley even if there has never been a master plan. Swiss geography endorses this kind of growth, and the Limmattal appears morphologically as a Swiss normal case: a small valley, bundled

infrastructure, historical settlement cores next to industrial parks and settlement fragments of different sizes and types everywhere. In contrast to the classical centre-periphery model there is no structural relationship between these patches apart from binding infrastructure elements. It's a patchwork of extreme contrasts of scale and characteristics: motorway interchanges next to single family house colonies, the shopping mall next to a marshalling yard, historic farmhouses next to functionalistic multi-storey building. The "city" does not grow circular around the old and new centres, but follows an own diffuse logic.

Looking at the morphological structure we recognize different recurring types of mono-structural settlement carpets. "Dots": single family home colonies, "Patterns" geometric housing zones of the 50, 60 and 70s, "Bigs": huge freestanding volumes and patches of industrial buildings. Mixed structures are mainly found in and around the historical cores. It is not surprising to find the "bigs" located along the railway and motorway and to find the hills mainly covered with "dots".



"Dots" - "Patterns" - "Bigs"



Limmattal in 1994

Along the infrastructure, "extra-large-buildings" serve as important landmarks in the suburban vastness: the Swisscom telecommunication centre, the post shipment centre in Muelligen, the gas works in Schlieren, the mall "Shoppi Spreitenbach" or the motorway restaurant (*Fressbuegel*) built across the road – just to mention a few. Their sheer bigness makes some of them even more impressive than the architecture of the nearby metropolis. Beside these pervasive landmarks there is a further form of supra-regional urban structures and huge "blind spots" hidden in the sprawl: the enormous marshalling yard,

big storage spaces, vast parking lots. These archetypical structures are hardly familiar to the broad public. Yet, the marshalling yard is a stamping part of the Limmattal identity. Some love it some hate it. There even exists a project, by an ambitious architect, for covering the whole yard with an artificial green hill.

Looking at today's situation these dreams of "back to nature" are more than ever pure utopia: the whole valley is densely covered with settlements and infrastructure facilities. For the few remaining protected free spaces it is difficult to successfully oppose the economical pressure.

2.4 Infrastructure

Traffic infrastructures influenced the settlement development in Limmattal during the last 100 years. The different "ribbons" meander side by side through the valley. Motorway, railway, main and local roads were planned so pragmatically that they isolated the river away from the inhabited areas. Particularly in-between the railway/motorway and the river lot of hardly accessible spaces are remaining. They are ignored or forgotten by the booming development. These "urban biotopes" represent another characteristic element of the Limmattal.

Despite the excellent connection of most municipalities to the public transport network of Zurich, the Limmattal remains, like most "outskirts", a car-dominated area. Public transport suffers the handicap of monocentric orientation on the metropolis. The network within Limmattal is not yet dense enough. Thus in Limmattal the proportion of cars per household is fairly high (1.14), compared with the average in Canton Zurich (1.0), the Swiss average (0.98) or the average in the city of Zurich (0.7). However, it is not as significant as expected in such a well-equipped area.²



Catchments area of commuter railway stations (radius of 500 m)
and motorway entrances/exits (radius of 1000 m)

The fact that new built roads only shift problems and usually generate even more traffic is no new finding. Nevertheless there are still various huge road-construction projects like the duplication of capacity for the motorway tunnel Baregg near Baden (actually under construction). The shifting of this bottleneck will bring back into actuality projects like the long-discussed expansion of the Gubrist-tunnel (by-pass between Limmattal and the Zurich airport). We don't know yet what effects will have the western by-pass of Zurich on Limmattal, which will be inaugurated approximately in five years.

The central project for public transportation in Limmattal is a new commuter railway system for improving the connections within the Limmattal. The projected route interconnects the centres, the main housing areas and the industrial zones. The capacity estimations show however that the project is not yet profitable enough. In the medium term the examined area will stay car-dominated.

2.5 Economic context

The "Spanisch Broetlibahn", the first railroad line of Switzerland, connecting Zurich and Baden started operating in 1847. This event marked the turning point from rural to suburban Limmattal, even if this process had taken many years to break through. At the end of 19th century numerous large manufactures and industries were settled along the river (1860 weaving mill in Dietikon, 1891 Brown Boveri and Co. in Baden, 1898 gas works in Schlieren). After extensive embankment of

the Limmat River it was possible to use the waterpower for generating electricity. Rural villages became industrial towns.³

During the economic boom of the post-war period the municipalities self-confidently planned their settlement development. Spreitenbach, at that time an ambitious village of 2'000 inhabitants, planned a new centre for 35'000 inhabitants including the first Swiss shopping mall. The "Shoppi" opened in 1970; other malls followed and changed Limmattal into a "leisure and consumption park" for the motorised metropolitan customers. Beside the availability of space and the excellent location, political strategies pushed this development. By positioning the retail business next to the border of Zurich, the canton of Aargau and its municipalities tried to benefit from the city's buying power, in order to get a slice of the (tax-) cake.

Limmattal cannot deny its dependence on Zurich. The valley has always been the city's servant, ensuring supply and disposal and providing space for the city's big and unwanted facilities like the marshalling yard, the cogeneration plant, the post shipment centre or industry zones – facilities that influenced Limmattal's economic development.

The industrial crisis of the 1970s caused severe problems for many municipalities. In Schlieren the gas works, the dyeing mill and the wagon- and lift-building factory had to close down within a few years. The huge industrial community had to deal with a challenging heritage. It had to reinvent itself. The industrial zones have been transformed step by step into service and business

parks, areas for leisure activities and artist's ateliers. Schlieren is still linked strongly to Zurich, but in a more balanced way. The ETH (Federal institute of technology) of Zurich for example moved some of its institutes to Limmattal.

In 1990 the continuous increase of jobs in Limmattal finally ended and the economic structures seem to stabilise. Of course there are still ambitious projects for huge service parks or new malls, but the speed of growth and the euphoria strongly decreased.

3 Specifics

While Limmattal is a geographical entity, it is hard to define to what extent it is perceived and functions as such. Certainly the planner's appreciation for this space stands in opposition to the political and administrative fragmentation of the territory.

Beneath the functional dependence on Zurich, soon a process of emancipation started in Limmattal. Plenty of subtle differences in the regulation-mechanisms, of the metropolis and the outskirts, shape and polarise the different spatial developments.

Unmarried couples for instance moved to Spreitenbach (Canton Aargau) to bypass Zurich's concubinage law not allowing them to live together. Exceptional permissions and conditions in Würenlos allowed to build the motorway restaurant as "event-gastronomy", a term that did not even exist at that time. The municipalities competed against each other by regulating the local taxes and thus specialising on certain social stratum.

3.1 Limmattal emancipation

The Limmattal was "thought" and planned for decades seen from the perspective of Zurich. Therefore Zurich somehow "engraved itself" with some projects into the territory. The classical understanding of town centre and functionally dependent periphery seems to apply thus also here. Nevertheless, the urban "colonisation" did not completely succeed, because there were also plans and projects of the Limmattal-communities themselves. The Limmattal is far more than only the transit area of the metropolis, and it contradicts the clichés in many ways. The personal curriculum of the "Limmat-city" may be short, but it contains many historically important events and emancipation attempts.

The communities of the Limmattal have almost all, by different means, tried to distinguish themselves from the others through planning strategies and the definition of their own potentials, their own image. These attempts have at the same time produced a gradual emancipation from the two main neighbour-cities Baden and Zurich. It is asto-

nishing how different the results are, especially considering that the planning attempts arose from similar planning guidelines. From the one-family-housing-prairie to the new-town-city-centre, the different strategies have created different identities, and all together compose today's Limmattal kaleidoscope of urbanity, a conglomerate that must not fear the comparison with Zurich.

Spreitenbach, big-centre town: Looking at the projects for Spreitenbach (Canton Aargau) we can see the visions and hopes of a whole generation of planners. The economic pressure on the undeveloped areas, the sheer endless availability of land, an excellent geographical position, good travel connections and a flexible interpretation of regulations and laws of the fairly autonomous municipalities in the Canton Aargau permitted to develop a high-flying project.

Between 1958 and 1962 the small but ambitious commune of Spreitenbach self-confidently plans a new "city-centre". The intention is not to become a satellite of the big neighbour Zurich, but an independent regional centre. "New Spreitenbach – the first completely new planned city of Switzerland. A town planner (K. Scheifele) organises a city for about 35'000 inhabitants, that will be carried out consequently according to his design." That's what the newspaper headlines look like at the beginning of the 1960s. By 1970, Spreitenbach population tripled up to 6'000 inhabitants. Spreitenbach changed into a "new world" providing jobs and space for modern lifestyles, including the necessary liberality (for instance permitting concubinage, as mentioned above).⁴



Aerial view of Spreitenbach towards the end of the 1960s

From today's perspective the vision seems to be kind of over-ambitious and overestimating Spreitenbach's potential for growth by far. Nevertheless Spreitenbach became an important regional economic centre and the shopping mall is still very popular.

Geroldswil, small-centre town: At the beginning of the 1960s Geroldswil (Canton Zurich) likewise Spreitenbach planned a new centre. Geroldswil is located at the privileged right side of the river, on the sunny side of the valley and therefore is "predestined" as a housing area. From the 1950s on, the municipality grew continuously. In 1960, the population had already doubled and new bigger housing projects offered other extensions of the village. In this context the future of the village's centre came up for discussion. The new project aimed at a modern centre providing the population with all necessary facilities for daily life. At the same time the project tried to maintain the village's scale and not to overestimate the economic potential since

Spreitenbach is so close. However, Dietikon and Spreitenbach retail sales were so strong that it was difficult for Geroldswil's centre to find its own position on this local market. Still, today the centre represents a well functioning public space and is an important point of reference for the inhabitants of Geroldswil.

Dietikon, in search of an image: Dietikon's (Canton Zurich) transportation connections are perfect: The town is situated at the east-west motorway (N1) connecting Basel and Zurich and at the same time it's situated at the motorway that bypasses Zurich on its way to the airport. Public transport connects Dietikon with Zurich's extended commuter railway system.

This privileged situation resulted in a continuous growth of population that only stopped about 10 years ago. The community didn't manage to structure this continuous growth and to concentrate public and commercial facilities, which spread until the 1970s more or less randomly all over the commune's territory.

In 1959, the architect Hans Marti worked out a development scheme based on the Garden City model, but his concept of a vast city-landscape didn't fit to the existing small-scale structure. The centre finally developed into a conglomerate of fragments of various development concepts – a common situation in younger cities. In the 1990s, the architect Ueli Zbinden worked out a new concept to overcome the fragmentation. After all the previous planning attempts, Zbinden draw upon a still noticeable, unvarying element: the open structure, generated by low density and rather small building volumes missing inter-

spatial correspondence. The open structure allows discontinuous interventions re-linking the different elements into a new kind of a collage.⁵

Wettingen, a century housing practice: Since 100 years Wettingen (Canton Aargau) is extending its vast housing zones continuously. The different epochs are reflected in different architecture-styles, but the urban structure remained rather homogenous. Single- and multifamily houses shape its open structure. Even the only "innovative" intervention, which led to some multi-storeyed buildings in the centre, could not change the character of Wettingen. Here the Lim-mattal shows its conservative and unhurried face not praying development and dynamics but opposing resistance to any innovation. Nevertheless, "urban" engagement is growing: There are initiatives trying to lift the management for cultural life to a higher, more competitive level.

Schlieren, post-industrial suburb: Hit hardly by the 1970s crisis, Schlieren (Canton Aargau) had to find new perspectives. On the abandoned industrial areas some interesting "occupants" could be found. Some of the area's pioneers are artists. These cultural "seismographs" are interesting elements to comment on the structural change and to show new perspectives.

Schlieren is the first suburban municipality beyond the metropolitan border and thus had difficulties to stand its ground. The village mutated more and more into an industrial commune. In addition, railway and industrial areas form a gap dividing the "village" in two parts that can hardly be recon-



The gas works' area in Schlieren

nected. The settlements near the Limmat River have been cut off and developed much slower than the rest of the commune.

Time left its marks, even if they are sometimes difficult to be decoded. It seems as if Schlieren rather "suffered" from history and still is in search of an own potential for emancipation. Today the city tries to strengthen the centre, to establish attractive functions and to bridge the gap between the northern and the southern part.

3.2 Limmattal highlights

Are spatial situations like in Limmattal as bad as their reputation?

If so, how the discrepancy between the preference of the inhabitant's majority and the judgement of professional planners can be explained? Is it just a faceless mash of settlements without historic deepness or are there "gifts" and multiple identities to disco-

ver? The city as an identity-creating living place needs patina, urban sediments and fragments, myths and tales. In the Limmattal a surprising amount of such elements can be found. There are quite some places, worth to be visited.

Between Baden and Wettingen, both an "art trail" and an "industry culture trail" are inviting people to discover the riverside. They are not attracting only the population of the close-by area. The Wettingen culture committee initiated the "art trail" in the 1980s. Along the river, where it passes through a gorge, about 20 artists placed their sculptures they specifically made for this place. An important part of the project is its "message". It is an attempt to let people rediscover their environment by adding these new elements. The trail mainly addresses near-by living people and people interested in arts. As for its political dimension, the project is an example of collaboration between three different municipalities. It mobilised a lot of energy and people.⁶

The concept of the "industry culture trail" is slightly different. Since the idea to show the regional industrial culture in the historic museum turned out to be too expensive, the museum director worked out a concept for an historic trail installing illustrated information panels along the historic sites on the riverside of the Limmat.

In contrast to the "art trail" the concept of the "industry culture trail" appears to be more issue-related and less idealistic. It is a more conventional project, putting less emphasis on its own location and identity than the "art trail".



Sculpture of the "art trail" between Wettingen and Baden: "Zimmer" by Beat Zoderer

An exceptional mix of architecture highlights Bergdietikon, a pure residential community on the left side of the Limmat River. People seem to live their dreams without any consideration to standard. Next to a group of organic grass-covered "cave-houses" around a small artificial pond stands a single-family house looking like a castle from a fairy tale with a moat and small turrets, while the next door neighbour's home is built in a classical roman-villa style.



Single family "castle" in Bergdietikon

Not far from these built dreams the sculptor Bruno Weber works since more than 2 decades on a Gaudi-like park "inhabited" by gigantic phantasy-creatures and his own residential house – another fairy-tale castle covered all over with mosaics and ornaments.⁷

Thanks to the artist's continuous dedication – he had to stand endless discussions with the municipality about approvals for his projects – the park came into being on private ground only. On weekends the park is open to the public. It can also be hired for weddings or other private parties.

Near Würenlos the so-called **Fressbuegel** (eating beam), a motorway restaurant, bridges the road. The building, which is well known for its peculiar architecture, also hosts various small shops frequently used by commuters for short shopping stopovers.

In close-by **Haselbühl** mysterious powers can be found. The *Emma Kunz grot*, "one of the most important energy sources in Switzerland" is a mystic place for esoteric pilgrims,



Motorway restaurant near Wuerenlos

where strong biodynamic energy is set free. A therapeutic stone powder with an astonishing healing power, especially against inflammation diseases, is extracted from the cave and commercialised under the name "Aion A". The legend tells that in the 1940's a boy suffering from a severe infantile paralysis was healed by the traditional healer Emma Kunz thanks to mentioned stone powder.

At the border of Würenlos, in a former gravel pit, a popular theatre-show is staged since some years. Starting as a one-season-project, the show was so successful that it is extending its engagement every year.

The former gas works area in Schlieren hosts – apart from the above-mentioned artists – an international known gay club and world's largest indoor free-climbing centre where competitions and other big events are frequently organised.

The shopping mall in Spreitenbach is still an important attraction for people of all ages and for the suburbanites as well as for the metropolitans from Zurich. On weekends, families travel to this artificial shopping and leisure world. Events organised on special occasions are always able to lure plenty of people.

There are lots of other places and events to mention and yet probably even more to be discovered. For its population Limmattal is an attractive place to live in with lots of appealing spaces: the historically "grown" sites and the old cores of the former villages as well as the industrial and infrastructural monuments with the tensions resulting from the variety of structures and functions. "It's an in-between area interspersed with pearls".

3.3 Limmattal nature

The qualities of Limmattal landscape are frequently mentioned. Very appreciated is the fact that local recreation areas are easily and quickly accessible, anywhere you come from. They assume an important role in promoting the relatedness to a common spatial entity for Limmattal inhabitants. The close contact to natural leisure areas is very important for Limmattal's quality of life. Consequently, they are intensively used for leisure activities as jogging, riding, rowing, walking, bathing, gulf plays (in the plain of Weiningen) and barbecues. These areas are not only frequented by the local population, but attract people from the whole Zurich Area. The plain near Weiningen for example is widely known since it is one of the few places where dogs are allowed to run freely, without lead.

In its current condition the valley is the result of an almost complete over-forming of the formerly rural, cultural landscape. The contrast between city and countryside is long dissolved in favour of an intensive mutual penetration of natural and urban fragments. Between the settlement carpets and the infrastructure lines, various landscape-forms such as cottonwood-rows, allotment gardens, cow pastures, football fields, brownfields or riverside woodlands subsist. The last mentioned are regarded as an important biotope as much as for instance the railway corridor including the huge marshalling yard, which is appreciated for offering habitat to reptiles. Although in the last 150 years the river has been regulated and canalised to a large

extent, there is a wide variety of open spaces next to the river: some agricultural zones, old closed meanders like the one at the power station in Wettingen or ecologically important reed areas. Thus the riverbanks also become recovery and recreational areas. Some are valorised by adding facilities like barbecue-places. Others are transformed completely by the infrastructures into hidden "natural" spaces, which are surprisingly fascinating, maybe due to their uncommon appearance.



The hills are mainly covered with wood thus keeping the crests completely free from settlements. Since forest zones are protected by strict regulations, in Limmattal the specific appearance of the valley formed by the combination of topography and forest is still present.

Agricultural zones are shrinking continuously but there are still some, especially around Weiningen, between Killwangen and Neuenhof and between Würenlos and Weiningen. Viniculture areas used to be an important part of the landscape in Limmattal too. Today there are only a few vineyards left around Weiningen and Wettingen.

In the past agriculture and forestry shaped the landscape's appearance. Today agriculture and forestry lost their economic importance and potency thus bringing up the question of the role of agriculture in today's society and for landscape conservation. On the other side the demand for spaces for leisure time activities and recreation is continuously growing.

In the last fifteen years different efforts were made to extend the protected areas in Limmattal and to improve the nature qualities of certain zones. Above all, compulsory environmental compatibility studies, as for the renewal for the concession of the power station in Wettingen, led to a series of compensatory measures. The power station in Dietikon soon also will have to apply for a renewal of the concession. Probably there too will follow compensatory measures. For sure there will be such measures when ambitious infrastructure projects, like the discussed extension of the Gubrist motorway tunnel are realised.

Nature protection and landscape conservation projects are common at the periphery of bigger cities. In fear of the greedy city extending itself more and more into the landscape, lots of outskirt-areas have been protected against new settlements. In Limmattal too, the concern of the whole valley being covered with vast housing colonies and industrial zones is a major motivation for different nature projects.

Out of this idea of landscape conservation emerged the concept of "settlement separation belts" (*Siedlungstrennquertel*), a cantonal instrument to stop the growing-together of the sprawl communities. It's the rural answer to the suburbanisation and the "ribbon city concept" propagated long time in upper Limmattal. The separation belts want

to protect the landscape and the open spaces in-between the settlement areas, thus forcing an even stronger coalescence of the communities between those belts. The valley's linearity is disrupted and superposed by a new structural system that forms new "city units". In this context the differentiation and conservation of the (rural) identity is important for the communities, also there is the idea of keeping reserves for following generations and their needs. Problematic is the fact that the concept of separation belts is defined negatively. It only defines the development to be prevented. It does not consider the whole region as a functional unit, as a complex economic and cultural fabric. Partially, this focus on spatial effects is relativised because the separation belts are only fixed for 15 to 20 years. Actually.

4 Key topics

4.1 Experts Presentations

Angelus Eisinger historian for urban planning, ETH Zürich: "Stadtland Schweiz".

Human settlements in Switzerland are highly influenced by the topography. Between the Jura and the Alps, both regions holding numerous inhabited or rural areas and few urban landscapes, lies the plateau, which is highly urbanised (Zürich, Basel, Bern,

Lausanne, Geneva). The Swiss urbanisation scheme builds a "network-system of towns" made up of large cities, small cities and middle range towns. One can speak of a "decentralized concentration" of urbanisation. This system of towns and this "decentralized concentration" is offering more than just a description of "urban Switzerland": it has been set, since the late 1960s, as the basis for defining public regulation. The governmental publication "Grundzuege der Raumordnung 1996" (Swiss Planning Policy

Guidelines) for instance includes both the principle of "decentralized concentration" and the concept of Switzerland as a networked system of towns.

How did this situation emerge? The principal reasons are:

- Cultural changes
- Socio-technical changes
- Devaluation of the urban culture
- Important increase of mobility

Today 70% of the Swiss population are living in an agglomeration, an urban condition that includes both core cities and suburbia (or "sprawled" settlements organically linked to urban centres). In that respect it makes a lot of sense to speak of Switzerland as "Stadtland Schweiz" (Swiss country-town).

Urs Zuppinger urban planner: "Helveti-Cité"

How can a town planner intervene in a low dense area? The region called "Le pays des Trois lacs" (P3L) is located between the cities of Bern, Neuchâtel, Biel and Morat. It is located at the border of four different cantons and at the language line that separates the German and the French-speaking parts of Switzerland. It is often considered as a "left-over-space" in-between three lakes, including no large town but important farming areas. In spite of being a low dense region it is well integrated into the Swiss major motorway – and railway – networks. The accessibility from the 4 towns is very good.

Expo.02, the Swiss national exhibition that took place in year 2002 in the P3L area, offered the opportunity to make this particular "Zwischenstadt" better known within Swit-

zerland. It also provided for initiating a collaborative teamwork between the four town's authorities. After documenting the forces and weaknesses of their towns and the P3L, the mayors invited interested parties to take part into three meetings. The purpose was to define avenues for common actions and to decide how to manage it together in order to build a collective, and stable collaborative process. This initiative was called "Helveti-Cité". Now that the Expo.02 is over, it is still uncertain whether or not "Helveti-Cité" managed to create such a long-term and on-going procedure.

John Palmesino architect, research director of "Studio Basel": Regio Insubrica

The Regio Insubrica reaches from the Milano region to Lugano, Como and Bergamo. Five million inhabitants live in this area that is the most important economic region of Italy. It crosses the border between Italy and Switzerland. There are major infrastructures but they were planned with regard to the country they belong to and to the towns they deserve. Therefore, the network is not homogeneous. Nevertheless, a new attitude has caught on today, focussing on close cooperation and having led to important projects. To mention is for example the scheduled train-connection between Lugano / Mendrisio in Switzerland and Como / Varese up to Milano and the Malpensa airport in Italy.

At the local scale, the urban shape can be characterized by some recurring elements and phenomena such as: buildings that concentrate all urban functions in one point,

linear corridors made up of complementary "urban pieces" (commercial centres, pedestrian areas, housing blocks...), the implantation of a new function or building in an old structure, "gated plots": settlements developed by one actor (industry, housing, leisure areas...), "clones": repetition of one element.

At the large scale, the scattering is not homogeneous too, due to the border situation, the infrastructures, the specific dynamic of each town and the topography (mountains and lakes). It is made up of: networks of roads deserving little towns, developments along the motorways, new dense development areas, some very low density settlements around farms and old villages, ...

The Swiss part of the Regio Insubrica has particular characteristics due to political and administrative reasons, which are different from the Italian ones. It is a dense region; the topography (Alps and pre-Alps) and the infrastructures play an important role in the constitution of this "in between land". The settlements are located along the major transport systems and on the banks of the lakes. The urban shape is a mosaic.

The northern part of the Regio Insubrica has a very nice climate. Both the Italian and the Swiss part took advantage of this and developed high level international tourist resorts. In comparison to Italy, the Swiss part is more linked to the (topographic) "corridors" and its economic value. The urban organisation is not the result of hierarchical planning but the result of decisions taken by hundreds of actors.

Michael Koch architect, professor for urban planning in Wuppertal/ D: the Limmattal.

The analysis of the Limmattal, located NW of Zürich leads to ask the question: what means "city" in Switzerland. This valley has as backbone linear infrastructures (railway, motorway, roads,...) alongside the Limmat River. It is surrounded by hills covered with forest (in Switzerland, all wooded areas are protected). A patchwork of different settlements can be observed: industry, housing, commercial centres, a large marshalling yard, fields...

It is necessary to give a name to each element of the patchwork, in order, first to be able to discuss and share the knowledge of these territories, and second, by analysing each element, to define how it can or will evolve.

The patchwork is made up of:

- Borderlines: the contact-line between build-up areas and green areas.
- Cores and relicts: (fragments of) historical centres or almost "intact" nature – the memory of the city.
- Ribbons: mainly transportation facilities. Important is the notion of city/landscape in motion
- Clones: there are settlements that are identical in their form such as housing settlements, industrial settlements, and commercial centres, among others. They form the "generic city".
- Ufos: self sufficient and attractive elements, such as commercial centres, highly connected to the infrastructures, ignoring the local urban or natural context
- Blind spots: empty, undefined or inaccessible spaces



The specific combination and appearance of these elements defines the "DNA" of the corresponding outskirts. The forest surrounds this patchwork of elements and is untouchable: it is a common good.

It can be stated that Swiss people fear big cities and Swiss people fear the degradation of their landscape.

4.2 Discussion

Heterogeneity, fragmentation, juxtaposition, density, mixture are keywords that describe this urban fabric. These "concentrated outskirts" are a patchwork of contrasted elements; each space is well kept, is of high quality; the environment is very pleasant, with a lot of green spaces. The lack of uniformity becomes pleasant: at each corner, one can discover something unexpected. It seems to be the "land of boundless possibilities": one can build his dreams, even if they are strange, unconventional, and unusual. It won't bother, it's almost not noticed since it goes under in the heterogeneity of the surroundings. The landscape is present everywhere. "Limmattal is

beautiful" and it seems that the quality of life in this valley is quite high: "the outskirts have to be explored in their beauty". The Zurich region including Limmattal can be seen as a garden city as a whole.

How to characterize the Limmattal sprawl?

The Swiss team has grappled with this urban fabric in order to understand it, to be able to share this knowledge with all the urban actors who are interested in the evolution of this valley. It proposes "concepts of understanding": as written before, Limmattal is made up of elements such as: borderlines, cores and relicts, ribbons, clones, ufos, blind spots. These outskirts can be qualified with the following terms: juxtaposition, harmonious fragmentation, coexistence (of different architectures), ambivalence, liquefied space, and emancipation, among others. All these terms are proposed to highlight what is a "morphology of heterogeneity", to help evolving from a conglomerate of random city-patches to a special kind of urban collage.

One can say that the Limmattal is a miniature of Switzerland: low-density settlement areas + rural areas + transport infrastruc-

res + industrial areas + forest areas... Leisure activities are not spectacular, there are no big urban parks, people enjoy their house, their garden, the squares, the forest and the rural areas surrounding the valley.

Scales

The observation of these outskirts depends on the scale chosen to do it. If one looks at the Limmattal at a larger scale, Limmattal belongs to a network of places made up of large cities, middle range towns, villages, and rural areas... The valley can therefore be considered as a place on its own or as one element of this whole urban system. One can also consider that each part of the network can be a central, specific place and therefore Limmattal as well can be seen as a central place – for instance for consumption and leisure.

The Swiss city network is very peculiar. Despite for the Zurich area, which is often considered as the Swiss core, (because it's the main economic centre), the hierarchy between the other towns is pretty loose. Switzerland is a real network of places. Just to give an example, one needs only one hour (at the most) to go from one main town to another. Therefore, Swiss planners are not facing urban sprawl *per se*. They rather have to cope with a broad filling scheme, where the gaps in-between the towns are urbanised and build together a metropolitan area. But this area is not fully urban. Actually, Switzerland still has a strong rural tradition. Even though people are discovering that urbanity – considered as a lifestyle rather than as a built form – has already conquered rural places, they are not ready to admit that they are living in an urban landscape. In terms

of perception, it is important noticing that many people who are living in outskirts are describing their surroundings as rural, although they are defined in statistical terms as parts of an urban agglomeration. In that respect, defining Switzerland as a "Stadtland" is a very interesting way of thinking. But one must be aware that it does not fully reunite the rural and the urban poles, which have to be integrated in a kind of a "rurbanisation" scheme. People as well as practitioners have to reconcile both urban life and the figure of the village: this remains the bottom-line from where one can conceive and experience social and political gatherings. Both have to be thought together.

Interestingly enough, many decisions dealing with planning issues such as zoning by-laws are made at the local level. One of the major challenges for the future will be to fine-tune this bottom-up procedure with environmental and transportation issues that rather refer to regional and national scales and that also call for top-down measures. To say that there is a need to integrate larger scales within the local decision-making process is typically one of the many points one can learn from the Limmattal and from the P3L.

Mobility and accessibility

The Limmat valley is very well deserved by a multi-modal system: busses and train, roads and motorways. These infrastructures are well integrated into the landscape and the urban areas. They "re-build" the landscape, creating a new landscape with its own qualities (as it is often the case in Switzerland). The delegates noticed the great quality of the public transports.

The question came up, how the coordination between transportation networks and urban development as seen in Copenhagen (densification around the stations of public transport) is managed.

The Stadtland quality depends highly on the quality of accessibility. But the transport system is almost overloaded (especially in the Limmattal) and it will be very expensive to make any improvement – not mentioning the fact that the expansion at one point only transfers the problem to the next capacity bottleneck. The Swiss team explained that a new suburban commuter railway system is planned to mitigate this problem.

Governance

The Swiss planning system is mainly relying on two documents that are defined in the Swiss planning law: the zoning plan and the master plan. It is the task of the municipalities to elaborate the zoning plan, which has a fully binding effect (a zoning plan is the equivalent of a law and everybody has to comply with it). A master plan has to be made by the 26 Swiss cantons. Its major role is to insure that the policies, measures, plans referring to all the authorities that are involved in planning related issues are properly coordinated. For that reason the master plan is only binding together the public authorities at the local, cantonal and federal levels. As for the federal level, it has only limited competences. It approves master plans made by the cantons and it defines general guidelines, which must be taken into account by the other public authorities.

But, as written before, an area such as the Limmattal represents a new kind of a territory. It is a regional entity made of many municipalities attached to two cantons (canton Zurich and canton Aargau). In that respect, it is a new kind of a city, which needs a new approach to planning. What is the role of the planners and what instruments do they need in such a context?

There is no easy answer although the agenda is fairly easy to articulate. First, there is a need to take into consideration the urban needs of the people, the realm of the present city and the modern aesthetics in order to better understand the urban condition of the Limmattal. Second, there is a need to find concepts and words to describe it and to make it understandable by all the stakeholders. There is a need to discuss the issues related to this new condition, and to induce a collaborative attitude. Only third comes the question of planning tools and practices.

From our point of view it is even more a question of processes rather than of tools and practices. The two last-named are well known and fairly well implemented at the local level. The "Stadtland" must be understood and dealt with at different scales. Therefore, the central question is linked to the ability to cope, following the bottom-up line, which is so important in the Swiss context, with issues at the regional, and national scales. Designing projects as images and as opportunities for organising this procedure seem to be very crucial. At least three initiatives have such a potential to build for supra-local collaboration. First, the new suburban railway line for example could be a good opportunity where municipalities

would have to work together. Second, within the Swiss policy to promote "rail transit", the federal railway line has recently decided to use the Limmattal marshalling yard as a terminal to put trucks on trains. This decision will open new avenues to mitigate the likely new nuisances it will generate in the region. The municipalities will substantially increase their power if they are able to define a common position within the negotiation procedure. Third, because the Limmattal is spanning over two different cantons, each one having different strategies and visions that are defined in its master plans, the Limmattal has been chosen as a testing area for a joint planning effort (PAZ – Plattform Aargau-Zurich). It is not yet possible to identify how this proposal will impact on the region, but it is clearly a third case which has the potential to participate in building a new attitude towards a supra-local kind of planning that respect the power and the prerogatives of the local municipalities. In terms of governance, these examples are good illustrations of possible ways to deal with the condition of urban outskirts.

4.3 Conclusion

As a conclusion one can say that the Limmattal gave the Cost C10 group the opportunity to analyse a very interesting situation, a *Zwischenstadt* that can be considered as a town in itself. This situation finds its roots in the Swiss' people relationship to nature, to rural life and to their network of towns and human settlements. Limmattal is one of the numerous "models" of the urban situations we are looking at. The great lesson Cost C10 has to learn from this experience is that new concepts and new tools for the understanding and the management of these places are proposed here.

Notes

- 1 Cp. *Schweizer Revue*, 2/1998, Solothurn
- 2 Data sources: Statistisches Amt Kanton Zürich (ed.) *Statistisches Jahrbuch des Kantons Zürich 2002* and: www.ag.ch/staag/ (web page of Statistisches Amt Kanton Aargau)
- 3 Cp. *Schweizer Revue*, 2/1998, Solothurn
- 4 Cp. Scheifele, K., 1967: 10 Jahre Ingenieur- und Planungsbüro Klaus Scheifele (10 years engineering and planning company Klaus Scheifele – in German), Dietikon
- 5 Cp. Malfroy, S., 1995: Die Neugestaltung des öffentlichen Raumes im Dietiker Stadtzentrum (The new public space design for the centre of Dietikon – in German) GTA Institute ETH Zurich and Office for architecture Ueli Zbinden (ed.) Exhibition catalogue, Zurich. p.10ff
- 6 Cp. Communes Baden Wettingen Neuenhof (ed) 1992: Kulturweg Baden-Wettingen-Neuenhof, Baden
- 7 Cp. Weber B. (ed), 2002: Bruno Weber. Der Architekt seiner Träume (Bruno Weber. The architect of his dreams – in German), Wabern/Bern

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