

Corridor development as part of the network city

Urban planning, design and praxis in the Frankfurt Rhein Main Region

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Abstract

The spatial development along the lines within urban networks tends to be neglected in urban design education and ignored or rejected by spatial planners. The spatial and economic development along these lines (corridor development) is an integral part of the network city with its own dynamics, functions and aesthetics. In the paper this development is regarded as a spatial expression of the postmodern organisation of production and society, requiring new values for urban planning and design. The Frankfurt Rhein Main Region is one of Europe's economic core regions. The region is an example of a postmodern urban landscape containing both postfordist production industry and postindustrial service/knowledge economy. The region functions as an urban network in which not just the main commercial and cultural nodes are important but also the space of flows gains importance; the lines between the main nodes which house many of the dweller-commuters that work in the (urban nodes of the) region and many of the postfordist and postindustrial production units. The region has chosen an offensive strategy to deal with (inter)national competition, in which location politics and enhancement of (spatial) quality of life play an important role. The major spatial strategy for the region focuses on the development of the major urban nodes and a strictly planned and controlled growth of smaller towns and cities. In the national planning documents of Bundesland Hessen -of which the Frankfurt Rhein Main Region is a part- the spatial development along infrastructural lines is acknowledged and promoted, yet this gets ignored in planning at the regional level which focuses on conservative and romantic ideals of the compactness of settlements and the openness of the landscape. The paper aims to describe the actual corridor-development in the Frankfurt Rhein Main region as part of the region's development as an urban network, focussing on changes in planning, users and design. The corridor development is researched by using a Deleuzian vocabulary and conceptual framework in order to analyse and describe the spatial processes in the region as a space of flows of people, money, data, goods, interests, etc. that clash, meet, mix and interfere and thereby shape the landscape. Data are mainly collected through observation, interviews with researchers and planners and comparison of spatial plans (differing in time and scale).

Introduction

The emergence of the network society offers, as the title of this congress suggests a new context for planning. This new context is the result of the intensification of urban networks due to changes in organisation of production and consumption as result of changes in technology, mainly (data)transport.

The spatial and economic consequences of these technological developments are an intensification and renewal of urban and global networks in which the position of many individual cities and smaller countries has decreased and a growing importance of regional urban networks, as part of larger networks, is notable.

Examples of these regions are the Randstad in the Netherlands and the Frankfurt Rhein Main region in Germany, as part of a greater international network that has been described as the well-known Blue Banana (image 1). In studies and plans concerning urban networks most of the attention goes out to the development of the nodes of these networks and the disperse urbanisation between those nodes.

Both in the Netherlands as in Germany the official spatial policy to this is trying to maintain compact cities combined with a romanticised notion of the territory outside the cities; empty, spatial and natural. Besides this there are concepts and visions that focus (also) on the development of the space between the nodes, such as the Zwischenstadt (in-between-city) of Sieverts or the Territorium city of Corboz.

Also there is an international tendency notable in spatial disciplines that concentrate on spatial development along the lines in and between the urban networks, on corridors. Concepts and designs for spatial development along infrastructure are present during the whole history of urban planning and design. (Collins, 1959; Whebell 1969). Especially in the period starting with the industrial revolutions and the rise of modern(ist) organisation of production (fordism) and transport (rail and car) ideas for a linear organisation of urban space emerge. Familiar examples are the linear gardening of Arturo Soria y Mata (image 2) and the schemes and designs for linear industrial cities from Millutin (image 3) and Leonidov (image 4)

This paper however focusses mainly on the urbanisation along lines in the landscape - in the German Frankfurt Rhein Main Region - as develops within the current postmodern organisation of society, stating that this type of urbanisation (corridor development) is immanent to the postmodern phase of production and consumption.

Location of the Frankfurt Rhein Main Region

The German Federation is divided into several hierarchic (planning) levels:

1. The Bund; federation
2. Länder; states of the federation
3. Planungsregionen; planning regions
4. Gemeinden; municipalities.

The region that is studied in this paper is the Region Frankfurt Rhein Main which is mainly situated in the *Bundesland* Hessen.

The region is part of the urban and economically dominating zone that goes through Europe, the Blue Banana (Bunet, 1989) (image 1)

The Frankfurt Rhein Main Region is not a clearly bordered entity. The borders of the region appear stretchable and subjective; governments, private and non-governmental organisations/institution, researchers etc. use different definitions.

Governments use the borders of the planning regions and Bundeslanden, causing cities like Mainz, Wiesbaden and Darmstadt not to belong to the region. Economic organisations/institutions such as the Wirtschaftsregion Frankfurt Rhein Mainz look at the economic forcefield and cooperations in the region and therefore do include Wiesbaden, Mainz and sometimes Darmstadt.

Researchers try to study a multiplicity of economic, cultural, social, geographic etc. connections and (therefore) use even different definitions among themselves. Especially the difference between the planologic and economic entity of the region makes it difficult to develop a coherent and consequent vision on the (spatial) development of the region.

In this study the Frankfurt Rhein Main region is defined as done by the Planungsverband Region Rhein Main (PVFRM) (a (sub-)regional planning authority) completed with other cities that have a strong spatio-economic and infra structural connection with this part of the region; this leads to a completion of the PVFRM definition with the cities of Darmstadt (in the south), Aschaffenburg and Hanau (in the east), Wiesbaden and Mainz (in the west). This region forms an urbanised stretched zone along the rivers Rhein and Main and the highways A3 and A66 together with the east-west orientated railways and an urbanized offshoot towards the south along the A661/A67 and railways (images 5 and 6).

In the Planungsverband Frankfurt Rhein Main live approximately 2,1 mjn people. The region as defined in this case houses over 5,2 mjn. people on a surface of over 13.000 km². The main urban centres of the region (Aschaffenburg, Darmstadt, Frankfurt, Mainz, Offenbach and Wiesbaden) together house little less than 30% of the regions population (1,5 mjn.) of which 644.000 live in Frankfurt.

Hypothesis

Corridor development occurs as spatial expression of the postmodern organisation of production (postfordist industrial production and postindustrial services/knowledge economy) whereby urban networks, that have always existed, intensify and the infrastructural lines between the nodes in these networks increasingly become urbanized. Companies settle there because of low landprices, connectability, in sight locations etc. New developments for housing also emerge there, often as expansion of existing centres. Reasons are connectability, employment, space and the proximity of green space and urban centres. Spatial planning, especially on a regional scale, tends to reject this development but has insufficient power and instruments to stop this development. The new context for urban planning is ahead of official thought about planning.

Theoretic framework

Postmodernisation of space

Spatial and urban organisation and appearance are closely connected to organisation of production (and consumption) and the ways by this is facilitated. Due to developments in ICE, global shifts in division of labour, etc. two new forms of (organisation of) production can be distinguished: postfordism en postindustrialism. Postfordism describes the changes in industrial production from large scale (mass production for a mass market) towards a more flexible and small scale production in the sense that larger companies have collapsed in to more or less autonomous specialized companies that work together in a (global) network. Post industrialism describes the strong growth since the 1960's of the commercial service sector and the emergence of a knowledge economy. Michael Dear brings these two developments together in what he calls flexism.

a pattern of econo-cultural production and consumption characterized by near-instantaneous delivery and rapid redirectability of resource flows. (M. Dear, 2000, p152).

The fluency of flexism is the result of cheaper and faster transportation and telecommunication systems, the globalization of the market and connected flexibility-specialized, just-in-time production processes. Dear states that this results in highly mobile flows of capital and goods that are more manoeuvrable than geographically-fixed labour markets, communities and nation-states and that they are able to dodge or manipulate these latter. Castells speaks in this context of the rise of a space of flows beside the traditional space of places.

Where Michael Dear uses a summarizing term for the two production regimes, Edward Soja makes a clear distinction between postindustrialism en postfordism. Edward Soja describes the postfordist regime of flexible accumulation as:

a complex mix of both deindustrialization (especially the decline of large-scale, vertically integrated, often assembly-line, mass production industries) and reindustrialization (particularly the rise of small and middle-size firms flexibly specializing in craft-based and/or high technology facilitated production of diverse goods and services), this restructuring of the organization of production and the labour process has also been associated with a repatterning of urbanization and a new dynamic of geographically uneven development (Soja, 1996)

Soja recognizes a complex combination of de-industrialisation and re-industrialisation. Therefore he doesn't speak of a post-industrial era but rather of a post-fordist era, because this new era is still highly industrial and the recognized changes are not so much quantitative but qualitative; not so much a change of production but rather a change of organisation of production.

Antonio Negri en Michael Hardt use the term *postmodernisation of production* or *informatisation of production*. The increasing dominance of the service and knowledge economy (tertiary sector) is according to Negri and Hardt a process of economic *postmodernisation* or *informatisation*. (Negri, Hardt, 2000, p.280) They claim that modernism is past and the dominant role of industrial production on other economic forms (like the industrialisation of agriculture) and social phenomena (like for example schools) diminishes. The role of industrial production doesn't decrease because of the informational revolution though. Just like the role of agriculture didn't diminish during the industrial revolution but the organisation of agricultural production changed, changes the postmodernisation the industry by redefining and reorganizing the production process. (Empire, 284-285)

Spatial consequences of the postmodernisation of production.

One characteristic that both production models share is the reconceptualisation of time and distance.

What the changes in transportation and communication - the infrastructures of society - have meant in recent years has been the eclipse of distance and the foreshortening of time, almost to the fusion of the two. Space has been enlarged to the entire globe, and is tied together, almost, in real time. The sense

of time, religiously and culturally, which had been orientated to continuity and the past, now sociologically, becomes geared to the future . (Bell, Teletext and technology, 1980)

The postmodernisation of production results in an increasing importance of productive flows and networks. The paradigm of the assembly-line of the industrial economy is in the informational economy replaced by the network. This network is flexible (it constantly establishes new connections) and requires no territorial or physical centre. (Negri and Hardt, 2000, p295). This change went hand in hand with a change of forms of cooperation and communication within and between production locations. Because of ICT distance is less important; the importance of proximity (both of colleagues and production units) diminishes.

Krishan Kumar expresses that this development leads to a movement of both de-concentration and re-concentration.

Post-modernity reverses or qualifies some of the typical spatial movements and arrangements of modernity. The concentration of populations in large cities is countered by a movement of de-concentration, de-centralization and dispersal. Much of this is related to post-fordist developments. It is also the result of the de-industrialisation of many regions of western societies - with much manufacturing being exported to non-western societies - and post-industrial re-industrialisation based on high-tech, research-based concerns which have preferred new locations in suburban and ex-urban areas, especially those near university cities (Krishan Kumar, 1995, p122)

Together with the territorialisation and decentralisation of (industrial) production a centralisation of control over production, the managing, can be noted.

The geographical dispersal of manufacturing has created a demand for increasingly centralized management and planning, and also for a new centralization of specialised producer services, especially financial services (empire 297)

Simultaneous with the decay of industrial cities a rise of cities of control occurs; economic key-cities like London and Frankfurt.

Nomadic thinking

In this case study a nomadic or neo-materialist approach is used to analyse and describe what happens spatially in the Frankfurt Rhein Main region. The econo-spatial and urban developments mentioned in previous paragraphs connect with the nomadic or neo-materialist thinking of Gilles Deleuze en Felix Guattari. Nomadic thinking can provide concepts and a fitting vocabulary, to research how flows (of people, money, goods, data, energy, etc.) shape the landscape and are being organised by/in abstract machines (also called social machines (Protevi) or engineering diagrams (De Landa)); structure generating processes that lead to more or less rhizomatic spatial, experimental politic/societal structures. These abstract machines connect simultaneously to the global economy and local econo-spatial policy or action; such as the offensive flexibility strategy used in Germany which focusses on enhancing spatial quality and connectability. Nomadic thinking can provide a neo-materialist way of thinking and analysing that simultaneously gives a broadening and a precision of dialectics by not limiting itself to oppositional abstract concepts but by regarding a multiplicity of virtual and actual (but always real) dynamic and interrupting flows.

First a small introduction will be given of the vocabulary, derived from Deleuze en Guattari, that is used in this paper. The main concepts or notions concerning postmodern spatial and urban development that are used in this study are;

- " flow,
- " network or rhizome,
- " major-minor planning,
- " de- and reterritorialisation,
- " smooth and striated space,

Flow

Deleuze describes the city as correlate of the road. The city hereby exists as function of circulation and circuits. The city is defined by its entrances and exits and causes a phylum, a flow along different places along horizontal lines. The city is inseparable from the horizontal network of other cities. The city is a phenomenon of transconsistency, the city is a network because it is fundamentally in contact with other cities. (Deleuze, 1994. 432).

The entrances and exits that Deleuze mentions in his description of the city are now becoming less and less clear; the network becomes urban, the interval between the nodes of the network gains substance. Manuel De Landa in *A thousand years of nonlinear history* represents, derived from the nomadic thinking of Deleuze, historical developments and processes as flows of energy, matter, information and their stratification/re-/destratification in hierarchies and networks.

... since what truly defines the real world (according to this way of viewing things) are neither uniform strata nor variable meshworks but the unformed and unstructured flows from which these two derive (De Landa, 2000, p260).

Cities hereby are considered as;

not only as structures operating at a certain degree of stratification (with a certain mix of market and command components), but they themselves performed destratifications and restratifications on the flows that traversed them . (De Landa, 2000, p263)

This is shown for example in the development of the Frankfurt Rhein Main Region where from the beginning of the 20th century a vast increase of urbanisation and industrialisation occurred along the 'flows' of matter and energy; along the river Main, the main (rail)roads and the lines for power- and data transport in the region.

Network / rhizome

Deleuze distinguishes between arborescent (treelike) structures and rhizomes.

In contrast to centered (even polycentric) systems with hierarchical modes of communication and preestablished paths, the rhizome is an acentered, non hierarchical, nonsignifying system without a General and without an organizing memory or central automaton, defined solely by circulation of states (Deleuze, 1994 p201)

Any point of a rhizome can be connected to anything other. Urban networks can be relational, infra structural, ecological etc. and have both rhizomatic and treelike characteristics. Corridors can be the interval between the nodes, the connections getting substance. A corridor in itself also can develop both rhizomatic and treelike characteristics.

With the development of networks, of disperse urbanisation and the development of corridors the importance of the in between space of the urban nodes gains importance; a development from points to lines. Especially on the fringes of the urban centres and in the suburban space new (often rather monofunctional) areas are developed for housing, work, recreation etc. where these functions used to concentrate more on/in the city itself.

It (the town) is a phenomenon of transconsistency, a network, because it is fundamentally in contact with other towns. It represents a threshold of deterritorialization, because whatever the material involved, it must be deterritorialized enough to enter the network...to follow the circuit of urban and road recoding...Towns are circuit points of every kind, which enter into counterpoint along horizontal lines; they effect a complete but local, town-by-town, integration . (Deleuze, 1994, 432)

Major-minor planning; dominance and counterflow

D&G recognize in a thousand plateaus the existence of major and minor literature and ditto science. The notions major and minor are in this context not necessarily quantitative categories. Majority rather describes a hierarchy or status; a supposed power and dominance.

when we say majority, we are referring not to a greater relative quantity but to the determination of a state or standard in relation to which larger quantities, as well as the smallest, can be said to be minoritarian... (Deleuze, 1994, 291). Majority assumes a state of power and domination, not the other way around. It assumes the standard measure not the other way around (Deleuze, 1994, 105)

The majority is (thereby) seen as a constant, as standard measure.

The opposition between majority and minority is not simply quantitative. Majority implies a constant, of expression or content, serving as a standard measure by which to evaluate it (Deleuze, 1994, 105). ... the majoritarian as a constant and homogeneous system... (Deleuze, 1994, 105)

Everything that deviates from this standard measure is considered as minor -a subsystem- but simultaneously as potential creative force.

A determination different from that of the constant will therefore be considered minoritarian, by nature and regardless of number, in other words, a subsystem or and outsystem (Deleuze, 1994, 105) ...minorities as subsystems, and the minoritarian as a potential, creative and created, becoming (Deleuze, 1994, 105-106)

Major and minor science are like major and minor language condemned to each other; they exist next to and in each other, in a same field. They form a tension-limit (Deleuze, 1994 364).

What we have ... are two formally different conceptions of science, and, ontologically, a single field of interaction in which royal science continually appropriates the contents of vague or nomad science while nomad science continually cuts the contents of royal science loose. At the limit, all that counts is the constantly shifting borderline (Deleuze, 1994 367)

Major and minor do not qualify two different languages but rather two usages or functions of language (Deleuze, 1994 104)

Minor languages do not exist in themselves: they exist only in relation to a major language and are also investments of that language for the purpose of making it minor (Deleuze, 1994 105)

Minor science -or nomadic science- can be described as a model that is:

- fluent or hydrolic, instead of static and solid,
- consists of becoming and heterogeneity, instead of stability and constancy,
- smooth instead of striated,
- problematic instead of theorematism; problem-solving, answer-generating.

one ... does ... go from a problem to the accidents that condition and resolve it (Deleuze, 1994 362)

These characteristics can also be found by Deleuze's notion of the concept (Deleuze and Guattari, 1994).

Deleuze and Guattari use their concept of the major and the minor for language and science. The major-minor division appears also useful to describe and analyse the processes and relations considering space, spatial planning and urban development/design.

The hydraulic model of nomad [minor] science and the war machine, ..., consists in being distributed by turbulence across a smooth space, in producing a movement that holds space and simultaneously affects all of its points, instead of being held by space in a local movement from one specified point to another. (Deleuze, 1994 p363).

Planning and urban design are activities that seem to be restricted to the State and other governments (the major) but at the same time they are under influence of all sorts of minor powers; lobbies (Deleuze, 1994 p366), alternative concepts, and own initiatives in a smooth space. Besides these there are also major-minor relations within the planning regime concerning large scale (State, Land) and smaller scale (region, city, municipality) interests and the different interests of different disciplines of governments in relation to spatial planning (economy, infrastructure, environment, housing etc.).

Smooth and striated space

The conceptions of space connecting to the majority and minority are on the one hand the *regulated* space; space that is controlled, over-coded and planned by governments, and on the other hand the *unregulated*, free space that is occupied, coded and organized by its users. Deleuze and Guattari describe this as striated and smooth space. Smooth space is a nomadic space (for example the space of flexible international capital), a space of resistance, of own initiatives and *immanent processes (compare; autopilot-> Rem Koolhaas)*; a space where the State has no control over, or at least doesn't use it. Striated space could be taken as the space of the majority; a space where according to ruling models and concepts spatial policy and planning is made by the State or other governments.

One of the fundamental tasks of the State is to striate the space over which it reigns, or to utilize smooth spaces as a means of communication in the service of striated space. It is a vital concern of every State not only to vanquish nomadism but to control migrations and, more generally, to establish a zone of rights over an entire exterior, over all of the flows traversing the ecumenon. If it can help it, the State does not dissociate itself from a process of capture of flows of all kinds, populations, commodities or commerce, money or capital, etc. (Deleuze, 1994 385)

The notion of smooth and striated space can be applied to describe the postmodern urban landscape in which the cities are no longer points or nodes in a network but the cities are merging with the hinterland and intensively transform into an urban field with nodal and linear concentrations. Deleuze describes that in a striated space everything is subordinated to points, while in a smooth space the points are subordinated to lines, vectors and trajectories, points are deterritorialized in a smooth space. Smooth space is the space where the interval becomes substance (Deleuze, 1994 p478).

Smooth space can be regarded as politically smooth in a sense that there are no/few restrictions and regulations. On the other hand it can be regarded as smooth landscape in a sense that there are few regulating or steering elements present in the space. Striated space can on the one hand be regarded as politically striated in a sense that there are clear restrictions and regulations and on the other hand as striated landscape in the sense that there are clear steering spatial elements, infrastructure, rivers, etc. present in the space.

De- and reterritorialisation

Besides the struggle between smooth and striated space, mentioned above, also a struggle between de- and reterritorialisation can be recognized.

New technologies and with that new means of production, lifestyles, needs etc. make that both flows (de- and reterritorialisation) take place at the same time and with great speed.

Movements of territorialisation and reterritorialisation play an important role in the thinking of Deleuze.

The earth constantly carries out a movement of deterritorialization on the spot, by which it goes beyond any territory: it is deterritorialized and reterritorialized. (WP 85)

Deleuze states that the city;

... represents a threshold of deterritorialization, because whatever the material involved, it must be deterritorialized enough to enter the network, to submit to the polarization, to follow the circuit of urban and road recoding. (Deleuze, 1994 432)

The maximum deterritorialisation sees Deleuze in the tendency of harbor- and mercantile cities to separate themselves from the hinterland, from the rural territory and to merge into a (global) urban network with a complete different dynamic: a megapolis or megamachine.

... the relation [between state and towns] is a reciprocal one: if it is the modern State that gives capitalism its models of realization, what is thus realized is an independent, worldwide axiomatic that is like a single City, megalopolis, or megamachine of which states are parts, or neighbourhoods (Deleuze, 1994 p434-5)

In the city deterritorialisation takes place by *immanence*. Deleuze writes about the (ancient-Greek) urban population that:

They develop a particular mode of deterritorialization that proceeds by immanence; they form a milieu of immanence. It is like an international market organized along the borders of the Orient between a multiplicity of independent cities or distinct societies that are nevertheless attached to one another and within which artisans and merchants find a freedom and mobility denied to them by the empires. (Deleuze and Guattari, 1994)

This also connects with the notion of the global urban networks and the role of the (working class) population of Negri and Hardt.

By innovations in technology and the connected changes in relations of power the international market has become dominant and requires a mobile, flexible population and production.

[So] the social field no longer refers to an external limit that restricts it from above, as in the empires, but to immanent internal limits that constantly shift by extending the system, and that reconstitute themselves through displacement. (Deleuze and Guattari, 1994, p97).

According to Deleuze the result is that;

Today we can depict an enormous, so-called stateless, monetary mass that circulates through foreign exchange and across borders, eluding control by the States, forming a multinational ecumenical organization, constituting a de facto supranational power untouched by governmental decisions (Deleuze, 1994 453).

Edward Soja states that re- and reterritorialisation can be directly connected to the emergence of the postfordist organisation of production.

Deterritorialisation involves the breaking down of fordist world of production and related spatial divisions of labour, the longstanding political and discursive hegemony of the modern nation-state and traditional forms of nationalism and internationalism, and established patterns of real-and-imagined cultural and spatial identity at every scale from the local to the global. (postmetropolis 212)

Reterritorialisation is the critical response to globalization and postfordist restructuring, generating new efforts by individuals and collectivities, cities and regions, business firms and industrial sectors, cultures and nations, to reconstitute their territorial behaviour, their fundamental spatiality and lived spaces, as a means of resisting an/or adapting to the contemporary condition (Postmetropolis, 212)

Deleuze on the other hand claims that de- and reterritorialisation is not restricted to a postfordist phase of capitalism but that these movements are immanent to capitalism itself; Deleuze describes capitalism as deterritorial and deterritorializing force.

Capitalism ... is not at all territorial, even in its beginnings: its power of deterritorialization consists in taking as its object not the earth, but materialized labour, the commodity (Deleuze, 1994, 454).

On the other hand also Deleuze recognizes a recent increase of deterritorialisation.

Today we can depict an enormous, so-called stateless, monetary mass that circulates through foreign exchange and across borders, eluding control by the States, forming a multinational ecumenical organizations, constituting a de facto supranational power untouched by governmental decisions (Deleuze, 1994, 453).

Technological innovations and the connected changes in organisation of production, culture, space etc. mentioned earlier result into a *flow of deterritorialisation*; the emergence of a relative independence or flexibility towards the territory. On the other hand are nations and regions trying to create a territorial overcoding in order to freeze or slow down the footloose *lines of flight* of people, goods, companies etc. by investing in image, connectability, quality of life, the surplus of (educated) labour etc. This results in a certain reterritorialisation, the territorialisation of other locations in the region; where connectability and visibility are better, prices lower, quality of the environment better etc. The development of the Regionalplar Rhein Main can be seen in this light.

Finally two types of deterritorialization can be distinguished; on the one hand a deterritorialisation as the development of a relative independence of the territory (a becoming deterritorialized) and on the other hand a deterritorialisation coupled with a reterritorialisation by other functions; and connected with this a recoding or overcoding of the landscape.

Frankfurt Rhein Main Regio as postmodern urban landscape

Brief historic overview

Since the mediaeval period (date) Frankfurt has developed as mercantile city with large fairs -Messestadt- due to its location on the crossing of main trade routes (road and river).

Even during the emergence of industrial production the city of Frankfurt concentrates on trade and financial services.

In the beginning of the 19th century the Frankfurter 5 (sons of Mayer Amschel Rothschild) almost have the monopoly on European Banking.

Industry is mainly located outside the city boundaries and in cities and villages surrounding Frankfurt.

Around 1900 a dense railnetwork is constructed in the region in order to move people, raw materials and products. Along these railconnections new towns arose and existing towns expand(ed). The industrialisation of Frankfurt mainly took place by its annexation of surrounding municipalities.

In order to (re)house the working-class population of Frankfurt at the end of the nineteenthcenturies a policy of Siedlungen (settlements) is developed by the architect Ernst May. Basic idea of Mays concept of Siedlungen was to regard the city as a network and to design new nodes for (working-class) housing nearby public transport.

Between 1871 and 1905 a strong growth of population of 5% per year occurs in the corecities of the region due to industrialisation and, connected, urbanisation. Besides this the cities in the region grow by annexation of surrounding municipalities.

Between 1905 and 1939 the population of the cities and surroundings increases much less; 0.9% per year in the cities and 0,8-1,3% per year in the Umlandkreisen, the surrounding municipalities.

After the second world war a new populationgrowth of ca. 3% per year occurs in the cities of the Frankfurt Rhein Main Region. In 1960 approximately 700.000 people live in Frankfurt. Starting in the nineteen sixties a strong movement of suburbanisation is notable; halfway the 1980's the population of Frankfurt had dropped to less than 600.000 people.

Between the 1950's and the 1980's a strong rise in number of jobs in the cities of the region occurs. In Frankfurt there are about 255.500 jobs in 1950. In 1980 this number has almost doubled to 593.000. During the 1980's however a strong backdrop in number of jobs is notable while the number of jobs in the Umlandkreisen (surrounding municipalities) increases. An important factor for this are the changes in organisation of production and the moving out of the cities of production-units and offices to new locations in the region.

Jobs in the secondary sector have decreased strongly in the last decades. Between 1990 and 1997 almost 120.000 jobs in this sector have been lost in the region. This tendency is only partly compensated by the emergence of new jobs in the post-industrial sectors. In 1987 69,4% of the jobs were in the tertiary sector, by 1989 this was grown to 81,0%.

Theory; Spatial planing in the Germany and the Frankfurt Rhein Main Region

The Frankfurt Rhein Main Region appears as relatively smooth in its spatial planning (spatial planning authorities compete at the different scale levels and are (thereby) not very strong in controlling spatial developments) and on the other hand spatially striated; there are clear points and lines notable where spatial dynamic concentrates.

Spatial planning tries to striate spatial developments, this means it tries to lead or control it. This happens in the Bundesland Hessen a.o. by appointing the possibilities for expansion for every municipality and by making rules for compensation; when a municipality decides to plan expansion where there is for example forest, the municipality has to create a multiplicity of these acres of new forest elsewhere within its boundaries. Possibilities for this differ in each municipality; which results into inequality of the possibilities to develop and following the dodging of these regulations.

The political *striation* or regulation of spatial development is concern of governments on different levels. These levels form a hierarchic system of 4 or 5 layers (see im age 7).

- " Bundesraumordnung; national planning
- " Landesplanung; spatial planing of the different states within the German federation
- " Regionalplanung; Regional planning within the *Landen*. Bundesland Hessen per example is dived into three planning regions; north, middle and south
- " (occasionally) Sub- or altermative regional planning; spatial planning of sub regions of the Regionalplanung; per example the Planungsverband Region Rhein Main as part of the Regionalplan Süd-Hessen.
- " Kommunalplanung; spatial planning on the municipal level.

The *Landesentwicklungsplan Hessen 2000* is the most recent planningdocument for the Bunesland Hessen. Hessen is divided into three planningregions, of which the Frankfurt Rhein Main Region is located in the southern region; Planungsregion Südhessen . Within this *planungsregion* there are different cooperative structures of cities and municipalities. For the Frankfurt Rhein Main Region, mainly the *Planungsverband Frankfurt Rhein Main* (Planning Union Frankfurt Rhein Main) is important.

On the regional level mainly the (major) planningdocuments *Regionalplan Südhessen 2002*, *Flächennutzungsplan PVFRM* (space-use plan PVFRM) and *Generalverkehrsplan 2000* (General traffic plan) are important.

Local planning doesn t exist on itself; it has a relation with larger scale levels (major) in which it is supposed to fit, while on the other hand local planners (minor) want to put in their problems with the concrete need for space of companies, ecology, housing, recreation etc .

The minor planning, concerning local initiatives, private projects and interests, often appears contradictory to the major planning ; minor concepts and minor planning respond to major concepts and major planning; they attack, distort, reinterpretate etc.

In the case of regional planning in de Region Frankfurt Rhein Main major-minor relations and conflicts appear very apparent.

The planninggeregime is hierarchic but also broken open (see image 7). According to this scheme at several levels minor forces of professionals, NGO s etc. have access to the planning. This could be supplemented with input from academics, artists, companies, private interests, protestgroups etc.

This breaking open is one of the aims of minor flows; to bring the major in motion, to force it into a stat of continuous variation or dynamic.

Conquer the major languages, in order to delineate in it as yet unknown minor languages. Use the minor language to send the major language racing (Deleuze, 1994 105).

Spatial developments in the Frankfurt Rhein Main Region can be considered minor when it:

- affects the major concepts or planning,
- uses or introduces other standards or value-systems,
- functions in another dynamic than the major concept/planning anticipates

(Shift in) 3 main goals of (major) planning in Germany

In *Raumordnung in Deutschland* (Spatial planning in Germany) (editions 1996 and 2000) three main goals for spatial planning are described.

The 1996 edition (p. 47) mentions

- " Ordnung; planning , mainly focussed on the prevention of urbanisation of rural space and the coordination of separate plans/planning levels.
- " Ausgleich; (economic) dispersion or spread, focussed on the support of poorer regions by richer ones and to prevent further segregation between regions.
- " Entwicklung; development, focussed on planned economic, spatial and ecologic development.

In *Raumordnung in Deutschland* (uitg 1996) these three main targets are placed in, what is in the document called, a Magic triangle (image 8), which gives it a rather transcendent or idealist connotation.

Among others the architecture-critic Manuel Cuadra is rather sceptic about this majoritan, transcendent triangle; especially on the topic of *Ausgleich*. Cuadra states that the against the over powerful and economically motivated process of building no political will to economic dispersal or spread is posited that in sense of initiatives for sustainable development of the all, like social, cultural, ecologic and also economic interests.

Dem übermächtigen wirtschaftlich motivierten Prozess der Bebauung steht kein ausgleichender politischer Wille gegenüber, der sich im Sinne einer nachhaltigen Entwicklung des Ganzen unter anderem für soziale, kulturelle, ökologische und auch wirtschaftliche Belange einsetzen würde. (Cuadra, 2002, p.24)

It is not just a matter of lack of political will to economic spread but also the lack of powerful instruments to do so; the aimed goals are supposed to be reached on the basis of voluntariness and convincing; the majoritan planning only has (or uses) only limited means to compel spatial policy on lower planning levels.

In the 2000 edition of *Raumordnung in Deutschland*, now called *Raumentwicklung und Raumordnung in Deutschland* there appears to have been a shift into the main targets of spatial planning between 1996 and 2000 (2000, p5). The targets now mentioned are:

Nachhaltigkeit; sustainability

Gleichwertigkeit; equivalence

Stärkung der Regionen; strengthening of the regions.

This time they are not placed into a triangle but next to each other, as without any relation. This shift is notable because it is a shift from whole to part; a specification has taken place, a meaning has been added. Planning becomes sustainable, dispersion becomes equivalence and development becomes strengthening. (image 9)

Three categories of space and a problematic fourth

In national and state planning documents three categories of space are distinguished. For the Bundesland Hessen these categories are shown in image 10 (Regional planning South Hessen) and 11 (Landesplanung Hessen).

" Ordnungsraum (planningspace). In Hessen; the Kassel region and the Frankfurt Rhein Main Region.

" Verdichtungsraum (densification space). In Hessen; the core of Kassel region and the core of Frankfurt Rhein Main region

" Ländliche Räume (rural space)

Spatial development is supposed mainly to take place in the Ordnungsräume and Verdichtungsräume.

A deviating, fourth, category is that of the *Entwicklungachsen* or *Korridore* (development-axes or corridors) as shown in image 11. These development- axes are seen as connections between the urban centres; the nodes of the network. These axes are at least transportation axes (rail and road), but more often in combination with energy- and data-transportation (cables) and spatial developments for commerce and housing. Along these axes the conditions for settlement of housing and companies are regarded/expected to be very favourable (*Raumordnung in Deutschland*, 1996, p51). The development-axes are on the one hand regarded as an instrument to plan the dense urban territory and on the other hand to help develop the rural territory. Concentration of housing and work along these development-axes is regarded as an instrument to prevent a further *Zersiedlung* (urbanisation, urban sprawl) of the space between these axes. (*Raumordnung in Deutschland*, 1996, p51).

In the 2000 edition of *Raumordnung in Deutschland* a more suspicious attitude towards the fourth category is notable; the high densities of settling along the axes and the high concentration of traffic are said to make this type of space highly problematic.

Eine besondere Kategorie stellen die Siedlungs- und Verkehrskorridore dar, deren Entwicklung auf den engen Zusammenhang von Siedlungsentwicklung und leistungsfähigen Verkehrsachsen zurückzuführen ist. Hohe Siedlungsdichte und Verkehrsbelastungen machen diesen Raumtyp besonders problematisch. (Bundesamt für Bauwesen und Raumordnung; Raumentwicklung und Raumordnung in Deutschland, 2000, p.7.)

The three categories of space (ordnungs-, verdichtungs-, ländliche raume) are essentially the traditional division between; urban space, periphery and rural space, or; economic core, periphery and hinterland. This classical division (categorisation in three types of urban centres and space) could be called theorematic. The description of the fourth category as highly problematic, shows the difficulty traditional planning has with this new and dynamic type of space. This problematic of the corridor makes it part of the minor, a spatial war machine.

... the problem is not an obstacle; it is the surpassing of the obstacle, a pro-jection,. In other words a war machine (Deleuze, 1994 362).

By adding the corridor as extraordinary space-category German planning authorities try to pull it within the theorematic, the tenet of typology of space. Deleuze describes this as an attempt to limit the movement of the minor:

All of this movement is what major science [planning] is striving to limit when it reduces as much as possible the range of the problem element and subordinates it to the theorem element (Deleuze, 1994 363).

This hinterland produces 5 percent of the Bruttowertschöpfung (production) in the region, the peripheral area 30% and the urban centres 65%. For the number of the population the proportions between the three types of space are: 16%, 30%, 54%. So 85% of the population lives in the densification- or planning space.

Three categories of urban centres

Like the three categories of space, also three categories of categories of urban centres -Zentrale Orten- are distinguished, these are cities or municipalities with a function (economic, service, cultural etc.) that goes beyond its own boundaries. The categories are

- " Oberzentern; topcenters; corecities and larger centres with an overregional economic and jobsupplying function and a population of over 100.000.
- " Mittelzentern; middlecenters, with a population between 20.000 and 100.000
- " Unterzentern; lower centers; small towns in the rural area with a population of 15.000 of which 3000 in an urban core. (Raumentwicklung und Raumordnung in Deutschland, 2000, p14)

The Oberzentern are appointed by the Landesplanung, the planning authority of each Bundesland, in this case Landesplanung Hessen. In South Hessen this are the cities Wiesbaden, Frankfurt, Offenbach, Hanau and Darmstadt. Besides these Rüsselheim, Friedberg and Bad Nauheim are appointed as Mittelzentren mit Teilfunktion eines Oberzentrum (middlecenters that partly function as topcentres). These Oberzentern have to be reachable from everywhere in South Hessen within an hour and function as nodes of regional and supraregional infrastructure (Regionalplan Südhessen 2000 p.9) Also the Mittelzentern are appointed by the Landesplanung Hessen. The Mittelzentren that are located along infra structural- and development-axes are granted more possibilities to grow. (Regionalplan Südhessen 2000 p10) The Unterzentren are appointed by the regional planning.

The spatial model that is given with this categorisation is not rhizomatic (or a nonhierarchic network) but arborescent; a tree-structure (image 12).

In other publications this model is also presented as hierarchic network.

The regionalplan Südhessen speaks of a Polyzentrale Struktur (polycentral structure). The hierarchy of the nodes is a majoritarian hierarchy; defined by a fixed standard, what scores low in this standard is considered minor, a subsystem; *mittel* or *unter*.

Regionalplan Südhessen

The Regionalplan Südhessen is part of the Landesentwicklungsplan (*Land* development plan) Hessen. In Südhessen houses roughly 2/3 of the population (3,7 mjn), jobs and is about 3/4 of the wertschöpfung (national income) realised of Hessen realized. The population density is with 493 p/km² nearly twice the average of Hessen (283 p/km²).

The region is confronted with a continuous growth of traffic and demand for housing. The unplanned space between the Siedlungen (settlements) is under pressure and is point of attention and conservation, but also of romantic conservatism. The Siedlungsentwicklung (urban development) gets mainly directed to cities and municipalities that are seen as suitable for this because of their spatial and infra structural capacities.

As important assets for the Spitzenposition (leading position) of the region the Regionalplan mentions (RP Südhessen 2002 p.1)

- presence of a strongly developed tertiary sector
- science and culture
- connectability
- polycentral Siedlungsstruktur (settlement structure)
- attractive landscape

The regional plan aims to strengthen these factors and stimulate the polycentral urbanisationstructure of the region. Strengthening of this polycentrality and mixture of functions are supposed to stimulate public transport and not to expand other flows of traffic.

The major task of the Regionalplan is to coordinate the spatial public plans and to create multidisciplinary coordinated planning and development concepts for the region, it aims to provide a framework for spatial developments.

Koordinierung der raumbedeutsamen öffentlichen Planungen und die Erstellung eines fachübergreifenden, abgestimmten Ordnungs- und Entwicklungskonzepts für die Region. Der Regionalplan stellt den planerischen und planungsrechtlichen Rahmen für raumbedeutsame Vorhaben und Investitionen dar. Inhaltliche Aufgabe des Regionalplans ist die Flächen-, Trassen- und Standortsicherung und -vorsorge. (Regionalplan Südhessen 2000, p.4-5).

The Regionalplan Südhessen 2000 shows on maps and in tables where and how much every city or municipality is allowed to grow. The Regionalplan distinguishes between Siedlungsbereiche (mainly housing) and Bereiche für Industrie und Gewerbe (mainly companies). Image 13 shows the level of urbanisation when all space for expansion of housing and commerce, appointed by the Regionalplan is used.

Expansion of areas for housing and companies preferably are located close to the regions (light)rail system. The regionalplan also prescribes the minimum densities for the distinguished types of landscape (Regionalplan Südhessen 2000, p.17):

- " Rural; 25 to 40 housing units per hectare.
- " Urban: 35 to 50 housing units per hectare
- " Near (planned) light rail structures 45 to 60 housing units per hectare
- " In the inner- or dense urban areas; at least 60 housing units per hectare

Areas for expansion that are appointed on the map of the regionalplan appear not much more than preference or priority locations. Several adjustments weaken the apparently strong regulation of space-use.

- " The Regionalplan states that an immanent development is also possible.
Eine Eigenentwicklung ist aber auch in nicht zentralen Ortsteilen möglich (Regionalplan Südhessen 2000, p.27).
- " It appears to be possible for cities and municipalities to make a flächentausch (space/use) trade where functions (use of space) can be traded with others.
- " Space that is in other plans already appointed for housing or companies can not be overruled by the Regionalplan.

Flächennutzungsplan PvFRM

The Planungsverband Frankfurt Rhein Main (PvFRM - Planning-union Frankfurt Rhein Main) was founded in 1974 (then called Umlandverband Frankfurt Rhein Main) as an alternative to the Regionalstadt Groß Frankfurt (Regionalcity Greater Frankfurt). In this period for example Hamburg and Berlin transformed into such regionalcities, but the cities and municipalities in the region of Frankfurt were not so easily prepared to give up their relative sovereignty. The Planungsverband is a more or less democratic union with representatives of the different cities and municipalities in the region. One of the problems of this union is that important economic centres as Mainz, Wiesbaden and Darmstadt are not part of this regional union. Another difficulty is the dominance of Frankfurt in the Planungsverband.

The PvFRM produces a Flächenutzungsplan (space-use plan), which is mainly an application of the Regionalplan. Remarkable is that the by the Landesplanung prescribed development-axes (Siedlungsachsen) are not acknowledged on the level of the Flächenutzungsplan. The development axes are not even mentioned. At this regional level the development of siedlungsachsen is according to Dr. Hauschild of the PvFRM not desired or noticed and therefore left out of the Flächenutzungsplan.

Both the Regionalplan Südhessen and the Flächenutzungsplan Region FrRM appear because of their dispersed possibilities for growth more as a democratic (political) compromise than as a spatial concept. For almost every settlement some growth for housing and companies is allowed. The actual growth on the other hand is less dispersed and concentrates along the important road and rail infrastructures of the region.

Concepts

19th century urban concepts appear no longer valid for postindustrial/postmodern regions as the Frankfurt Rhein Main Region. Designers, planners and researchers in/of the region are searching for new concepts and models. Several important concepts that are used in the region are mentioned in this paragraph.

Planning in Germany focusses on polycentrality; not the European model of the Blue Banana is used but that of a bunch of grapes (Raumplanung in Deutschland, 1996 and 2000).

Central question for the development of urban concepts for the region is whether they should focus on the urban and economic centres or on the space between those centres.

Just as with planning also concepts can be distinguished as major or minor. The major concepts can be described as concepts that are well known and possess a certain power-base; an acceptance by academic, professional and or political authorities. A conceptual struggle can be noted between the two extremes *zwischenstadt* vs. *kernstadt*

A conceptual struggle is also notable between dynamic concepts, focussing on flow and flexibility and more static concepts focussing on preservation and identity. Effectively this is a struggle the concept of *Dezentrale Konzentration* (decentral concentration) with a focus on development of the existing urban centres) and *Achsenentwicklung* (spatial development near/along axes) with a focus on (also) the development of the *zwischenraum*, the in between space. Both concepts even though can be regarded as concepts for the development of an urban network or networkcity.

Spatial planning in Germany though mainly focusses on two related conceptual models; the *Kompakte gemischte Stadt* (compact mixed city) and *Dezentrale Konzentration* (decentral concentration). (Raumordnung in Deutschland, 1996). These can be considered as the dominant, major, concepts. Principles of spatial planning that are central in both concepts are

- Intensivation (Dichte)
- Mixing (Mischung)
- Decentrality (Dezentralität)

So several major concepts can be distinguished in analysing the regional planning of the Frankfurt Rhein Main Region. For the current dispersed structure mainly landscape conservation (aesthetic conservatism), ecologic and quality-of-life arguments are posited.

Especially the concept of decentral concentration seems to sort of integrate 3 different concepts on spatial planning; dispersion, corridor development and compact cities.

Dezentralen Konzentration

This concept focusses on both concentration in and spread of growth over the (main) urban centres in the region. The concept appears to be more a political-spatial concept than a functional and/or aesthetical spatial concept. Decentral concentration focusses on the concentration of urban development in the *umland*, the surrounding areas in appointed urbanised centres (*Siedlungsschwerpunkten*) instead of letting them take place unplanned. These *Siedlungsschwerpunkten* are supposed to develop into mixed, varied urban centres. The concept provides for every *Siedlung* at least a growth, at own insight, of 5 hectare for housing and companies. Larger expansions are only possible for a selected number of *Siedlungen* and embedded in a map and a table.

The *Dezentralen Konzentration* concept is also promoted as an ecologic concept, aimed on protection of the rural landscape and growth public transport.

Nachhaltige Raumentwicklung bedeutet in diesem Zusammenhang [stadtnahe und verstädterte Gebiete] vor allem eine Begrenzung von Eingriffen in Natur und Landschaft (Flächenschutz) und eine Eingrenzung von Stoff-Kreisläufen und verkehrlicher Mobilität. Das heißt nichts anderes, als das Prinzip der dezentralen Konzentration auch im Stadt-Umland-Umfeld angewandt und eine Nutzungsmischung angestrebt wird. (Raumordnung in Deutschland, p. 21).

Kompakte gemischte Stadt

The compact mixed city is supposed to grow by intensivation (*im Bestand*) by using unused space (*nachverdichtung*) and industrial or military sites that are replaced (*Flächenrecycling*): de- en reterritorialisation. This concept needs thorough planning in which three principles are central; density, mixture and decentrality. With these principles again three negative trends are supposed to be contested; urbanisation of the rural landscape, separation of spatially connected functions (*demixture*) and the pressure on the environment by growing private transportation.

Achsenentwicklung; (Planned) corridor development

Economic and urban development along appointed axes in a network of *Zentrale Orten*.

Large scale transportation axes are appointed by the *Landesplanung*. More regional transportation and development axes are appointed by the *Regionalplanung*, if necessary together with neighbouring planning-regions.

Für die Verkehrsnetze, die die Siedlungsstruktur des Landes im Rahmen eines zukunftsfähigen Verkehrskonzepts groß- und kleinräumig erschließen und die eine wesentliche Grundlage der siedlungsstrukturellen Weiterentwicklung darstellen, sind Verkehrs- und Siedlungsachsen festzulegen. Die großräumigen Verkehrsachsen (überregional bedeutsame Verkehrsinfrastruktur) werden im LEP

dargestellt, die Ausweisung der regionalen und überörtlichen Verkehrs- und Siedlungsachsen bleibt der Regionalplanung vorbehalten (regional bedeutsame Verkehrsinfrastruktur). Regionsgrenzen überschreitende Ausweisungen von Achsen sind mit den entsprechenden Nachbarregionen abzustimmen. (LP Hessen 2000, 8)

Motivation for the concentration for housing along the axes, mainly the rail connection, is the quality of life in these areas. Also is expected that unbuilt areas -Freiflächen- (lit. freespace) that are not in the proximity of infrastructure can be better preserved that way. (Landesplan Hessen, 2000, p8).

The regionalplan Sudhessen 2000 focusses on further urban development in the Oberzentren (large urban centres) and other cities and municipalities near the regional transportation and development axes.

Nach der siedlungsstrukturellen Konzeption des RPS 2000 soll die weitere Siedlungstätigkeit über die Eigenentwicklung hinaus vorrangig in den Oberzentren sowie in geeigneten Städten und Gemeinden im Verlauf der Nahverkehrs- und Siedlungsachsen stattfinden. (RPS 2000, Ziffer 2.4-2)

The spatial development along these axes comprises more than just the own growth of the settlements along these axes; an expansion larger than the eigenentwicklung is expected:

Mittelzentren an Nahverkehrs- und Siedlungsachsen, die ein entsprechendes Flächenangebot aufweisen, sind grundsätzlich Standorte für eine über die Eigenentwicklung hinausgehende Siedlungstätigkeit (RPS 2000, 2.2.2-6). In Unterzentren im Verlauf von Nahverkehrs- und Siedlungsachsen, die ein ausreichendes Flächenangebot aufweisen, kann eine über die Eigenentwicklung hinausgehende Siedlungstätigkeit stattfinden (RPS 2000, 2.2.3-4).

Image 14, below, shows the regional transportation and development axes together with the distinguished urban centres as mentioned in the Regionalplan Sudhessen 2000.

The Achsenentwicklungs-concept appears mainly to play a role in planning on the *Bund-* and *Landes-*level; on this level it is explicitly mentioned in text and on maps of spatial planning documents (see image 15 for corridors in Bundesplanung and image 11 for corridors in Landesplanung).

In the local planning documents (such as the Flachennutzungsplan of the Planungsverband FrRM) the achsenentwicklungs-concept is not taken over; the development is not recognized and unwanted (dr. Hauschild of the Planungsverband FrRM in an interview).

Important arguments for corridor development (achsenentwicklung) mentioned in Landes- and Bundesplanung are the connectability for companies and housing-areas, relatively low landprizes and the expectation that concentration of spatial and economic development will preserve the rural areas in between from pressure of urbanisation and traffic.

Die schwerpunktmäßige Konzentration der weiteren Siedlungsentwicklung auf Achsen insbesondere schienengebundener Regional- und Nahverkehrssysteme unter Beachtung der ökologischen Situation sichert die Lebensqualität der bebauten Umwelt und führt zu möglichst weit gehender Schonung der Freiflächen und natürlichen Lebensgrundlagen bei der Raumnutzung.

(Landesentwicklungsplan Hessen 2000, p.9)

On the other side is acknowledged that the success of a corridor (leading to higher landprizes, increase of traffic, enclosure of infrastructure with sound-barriers etc.) can undo these advantages.

Praxis; Actual spatial development - Kämpf um den Raum.

In his article whatever happened to urbanism Rem Koolhaas sharply describes the immanent spatial processes that take place in the (network)city.

The professionals of the city are like chess players who lose to computers. A perverse automatic pilot constantly outwits all attempts at capturing the city, exhausts all ambitions of its definition, ridicules the most passionate assertions of its present failure and future impossibility, steers it implacably further on its flight forward. Each disaster foretold is somehow absorbed under the infinite blanketing of the urban.
(Koolhaas, 1995)

Dominance of Frankfurt

Despite attempts to spread economic and spatial development (the goal of Ausgleich or Gleichwertigkeit mentioned earlier) in the Hessen and the Frankfurt Rhein Main Region, Frankfurt and its immediate surroundings still attract most of the econo-spatial dynamics.

This dynamic takes place by movements of de- and reterritorialisation. Innerurban spaces that have been used by the secondary sector (industrial sites, harbors etc) are now converted into spaces for housing and offices. Spaces on the urban fringe of Frankfurt, mainly along infra structural lines, that have been used for agriculture or forestry are likewise converted into sites for housing and offices. The latter happens mainly in the north of Frankfurt and in the eastern and western neighbouring municipalities of Frankfurt.

Many of the in the regionalplan appointed spaces for housing and commerce in existing siedlungen face a much lower econo-spatial dynamic and are currently not used.

The locations outside the city of Frankfurt with substantial spatial development are the ones with a strong relation with existing infrastructure, mainly the high- and motorways and railconnections.

Lack of power of the PFVRM

Inspite of the apparently democratic something for all character of the Regionalplan and the related Flachennutzungsplan there is criticism on the lack of power to control the obstinate development of municipalities and cities in the region. Difficulty thereby is the expectation of voluntary cooperation and the distrust towards Frankfurt as dominant spatial and economic centre of the region. The architecture-critic Manuel Cuadra observe an attraction of the small, but notably aggressive acting municipalities nearby the larger cities:

[starke] anziehungskraft der kleinen, aber außerordentlich aggressiv agierenden Kommunen in der Umgebung der Großstädte (RheinMainRegionale, 2000, p.24).

Cuadra also notices a current lack of political will to steer, to regulate, the development of the region.

Leider fehlt im Rhein-Main-Gebiedt bis heute der politische Wille, die Entwicklung der Region zu steuern. (RheinMainRegionale, 2000,p.24).

Along other means the municipalities try to attract or keep companies and population by competing on tax-benefits, land prizes and connectivity. Cuadra speaks of a struggle for space, that also involves a struggle for air, quietness and harmony .

Mit dem Kampf um Raum, der sich vor allem im gewerbebau ausdrückt, ist auch ein Kampf um Luft, um Ruhe und Harmonie verbunden . (RheinMainRegionale, 2000, p.26)

Also Werner Heinz concludes in his *Major Cities and their Peripheries; Frankfurt and the Frankfurt Region* a lack of control on spatial developments.

Unlike in planning and investigative matters, the UVF [PvFRM] has little potential for implementation or enforcement, since narrow limits are set by established local interests. This is particularly evident in relation to the provision of public services (supralocal water supplies, sewage disposal). Despite its statutory mandate, the Union is unable to act, because the Gemeinden refuse to transfer these duties to it and it has no means of penalizing this behaviour. (Heinz, 1995)

East-west and North south connections

Two major types of corridors can be distinguished in the Frankfurt Rhein Main Region

East-West connections: These are mainly the large traffic routes that go to and pass by the region. These concern mainly the new ICE and traditional railway connections and the parallel highways (A66 and A3). The A66 traverses the city of Frankfurt. The A3 passes on the south of Frankfurt and connects to the ICE highspeed rail connection and the Frankfurt Airport. Rail connections make this same movement; one main connection enters the city, the other (ICE) connects to the airport on the south of Frankfurt. On this access the larger multinationals concentrate both industrial (like the Opel car factories and chemical plants in Höchst between Frankfurt and Mainz) and postindustrial office-locations.

North-South connections: in the north-south direction of the region also some large rail and road connections entering and passing by the region are present. Besides these there are some older more or less regional connections (both road and rail) that have gained importance through the years. Along these connections -since the construction of the railways about a 100 years ago- there a strong process of urbanisation is notable. On these north-south axes mainly smaller (regional and national) companies and distribution-centres are located .

Visual striation of space

Spatially/aesthetically striation seems an important metaphor in the region because of all sorts of means to diminish visual- and sound pollution. These means convert the highway landscape more and more into a 1-dimensional space; a striation in the landscape. With trees, sound-screens and walls, differences of height etc. the main rail- and road connections change into space where vision is restricted to the front and the rear (images 16 and 17). This is one of the aspects where a corridor loses part of its attractiveness due to its own success. Both functional and aesthetical solutions will have to be developed for this.

Also the protection zones along power-lines and airports (noise-contour) result in a spatial striation of the landscape, this becomes more and more evident when the density of a region increases. The Regionalplan Südhessen developed a policy to bundle infrastructure -including data- and energytransport- along existing high- and motorways for reasons of efficiency and landscape preservation between these lines (image 18).

Manuel Cuadra mentions as disadvantage of this policy that the infrastructure becomes very dominant in the landscape. This dominance can be regarded as a coding of the landscape. Especially the impressive ICE railway together with the new station near the Frankfurt Airport can be seen as a coding, as expression, of the dynamics of the region.

De- and reterritorialisation

Developments in ICT and transportation sectors have resulted in a deterritorialisation of production (of knowledge/information and goods). On the other hand the territory, and State and governments, still play an important role. The German Standortpolitik (Location politics) focusses on optimisation of locational factors instead of (merely) competing on financial aspects (taxes, wages etc.)

Features of the territory that contribute to settlement , to territorialisation, of companies are can be categorised as weak and strong factors.

Strong factors: connectivity (infrastructure), presence of and (educated) workforce, presence of costumers and cooperative companies, possibilities of face-to-face contacts, etc.

Weak factors; image, quality of life (housing, recreation, culture, nature), taxes and environmental regulations, etc.

A signifying example of these strong and weak location factors is how the city of Russelheim presents itself as located in the centre of one of the economically strongest region of Germany. Modest taxes, presence of new space for companies and efficient meeting places characterize the city. Hard and weak location factors give Russelheim a good position compared to other cities in the region .;

Standort Rüsselsheim - zentral gelegen, in einer der wirtschafts- stärksten Regionen Deutschlands. Maßvolle Steuerpolitik, die Ausweisung neuer Gewerbeflächen und effiziente Beratungsangebote zeichnen die Stadt aus. Harte und weiche Standortfaktoren positionieren Rüsselsheim im Wettbewerb mit anderen Städten der Region. (www.stadt-ruesselsheim.de)

Not only cities along the main infrastructures in the region present themselves this way. Also commercial real estate is promoted with these arguments.

Deterritorialisation often is followed by a movement of reterritorialisation. The postmodernisation of production changes the structure of companies and the locational features these companies need. The productive sector disappears or moves to other parts of the region or other countries. In the Frankfurt Rhein Main Region this movement can be seen at the harbors, the industrial sites and the shunting-yards in (the proximity of) the city. Here deterritorialisation is followed by a strong movement of reterritorialisation by housing and offices.

Other urban locations where this movements in Frankfurt take place are cityparks and other recreational sites, such as the Rebstockpark or allotmentgardens in Niederrad (images 19 and 20)

This corresponds with Deleuzes notion of relative deterritorialisation when followed by a reterritorialisation by a dominant (major) force. (Deleuze, 1994 p510).

A third type of territory that increasingly gets reterritorialized in the Frankfurt Rhein Main Region are the US military bases that get dismantled.

Both developments - the relative footlooseness or flexibility of people and companies, and the transition of the territory- contribute to the strong spatial dynamic of the region.

The secondary sector (production and distribution/transportation) keeps moving out of the regions cities towards the periphery of the Frankfurt Rhein Main Region where landprices are lower and connectivity better. The Cargo-City Sud close to the airport, rail- and roadtransport is a good example of this. Also a lot of companies move(d) their production to former East Germany and other countries east of Germany because of lower wages over there.

The new space this movement provides in the urban centres of the region gets mainly filled with offices. The number of employers per m2 in offices is larger than in factories or distribution areas. This results in a substantial densification of these cities and a strong growth of car traffic and need for public transport.

Deterritorialisation of the population

Closely connected with the in previous paragraph mentioned movements of deterritorialisation and reterritorialisation of companies are aspects of sedentarism and nomadism of the users/inhabitants of the region.

Michael Mönninger distinguishes in *Last Exit Downtown* (1994) two types of contemporary citydwellers/- users.

" The *tourist*; recreative users from outside , mainly the suburban inhabitants of the region.

" De nomadic *urban professional*; high-educated staff of multinationals that live in a certain place of work for a short period of time.

Die Oberschicht hat sich auf die Feldherrenhügel des Taunus Zurückgezogen. Die Menschen benutzen die Stadt tagsüber wie Touristen und verschwinden abends in tausend Winkeln. Das neue Heer der <<urban professionals>> aus aller Welt hat das Verschleißtempo noch gesteigert: hochqualifizierte Elegants, die in volla usgesteuten Citz_appartments Quartier nehmen, kurzzeitig die Kunst- und Konsumnachfrage steigern und plötzlich wieder and andere Wirtschaftsplätze abberufen werden. (Mönninger, 1994, p.42).

Monninger mentions two upperclass types of nomadic citydwellers/-users.

Negri en Hardt on the other hand concentrate on the existence of a nomadic underclass.

" The nomadic working class *As early as the nineteenth century, proletarians were recognized as the nomads of the capitalist world* (Empire 217, also Deleuze, 1994 558).

" The asylum seeker, the refugee, the illegal . *Mobility and mass worker nomadism always express a refusal and a search for liberation: the resistance against the horrible conditions of exploitation and the search for freedom and new conditions of life* (Empire 212)

Both types of urban nomads , the upper class (tourist (commuter) en urban professional) and the lower class (worker and alien) are important for the Frankfurt Rhein Main Region. The past decades a movement of suburbanisation has taken place in which mainly the high income groups moved out of the cities of the region towards the fringe of the green Taunus area north of Frankfurt. These people mainly still work in the cities of the region, particularly Frankfurt, and still absorb the cultural, educative and other services of the cities. On the other hand also a -forced- suburbanisation of lower income groups has taken place. Among others by relocation in the sixties to newtowns in the region like Eschborn and Dieburg.

Recent suburbanisation takes a.o. place in the northern fringe of Frankfurt, in towns like Heddersheim, Kalbach and Preungesheim. Outside the municipal boundaries of Frankfurt population growth takes place where both the connections to highway and rail-transportation and a forest/rural landscape is available. This are the borders of the corridor; connected to an urbanized transportation-axe and the hinterland . Municipalities like Bad Vilbel, Nidderrau, Bad Homburg, Florsheim and Raunheim .

Large urban centres in the region like Frankfurt, Russelheim, Hannau etc. have seen their population drop with 1 or 2% in the last 5 years.

Hard and weak location factors.

Besides hard location factors to attract and keep companies and inhabitant in the region, such as infrastructure, also weak location factors for this purpose gain importance. By expressing and developing weak location factors regions like the Frankfurt Rhein Main Region try to promote and improve the quality of life and the image of the region for companies and inhabitants.

Policy for this mainly concentrates on the development of the (recreational) landscape, culture and education.

The Regionalpark Rhein Main, a recreative and ecological network through the region, mainly in the proximity of Frankfurt is an example of this enhancement of landscape quality and recreative possibilities of the region.

The population of the Frankfurt Rhein Main region is highly nomadic .

The number of people travelling from the region to work in Frankfurt every day is little over 318.000 (image 22), which is 64,6 % of the number of jobs in Frankfurt (492.000 = $\frac{1}{4}$ of the employability in the region) and 50 percent of the population of Frankfurt (641.000). This is the largest quotient of commuters to of German cities (ABF Aktuell, 19/02/02, Landesarbeitsamt Hessen).

These employers mainly come from the municipalities of Main-Taunus (32.500), Offenbach (32.000), Main-Kinzig (30.500), Wetterau (25.000), Hochtaunus (24.500) and Groß-Gerau (20.500). Only ●—of the jobs in Frankfurt is taken by inhabitants of Frankfurt and this percentage is steadily dropping; in the early nineties it was still 40%. The second largest Einpendlerzentrum , urban centre that attracts commuters to work, is Wiesbaden. Of the 121.500 jobs more than 50% (62.500) are taken by people that live outside Wiesbaden. Third in the region is Darmstadt with 87.500 jobs and 68,2% of commuters.

Mobility of employers is strongly connected to their level of education. Mainly the high educated inhabitants of the region commute (over ●—of the people commuting to Frankfurt have an academic degree). The number of people travelling out of Frankfurt for work is 58.000, mainly working in the secondary sector originally located outside Frankfurt, or displaced over the last decades.

20,7% of the population in 6 larger urban centres of the region (Aschaffenburg, Darmstadt, Frankfurt, Mainz, Offenbach and Wiesbaden) the region comes from abroad.

The city of Frankfurt houses a vast number of foreign companies (Table next page).

Foreign Business Community	
Foreign inhabitants in Frankfurt region from	
USA	20,338
Great Britain	12,614
France	12,276
Japan	4,086
Korea Republic	3,906
China	3,104
Foreign companies in Frankfurt region from	
USA	75020020015013050000
Great Britain	
Japan	
China	
France	
Korea Republic	
Consulates	
Foreign chambers and trade missions	59
Foreign banks in Frankfurt	196
Tourist offices of foreign countries	54
	<i>Source: Industrie- und Handelskammer Hessen</i>

Recent developments

Finally some (contemporary) urban/architectural projects are described that can be distinguished as part of corridor development in the region.

Many of the new housing and commerce projects that are realized in the region are located in the armpits or crossings of existing large scale infrastructure (highways and motorways), for example Riedberg (image 25). New commercial locations, mainly business- or brainparks are also located along the lines of these infrastructures, for example Burostadt Blauer See along the A60 (image 24).

Riedberg

Riedberg is a development-project replacing agricultural ground by housing for 15.000 people (6.000 houses on 266HA) on the north of Frankfurt in the armpit of the A661 and A5. This new development also houses and expansion of the university of Frankfurt (for ca. 8000 students).

The development is situated approximately 10km. from the centre of Frankfurt. The development is promoted as a post-urban location; living in the green, near the city.

Im Grünen und trotzdem citynah wohnen.

www.riedberg-ffm.de

The housing mainly consists of 2 layered rowhousing and 3 or 4 stock apartments. To enhance the connectivity a new highway-exit will be made as well as a new connection to the Stadtbahn light rail system.

Riedberg is part of a larger project to densify the space between the A661 and A5. Other developments that are part of this project are Kalbach and Nieder-Eschbach (image 26).

Rebstock(park)

This development is enclosed by the A5 (north-south connection) and A646 (east-west connection). The development mainly consists of the (to be) demolished shunting yard next to the Europaviertel (downtown office location). In World War II Rebstock was a military airfield. After the war this area is transformed into a park with sports- and swimming facilities. The park now gets deterritorialized and reterritorialized as new urban district of Frankfurt, programmed with housing, offices, the new Messeparkhaus (part of the Frankfurt Messe (fairs centre)) and a restructuring of the park. The masterplan is made by the architect Peter Eisenman and inspired by the concept of The Fold of Deleuze. (image 27)

The plan provides housing for 5.500 people and 4.500 office-jobs. A new connection to the Frankfurt lightrail system will be established.

Burostadt Eschborn (Süd)

Eschborn is mainly a so-called Bürostadt, a business city.

The population of Eschborn is 19.400 people (2000). Between 1987 and 2000 the numbers of jobs grew with 350% from 8.700 to over 30.300. Typical for this kind of Bürostädte is the amount of commuters both to and from the city. 95% of the jobs (28.200) is taken by commuters to Eschborn while 74% of the working population of Eschborn commutes to other cities/municipalities. This has mainly to do with the orientation on the secondary sector of the Eschborn population and the amount of offices settling in Eschborn.

Eschborn is located west of Frankfurt, in the crossing of the A5 and A66 Autobahnen. Eschborn contains ca. 720.000m² of officespace, mainly used by electronics and fashion/clothing companies and public services. In the triangle of the highways A646, A5E4 and A66 a new development for officebuildings is planned. (image 28) Eschborn could grow as popular location for companies because of its connectability, the low taxes it charges for companies and relatively low rents for office-space. This mainly made Eschborn attractive for companies leaving the more expensive and traffic-congested city of Frankfurt.

Manuel Cuadra describes by the smallness of the sites and the diversity of architectural styles, shapes and quality the already existing businesspark of Eschborn as example for the difficulty for municipalities to control their architectural and urban design.

Kurios genug, macht genau dieser Kontrast Eschborn zu einem unverwechselbaren Dokument des späten zwanzigsten Jahrhunderts. Eschborn dokumentiert die Fragmentierung des heutigen Lebens und des Bewusstseins der Menschen, ihr enormes ökonomisches Potenzial wie ihre Schwierigkeit, den Lebensraum im Sinne des eigenen Wohls zu gestalten (Cuadra, 2002, p.26)

Rodgau

Rodgau takes an important position in the urbanized zone of the Bundesbahn B45. The B45 is next to the A5 and A66 an important north-south axis in the Frankfurt Rhein Main Region. Rodgau is one of the clearest and most densely built urbanized zones along infrastructure (corridor development) in the region. Notable about Rodgau is that not only company space but also housing is located very close to the highway. This results in an enclosure of the highway with soundbarriers like screens and earthen walls. Rodgau is in the Flächennutzungsplan from the Planungsverband Frankfurt Rhein Main appointed as one of the more important locations for new settlements for companies and houses. (image 29).

ICE Station near Frankfurt Airport.

The ICE (high speed train) Station is located between the parallel motorways A4 and B43, south of Frankfurt. The station is connected to the Frankfurt Airport by a footbridge or skywalk. Since 1972 there has been an underground railway station in the terminal of the airport. The new station also services the European ICE trains and creates a more intensive mixture of air-, rail and road traffic. The -partly still under construction- ICE station is presented as UFO - Unbegrenstes Freizeit Objekt or Unlimited Fun Object - a consumption-spectacle with shops, cinemas etc. (image 30)

This UFO building can be regarded as a postmodern alternative for the Main Taunus Zenter. The MTZ is a project with shops, cinemas, restaurants etc. that was built in the sixties (and restyled in 2001) along the A66 Highway near Höchst (between Frankfurt and Wiesbaden). The MTZ was one of the first suburban Einkaufszentren (large consumption centres) in Germany.

The proximity of the airport and the restrictions to protect the nearby forest have till now prevented much other building-activities on the site. The extensions of the Airport are mainly aimed on densification (also made possible by the retreating US army units) and by growth towards the south; the Cargo City.

Conclusion

Due to changes in technology and associated changes in organisation of society and space a new context for planning is created. While conservative elements of urban planning and design (compact cities in a rural countryside) in Germany and the Frankfurt Rhein Main Region are still part of the ruling concepts, these concepts also have adapted the notion of a more dynamic urban landscape and the emergence of networkcities. On the different levels of spatial planning in Germany different concepts are used that not necessarily

correspond to other levels. Most notable thereby is the denial of corridor development by the regional planning in the Frankfurt RM Region. Spatial dynamic in this region is supposed to be disperse but concentrates along the major north-south and east-west corridors; along the main infrastructures and in the until so far not used space in the crossings and armpits of these infrastructures. On the other hand the urban network in the region still is dominated by Frankfurt which maintains its economic dominance (city of control) by a constant movement of de- and reterritorialisation.

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