IFLA
International
Federation of
Landscape
Architects

Akademie für Naturschutz
und Landschaftspflege

Laufen/Salzach

Report of the Meeting

2/80

International
Scientific
Seminar

on
Landscape Planning
in City Development
on the Example of
Erlangen/Nürnberg

14th – 17th April, 1980 in Erlangen

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International Scientific Seminar on Landscape Planning in City Development on the Example of Erlangen / Nürnberg

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Landscape Planning in Urban Areas

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Program of the Meeting

April 14th - 17th, 1980

Monday, April 14th, 1980, until 3 p.m. arrival — Introduction to the city area

Opening by
Minister of State Alfred Dick, Munich — »Landscape Planning in Urban Development«

Tuesday, April 15th, 1980

Reports and Discussions

Prof. Dr. W. Haber, Freising:	Ecological Bases of the City
Dr. W Zielonkowski, Laufen:	Livable Cities
W. Boehlk, Professional City Councillor, Erlangen:	City Development in Erlangen
Prof. Dipl.-Ing. R. Grebe, Nuremberg:	Landscape Planning using Erlangen as an Example
W. Deixler, Ministerial Councillor, Munich:	The Legal Foundation of Landscape Planning
K. Schmidt, Horticultural Director, Augsburg:	Natural Landscape Spaces in the City
H. Horneber, Forest Director, Erlangen:	The Task of Forests Adjacent to the City
Dr. D. Hahlweg, 1st Mayor, Erlangen:	The Landscape Plan - Realization in the Public
Dr. H. Heinrich, Bavarian Federation for the Protection of Nature, Erlangen:	Citizen Actions for the Preservation of Landscape Quality using Erlangen as an Example

in the evening: »Landscapes in Franconia« Serenade for Trumpets presented by Bavarian landscape architects

Wednesday, April 16th, 1980

Study Groups

under the direction of landscape architects, vegetation experts, forest administration officers and city planners.
Group work in 3 study groups.

Biotopes in the City
(protection and maintenance of natural landscape elements)

Open Spaces in the City
(dwelling areas, reduction of traffic, bicycle and pedestrian paths)

Recreation Spaces in the City
(spontaneous play, spaces for leisure and local recreation)

in the evening: Public Platform Discussions with politicians and journalists »International Architects see their town«

Thursday, April 17th, 1980

Reports of the work groups: Situation of Landscape Planning in the Countries Involved

in the afternoon: Excursion to Nuremberg-Langwasser
20 Years of Co-operation Landscape - Town Planning
Stroll through the historical center of Nuremberg

in the evening: Work discussions in the offices of Nuremberg architects

Summary

The report »Ecological Bases of the City« was not available at time of going to press.

Referring to the International Meeting on Landscape Planning in Erlangen

The International Federation of Landscape Architects organizes every two years in various countries congresses of several days duration at topics specific to the country (in 1976 Turkey - Protection of the Coast, in 1978 Brazilia - Urban Development, in 1978 Rotterdam - Delta Planning, planned in 1980: Berne - Humid Areas, Rivers and Lakes).
In addition to the congress, the work of the IFLA is effected in 12 work groups. The discussions with the representatives of the great council of the IFLA, with the representatives of the international associations, show that in addition to the treatment of basic questions, there is a great interest for practical demonstration, the conversion of planning into practice of landscape and city development.
The Academy for the Protection of Nature and Maintenance of the Landscape has taken charge of organizing the international meeting and its interpretation.
The City of Erlangen offers a widespread field of information for tasks of urban and landscape development. Already in 1974, the first international meeting has taken place here; meanwhile the programs, perceptible at that time, have been realized and offer a variety of examples for demonstration:

- Continuous co-operation between landscape and urban planning on all levels, from the comprehensive planning to the extension of urban open spaces (pedestrian areas, reduction of traffic, green axes, tight net of bicycle paths in the city),
- Development of surface-saving settlement areas - after previous town-planning competitions - with individual use of gardens as an alternative to the continuous flight from the city,
- Ensuring of natural landscape elements in the city with considerable support of the Federation Protection of Nature and the public,
- Development of recreation areas in the city and suburbs, with participation of citizens and youth groups, exemplary achievements of the forest administration,
- Considerable participation of the public in the program of city development, supported by the assistants of institutes of science of the University of Erlangen.

The city of Erlangen will show for half a year these endeavours in 1982 in an exhibition with the topic »Green 82 Erlangen« in the frame of a horticultural show.
At the meeting, these subjects were being more deepened, at first in plenary session and lectures, afterwards in 3 work groups, by interchange of lectures and excursions, completed by discussions with politicians and the public.
During the meeting, the planning situations in the various countries were compared and commented. It is planned to arrange similar »International Working Weeks« also in the other member countries of the IFLA.
The Academy for the Protection of Nature and Maintenance of Landscape in Bavaria is a competent institution of the law applying to public bodies with seat in Laufen/Salzach. Its aim is to promote, in co-operation with the high schools, the district office for the protection of the environment and other suitable institutions at home and abroad, the exchange of knowledge and experience, especially by seminars and special meetings of scientists. Moreover, it must mediate the most recent knowledge and experiences in the realm of nature protection and maintenance of landscape, by scientific publication, public work and further education of the people responsible for the maintenance of landscape. Settlement areas as living space of man have become a special concern of the Academy in the line of nature and environmental protection, in order to develop more livable cities and to actively carry on the protection of nature. To achieve this goal, means promotion of discussions between specialists and men of science as well as creation of a solid basis for cognition and plans by information of the public.
So the presidency of the Academy, under the chairmanship of Alfred Dick, Minister of State, has appreciated very much the proposal of a performance together with the IFLA at the topic of landscape planning and urban development. Impulses, alternatives and new ways certainly will be fruitful.

Dr. W. Zielonkowski
Director of the ANL

Prof. Dipl.-Ing. Reinhard Grebe
Chairman of the Work Group:
Landscape Planning in Urban Areas of the IFLA

Development of Landscape in the City

Erlangen Recommendations of the International Federation of Landscape Architects - IFLA -

The *International Federation of Landscape Architects (IFLA)* as an association of more than 8000 landscape architects in 30 countries of the world has treated during a scientific seminar from April 14th to 17th, 1980, in Erlangen, the problems of *development of landscape in the city.*

In 3 work groups, the representatives of 16 countries have elaborated recommendations referring to the 3 main tasks of landscape architects in urban planning:

1. Nature in the city
2. Recreation areas in the city
3. Open spaces in the city center.

The meeting was organized by the Academy for the Protection of Nature, an institution in the portfolio of the Bavarian Ministry for the Development of the Country and Environmental Belongings.

The following *Erlangen recommendations* will be sent to all 30 associations of the international union.

1. Nature in the City

1. Every part of the landscape is a living space, differently impressed by topography, geology, soil and water, for a variety of animals and plants. This quality is bound to the site, it cannot be shifted to any place that may be suitable. Therefore, the ensuring of valuable natural living spaces (biotopes) is an important task.

2. Despite of stagnating birth rates, increasing demand of people for dwelling and recreation spaces with subsequent further extension of cities has to be taken into account. For this reason, all possibilities must be followed up, to reduce the increasing demand for areas by multiple use of areas, for example in traffic and in the organization of recreation areas.

On the other hand, everybody ought to revise his mind. Every citizen must begin this retrenchment with himself. Most of the participants in the Erlangen meeting arrived by public transport means and all of them made their excursions into town only by bicycle and bus.

3. Plants and animals need, also in the city, coherent, undisturbed spaces of graduated use and maintenance. By protecting and creating closed free area systems leading out of the city center into the free landscape, people will at the same time be offered green, undisturbed connections to nature. They have to be intensively disclosed by pedestrian and bicycle paths. These open spaces in the city are endangered most. Plannings for the protection of open areas, therefore, are to be extended. These areas must be ensured legally, in order to preserve the important functions of spaces, in their structure similar to nature, for the living quality of the city.

4. The multiform natural landscape corresponds to a higher degree with the desire of man, to shape his living spaces for spare time and recreation individually, than does the uniform lawn of many open areas with the constraint of standardized behaviour. With the growing denaturalisation of life, the fundamental need of man for an unadulterated nature increases.

The international association therefore appeals especially to the offices responsible for green areas in cities, to reduce costly maintenance measures for green areas, thus promoting the development of sites close to nature. The multiformity of nature is being diminished or even destroyed by continuous treatment of vegetation areas.

But especially protectable fields of landscape must hence be more protected from entering ad libitum. This implies a more intensive information of the public.

5. The landscape architects are criticizing, that worldwidely nature is being handled with a sort of sterile perfection. This is induced by unilateral propaganda, by a tendency to exaggerated order and unfortunately also by the image of horticultural expositions. This applies to private as well as to public open spaces.

6. The fact that the maintenance of simple structures in an environment, increasingly stamped by rules and exaggerated security measures, becomes more and more difficult, is judged by the landscape architects as a failure. The perfection, necessary in technical science, cannot in the same way be a criterion in nature. An example for such exaggerated »safety-first-thinking« is the list of poisonous plants in preparation by the Federal Ministry of Health, which will prohibit a great part of our home shrubs in future and thereby retrench significantly the diversity of kinds in the landscape.

7. The worldwide rising substitution of mancraft by the machine cannot be justified any longer. It is destroying human bonds to the same degree as the multiformity of nature. This problem has, apart from landscape belongings, a high rank in social thinking.

2. Recreation Areas in the City

1. By projecting coherent public places and open areas free from traffic in the city, all citizens get spaces of high quality for manifold use in their spare time and for encounter. Thereby the city in its realm of dwelling will be raised in value, the flight from the city reduced and a contribution made against the continued parcelling out of the landscape.

2. The bicycle-path-system, completed in Erlangen in an examplary manner, creates for the especially endangered marginal groups, the old and the young, undangered spaces for action. By the extension of these paths, recreation begins in front of the own door and not only at a far away sited car-park in the landscape.

The vigorous reduction of children's accidents in traffic in Erlangen just shows the high significance of bicycle path improvement.

3. The recreation areas in the city and at the edge of the town of Erlangen are distinguished by their special consideration of the natural elements: water, soil, relief, natural stand of trees and shrubs. Thus these fields receive a great variety, spontaneous changes - condition of every play - are easily possible. It is appealed to all planners and principals, to integrate natural conditions to a greater extent when planning play grounds.

The model plan Local Recreation Area Dechsendorfer Weiher of the Bavarian Ministry of State for Country Development and Environment shows, that in case of good planning, a coexistence of protection of nature and recreation is possible.

4. The noticeable overloading of some play grounds should be reduced to sites close to the city with a high frequentation. The use of wood on the play grounds corresponds with the children's and youngs' demand for handling natural raw material.

5. The participants appreciate the openmindedness of the administration concerning the wishes and ideas of citizens applying to the creation of open spaces. By doing so, people

are allowed to share in the shaping of their own environment. This co-operation of the citizens, above all of children and youth groups, raises the personal responsibility of every individual for the recreation grounds. This is a means to cut down the growing vandalism, to be noted in many cities.

6. The youth farm, created by a citizen initiative, is an especially valuable contribution to counteract the increasing alienation of children from intercourse with animals and plants in town. Such exemplary grounds should be created also in other cities.

7. The co-operation between township and forestral administration, the common development of a local recreation space with all communities of the region in a recreation association existing for 10 years, has brought about recreation areas close to town for manifold use. Thereby the pressure of recreation on the landscape is being diminished and traffic, with its special stress on the landscape, significantly reduced.

3. Open Spaces in the City Center

In the closed, built up city center, where citizens are experiencing their town most intensely, there is the highest demand for open areas and green elements. The greatest problems in ensuring and creating new open areas derive from the high real estate prices.

All cities should augment their endeavours

- to enlarge private gardens and green courts, partially by elimination of formerly industrial sites and parking areas;
- to clear streets in the city center from car traffic, at the same time creating dwelling streets as well as pedestrian zones adorned with plants;
- to connect so far isolated smaller greens by pedestrian areas to an uninterrupted open space system;
- to improve pedestrian and bicycle paths leading out of the city into natural landscape spaces.

1. It is an important task of the townships to elucidate the possibilities for improvement of private and public open spaces by an intensified publicity, in such a way initiating individual activity.

2. The inhabitants of backyards and traffic-calmed-down street spaces should share not only in the planning phase, but also in the realization and subsequent maintenance. Only by so acting, a full identification of the inhabitants with their street can be achieved.

This implies that dwelling streets are not to be completed in one line, rather should receive a sort of basic structure, that leaves possivilities for development and changes by individual activities.

3. In historical city centers, the planting of trees in streets and public squares has to be adapted in a better way to the character of town.

This task cannot be judged only in front of the historical background: The scores of old towns were formed in a time, when the citizen had enough open space at his disposal in the city as well as in front of the town gates. Today the significance of herbage for the ecology of the town has to be implicated to a greater extent.

4. The essential improvement and trimming of traffic-calmed-down street spaces unfortunately is not accepted by some citizens, because the improved dwelling quality is leading to a concentration of playing children, i.e. to more noise in front of the own door.

Unfortunately parking cars are being borne less reluctantly than playing children. This behaviour of citizens shows, that measures for calming down traffic must not be reduced to a few selected street segments, but have to be carried out in a greater relationship.

5. The protection of nature in the city must not be limited to the remainders of open spaces. All possibilities, to add more natural elements to the built up areas of the city, must be dealt with completely: Greening of walls, roofs and backyards; planting of trees and shrubs in streets, public squares, on ramparts protecting against noise and on parking places.

6. Exaggerated liability claims very often restrain cities from the planting of trees: the honey dew from the lime-trees, the falling of leafs, the breaking of decayed branches, deter some cities completely from the planting of trees.

The cities should effect an insurance in order to conserve the high quality of old trees and to enable the new cultivation of trees. By a counsel's opinion in co-operation with lawyers, administration officers and landscape architects, these problems should be solved in all towns.

Erlangen - an Example

The international landscape architects experienced the place of their meeting Erlangen as a town, in which nature is being preserved and newly created with a high consciousness and a strong responsivility by the main part of the citizenry.

The association, therefore, will arrange also in future international discussions with politicians, citizens and planners in this city, so as to allow this positive example to produce a lasting impression on the minds.

The preparations of the town for the GRÜNSCHAU §2 are considered a decisive contribution to the necessary humanizing of the city. New ways for the future can be paved by summing up the activities and open spaces in closed axes with possibilities for experience as constant arrangements. A great variety of proposals to the urban development can thus been delegated to the townships and their planners, also to the private garden owners.

With the extension and increasing stress of cities, the protests of citizens against any destruction of nature and environment are worldwidely swelling up. The protection of the natural environment must get a higher rank in politics if the essential quality of the city as a living space shall be ensured also in the future.

The aggravation of the problems of protection of environment and nature are to be solved in the city; it is here that nature is being hurt most of all nowadays.

Work Group JFLA
ANL

Landscape Planning in Urban Development

Alfred Dick

My dear ladies and gentlemen!

I would like to thank the Academy for the Protection of Nature and Care of the Landscape and the International Federation of Landscape Architects for the invitation to speak within the scope of this international seminar, on the theme of »Landscape Planning in Urban Development«. I would especially like to thank you, honorable Herr Professor Grebe, for the orientation of this seminar with the Academy for the Protection of Nature and Care of the Landscape. I am especially happy that the Academy, which was originally created as a Bavarian facility, is now able to be of service not only for Bavarian landscape architects with its comprehensive services, but has an international esteem as well.

Ladies and gentlemen,

Almost four years ago at the annual conference of the German Garden Construction Society here in Erlangen I called for more green areas for our cities. This challenge is more real today than ever before. It revolves not only around the representation and aesthetic forming of our cities; the preservation of the natural environment with soil, climate, water, and flora and fauna in the development of the city has become a vital task.

The stormy construction developments of the 50's and 60's, increased mobility, more leisure time, and a lack of consciousness of quality in construction have led to desolate inner cities, settlement limits which grow like a cancer with faceless new buildings, flight from the city, streams of commuters, expressways, and overloaded recreation areas. The rural communities on the edge of concentrated areas become claimed by »evacuees« from the congested cores. Daily life takes place in individual functions: residencies at the periphery of the congested area, work in the congested core, and recreation outside of both.

Sociological problems, the origins of which can be found in the shoving aside of the socially weak in soulless concrete strongholds at the edge of settlements. The loss of the natural environment in these ghettos leaves man isolated, leads to contact difficulties and depression, to a higher than average suicide rate and to increasing criminality as an expression of an unconscious rebellion against this situation.

This development is worth opposing. We have also perceived in the meantime that even in the ecosystems created by man (the cities), an intensive interlocking of residency, work, and recreation is necessary in order to maintain a city capable of functioning and worthy of residency. We must seek the way to brake the flight from the city, we must find possibilities to again fill our inner cities with life, and we must again awaken the values, latently present in all cities, of living and experiencing the city.

We must begin with this task now: we carry the responsibility today for the future. I am of the conviction that future cities will not be like mushroom towers with giant supporting arms and tiny living units. Nor will they float on pontoons on the ocean or be built under the ground, as futurists have planned. I am of the opinion that the values of our conventional, mature cities are always greater than their disadvantages. The future of man lies in the cities, - in cities arranged to be worthy of man.

Wouldn't it be something if it were read one of these days in the press that the supposedly urgently needed new Parliament building in Bonn (which received the top prize in a design competition) should now be reduced because of the perception of this gigantomania?

The city of tomorrow is the city of today with yesterday's living values. It is necessary to reintroduce this city worthy of living in, to again show the hidden quality of life, to open, and to activate. Present dangers, which were introduced through suburban colonies, traffic, extraction of raw materials, corrosion, and waste disposal must be repaired and planning concepts developed in order to avoid future damages.

The removal of town planning nuisances, the preservation of an environment worthy for man, and the preparation and execution of the architectural and other uses of plots of land are tasks conforming to master building planning. According to § 1 para 6 of the Federal Construction Law it is the task of master building planning not only to guarentee an orderly town planning development and a socially just use of the ground soil corresponding to the common good, but also to contribute to the preservation of an evironment worthy for man. Accordingly the Federal Construction Law contains a comprehensive catalog of relevant concerns which are given to the communities for consideration in master building planning. The following points are of special significance:

- The natural realities as well as the development of the landscape and the landscape as recreation area
- The arrangement of the locality and landscape image
- The interests of environmental protection
- The maintaining and preserving of the natural basis for life, especially of the soil, including raw material mineral deposits, and of the water, the climate, and the air
- The interests of nature protection and care of the landscape
- The interests of sport, leisure time, and recreation.

These widely represented interests can in many cases only be considered if landscape planning is executed as a basis or part of master building planning. According to § 6 of the Federal Construction Law the local requirements and measures for realization of the goals of nature protection and care of the landscape come closer to being represented in landscape plans as soon and so far as this is necessary for reasons of protection of nature and care of the landscape.

Bavaria was one of the first federal states which perceived the necessity for a legal standardization of landscape planning. In 1973 Bavaria issued legal regulations for landscape planning. According to our understanding landscape planning is not only the landscape plan which is attached to the Land Use Plan, but is the total instrumentation of landscape planning, beginning at the landscape master program and continuing to the accompanying plans for the maintenance of the landscape. A widely understood landscape planning of this kind cannot be set up as an isolated specialized planning; it is, rather, coordinated with all other often controversial demands on space. Tomorrow we'll go deeper into this theme in other reports.

Landscape planning has not only a legal basis resulting from the issuing of laws for nature protection in the 70's, but has also experienced an essential expansion of content.

If the main weight of the basis of landscape planning lies on aesthetic landscape concerns there are declarations today which give prime importance to the ecological landscape connections and dependencies. The preservation of the carrying capacity of the »natural budget« for definite land uses has become the essential goal of landscape planning.

The Ministry Conference for Spatial Order has also formulated »that with operations in the landscape the effects on the ›natural household‹ are to be analysed through the preceeding

investigation and be made the basis for planning and decisions. Therewith the impairments of the natural economy are to be limited to the scale of the unavoidable«. The Land Development Program of Bavaria goes even further, for it requires that with goal conflicts between ecological carrying capacity and economic requirements priority is granted to the ecological concerns if there is the threat of an essential and long-term impairment to the natural basis of life.

Landscape planning is thus cross-section oriented; it must come to terms with all use demands. Landscape planning is however also specialized planning of nature protection and care of the landscape. That is, its content has concrete measures as goals, as for example the identification of areas to be protected, the maintenance of biotopes, or an improvement of cleared lands.

Because of their comprehensive functions a multitude of influence possibilities fall to landscape planning even in city development. Landscape planning can work out a concept for the further development of the community area in respect to suburban areas that shows

- how the landscape or individual landscape factors could be used without destroying them
- which portions of the landscape are to be maintained for the necessary functioning capability of the natural economy, and shows how to provide for their non-use or only limited use
- where damage to the landscape has already occurred and how such cases can be repaired
- how the landscape and local image should be arranged
- how leisure time and recreation can be promoted in the settlement areas and in the open landscape.

On the basis of these kinds of concepts landscape planning can deal with declarations about determining and describing private and public green and open spaces which are to be kept open for species and biotope protection for reasons of city hygiene and climate, or for recreation.

Proceeding from this landscape planning can set up goals for the kind of settlement development, and about the positioning and form of the structures. It is the task of landscape planning to consider therewith the previously given landscape structures such as topography, bodies of water, vegetation, and the animal world also in city development and to meet the added declarations for individual land uses, in particular for traffic or for residential, business, and industrial layouts. The determination and distribution of the masses of structures as well as the alignment of the streets for traffic must occur in common with the landscape planner. It would be of little use if he were used only as a »green decorator«. The landscape planner can supply decisive help from the ecological/design viewpoint directly for such plans. A minimal consumption of the land can only be attained if the effects of these kinds of plans on the locality factors of soil, climate, water, vegetation, and the animal world are included in the first planning considerations. The intensity of the individual land uses must be coordinated to the carrying capacity of the natural economy and of the landscape image. It is when lifeless materials and city structures unite in a mosaic with natural areas that living and experience spaces first arise.

Along with this common possibility for influencing the development of a city an additional special significance in regard to the arrangement of urban green areas falls to landscape planning.

Under the term »green area planning« is understood all measures which spatially and functionally attach the individual green areas of a settlement to one another, which integrate them to the architectural layouts and preserves the urban development in the process, and which sufficiently care for them while making them as accessible as possible to the inhabitants. The private and public green surfaces have ecological and urban hygiene functions; they demonstrably improve the urban climate, absorb dust, subdue noise, and improve the local image. They break up the built up areas and offer recreation. The goal of green area planning is the construction of a green system in which not only the most varied green surfaces in settlement areas stand in close connection with one another, but also stand in connection with outlying areas. With green area planning a net of park layouts, tree-lined walks, allotment gardens, rental gardens, cemetaries, sport surfaces, gardens, meadows, and fields are thus to be knotted, run through the city radially in the form of a ring, and lead in all directions in the undeveloped landscape. The banks of bodies of water are in particular to be kept open from construction areas, even in the city, as part of this system. Historically, artistically, and urban worthy spaces, such as rampart layouts, old fortifications, castle gardens, street areas, and other areas deserve particular attention in the progress of green area distribution.

The essential basis for the planning of an urban green area arrangement is the green area plan which is relegated to the building code plan. It is directly in the communities which already have a land use plan (but no landscape plan) at their disposal that a decisive significance falls to green area plans. A correctly understood green area plan merely has the task of determining the planting spectrum of trees and shrubbery on public and private ground. As a rule it will suffice to limit the planning statements for private green areas to a catalog of plant recommendations. It is exactly the private green areas which should be declared private; everyone should be able to decide for himself what is a plant and what is a weed. With the information about plant recommendations it should at any rate again be self evident that the plant selection will be decided not only according to aesthetic points of view. Plants are living areas for a large number of animal species, for example retreat and nesting areas for certain bird species such as the hedge sparrow and the greater white throat. Plants are living areas for numerous insect species - the parasite wasp among others, which is of significance for an integrated plant protection.

Along with the determination of the plant spectrum it is the duty of the green area plan above all to exercise concrete influence on the future distribution of massing of structures, developed streets, and so forth, and to come to terms with local factors from a landscape point of view. This function of the green area plan has not previously been sufficiently considered although an ecological way of thinking is inherent in the plan. In the future special worth will be laid on the fact that a green arrangement plan is the basis for a representation of the land use of the inner and outer areas in the master building plans. This representation is based on the realities of the landscape.

Ladies and gentlemen,

In regard to the fulfillment of these manifold tasks of landscape planning in urban development we have obtained important success since 1973. Meanwhile, since the issuance of the Bavarian Nature Protection Law over 200 landscape plans were enabled from the budget resources of the State Ministry for Land Development and Environmental Questions. Grants of around 4 million Marks enabled the Ministry to complete landscape planning for about 16 % of the surface of Bavaria.

Various Bavarian individual initiatives are also noteworthy:

- In a model study based on the example of back courts and yards of apartment buildings in Munich for the State Ministry for Land Development and Environmental Questions it was shown how back courts and yards must no longer remain reserved for autos, garbage containers, and other junk, but could be improved as »green islands« between dwellings of the urban living room.
- Among other things the increased shaping of protective green areas has also served the urban biotope mapping (also supported by the State Ministry for Land Development and Environmental Questions) which was actually completed in Augsburg and hopefully will be taken up by other cities. Through this urban biotope mapping the ecologically significant land reserves should be determined and evaluated and be made useful for further city development.
- Numerous wild garbage deposit sites were removed in the last years, many sand and gravel pits recultivated into recreation areas and integrated into the landscape as secondary biotopes. This was done in co-operation with the State Ministry for Land Development and Environmental Questions, the State Office for Environmental Protection, and the communities.
- In the meantime some research given to the professorship for landscape architecture in Weihenstephan by the State Office for Environmental Protection has now been completed and has carried through an abundance of worthy knowledge on the theme of green arrangement. We are presently considering how this foundation can be passed on for the most suitable practical use.

I believe that the positive influence of landscape Planning directly on the example of Erlangen will be clear. The city of Erlangen was certainly not ill-advised when it called in the landscape planner at the appropriate time. It should be imitated in all communities that work between landscape planner, town planner, traffic planner and other intensive planning considerations be done in common with the concrete determination of individual uses. In this kind of cooperation the positive climatic exchange effects of open spaces and their utility for recreation can remain preserved through suitable arrangement of the buildings or arrangement of traffic facilities. The consumption of the landscape can also be reduced in this way. The city of Erlangen will certainly therefore supply stimulation in the next days for an example of the positive effects that can be brought about by a correctly understood and applied landscape planning. So it can be shown here for example how the Regnitz Valley can be preserved, maintained, and arranged through landscape planning integrated in urban planning.

Ladies and gentlemen,

We must use both the basis of the previous successes and cooperation with all of our partners when tackling future tasks. In this sense I appeal to every individual citizen to develop concepts and seize the initiative. There are a great number of important measures which can be carried out by every individual - for example an increased provision of usable green areas, the arrangement of rental gardens, allotment gardens, and sport and play surfaces.

I also call upon the responsible community politicians to assume decision aids worked out through landscape planning and to develop goal concepts for the uses of the citizen in cooperation with the landscape architects.

I ask the landscape architects to make known the ecological duty of landscape planning at all levels of planning. Along with the artistic/design requirement the representation of biological-ecological connections is increasingly expected of landscape planning. This means great responsibility for the planner and presupposes action and knowledge. Yet it also presupposes love of nature. Landscape planning requires above all a nose for and an empathy with the »creatability« of nature. Negative developments under the argument that »substitute nature« will be created are not acceptable. Often natural realities are ignored from practical or financial reasons. Substitute solutions, often high in technical and engineering detail, are then offered. The building of a »moist biotope« with automatic water dispersal can scarcely be considered responsible when a natural watercourse is simultaneously piped away. There is certainly a feeling of valuable secondary biotopes in our urban landscape. Yet we don't overestimate their beneficial effects in comparison to the existing intact living communities. With many of these substitute solutions, especially in green area plans, parts of the landscape stock are horticulturally reorganized according to contemporary taste, or the vegetation is even repressed to boxes, buckets, and mobile containers. It is the task of the landscape planner to prevent this tendency and to seek original solutions which are compatible with nature.

Ladies and gentlemen,

Please allow me to thank you for your attention and to wish you a successful continuation of the conference. I hope that the perceptions gathered here will have an enduring effect on your occupation. Landscape planning is an integral element of city development. Allow me to conclude with a paragraph of Michael Lohmann from »Natur als Ware« which underscores this:

> It is senseless to carry on town planning without traffic planning, recreation planning without agricultural planning, agricultural planning without industry planning, or industry planning without ecological landscape planning.«

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Livable Cities

Wolfgang Zielonkowski

Cities are artificial ecosystems, removed from nature, which can only be maintained at a high cost of energy. Even though they can be differentiated at basic levels from natural self-regulating ecosystems our cities are nevertheless living spaces for living communities of man, animals, and plants.

The earlier strict differentiation and polarization between city and free landscape led to a scandalous neglect of the relevancy of urban ecology in the realm of nature protection and maintenance of the landscape. Research and planning relevant to the protection of nature, predominantly in the open landscape, established itself in the trend conducive to environmental concerns at the beginning of the 70's. This research and planning was done in order to reduce the backlog of demands concerning these ecological realizations and management measures. In order to prevent mistakes it may be stressed that the research work being done in free landscape is also to be strengthened in the future, after the ongoing state of the knowledge first gives us information about our ignorance.

For a better understanding of the facts being critiqued today permit yourself a short retrospective glance. We have known horticultural design in the human environment for thousands of years. It was a few decades ago, however, that it came to be commonly acknowledged as a true profession in the public and private realms. Horticulture could be studied at a college for the first time in the 30's. This direction specialized a little later and split into various focal points and curricula, among them being garden design and landscape design. The artistic/design element, inspired by aesthetic goals, therefore stands in the foreground. So it is no wonder then, that the work of garden architects of that time was limited to cosmetics, both in settlement areas as well as in the open landscape. The creative contributions for the unification of buildings through contour lines and attention to the relief of the land as well as measures for »greening« actions are to be valued as decisive results which are recognized as self-evident even today.

Yet it would not be understandable if garden and landscape architects would have their employment seen as predominantly optically and artistically formed assignments.

So it is understandable, on the basis of the most recent research results, that the call for ecological and qualitative considerations in the cities became more and more public. As professional landscape architects with specialized knowledge we must hurry to keep pace with these justified demands.

Landscape architects execute designs for living space which are extremely comprehensive and contain biological and ecological criteria that are equally valuable as the accompanying optical aspects.

What is life? To give fundamental consideration to this question, even in quiet hours, can be very worthwhile.

Life is the totality of phenomena through which organisms of lifeless bodies differentiate themselves. Material and energy exchange, stimulus phenomena, and changes of physical form are manifestations of life which can only run their course when a series of living conditions such as water, light, nourishment, and temperature, etc., are fulfilled.

Thus the adjective »livable«, which appears in the title of this report, signifies that there are qualitative as well as quantitative criteria, the totality of which ultimately optimize the quality of life. Hence, quality of life comprises not only the endangering of our living conditions through environmental strain, but also such immaterial realities as spirit, tradition, and culture.

In order to obtain satisfying solutions for urban development concepts these three decisive factors should always be closely questioned and elucidated.

1. The image; the optical/aesthetic appearance of our environment.
2. The biology; the diversity of species through diversity of living spaces for the animal and plant world.
3. The function; the guarentee of multiple cycles and regulatory mechanisms.

These three factors mean uniformly better conditions for all organisms; man, animal, and plant.

Basic human needs, such as for dwellings, work, and recreation, are functions which are becoming increasingly spatially divided. Yet in order to fulfill these basic needs we find ourselves switching over to a highly straining mobility. The flight from the city of primarily young and active families can be prevented only if the cities win back their »dwelling function«, that is, through uniformly increasing their value for dwelling and leisure time. Recreation and leisure time activities should if possible be offered at no further than a 10–15 minute walking distance. On no account does this refer to costly arranged surfaces which the citizens perceive as manipulation of leisure time, but simply spaces for activity and movement in the local living environment. For this reason it should be no wonder if surveys of citizen opinion are given top priority in the creation of green spaces. However the sober reality appears so, that excluding speculative, technical/rational points of view, unalterable processes are being cemented, which enable landscape architects, who design with living building material, only little elbow room and individual initiative. Thus the pedestrian is directed under the earth through the valleys between buildings or tunnels (for his protection), green surfaces become reduced to traffic islands, German Industrial Standard oriented children's playgrounds are set up, and pedestrian zones are decorated with boring architectonic concrete containers.

When speaking of this need of the population it is astonishing that in most large cities fewer green surfaces (3–5 sq. meters) are on the average available per person than in cemeteries (4–7 sq. meters). Interdisciplinary cooperation, especially among the partners in human sciences and biological and ecological fields, is needed for the mastering of the individually indicated problems, a process which should acquire standard values for technology, and not vice-versa. Thus the question as to which kind of trees in a given concrete container have the best survival chances cannot be addressed by landscape architects. Rather, the question must be formed in such a way as to ask how the technical formulation of concrete containers can be done in order to enable X type of tree to live. The assumption then for the formation of livable spaces must be the primary orientation of life.

What about this life, and those living in our cities? I would like to go deeper into this thought with the help of some examples.

Water has always been valued in human history as a symbol of life and has always obtained the highest value when it was scarce. Even in the earliest depictions of Egyptian garden art we are shown water which is full of life, in the relationships with men, water fowl, fish, and water plants.

The element of water has always been dedicated the greatest attention with all peoples and in all epochs of garden art, as evidenced by brilliantly executed Moorish gardens as well as Renaissance and Baroque gardens. Water is a moving, living,

and animating element, which itself produces life and allows life.

Yet how unattentively, how adversely, how lifelessly and terribly do we treat this precious life-shaping thing!

We degrade it through use as a transport medium for our garbage and industrial waste until we can't stand its sight or smell. We regulate it, channelize it, pipe it, and pave around it. We waste it in non-fertile ways, yet seal off the earth's surface and direct it in the most rapid possible way away from our living space. The qualities of all flowing water of large Bavarian cities can be ranked in classifications of strongly and very strongly polluted.

Overview

City	Body of Water	Quality Classification
Munich	Isar Canal	Very strongly polluted
Nuremberg/Fuerth	Regnitz	strongly polluted
Augsburg	Lech	Very strongly polluted
Regensburg	Donau	strongly polluted
Rosenheim	Inn	Very strongly polluted

Source: 4th SPATIAL ORDER REPORT of the Bav. State Government (1977)

Bavaria has already invested 304 million Marks in 1969 (401) and this sum rose in 1976 to 617 million Marks (1408) (the numbers in brackets are the purification plant investments of the whole Federal Republic).

The existing legal pressures for rain water diversion must be reconsidered on a basic level, because they are mostly completely foolish in their ecological aspects. The sealing off of ground surfaces with asphalt coating must likewise be reconsidered in the fundamentals and be allowed only in unalterable cases which have no other alternatives.

Water can fulfill multiple functions. If one thinks nostalgically to the earlier village creeks and ponds these show in a most exemplary way how they not only offer living space to ducks and geese, playing children, fish and crayfish, washing women, reed spikes, and irises, but also serve the fire department and enable evening recreative communication for the village community. This abundance is indeed connected with something of the quality of life.

How one-sided in comparison is the sterile function of the oh-yet-so elaborate small spring fountain with its prohibitions against access and contact, nice chlorinated water, and surroundings which have been purified with herbicide.

A space for living of this kind simply cannot be, neither in the private nor in the public realms.

Water will never lose its attractiveness. We should change our views of it, and use it in our living areas in a new form for the creation of living communities. Moreover, among the conditions of the circumstances of piping, building up, and paving over a new yet attractive task is given for some urban construction administration authorities.

Perhaps the example of water shows, by way of indication, the harmony of the three factors of image, biology, and function.

The formal-aesthetic organization of a living space possesses a justifiably worthy position. Yet if this organization operates for itself alone, without qualitative content for life and functions, it then becomes an end unto itself and fulfills only a part of the criteria of a livable environment.

For this reason please allow me to give an example. In relation to the importance of the environment a strengthend open-mindedness is perceivable on the part of the urban population. This perception induces reflections about traditional garden design concepts. Isn't it inhuman, how in public green areas, with such intensively cared for lawns which always have such a strong resemblance to pastures, that people are always confronted with prohibitions of use? Does the citizen promote a lawn capable of use (at high personal and indirect costs) only then to use it optically as a unit of green? Unfortunately the exceptions only confirm the rule, and so it remains to be wished that the burdened and intensively cared for lawns in public layouts be more often accessible to the public.

Should, however, as already alternatively supposed, the optical delights be turned over to the people, then there would be less expense and more success. Not only does frequent mowing cost much money and time, it also hinders the growth of splendid and heterogenous flower meadows because any flowering plants ready to develop are constantly beheaded. A fine, clinical, intensively cared for lawn with few common varieties is not necessary everywhere. When flowers, daisies for example, can be picked in the city, such alternatives are certainly a contribution to the livable arrangement of the settlement areas. As for the others, by the way, »poorly grassed« lawns and flower meadows can be layed out in larger private gardens as well. A soil which is not too rich in nutritive substances is presupposed, which one can shape through the introduction of sand and gravel or by turning up the parent earth. Of course a flower meadow needs only a little maintenance: mowing 1 to 3 times annually, no dung, no watering or tamping. Access is reduced, yet the blooming splendor and insect world are thereby compensated.

In small gardens, especially the terrace house gardens, the erection of a flower meadow is not possible. Most owners of terrace house gardens are concerned with extraordinary cleanliness and carry out too much maintenance on their minimal lawn surfaces through oversized and noisy motorized mowers. Herbicides, especially serious in their ecological effects, account for a 60% portion of the total market of plant-protective agents in the Federal Republic. They are used on about 25% of the total surface. Indeed the greatest portion is used in agricultural plant nurturation, yet the portion used in the maintenance of trafficways, watercourses, parks, and back gardens is not insignificant (1978 Study on the Environment, Federal Government). Solid enlightenment and information through city administrations and specialists absolutely must oppose this neatness illusion.

In this connection the unfounded belief in the wholesomeness of peat dust cannot be left open.

Thousands of tons of peat dust are ordered annually by back garden owners, city administrations, and even landscape architects for their supposed soil-improving effects. In most cases the introduction of loam in sandy soil and the introduction of sand in loamy soil would be better, because peat dust fizzles away in sand and carbonizes in loam.

Besides, natural peat contains practically no nutrients.

For the enrichment of the soil with humus and nutrients garden owners and administrations should turn more often and with assuredness to the practice of composting garbage. Two problems, whose connection is not always evident, can thereby be simultaneously mitigated.

Sometimes less peat dust consumption means practical nature protection, because the vehement commercial extraction of peat from our last swamps could be slowed down.

In addition a strengthened composting indicates a tangible relief from expensive disposal measures, especially when one considers that about 60% of the accumulating household garbage is compostable (1978 Study of the Environment).

Please excuse me for the excursion into back garden maintenance, peat dust, compost, and nature protection, but this

shows the indications of networks and chains in what is a thoroughly ecological state of affairs.

As is known the large number of varieties in the settlement areas is a result of planting native varieties and a high number of non-native plant varieties.

The assortment of cultivated woods alone comprises about 200 varieties and groups of varieties (W. Kunick, 1978).

The salt thrown out in the winter to aid traffic has a straining effect on many kinds of undergrowth and sometimes causes their death. Conifers, as is known, suffer heavily under the effects of this winter salting. One can notice this dilemma everywhere that plots of land are hung with plastic and boarded up as protection against the salted streets.

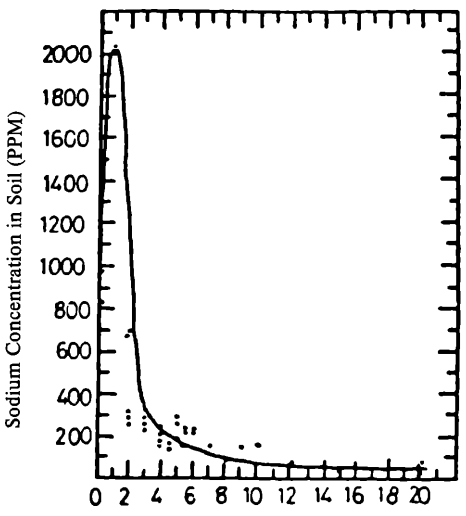
Investigations have shown that even deciduous trees can be significantly damaged. For example let us look at a linden which had been exposed to strong salting effects since the winter of 1962/63. The damaging effects are corroborated by the annual growth ring changes.

Time Period	Mean Annual Growth Ring Breadth in mm
1920 - 24	3.52
1925 - 29	3.18
1930 - 34	3.70
1935 - 39	4.16
1940 - 44	3.84
1945 - 49	3.14
1950 - 54	2.46
1955 - 59	2.34
1960 - 64	1.92
1965 - 69	0.66
1970 - 74	0.88
1975 - 78	0.34

Source: Hoester, H. R.: »The Influence of Winter Salting on the Influence of Street Trees« (German original title: »Der Einfluß von Streusalz auf den Einfluß von Straßenbäumen«), in: Die Grüne Stadt, Munich, 1979.

Cooking salt damage is not only limited to winter, but is also evident in plants even in the beginning of the vegetation period, when salt is thrown over the ground and running sap. In addition, the concentration of sodium in the ground extends far beyond the edge of the street. One can observe a concentration cluster (see profile below).

In consideration of this less known damaging effect of winter salting and also the commonly acknowledged negative effects the example of some cities should be followed: salt should be strewn only on the important through roads. In the private sector the strewing of cooking salt should generally be forbidden in favor of sand or ashes. It is certainly serious if the quality of life in the already sparsely vegetated inner city suffers further with the loss of trees. In our latitude there are no salt resistant trees.



Profile of sodium concentration from soil samples as determined by distance from the street. Point of collection: one mile south of Presque Isle, Maine, on U.S. Nr. 1 (TRIPP T. B. & NADEAU J. L., 1974)

Having many different divisions is not only a principle of societal and economic stability, but also of ecological stability. So it is understandable if a high value is placed on cities with structural variety. Structural variety is a contribution for variety of types.

As for the area of vegetation, whether or not they are native or foreign varieties plays no important role for what is anyway a reduced self-regulation of many cities' run-off. What is decisive is the diversity of vegetation structures, especially for adaptive plant and animal varieties.

In the transition area from open lawn and meadow vegetation to wood structures shrubs are as a rule found first, as is the case in the forests, in the protection of the larger trees. This transition area is of extraordinary ecological meaning because here, in the narrowest space, one finds a flowing transition of all stages of light from complete brightness in the open to total darkness in the wooded areas.

Now there is not only a series of shrubs, the so-called transition vegetation, which is specifically adapted to this bright-dark biotope sequence, but many additional types of animals, above all for insects, whose existence depends on these shrubs. Insects need various brightness biotopes in their life cycles for the chrysalis stage, egg laying, the search for food, and hoarding of prey. It is revealing in this connection that by far the greatest part of the garden shrubs found in the trade are transition varieties, which are thus suitable for any available mediumly shadowed places.

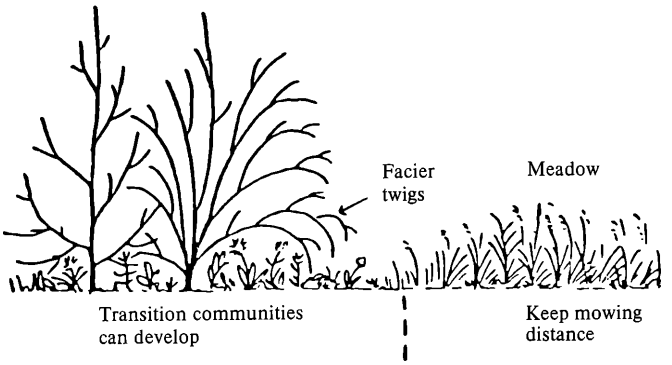
Multiplicity of varieties means variety for life, and we should therefore strive to maintain this multiplicity. It is therefore proper, as we have seen, that the transition areas should be developed and maintained, especially in the public green layouts of our cities.

Unfortunately it is a universal bad habit to mow near and in the bushes when maintaining these lawns. Shrubbery with acrotoner branching features facier twigs which reach almost to the ground. These branches are always damaged with mowing, and then can't develop at all. These facier branches protect the roots and create the necessary brightness-darkness sequence for the transition shrubbery. The understory plants are the ultimate image of current maintenance practise; they stand around like fools, promoting the growth of grass and thereby requiring yet higher maintenance costs.

When mowing the goal must therefore be to keep a sufficient distance from the trees, so that the development of the facier twigs can prevent the growth of grass through sufficient shade.

This explanation is certainly valid not only for settlement areas, but also in general for understory plantings, whether they be in accompanying street green projects, in water bodies, or as part of the course of consolidation of farmland.

Please allow me two further remarks on the theme of understory plants. There are many varieties and living communities, such as many insects and the cave nesters among birds, which live in died-out wood. Even some old trees, accommodated so seldomly in human living communities, fall victim to thoughtless and rashly exaggerated safety precautions for the reason that some citizens could place liability claims on the state or community. No objections can be raised in cases where trees are in obvious danger of falling, yet the practised legal positions should be reconsidered with preventive measures of all kinds. Life cannot be totally without risk.



Development of lateral branching system and resulting transition shrubbery.

Under this train of thought chemical-toxilogical pedants point out that a good 90% of the poisonous plants are found among our native and foreign undergrowth plants. In order to protect man totally from such danger laws and regulations would have to be issued forbidding the cultivation of such varieties. Using considerations of all requirements which could be raised from various sides the selection of possibly objectionable trees would be so decimating that planting would soon be impossible (see tree nursery catalogs).

It is far less familiar to us that many of these varieties offer joy through viewing their flower and fruit adornments, that they offer animals places for flight, nesting, and nourishment, and that they mitigate environmental burdens for man, such as heat, exhaust fumes, and noise. Unfortunately we possess too little knowledge of the beneficial effects of plants and animals in the urban living space of man.

Wouldn't it be helpful, if children and adults had better individual knowledge of the organisms growing in their environment, including their special attributes? Public green layouts could contain more rich and various plants and animals if there were less laws and regulations and an accompanying increase in information and knowledge. The enrichment of the human living space would also be certain, if one makes the assumption that we can see a stronger connection of man to his cities through an increased interaction of man with his environment.

Perhaps a new phase of the assignment and field of activities of the city is in effect for garden and landscape architects. Proficiency in the artistic-design must be supported by biological and ecological knowledge, which draws upon the functions of image, biology, and function.

Yet one should not disregard the ultimate side effects of a livable urban living space design. Settlement areas which offer recreation contribute to the relief of excessively frequented close to nature living spaces in the open landscape, offer a spatially unified concept of human existence functions of work, dwelling, and recreation, and dispense with unnecessary energy-using mobility. At the same time it would work as a means against the flight from the city, especially by young people, which is so serious for land planning.

Variety of types in the settlement area gives further indication of an irreplaceable system of bio-indicators (a monitor system), which is the best actual indicator of the condition of our environmental relationships. We must learn to only see, evaluate, and interpret.

It is exactly the scant knowledge in this finally mentioned section which should give us the encouragement for future research work. In this way we can experience the relative biological and ecological values of single varieties, as well as for »activity« green areas, private gardens, cemeteries, parks, parcels of green which accompany trafficways.

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City Development in Erlangen

Walter Böhlk

I. PRELIMINARY REMARKS

When one is requested to deliver a lecture on the theme of »City Development in Erlangen« he attempts of course to do this under the special aspect of landscape planning. I will endeaver to withstand this temptation for two reasons. The first of these is because I would like to allow the following speaker yet another chance, besides being of the opinion that you can correctly concern yourself with the city of Erlangen and the local area only when you have previously formed a clear picture of its past and future development. It would certainly be interesting to receive a lecture on the connection of landscape planning and city development planning as well as from the perspective of the landscape planner and town planner. I fear in this case, however, you would ascertain no great differences with on the one hand Herr Professor Grebe, certainly a landscape planner of no little reknown, who has already considered all aspects of city planning in his landscape planning, and on the other hand the mutual coordination which was always so intensive that most points could be solved in mutual agreement. With Mr. Grebe we were able, even in the problems which could not be removed from the planning level because of the different valuative scopes resulting from conflict of goals, to clearly discuss the problem in public and finally arrive at a political solution.

Therefore in this report I would rather depict the city of Erlangen in its prior development and also its possible further development on the basis of city development plans which were determined by the city council. Therefore I have chosen the following format:

a. Past (historical) development

b. Representation of the present overall conditions for further development (representation of the development mechanism, the setting of the scope through the Erlangen City Council, the setting of goals through the Land Development Program and regional planning.

c. City development planning in Erlangen

d. Outlook for the future.

II. CITY DEVELOPMENT IN ERLANGEN

a. Past (historical) development in the most important dates

At about 500 A.D.	First settlement founded at the confluence of the Schwabach and Regnitz rivers
1362	Founding of »City and Fortress« by Kaiser Charles IV;
1402 - 1806	Membership in the House of Hohenzollerns
until 1415	Burgrave of Nuremberg
until 1791	Brandenburg Margraves in Franconia
until 1806	Prussian kings
1806 - 1810	Principalities of Bayreuth and Erlangen under Napoleon
since 1810	Membership in Bavaria

Three important incidents which determined the development of the city:

End of the 17th century	Hugenot refugees (city plan by Richter, the »drawing board« settlement, the Baroque city, and the refugee settlement)
1743	Transference of the university which had been founded in Bayreuth in 1742 to Erlangen
1947	Transference of part of the main administration of the Siemens Firm from Berlin to Erlangen

I prefer not to any closer into the meaning of Erlangen as a garrison-town even though this fact is of great importance for the city. The development of the numbers of inhabitants within the respective city limits shows a similar progress as that which is known about many other cities. It is said that the increase in population maintained itself within definite limits up until the middle of the previous century. It is first from that point on that a substantial addition is noted. If one scrutinizes this development yet more closely he is able to establish that the number of inhabitants in Erlangen had grown significantly slower up until the middle of the 20th century than in comparable cities, although a later rapid population growth can be determined.

Other large cities have the imprint of the architecture from the peak period of Germany's industrialization in 1871 - 1873 even today. You can find a corresponding development in Erlangen only in a limited extent; 80% of all dwellings in Erlangen were built after 1948.

The population growth also corresponds to the expansion of the city in its spatial development. The city expanded significantly through successive incorporations. The incorporation in connection with the District Reform of 1972 alone enlarged the size of the city from 35 square kilometers to 70 square kilometers.

The increase of the number of employed in Erlangen is analagous to the increase in the number of inhabitants. This shows the special meaning of the two large employers, the Siemens Firm and the university. The Place of Employment Census of 1970 shows that the Siemens corporation accounts for only 32% of these employed and the university for only 8 percent, yet these numbers can be deceiving. On the one hand the Siemens corporation is more or less involved in many concerns in Erlangen, so much that the actual number lies closer to 50%. The university, on the other hand, is not only an employer but also an establishment of education. One must consider the number of students (18,295 students as of the winter semester of 1979/80, of whom 14,696 study in Erlangen) when calculating the number of persons employed by the university.

When one bears in mind that only a small part of the employees of this branch of Siemens are directly working in production, the larger part being in management and research, it is easy to derive the reasons for an atypical social structure. This is ascertainable in many facts, which account for the deviations from the average values obtained from the Federal and State governments.

These examples are given:

- The proportion of high school graduates to the total population
- Number of salaried employees and officials in proportion to all those employed
- The transfer rate from schools enabling further study

and many others as well.

The great number of pupils in the schools which prepare for further study shows what demands the Erlangen population places on the infrastructure of the city. We can think of course not only about educational affairs, but also the total leisure time sector in particular. However, the effects of the demands from the private sphere - we'll come back to this point later - have had especially damaging effects on the development of the city in the area of dwellings.

The strong development of the past has positive as well as negative aspects for the city. A series of present special situational qualities, such as a high leisure time value (because of the previous relatively little settled surroundings) or the uniqueness of Erlangen, which is characterized by the topographical situation as well as through the relatively undamaged Baroque city layout, are presently endangered through growth. For example the tendency of those willing to build who settle in the areas around Erlangen (where plots of land are still relatively inexpensive) endangers the charming landscape of the region. Similarly, the trend to large-surfaced central institutions threatens the faceted image of the Baroque center of the city.

There is an additional negative effect because the extension of the infrastructure of various areas (for example in the construction of schools and streets) cannot always keep pace with the growth of the city. Altogether, however, progress has up until now not impaired the favorable situation of the city.

b. Representation of the Present Framework for Further Development

Given the fact that since 1974 the number of inhabitants in Erlangen has stagnated at about 100,000, the question must be answered as to whether or not the growth of the area has come to a complete standstill (that is, the city has left the growth phase and has now entered the consolidation phase) or if it must be assumed that the powers which were relevant in the most recent past will also have strong influence in the future of the city's development. Further investigation is made more difficult by the successively postponed comprehensive census. The present statistics however show on the one hand a further growth in the number of employed in Erlangen and an increase of around 2,000 inhabitants per year in the immediate surroundings.

Now it is generally known that the professed goal of the Bavarian State Government is to brake the attractiveness of the congested centers through the over-proportional promotion of the rural areas, and also to meticulously demonstrate in the corresponding Spatial Order Report where the means of the past have flowed. Consequentially the strongly controversial numerical goal for employees and inhabitants for Region 7 (that is, the Middle Franconian economic area with the city axis and the environs) will be gathered at relatively low levels in the Land Development Program. This prognosis is certainly not directly transfereable to Erlangen and the immediate environs because of the type of places of employment found in Erlangen. On the basis of a status quo prognosis at the beginning of the 70's it could be expected that the number of inhabitants in Erlangen could rise to 120,000 by 1990. The status quo prognosis of the Bavarian Land Office for Statistics also predicts an increase to 105,000 inhabitants for Erlangen by the year 1985. On the basis of various considerations the Erlangen City Council concluded in the middle of the 70's not to allow the number of inhabitants to grow past 110,000 by 1990. It is presently being discussed to take a numerical goal of 100,000 as a basis for further development, particulary from reasons of what would be accompanying consumption of the landscape.

aa) Methodology of the Planning of the Development of the City

Before I comment more on the conflict of goals and the train of thought leading to the correct goals I must briefly go into the methodology of city development planning in Erlangen. In order to show the most important of these entanglements the various technical facts, goals, and measures will be shown in consideration of their financial, spatial, and personal effects in the so-called specialized plans. The spatial aspects of the particular specialized planning will be coordinated and graphically depicted in the area plans. The corresponding financial aspects of the specialized plans occur in the long-range financial and investment planning. The long-range personnel planning has not yet been implemented.

The main difficulty of city development planning exists in the fact that with the formation of the particular plans the multifaceted dependencies must be considered as well as the aspects which cannot yet be dealt with by their respective time-frames. Therefore virtually all plans must be produced simultaneously. Because this action is not possible within the administration of a city of Erlangen's size (for reasons of personnel) the next most important action, that with the largest demand on resources, must be chosen. Even with this action, however, not all points of view within the thus determined plans can be dealt with in the desired level of detail. However, at the least, the large framework in which further investigations can be incorporated, must be set up.

The following arrangment has been chosen for all specialized plans as they correspond to the purpose of city development planning:

1. Explanation of existing conditions
2. Demonstration of the goals
3. Analysis of the present conditions (comparison of the conditions with the goals)
4. Estimation of future development
5. Recommendations for measures to influence the development
6. Effects of the measures (especially the need of area and financing)

The results of the Population and Place of Employment Census of 1970 were chosen as the essential statistical basis. In the course of time the partially completed work and available statistics as well as other sources were cited. After basic discussions the time from 1975 to 1990 was fixed as the essential period for the planning framework. This planning schedule was divided into three sections, which corresponded to the first of the then occurring financial and investment planning.

Obviously the statements of the plans represent no prognosis in the sense of a prophetic vision of the future. Instead they can merely show a development which can be assumed possible given the consideration of the goals and the estimation of the presently operating forces (including their influential abilities). A result of this connection is that a constant observation of the development is necessary. It is only in this way that the cited changes can be estimated in their effects on the various areas of life, and, should the occasion arise, to introduce in a timely fashion any tax measures which become necessary. It is said that city development planning needs a constant reassessment.

bb) The Specialized Dwelling Plan

On the basis of two specialized plans I would like to now lay out for you some very different lines of thought concerning city development planning. First the specialized dwelling plan. As executed it can be assumed that the need for living areas in

Erlangen will rise significantly. This results in only a small measure from the growth of the number of inhabitants. It can be determined from the development of the past however that the spatial extension of the present population plays a fundamentally larger roll with the demand for new surfaces for construction than the addition of inhabitants. Even in recent years with the relatively low economic growth rate a so-called »need for extension« of 2% per year can be seen in the dwelling sector. This means that in the city of Erlangen, with 100,000 inhabitants, that about 2,000 new inhabitants must be housed every year. Thus in the past years, in which there has been no essential change in the number of inhabitants, we have to note a rough increase of about 700 dwelling units a year. With an average example of a new apartment with 2.8 persons this corresponds to 2,000 inhabitants a year. As a result of the agreement of market tendencies and political declarations about 50% of the newly built apartments have been realized in multi-story apartment buildings and 50% in private house construction. The architectural densities which are obtainable with this program result in about 70 inhabitants per hectare of the total land available for the construction of dwellings.

Through another conversion 30 hectares of total land available for construction of dwellings must be newly developed only to prevent migration (maintaining the number of inhabitants at 100,000). It is before this background that the alternative demands for space for different numbers of inhabitants were calculated and represented in their spatial effects. The attempt to bring the so-ascertained demand for space into unison with the requirements of the landscape plan led in 1975 to the political goals to not let the number of inhabitants to grow so strongly in the future as had been previously observed.

From well founded considerations we nevertheless proceed from 1975 to apply the previous extension of 2% per year to only 1% per year. An investigation in 1979 however has shown that in spite of the recession in the middle seventies the undiminished spatial expansion of the population has continued. It can be noted in the meantime that the agricultural sector was not in the position to give up space. On the other hand a renewed reduction of the numerical goal for the inhabitants which has now stagnated at about 100,000 has come into the picture. This has a certain amount of significance for the agricultural sector within the city limits. The stagnation of the population level (with further population growth at 1% per year and a necessary reservation of about 10% of the land for construction) makes a new clearing of around 300 hectares necessary by 1995.

This presentation of goals certainly cannot be realized by means of the Federal Construction Law alone. For this reason the city of Erlangen has proposed to the Bavarian State Government to have a larger part of the future construction surfaces in the west of Erlangen cleared for the purpose of having these as city development areas.

At this point I would prefer not to go into the goal conflicts – or their possible solutions – which result from these enormous demands on land. I prefer, rather, to make known to you how a normal specialized plan is frequently necessary for the urban infrastructure. I refer to the specialized plan for the schools.

cc) Specialized Plan for Schools

On the basis of numerical goals for the development of the population and the expected spatial distribution a population prognosis was executed for a small space with age-specific strata. The goals of school development in Erlangen were coordinated in a parallel fashion, especially in coordination with the Complete Education Plan and the corresponding presentation to the Bavarian State Government. The aspired for frequency of classes plays of course an especially decisive roll in the question of the necessity of new school rooms. In consideration of the prior conversion relationships the number of pupils per type of school were then estimated according to the spacial distribution in the city area. From this, together with the aspired for frequency of classes, the demand for school rooms according to spatial arrangement could be ascertained. The most essential results showed a growth of the need for primary school spaces on the east shore of Regnitz, a strengthening of the demand for such spaces on the west shore of the Regnitz, and a highly insufficient supply for the foreseen demand in the realm of secondary schools and in the upper divisions of elementary schools until far into the 80's. The consequences which can be extrapolated for the school houses in terms of new construction were shown as well as those concerning the extent of the spatial situation and the financial consequences.

dd) Traffic

The General Traffic Plan was an especially controversial part of the city development planning. Unlike other cities the significance of the bicycle for the health of the traffic participant as well as for the solution of urban traffic problems was perceived in Erlangen at a relatively early stage. For this reason the promotion of the local public transit system was granted a clear political priority. Considered thereby were not only conventional technologies but also new local transit techniques presently being developed. This process has not yet been settled. A detailed investigation has proven that a railroad which can run automatically on its own track is certainly in the position to offer an essential contribution to the solution of Erlangen's traffic problems. Why, in spite of this investigation, the first spadeful of earth for the establishment of this train in Erlangen has yet to take place cannot be explained in the scope of this report. This is already enough to fill the evening.

Even without the special problem of a new transportation technology the General Traffic Planning supplies enough material for conflict – not only with landscape planning.

d) Overview

Allow me to conclude with some thoughts concerning a problem which oppresses all of us. You, as specialized planners, and myself as an urban planner. Looking back, it is always easier to maintain that it was simpler to make prognoses earlier as the development had not then taken such bounding leaps.

Breaches in the development are expected during the time of this discussion. The effects of these breaches will be difficult to predict. The considerations of ecological questions of the fleeting present must be mentioned in connection with the significance of the energy supply.

Will, given the consideration of the global political situation and the points of view mentioned above, the economic development show itself to be similar to that in the past?

Will the expansion of surfaces in all realms (the work place, dwellings, leisure time needs, infrastructures of all types) be able to develop parallel with the unfolding needs, or will the rise in the cost of energy, the erratic increase of construction costs, and similar developments in this way lead to a change of trend?

We would do well to think in alternatives and thereby insure that the first step necessary today is wise for the alternative presently in trend as well as for other developments. To

employ these alternative considerations and to lay open their respective effects on the political decision makers is certainly difficult for many reasons. On the one hand effects of developments which lie apart from the trend allow only difficult forecasting. On the other hand the research in this area frequently lags behind the development. Thirdly, this work should occur in close contact with the population, with the most possible constant personnel body, and within expansion of costs. One must get accustomed to the fact that in such an extremely complex system as our society that timely possible alternative developments must be anticipated intellectually if one wants to avoid paying dearly for one's wisdom.

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The Landscape Plan as an Instrument for City Development using Erlangen/Middle Franconia as an Example

Reinhard Grebe

Outline

Comprehensive planning
1 Comprehensive landscape plan for the industrial region of middle Franconia

Supralocal planning
2 Ecological planning study
3 Local recreation study
4 Development of a regional net of bicycle paths

Master building planning in the community
5 Green area planning study
6 Landscape plan

Deepening of the land use planning
7 Specialized plans for city development
8 Area plans for sections of the city or landscape spaces
9 Structure plan of the historical inner city of Erlangen
10 Schwabach valley green area plan
11 Recultivation plan for the Buckenhof waste disposal site
12 Focal point for development of local recreation for the Dechsendorf pond area

By decree of the 1973 Bavarian Law for the Protection of Nature communities are legally required

- *to prepare a landscape plan as the basis and supporting plan for the Land Use Plan.*

In order to promote the preparation of these landscape plans the Bavarian State Ministry for the Development of the Land and Environmental Questions has, in its capacity as the highest office for the protection of nature, issued in 1975 some *»Guidelines for the Preparation of Landscape Plans«.* Costs of landscape plans as well as those plans prepared within the framework of land use planning, can thus be subsidized by 50 or even up to 60% by the Ministry.

Parallel to this development has been a change in the legal basis as well as the public consciousness. This change has been occurring over the past ten years, since about 1970 (the European Year for the Protection of Nature): The preservation of the natural environment is not only a goal of numerous citizen initiative groups and a goal of some political groups in the past two years; rather, all political parties have now, to be sure with various focal points, formulated this goal.

The coordination between landscape planning and city development can't be pointed to in other cities with such positive results as those in Erlangen (6,500 hectares, 100,000 inhabitants). Three points which hold good possibilities for coordination between landscape planning and city development are especially decisive for a noteworthy environmental consciousness.

a. An Open-minded Citizenry

A strong public movement in Erlangen, concentrated in the Bavarian *City Group of the Association for the Protection of Nature,* is a result of the open discussion during the last 10 years concerning the question of landscape and city development. In Erlangen alone this group has almost 1000 members. The members of the Association for the Protection of Nature are united in a series of working groups for traffic planning, inner city developments, preservation and development of natural landscape elements, living spaces for animals in the city, etc. Members of institutes of the university, above all from Botany and Zoology, as well as engaged animal and nature protectionists from all professional fields, lead these working groups and execute noteworthy independent actions. The city of Erlangen has made offices and meeting areas available at not cost for this important task of nature protection.

b. A city council which treats the preservation of the city quality as an important goal, and an open-minded city administration

With its higher than average rate of growth after 1950 through the fast-growing university and central research institutes and concerns of the Siemans Firm (which alone employs over 25,000) Erlangen is, in our present period of reduced development, a solitary example for increasing and necessary development capacities. So it is noteworthy, that the city council and the mayor of the city have taken it upon themselves to insure the quality of the development of the city. This is expressed in an exemplary gradual city development with participation of landscape planning occurring on all levels, from a series of planning competitions for various planning assignments to a constant dialog with the citizens of the city. This dialog has been going on long before the Federal Construction Law of 1.1.77 which called for increased public participation.

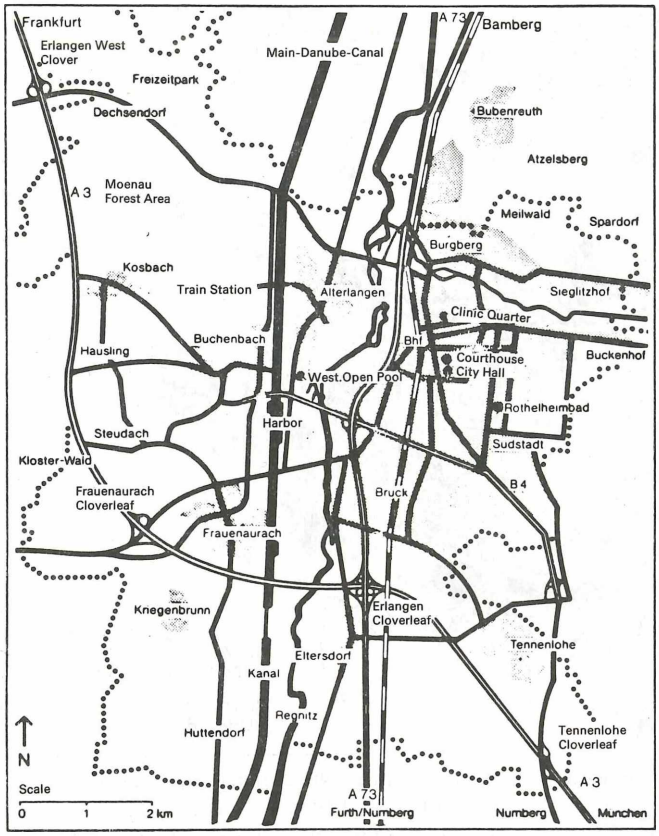
c. Cooperation of independent landscape planners with the city administration

According to the Bavarian Law for the Protection of Nature the landscape plan is to act as an accompanying plan to the Land Use Plan. It should be worked out to be parallel as much

INTEGRATION LANDSCAPE PLANNING, REGIONAL AND MASTER BUILDING PLANNING — ERLANGEN/MIDDLE FRANCONIA AS AN EXAMPLE

		REGIONAL/COMPREHENSIVE PLANNING				MASTER BUILDING PLANNING IN THE COMMUNITY						DESIGN PLANS	
1	CONTRIBUTION REGIONAL PLAN - CITY PLANNING	1 REGIONAL PLAN	2	3	4 BICYCLE PATH PLANNING Model, BavStM DevSt & EnQuest.	5	6 LAND USE PLAN	7 SPECIALIZED PLANS City Dev: Bicycle Paths, Allotment Gardens, Sport	8 AREA PLANS Landscape Plans Area Plans	9 INNER CITY STRUCTURE PLANS	10 BUILDING CODE PLAN	11	12 DECHSENDORF POND RECREATION AREA Model, BavStM DevSt & EnvQuest.
2	CONTRIBUTION LANDSCAPE PLAN	COMPRE-HENSIVE LANDSCAPE PLAN	BASIC ECOLOGICAL PLANNING STUDY	LOCAL RECREATION STUDY		ERLANGEN GREEN AREA PLANNING STUDY	Landscape Plan				GREEN AREA PLAN (Design Plan)	LANDSCAPE PLAN as Recultivation Plan	
3	PLANNING AREA	Region 7	Region 7	City and County of Erlangen Sebald Forest Area	Region 7 80 %	City of Erlangen	City of Erlangen	City of Erlangen	Landscape areas Parts of the city	Inner City	Schwabach Valley, Burgberg	Buckenhof	Dechsendorf Pond
4	SCALE	1 : 25,000	1 : 200,000	1 : 25,000	1 : 25,000 1 : 50,000	1 10,000	1 10,000	1 10,000	1 2,000 1 : 5,000	1 : 2,000 1 : 1000	1 1000	1 : 2,000 1 : 1000	1 : 2,000 1 : 1000
5	EMPLOYER	Region	Axis of Cities: Nuremberg, Fuerth, Erlangen Schwabach	Local Recreation Association	BavStM DevSt & Env. Quest.	City of Erlangen	City of Erlangen	City of Erlangen	City of Erlangen	City of Erlangen	City of Erlangen	City of Erlangen Buckenhof Cmty Schultheiß Co.	City of Erlangen BavStM DevSt & Env.Quest.
6	PREPARER	Nature Protec-tion Report, Gov't of Middle Franconia	Prof. Mueller, Munich, Prof. Kiem-stedt, Berlin	Grebe Office & Forest Offices	City of Nurem-berg, Grebe Office	Landscape Architects Grebe/Thiele	Grebe Office	City Planning Office, Garden Office, Grebe Office	City Planning with all the agencies, in part with Grebe office	Group Project	Grebe Office, Garden Office, Group project	Grebe Office	– Framework by Grebe Office – Competion: Blendemann, Kargerer Seiffer
7	YEAR	1973 – 76	1974 – 76	1969 – 71	1976 – 78	1967	1975 – 76	1975 – 76	1975 – 78	1972 – 73	1973	1973	1971 – 75
8	CONCERNED DISCIPLINES	Landscape Planning	Space Research Landscape Maint. Ecology	Landscape Maint. Forestry	Landscape Maint., City Planning	Landscape Maint.	City Planning Landscape Planning	City Planning Landscape Planning	City Planning (all agencies in part with Grebe Office	City and Land-scape Planning, Traffic Planning, Sociology, Monument Maintenance	Landscape Planning	Landscape Planning	Landscape City Planning Architecture
9	ASSIGNMENT	State Maint. Contribution to the Regional Plan	Depiction of the loads & risks from an ecological basis	Comprehensive Concept, local recreation focal points, development, rest area	Concept Bicycle Paths Region	Preparation, Green Surfaces System, Opinions of plans at hand	Basis & State Maint. Contri-bution of Land Use Plan	Comprehensive plans for various development areas	Comprehensive plans being prepared, Building Code Plans	According to valuation of alternative development Models, Com-prehensive plan for Inner City	Open Space Concept for Building Code Plan, Group Project	– Recultivation of sand pits, – filling of garbage dumps – Programming of recreation use	Comprehensive plan for development of recreation areaa
10	PROCEDURE	Hearing TÖB	Coordination of the four city axis	Coordination of concerned communities	Coordinated working groups of cities and regional administrative units Coord. results TÖB	Discussion City Council and the public	As with the Land Use Plan Participation TÖB	Coordination City administration Associations	Coordination of the city offices	Coordination City Council, public	Administration, City Council	Coordination with 3 em-ployers and field (specialist) authorities	Coordination
11	LIABILITY	in the regional plan	–	Comprehensive plan for following development plans	Comprehensive plan for communities and field (specialist) authorities Undertaking of Land Use Plan	–	Land Use Plan	City Develop-ment Program, Undertaking of Land Use Plan, Building Code Plan	Comprehensive plan through conclusions of the City Council	Comprehensive plan Conclusion City Council	Element of Building Code Plan	Liable for design, pit and garbage dump Community Council Conclusion	Building Code Plan
12	PUBLIC PARTICIPATION	–	–	–	some public phases acc. to stage of concept	According to type of study	City area-discussions, presentations	limited associa-tions, groups	Presentation in city areas, citizen assembly	Discussion of concerned valuation of development alternatives & total concept	Presentation citizen assembly hearing	–	Program Final Planning

Erlangen



as possible with the Land Use Plan so as to work in unison with it. The landscape plan should, up until its review through the higher nature protection offices of the government, clearly feature the conflicts at hand with the Land Use Plan so that the obtained decision criteria can be made clear to the government.

The most important goals of the landscape plan in Erlangen were already entered into the Land Use Plan during the parallel preparation of the landscape and land use plans. Yet some goals of landscape planning cannot be assumed by the city council. They are the subject of later decisions. This discussion of the conflicts before the city parliament is an essential element of political realization. It is therefore important that the independent planner be able to report directly in the city parliament.

The illustrations for landscape planning and city development were made before the background of a cooperation which has been going on with and in this city for over twelve years. The following compilation shows the various levels of landscape planning, from regional planning to master building planning with its various steps, in which a cooperation with landscape planning occurs.

COMPREHENSIVE PLANNING

1. Comprehensive landscape plan for the industrial region of middle Franconia

Erlangen, along with its neigbor cities of Nuremberg, Fuerth, and Schwabach, lies in the industrial region of Middle Franconia. Landscape goals for each region will be depicted in the Landscape Master Plan in the scale of 1 : 50,000.

Priority areas for various uses such as for settlements, recreation, protection areas, and sand extraction areas are set aside according to a representation of landscape elements soil, topography, vegetation, ground water, etc. The results should be completely worked into the regional plan, because natural conflicts among the goals of nature protection, as can be found in the case of settlement and traffic development, are to be decided in the political bodies of the planning board.

A section plan produced from the regional plan identifies the clearing of forest areas in the area as protection forests. This proclamation of the Bavarian Land Planning Law was issued by the Bavarian State Ministry for the Development of the Land and Environmental Questions on 12 June 1979.

About 46,000 hectares of forest in the environs of Nuremberg are now comprehensively protected. In recent years about 3,000 hectares of these forest surfaces lying near the city have been lost through intense construction for traffic, harbor development, and settlement, etc. The forest is also comprehensively protected by the requirement that substitutive reforestration be done in the case of any unavoidable clearing.

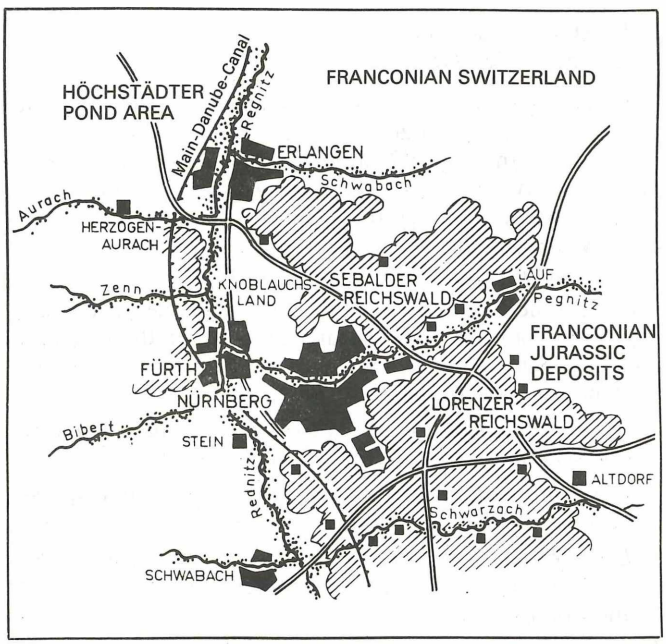
SUPRALOCAL STUDY

2. Ecological planning study
(Professors Kiemstedt and Müller 78)

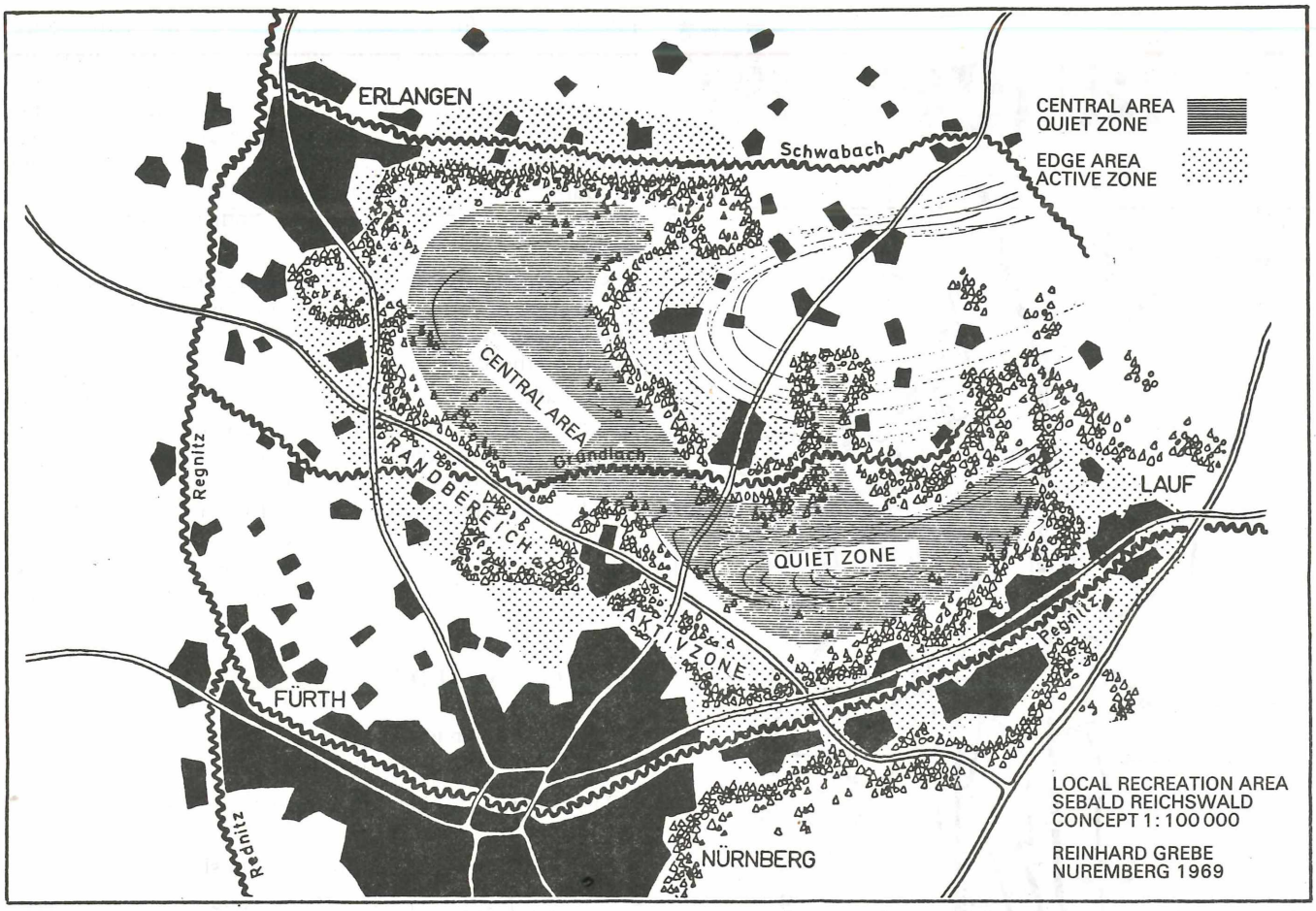
The following actions place heavy loads on the environs of Nuremberg:

- high level of absorption in the basin-shaped landscape
- low precipitation of 500 - 600 mm and the accompanying low ground water availability necessitates a supply from the Lech and Danube areas
- much sand extraction through operations in the earth and ground water
- wasting of valuable landscape areas through settlements and traffic

These have unified the four conglomerated cities and have allowed a commissioning of ecological studies in the cooperation between spatial order and care of the land.



ENVIRONS OF NUREMBERG MIDDLE FRANCONIAN INDUSTRIAL REGION
with the Cities of Nuremberg, Fuerth, Erlangen, and Schwabach.



The total area is broken down into parcels of 1 x 1 kilometers and is investigated and evalutated in a form of risk analysis using considerations of its potential and endangered condition through various stresses. These affirmations extend of course beyond the city limits and have led in part to critical reactions in the environs with the areas of regional administration and fringe communities because of the necessary restrictions that occur with the allowing of settlements. It is here that the problem of all regional planning in the environs of the city is especially clear.

3. Local recreation study
(Grebe Office, '71)

At the suggestion of landscape architect R. Grebe and the community of Schwarzenbruck (a special focal point for recreation on the edge of Nuremberg), which had worked with him, the City Council of Nuremberg founded a Local Recreation Association for the environs of the city in 1968. Initiatives from the Erlangen Area Forest Administration came simultaneously.

While Munich, where the city is obviously the center of a large area, could develop *one* large association, three various associations in the Nuremberg area were necessitated by the existence of multiple poles:

1. *Association of the Lorenz Reichswald* (Lorenz Imperial Forest) - southwestern fringe area of Nuremberg
2. *Association of the Sebald Reichswald* (Sebald Imperial Forest) - forest areas north of Nuremberg and Erlangen
3. *Local Recreation Association of Erlangen* - transition area to Franconian Switzerland with the areas of Forchheim and Erlangen-Hoechstadt.

The working focal points of these three associations are also various in comparison with the model of Munich. During the extensive development measures pushed through by the purchase of tracts of land the Nuremberg Association, which has large government-owned forest areas in its jurisdiction, has determined that these developments should include the improvement of pedestrian and bicycle paths, and the construction of park places and play areas. The model project of the Bavarian Environmental Ministry - the Dechsendorfer Pond Area - was prepared as the larger focal point, as well as a development of some excavated lakes in recent years.

The »Sebald Reichswald« Study - Grebe Planning Office - was prepared in close cooperation with the local forest agencies in 1969. The scope ranged from an inventory of the valuation of the forest stock to recommendations. This very early cooperation in the Nuremberg area between forestry and landscape planning has led to a very fruitful coordination, with no questions of delegation of authority which still exist between these two fields in other places.

Some years before the later occurring designation of regions this work in local recreation associations had already led to an increased cooperation among the essential bearers of the development means: the communities, the forest officials, and garden agencies of the cities. As the first summary of the goals of landscape planning the landscape planning master plans, worked out as a study, have had a strong advertising effect in the communities and have allowed a growing understanding of the duties of nature protection.

4. Development of a regional net of bicycle paths
(City of Nuremberg and Grebe Office)

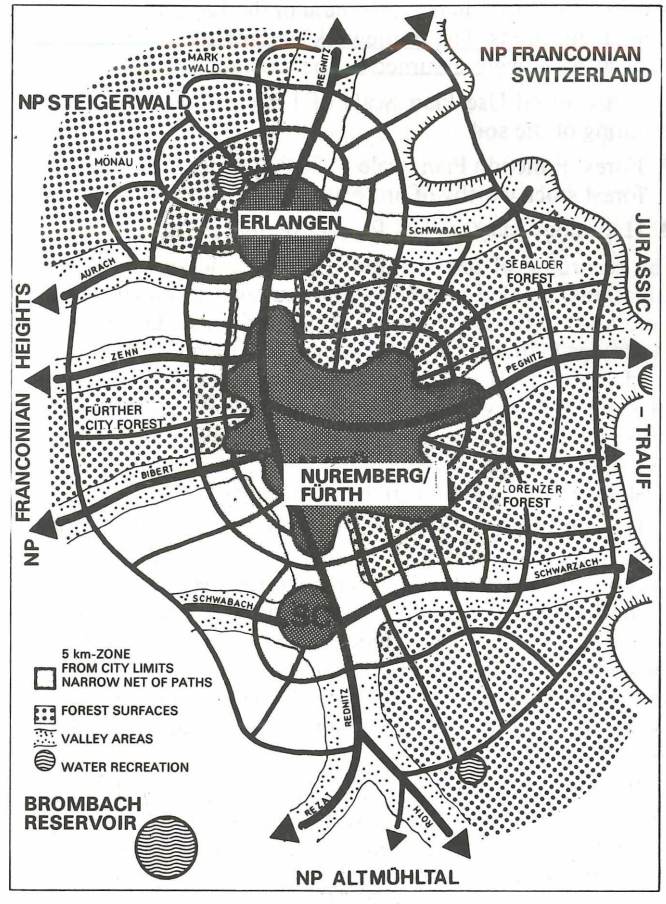
The Bavarian State Ministry for the Development of the State and Environmental Questions has promoted a model project for the development of a regional bicycle path network in order to improve public access to recreation areas near the cities of Munich, Augsburg, and Nuremberg. This task went first to the city of Nuremberg. Because there is a large knowledge of the land in Nuremberg's environs in the Grebe office

(about 30% of this area is covered in master plans and landscape plans) it was this office which received the work.
After an inventory of bicycle path networks a basic concept was developmed in eight months through the cooperation of field officials, country administration units, and the four large cities. One year later the information was given to the citizens who were invited to give further suggestions for the development of the network.

After this work with the public over 6,000 questionnaires were evaluated. They enabled a perception of a very strong demand for the improvement of bicycle paths even in the city. Through numerous demands from citizen initiatives and the political parties similar plans are now being begun in all of the cities.

Erlangen is exemplary in its bicycle planning. For ten years the resulting development of bicycle paths has been taking place so that by 1979 there were 140 kilometers of such paths in the city area of 6,000 hectares. In the 1979 budget the allotment for the development of bicycle paths was set for the first time at 1 million Marks, or 10 Marks per inhabitant.

The development of bicycle paths requires the continual work of some planning groups in the City Construction Office in close cooperation among the City Planning Office, the Garden Office, the Underground Construction Engineering Office, and the Real Estate Office.



Net Model Master Plan Bicycle Paths
Environs of Nuremberg
Grebe Office 77

MASTER BUILDING PLANNING IN THE COMMUNITY

With bicycle path planning a step is already taken from the comprehensive plan to the community master building plan as well as influencing other regional plans directly in the Land Use Plan.

The Bavarian Law for the Protection of Nature requires, with certain qualifications, the working out of a landscape plan as the basis of the Land Use Plan.

This planning was furnished twice in the last 10 years in Erlangen:

- Green Area Planning Study (Nr. 5) 1967
- Landscape Plan of the Land Use Plan (Nr. 6) 1977

A comparison of both works shows the change in landscape planning in these ten years.

5. Green area planning study
(Grebe/Thiele Office '67)

The 1967 Plan possessed no legal basis and was characterized as a study. An incorporation into the Land Use Plan did not occur. There were even discussions in the city council about the total development and individual problems. Only a little curiosity was perceivable about the numerous restrictions inevitably contained in the landscape plan, for which partial or total agreement was found. Even the publicity showed few reverberations at first; the problems were not recognized at first, even here.

The problems addressed in the 1967 Landscape Plan – which were not considered at first in the following city development – illustrate especially critical points in the city today:

- Construction of skyscrapers directly in the noisy highway areas
- Direction of traffic through valley areas near the city
- Obstruction of important open space relationships

After the intensification of environmental consciousness, especially through the European Year for the Protection of Nature in 1970, the 1967 Plan became actual three years later through two important incidents:

1. The *first citizen initiative in the city,* which was able to prevent the construction of a street, the cancellation of which had already been recommended in studies done three years previously. Not only is the existence of a nature protection area made safer with the sacrifice of this street, but a valuable natural valley area is also maintained. This area presently extends into suburban areas and has developed into a valuable recreation area.

2. The *election campaign* of the young mayoral candidate Dr. Hahlweg. He became acquainted with the special problems of condensed cities in the USA and put his support into insuring the quality of life in the city into the foreground of his campaign. Using the publication of the Green System Planning Study written two years previously he reproached the city and its council by showing special omissions in this area. He won the election in the second run, and in short time a repitition of the area reform was required.

In the second election Mayor Dr. Hahlweg was elected with a high majority, as indicated not only by votes of his own party. In the meantime the preservation of the environment has become a decisive demand of many cities. It is unfortunate that not all politicians perceive that it is possible to rate themselves politically with the success of better environmental quality.

6. Landscape Plan
(Grebe Office '76)

The 1975 – 76 Landscape Plan was acquired parallel with the Land Use Plan according to the valid guidelines of the Bavarian

State Ministry for the Development of the Land and Environmental Questions. The framework statements of the regional plans at hand were assumed in the existing conditions plan:

- Agricultural Use Plan, scale of 1 50,000 meters, with a rating of the soil
- Forest Function Plan, scale 1 : 50,000 meters, depicting the forest stock worthy of protection
- Hydrology Master Plan, for the Regnitz in particular

The recording of the conditions of the landscape and their valuations enabled an intensive discussion about the settlement and traffic development during the presentation of the Landscape Plan and Land Use Plan to City Planning. When the Landscape Plan was laid before the higher nature protection officials of the government so that the plan could be checked for professional quality and promotional ability *three conflicts* for landscape planners in the Land Use Plan emerged from the most differentiated points of agreement:

1. The cultivation of valuable agricultural areas were required. The reservation of space for these areas in the Land Use Plan was done with consideration of the valuable soil qualities and the protection of recreation areas as well as the high noise level in the vicinity of the highways. The government took the objection a little oddly and did not approve the construction area. The city accepted this point of view even though they owned the area and therefore suffered a certain amount of financial loss.

2. The cultivation of forest areas near the city through a large clinic; rejection through landscape planning because of the significance of the local recreation area which necessitated the development of alternative locations. The altered situation in the hospital area had solved this fundamental issue.

3. Placing another dam in the Regnitz valley. Rejected through landscape planning because of the heavy operations in the valley area, ground water, the local recreation area of the city as well as from apprehension of an over-flooding of traffic in the inner city.

In its examination the government indicated a further examination of its concerns of landscape planning.

In the meantime this »Kosbach Dam« has been rejected by the majority in the city council. A model project of the dam which had been going on for three years at the Erlangen-Nuremberg University was also critically judged in opinions from various disciplines for its effects in the valley space. The conflict with street planning in the last years has become a particular focal point of landscape planning.

The comparison of both plans shows clearly that in the last ten years the public consciousness as well as the legal basis has changed significantly. The restrictions often required by landscape planners are commonly seen today as a presupposition for the preservation of city quality. Variety, not monotony, is once again desired.

It is self-evident that the landscape planner not allow himself to be confined only to these preventative functions for the landscape. An intensive collaboration for all urban construction problems, for competition, etc., is indispensable. This requires that the landscape planner becomes involved with urban construction problems, traffic, and the development of suburbs etc. The problem lies in the financing of the thereby necessary expenditures, because this duty area is not intended in the present fee rules and promotion guidelines of the ministry. Much work must be done which can't be covered by the fee - a problem of all landscape planning. Yet without this commitment the realization of landscape plans is impossible; landscape planning must begin above all exactly where effects from third forces operate in the landscape. The reduction to the interest for the protection of nature does not give the landscape planner the necessary magnetism for the political realm.

DEEPENING OF THE LAND USE PLANNING

With the necessary planning scale of 1 10,000 it is difficult, when working with a large city area, to

- go into all spatial differentiations, even directly in the landscape realm
- simultaneously include, in the sense of a scale catalog, problems of urgency, financing, etc.

In the practice of the master building planning further comprehensive plans have been developed as ordered by the cities before the preparation of the legally binding building code plans.

7. Specialized plans for city development
(Report for City Development, Erlangen)

The goals for next year and the priorities of development and financing were determined after careful examination of the need and demand situation.

The following areas from landscape planning are given for their contributions (as worked out by the Erlangen Garden Office, Grebe Office):

Sport areas	Settlement areas
Playgrounds	Bicycle paths
Allotment gardens	

After these areas are already basically addressed in the landscape plan they are to be included in the specialized plans in their connection with the problems of preservation of plots of land, financing, etc., in the form of detailed plans which are to be coordinated with all concerned parties, especially the associations and other groups.

8. Area plans for sections of the city or landscape spaces

The jump from the scale of 1 10,000 to the 1 1000 of the building code plan, or even to 1 500 in the inner city area, is too large. It is the small differences in a landscape area - edges of slopes, important moist areas, riverbank zones, etc., - which cannot be made perceivable and are therefore easily lost.

So in town planning area plans of the master plan in the scale of 1 : 2,000 (2,500) were developed years ago for certain sections of the city. Programs for sections of the area were developed from the population structure, the valuation of construction substances, and the traffic layout. Priorities were developed for the further construction through building code plans.

Area plans for important landscape areas with similar objectives were developed in Erlangen:

- Valley area of Schwabach and Regnitz
  Grebe Planning Office
- Dechsendorf Pond Edge Area
  City Planning Office

The transition of this plan occured in various stages:

- linear development elements such as pedestrian and bicycle paths, bridges, parking places, etc., were built directly according to these plans, as well as plantings on the water bodies, large afforesting, tree-lined walks on the streets, etc.

The majority of this work was executed through the Garden Office of Erlangen, although some focal points (play and sport areas, etc.) were given out to independent landscape architects.

Yet for certain areas building code plans must be presented in order to maintain the legal basis for perhaps a purchase of a plot of land or even to maintain expropriation (see point 10).

The main task of this area plan is the preservation of natural landscape spaces, which are especially endangered in the cities by the strong pressures of suburbs and traffic.

9. Structure plan of the historical inner city of Erlangen
(Working Group for City Planning and external advisors, such as landscape planners - 1973)

The structure plan of the inner city can be considered as the area plan for an especially sensitive area of the city, its old quarter.

In addition to this a small initiation to the development of the city is necessary. In 1686 Margrave Christian Ernst allowed refugee Hugenots from France to settle near the existing city in a new city based on the Baroque ground-plan with castle and castle garden. After 1706 the cities expanded enough to join, although each maintained a separate administration until 1822. Up until the second world war the old part of the city could assume all the central functions of the city, yet this was no longer possible after the stormy development between 1950 and 1970, which saw a population growth from 30,000 to 100,000 and included some land incorporations.

The great pressure on the inner city threatened to burst the small spatial scale of the only two-storied old part of the city. So after a 1970 town planning competition for the axis of the main street with the »new square« a further focal point for the growing city was established: here the large structures can be found (the courthouse, the city hall, large shopping houses and all other structures) in close attachment to the old city center.

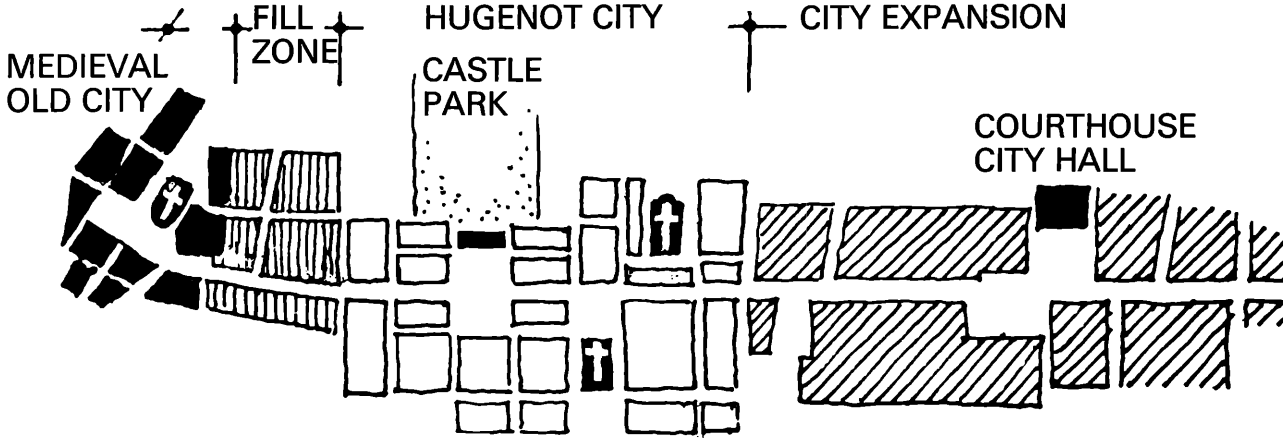
This operation was very painful although certainly necessary. Painful because after the completion of this square the main shopping flow changed completely, and at first forced some small shops to close. Yet necessary - and today uncontroversial - because only in this way could other structures of the old city be maintained. Today the old streets and plazas can again develop as the preferred areas for dwelling and leisure time use.

However the experience of the cooperation of the necessary interdisciplinary working groups was exemplary, and involved a standing working group of three young architects who had just written their Masters Theses about urban development in Erlangen as well as a responsible city planner and city administration and technical employees. The work of this group, with its weekly all-day sessions, was completed through the other necessary disciplines: sociology, monument maintenance, and traffic and landscape planning.

So the spectrum for judgements and decisions was significantly broadened. This was indispensable for this multi-layered task.

Interdisciplinary cooperation in town planning is often only seldom in other cities. Thinking of the motto »many disciplines - many criteria - many words - much money« some pragmatically thinking city administrations won't introduce the interdisciplinary cooperations. Some administrations, in spite of affirmations to the contrary, are characterized by a deplorable lack of cooperation even among the individual city offices.

The permanent image of task-oriented, plan-preparing work groups, as has been practised in the city administration of Erlangen for years, is unfortunately not yet self-evident elsewhere.



10. Schwabach valley green area plan
(Grebe Office, City Planning Office of Erlangen 1974)

Obligatory regulations, even for private land owners, are found in the building code plan.

In most cities the garden office or some landscape architects within the city planning office are included in the presentation of the building code plan. The open space regulations (streets, plazas, private gardens, etc.), as far as they are enforceable, are to be found in the Green Area Plan for the following: trees, arrangement of boundaries, front gardens, etc.

Yet building code plans need not only lead to the development of rules for the constructed environment, they have an equally great task with open space regulations.

- Compulsory preservation of open spaces
- Insuring that built-up or fenced-in riverbank zones and the edges of forests be kept open for paths, etc.
- Boundary regulations for the extension of public open space

The »1974 Schwabach Valley Master Plan« will be fulfilled and legally realized through subsequent building code and green area plans.

The Schwabach Valley traverses the city area from east to west directly on the center of the old part of the city. So

at the same time it is an important connecting element between living areas outside of the city and the central establishments in the center of the city, as well as being important here in the open landscape. The valley is still extensively in agricultural use, and planning is limited to the identification of some focal points and the development of a comprehensive path system.

Public participation is problematic, not only in Erlangen, for such plans:

At public hearings it is unfortunate that it is predominantly the opponents who participate, and not the majority in favor for whom the plans are made. Garden owners reject the erection of grilling places in public areas because the nightly smell of bratwurst disturbs them. They are against the introduction of pedestrian and bicycle paths directly adjacent to their property.

It is difficult for an administration, even under the best of conditions and with the most open-mindedness, to implement such things if a critical citizenry doesn't take on all these things for reflection in the open public.
Thus the realization of landscape planning goals is unthinkable without a strong public participation.

11. Recultivation plan for the Buckenhof Waste Disposal Site
(Grebe Office, '73)

Today the »Landscape Maintenance Accompanying Plans« are required by different laws (Protection of Nature, Water Budget, garbage disposal) with all large removal and deposition proposals. These plans, next to the basic suitability of the site, call for development of these landscape areas even to the point of resurfacing, soil arrangement, and plantings.

The incorporation of the *Buckenhof City Disposal Site* on the edge of Erlangen comprises three tasks:

1. Recultivation of the large sand pits (Employer: Brickworks)
2. Filling, resurfacing, and planting of a garbage dump in what was previously a sand pit, at a recommended heighth of about 20 meters (Employer: City of Erlangen)
3. Programming for recreation uses for this transition area from Buckenhof village to the open landscape after the conclusion of the recultivation measures (Employer: Bukkenhof Community).

At the recommendation of the Grebe office the three employers united in a work partnership with the responsibility of the master building planning concerning the Buckenhof community. The prepared plan depicts not only the basis of the community master building planning but also the resulting approval procedure for sand pits as well as for garbage dumps.

The City Sanitation Office's very good dump management and the adherence to the legal conditions of landscape maintenance has led to the fact that, according to the examination of the State Office for the Environment (founded in 1975), the Buckenhof-Erlangen dump could be characterized as one of the few controlled garbage dumps in Bavaria.

In 1979 the garbage dump was finally closed and with the last afforestration and sowing of seeds the landscape incorporation, which had already been introduced through plantings on the foot of the slope, was completed.

The natural dampness biotopes and dry grass areas of the closed down sand pit have developed with the support of a few plantings on the edge areas. This differentiated landscape, only a few years old, is already distinguished by a definite multiplicity of flora and fauna.

The previously very lively discussion about the development program for the organization of recreation became almost groundless after this strong development of the landscape. The space has already such a large variety of experiences that earlier considerations for the construction of sport shooting places, land for sport, etc., can scarcely be carried out.

12. Focal point for development of local recreation for the Dechsendorf pond area
(City Planning and Erlangen Garden office with independent planners)
Model project of the Bavarian State Ministry for Development of the State and Environmental Questions

The approximately 45 hectare sized Dechsendorf Pond lies on the west of the city, in connection with a large chain of ponds (the breeding of carp has been occurring there since the early middle ages). With its edge situation to the Nuremberg-Erlangen conglomeration area it was exposed to the strong pressure of private interests. In 1970 about 2 kilometers of shoreline passing through camping places were so possessed. The public had access to the water only at a 200 meter wide strip.

After the incorporation of Dechsendorf into Erlangen a systematic development was introduced. It can be seen in *one* example as a compendium of the previously depicted planning steps.

1970 Master Plan for Local Recreation in Erlangen (Grebe Office) Recommendation for the development of the pond as a local recreation focal point with access to the bank zones.

1970 Conclusion of the Bavarian Representative Assembly for the State Government:

»Acquisition of a model for a supra-town center of local recreation.

This center should

- lie within the realm of a highly urban conglomerated area
- be as independent as possible from season and weather
- be tuned to the anticipated possibilities and needs of ›the leisure society of the year 2000‹
- observe the landscape data under conditions of ecological points of view«

The Bavarian Environmental Ministry chose the Dechsendorf Pond as well as the local recreation center in Kochel am See already under construction.

1972 Announcement of a competition program for the Dechsendorf Pond Concept Competition among landscape architects and architects from Bavaria, Baden-Wuerttemberg, Hessen, and Berlin (Program preparation by Grebe Office with the City of Erlangen)

1973 Judgement of competion, issuing of assignments to the winner:

1st prize: Landscape architects Blendermann and Kagerer, Architect Seiffert

Preparation of the Master Plan, according to the text taken from area plans of the city, foundation for the following building code plan which would be ultimately implemented through the expropriation of the bank area.

2nd prize: Architects Hartung/Niebels/Trojan
Landscape Architect G. Oestmann/Darmstadt

The planning of the restaurant as a focal point for provisions, with affiliated play areas.

The Dechsendorf Pond is an exemple which shows that without a legally binding text the clearing of landscape spaces, with the resulting encroachment on private claims, cannot be implemented. Even the competition essentially required the implementation of these partially problematic goals through common work between planners and politicians, and through strong public participation.

1979 - Six years after the development of the master plan for the lakes changes in the earlier program have become evident:

The required leisure time center, which was to be usable all year with the indoor swimming pool and buildings with large play and leisure time facilities, has not been built. Rather, the continuous discussion of the last five years has led to the very clear perception to above all maintain and improve the landscape quality of the lakes and to limit the furnishing of necessary provision facilities (food). Intensive recreation facilities such as indoor swimming pools and recreation buildings, with their high building and energy costs, must be built in the city. Situating them in landscape areas destroys their own quality as well as the living quality in the adjacent settlement areas.

In this development Dechsendorf shows itself to be a problem, the kind of which is often posed by landscape planning:

The preservation of valuable landscape areas, and the implementation of restrictive measures for their protection - one of the main tasks of landscape planning - is above all difficult to accomplish in political differences of opinion: the support of a critical public is often missing, and landscape planning is often opposed by efforts for so-called »more valuable uses« like the development of settlement areas.

One of the most important results of this increased public involvement is that the preservation of natural landscape areas is valued very highly today, above all as a result of strong activity through traffic and settlement measures.

This welcome development does not need, in landscape planning and in the protection of nature, to lead to, - as has happened here and there, above all also in education, - a search for a focal point for the profession only in ecological areas and thus set aside the development and planning problems.

It is directly in the concentrated areas of our cities, which depict, with their strong environmental operations, the focal point of landscape planning, that the landscape planner is to intensively concern himself with traffic and city planning and even be in the situation to develop, substitute, and implement his own alternatives.

Planning is only the beginning of a process: plans can finally be realized only through a continuous involvement of the planner and through a strong support in the political sector.

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The Legal Foundation of Landscape Planning

Wolfgang Deixler

In the three-fourths of an hour which is reserved for this theme a consideration of »The Legal Foundation of Landscape Planning« cannot even once allow a detailed description of the relationships in the Federal Republic of Germany, let alone go beyond its borders. That is to say, the individual German federal states make such a copious application of their legislative competence in nature protection and landscape maintenance that a detailed comparison of the existing legal norms for landscape planning in the federal states could demand much time. Therefore the following text will predominantly concern itself with showing data for Bavaria.

Bavaria has issued some legal bases for landscape planning. The Free State of Bavaria consists of 70,550 square kilometers as compared to 83,850 square kilometers in the Federal Republic of Austria or 41,288 square kilometers in Switzerland. A comparison on the basis of other conditions is also possible. A consideration of the legal relationships of landscape planning in Bavaria by reference to particularities of other German federal states must also allow the necessary conclusions about relationships outside of Germany. It should also be recalled that the Federal Republic of Germany consists not only of »area-states« such as Bavaria or Rhineland-Westphalia but also of »city-states«. In the »city-states« of Berlin, Bremen, and Hamburg landscape planning essentially limits itself to the local planning level. That is, supra-local planning is here extensively omitted.

1. The Present Administration Arrangement

More knowledge of the three-membered state administration in most of the federal »area-states« is important for the understanding of the following explanation. The ministry represents the highest state authority, and after it come the Regional Governments (seven in Bavaria) in the middle position. Then come the Rural District Authorities of the lower administrative levels. Whenever there are a great number of field (specialist) authorities it means basically that for every federal state that the tasks for the protection of nature on all administrative levels are nowhere solely the task for one authority alone. There is no ministry which concerns itself solely with environmental questions. Indeed it is normal that not once is there a division of competence for the use of environmental areas and for the protection of nature. Many times it is an economic administration, namely the Agricultural Ministry, which is also the highest authority for the protection of nature!

The higher nature protection authorities of the Regional Governments and the lower nature protection authorities of the District President offices represent the interests of nature protection and care of the landscape. So the points of view of these interests, are, as a rule, tuned in to the economic and special interests which concern these authorities.

Other areas of this field, especially on the lower administrative levels, stand in control over some authorities such as consolidation of farmland, forest offices, agricultural and water economy offices. These represent their special interests without being filtered and watered down by other interests, completely contrary to the case with the nature protection authorities. They serve highly influential and often financially powerful partners beyond the concerned authority, such as the Farmers' Association or the Industry and Trade Chambers.

A consideration of the legal basis of the planning of nature protection and landscape maintenance (as landscape planning presents them) or even considerations for the improvement of this legal basis must thus first assume no other realities about the administration. If, in consideration of the federal parliamentary elections, the Federation for the Protection of Nature lifts the requirement to shift the competence for nature protection and landscape maintenance away from the Federal Agricultural Minister to the Federal Ministry for the Interior (which is technically competent for environmental protection) then such efforts may be assumed to have negligable chances. Efforts to install independent nature protection authorities are completely hopeless.

2. The Present Planning Hierarchy

In the Federal Republic of Germany a planning hierarchy for the legal regulation of landscape planning was already present through other existing laws. So »supraordinate, comprehensively supra-local, and supra-locally specialized programs and plans« are to be drawn up according to the Spatial Arrangement Law of April the 8th, 1960 (ROG - BGBl I S.306) and the already issued parts of the Planning Laws of the Federal States now being completed. The Bavarian Land Planning Law (BayLplG - BVBl S.9) consists of three kinds of compulsory plans, namely the Land Development Program (Art. 13), specialized programs and plans (Art. 15), and the Regional Plans (Art. 17). The Land Development Program establishes the distinctive features of the spatial arrangement and development to be striven for for the federal state area. The goals of the aspired-for arrangement and development of the state area, drawn up by the Land Development Program, are made concrete for 18 Bavarian planning regions by the Regional Plans. According to the Bavarian Land Planning Law (Art. 15) specialized programs and plans fit in the hierarchy of planning between the Land Development Program and the Regional Plans. Their declarations are to be tuned in with those of the Land Development Program, yet must be so comprehensive as to allow regional planning enough room for necessary decisions.

The Federal Construction Law (BBauG - according to promulgation of the new version of the Federal Construction Law of 18.8.1976 - BGBl I S.2256) established local planning levels in addition to the above-mentioned gradation of supra-local planning. When planning for communities according to conditions of supra-local goals the development goals of the community are to be accordingly laid out for the total community area in the Land Use Plan, and for sections of the area in the Building Code Plan.

Local specialized planning regulates yet other laws. A large amount of specialized planning, for example street construction, for water economy measures, for the consolidation of farmland, or for airports, is subject to a formal process, the so-called Plan Determination Process.

3. Landscape Planning According to the Federal Nature Protection Law

The enactment of laws for landscape planning must procede under the presupposition of a federative organization of the Federal Republic of Germany, the administrative structure of the individual federal states, and the present planning levels. Because the competence for legal enactments for protection of nature and care of the landscape lies with the federal states the Federation can enact only comprehensive regulations for landscape planning. In accordance with this the Nature Protection and Care of the Landscape Law (Federal Nature Protection Law - BNatSchG) was enacted on 20.12.1976 (BGBl I S.3574) after having already given a legal basis with nature protection laws some years earlier in various federal states, including Bavaria.

In landscape planning even the Federal Nature Protection Law proceeds from a planning hierarchy. So »the supra-local requirements and measures for the realization of the goals of nature protection and care of the landscape in the area of a federal state are to be depicted, under consideration of the principles and goals of Spatial Arrangement and land planning, in landscape programs including species protection programs, or, for areas of the federal state, in comprehensive landscape planning.« (§ 5 Abs. 1 BNatSchG). »The local requirements and measures for the realization of the goals of nature protection and care of the landscape are to be represented in more detail in landscape plans with textmaps and additional substantiation as soon as and so far as this is necessary for reasons of nature protection and care of the landscape« (§ 6 Abs. 1 BNatSchG).

In addition to the landscape programs as the highest planning levels, the comprehensive landscape plans for the concretization of this landscape program (although always still on a supra-local plane), and the landscape plans on the local planning level the Federal Nature Protection Law recognizes yet another type of landscape planning which assists specialized planning. This type of landscape planning consists of the accompanying plans for the care of the landscape which »are to represent the necessary measures for nature protection and care of the landscape for the arrangement of this concept in individual texts and maps. These special plans should be undertaken, according to public right, whenever operations occur in nature and the landscape (§ 8 Abs. 4 BNatSchG).

The efficiency of the supra-local landscape planning ordains that through the Federal Nature Protection Law that »the spatially significant requirements and measures of the landscape programs and landscape plans should be undertaken according to the legal land planning instructions of the federal states in the programs and plans as in the sense of § 5 para 1, sections 1 and 2, and para 3 of the Spatial Arrangement Law« (§ 5 Abs. 2 BNatSchG). As for the landscape plans the federal law givers leave the legal regulations to the county authorities and the legal binding power to the federal states (§ 6 Abs. 4 BNatSchG).

The Federal Nature Protection Law declares nothing about the content of landscape programs and landscape master plans let alone anything about landscape plans. According to § 6 para 2 number 1 of the Federal Nature Protection Law the landscape plan contains representations of the existing natural and landscape conditions and its rating of them according to the goals of nature protection and care of the landscape, as determined in § 1 para 1, Federal Nature Protection Law. That is »nature and landscape are to be protected, maintained, and developed in settled and unsettled areas, and that

- the carrying capacity of nature's economy
- the use abilities of nature's goods
- the plant and animal world as well as
- the variety, uniqueness and beauty of nature and landscape

are lastingly preserved as the basis for human life and as a presupposition for man's recreation in nature and in the landscape«. Resulting from this it need not be irrelevant for Rhineland-Westphalia that the landscape plans should have to say something for settlement areas, just as also for the landscape outside of those areas connected with built-up parts of the village.

In addition to the representations devoted to landscape analysis and diagnosis the Landscape Plan contains (according to § 6 para 2 number 2, Federal Nature Protection Law) declarations of the condition of nature and the landscape to be aspired for and the necessary measures.

4. Landscape Planning According to the Bavarian Nature Protection Law

Bavaria is one of the first federal states which issued legal regulations for landscape planning. According to the law for the protection of nature, the maintenance of the landscape and recreation in open nature (Bavarian Nature Protection Law of July 27, 1973 (GVBl S. 437)

a) a comprehensive landscape program is to be prepared as a part of the Land Development Program in the realm of supra-local planning,

b) and in the realm of local planning

- the Landscape Plan is to be prepared as the basis of the Land Use Plan and the Green Area Plan as the basis of the Building Code Plan, as far as this is necessary from reasons of nature protection and landscape maintenance
- to work out design plans with existing nature conditions, damaged landscape, or significant anticipated operations in the landscape.

Landscape planning is thus regulated to a basic comprehensive planning by the Bavarian Nature Protection Law. This law allows only two exceptions from this alliance with other types of planning – namely Comprehensive Landscape Plans which have been worked out as specialized programs and plans, and nature park facility plans. A comprehensive planning is then given if the goals of various specialties for a given region, for example that of a Region or community, are prepared with the same intensity and in the most inter-disciplinary way possible, as well as through an agreement of interests which is justifiable in every one of these concerned speciality areas.

4.1 Planning Areas

Planning areas are also legally laid out in Bavaria. So the Comprehensive Landscape Program for the whole state area and comprehensive landscape plans for each of the 18 planning regions are to be worked out and put into effect. Landscape or Green Area Plans, according to the Bavarian Nature Protection Law, are to be worked out above all for areas which

a) are exposed to lasting changes in the landscape
b) serve as recreation areas or are foreseen as doing so
c) have landscape damage, or where such damage is suspected
d) lie adjacent to water areas such as shore areas
e) are to be protected or preserved from reasons of water supply quite apart from hydrological regulations.

According to the Comprehensive Landscape Program the Comprehensive Landscape Plan should give these areas concrete names.

4.2 Content of the Landscape Plans

The Bavarian Nature Protection Law contains no regulations about the content of the landscape plans, unlike the case of the Federal Nature Protection Law or the nature protection laws of the other federal states. Yet because the Comprehensive Landscape Program and the Comprehensive Landscape Plan should contribute to the realization of the goals and tasks as given in Art. 1, Bavarian Nature Protection Law, more functions are allowed to be derived from landscape planning in the framework of comprehensive planning. As ecological landscape planning landscape planning has the goals of the preservation, protection, and maintenance of natural resources as well as for the renewal and development of the natural landscape potential. The task of landscape design, to which landscape planning must always be unbiassed, derives from man's demand on the landscape as space for use and experience. Landscape planning ultimately concerns itself with the recreation function of the landscape.

The Comprehensive Landscape Program contains the regulations for the content of the Landscape Plans. The Comprehensive Landscape Program, which is a part of the Bavarian Land Development Program issued on 10.3.1976 as a legal decree of the state government (GVBl S.123), determines that:

- on the basis of the data relevant to the landscape an arrangement of natural areas corresponding to the landscape structure is to be undertaken
- the land use is to be critically evaluated according to the measure of the load carrying ability of natural factors and of the landscape's image
- solutions are to be worked out from an ecological point of view for the various conflicts of goals resulting from demands for various uses
- goals are to be drawn up for the identification of protection and recreation areas as well as for an ecologically sensible land use
- the required or proper maintenance, protection, design, and regulatory measures are to be foreseen
- a working calendar is to be set up under the consideration of urgency and the entanglement between the individually aspired for measures
- the financial assumptions are also to be considered in an overview of the costs. That is, it is to show, on the basis of a thorough landscape analysis and diagnosis, as can be learned in every textbook about landscape planning, the necessary goals and measures for the further development of the planning area. These goals and measures are:
- how the landscape or individual landscape factors can be used without being destroyed, and determining which parts of the landscape are necessary for the function capability of nature's household and are thus not to be used, or used only in a limited way
- to rectify any damage which has already occured in the landscape
- how the image of the landscape and village should be arranged
- how leisure time and recreation can be promoted in settlement areas and in the open landscape.

According to the legal provisions of the Bavarian Nature Protection Law, the Land Planning Law, and the Comprehensive Landscape Program, four complexes of tasks arise for the Comprehensive Landscape Plan, which is actually part of the Regional Plan. These complexes of tasks are:

a) To determine the various load carrying capacities of nature's household and of the landscape image of the individual partial areas (under the consideration of anticipated use demands) for proper further development of the region. For this the region is to be arranged in large areas, and the ecological and functional goals corresponding to the supra-local character of the Regional Plan are to be limited to four categories, namely

- areas of natural and almost natural living communities
- areas with minutely divided, mostly overlapping uses
- areas with intensive land use
- areas with urban and industrial use.

The proximity to be observed, and – in the over-burdened areas – the nature setting to be developed are to be the standards for this arrangement.

b) To identify nature parks and landscape areas to be protected

c) To represent the goals of care of the landscape and green area planning from a supra-local viewpoint. For this task the identification of regional green belts which extend through predominantly agricultural and forested areas has a special rank, for these green belts particularly serve in the balance of fresh air and for recreation in concentrated areas.

d) To designate areas for which the predominantly local goals of the communities for nature protection and landscape maintenance are to be set up.

A proclamation of the Bavarian State Ministry for the Development of the Land and Environmental Questions of 31.10.1975 (LUMBl S.203) gives thorough refernces for the content of the landscape plans. The subject of implementations will now be avoided, because this proclamation, like most of the other sources cited in this report, can be looked up in material volumn Nr. 6 of the State Ministry for Development of the Land and Environmental Questions. Every interested participant of the seminar can obtain a copy of this volume.

4.3 The Effectiveness of Landscape Planning

The goals of the supra-local landscape planning, thus also of the Landscape Program and Comprehensive Landscape Plans, obtain about the same legal binding ability, although in different ways, in the individual federal states. They are to be noted as the goals of the spatial arrangement and land planning for public planning bearers. These goals are not binding for the individual citizen.

The relationships concerning the legal effectiveness of the landscape and green area plans lie elsewhere. In Bavaria the completed landscape or green area plan has first of all only the character of a study. The representations of the landscape or green area plans become »legally binding« to the extent that they are made part of the Master Building Plans as well as their participation in the establishment process for these Master Building Plans. According to corresponding directives of the Bavarian State Ministry of the Interior of 30.8.1976 (LUMBl S.225) landscape plans (respectively green area plans) can either be adapted to the Land Use Plan (respectively Building Code Plans) as thus complete accompanying plans, or they can be expressed in the Master Building Plans. The statements of the landscape and green area plans then become »binding for the authorities« like the normal representation of the Land Use Plan, or they bind everyone as a requirement of the Building Code Plan. This presupposes however that they can be met according to §§ 5 and 9 in the Master Building Plans.

As a rule the landscape plan will contain more than can be represented in the Land Use Plan according to § 5 of the Federal Construction Law. The realization of the goals and measures of the landscape plan therefore results not from its integration in the Land Use Plan alone; particular measures are also to be thereby realized for the protection and maintenance of the landscape that

- issue legal ordinances (according to Art 5, para 3 and Art 12, para 2 in connection with Art 45, para 1, number 5 of the Bavarian Nature Protection Law) for example for the maintenance of pieces of land and their protection for wild growth respective to the protection of trees and shrubs within village areas;
- Measures for the care of the landscape and green areas through the community itself are to be executed among nature protection officials according to Art. 4, Bavarian Nature Protection Law, in farmland consolidation or from agricultural facilities for the preservation of the cultural landscape according to the 4th segment of the Agriculture Promotion Law of 8.8.1974 (GVBl S.395).
- Measures will be promoted for the furthering of the recreative function according to the program »Leisure and Recreation« (comp. LUMBl Nr. 5 1975 S. 46).

Rhineland-Westphalia controls landscape planning in a basically different way. Here the landscape plan is determined in statute form by the districts and cities free of districts, unlike the case of Bavaria, where they are determined by the communities. Now because the planning sovereignty of the communities was, according to the Federal Construction Law, not to be circumvented, such a landscape plan must exclude »the built-up village areas and the legally binding parts of the Building Code Plans«, and thus even each multiply-overloaded area, whereby an improvement of the natural living relationships would be strived for with the landscape plan. Nevertheless the representations of a landscape plan of this kind are to be noted by everyone and must not first be circumvented through further legal ordinances.

4.4 Author of the Plan

According to Art. 1 of the Bavarian Architect Law of 31.7.1970 (GVBl S.363) »the preparation of the design as well as of technical and economic aspects of garden and landscape plans is the professional task of landscape architects.« The professional designation »landscape architect« is only allowed to be used by those whose name is entered in the architect list. When it is thus so legally determined that landscape planning is to be given over to the landscape architects as the appropriately trained and educated experts then landscape planning stands and falls as practised if the planner also really shows himself to be a specialist.

The nature protection laws in the Federal Republic standardize the preservation of the landscape as a natural basis for living in accordance as a task of landscape planning. Should landscape planning become legally valid through an acquired ecological development concept then the landscape planner must deal with the bill for an intensive, professional continuuing education. The landscape architect doesn't satisfy the landscape/ecological requirements of landscape planning if he sees his task as only one of design.

In addition the difficult situation in which the landscape architect frequently stands in regard to perception of his tasks should not be hidden away. Landscape planning, as the basis of master building planning or in the framework of specialized planning is often not at all desired from those who must carry it through because of the laws. Some community councillors give out landscape plan assignments only because they can't otherwise reckon with an approval of the Land Use Plan. They see only a senseless expenditure of money in spite of the high state grants for the planning costs. Often the employer expects that the landscape planning will represent his conception and not say some landscape/ecological requirements in the way that the landscape architect must represent them. The landscape architect must thus act as an advocate for an intact landscape with an initial clarification work of the highest priority, and do this with the danger of becoming unpopular with powerful clients and thus receiving no projects!

Should planning in nature protection be able to be realized it must be made understandable to those concerned. The implementation of measures for the protection, maintenance, and rehabilitation of the landscape requires the preparedness of property owners, land users, or recreation seekers. The necessity of intensive participation by the community citizen in the establishment of landscape and green area plans is also given in § 2 a of the Federal Construction Law.

It is thus certain that the landscape plan be prepared as the specialized plan of nature protection and landscape main-

tenance in Bavaria because of the local planning sovereignty of the community and not from the specialized authorities (in this case the nature protection authorities). One can argue over whether or not the results are so much different in their end effect when a specialist in Bavaria prepares a landscape plan which is then altered by the project issuer because he did not agree with it, or, as is striven for in Lower Saxony, the landscape plan is worked out by the specialist under nature protection authorities and finally changed in the district administration authorities as well as in the community hearing process because of opposing special interests.

To complete this part of the discussion is should be noted that in a legal ordinance of 17.9.1976 (BGGl S.2805) of the Federation about fees for payment of architects and engineers rules are also given for fees for payment of landscape planning.

5. Lineal Legal Developments

The Bavarian Nature Protection Law, as mentioned at the beginning, was issued three and a half years before the Federal Nature Protection Law, and is now adapted to the framework of that law. That is, when considering landscape planning, that even in the Bavarian Nature Protection Law an entrance should be found for legal regulations about the content, kind of form, and legally binding nature of the landscape and green area regulatory planning. Especially to be considered is the authorization according to § 6 para 4 sentence 2 of the Federal Nature Protection Law which prescribes the legally binding ability of the landscape plan for the Master Building Plans, especially since § 9 para 4 of the Federal Construction Law authorizes that regulations which are legal for the federal states be taken as determinations to be included in the Building Code Plans.

For areas which do not require the exhibition of Master Building Plans for urban development and regulation (§ 1 Abs. 3, BBauG) an exclusive binding of the local landscape planning to the Master Building Plan does not show itself to be useful. Also, the necessity to realize goals of nature protection and of care of the landscape can arise directly in such areas. It should also be striven for, with an amending law to the Bavarian Nature Protection Law, to take into account such requirements through independent landscape plans for the total community area or through independent green area plans for sections of the community area.

Furthermore, a formal approval through the nature protection authorities appears necessary for the landscape or green area plans ordered by the community. The achievement of legal binding powers of unsuitable specialized plans for nature protection and care of the landscape would thereby be continuously excluded. With the amending of the Bavarian Nature Protection Law the authorization should be further striven for to control planning symbols for landscape and green area plans through legal ordinance.

Such considerations for the improvement of the legal basis of landscape planning should however not overlook the fact that presently a hostility to planning can be ascertained on the part of influential people. This can go so far that landscape planning can be perceived as dispensable, »because according to § 1 para 6 of the Federal Construction Law the master building plans must correspond to the requirements of nature protection and care of the landscape anyway.« The arguments can become so irrational that farmers become angry with landscape planning because of its aspects of total planning of the landscape. Much in landscape planning revolves around the fact that rural areas of agriculture and forestry are to be preserved from the construction of streets and settlements, gravel extraction, or other denaturing.

Good legal regulations for landscape planning need a strong lobby. It would be welcome news if the international exchange process of this conference would bring them on the way everywhere!

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Natural Landscape Spaces in the City

Kurt R. Schmidt

The theme of »Natural Landscape Spaces in the City« offers various beginning points. It is always treated again scientifically under the most different perspectives. Therefore it cannot be my task to want to supply further definitions for the concept of landscape.

According to the agreement with the Bavarian Academy for the Protection of Nature and Care of the Landscape the theme should be treated in relation to actual practise whenever possible, as on the example of the city of Augsburg (250,000 inhabitants). In order to make some focal points clear I consider a breakdown into the following theme areas to be sensible:

1. Augsburg's Landscape Situation
2. Land Use Plan - Landscape Planning
3. Mapping of the Urban Biotopes in Augsburg
4. Information - Cooperation
5. Administration - The Citizen's Partner

I would prefer not to begin with single experiences, except to recall that in 1961 that, from worries about the advancing destruction of our natural environment, theses were formulated by noteworthy personalities and laid down in the »Green Charta from the Mainau«.

Even today the requirements and principles set up for this protection, maintenance, and development of the natural environment have lost nothing of their actuality - on the contrary!

Although we should deal sparingly with quotations it should nevertheless be permitted to bring out some especially noteworthy thoughts from the Green Charta because of their actual relevancy, even directly from a communal point of view:

The basis of our life has been placed in danger because life-essential elements of nature are being polluted, poisoned, and annihilated, and because we are beset with unbearable noise. The worth of man is threatened whereever his natural environment is impaired. The rights of man for a life worthy of human dignity in the city and country are inviolable and inalienable.

the healthy landscape is being used up in alarming proportions.

for this reason it is necessary to jointly review, plan and act in order to bring about and insure the exchange between technology, economy, and nature (GREEN CHARTA FROM THE MAINAU, II., III., IV.)

Proceeding from these considerations and principles I would now like to go into the work in the case of the city of Augsburg.

1. Augsburg's Landscape Situation

The Augsburg area has a geomorphological composition of three larger landscape building elements which were deposited during the Tertiary (Mioscene/Plioscene) and the Quarternary (Diluvium/Alluvium). These are:

a) The western hilly landscape
b) The eastern hilly landscape
c) The Lech and Wertach valleys

The western heights represent a hill country area through which numerous bodies of water occur. Here large comprehensive conifer forests characterize the image of the landscape.

The eastern heights also largely belong to the tertiary hill country; before the ice age they prepared a landscape form which was uniform with the western heights.

The eastern heights are characterized by the predominance of farmland and meadows.

The Lech-Wertach Valley extends between the western and eastern heights. In the southern Augsburg area the valley extent is up to 14 kilometers wide and narrows to a 7 kilometer width in the northern Augsburg area. The river which gave the valley its name buried this valley deeply in the tertiary subsoil and has also since then partially refilled it. The Lech-Wertach Valley is bounded by steep slopes twenty to fifty meters in heighth.

Augsburg itself lies between the Lech and Wertach Rivers, where the two flow together (446 - 561 meters above normal null).

Climate

Climatically Augsburg belongs to the southern German climate area, within the Baden-Wuerttemberg/Bavarian tableland and hill country. In line with this both maritime (predominantly Atlantic) and continental influence changes although the former prevails. The climate is nevertheless modified in strong and various ways through the towering Alps in the south.

Vegetation

Even the vegetation reflects the geological foundation and climatic influences, often in surprising details. In Augsburg the still natural fertile plain forests which accompany the Lech and Wertach along the shores represent, along with the geological landscape arrangement, essential elements for the topographical and also visual appearance of the various landscape spaces. The pre-alpine Schneeheidekiefern forest as well as the Grauerlen - alden/ash forests are also prominent, which today form, together with the rich occurrence of rare plant and animal species, one of the areas of the Lech and Wertach most worthy of urgent protection.

2. Land Use Planning - Landscape Planning

With landscape planning the city of Augsburg assumes essentially the following hierarchy:

City Development Planning (highest level of communal planning)

On the Plane of the Prepared Master Building Planning:
a) Land Use Plan
b) Landscape Plan

At the level of compulsory master building planning:
a) Building Code Plan
b) Green Area Plan

Sketch Planning = Implementation Planning

There are different ways and interpretations for the landscape planning of a city in the individual federal states of the Federal Republic. They are not everywhere so represented as by the above planning hierarchy, yet my opinion is that the landscape plan, in the framework of the community master building planning, is an excellent instrument in representing and advocating the importance of nature protection and care of the landscape, and also even the recreation supply.

If we want to keep pace with other planning areas, especially when also concerned with the preservation of the natural landscape spaces in the city, then yet more intensive work is to be done!

Landscape planning contributes to this by ensuring and developing enduring multiple human living bases; they must therefore be considered from the viewpoint of the green planning of the city, first securely based on the local situation and united in a realistic, long-term yet above all in an applicable and legally secure total concept.

Expert knowledge and goal oriented dealings with the highest possible standard of interdisciplinary cooperation offer a good opportunity to further improve the prior successes of landscape planning.

Type and Use of Augsburg's Urban Areas = Total Area

Type or Utilization of the Area	Officially registed area 31. 12. 1976	
	ha	%
1. Built-up areas (buildings, courtyard spaces, back and ornamental gardens)	3,441.66	23.4
2. Streets, paths, and public squares	888.04	6.0
3. Railroads and other permanent transit routes	191.50	1.3
4. Public layouts and children's playgrounds	254.14	1.7
5. Play and sport areas, camping sites, and bathing establishments.	227.32	1.5
6. Cemeteries	78.54	0.5
7. Land for rental and allotment gardens	186.83	1.3
8. Surfaces used for agriculture and horticulture (fields, meadows, tree nurseries, etc.)	5,544.63	37.9
9. Woods (forests and timber)	3,112.51	21.2
10. Water surfaces	337.16	2.3
11. Other surfaces (fallow land, sand and gravel pits, fertile plains, etc.)	422.96	2.9
Total Area	14,685.29	100.0

3. Urban Biotope Mapping in Augsburg

Nature and landscape are to be protected and shaped as the basis of life, the environment, and recreation areas. These goals, formulated in the Bavarian Nature Protection Law, are opposed by man in the cities' constant acquisitive demands on the landscape and inner city green areas. Conflicts appear almost unsolvable when arrangement of areas for street construction, housing construction, and location of industry is being dealt with; even the new leisure time demands continuously bring up new problems.

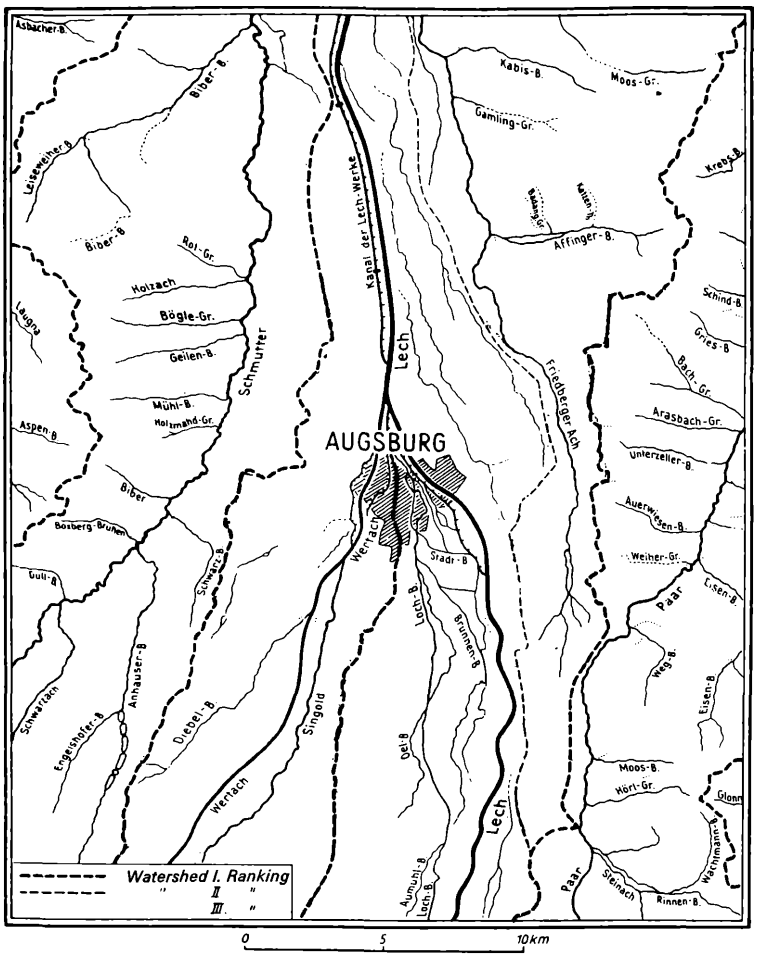
With the term »climate« a common, more or less regularly and annually occurring condition of weather is assumed. The average climatic values for Augsburg allow the following overview.

THE CLIMATE

	J	F	M	A	M	J	J	A	S	O	N	D	Year
Mean Temp. (° C)	-1,7	0,4	3,4	8,1	12,2	15,9	17,6	16,6	13,7	8,6	3,5	-0,4	Ø 8,1
Number of days of frost (min. below O°)	25	21	16	5	0,6				0,1	4	13	23	tot. 108
Number of days with ice (max. below O°)	12	7	2	0,1							2	10	tot. 33
Number of summer days (max. over 25°)				0,6	3	7	12	9	4	0,2			tot. 35
Cloudiness (%)	84	83	74	69	67	62	58	63	63	77	85	83	Ø 72
Humidity (%)	85	82	76	72	72	73	72	75	77	82	85	86	Ø 78
Precipitation (in mm)	54	54	49	55	88	125	102	84	59	51	46	51	tot. 818
Number of days of snow	11	10	5	2	0,1					0,3	3	9	tot. 40
Sum of new snow layers (cm)	28	25	10	4						1	6	17	tot. 91
Wind direction (in %)		N 3	NO 12	O 11	SO 7	S 2	SW 24	W 11	NW 14	Still 16			—

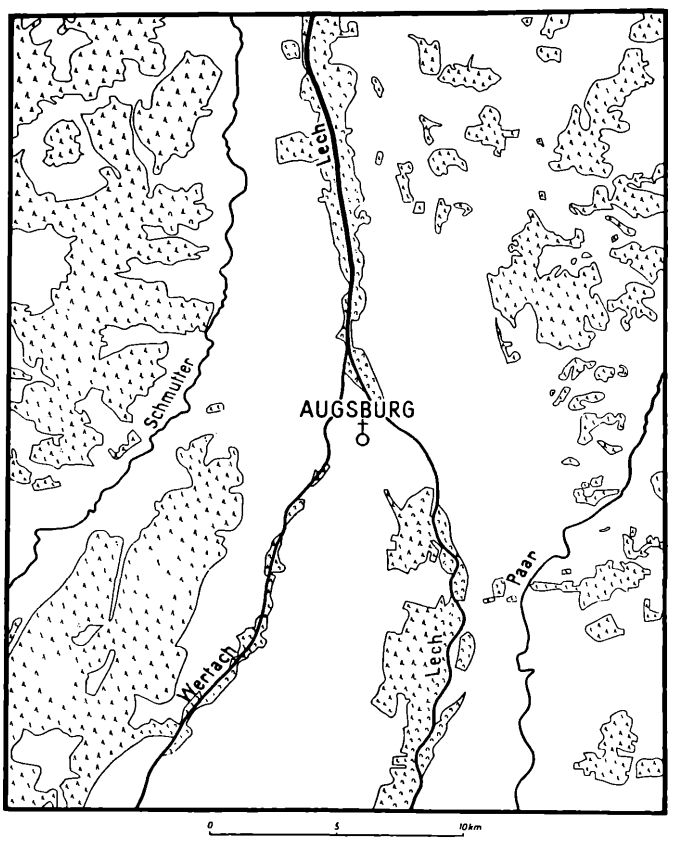
All data, excluding wind direction, are from the German Weather Service. With the exception of the numbers for temperature all numbers are rounded to the nearest whole number.

Source: Augsburg's Flora
Natural Science Association for Swabia, registered society, 1978.



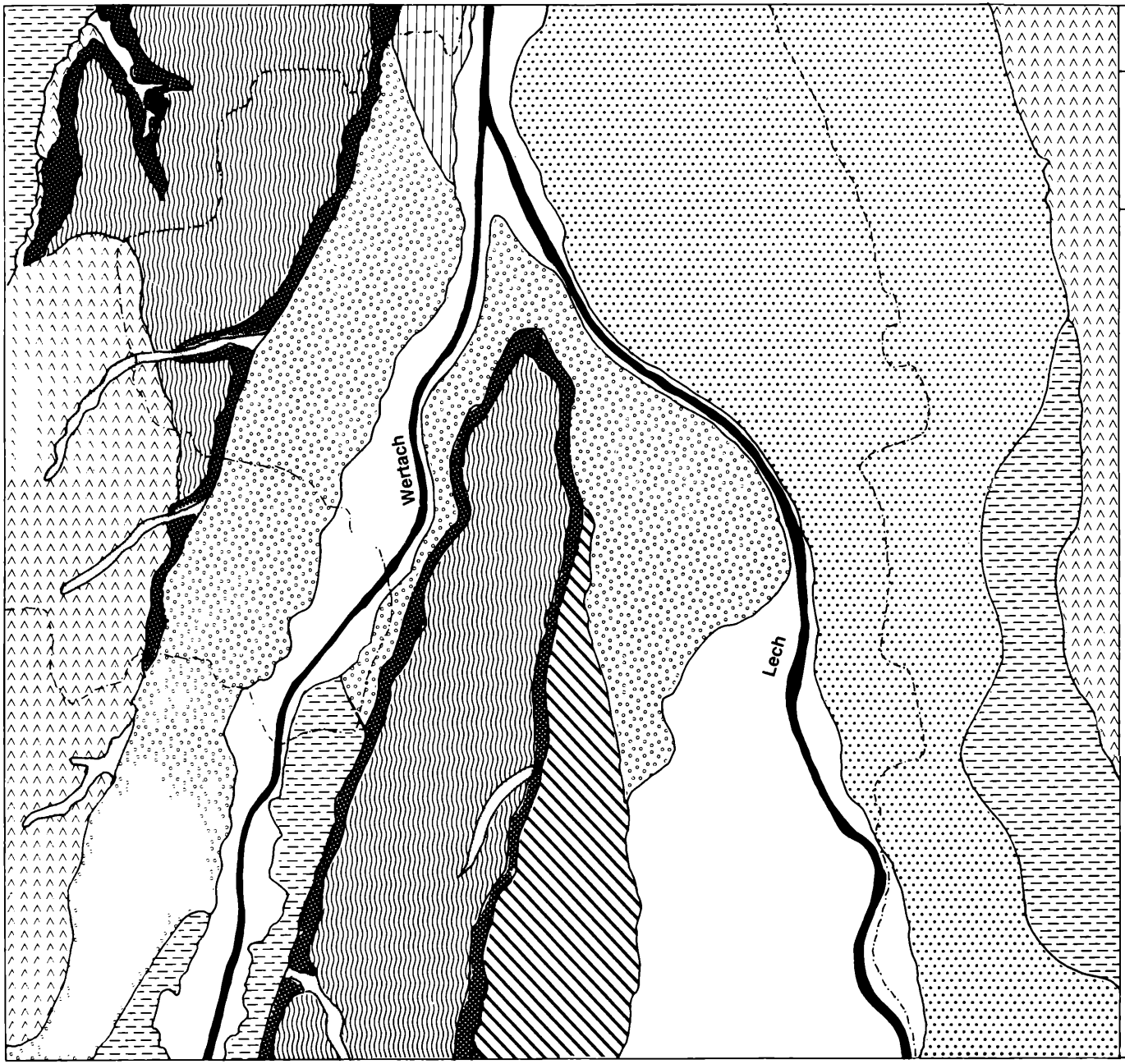
Bodies of Water and Watersheds in the Augsburg Area

Source: Illustration for the Geological Map of Augsburg and the Environs, Bayerisches Landesamt, Munich, 1957



Forest Coverage - Augsburg Area

Source: Notes, Geological Map of Augsburg and Environs, Bavarian Land Office, Munich, 1957



Geology

Augsburg Landscape Plan
City of Augsburg Garden Office

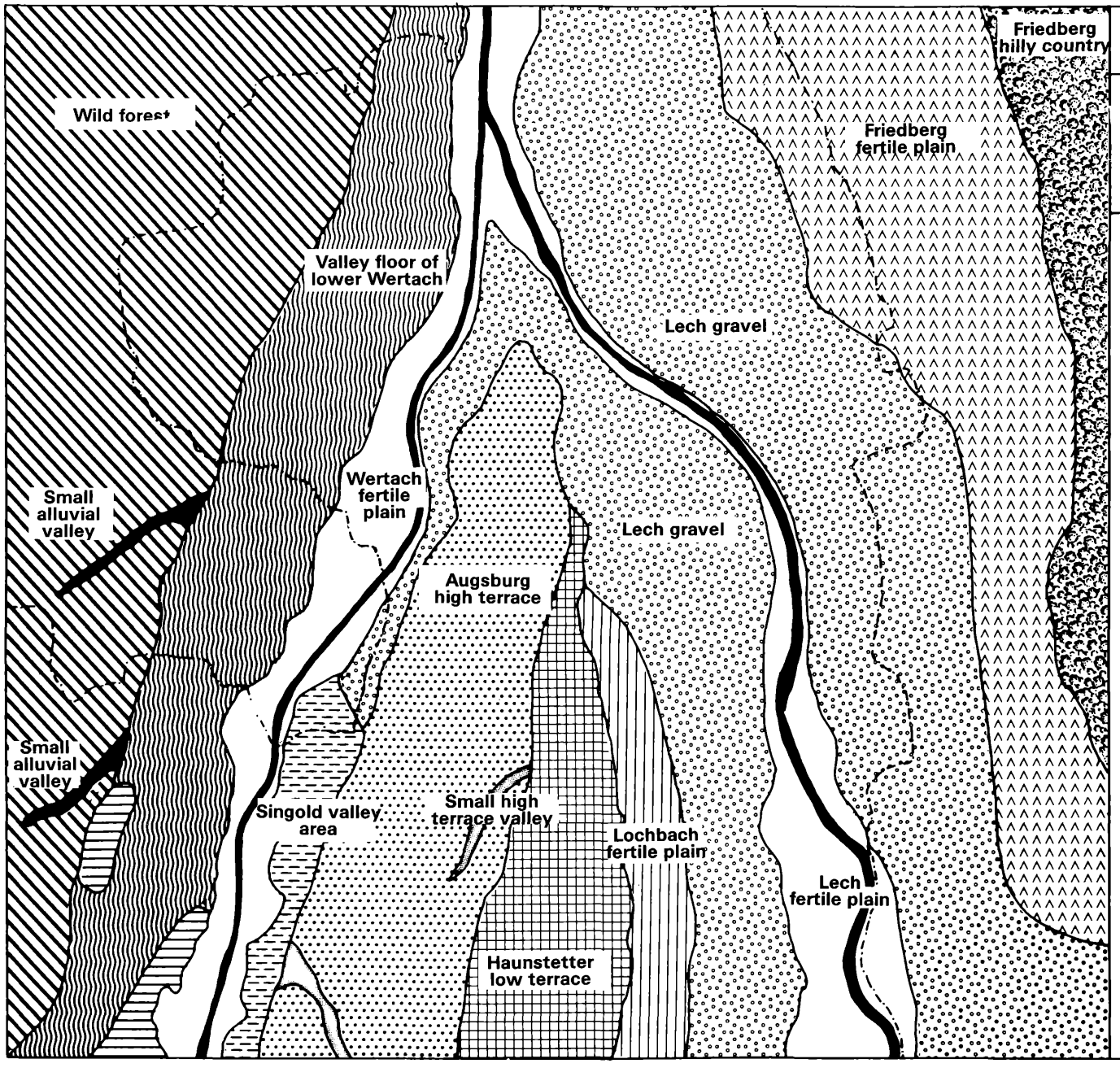
Quarternary

- Alluvial grit
- Lower moor
- Lower moor with alternate alluvial gravel stratification
- Gravel in fertile plain valley
- Diluvial gravel
- Small alluvial valley
- Low terrace
- High terrace: gravel
- High terrace: loam

Tertiary

- Middle Swabian Hill Country

Source: Geological Map of Augsburg and Environs



ECOLOGICAL SPATIAL UNITS

Augsburg Landscape Plan

City of Augsburg Garden Office

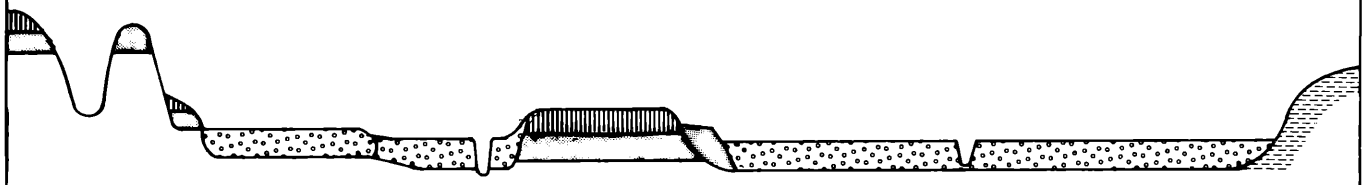
West
western forests

Pfer
Lake

Augsburg

Hochzoll

East
Friedberg



	Valley floor of the lower Wertach	Wertach fertile plain	Augsburg high terrace	Haunstetter low terrace	Lech fertile plain	Lech gravel	
Geology	early diluvial gravel	alluvial gravel	Pleistocene loess/loam	early Pleistocene gravel	alluvial gravel	alluvial gravel	
Soil Type	top layer brown earth Rendzina	limerich fertile plain soil	brown earth	top layer brown earth	limerich fertile plain soil	top layer fertile plain soil	
Potential Natural Vegetation	Our lady's bedstraw, oak and hornbeam forests	Grauerlen fertile plain forest	O. lady's bedstraw, oak and hornbeam forests	Cinquefoil (Potentilla) pine-oak forest	Grauerlen fertile plain forests	ash, elm, fertile plain forest	
Land Use	Agricultural fields	pasture	Agricultural fields built-up areas		forest	built-up areas, forest	

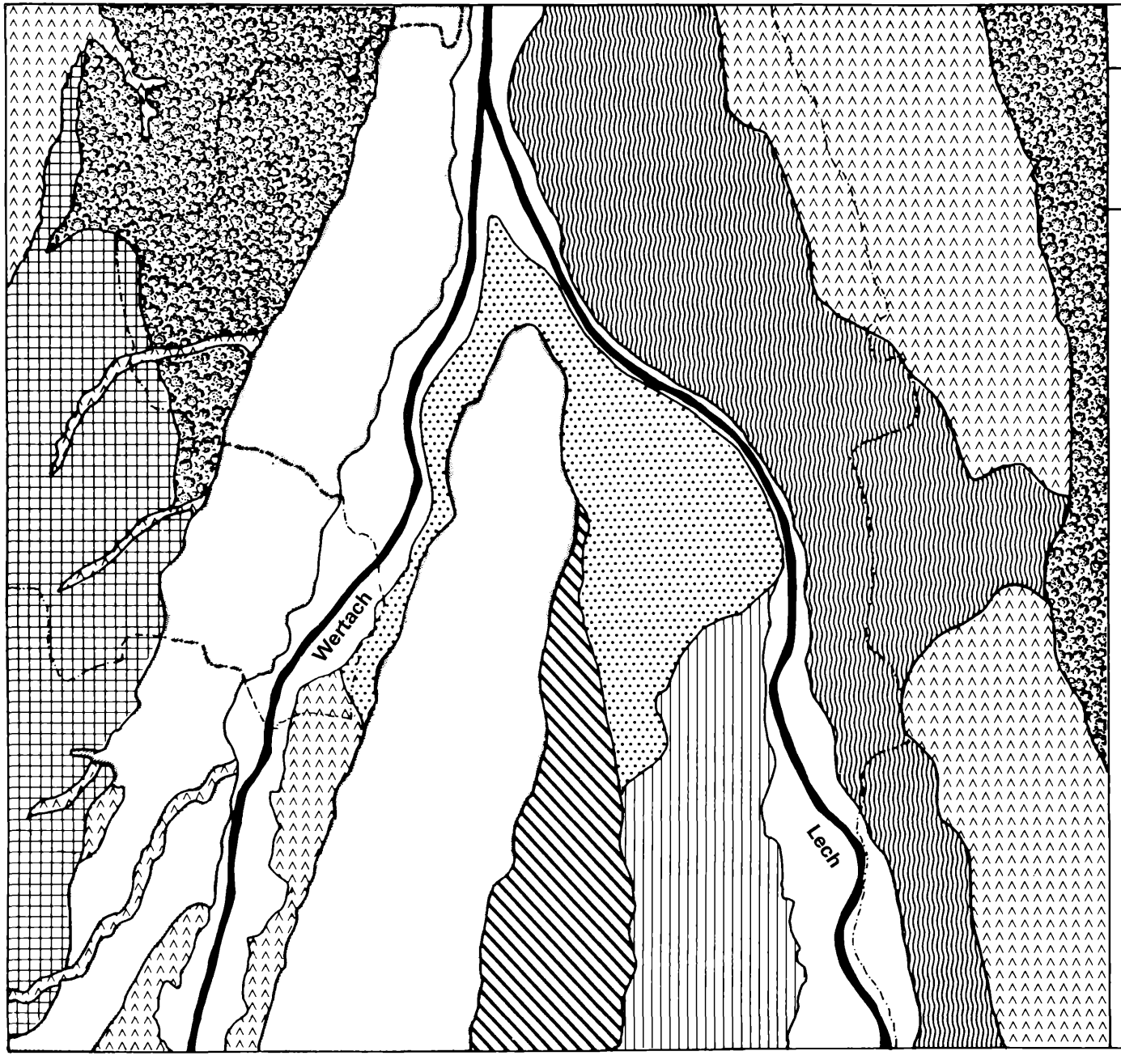
Ecological Spatial Units
Schematic Section

Augsburg Landscape Plan

City of Augsburg Garden Office

- tertiary fine gravel
- ice age loess and loam
- ice age gravel
- post ice age filling of the valleys

Source: Geological Map of Augsburg and Environs



Potential Natural Vegetation

Augsburg Landscape Plan

City of Augsburg Garden Office

- Grauerlen fertile plain forest
- Alden-ash fertile plain forest
- Ash-elm fertile plain forests
- Oak-hornbeam forests
- Our Lady's bedstraw, oak-hornbeam forest
- Cinquefoil, pine-oak forest
- Woodruff-fir-beech forest
- Grove club-rush-beech forest
- Snow heather, resp. pipe grass-pine forest

Source: Geological Map of Augsburg and the Environs

Protection of nature, care of the landscape, and landscape ecology have concerned themselves in past years predominantly with research and planning aspects of the free landscape. In the same measure a neglect of the relevancy of ecology has occurred in the suburban areas. This development was clearly addressed from a competent side on the occasion of a seminar of the Bavarian Academy for the Protection of Nature in January 1979 in Freising under the theme of »Plant Ecology Aspects of Green Area Planning«.

According to tradition the city was and is the area where the smallest of spaces are constantly being built-up, altered, destroyed, and newly formed. On most occasions there is a concomitant strong pressure on the city's internal open surfaces and on the free areas in the city's environs, including the city limit zones.

A special problem with this is that areas which are necessary for city development are today still viewed almost exclusively according to their possibilities in light of the economy and building codes (i.e. economic points of view). Also the availability of plots of land for definite point, for example architecture or underground construction, is not seldom a heavily-weighted criterion for decision-making.

When one proceeds under this impression that some decisions have unfavorable effects on open spaces or even on a natural landscape area in the city because too little is known about their ecological quality and meaning, then it rapidly becomes clear how indispensable it is to be concerned with urban-ecological questions in the framework of master building planning, green area designs, and green area maintenance.

Urban ecology cannot be allowed to remain a farce in the »city living area«. It must be filled much more with life, and be made known.

Recording Valuable Living Areas of Plants and Animals in Settled Areas

In connection with the new exhibition of the Land Use Plan of Augsburg a landscape plan was also worked out from the construction report (garden office) according to the Bavarian Nature Protection Law (Art. 3, para 2). From this start the absorption with specialized qualifications as well as accumulations of bases, data, and facts for open space planning, nature protection, maintenance of the landscape, green area construction and the 1979 construction conference in the total Augsburg city area was begun with the recording, mapping, and assessment of valuable plant and animal living areas.

The biotype mapping of the city, as executed in Augsburg, should be considered as a completion of the »mapping of biotopes worthy of protection in Bavaria« as well as »mapping of biotopes worthy of protection in the Bavarian Alps.«

The formal arrangement of biotope mapping in Augsburg essentially results in the following overview:

a) Employer: City of Augsburg
b) Promotion: Bav. St. Ministry for Land Development and Environmental Questions
c) Monitoring: Bav. Land Office for Environmental Protection
d) Responsibility/Coordination: Augsburg Garden Office
e) Methodology and Implementation: »Die Kreissn« planning group (comp. special edition of »Das Gartenamt«, February, 1979)
f) Basis for Mapping: ground plan, scale 1 25,000 meters, field maps, aerial photographs, scale 1 5,000 meters, and the Bavarian Biotope Mapping Formular (Biotope Description)

Because of financial reasons the recording of the green structures present in Augsburg could not cover the whole area (although it was tried), so it was done selectively. In 1979 a total of 350 plant and animal living areas were obtained. These were broken down into the following biotope types:

1. Not completely natural forests and remnants of woods
2. Water areas with intact sedimentation zones from inflowing streams
3. Water courses with intact transition vegetation
4. Moist meadows
5. Large surfaced poorly grassed areas
6. Unused spontaneous vegetation types from lower stages of succession
7. Green areas with extensive use
8. Valuable individual trees.

Yet because of the frequent existence of an increased demand on individual areas by other land uses, and probably not all urban biotopes worthy of protection can be preserved, surfaces were likewise entered which showed the rudiments of biotope development. This deals with the so-called potential biotope which represents a certain reservoir, especially for the future.

Goals and Intentions of Urban Biotope Mapping

a) Basis:
- Recording and mapping of all valuable living areas for plants and animals in the total city area.
- The clear identification of ecologically significant reserve areas
- Assessment of these reserves from the viewpoint of landscape maintenance, that is from landscape architecture, landscape ecology, and nature protection.

b) Planning:
- Supply of bases, data, and facts for urban development planning, the preparatory and compulsory master building planning, as well as also for site specific planning and the initial construction advice.

c) Nature Protection:
- Among other things an essential contribution for the improvement of the ecological total situation and maintenance of the nature potential of the city should be performed.

d) Maintenance of Green Areas/Maintenance of the Landscape:
- It will come along in the future that maintenance of nature, often set up on an incorrectly understood »cleanliness«, will be made newly conscious through alternative and maintenance methods and in practise, in the public as well as the private realms.

e) Resulting Costs - Minimizing of Costs
- The idea that new green layouts can be created only through a high financial expenditure is false. With the building up of green space and the care of green space in our cities we must try out new ways in order to oppose the continual rising costs.

The urban biotope mapping of Augsburg has brought immediately valuable indications for extensive measures in green space maintenance and a less intensive and less expensive construction of new green areas in the city.

Examples from the Practise of Green Area Maintenance

In consideration of a certain new consciousness for green area maintenance in public park and garden layouts a small attempt had already been begun to let damaged surfaces with no vegetation (herb-layer) develop in natural succession. One of the surfaces in the Siebentisch layout (entrance to the botanical garden) which had previously been treated with »good horticultural maintenance«, has, in less than five years (1975–1979) been covered with a blooming and a variety-rich

layer of herbs with only minimal human influence. Before the beginning of this practice the surfaces were covered with old copper beeches, alders, and some younger yew bushes on bare and »well cleaned« soil!

Today figwort, scilla, campion, corydalis, ferns, ivy, and various forest grasses as well as some other not yet determined kinds of plants are found under the foliage and cover of the deciduous trees.

This example brought us not only a good ecological result; the aesthetic aspects surprised us as well: luxurious and simultaneously blooming yellow petals of the figwort herb and the squill scilla in the spring, and in winter the dry seed strands of the grasses and the ivy growing through the beech leaves on the ground.

In other urban green layouts the Augsburg Garden Office laid down test fields, which carry out various types of care. So in the Siebentisch layout and Spickelwiese, focal points of local recreation in the inner city, grass surfaces are partially mowed only once a year instead of fifteen to twenty times a year as had been the case in the past.

With this once-a-year mowing a retrogression of the kinds of plants compatible with mowing rapidly occurred with favorable effects for dry grass surfaces.

In August 1979 about forty various kinds of plants were registered as opposed to the less than ten kinds which could be found in similar but intensively mowed surfaces.

The extensively maintained experimental surfaces, which had always previously been mowed with a spindle mower, which allowed the clippings to remain on the ground, appears now after extended maintenance to be developing as a living area for wild plants, small animals, and especially as a butterfly biotope.

Similar maintenance experiments were also performed and observed in the realm of tree groups and transition undergrowth along free growing hedges and also other places in public layouts. Green area maintenance plans were worked out by the garden office working group »Landscape Planning – City Biotope Mapping« as a basis for altered methods of maintenance for partial areas of public green areas.

I am convinced that here one of the ways is shown to come out of the partially truly sterile, energy-intensive, expensive and not always nature-compatible treatment of our green areas without adversely affecting either the increased need of our population for local recreation in the country or the use of the areas.

On the contrary, even leisure time use serves in a special measure for the preservation and formation of surfaces which are ecologically manifold and rich in variety of species.

Proceeding from the thought that the life of the city for the animal and plant world as well as for us as humans appears yet more endangered, we must now seriously consider what is to be concentrated on in the settled areas in order to maintain strong, healthy, and manifold nature and landscapes in the urban living area.

Indeed arguments pregnant with evocation, sentiment, or even ideology cannot help us any further. In the case of country and garden maintenance the specialized assumptions as well as our personal readiness to meditate over the previously practised norms and methods (even if these are partially forced relationships) are much more decisive.

If we can only make it known among ourselves that the maintenance of a green area also means a renunciation of the normal intensive use of machines and chemicals!

Question: Must we mow our green areas more than twenty times a year, mowing under and destroying the transition undergrowth?

This question certainly can't be ansered with a yes or a no. For my part I would be satisfied if it were first perceived as being justified. Both strong pro- and con arguments can be advanced. The attempt however to want to give a common, valid, good-for-all occasions answer would be a mistake.

Yet one thing must be seen clearly: the exterminiation of different species of plants and animals in settled areas is given further strong encouragement through modern green area maintenance, which is often practised according to even domestic ideas of cleanliness!

It would, however, be an enormous mistake to want to solve the existing urban ecological problems with polemics or unusual conceptions. Rather we must proceed from the realities of the contemporary city. Delicacy of feeling and knowledge of the subject are therefore definitely the safer way.

In recent years a caricature appeared in a Bavarian newspaper which showed a forest and two citizens in the middle of a discussion. The caption of the picture: »All of this will be cut down, and then we'll build a recreation center here!«

If things like this had not occurred then certainly this thought-provoking caricature would not have come into being.

With the attempt at a closer interpretation one becomes aware that even in our time yet more biologically intact living areas in the urban landscape are changing through design and what are apparently need-oriented measures. In the Federal Republic there are an abundant number of laws and regulations about the protection of nature and the maintenance and arrangement of the landscape. Yet they are of little use if they are indeed painfully observed in the administration, yet are missing in the corresponding fulfillment of the required implementation as well as the necessary personal and financial maintenance.

The biotope mapping of a city, as prepared in Augsburg, is a valuable instrument for filling up the deficit of present information and data – as well as being however also an essential starting point for the step by step improvement of the ecological situation in a city. The presupposition for this is that the perceptions about the living areas for flora and fauna in the city can be given practical treatment.

The commonly noticed rise of ecology and the increased environmental consciousness of our citizens does not allow us to make light of the fact that scientific insights and practical dealings are often widely separated.

It should now be permitted to address some special points which appear important in this subject: Although we know that the stability of our natural environment depends on the abundance of types of plants and animals, we uninterruptedly and desperately annihilate their living areas, even often only through thoughtlessness.

A short comparison of two city plans from the years 1880 and 1980 – thus a time frame of a hundred years – makes it rapidly clear to what a large extent our urban environment has changed in this time. If one compares a city plan from 1945 with a contemporary one it is not difficult to perceive that open spaces have been further reduced, especially in the thickly settled inner city. The demand for surfaces in the city for construction of apartments, street construction, and locationing of industry will probably not decrease in the future. 125 hectares of landscape are lost daily through settlement. It is therefore important to preserve the few still remaining natural landscape areas in our cities.

Next to the optical/aesthetic importance in the arrangement of our urban living areas biological/ecological criteria should be given extra consideration as well.

So some green areas in a city would probably not be so

BIOTOPE MAPPING – BAVARIA — Biotope Description

Type Map Number: SNW 0 0 8 2 2 | Obj. Nr.: 2 5 7 | Chang. Section of map: 0 0 0 1 | Year: 7 9 | Month: 1 0 | Day: 0 3 | Region Community Nr. | Nature Area

Preparer: Die Kreissn, Brunner & Patsch

Scale: 0 5

Position: 2 2 0 9 L f U

Location/Map | Kinds of changes | Foliation Nr.

Position in the map

Place/Location: Kleiner Ölbach

County: Augsburg

Nature Area: Lech-Wertach

Area in square kilometers: 7500

02 Condition Level | Alpine Plan Zone | Danger of erosion | Protection of species | Area in sq. km | Chg. Yr.

Plant communities, animal communities, description of conditions

Creek with broad transition area reeds. Before the water flows into the Martini factory lands it has only a slow rate of flow. Because of this there is a good water supply for broad areas on the shores of the creek, which flows in broad meanders. These waters are taken in by a reed transition area which shows a rich composition of species. Connecting gullies could be shaped between the broad row of reeds and a branch of the creek further west on the edge of the settlement. Through this areas could arise which fulfill important living conditions, above all for amphibians (arranged with Dr. Plachter, LfU).

03 Chg. Yr.

Condition of the flora

Cond. 1 | Cond. 2 | Cond. 3 | Cond. 4

Portion of the condition in %

Condition of the fauna

Cond. 1: VR | Cond. 2 | Cond. 3 | Cond. 4

Function of the fauna: 9 9

Location: Bachlauf

04 Chg. Yr.

Geology: Alluvium

Inclination

Exposition

Use

Use of adjacent lands: Pasture land, fields

Effects of use: Limitation through pasture use

05 Chg. Yr.

Endangering

lower limits

conditions of rarity: This use prevents more

maintenance: extensive shore areas from being kept free from agricul. use

Protection status: LB-Recommendation

06 Status: NSG-B | NSG-V | ND-B | ND-V | LB-B | LB-V | LSG-B | LSG-V | LÖ-V | LÖ-VZ | Enlargement | Changes | Chg. Yr.

use area: surfaces with no construction

type of development: spontaneous

replaceability: high financial and time costs

ownership: public

possibilities for use: Recreation: not suitable for access; good for experiments, lessons, research.

Type Map Number: SNW 0 0 8 2 2 | Obj. Nr.: 2 5 7 | Changes: 0 0

Plant spacies

Phragmites com., Deshampsia caespitosa, Agrostis canina, A. stolonifera, Molinia coerulea, Juncus compressus, Carex-Arten, Scrophularia umbrosa, Lysimachia vulg., Urtica dioica, Scutellaria galeri culata, Cirsium oleraceum, Filipendula ulmaria, Lythrum salicaria, Colchicum autumnale, Geranium prat., Epilobium hirsutum, E. angustifolium, Sanguisorba off., Mentha aquatica, M. verticillata, Caltha palustris

07 1 3 4 | Total number

08 1 3 4 | 19

09 1 3 4 | 19

10 1 3 4 | 19

Endangered Plant Species

37 | Total number

38 | 19

Animal Species

47 | Total number

48 | 19

Endangered Animal Species

87 | Total number

88 | 19

Photo

100 Biotope | Yr. | Month

Literatur

Contact persons: Dr. Plachter, LfU

Photo by: Brunner & Patsch

Location | Date of photo: 3.10.79

Photos (number): 1 | Slides (number)

monotonous and biologically sterile if the individual plant and animal living areas were cared for with somewhat more attention and ecological understanding. Even public green layouts could be much richer in types of plants and animals.

Starting points for more abundance of species of plants and animals can be found for public green layouts in the following types of living areas:

- Understory plantings
- Understory edges - transition undergrowth
- Open surfaces (lawns, meadows)
- Water surfaces
- Water edges
- Swampy surfaces

I would like to give my whole-hearted endorsement to the idea that we specialists always treat these valuable living spaces in our layouts and in the landscape with the necessary and critical attentiveness. Here a consideration of traditional green area maintenance concepts could introduce a new development which would lead to multiplicity of plant and animal species in our green area facilities.

Less use of machines, less chemicals, and therefore more regard for nature's household and natural cycles would be a true help for this.

4. Information - Cooperation

The urban biotope mapping of Augsburg offered an occasion to set up contact to the local specialists of vegetation knowledge, zoology, and nature protection. In September of 1979 the first contact conversation took place at the invitation of the city garden office (the second: November 1979, the third: March 1980). Along with representatives of the city administration (City Building Council, City Planning Office, City Forest Administration as Lower Nature Protection Authorities) representatives of the following participating groups and institutions were present:

- Government of Swabia Higher Nature Protection Authorities
- Natural Science Association for Swabia
  Nature Research Society of Augsburg
- University of Augsburg
- Federation for the Protection of Nature - Augsburg Circle
- Federal Research Institution - Institute for Soil Science Munich/Neusäß
- Museum of Natural Science
- Wasserstern Terrarium Club - Augsburg
- »Die Kreissn« Planning Group

Even at the first meeting a very open exchange of opinion took place between the groups and the administration. A wish for further meetings was clearly expressed. At the recommendation of the City Building Council an executive group »Urban Biotope Mapping - Augsburg« was spontaneously and unanimously set up which would meet in the city garden office in the event of executive developments, arising problems, or presentations of work results. They also took care of leadership and coordination.

5. Administration - The Citizen's Partner

The City of Augsburg places great value on the instruction of the citizens at an appropriate time and in understandable form about urban biotope mapping. This occurs through the local press, Augsburg Today (TV), and a touring exhibition put together both in text and graphics with the press office during the Open House Day in the garden office.
The reverberation and interest in this work are welcome. To want to be a partner of the citizen assumes not only good will but also the readiness of the administration to work together with him and to make the administration processes clearer and more understandable.

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The Task of Forests Adjacent to the City

Helmut Horneber

If the question of the proper task of the forests adjacent to cities were asked at different times one would certainly receive completely different answers. The meaning of forests for the city and its inhabitants has in fact changed many times in the course of history and could possibly change again in the same way.

The following example of the cities of Nuremberg and Erlangen, and the Reichswald forest which lies between them, should make this change apparent.

By the middle ages good will on the part of the Kaiser as well as clever politics were enough to put the 35,000 hectare Reichswald forest in the possession of Nuremberg. This forest then enclosed Nuremberg on three sides (as it does today). Total use of this forest then belonged to the city and the city population. This meant the availability of what at first appeared to be an unlimited source of energy, for at that time wood represented the available energy supply for heating, business, and industry. Stated in modern terms, Nuremberg, thanks to its forest, was the oil sheik among cities. So a highly specialized metal manufacturing and thus energy demanding business could arise. The development of a state of economic well-being allowed a rich cultural and artistic life in the city.

The development of the city of Erlangen is different. The forests in its environs belonged to the rulers of other territories. According to an old description »not one load of timber could be delivered to Erlangen« from the adjacent Reichswald forest south of Nuremberg. A small city certainly could not develop economically with a deprivation of wood and thus energy.

If a report about the task of forests in the vicinity of the city had been issued exactly at the middle of the 19th century when the construction of the railroad meant that coal became the main energy source then it certainly would have had a completely different accent than that of today. And the report at that time would certainly have also mentioned the following:

The forest is the most beloved recreation area for citizens of Nuremberg and Erlangen.

The Buchenklinge, a spring site in the Reichswald forest, was already mentioned in 1372 as a place for banquets and was described in this way in the 17th century:

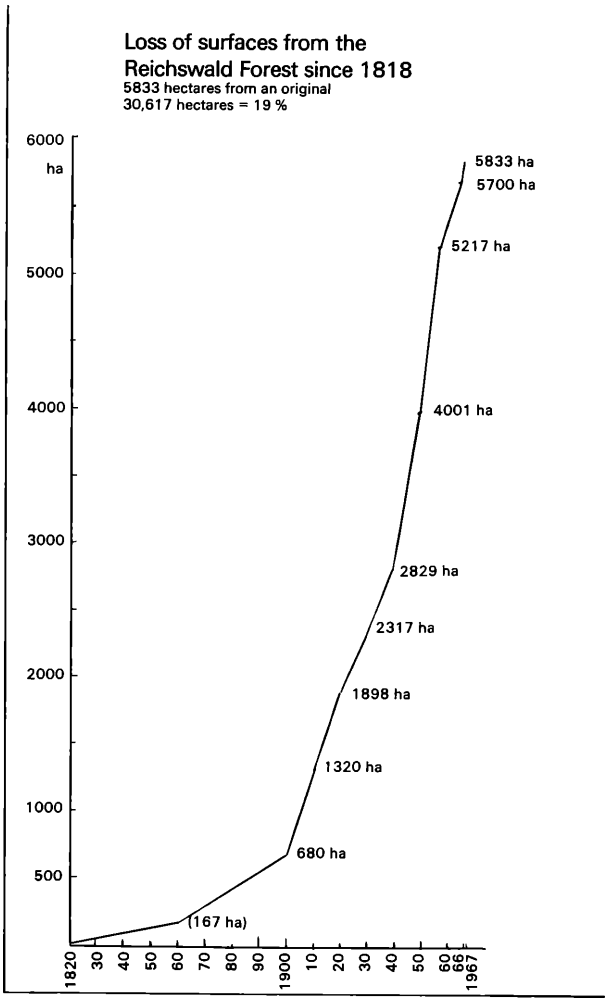
»Here is the beautiful place named the Buchenklinge
where with little money one can eat, drink, and spring,
and practise other pastimes as is known
if one only brings what he likes.«

An engraving by Delsenbach shows us a beautifully arranged feasting place.

The main task of the forest for many centuries however was without a doubt as a supply for wood for burning and building and as a grazing place for cattle and sheep.

With the changing of the energy situation in the middle of the last century a change in the task of this forest near the city also occurred. The stormy development of the cities, the locating of large industries, and the increase in population demanded much space and possibility to develop. This nearby forest became a land reserve. It was not officially counted as »culture land« and stood available as cheap building land for factories, sport places, and certainly not lastly as military training areas.

In the last years the demand on the forests has continued to an unlimited extent (see table), until the exemplary Bavarian Forest Law of 1975 brought relatively strict instructions for forest protection. Up until this time the clearing of the forest was something completely self-evident; indeed



it was even celebrated as a sign of progress. Even such a known writer as Max Freiherr von Aufsess wrote in 1955:

»The scantily vegetated pine forest, similar to that within the borders around Erlangen, which was known by a popular saying as the so-called ›stunted woods‹, was an ideal ground for clearing (for the construction of the Erlangen new city ›Christian Erlang‹). They could place no pertinent obstacles in the way of the expansion. What the official forest administration (as the only successor for the possession of the forests previously owned by the margraves) later opposed, which restrained the bureaucratic manner of individual construction initiavtives or the city, is described on another page.«

By the middle of the 60's, however, with the special stress after the European Year for the Protection of Nature (1970), the proposed views of the duty of the forests adjacent to the city were given broad public implementation. Previously these views had been proposed by only a few nature advocates. Finally the majority of the population perceived the necessity that the last green third of the land, still intact to a certain extent, be maintained because of its many beneficial effects. Yet the duty of the forest as a stabilizer of the environmental relationships was never great. Within a few years the agricultural use outside of the forest was indeed enormously intensified, rivers which had been suitable for swimming thirty years ago are totally polluted, and the air has been heavily burdened through industrial concentration. So today we define the task of the forest adjacent to the city as something different than previously:

The Forest as Supplier of Pure, Good Spring Water

Almost all of the drinking water in the north Bavarian area comes from forest areas.

Water is biologically, chemically, and mechanically purified in the forest soil. The forest management produces the lowest burdening of the water with damaging substances as compared with other forms of ground use which require large surfaces. With strong and lasting rain and with the melting of snow the surface or near-surface run-off can be delayed and flood water peaks gradually suppressed. The forest soil then works as a sponge which soaks up the water and then gradually releases it. A steady dispensal of water occurs in this way. Of course the water protection forest needs a method of special treatment: a wide spectrum of, where possible, mixed evergreen and deciduous trees, prevents an excessive accumulation of the top humus deposit. At the same time a corresponding forest control should work against a wash-out. Forests close to the natural state offer the greatest possible security against calamities and catastrophies of every kind. This is a good argument against the pressure of introducing chemicals as a means of protecting these forests.

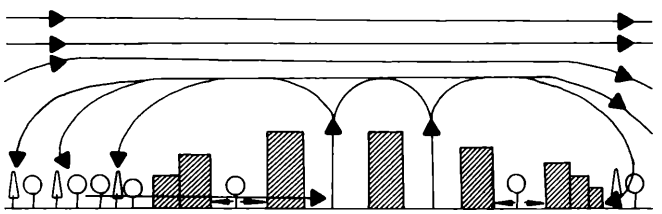
The Forest as Protector of the Soil

Part of the forest's duty is also protection of the soil. It hinders the eroding power of the surface water; the soil is mechanically secured through the root system and thus insured against slides, which for example could cause extreme danger in settlements in the vicinity of slopes. The danger to traffic and settlements from rockfalls and landslides is removed, if not eliminated, through forestration.

The Forest as Regulator of the Climate

A very important function falls to the forest in the vicinity of the city in the role of climate protection. The effects are not only local, because they also improve the regional climate.

The most important function of the forest as a source of fresh air for the city arises through the various kinds of warming of layers of air close to the ground. On summer days with no wind for example the difference in temperature between the artificial rock-world of stone, concrete, and asphalt and the surrounding shady forest can account to up to ten degrees. The warmth allows the specifically lighter city air with all the exhaust gases containing dust and filth to rise vertically, so that the air from the environs of the city is directly and laterally sucked out and a continual if only barely noticeable air stream occurs. When the city is surrounded by forests then fresh, oxygen-rich and cleaned air flows into the city and replaces the hot and dirty air. A better air purification process, which always functions and is as costless as this, does not exist (see sketch).



Nevertheless, and this is a decisively important task of the city and landscape planners, good air needs entrance points in the city: green belts, valley spaces, and open aisles of fresh air. The forest and correct planning are the reasons that we can exactly differentiate between cities with good air and those with bad air. Places for air purification in the Federal Republic always lie in forest-rich areas; they live from the forest surrounding them.

The Forest as an Air Filter

A fourth important task of the forests adjacent to cities is as absorption protection. These forests improve the air quality of an area through absorption of air pollutants. The forest appears to be especially valuable in an increased dust sedimentation, the filtering out of suspended particles and radioactive air pollutants, absorption of gases through stands of timber and forest soil, and the combing out of the finest water droplets in which the pollutants are concentrated. The large combined surface of leaves, twigs, needles, and boughs continually comb foreign particles out of the air. When it rains these particles are always washed off and deposited on the ground. For every square meter of soil about 1,000 square meters of true forest surface can be measured. The structure of the forest, along with its spatial location - near the city, within the city, behind the city in the direction of prevalent winds - plays an essential role in its filtering effects: mixed forests built on steps are the most favorable. Yet each group of trees and each tree has its meaning in the city. A thirty year old chestnut, as can be calculated, is able to annually bind about 120 kilograms of dust through its leaf structure.

Forests are even in the position to absorb the radioactive substances of finely distributed radioactive particles. In America it is foreseen that nuclear reactors will be stocked with protective forest zones. Of course it can't be derived from this that forests insure protection from radioactivity. Yet even every merely modest contribution for the reduction of this invisible deadly danger cannot be left unnoticed.

The Forest as Protection Against Noise and View

In this category it is the proper task of the forest to reduce traffic and industry noise. From the thickness of traffic during the day an equivalent constant noise level can be determined. The result of the difference between this value and the planning guidelines is the desired sound level reduction. The depth of the necessary forests for protection from noise depends on this. In any case they should not have a depth of less than 80 to 100 meters.

A forest for the protection of views should likewise possess a depth which is as far reaching as possible. It should maintain or develop a landscape image in the surroundings of disturbing structures and layouts. With the laying out of such new forests a sufficient surface for the planting of such a view-protecting forest should be striven for. The *street-protecting forest* is the last of these protective forests. It offers protection for the traffic ways and safety from traffic, for it can prevent snow drifts, protect the roadway foundations from slides, improve side-wind relationships, enable optical guidance with curvilinear streets and in eventful areas, and counteracts driver fatigue with varied forest edges. For these reasons forest edges should be built up in steps, with salt-resistant types of trees.

The Forest as a Recreation Area

All of these previously mentioned functions of the forest are objectively and also partially quantifiably representable, while the so-called use and social functions of the forest, as initially defined by the forestry scientist Viktor Dietrich in the thirties, are dependent in their essentials upon the respective human attitudes of interest. These dependencies and attitudes define the forests' use and social functions. The forest shows itself to the cities most apparently in its »social function«, that is, in its duty as a recreation area. Urban ways of living and industrial working conditions are accompanied by physical and spiritual as well as social burdens, for which man, with his constitution and development history, is not equipped.

If one compares man's history to the lifetime of a seventy year old man, then he was a hunter and gatherer for sixty nine years and nine months. He concerned himself with farming during the last three months, and perhaps since yesterday – thus only one day – with modern technology. So it is no wonder that his hereditary predisposition is not programmed for coping with such burdens. In spite of this thirty million Federal German citizens live on seven percent of the land's surface. This is indeed the explanation for the migration-like mass movement every weekend from the cities to the country – in the adjacent forests.

The forest plans an obviously special role in man's attempt for more contact with nature. This is based on the fact that in comparison to agriculturally used surfaces the forest is more natural, has a better access point, and often is of a larger area. It enables a feeling of being undisturbed and liberated, and of calm and coming to inner peace.

Regular sojourns in nature and being with nature can counteract civilization-caused illnesses, particularly a sensibly arranged sojourn in the forest. Doctors have always maintained that the forest climate is a healing climate. The inner forest is able to offer protection not only from noise, but also from an excess of light and invisible radiation. The forest structure and forest formation process work to the common favorable exchange of radiation and light. The local effects of radiation are unhindered, yet they are screened off from nearby areas.

The forest affects not only the physical well-being of stress-plagued modern man. Even the psyche does not remain uninfluenced by the beauty of the forest. One knows that the impressions of the forest and trees can be taken in as form qualities in spatial expansion, structure, and composition of the forest stock as well as the heighth and crown form of individual trees. It is indeed decisive that they are first perceived as beautiful when the form and content, as it were, of the impressions come together.

In many respects the visitor means burdening and danger for the forest and to its realm of living, above all when they are entered en masse, as in forests adjacent to cities, where use should be limited to recreation and for the protection of all. Mushrooms, berries, and rare plants are collected, and garbage is left in their place. Above all it is the forest and its realm of living which is endangered by an unregulated use of the forest.

Thus it will be attempted to concentrate more and more on the »visitor masses« in the vicinity of the city. The Sebald Reichswald forest for example is well-supplied with finished and marked paths for hiking, bicycling, and horse riding. 100 parking places had to be built for this. Special recreation facilities were set up: forest sport paths, children's playgrounds and special shooting areas, fields for laying about, nature instruction trails, pig and fallow deer enclosures, toboggan paths, pub layouts, grilling places, fountain features, and viewing towers. A forest museum was established in order to acquaint city dwellers with old forestry tools and the historical meaning of the forest for living.

The Forest as a Supply of Wood

With so many life-essential functions of the forest some city-dwellers, in particular those who are engaged in the protection of nature, are not happy with the fact that the nearby forest has an extraordinarily important meaning as a producer of the raw material of wood. On one hectare of land, for example in Middle Franconia, there is an annual increase of between four and six cubic meters of wood, and in the Reichswald forest between Erlangen and Nuremberg about 40,000 cubic meters on the 10,000 hectare surface. About 25,000 cubic meters with a value of 2.5 million Marks can be harvested. It should be noted that the adjacent forests around both large cities belong among the poorest in all of Bavaria, because of their over-use, indeed destruction, which has been occurring for centuries. The whole of the Federal Republic is forced to introduce over half of its forests, almost all of which are adjacent to cities, for the need for wood. After oil wood, with a value of 20 million Marks, takes second place in imports. There is now a worldwide shortage of available wood, because numerous developing nations have exploited their wood supply too strongly because of their need for hard currency.

Even the production of the raw material of wood is also among the tasks of the city-adjacent forests.

Today the task of the forest people is to bring all tasks and functions of the forest to completion through maintenance, and, as far as is necessary, the new establishment of healthy and stable forests through the most natural forest care possible. With this comes also the most important – although also the most difficult – problem, not only to perceive the correct sequence of functions for every forest, but also to adjust to the work directly in the forest. With the density of the settling of our Federal State that is not often possible without a compromise. Our Reichswald forest once again for example. Its large surface is used *simultaneously* for a military training place, water protection area, local recreation area, and as a climate and partial surface area as well as beeing a biotope protection forest of the utmost importance. Finally the Reichswald forest supplies wood, which in the future will perhaps again advance a little in this sequence of functions.

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The Landscape Plan - Realization in the Public

Dietmar Hahlweg

1. What do I understand unter the term »landscape planning«?

For myself landscape planning is engaged planning. The landscape planner can view himself less as a task-completer and more as a true completion assistant. Rather, he is, next to other professional groups such as the forestry people, the resulting specialist-advocate for the landscape and for nature.

For this reason he must deal with the preservation or reintroduction of as many natural life relationships as possible.

This is a difficult and often thankless task which requires courage.

The demands on land for dwellings, work, and leisure time grow along with the verbal agreements about the significance and the worthiness of protecting nature, the landscape, and green areas. The landscape planner must show which parts of the landscape must be preserved and above all where the limits of development lie. Yet limits can do harm. It is here that the provisions against planning in general and against landscape planning in particular begin.

Here above all the politicians must support the landscape planner in the argumentation that increased preservation planning has significance, and that even dealings in a completely conscious and decisive »non-dealing«, that is, non-interference in the natural situation, are to occur in increasing measure.

2. Why was the engaged landscape planning in Erlangen able to obtain a relatively good success in the past years?

2.1 In 1966 the city of Erlangen had already charged a qualified landscape architecture office (the Thiele/Grebe office of that time) with the delivery of the study »Green Area Planning in Erlangen«.

It contained a comprehensively engaged and even readable specialized study which went far beyond pure green area planning in critically addressing all city planning problems of the 60's (thus traffic planning in particular). It also made concrete solution recommendations for Erlangen.

2.2 At the community election at the beginning of the 70's (where the city council and the mayor are chosen for six years at a times) one of the mayoral candidates put this study in the middle of his campaign when he reproduced and distributed the study along with other normal campaign literature. This candidate won the election, and the party supporting him maintained the absolute majority in the city council.

2.3 Erlangen has an extremely open-minded and active population directly involved in environmental protection concerns. This is based on Erlangen's special structure (because of the high portion of university graduates of the university and the Siemens research facilities). Specialists from the most varied disciplines are active in the extremely busy local group of the Federation for the Protection of Nature.

2.4 In the Erlangen area we deal with very open-minded specialized authorities. The State Forest Administration, in whose care we find the large state forests in the southeast and northwest of the city, is particularly noteworthy. Forestry people such as the leader of the Erlangen Forest Office, Herr Forstdirektor Horneber, have been not only engaged nature protectionists for years, but have also similarly concerned themselves with caring for the so-called social function of the forest (the suggestion that the city found a local recreation association together with the adjacent countries and communities came from the forestry people).

2.5 The city of Erlangen has well motivated co-workers. Offices which are very important in this respect are: The City Development Office, The City Planning Office, and the Garden Office. They were ready to give good cooperation to the external planners.

2.6 Engaged landscape planning indeed was first of all possible in Erlangen because the city grew very rapidly in the years between 1950 and 1970. The citizens also clearly felt the negative influences of a strong growth on the living quality. In addition Erlangen has had no lack of employment to speak of in the last 30 years.

2.7 The Bavarian cities and communities have a good legal means, both in the Federal Construction Law and in the really exemplary Bavarian Nature Protection Law.

If I cite the legal possibilities as the last point it is not because I had not known about their significance for good planning. I will however make it known, that good laws alone are in no way sufficient. Rather it is necessary to apply willpower, courage, and the power to implement. In addition it is necessary that a truly proper and engaged use be made.

3. I would like to briefly state three examples of the success of such an engaged landscape planning as is the case in Erlangen.

3.1 Although we still have relatively many woods around Erlangen it is our declared goal to maintain the city-adjacent forests. This is because, among other things, we must indeed concede that the strong development of the city of Erlangen in the past decades has clearly occurred at the cost of the forest.

With this clear presentation of goals it was begun in the autumn of 1973 to legally identifiy 53 hectares of forest south of the city (which were ready for further development for dwellings and business according to the 1962 Land Use Plan) as standing woods. The Siemens Firm was at first anything but pleased at this intention, because they considered the area as expansion land in the immediate vicinity of their research center with the corresponding residential areas. They could consider this area as land set aside for residential construction, because the Free State of Bavaria, as owner of the forest land, had already put it relatively out of the picture in the 50's.

What at first appeared less promising succeeded above all with the engagement of the local State Parliament delegates (election time was near) in active support of bringing around the land owners, i.e. the State Forest Administration and the Siemens Firm. The Siemens Firm had started, earlier than originally considered, to plan a new place in the west of the city. The city of Erlangen was very helpful in obtaining a plot of land. In this amicable way the 53 hectares could be legally identified as a standing forest.

A partial problem could also be solved in the framework of this alternative planning: the State Forest had already sold a plot of about 12,000 square meters for 600,000 Marks to a religious institution for the construction of a charitable home. This project had gored itself into the valuable forest area: even a correction here held to be sheerly impossible succeeded right at the beginning: the Free State of Bavaria bought the 12,000 square meters back, and with this money the religious institution bought a plot of land belonging to Siemens which lay in a nearby building area. The Siemens firm was again compensated by the city of Erlangen by a corresponding plot of land in the west of the city.

3.2 Erlangen, like other cities, has had to struggle with a very strong exodus of families wanting to build in the environs. For this reason an agricultural surface of about 40 hectares in size was set aside for construction of single family dwellings in spite of many hesitations. This land was owned by the city of Erlangen and for this reason could be sold to interested persons at a reasonable price per plot. The Landscape Plan (executed by the Grebe Office in Nuremberg) turned around against this identification with the argument that it was a question of a valuable agricultural surface for which the maintenance (for the agricultural structure in that area of the city) could not be renounced. The city council thereupon also took this area out of the building area according to the appropriate requests through the superior authorities - the Government of Middle Franconia.

3.3 The most constroversial theme in the city council for over 7 years has been whether or not to construct a further valley crossing over the Regnitz Valley (the so-called Kosbach Dam). Citizens of the west of the city have been demanding this valley for years.

The landscape plan speaks out against once again severing the Regnitz Valley at the broadest place in the heart of the city through the construction of a street. The four existing crossings are considered sufficient. The majority of the city council has followed this recommendation of the landscape plan and has rejected the construction of this valley crossing which had been a definite element of traffic planning for years.

4. Which conclusions can be drawn from the Erlangen experience?

4.1 Large cities, and not only small and medium-sized cities and communities, should let their Landscape Plan be done by externally engaged specialists. External specialists often have a clearer view for developments, first of all for incorrect developments, and can work out impartial and independent recommendations.

4.2 Because the landscape architect as represented under section 1 is not only the task-completer but is also an advocate for nature, he should employ all justifiable means in order to help bring his views to implementation.

He should therefore insist that the results of his investigation be presented to the responsible community leaders. He should be prepared to do this even in the individual parliamentary parties in which indeed the actual preliminary decisions often occur. If need be he must be ready to assume the freedom to go behind the scenes of individual conversations.

He should finally not be above giving accounts to citizen initiatives and other extra-parliamentary groups.

4.3 For the realization of the goals and recommendations set down in the landscape plan it would be important that it came to a long term cooperation between the landscape architect and the concerned community. Here the fee regulations must be changed so that this continuous co-operation, which I consider the deciding assumption for realization, can be made easier.

4.4 The cooperation between the offical powers of a community and the independent planners has great advantages. As represented above, the cooperation of specialized energies in the administration with free-lance landscape architects has great advantages. This cooperation can only be truly successful if a readiness and capability for a genuine cooperation is present on both sides. Finally it is assumed that the work results be considered as community results and also that it becomes a concern of community results.

Concluding notes:

My honorable ladies and gentlemen,

Like the Erlangen experts before me I would like to give you the illusion of nothing other than a healed world.

Even with us in Erlangen something a little bad always occurs, even with the best of endeavors, and questionable compromises must be accepted. These must be obtained by hard fighting so that success can be realized.

In spite of this we hope that our results have encouraged rather than discouraged you.

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Citizen Actions for the Preservation of Landscape Quality using Erlangen as an Example

Hans Heinrich

The classical measures from the beginning of this century are no longer enough for the solution of the manifold problems which occur in the wake of industrialized society and often lead to damage of nature and the impairment of the landscape. A particularly close cooperation of politicians, authorities, specialists of the most varied areas, and engaged citizens based on the most comprehensive as possible informing of the public must be striven for in the planning and execution of environmentally relevant measures.

Large citizen associations, however, like the Bavarian Federation for the Protection of Nature, which is over one hundred years old, should also execute some special work in order to be able to purposefully operate from this information.

The Erlangen Group of the Bavarian Federation for the Protection of Nature has become a very active citizen association through a series of favorable conditions (qualified specialized cooperation through scientists at the University of Erlangen, engaged nature protectors from the fields of ornithology and vegetation science, and strong support from the city of Erlangen). Because of the high numbers of members (about 1,000 members in 1980) they worked in eleven various work groups in areas of determined focal points.

The support of the city of Erlangen has risen with the increasing public engagement of the nature protection group. The city has made some work spaces in centrally located buildings of the old part of the city available to the Erlangen Group. They serve

- as meeting points for various working groups
- as information for all members
- as an information office for the citizens of the city, who bring up their problems concerning nature, which belongs to all of us, in their many daily telephone calls.

Because of these manifold tasks the offices are now staffed by two co-workers, yet are strengthened in the evenings by further voluntary helpers.

The activities of the group can be broken down into three focal points:

1. Information about Environmental Questions

The action work group *»Public Work«* attempted to awaken consciousness of the problem in the population and to win additional co-workers through its own exhibitions, information events, through films and lectures, and showcases in the schools. Through this method the number of members has risen in three and a half years from 360 to about 1,000.

In the last years the group has set up many larger exhibitions in the Rathausfoyer and at other points:

- Nature in the city
- Protection of the white stork
- Orchids

2. Individual Actions

Measures for the improvement of *animal populations:*

- Improvement of nesting opportunities in churches for kestrels, jackdaws, and black martins,
- Improvement of living areas (especially moist areas), layout of aids for nesting especially for storks, swallows, and bats,
- Layouts for biotopes for amphibians.

The setting up of a *tree nursery* with native understory plants can allow interested private persons to make their own »greening measures« or can supply the necessary plants for the renaturization program of the working group.

Implementation of a *bicycle lending service,* which had 40 bicycles at first, now 60, and soon 100, which can be loaned out after a weekly deposit of 5 Marks is given. This program will be supported by the city of Erlangen.

3. Increased Cooperation with Politicians, Authorities, Specialists and Citizens

The cooperation with politicians and authorities as well as with other specialists and above all with the concerned citizens is indispensable for the implementation of many programs. Here are some of the programs of the last years:

1. The improvement of the total traffic situation through a limitation of the privately owned automobile traffic with a conversion to bus and minibus use as part of the total traffic strategy.

The working group has approached the large plants, the university, and the large administrations in the Erlangen area with the most varied suggestions, such as parking place limitations, the introduction of a small bus system, and the scheduling of speedy bus lines from the environs to definite concentrations of employment areas. Along with this the further exuberant growth of street construction in the environs will be avoided and at the same time the valuable surfaces previously used for private automobile parking places can be won back for the improvement of the living environment.

2. Furnishings of Residential Streets

The traffic group has developed its own traffic concept for a residential area which is endangered through the construction of an expressway. This concept will be examined by city planning in cooperation with various citizen initiatives through rising support from the city councils. This has essentially provided for the discovery of alternative concepts.

3. Preservation of the Regnitz Valley in the City Area, Rejection of Additional Valley Passages

Erlangen has an advantage over other German cities in its position of a large continuous valley area between both parts of the city in the east and west. In the last years it has won a significance as an important traffic relation for bicyclists and pedestrians as well as for local recreation. The Federation for the Protection of Nature in Erlangen has implemented a series of investigations for the improvement of this valley area through its own »renaturization« measures.

The prevention of the long-standing plans for a further street crossing in the valley with a large embankment was successful due to the cooperation with the most varied citizen initiatives, above all those from the inner city area.

4. Consolidation of Farmlands

In northern landscape areas of Erlangen the on-going consolidation of farmlands and the strong operations associated with it threatens to lead to a strong change in the landscape. The »Vegetation and Landscape« work group is presently mapping all biotopes in the areas in which this consolidation is foreseen and prepares recommendations for an ecologically based consolidation.

However the working group also simultaneously supported the efforts of the farmers, as in Moehrendorf, to, on the whole, prevent the consolidation of farmland. The present distribution of areas does not necessitate the consolidation of fields.

The preservation and reintroduction of a manifold nature is necessary and also possible directly in the large city. The Erlangen working group of the Federation for the Protection of Nature plans and attempts to preserve nature in the city of Erlangen through many small and large actions in order to further promote the positive development of the city.

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