



Finnish
National
Road
Administration

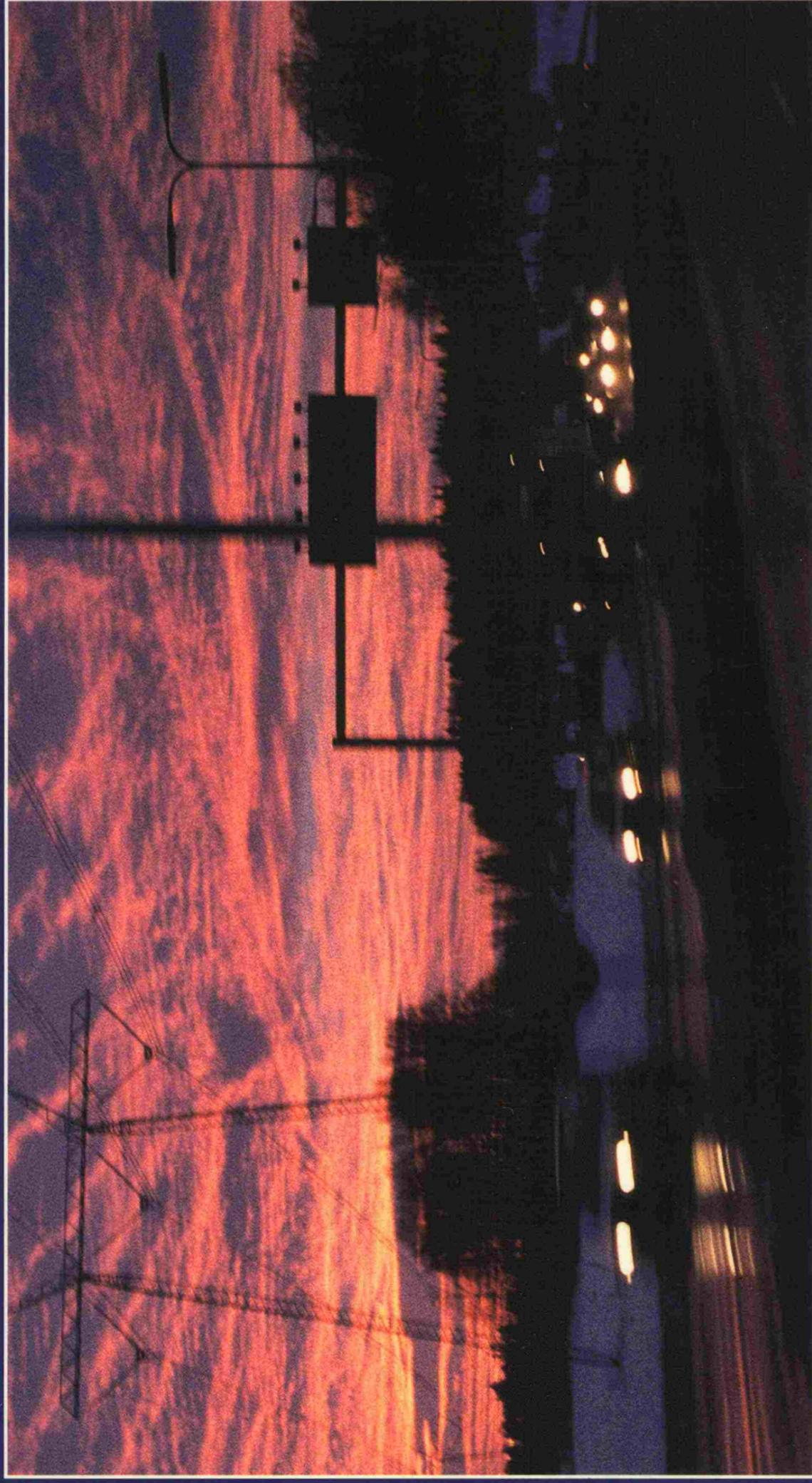
KEHÄ III - segment of Road E18 in the Helsinki Metropolitan Area of Finland

The existing conditions of the road milieu and general guidelines for its development



January 1996

FinnRA
Uusimaa region



KEHÄ III

The future road milieu in the Helsinki Metropolitan area sequence of Road E18 in Finland

**KEHÄ III - segment of Road E18 in
the Helsinki Metropolitan Area of Finland**

The existing of the road milieu and
general guidelines for its development

January 1996
FinnRA Uusimaa region

LT - Consultants Ltd
Jukka Turtainen Architect Office Ltd
Klippi Design Management Ltd

SUMMARY

Background

The connection of the international route Road E18 between Turku and Vaalimaa is at present being developed in Finland. The project is lead and co-ordinated by the Finnish National Road Administration (FinnRA) in close co-operation with several reference groups. Simultaneously, Kehä III, a segment of Road E18 and an important ring road in the Helsinki Metropolitan Area, is under improvement between two suburban centres, Vantaankoski and Tikkurila. Among the aspects considered are the development of community structure as well as the development of aesthetic features of the road milieu. Since Kehä III also acts as segment of the European road E18 in the Helsinki Metropolitan Area, and is maintained by FinnRA, it has also been necessary to assess the development of Kehä III as a part of the entire Road E18. Consequently, this report has been prepared to examine the existing state of Kehä III road milieu and the general principles for its development which can provide guidelines for different projects.

This report was prepared while the elaboration of Road E18 planning was still at a preliminary stage and the final road engineering of Kehä III between Vantaankoski and Tikkurila was under revision. The aim is not to provide ready-made solutions, but rather to seek different emphases in the development of road milieu as well as common features between the various aspects. This report was prepared by FinnRA Uusimaa region; by LT-Consultants Ltd with the assistance of Jukka Turtiainen Architect Office Ltd and Klippi Design Management Ltd.

TYÖRYHMÄ

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Objectives

The objective of the development of Road E18 is to provide favourable preconditions for a road that meets the international service standards. Special emphasis is given to the image of Finland which the road conveys to visitors. In this respect, the focus of the development will be on the Finnish landscape and the high-quality architecture as well as on the aesthetics of the road milieu.

The objectives of the planning for the road milieu in the Road E18 development project are defined as follows (Soil and Water Ltd, FinnRA Uusimaa region):

- the road tells a story of the Finnish landscape and townscape;
- the road represents the high-quality modern Finnish architecture and design;
- the Finnish natural landscape is an essential part of the view from the road;
- the road milieu constitutes of a controlled and coherent entity;
- the road milieu, and related activities are smoothly adjusted to one another;
- the planning is conducted in accordance with the principle of sustainable development;
- environmental hazards will be prevented and alleviated through conscientious planning.

These objectives also apply to Kehä III with regard to its nature as a ring road segment around the Helsinki Metropolitan Area.

Major aspects

Due to the special character of Kehä III, the most important development views include the distinctness, systematic orientation and public image of the route. The visual background of the road should be free from distractions to enable the traveller to observe signs directing traffic. Distinctness of the road milieu can be achieved by intensifying the green spaces while utilising the natural prerequisites set by the community structure and the landscape.

Promoting public image, Kehä III is perceived as a product, the identity, profile and image of which are strengthened through its role in the Road E18 project. This can be achieved by minimising visual noise, and by product development of road fixtures which are aesthetically coherent and reflect the distinctive characteristics of the segment of Road E18 in the Helsinki Metropolitan Area.

FinnRA has established a special Road E18 project organisation which is responsible for co-ordinating activities in different FinnRA regions, and interacts with different reference groups involved. Kehä III is a part of this development process, but needs special consideration due to its distinctive character as the ring road in the Helsinki Metropolitan Area.

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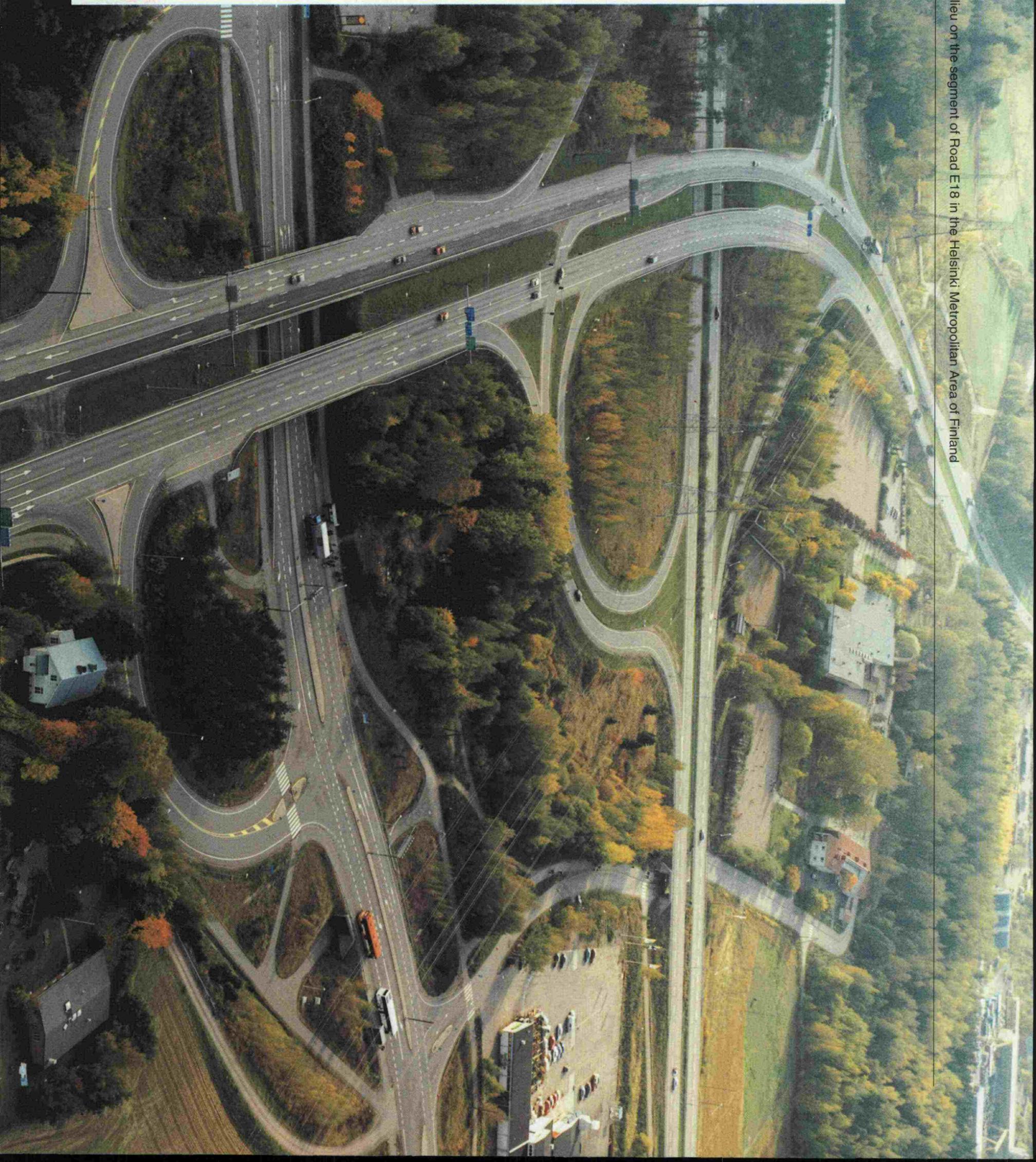
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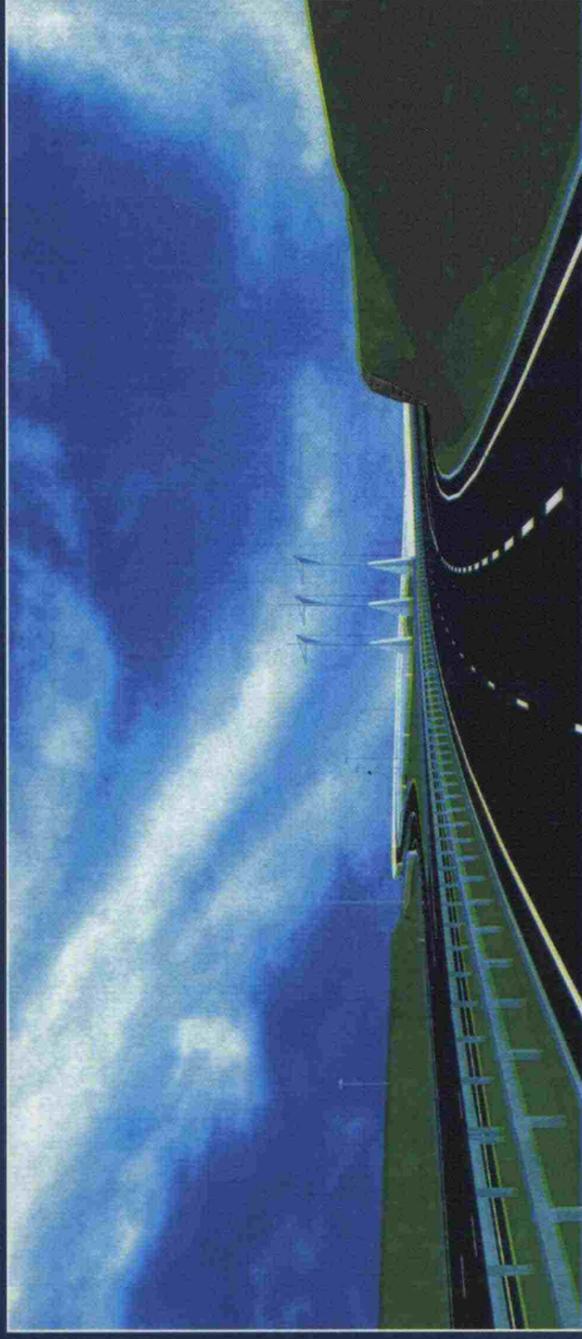
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KEHÄ III

1

INTERNATIONAL ROAD ENVIRONMENT AS THE IMAGE OF THE FUTURE



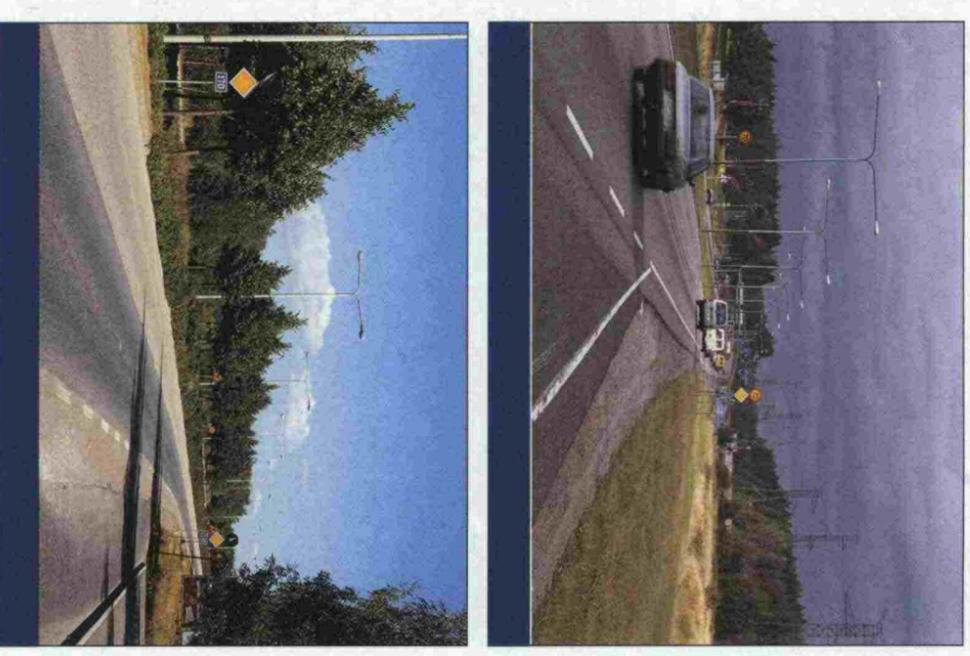
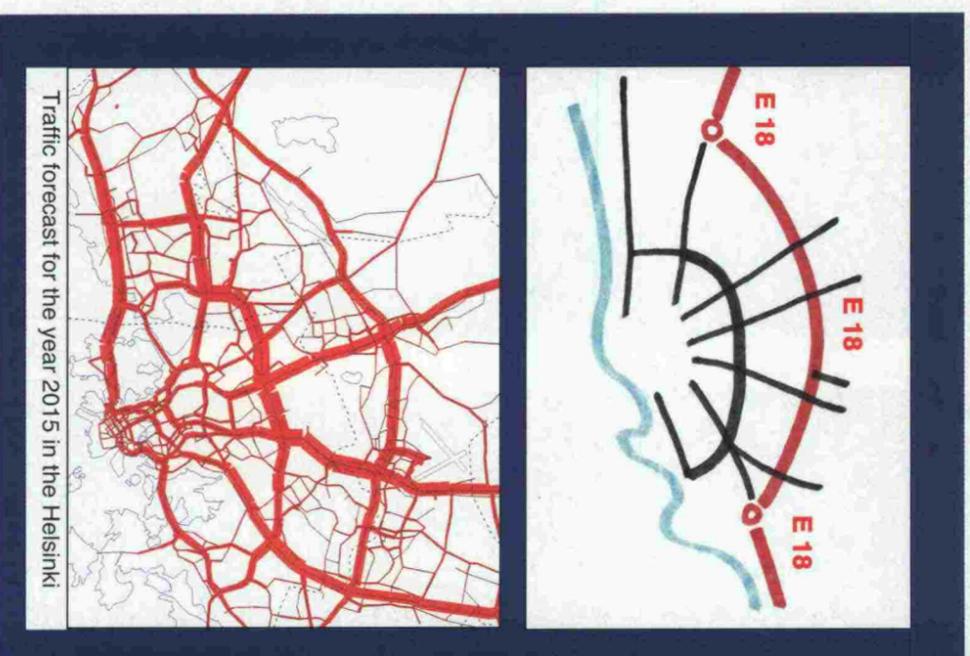
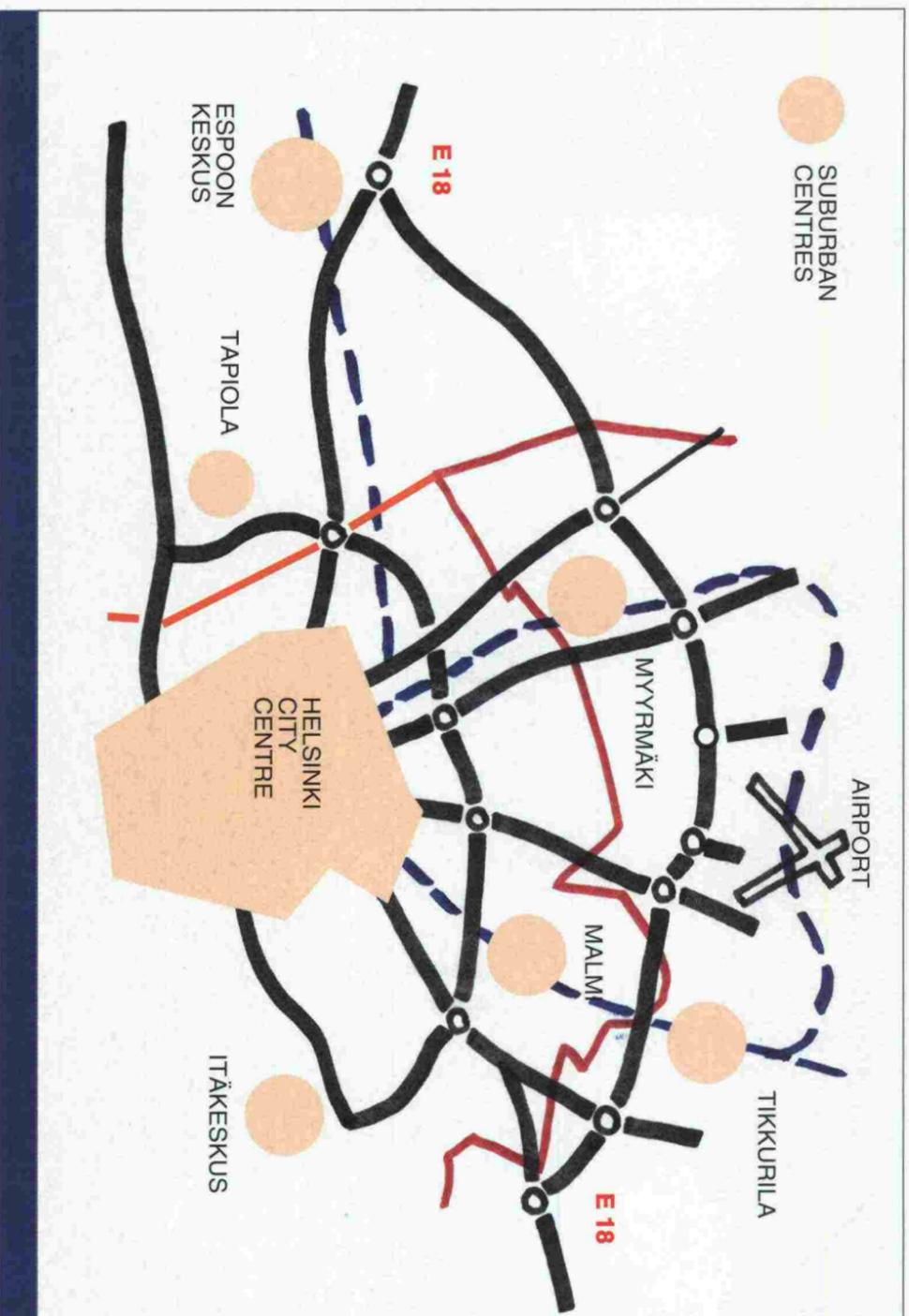
The main routes, their users and community structure in the Helsinki Metropolitan Area

The development of the character Kehä III as a part of the landscape and urban structure

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Transport related services

The main routes, their users and community structure in the Helsinki Metropolitan Area



The arterial roads for vehicle traffic in the Helsinki Metropolitan Area radiate evenly from Helsinki City Centre. Kehä I, the inner ring road, runs within the urban structure forming a border between the inner city and the suburban area. Kehä III is located on the fringe area of the suburbs.

The role of Kehä III is to

- act as a bypass road connecting the radial arterial roads of Helsinki Metropolitan Area
- act as a main route which
- serves as one the major roads for vehicle traffic in the Helsinki Metropolitan Area
- is part of the main public transport network in the Helsinki Metropolitan Area
- forms the regional main road in the City of Vantaa,

connecting its regional centres and while acting as a local main street

- serves as the most important connection for ground transport to the airport.

With regard to the traffic volumes, the most important task of Kehä III is to serve the intrazonal traffic of Helsinki Metropolitan Area and traffic entering the Helsinki Metropolitan Area from other parts of the country. Long distance traffic passing the Helsinki Metropolitan Area constitutes only a small proportion of the road users. The function of Kehä III as a main road in the area requires a large number of interchanges.

Future visions of the urban structure

The Cities of Vantaa and Espoo have in their master plans reserved large areas for industrial and office development along Kehä III. The fastest growing areas are situated in the vicinity of the airport in Vantaa between Tuusulan väylä and Vihdintie. Densely situated interchanges - some of them already implemented, some proposed - and the gradually implemented parallel street network along this route lead to the concentration of the urban structure around Kehä III. Consequently, the role of Kehä III as a major route for vehicle traffic and partly for public transport is emphasised. Therefore, the clarity of route signing and the minimising of visual noise in the road milieu are

particularly demanding tasks and require significant development contribution by the road keeper.

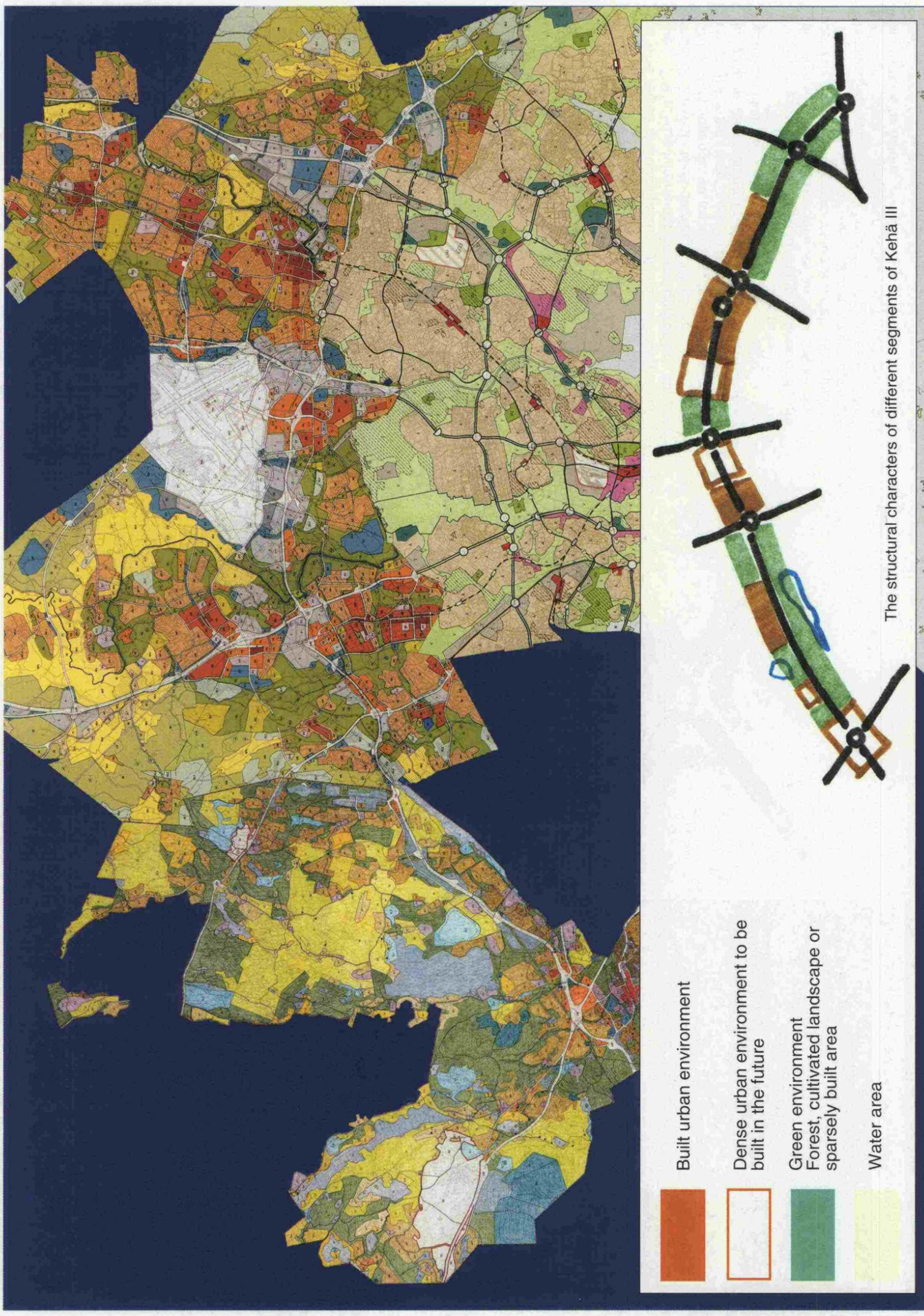
The development of the character of Kehä III as a part of the landscape and urban structure

The urban structure around Kehä III is most highly developed in the suburban centre of Tikkurila and in the vicinity of the airport, where the road environment is in places densely built.

A major part of the land use along the road is rather sparse and not densely built. Long segments of the road particularly in Espoo, are aligned through rural landscape that has remained virtually unchanged.

The cities have reserved significant areas in their master plans for various business activities. The existing and future focal points for business areas in Vantaa are and will be situated between Tikkurila and the Vihtintie arterial road. In the city of Espoo business is likely to concentrate around the Espoo Interchange. Along other segments of Kehä III in Espoo the business areas are mostly situated along the network of parallel roads and streets providing Kehä III with a more open and rural profile. Furthermore, there are large residential areas of small houses currently being completed on the southern side of Kehä III. They have been separated from Kehä III by noise walls.

The urban structure along Kehä III will experience a constant change during the next decades. One of the environmental characteristics of Kehä III area include large unbuilt building lots and parts of building lots. The road cannot be supported by continuous urban structure.



The image of Finland and the Helsinki Metropolitan Area

The existing state of road milieu

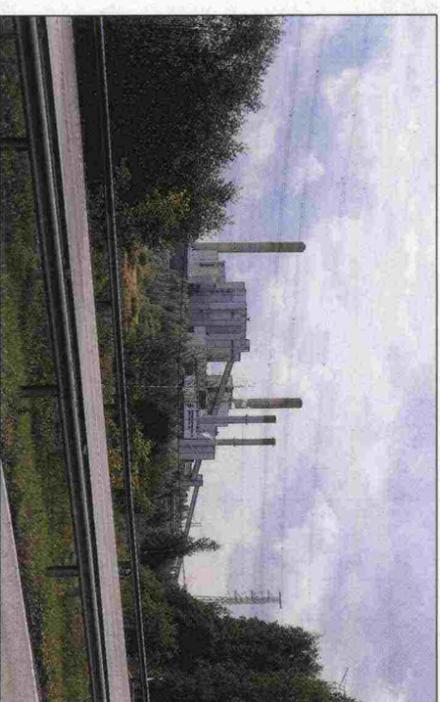
The segment of Kehä III between Turunväylä and Porvoonväylä is a road corridor with diversified landscape. The western part of this segment until Hämeenkylä interchange is strongly characterised by natural and cultural landscapes. In some places the road milieu is bordered by deep forests, in other places the view opens over large fields to lakes. Industrial buildings are sparsely located in the vicinity of the road. Settlement is situated further away from the road, although close enough requiring noise reduction measures. In the longer segments, the noise banks are dominating structures.

In the areas of Petikko and Varisto the road is clearly bordered to the built-up areas. The road milieu seems rather unfinished. The scenery is dominated by the power station between Petikko and Vantaanlaakso. The region of Vantaankoski and the entire Vantaanjoki river valley forms a cultural landscape with its open fields and meadows. The surroundings of the buildings are well maintained.

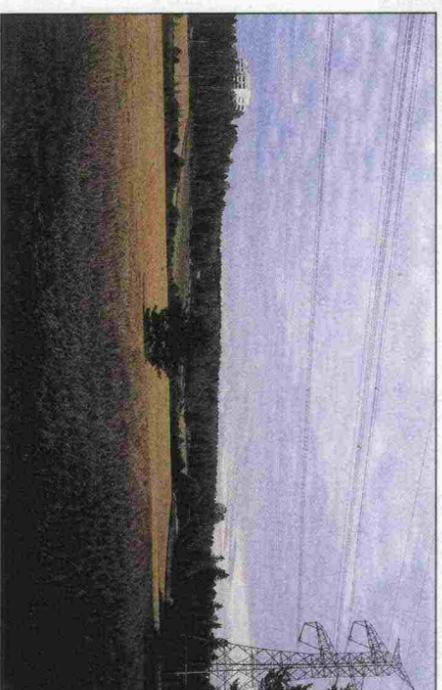
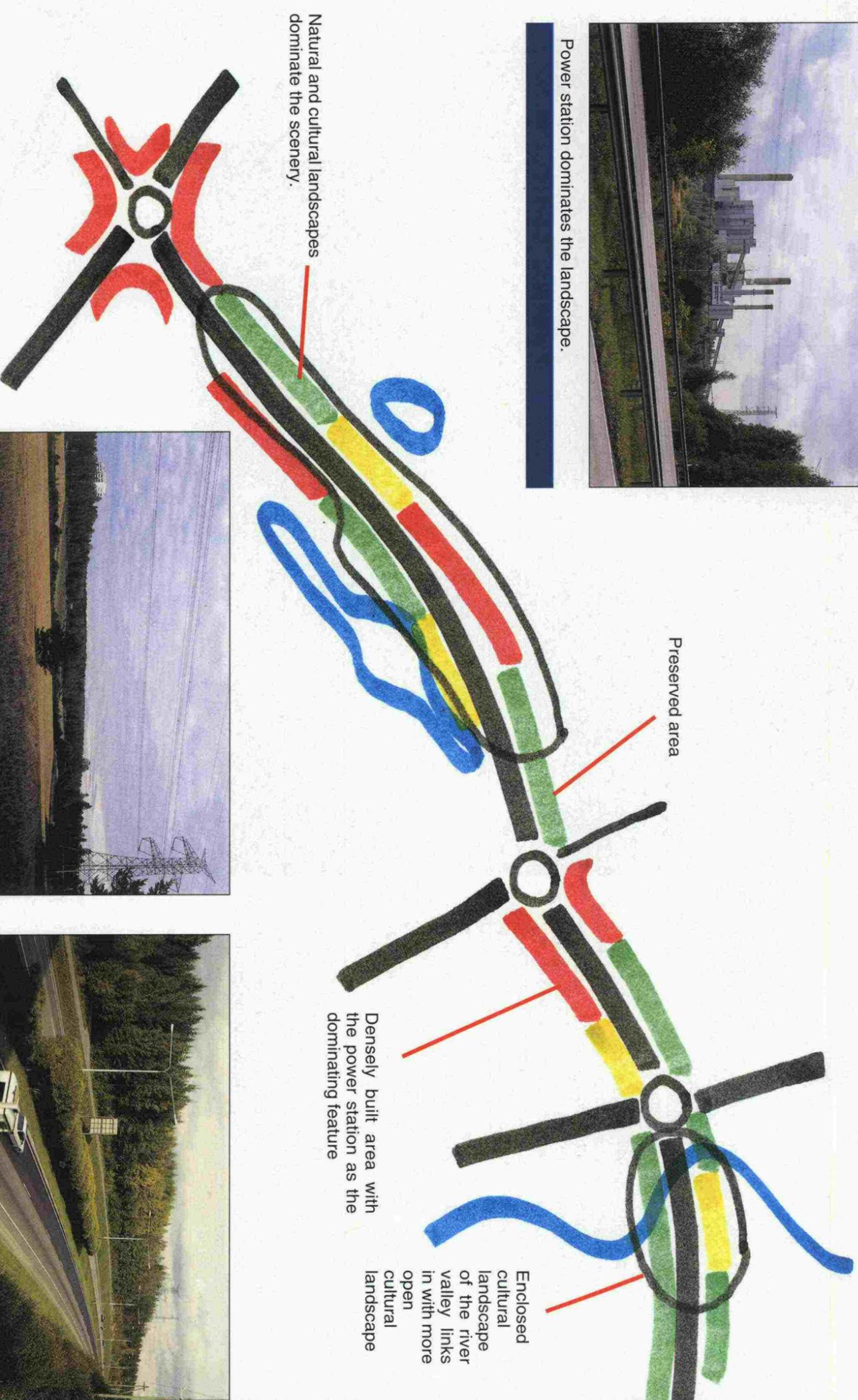
The segment between Kalliosola and Kirkonkylä interchange consists mainly of forests with some industrial buildings. In places there are rather unaesthetic views over quarry areas and industrial plots. West from Kirkonkylä interchange the scenery is dominated by clayey flat fields along the Keravanjoki river and the cultural landscape of the village of Helsinki. The power line poles dominate the scenery. The area is densely built, although not as massively as in the previously described segment.

The region of Suutarila and Tikkurila is a residential area. The road environment seems unfinished. Noise walls of different styles dominate the scenery east from Tikkurila interchange. At Kuninkaala the scenery opens up to the road user and is blocked again by the impressive rock cutting of Kalkkikallio which creates visual stimulation.

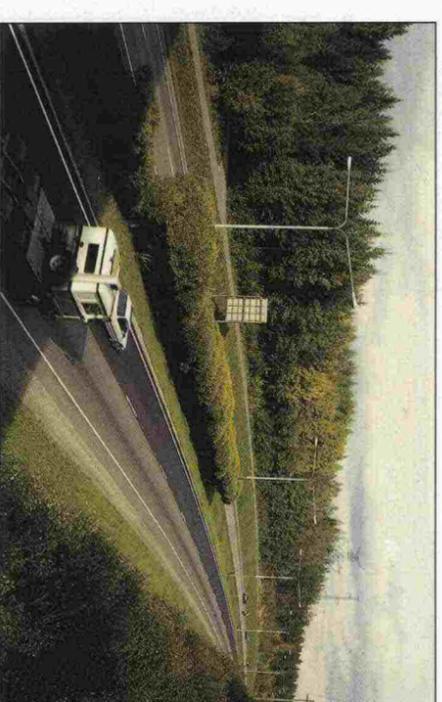
The area around Vaarala interchange is large and can be slightly difficult to perceive as an entity. After the densely built Hakunila residential area, Kehä III changes its character, as it is aligned between open cultural landscapes and those bordered by forests. The Westernsundom grade-separated interchange is anonymous by nature.



Power station dominates the landscape.



Open fields are typical scenery in the western parts of Kehä III



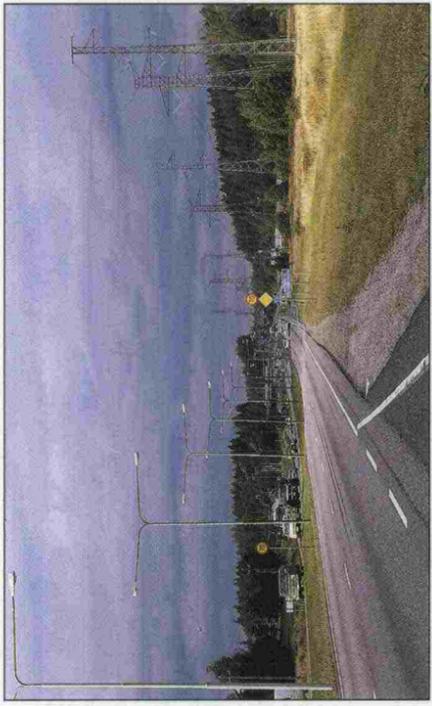
The Vantaanjoki-laakso river valley is green and lush

Open fields alternate with closed scenes of rock cuttings

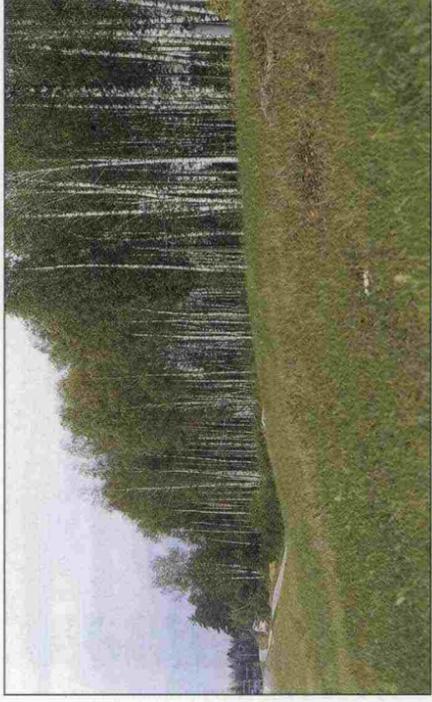
The valuable church and village milieu

A densely built area borders the road

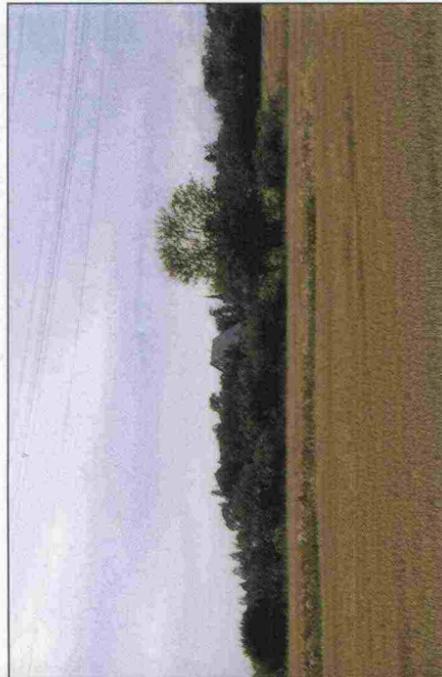
Rural landscape with open fields



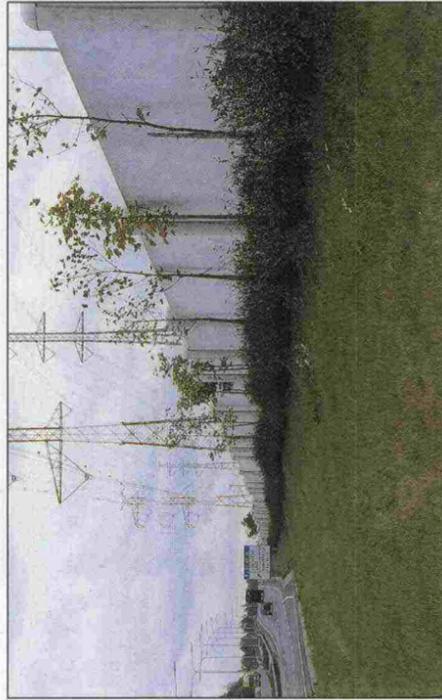
Clearly perceptible scenery



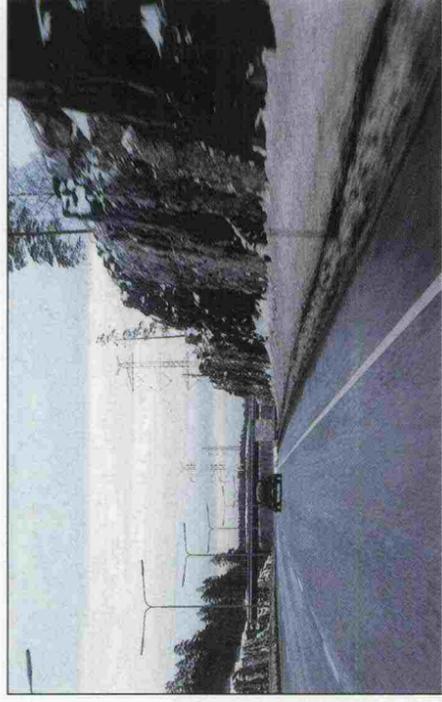
A Finnish birch grove is a lovely sight



The church milieu is a valuable part of the landscape



The road is aligned by noise walls in Tikkurila



Rock cuttings create a dynamic atmosphere

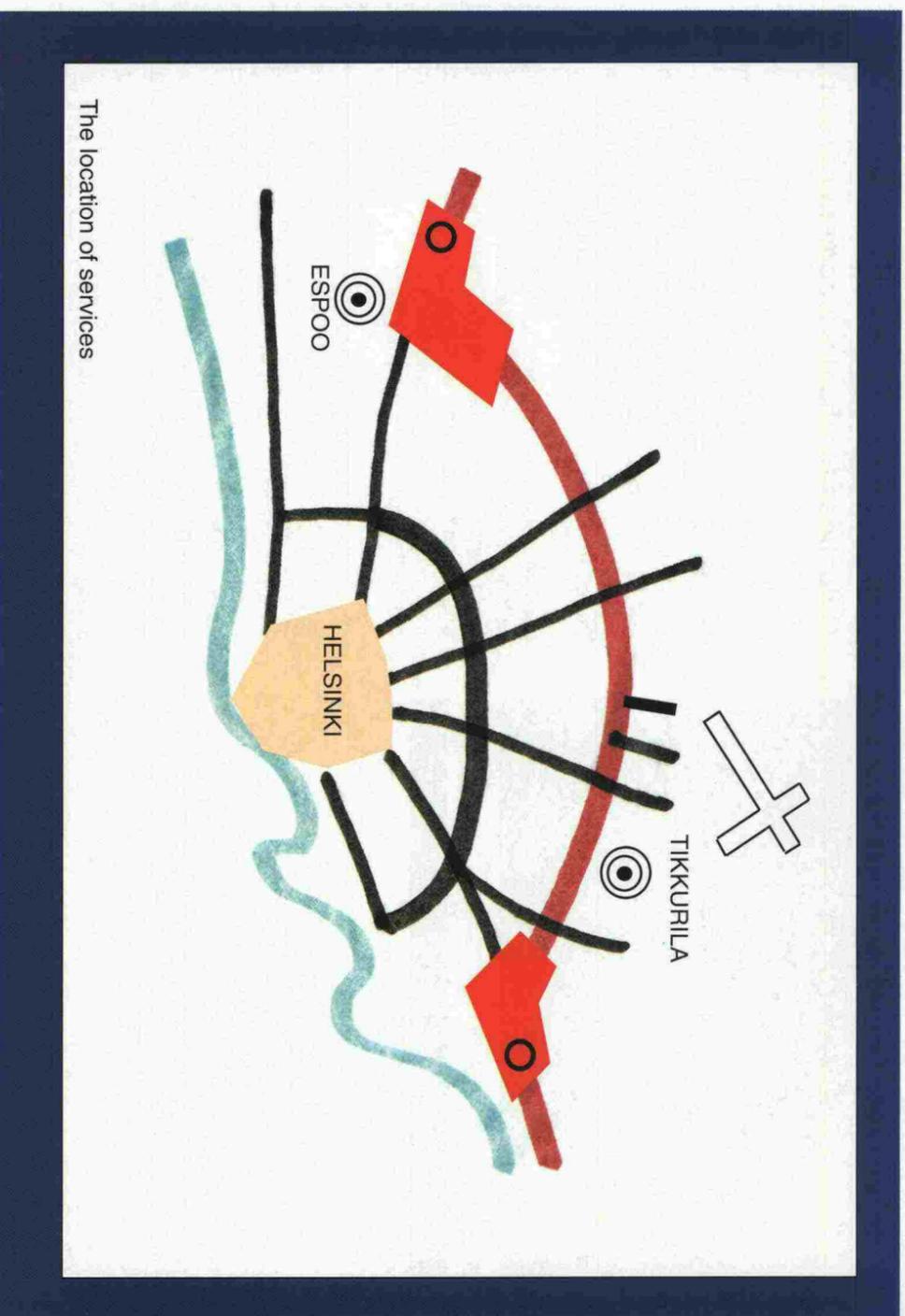
Guidelines for the development of road milieu

The role of Kehä III as a major road is becoming more significant and the amount of visual noise will increase. It is therefore necessary that the view from the road will be calmed down as a counterbalance. The best way to achieve this is to develop the green areas in the vicinity of the road and to emphasise the natural border zones and elements of the landscape.

The noise barriers tend to dominate the road milieu in longer segments. In principle, noise banks should be used where possible and the plantings of the bank should be in harmony with the surrounding landscape. The noise barriers should be integrated into the road milieu through the use of plants.

Large interchange areas should be developed as enclosed spaces which are open in character. Central factors will then be the shaping of the terrain, exceptional vegetation and surfaces, and trees. Special consideration should be given to the bridge architecture of the interchanges. Local interchanges are to be subjected to the conditions of the landscape and be modest in appearance as well as naturally integrated into the landscape.

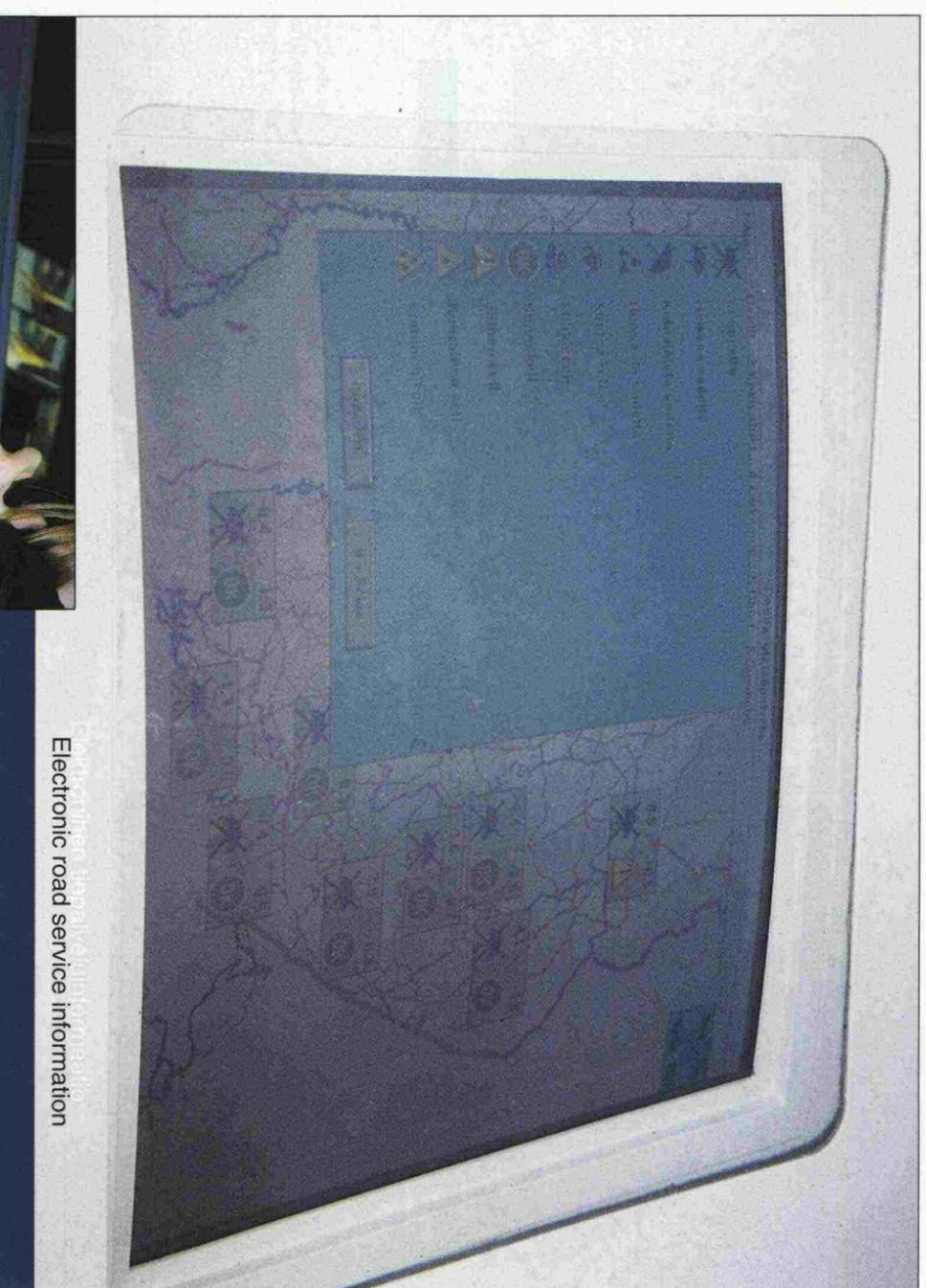
Transport-related services



There is a network of service stations for drivers in the Helsinki Metropolitan Area, which will be developed according to the needs of the internal traffic of the area. In developing Kehä III it is necessary to organise the services with regard both to traffic entering to and passing by the Helsinki Metropolitan Area. Therefore, it is most important that the road-user will receive road information as well as other regional information at appropriate points of their selected route.

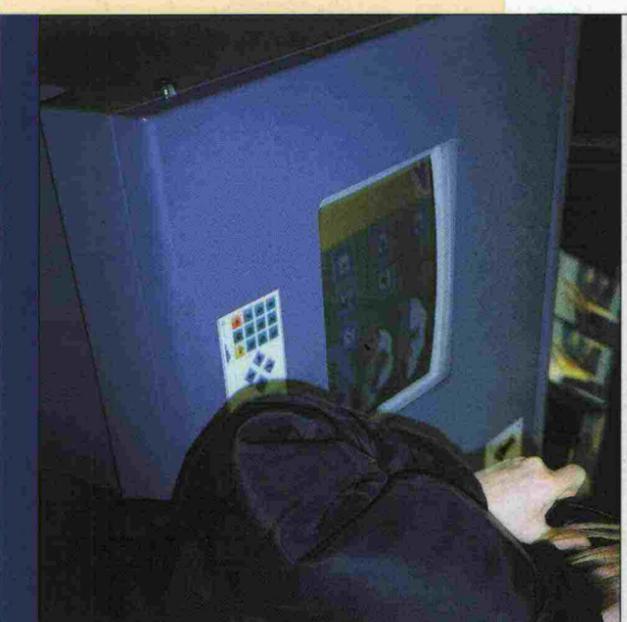
The service area has to meet international standards. As a minimum requirement, the following services must be available for 24 hours a day:

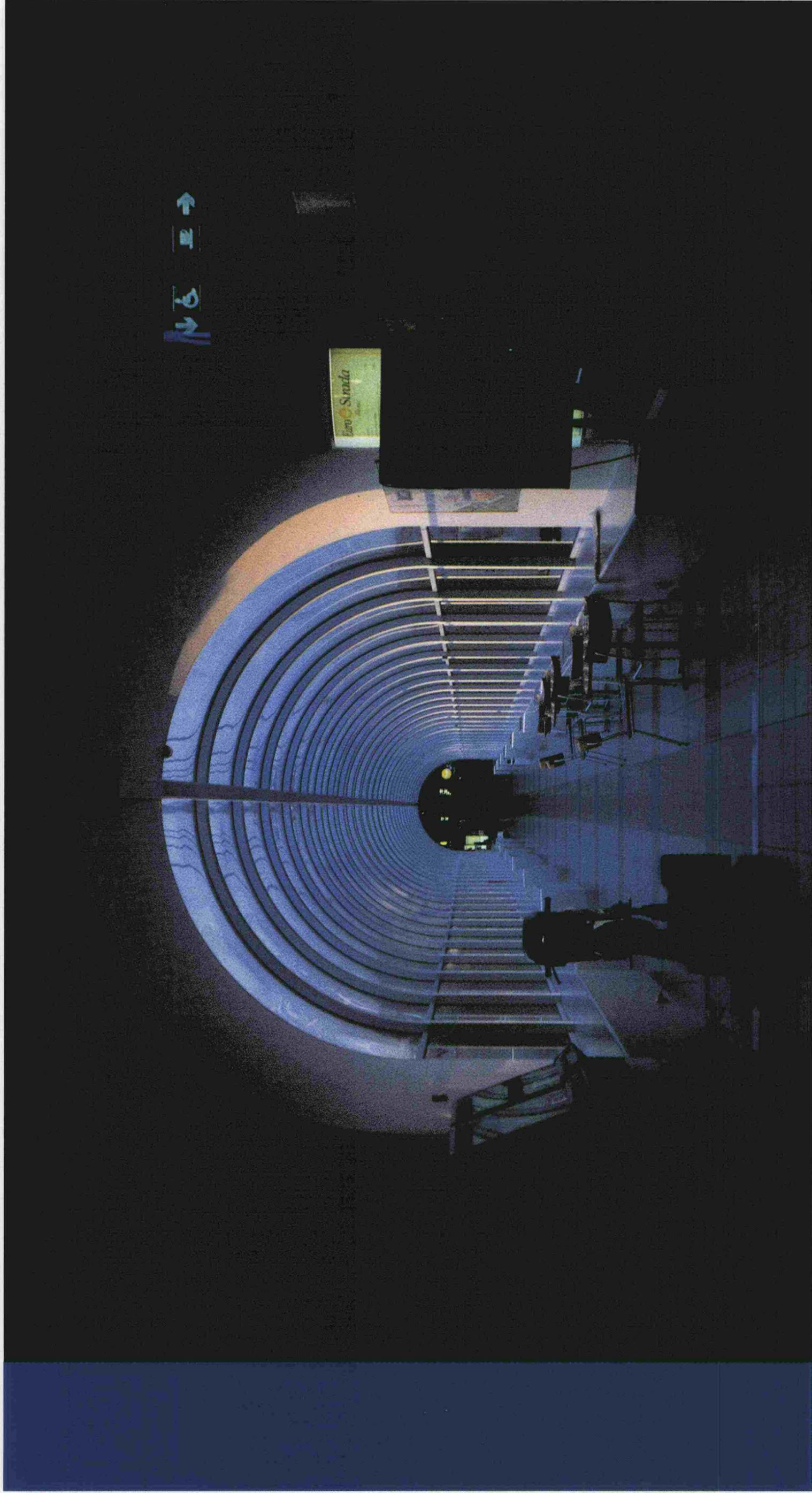
- refuelling and garage services
- toilets
- cafeteria/restaurant
- road and traffic information
- guidance to major terminals in the Helsinki Metropolitan Area
- tourist information



The architecture of the buildings and structures in the service area as well as the environmental planning should be of high standard. Direct access should be provided from the road to the service area.

Thus the appropriate locations for the service areas on Road E18 are before the access to Kehä III on highway 1, west from Turunväylä interchange, and on highway 6, east of Kehä III.







KEHÄ III
The future view of the road project on the segment of Road E18 in South-Western Metropolitan Area of Finland

KEHÄ III

2

DEVELOPMENT VIEWS OF THE ROAD MILIEU

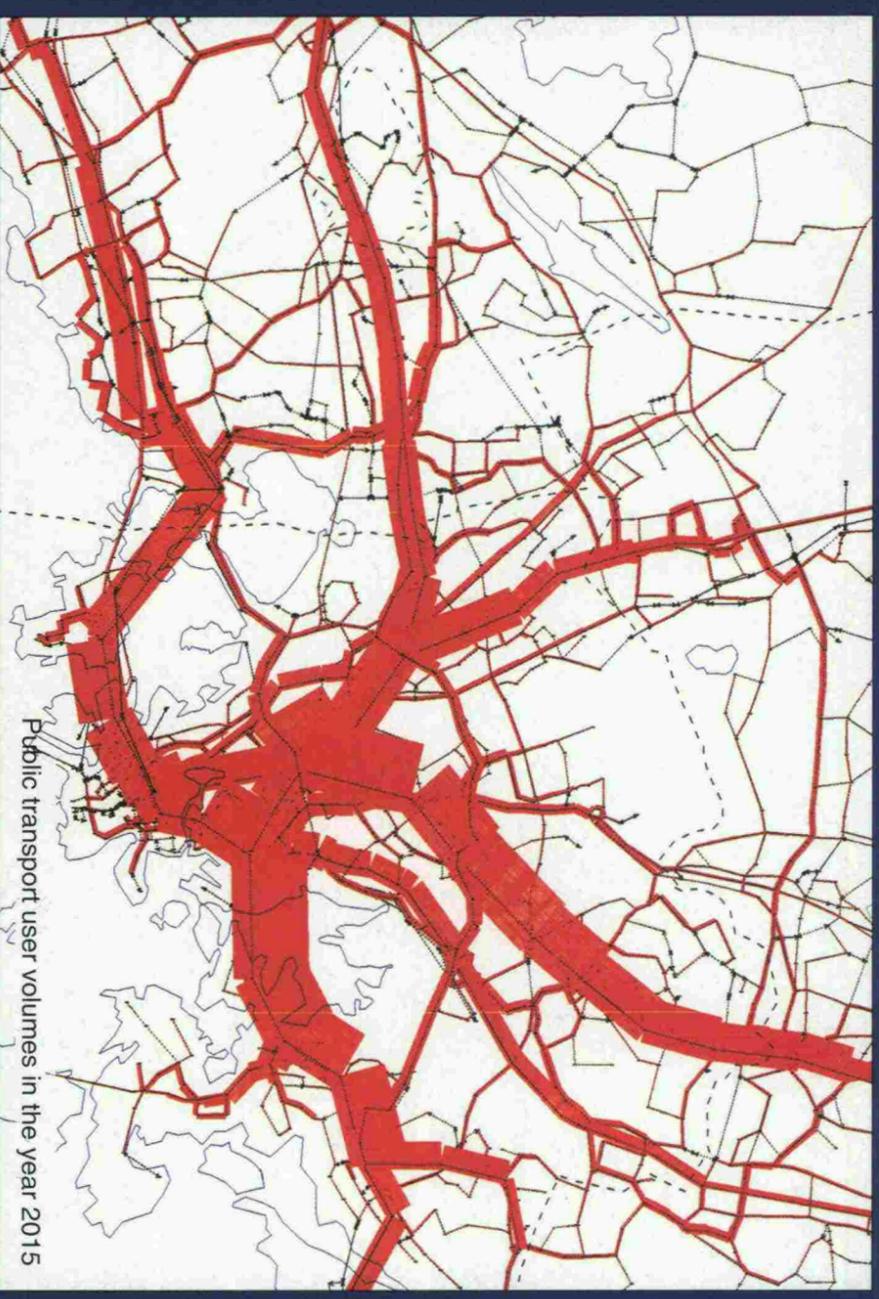
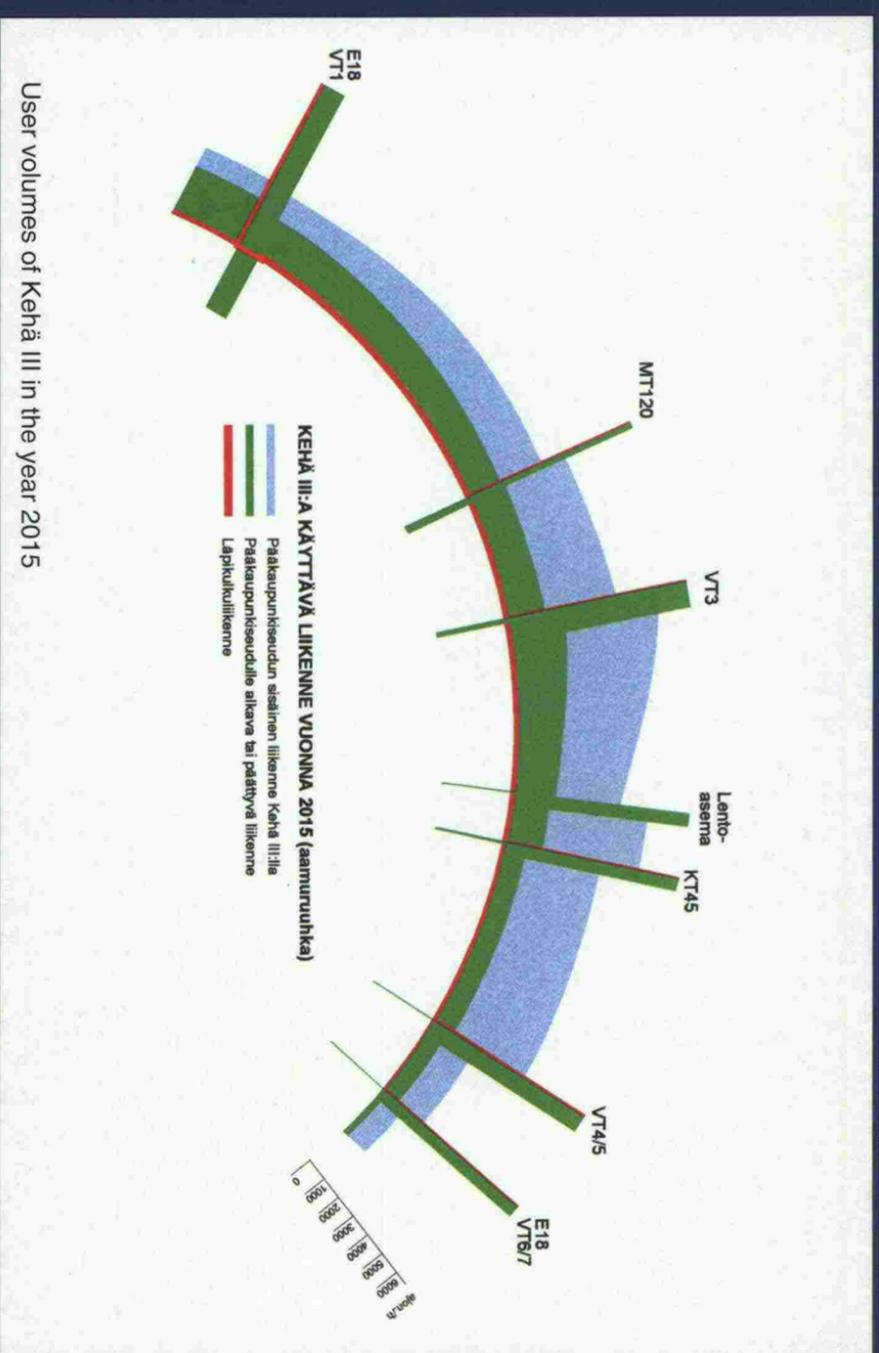


The distinctness and orientation of Kehä III for different user groups

Kehä III as a driving experience in the light and in the dark

Aesthetics of the unique milieu of Kehä III

The aspects of distinctness and route signing of Kehä III for different user groups



Only a small percentage of the vehicle traffic on Kehä III passes through the entire Helsinki Metropolitan Area. The share of local traffic is highest in the eastern segments of Kehä III. The share of interregional traffic having its destination in the Helsinki Metropolitan Area is highest in the western segments of Kehä III.

In comparison with other main roads in the region, Kehä III has more passenger car traffic and the share of bus passengers is very low. Passengers using public transport need special consideration in respect to the development of the road environment, since they walk in the vicinity of the road and are thus subjected to hazards caused by traffic.

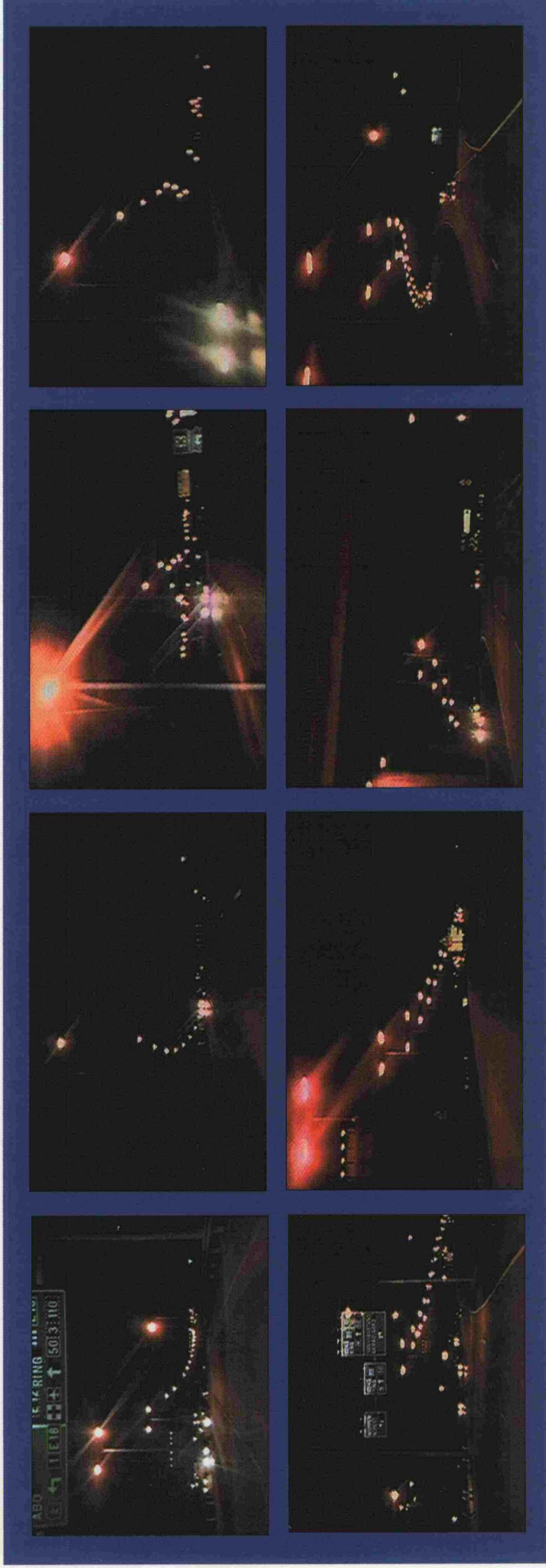
For the benefit of bus passengers it is important to provide easy access from bus stops to the surrounding land use activities. There are also transfer points for bus passengers on Kehä III, where the connections between bus stops and the comfort of bus stop areas need special attention.

Buses are mainly used for work trips on Kehä III. The majority of passengers commute between the suburban centres of Martinkaakso and Tikkurila. Although the land use would be more efficient in the area, Vantaankoski-Tikkurila will be the most significant segment for public transport of Kehä III. It is necessary to improve the orientation in the vicinity by bus stops and pedestrian and bicycle ways, and to clarify transfer opportunities

through appropriate guidance.

In the long run the aim is to move bus routes from Kehä III to the parallel street network closer to the various local activities. This parallel street network will however be completed in the distant future; therefore Kehä III will serve as the main connection for cross bus traffic in Vantaa for the next 20-30 years.

Kehä III as a driving experience in the light and in the dark



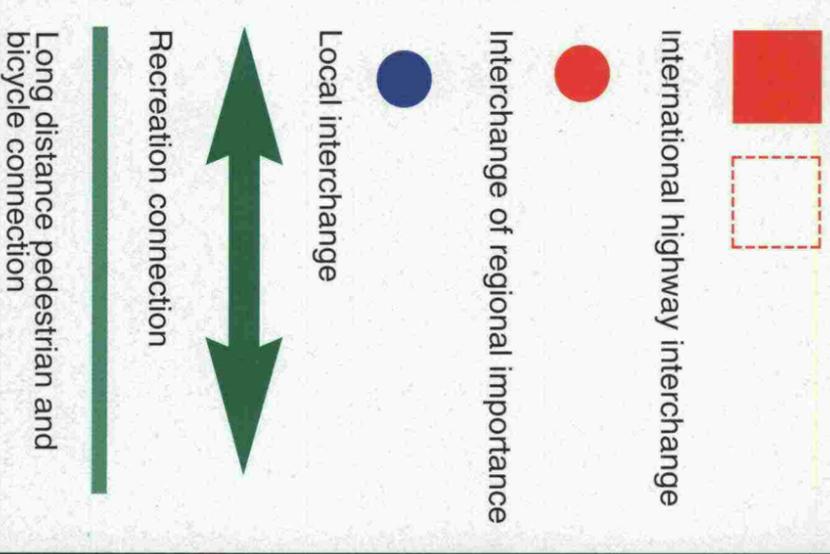
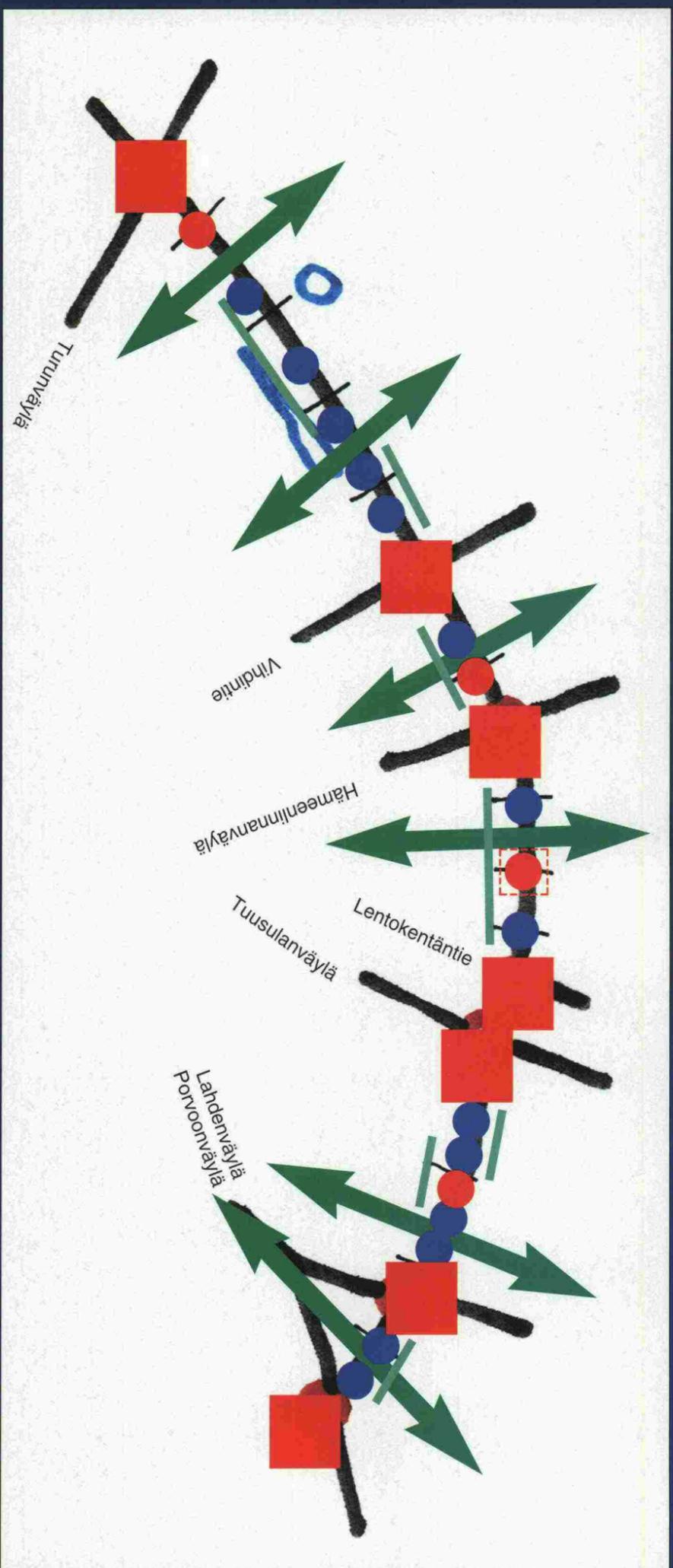
In the dark the Kehä III road milieu differs entirely from its daytime appearance. In the dark, altogether different features stand out from the environment while visually significant entities are obscure. Orientation in the dark is based on other factors than those pertaining in the light. In order to improve the orientation in the dark, it is vital to emphasise various elements that are visible in the dark, to emphasise outstanding local characteristics, and to decrease the visual noise caused by excessive lighting.

The most important factor for the night-time orientation is the lighting in the central reserve. The role of the central reserve in directing the traffic supporting the road alignment can be emphasised through the use

of a different colour of lighting. The lighting at interchanges often tends to be confusing. Lighting plays an important role in clarifying the space when improving the interchanges.

The power line poles, which dominate the scenery in the daytime, disappear in the dark. Only in Tikkurila the red signal lights on the poles create a separate, fascinating environmental work of art. Bridges are indiscernible in the dark: lighting could be used as a special effect to illuminate the gatelike bridges.

The role of interchanges as distinctive and orientating factors



The road serves different groups of vehicle traffic, users of public transport as well as pedestrians and cyclists. The different demands of these groups should be combined:

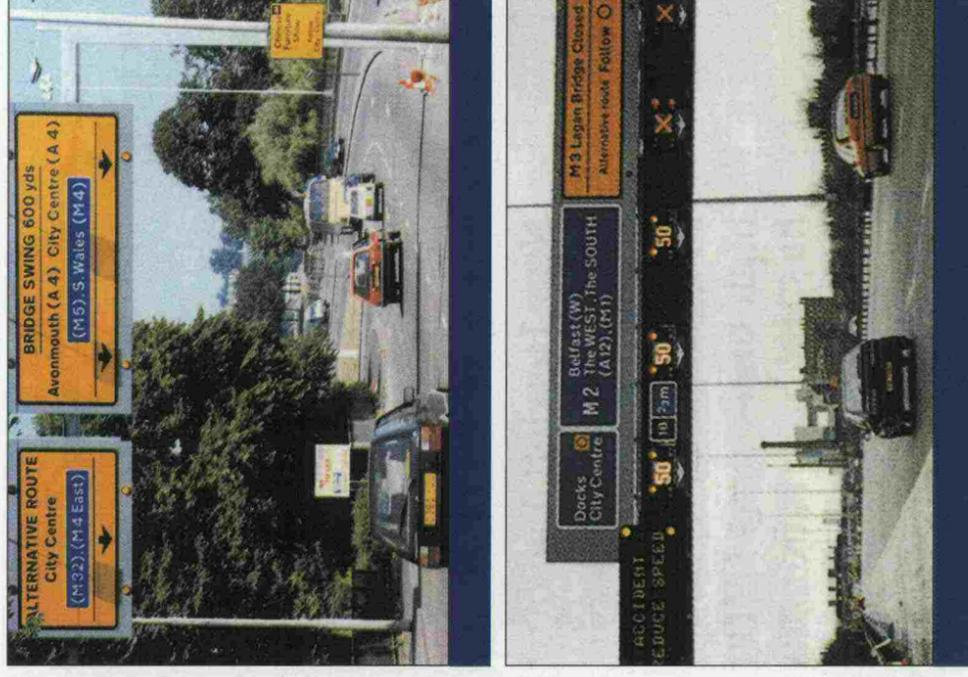
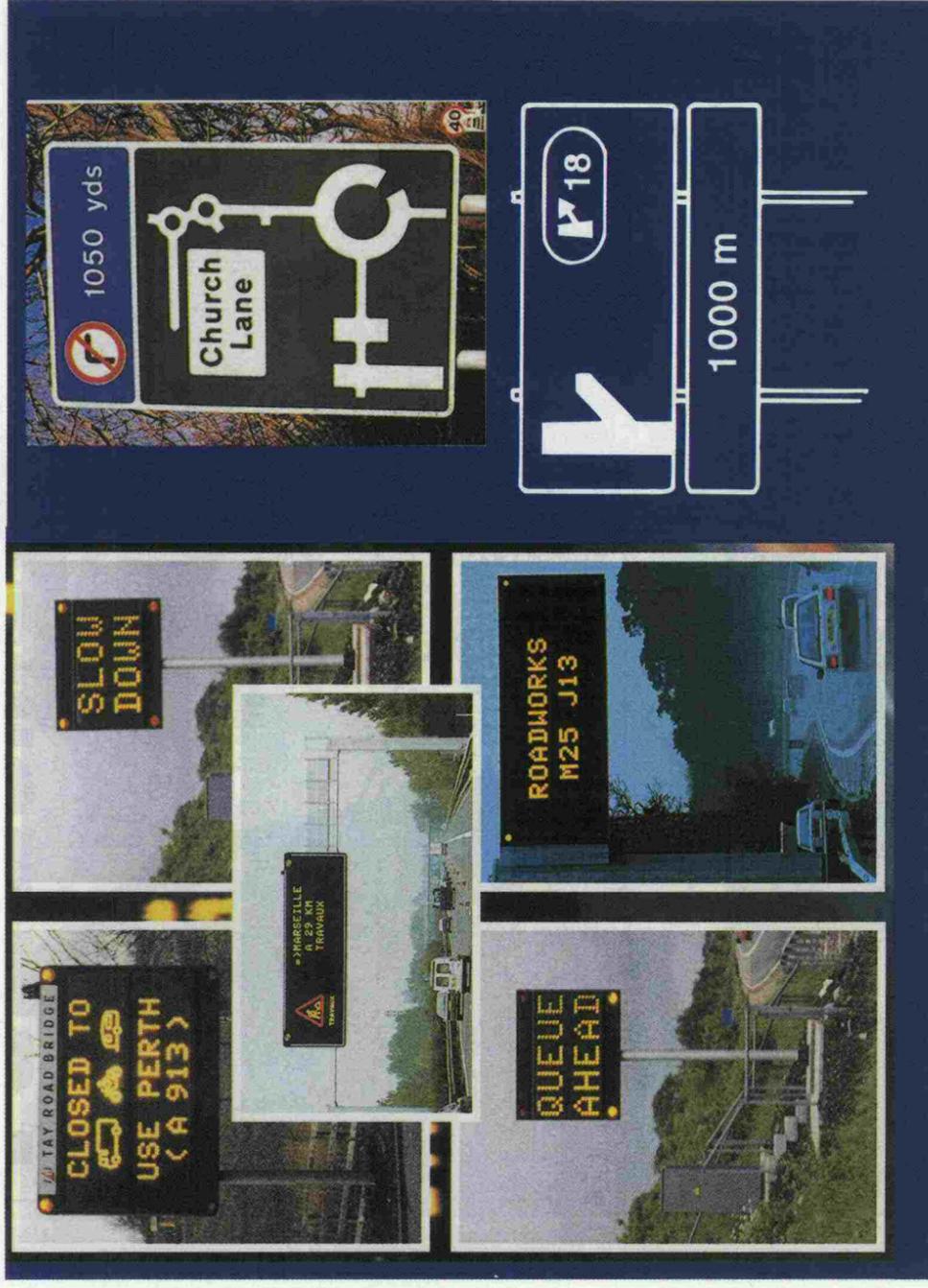
- with respect to international traffic, arterial road interchange and related directional guidance are important;
- since Kehä III is a main road in the Helsinki Metropolitan Area, the connections to local suburban centres and other important functional centres are vital;
- for local traffic (e.g. commuter traffic and freight transport) the connections to the minor street network are essential;

- for public transport users the appropriate location, good access and pleasant surroundings of bus stops are emphasised;
- there is a pedestrian and bicycle way alongside Kehä III that serves mainly cyclists.

In order to achieve distinctness with regard to all user groups, the interchanges should be divided into local interchanges and grade-separated main interchanges. Main interchanges are designed to be as clear and peaceful in appearance as possible, while maintaining their uniqueness in the townscape. The basic principle of the development work has been "uniform traffic engineering - distinctive townscape features". While local interchanges are not emphasized

in the townscape, certain recurrent elements are designed to help their use.

Traffic guidance is under continuous development on Kehä III



The traffic guidance system on Kehä III is of basic standard. As Kehä III develops as part of Road E18, the needs of new road users and functions require the system to be further developed to meet international standards. The high density of junctions constitutes a special problem on the middle segment of Kehä III since it creates distraction and visual noise, and therefore decreases the orientating effect of traffic guidance.

The western and eastern segments of Kehä III have recently improved also with regard to guidance, but on the middle segment, however, the goals of traffic guidance will have to meet the requirements of the route. Some standards have already been set. Traffic

guidance will be restricted to overhead signs only.

It will be necessary to increasingly simplify the traffic guidance fixtures in the future. This can be achieved through the following measures:

- numbering of the grade-separated interchanges;
- variable message signs;
- application of international symbols;
- design of construction for overhead signs;
- more legible layout;
- clarification of typography;

● improvement of colour contrasts;

- highlighting the signs on Kehä III to the national main roads crossing it (type A interchanges) in relation to the signs in local interchanges (type B interchanges);

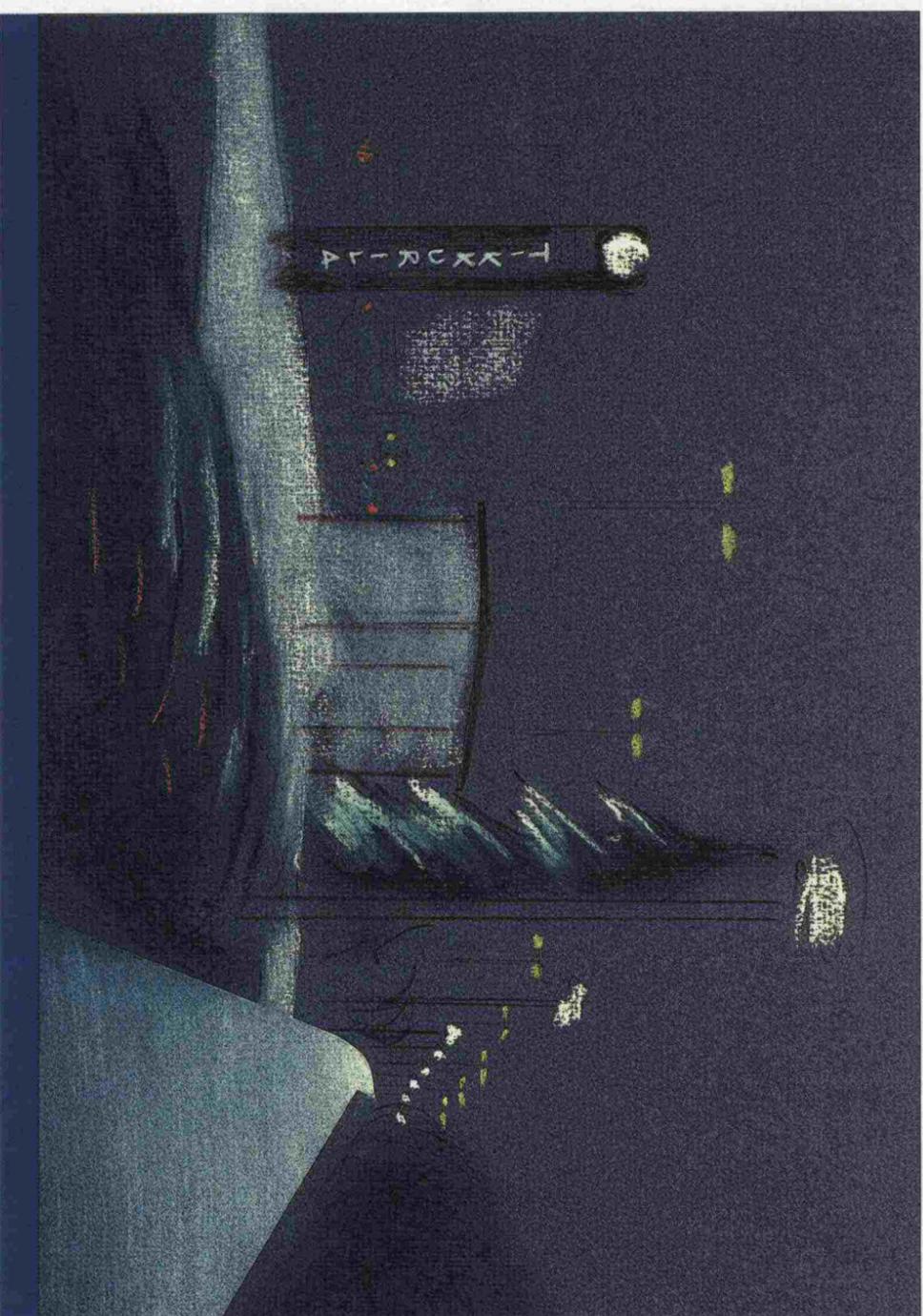
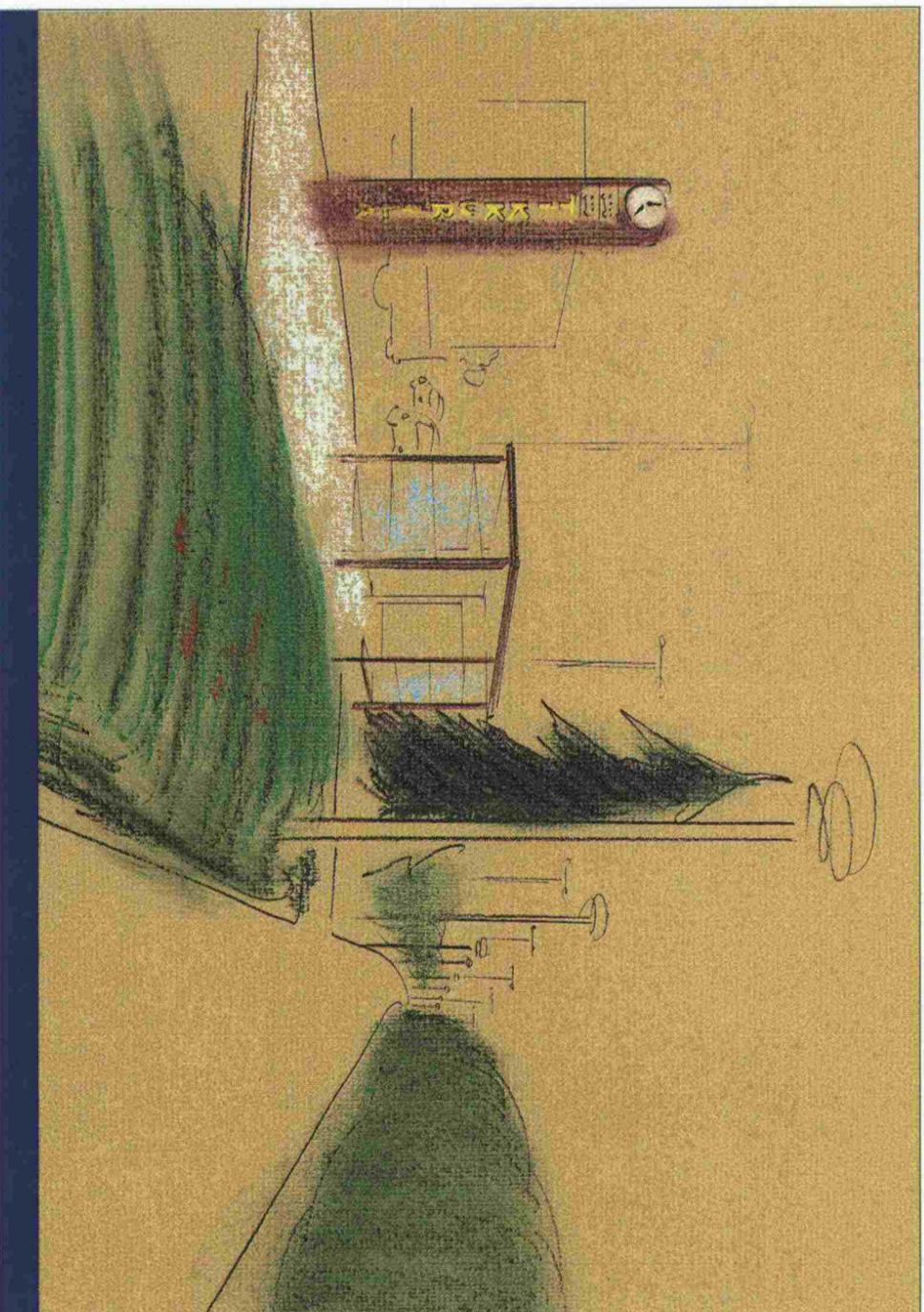
- use of light with the aid of modern technology;
- avoiding multilingualism.

One alternative for further enhancing the orientation could be a diagrammatic map from which the road user could get the overall picture of Kehä III. This kind of map can be difficult to observe when passing by, but could be helpful for instance at rest areas or as an overview map in different announcements.

To support traffic guidance, other guiding elements are also being developed to clarify recurrent points, such as exit ramps. One essential element could be the utilisation of lighting.

Traffic guidance fixtures provide the road a distinctive character, and therefore their aesthetic quality is of utmost importance throughout Road E18.

A user-friendly bus stop network as part of the public image of Kehä III

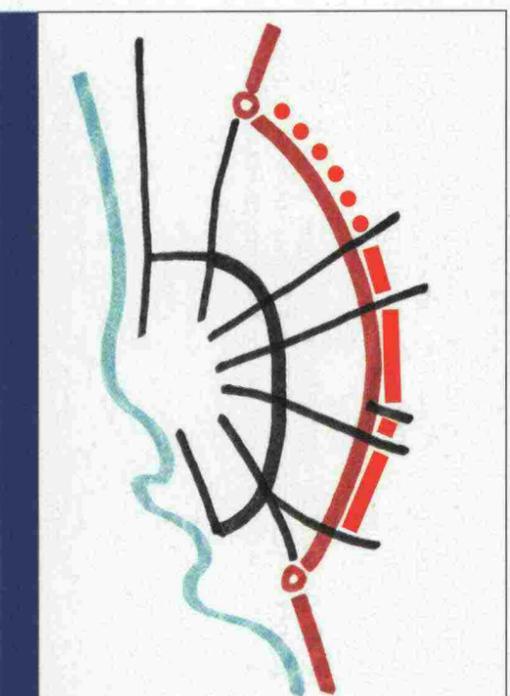


As a rule, bus stops tend to be unpleasant, unsafe and susceptible to hazards and disturbances caused by traffic. Public transport also has a very low profile on Kehä III, which otherwise provides good level of service. It is recommended that a distinctive, visible and well-equipped, user-friendly bus stop network will be developed on Kehä III.

The bus stops should be visible from far. They can be easily identified through a bus stop sign of distinctive colour, a clock and the name of the bus stop - which all are typical public transport symbols. The stops are to be well illuminated, as are the pedestrian routes leading to the street network. Gradual increase of lighting when approaching the bus stop will help the bus driver to

observe the passengers waiting at the bus stop. Where lighting is increased on the main road, the length of adjustment period to the light is related to the driving speed. Basic bus stop equipment should include good protection from the road, transparency of the shelter element, tidiness and adequate information on bus services as well as on the surrounding area.

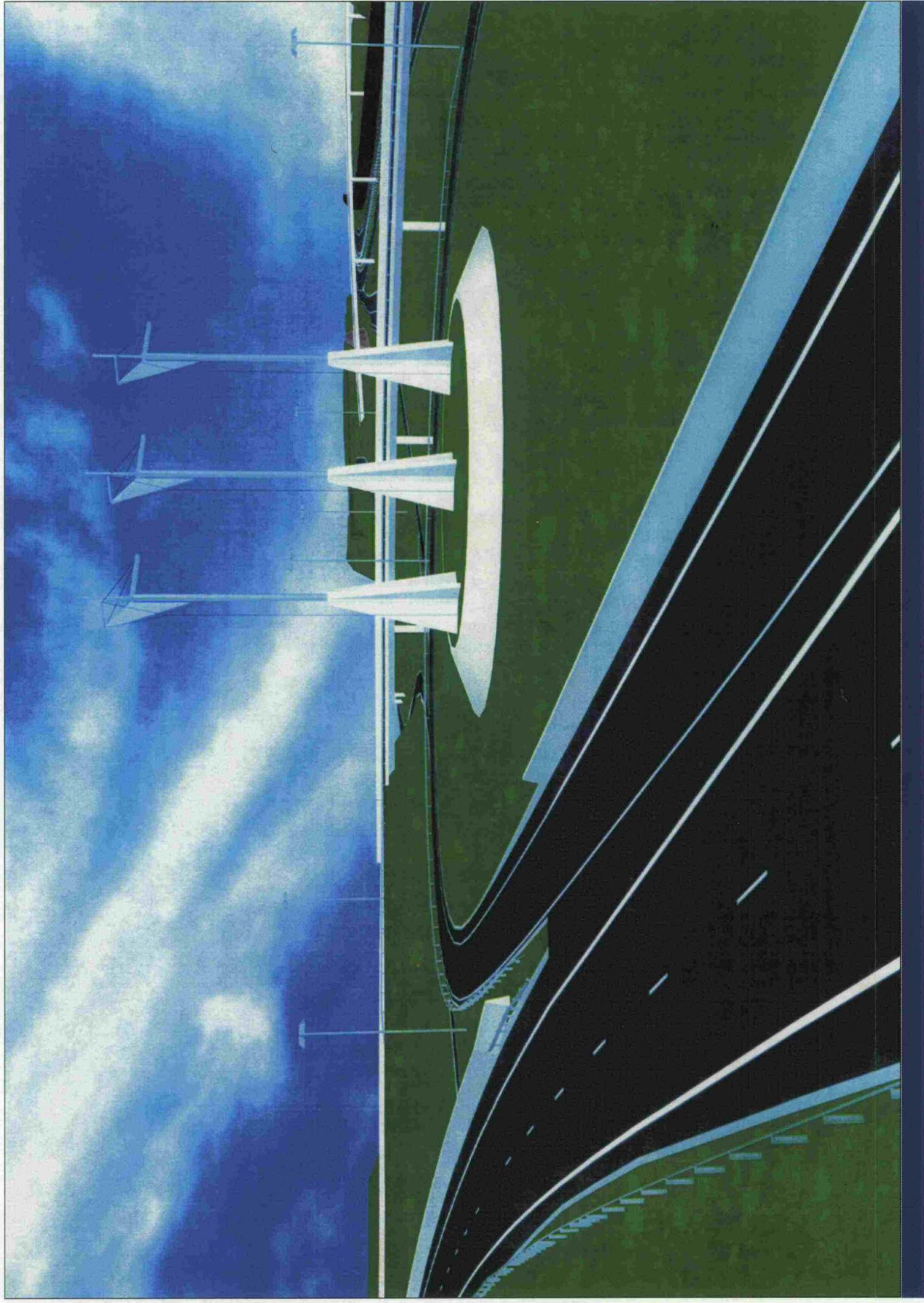
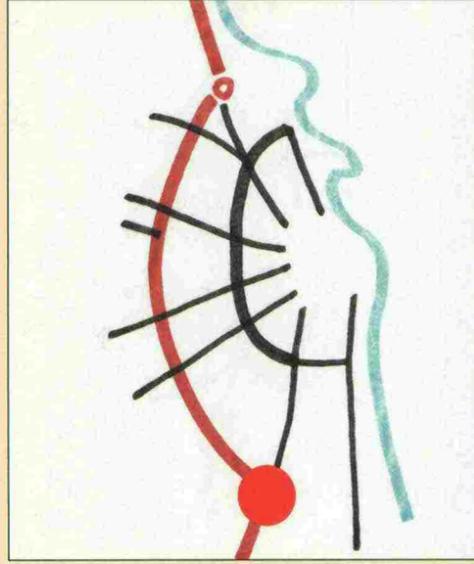
The identification of the actual bus stop is easier if there is a special tree or other landmark of human scale.



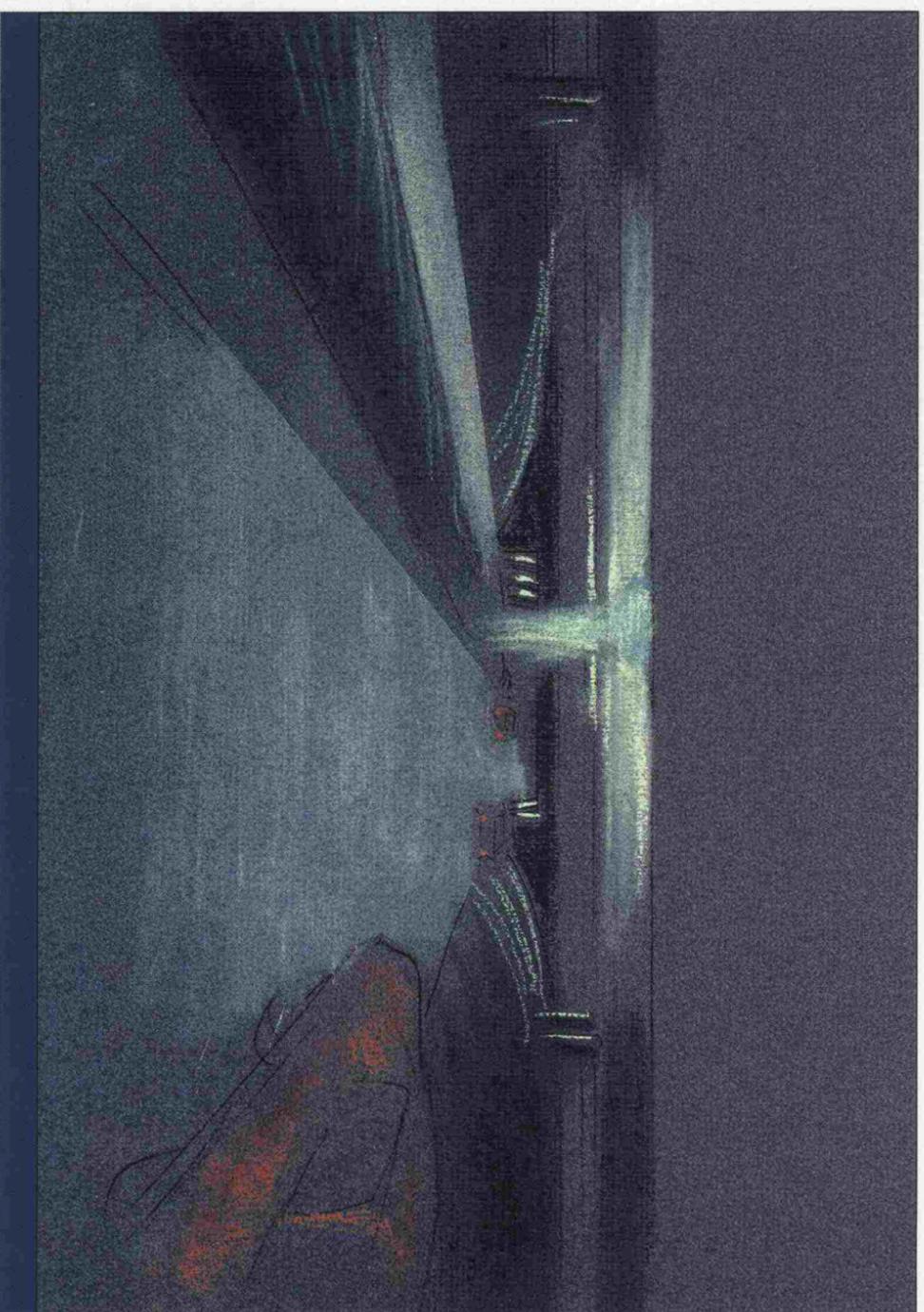
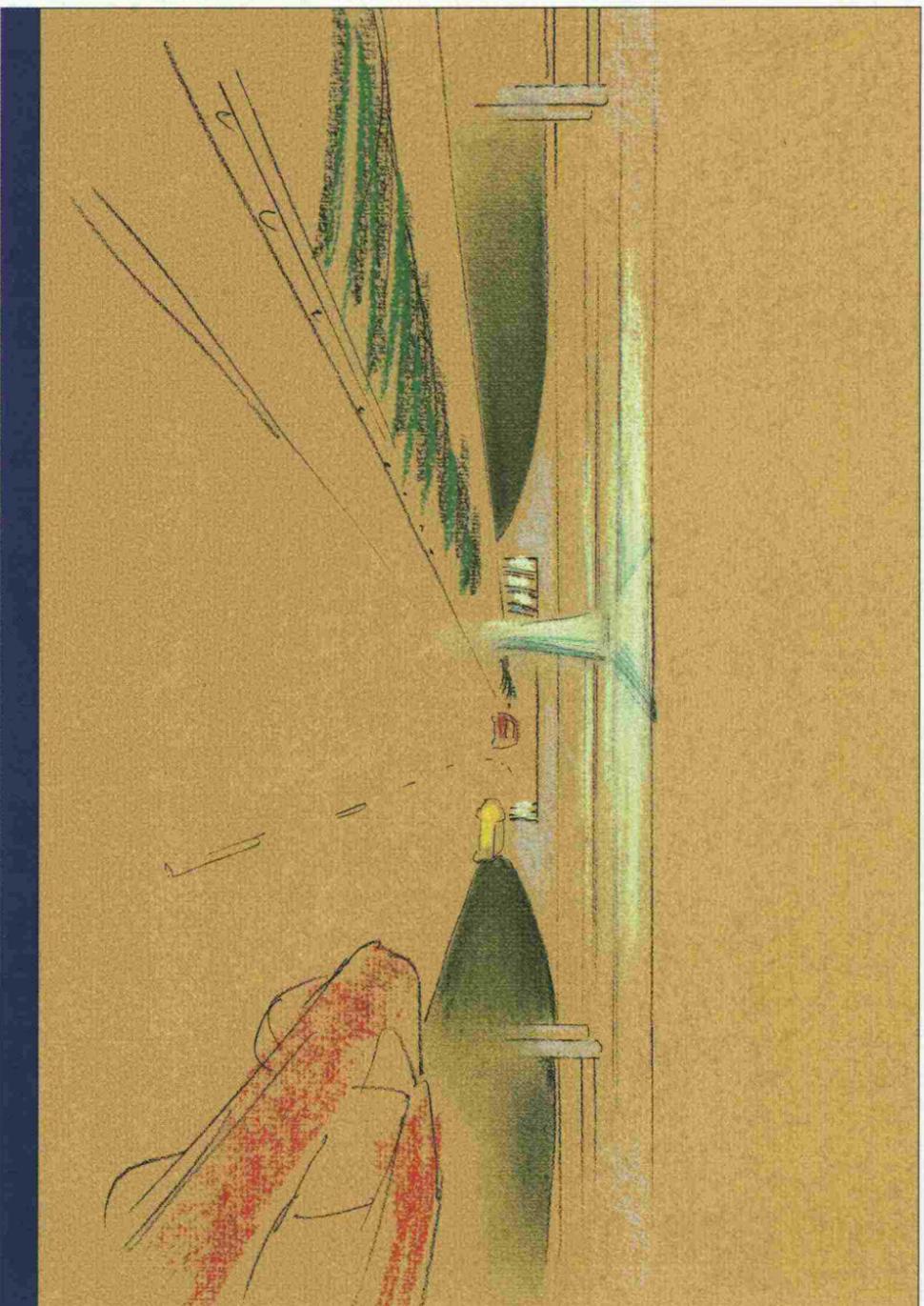
The future view of the road milieu on the segment of Road E18 in the Helsinki Metropolitan Area of Finland

Approaching the Helsinki Metropolitan Area from Road E18

When approaching the Helsinki Metropolitan Area along Road E18 from the west, the most focal point is the Espoo Interchange between Turunväylä motorway and Kehä III. At this point the driver selects whether to continue eastward or enter the Helsinki Metropolitan Area. These interchanges for inbound traffic on Road E18 are so significant nodes that they should have a name, and bear a unique and prominent image. At the western node, the landmark is a pioneering product of Finnish design, a colonnade of three powerline poles.

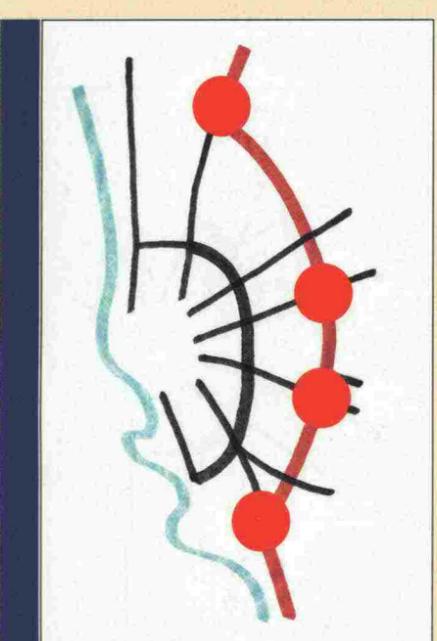


Ramp bridges as gateways to the Helsinki Metropolitan Area

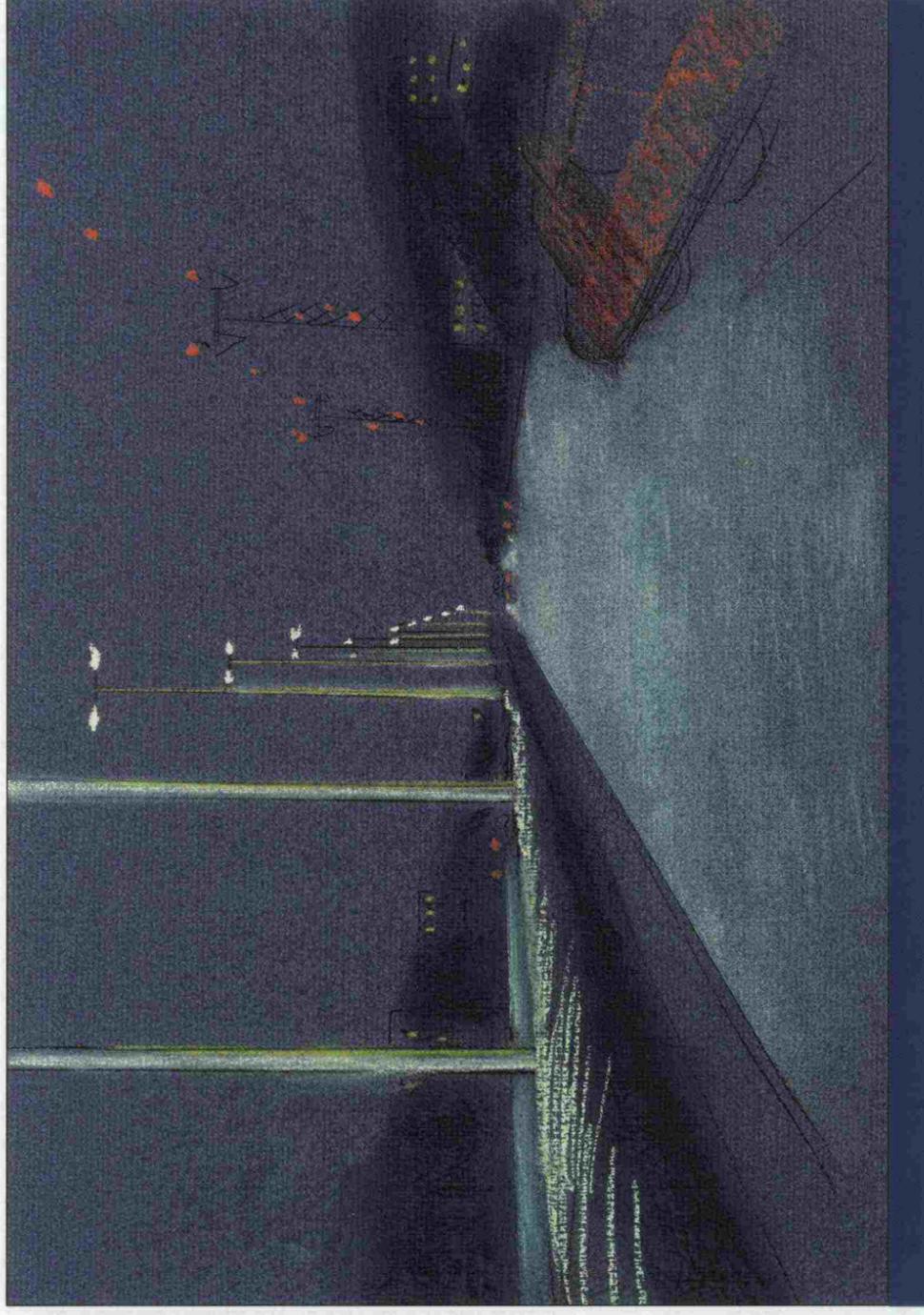
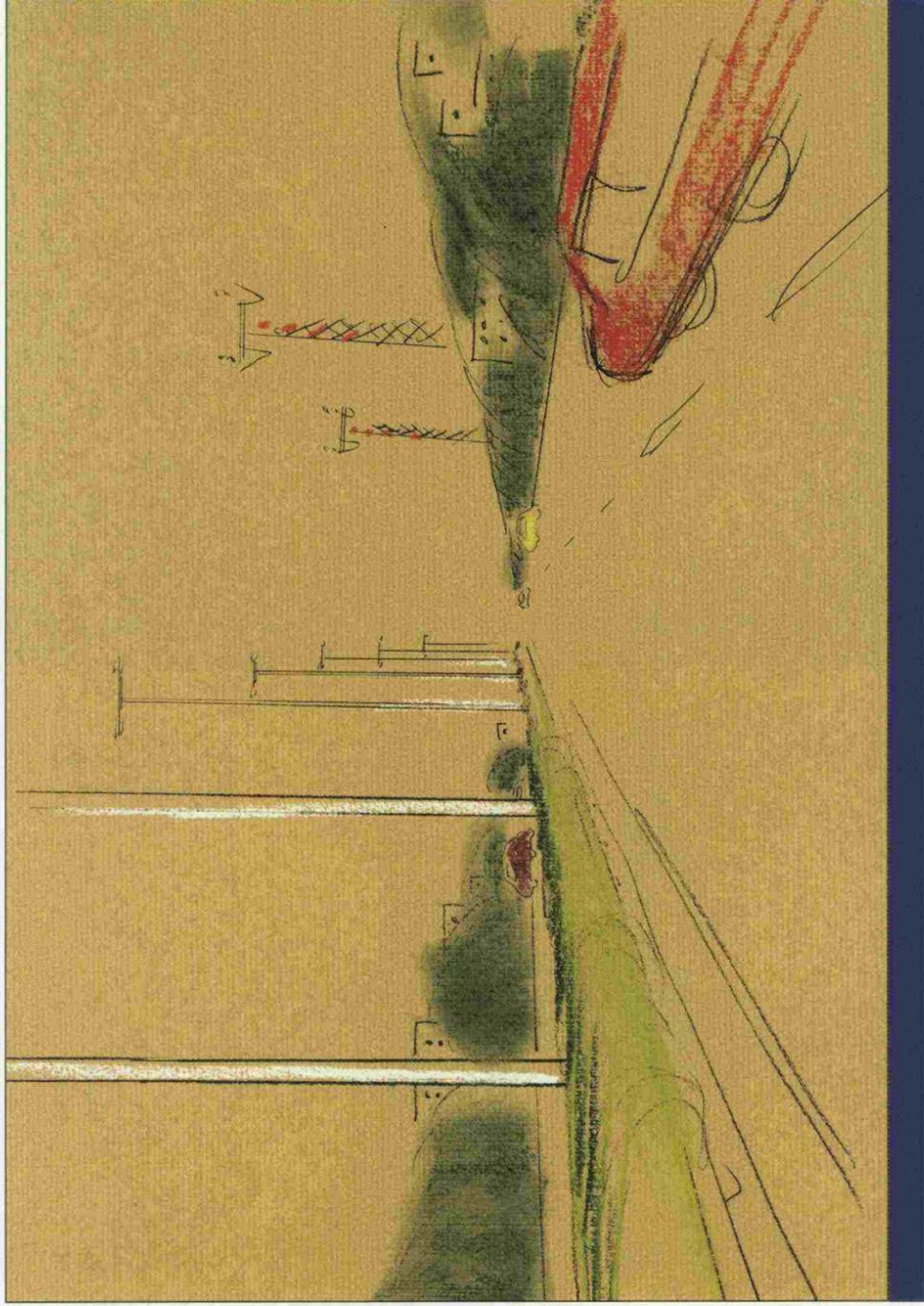


The large grade-separated interchanges used by long distance traffic are characterised by recurring, long and gracefully arching bridges. The architectural form of these bridges emphasises the portal design and identity of the interchanges. The bridge design aims at outstanding uniqueness, while maintaining simplicity and paying respect to the logic of the bridge structure. Each bridge has its own colour that highlights the individuality of the gateway. Although the uniqueness of the site is emphasised, aesthetically coherent appearance will still be maintained in all of the interchanges.

Skilfully illuminated, the bridge takes on a new appearance in the dark.



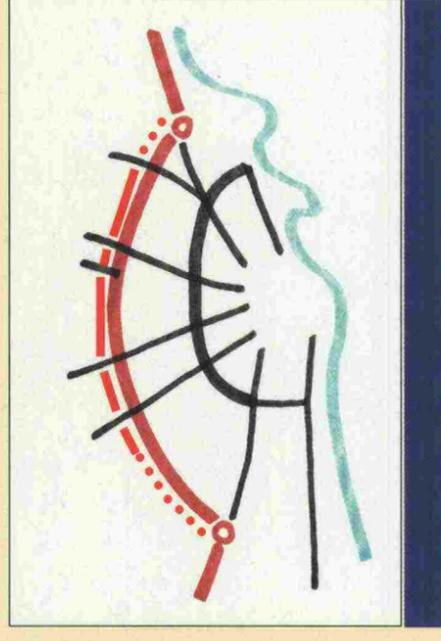
The orientation of central reserve



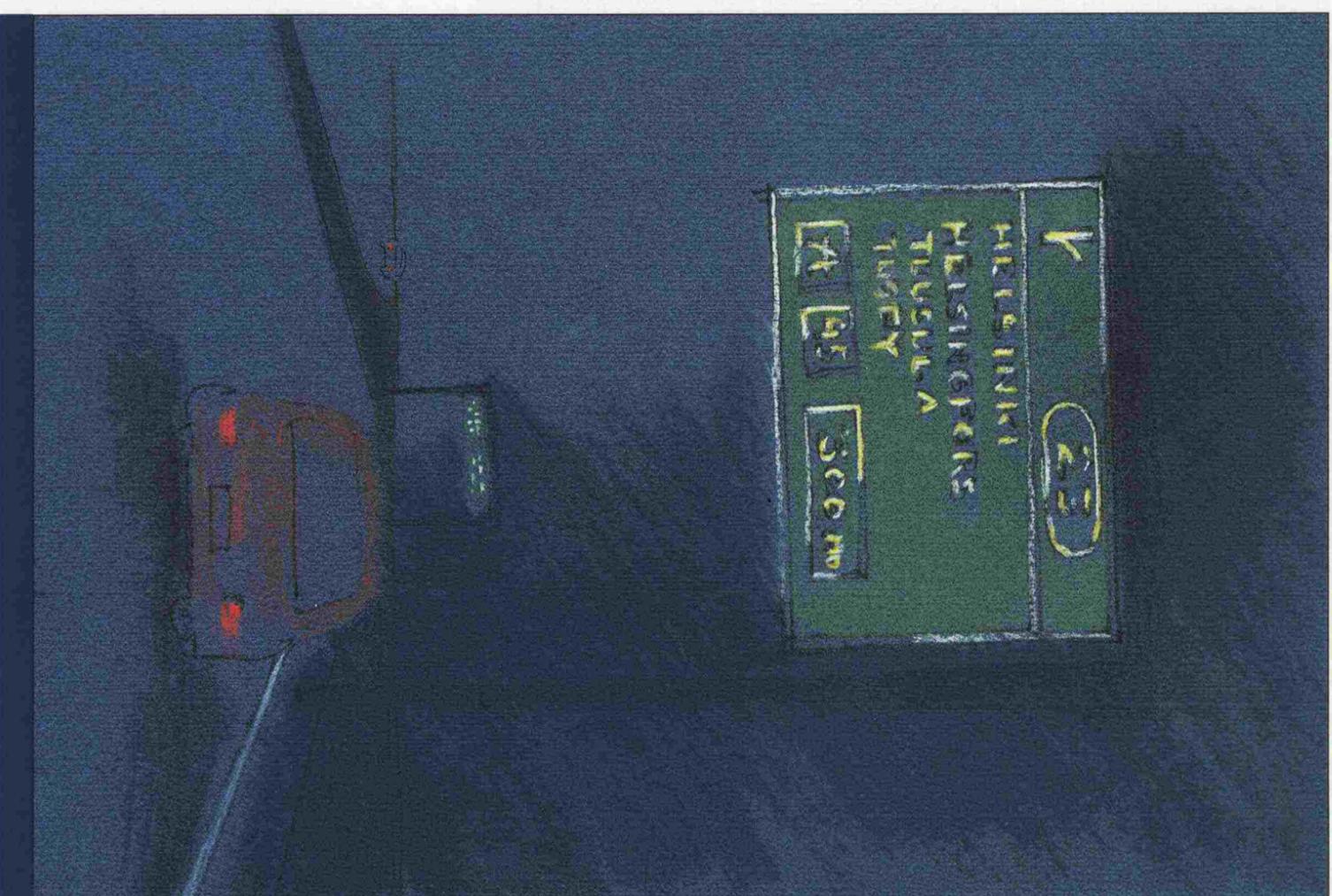
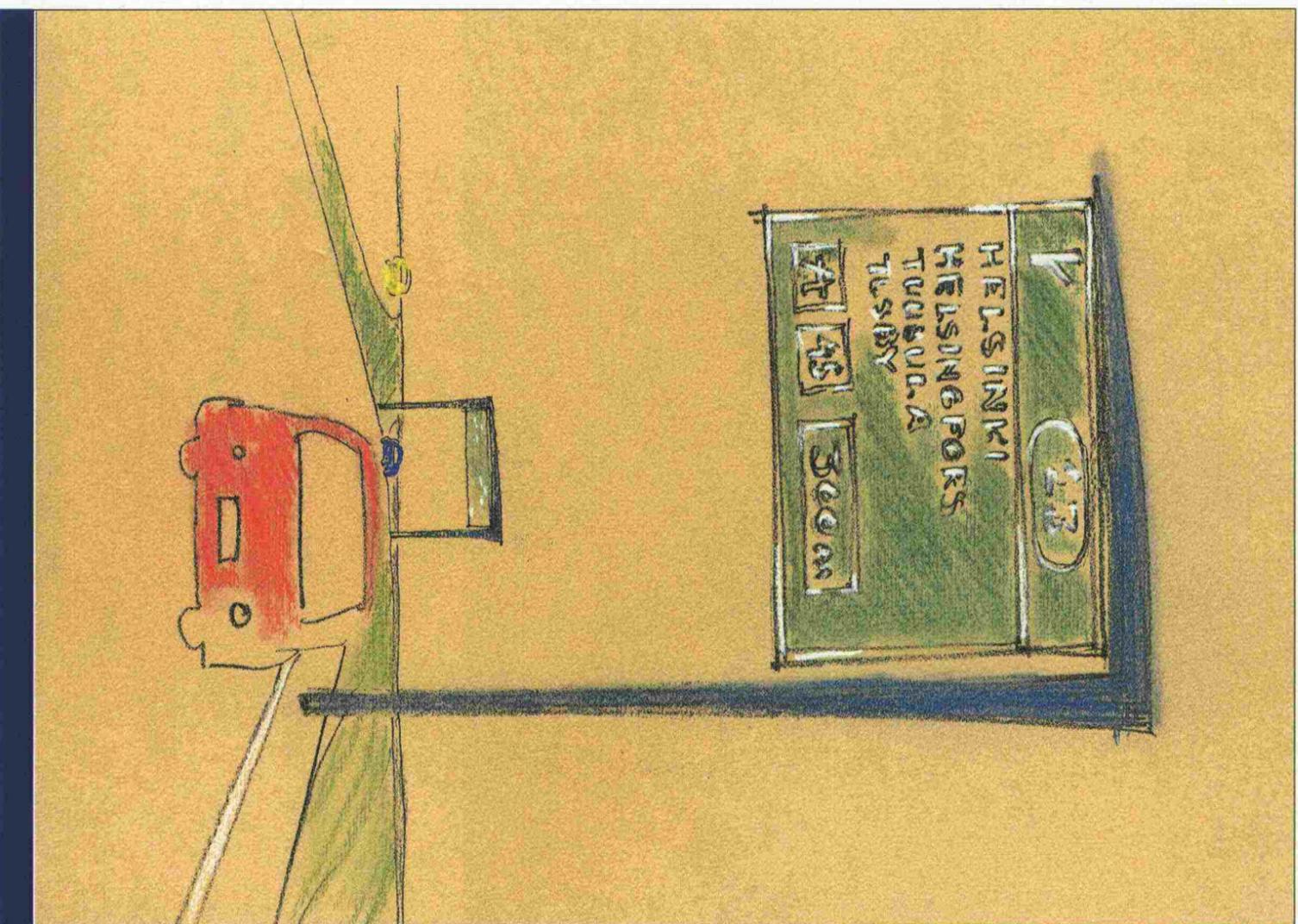
Kehä III stands out visually from its surroundings. Therefore, the central reserve has a special role as the backbone of the road, emphasising its continuity and orientation. The central reserve is lined with a string of lighting columns which act as a strongly orientating element both in the light and in the dark. The rails along the central reserve also contribute to the orientation effect.

The fixtures of central reserve creates cohesion for the road from end to end. The western and eastern segments of Kehä III have recently been renewed, and their fixtures will serve adequately for decades. These segments are mostly situated in open cultural landscape, which calls for the modest appearance of

road fixtures. In the middle segment from the grade-separated interchange of Hämeenkyliä to the Tikkurila interchange, the image of the central reserve as a kind of town wall is highlighted with tall lighting columns, the sophisticated design of the rails, and low bush arrangements, which all reflect the urban architecture.



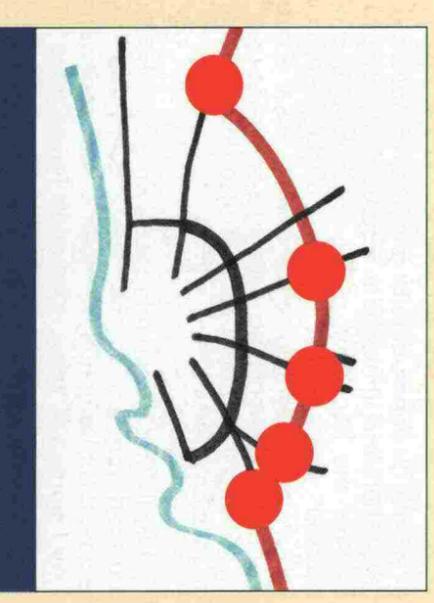
Approaching the exit ramp



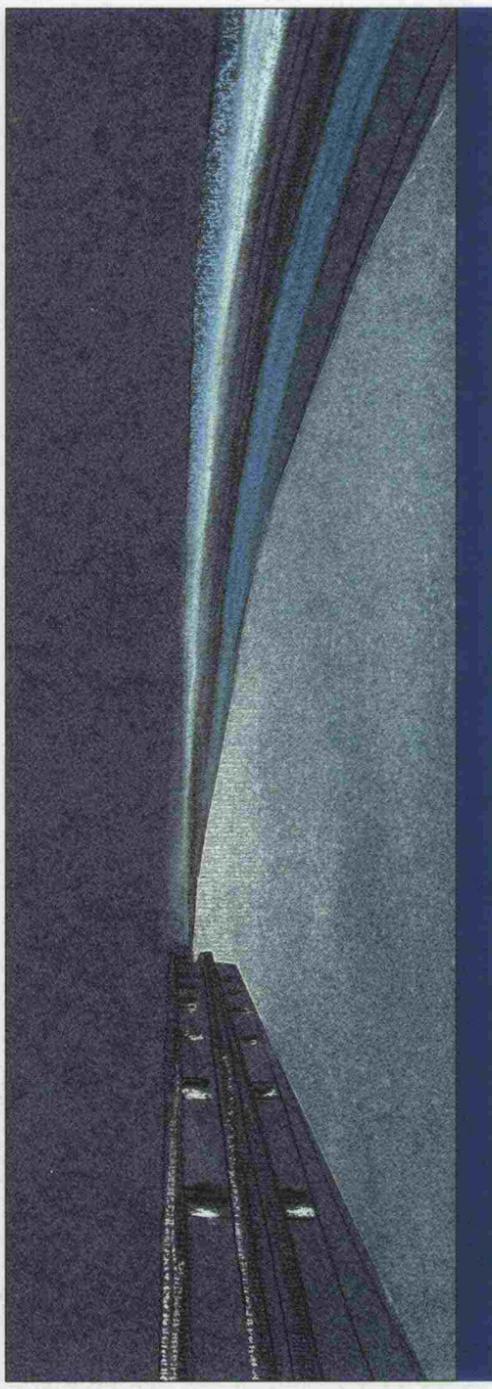
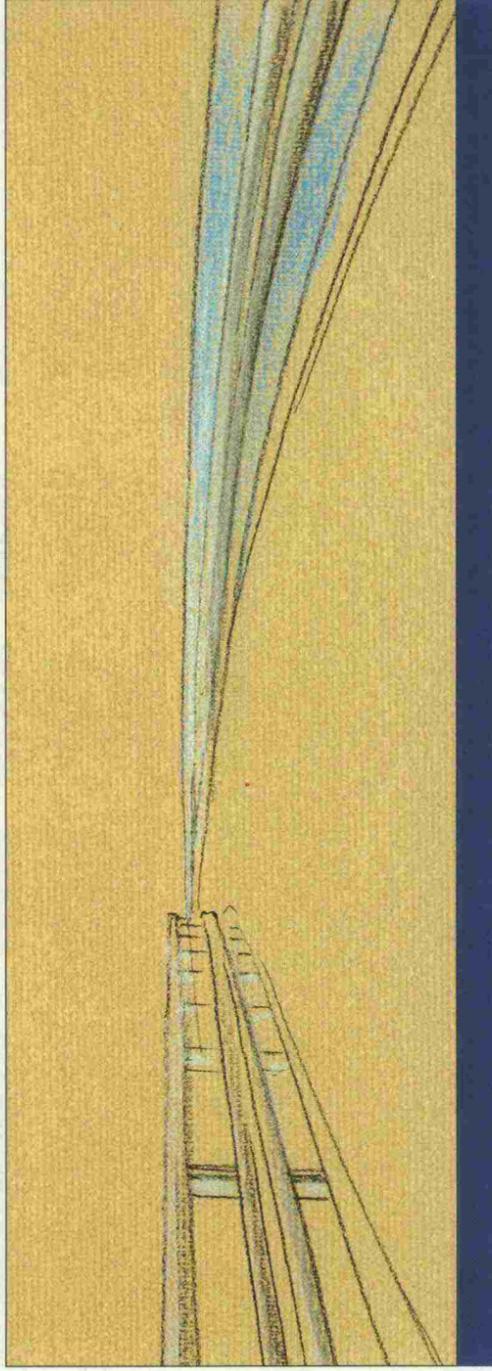
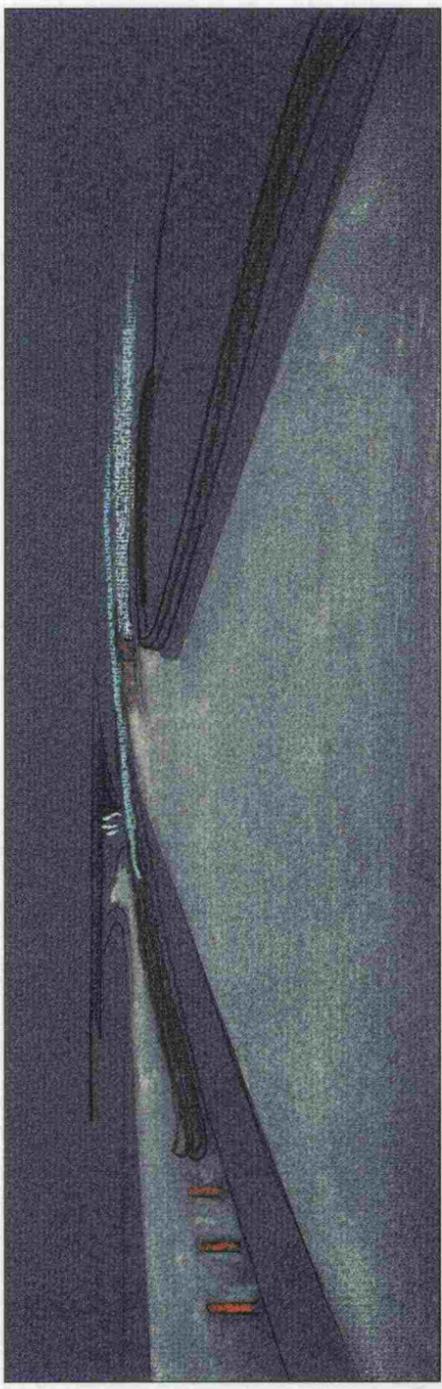
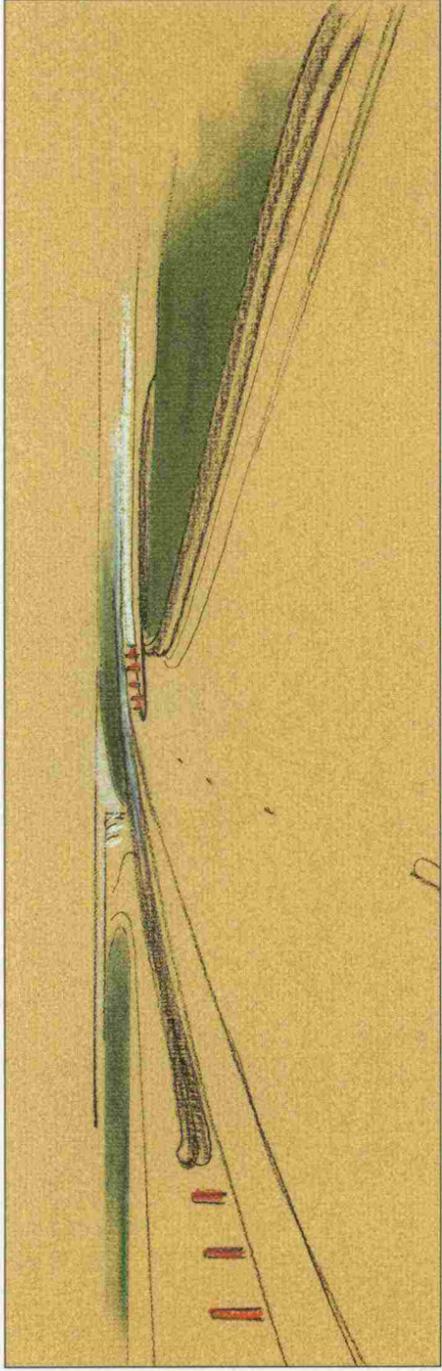
The traffic to different destinations in the Helsinki Metropolitan Area is directed through the grade-separated interchanges. The local interchanges direct local traffic to nearer destinations, and the driver is expected to know the route by following the ordinary route signs.

The most essential points for route signing are the exit ramps when approaching a grade-separated interchange, and when choosing the route as they divert. The important exit ramps are always marked with similar, recurring overhead signs, which are larger than usual signs, semiotically and technically modern, and coherent in design. Well illuminated in the dark, the sign can be distinguished more clearly, while the structure remains invisible.

When developing the route signing and image of Road E18, it is necessary to further define the special role of Kehä III as the segment of Road E18 in the Helsinki Metropolitan Area, which can be indicated, for example, through unique overhead sign design. Product development could also take place in co-operation with the European Union.



Enhancing the visibility and the orientational character of the exit ramp

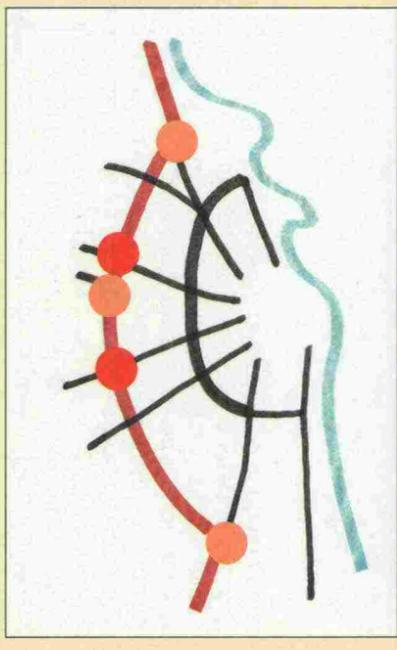


Route signing alone cannot guarantee the adequate visibility of the exit ramp. The road environment should also signal the change with other themes which should always be repeated unchanged in order for their orientation effect to operate unconsciously.

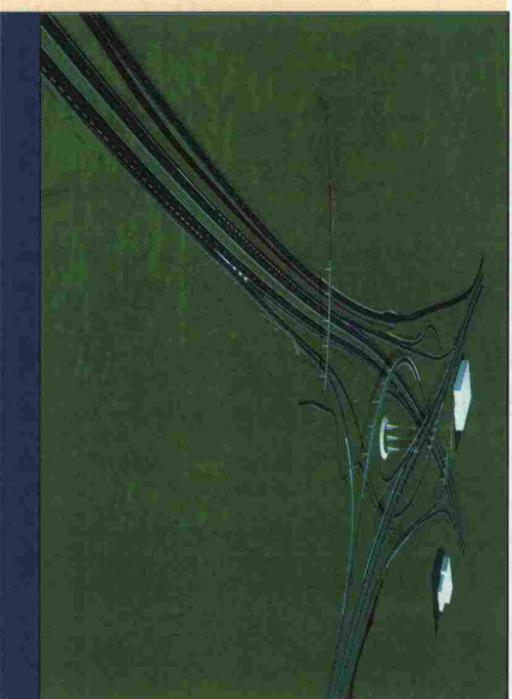
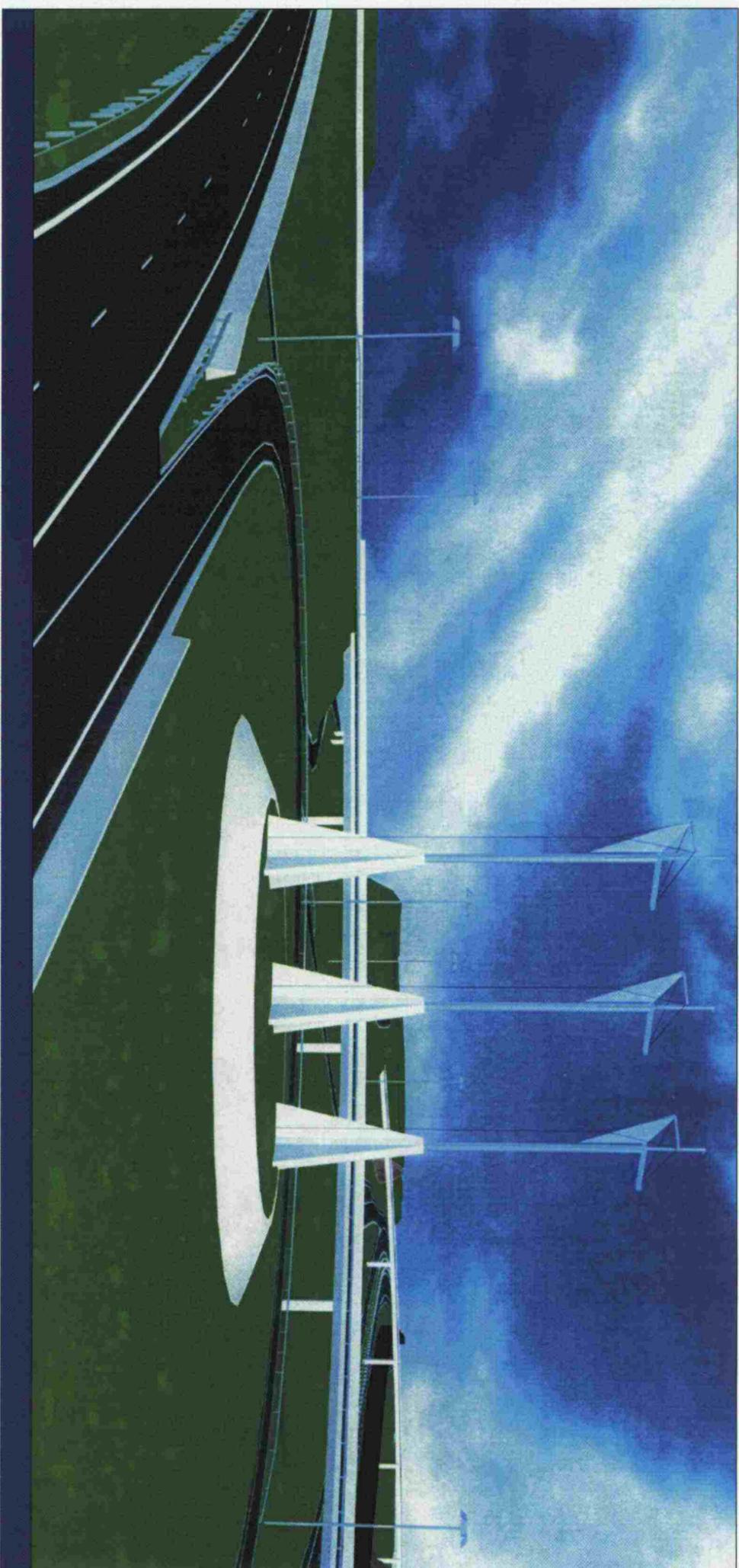
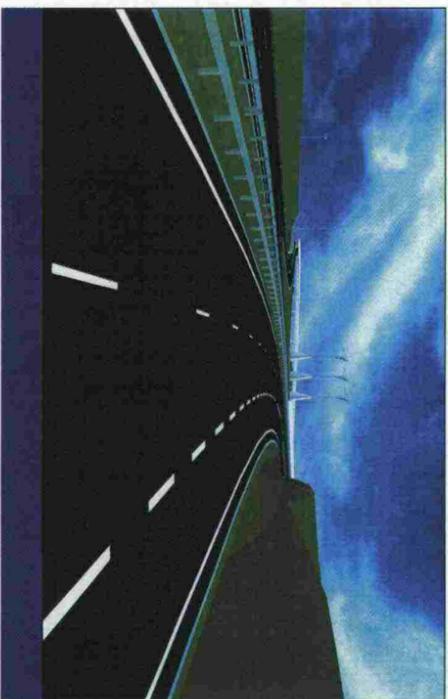
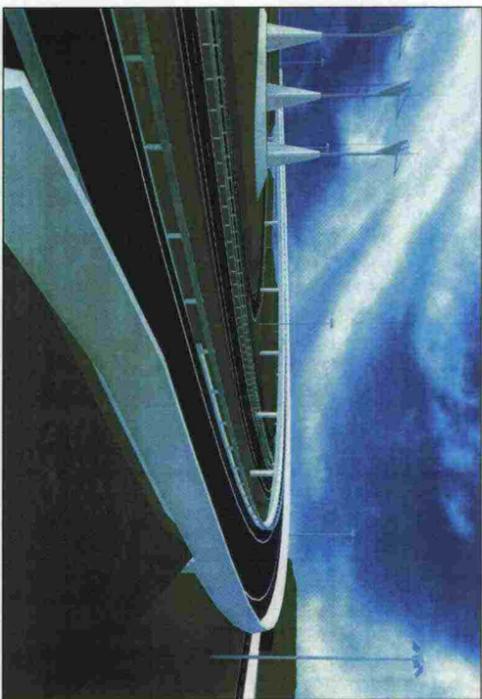
The visibility of the exit ramp can be improved by furnishing the point of exit with sign posts or some other eye-catchers. Lighting is a crucial factor when marking the exit ramps; light and colour can also be used to emphasise left and right turning lanes on the curving ramps. The sign posts should give in when hit by a vehicle and thus enhance traffic safety.

Emphasising the orientation effect of the ramp

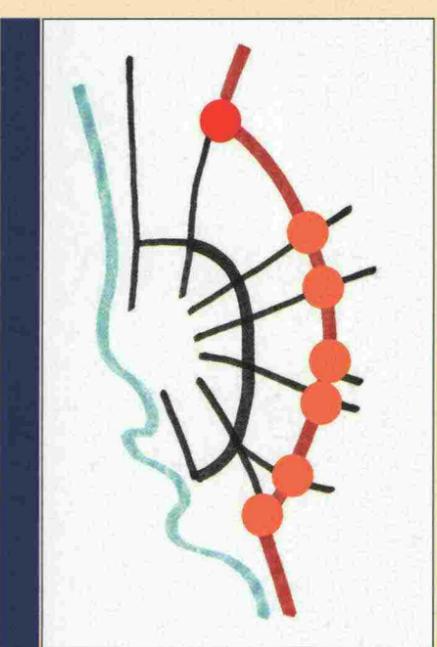
In the grade-separated interchanges, long curving ramps lining the open space of the interchange repeat the pattern from one interchange to another. The ramp construction usually requires concrete rails to improve noise reduction. The orientation effect of the ramp can be emphasised with the long and curving line of the collision rail and the string of lighting. Implementation of the solution requires co-operation in product development by the designer, the rail manufacturer and the lighting expert.



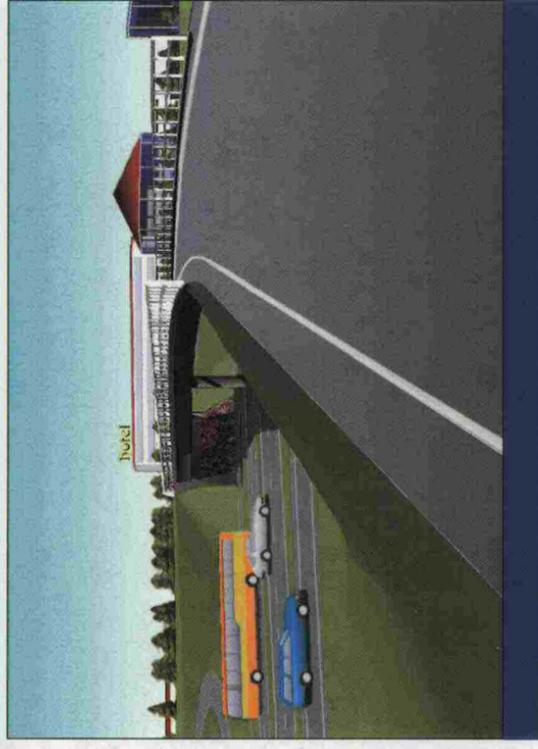
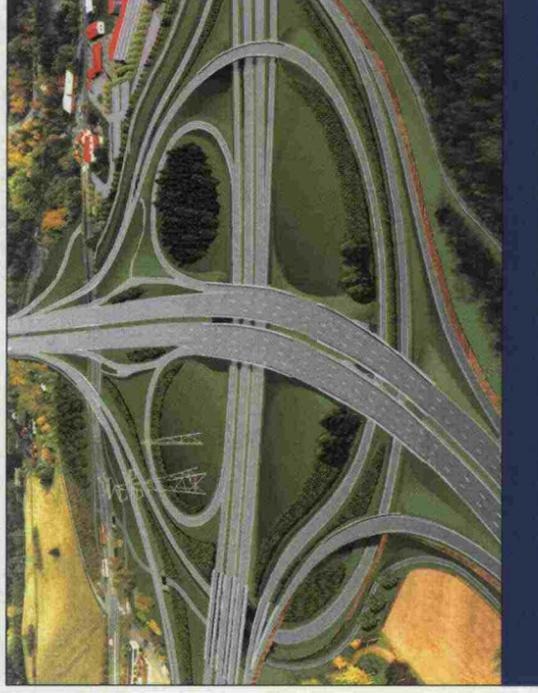
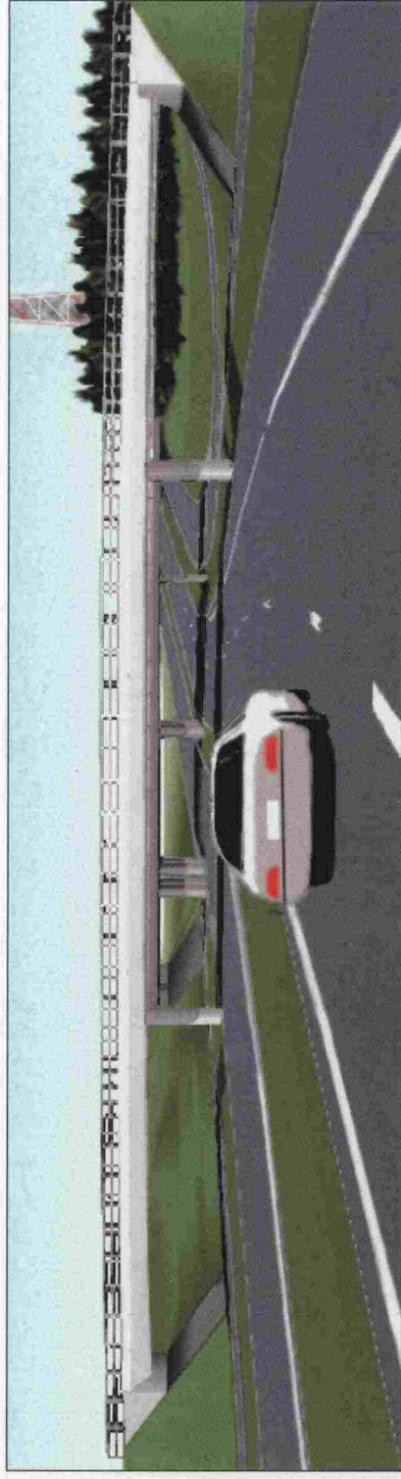
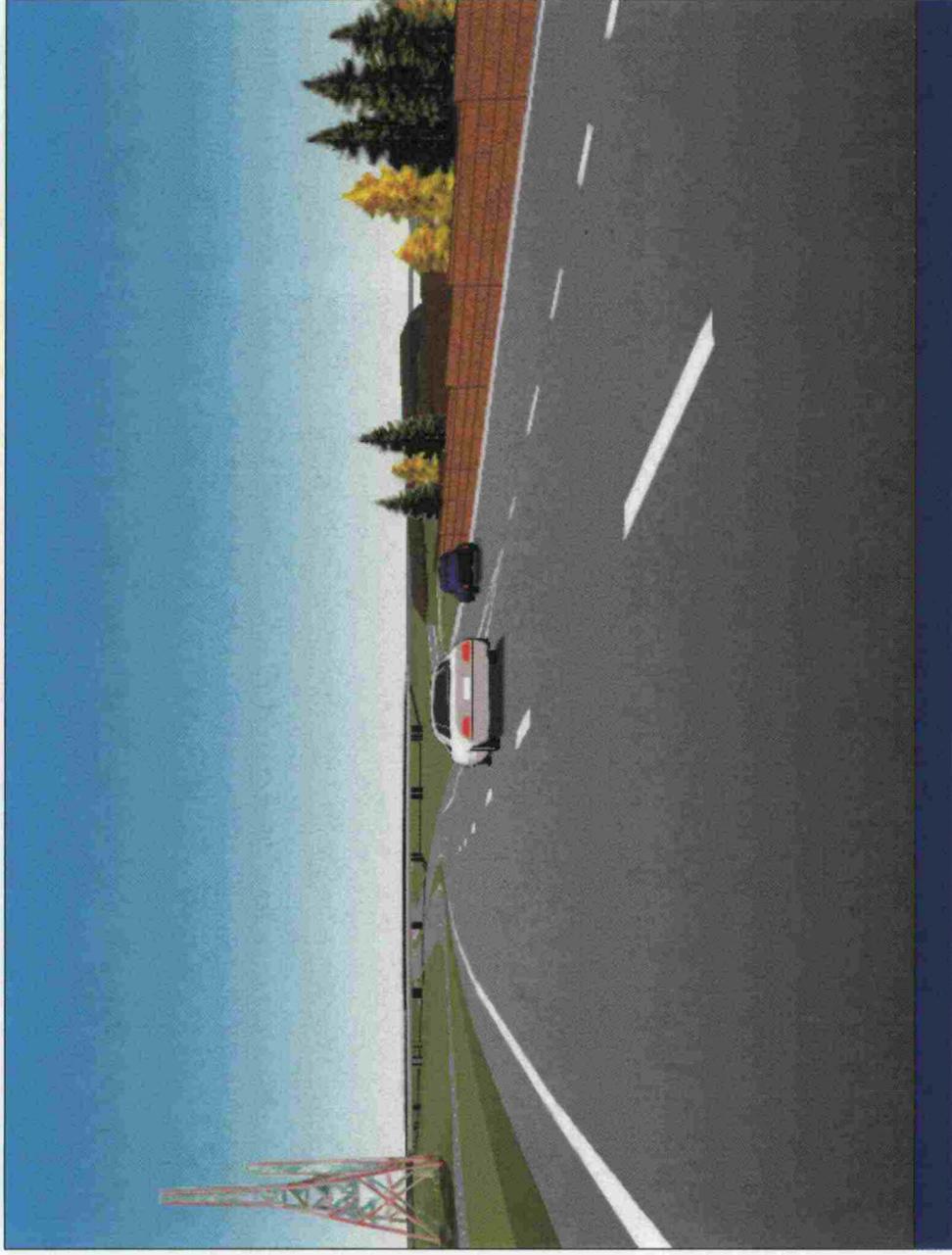
GRADE-SEPARATED INTERCHANGES ● Turunväylä – Kehä III Interchange



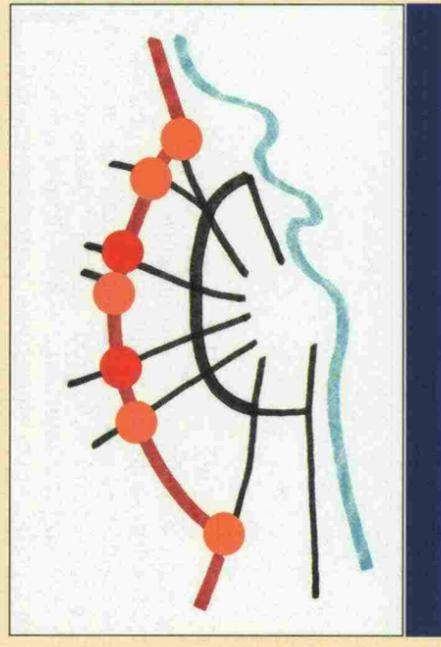
The Espoo Interchange between Turunväylä and Kehä III is one of the most important interchanges on Road E18. It has been improved following the same guidelines as the other renewed grade-separated interchanges on Kehä III. The curving ramps confine the open space highlighted by the designed power line poles which dominate the view from all directions. Unique architectural features can be seen in the soft, long lines of both the ramp rails and the confining noise barriers.



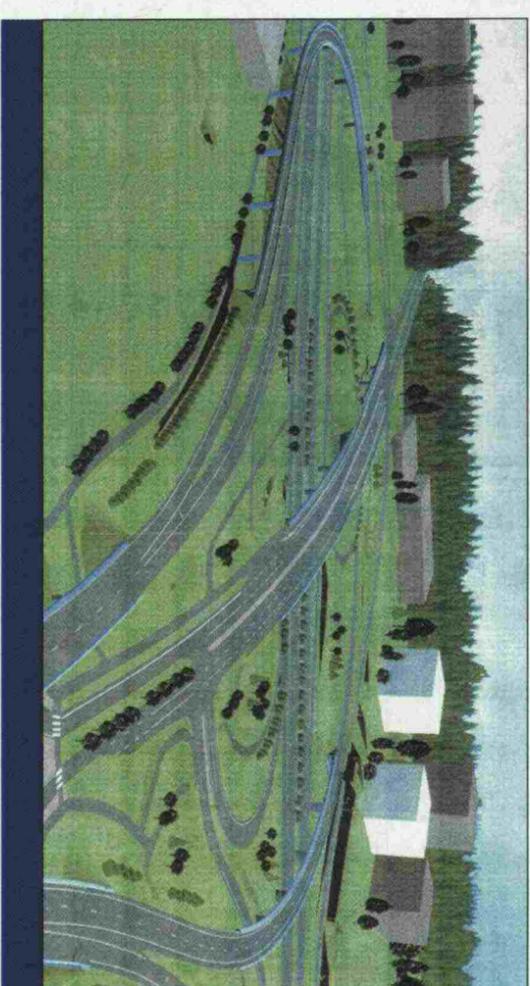
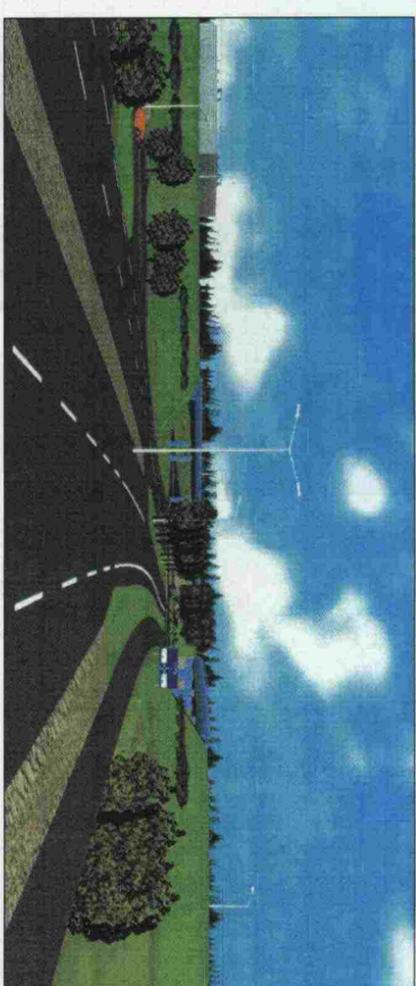
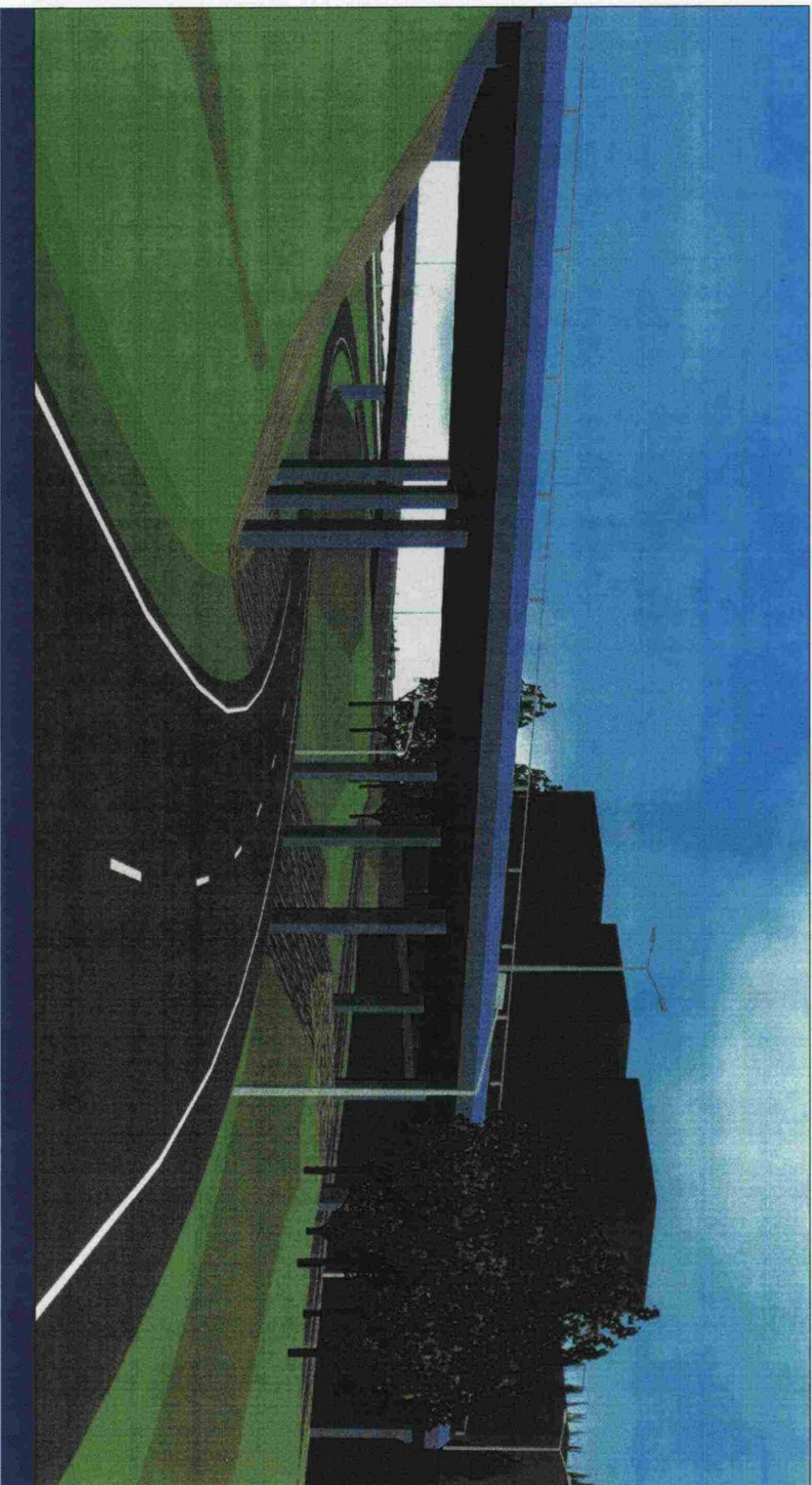
GRADE-SEPARATED INTERCHANGES ● Hämeenlinnanväylä and Tuusulanväylä interchanges on Kehä III



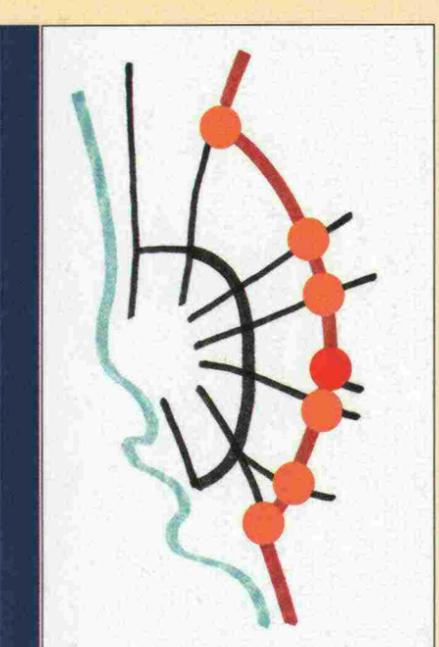
The Vantaankoski Interchange between Hämeenlinnanväylä and Kehä III, and Kirkonkylä Interchange between Tuusulanväylä and Kehä III, currently under improvement, are grade-separated interchanges of very similar character: they are open spaces confined by long, curving ramps. Every interchange bears its own individual mark, even though the structural solutions are identical. Unique details are deliberately situated in the open space to help the road user to observe the space as an entity.



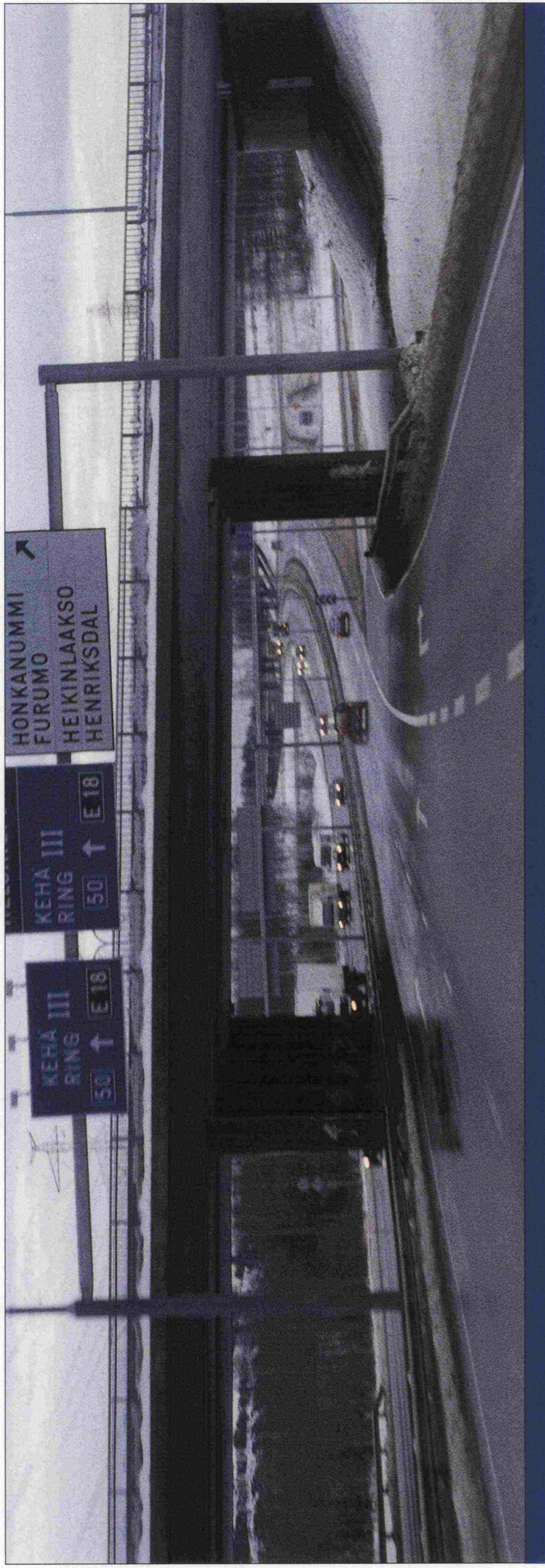
GRADE-SEPARATED INTERCHANGES ● Airport Interchange



The grade-separated interchange to the airport is in principle similar to the other interchanges under improvement, but its confining ramps act as gateways for the traffic on Kehä III. This way it captures the attention on Kehä III, and is therefore a perfect landmark for the airport. Blue bridges are special characteristic of the interchange.

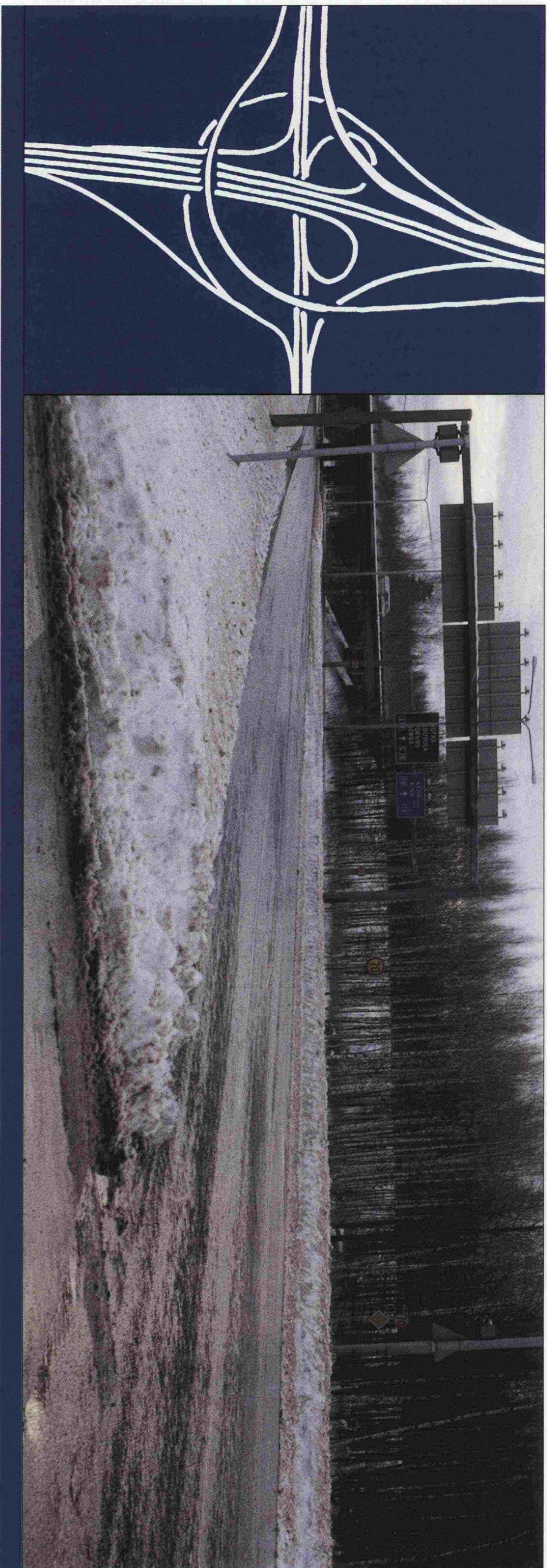


GRADE-SEPARATED INTERCHANGES ● Lahdenväylä interchange on Kehä III

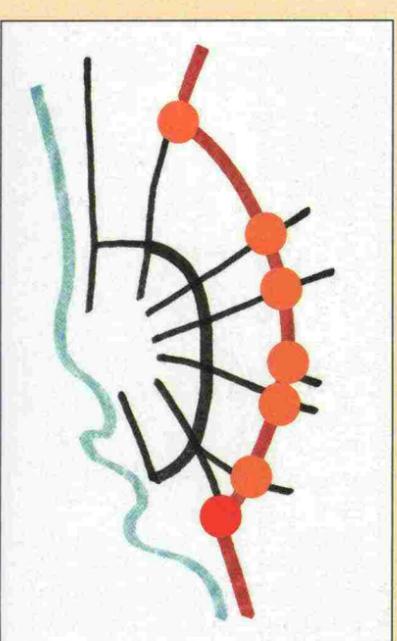


The Vaarala Interchange between Lahdenväylä and Kehä III is rather old, and there are no plans for improving it in the near future. However, the interchange is confusing in orientation, so the improvement of it is recommended, for example, by the use of landscape management.

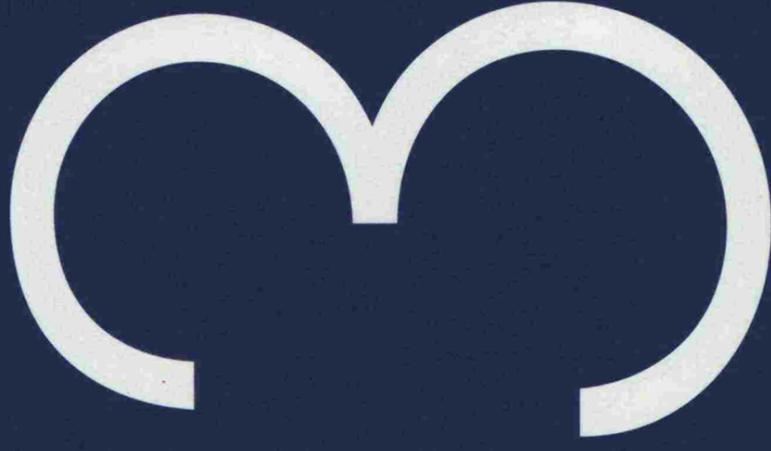
GRADE-SEPARATED INTERCHANGES ● Porvoonväylä interchange on Kehä III



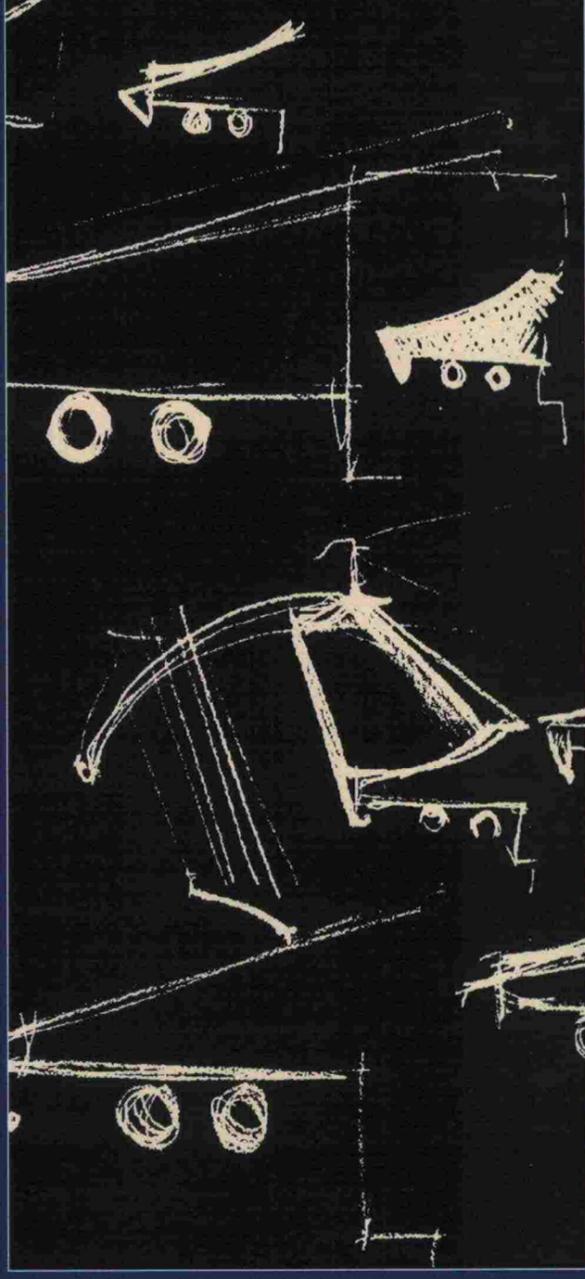
The improvement plans of the Westersundom Interchange between Porvoonväylä and Kehä III follow the principles of the other interchanges under improvement, with their curving, confining ramps. The Westersundom Interchange acts as a counterpart to the Espoo Interchange as a nodal point on Road E18 at the opposite end of Kehä III. An eye-catching visual landmark would be useful at this interchange as well. Furthermore, the image of the interchange could also be developed through emphasising the valuable cultural landscape of the area by means of landscape art.



Kehä:
|||

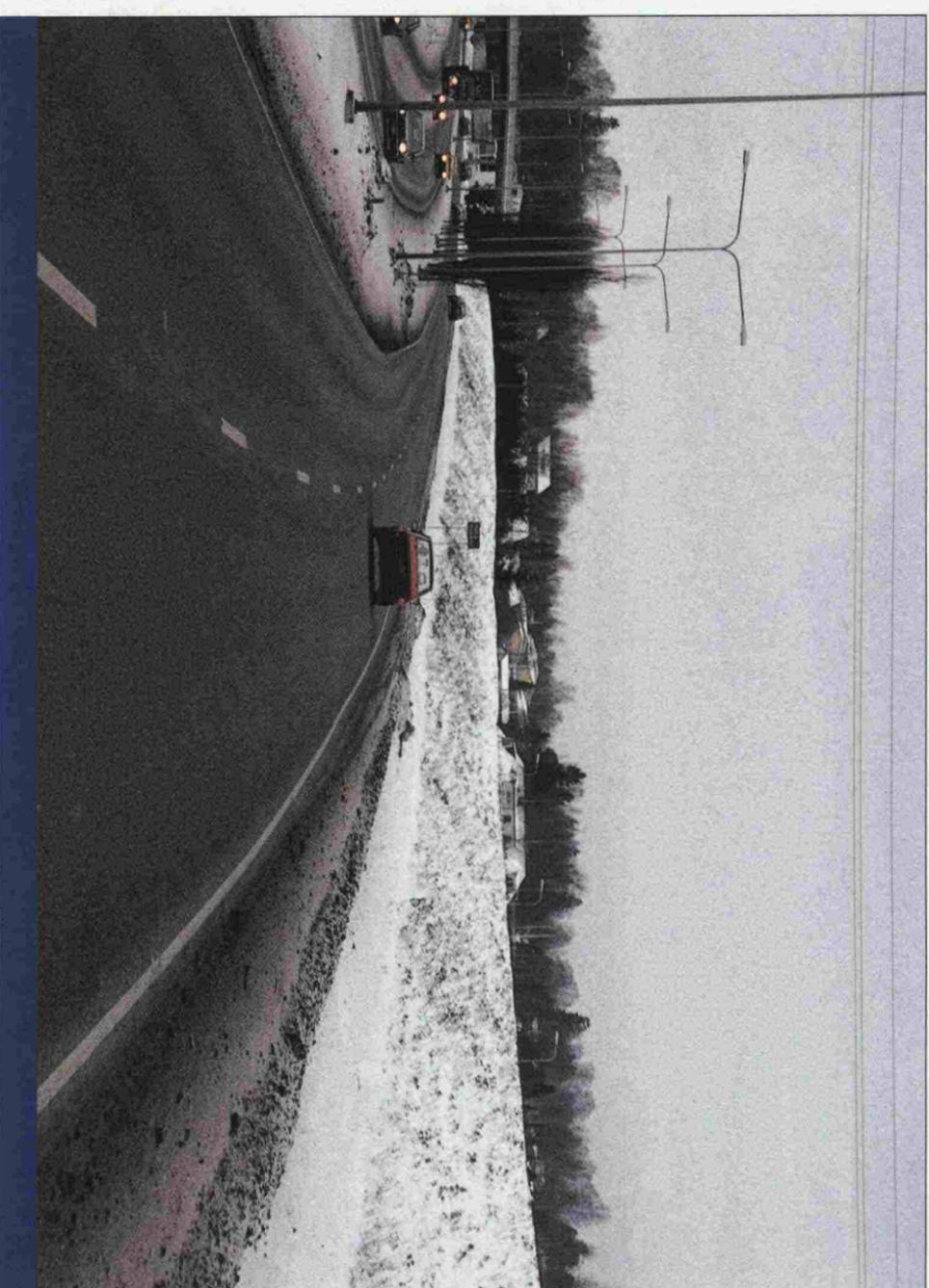
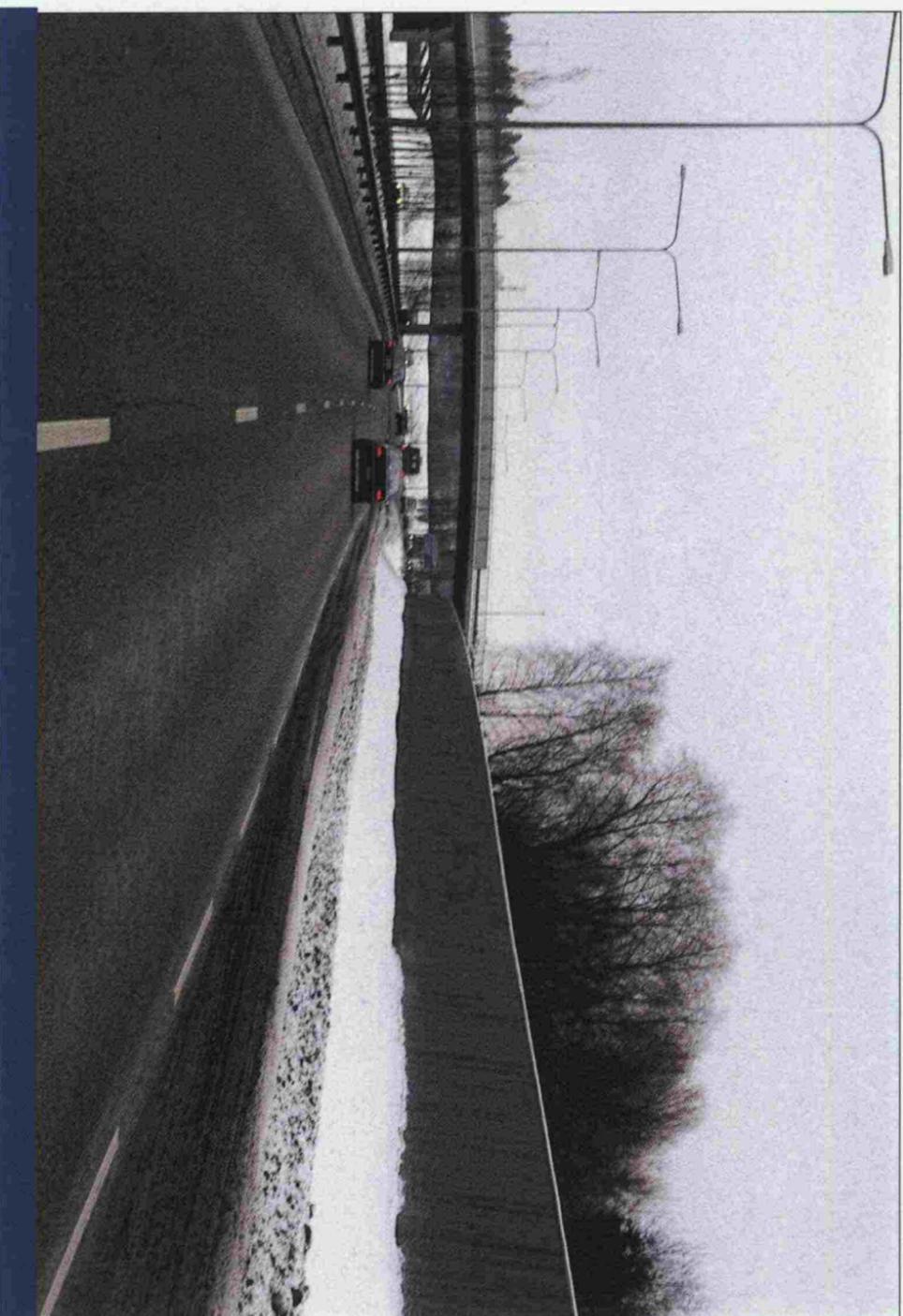


STARTING POINTS FOR THE DEVELOPMENT
OF ROAD MILIEU



- Kehä III and the architecture of structures
- Kehä III and the aesthetics of road fixtures
- Kehä III and environmental art

Noise barriers as calming factors in the road milieu

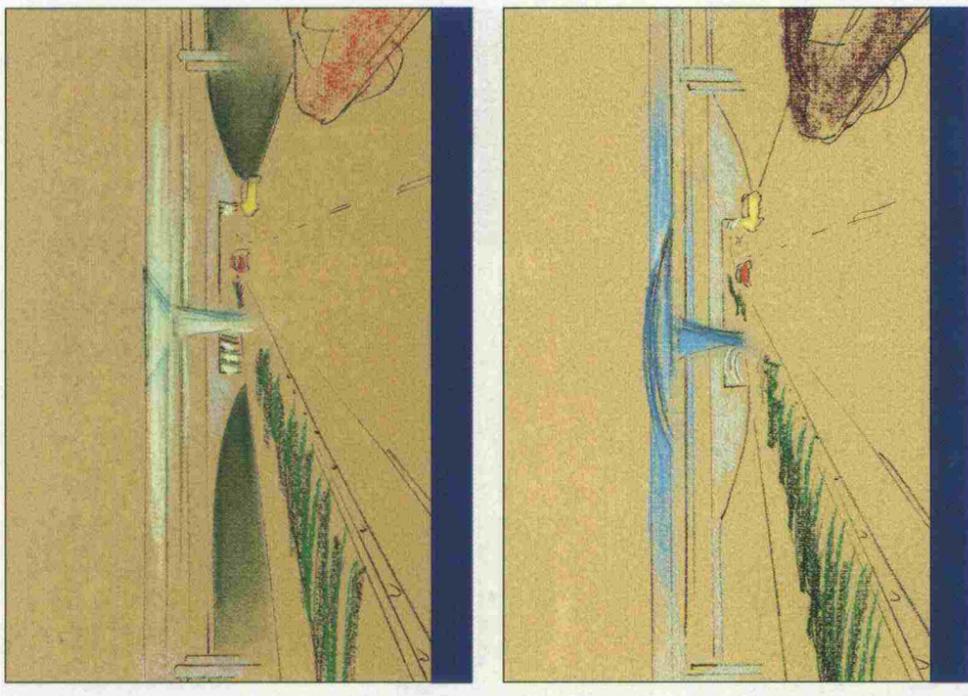
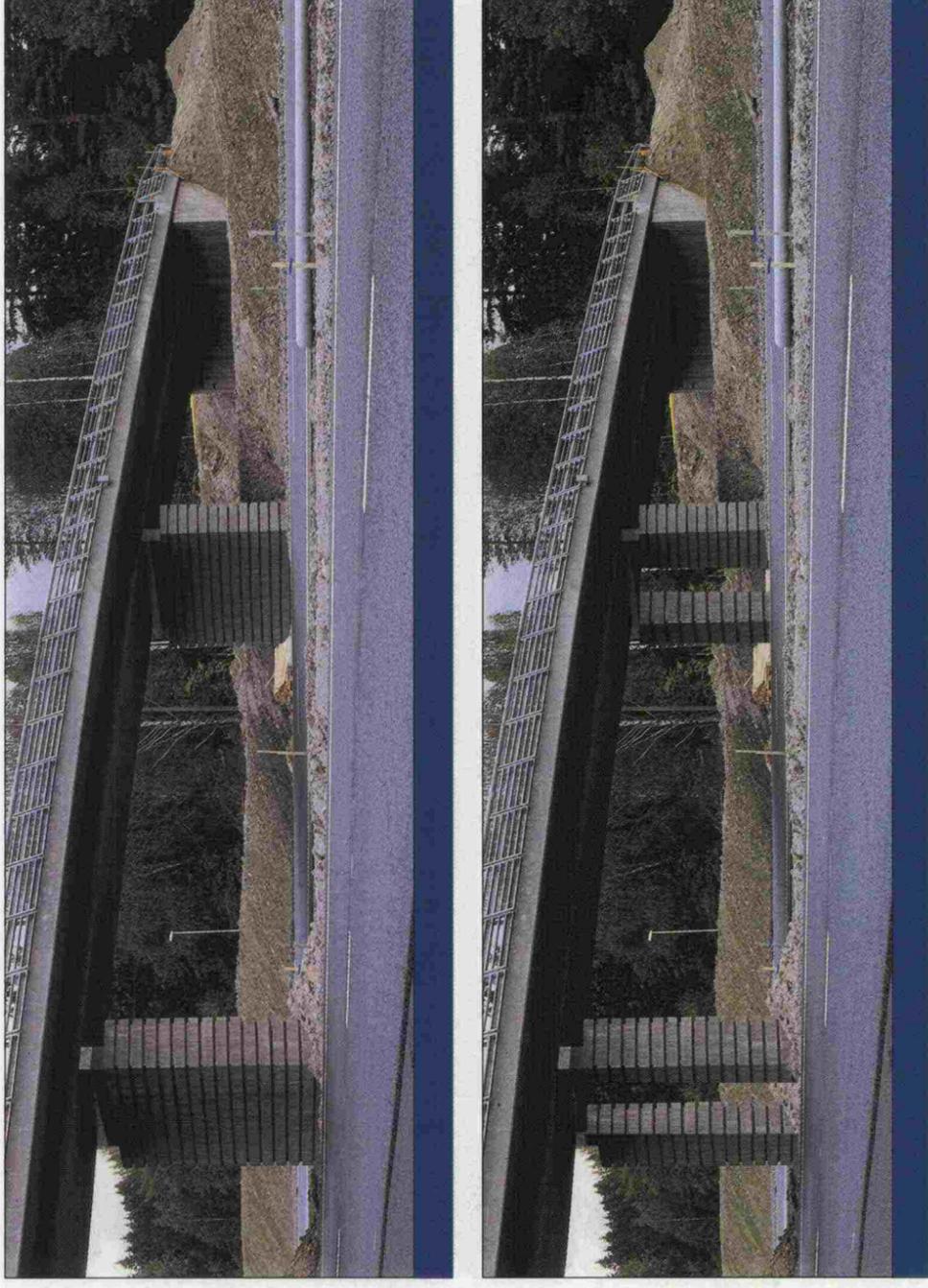
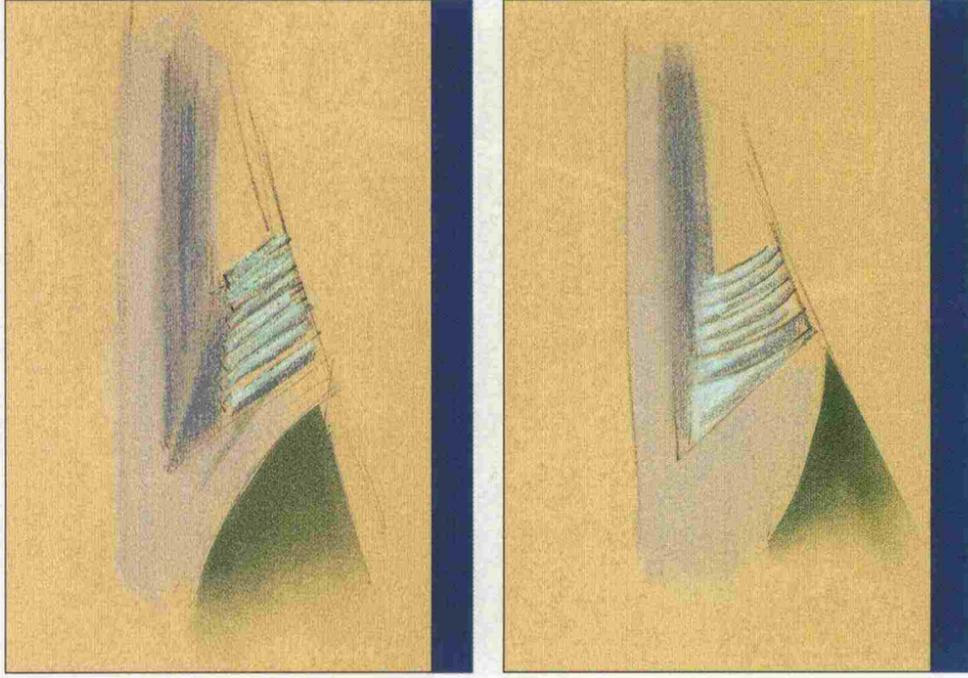


There are segments on Kehä III confined by noise barriers; on the whole, however, they are not the dominant features in the road milieu. Nor in the future will the road be completely confined by noise barriers, since the plans for land use in the immediate vicinity of the route mainly include industrial and office buildings.

The desired role of noise barriers in the road milieu is to increase visual calmness, as the traffic itself causes plenty of distractions, and as orientation to traffic operations demands full attention. The noise barriers and banks should be architecturally designed so that they bear as little individual character as possible. They should have a calming effect on the surroundings and

create visual consistency in the dark as well.

Bridge architecture supports consistency and orientation

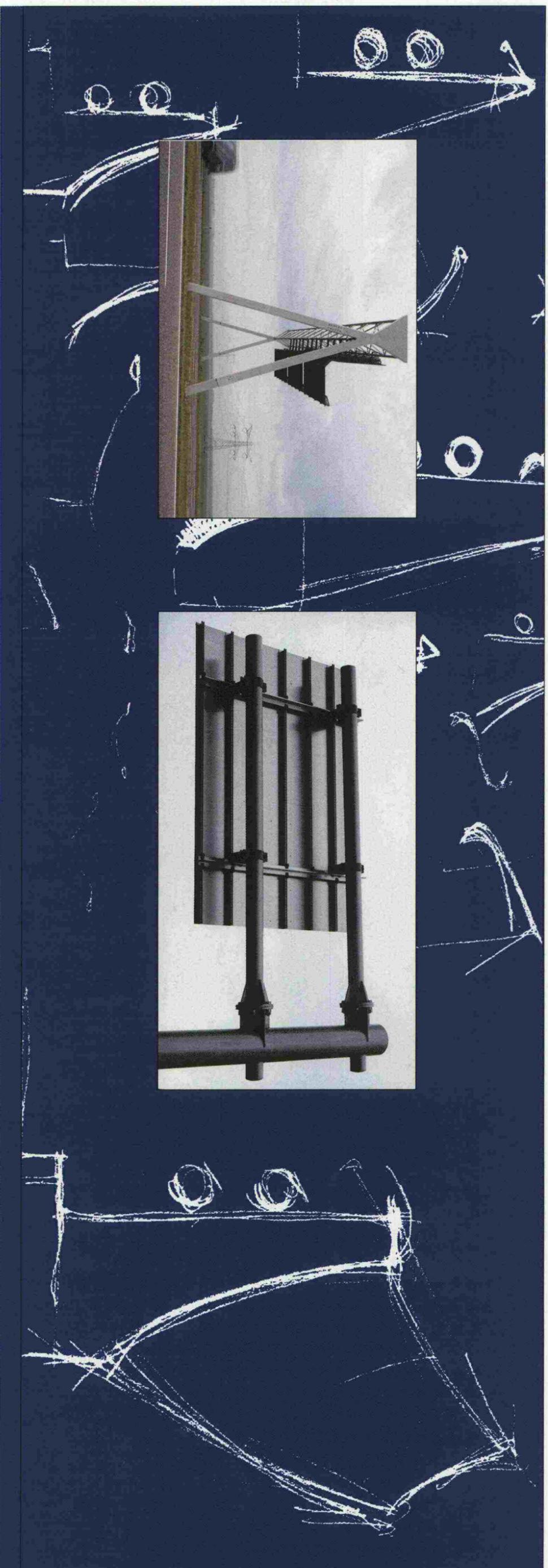


The aim of the bridge architecture on Kehä III is to support its overall image. The architectural elements of the grade-separated interchanges can emphasise repetitiveness and consistency but, at the same time, the individuality of the interchanges should be maintained. These architectural elements are small in scale and situated in those critical points where the road user passes under the bridge. The architectural elements should be modestly implemented, and in accordance with the logical structure of the bridge.

Bridges in local interchanges should be modest and simple in comparison to larger interchanges. In the western part of Kehä III the bridge architecture repeats itself with the massive, deeply grooved piers, and the

arching decks. New local interchanges will be opened throughout Kehä III. The guideline for the bridge architecture should be to maintain consistency while emphasising individual regional and local features. On the visually noisy middle section, the strikingly grooved surfaces can be changed to more moderate ones.

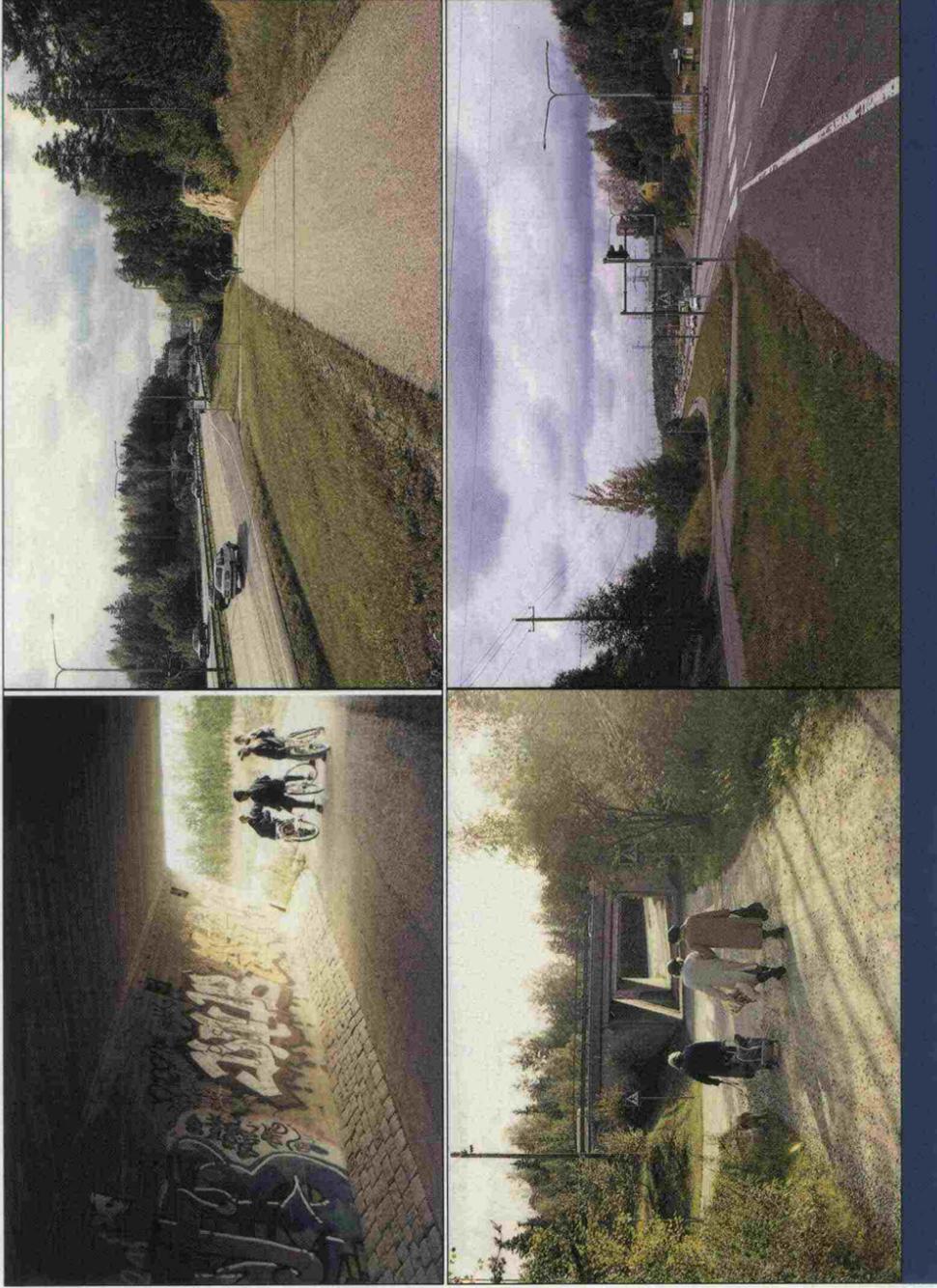
Kehä III and the aesthetics of road fixtures



Kehä III as a segment of Road E18 in the Helsinki Metropolitan Area of Finland is one of the most significant roads in the country. It is a "business card" to the visitor. Introduction to Finnish design begins at the Espoo Intrechange. It continues with the large elements in the road fixtures, the lighting columns in the central reserves, and the overhead signs of the exit ramps of the larger interchanges. These are the main objects of design, the visual theme that stands out from other fixtures in the road milieu. It is also important to study the possibilities to develop the collision rails so that, without compromising traffic safety, they would beautifully strengthen the orientational quality of ramps and bridges, and aesthetically act as a uniting form in the road milieu. Lighting can also be used as another

factor to characterise different junctions and to illuminate bridges, power line poles and special sights.

The possibilities of art in the road environment



The role of Kehä III as a major ring road of the Helsinki Metropolitan Area can also be emphasised by the means of art. Art in the road environment would give people positive experiences and new dimensions to the conception of their own milieu. On Kehä III, however, introducing environmental art to the road milieu can become a distracting factor or even a traffic safety risk. The parallel street network and pedestrian and bicycle routes as more peaceful environments are more appropriate for art works.

Introducing art into public places can be risky both aesthetically and in the respect of the durability of the material. The objects of art should be durable with regard to wear, vandalism and time. The aesthetic

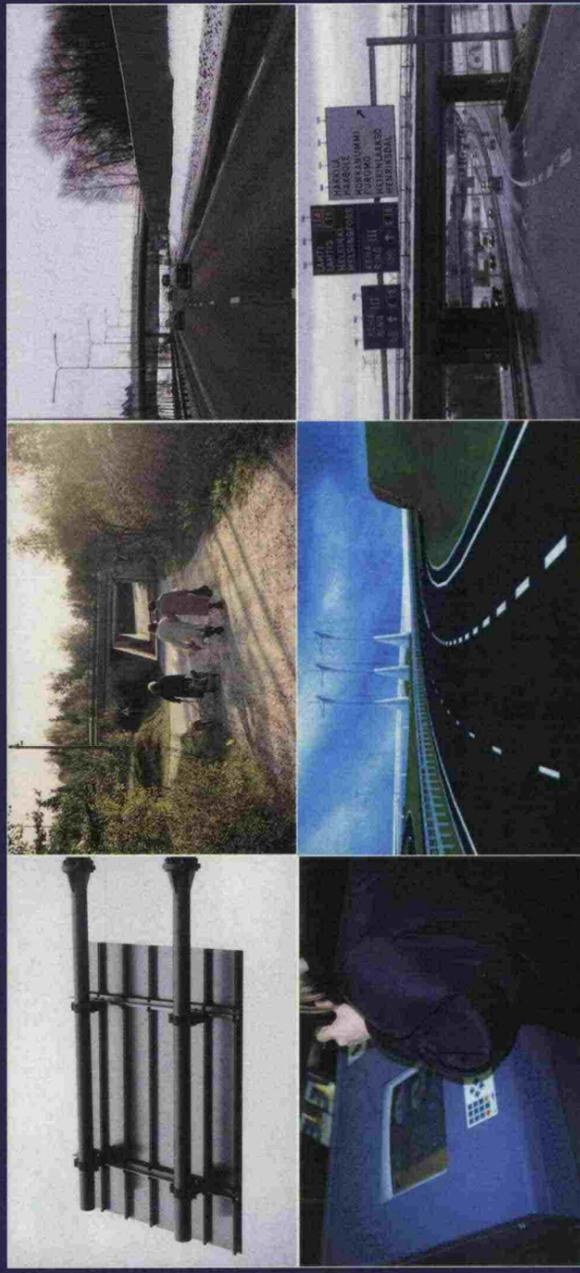
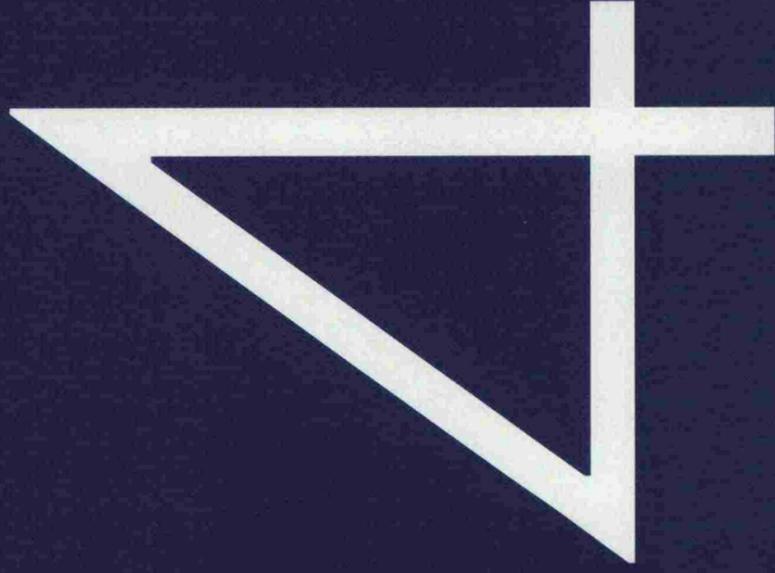
standards are set very high, as the road users are provided with art with no regard to their personal tastes and, after all, public environment does belong to everyone. The introduction process of environmental art to the road milieu should take place over a long time-span. The process requires co-ordinators (municipalities), adequate resources, high critical standards, and professional responsibility. In practice, the appropriate locations for such art could be the points and the vicinity where the parallel street network or pedestrian and bicycle ways cross Kehä III. The works can be of local or regional character, and they can be implemented at different times and through different modes of art.



The interchange of Road E19 in the Helsinki Metropolitan Area of Finland

KEHÄ III

CO-ORDINATING THE DEVELOPMENT OF ROAD MILIEU



Kehä III and the co-ordinating of road milieu

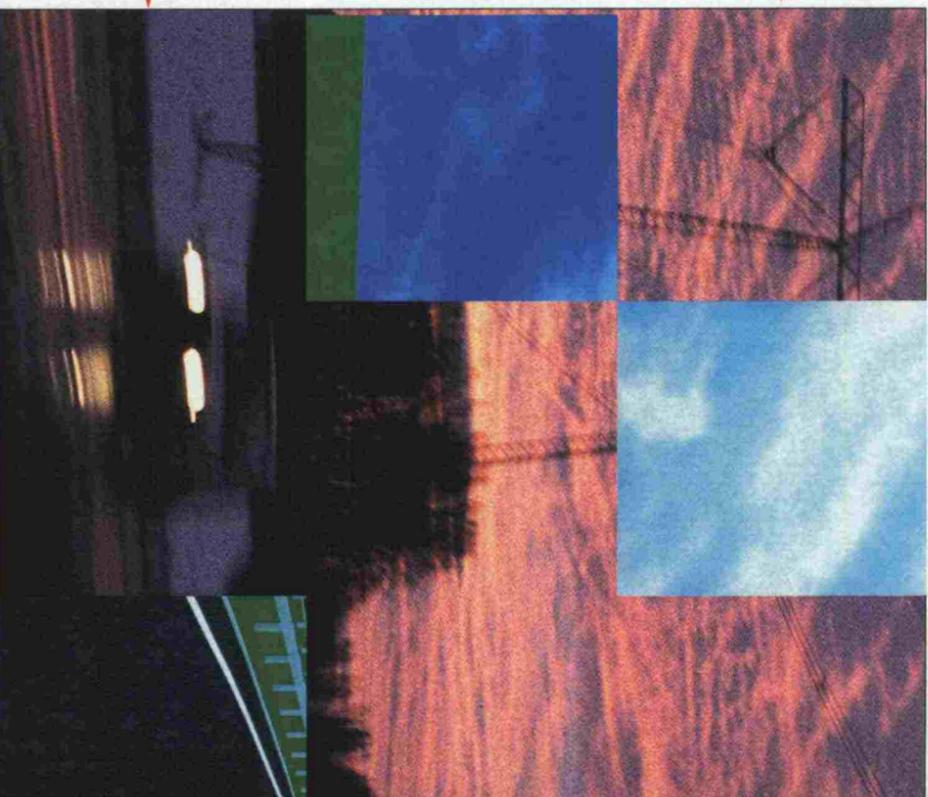
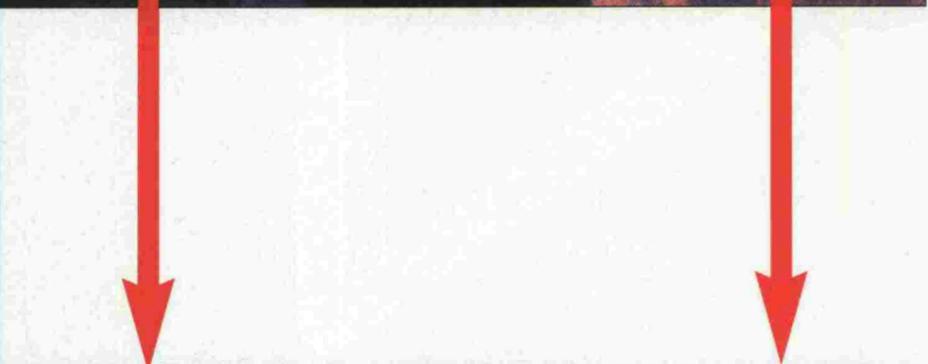
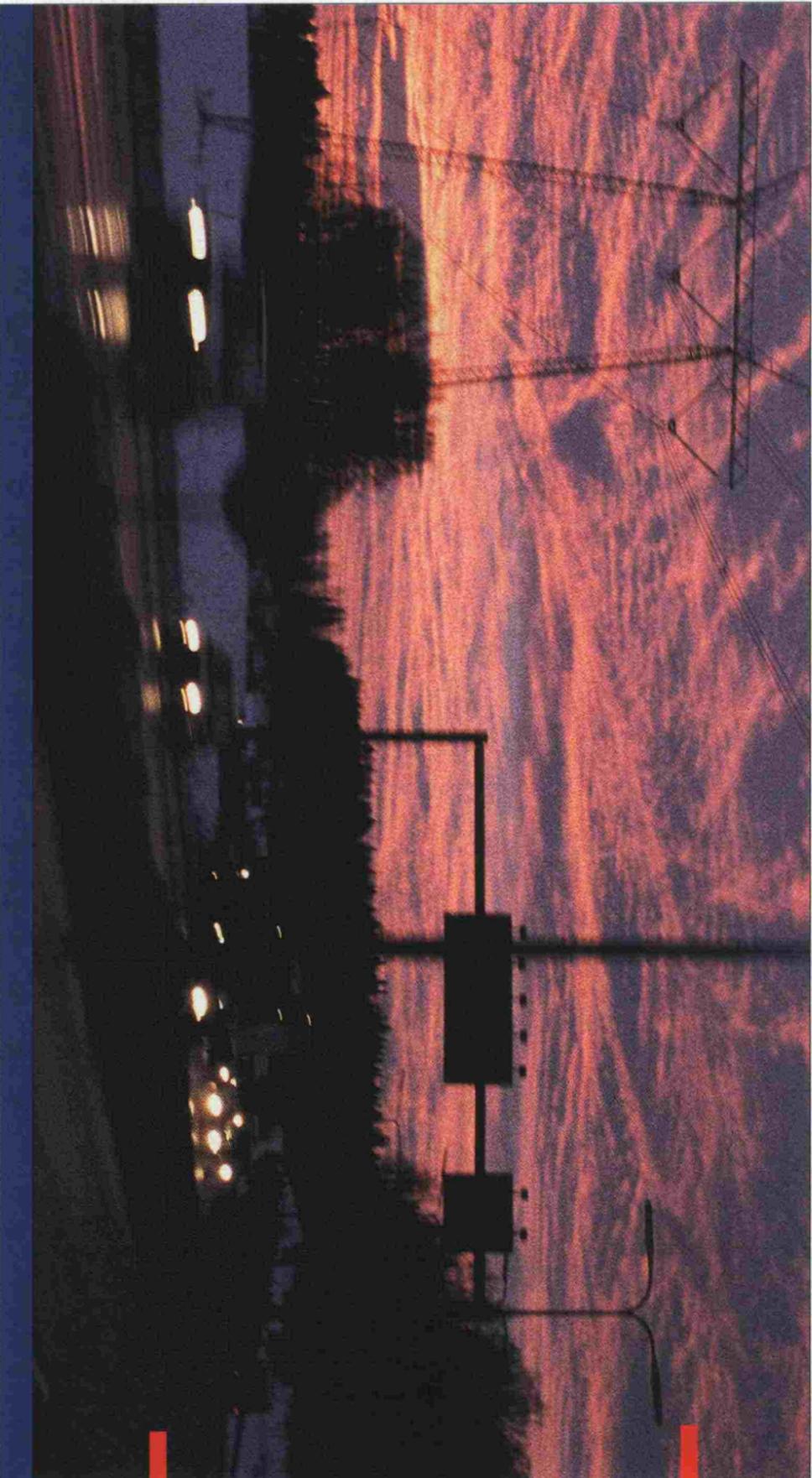
Kehä III and the concept of product

Kehä III and communications

Kehä III and the environment

Kehä III and behavioural aspects

Kehä III is a product



Kehä III with its surroundings can be conceptualised as a product, and in particular as a service product. As a product, Kehä III encompasses not only its physical substance, but also the operations on it, as well as the functions connected to its maintenance.

Kehä III will for its part manifest the 'company image' of Road E18 supported by FinnRA, the municipalities involved, and the state. In this respect, the following aspects of the company 'identity', 'profile' and 'image' should be considered:

- the 'identity' of the company equals to its personality, in other words, what the company really stands for;
- 'profile' is the picture that the company wants to express of itself;

- 'image' of the company or community is the impression which target groups have of the company.

A central goal in the development of Kehä III is to build a profile that is clear, straightforward, and of high quality, through emphasising selected elements and areas in its identity. When building the company image, the aim is to improve the product, communications, functional environment and behaviour.

The development of Kehä III can be divided into four segments which comply with the principles of design management.

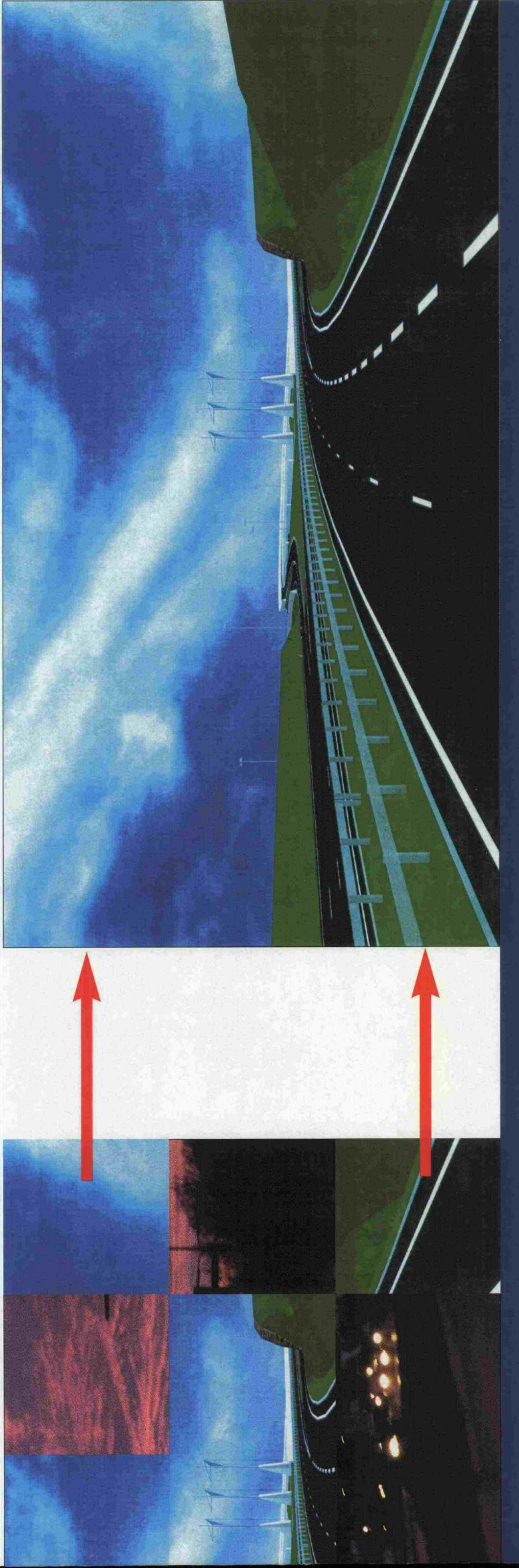
Kehä III as a product

- the development as a product can be understood broadly, covering everything from dimensioning and structures to traffic safety;
- with regard to the road milieu, important elements of the product include the actual fixtures on the road as well as their controlling effect on traffic culture.

Kehä III and communication

- communication includes the systems of traffic guidance and route signing together with all the other information provided in the immediate vicinity of the road;

- the key questions for the goal of clarity in communication are, what kind of classification and hierarchy in the guidance system carries the most informative effect in visually noisy surroundings;
- the basic principle of the communications in a road milieu is the maximising of the orientation effect of the road itself while minimising the amount of guidance and route signing;
- communication also includes the material distributed to road users as well as the information provided by the mass media;
- the contents and quality of the material distributed to road users and the means by which it is distributed should be included in the concept of communications.



Kehä III and the environment

- the area surrounding Kehä III can be divided into two zones: the immediate vicinity of road which is maintained by FinnRA, and the impact area of the road which is governed by various communities and companies;
- the aim is to stress the positive aspects and improve the negative aspects of the milieu;
- transport-related services should be adjusted according to the needs of the road users as well as to various restrictive factors and possibilities.

Kehä III and behaviour

- The behavioural context of Kehä III, with respect to company image, is the definition of responsibilities and scopes of responsibility, and the patterns of behaviour of the responsible parties;
- the responsible parties include all those involved in maintaining the road and in the interactions connected to it.

As a concept, Road E18 is both a concrete and an abstract channel of traffic and communication serving the international road user. It is under constant improvement, and controlled development of business activities, services and road milieu require continuous project management and co-ordination. Kehä III acts as a segment of Road E18, and therefore its development is closely connected to that of Road E18. However, it will also maintain its important and separate role as part of the major route network within the Helsinki Metropolitan Area.

