

Vliegwiel Twente Maatschappij

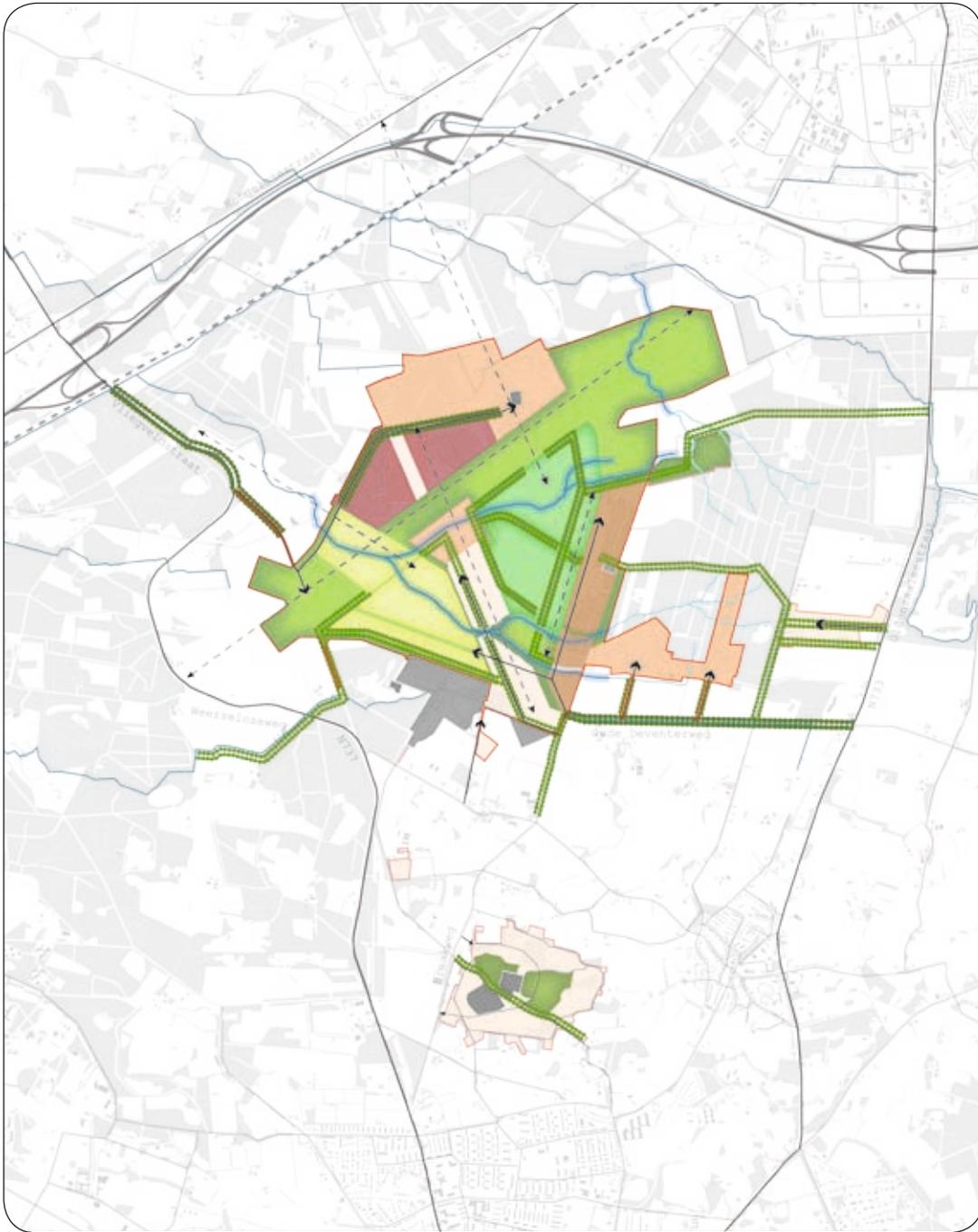


JULY 2009

# **Regional Development Strategies of the Twente Airport and surroundings**

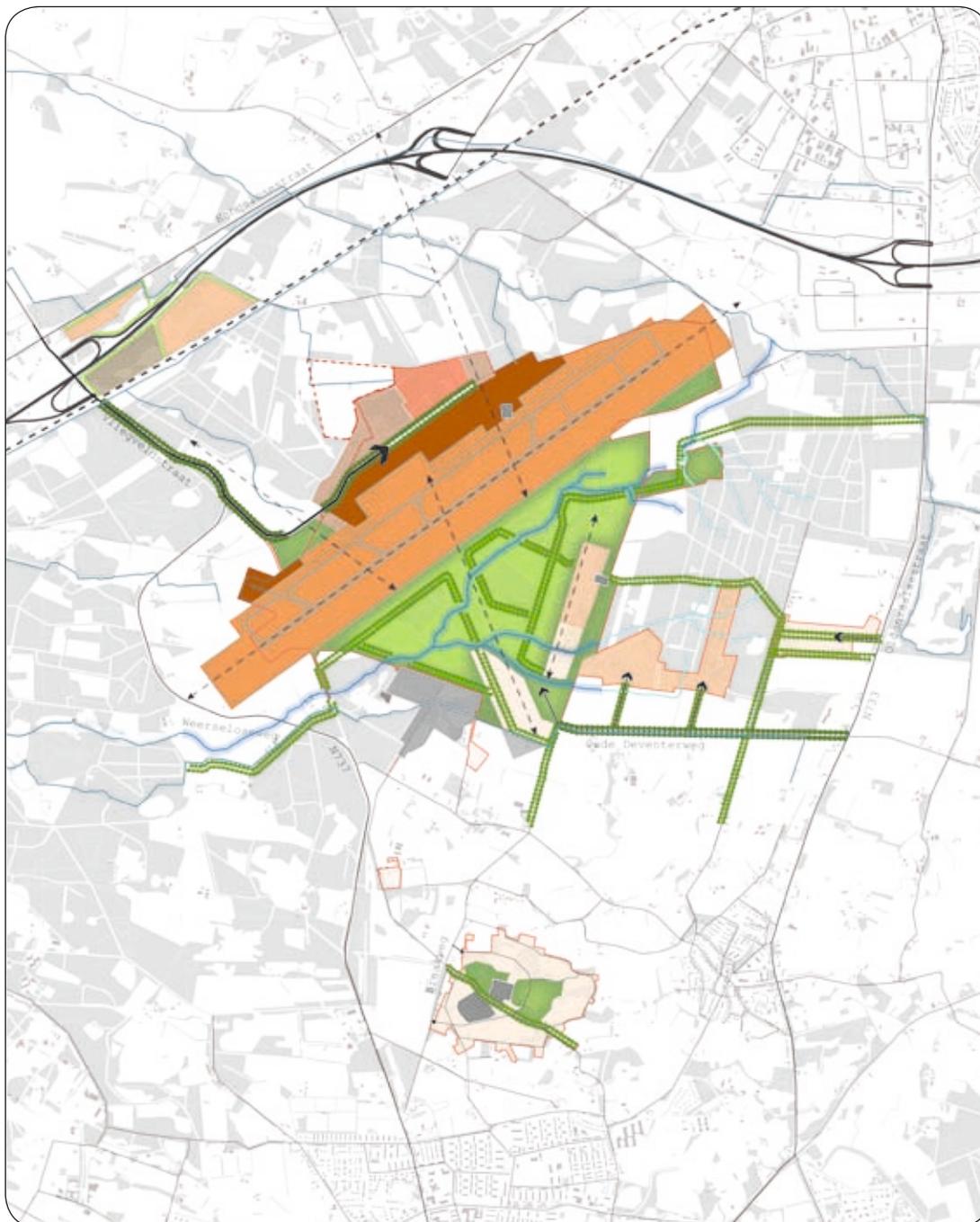
**Making Twente economically  
stronger and more sustainable**

# Structuurvisie A



- |   |   |   |                                    |
|---|---|---|------------------------------------|
|  | Government-owned land                       |  | Country estates                    |
|  | Municipal boundaries                        |  | Agriculture/nature                 |
|  | Care + Cure                                 |  | Lane                               |
|  | Leisure/innovative economic activity        |  | Sight lines                        |
|  | Living                                      |  | Main access                        |
|  | Living/leisure/innovative economic activity |  | Existing brook                     |
|  | Defence                                     |  | New upper watercourse Lonnekerberg |
|  | Green/landscape                             |  | New middle watercourse             |

# Structuurvisie B



- |   |  |   |   |
|---|--|---|---|
|  | <b>Government-owned land</b>                                 |  | <b>Defence</b>                            |
|  | <b>Municipal boundaries</b>                                  |  | <b>Green/landscape</b>                    |
|  | <b>Airport facilities/platform-related economic activity</b> |  | <b>Lane</b>                               |
|  | <b>Parking</b>   |  | <b>Sight lines</b>                        |
|  | <b>Airport airside</b>                                       |  | <b>Main access</b>                        |
|  | <b>Leisure/Innovative economic activity</b>                  |  | <b>Existing brook</b>                     |
|  | <b>Leisure/Airport-related economic activity</b>             |  | <b>New upper watercourse Lonnekerberg</b> |
|  | <b>Living</b>  |  | <b>New middle watercourse</b>             |
|  | <b>NS suburban station + Transferium/offices</b>             |  | <b>Compensation Oostkamp</b>              |





# **Regional Development Strategies of the Twente Airport and surroundings**





JULY 2009

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**Making Twente economically  
stronger and more sustainable**

# Contents

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## Foreword

With considerable perseverance and enthusiasm, Stichting Lonnekerland has endeavoured to highlight for everybody the landscape qualities of the green enclave between Enschede, Hengelo, Dinkelland, Oldenzaal and Losser. The foundation's chairman Dick Feil dug out old maps and gave graphic accounts of wandering through the country estates, woods and grasslands. From the 1930s, the airport made a decisive contribution, perhaps unintentionally, to the creation and retention of these qualities.

The airport, originally established on the initiative of Twente entrepreneurs and municipalities, is once again high on the political agenda: which development of the former air force base offers the best opportunities for strengthening the economy and ecology of the region?

A lot of hard work has been undertaken over the past two years under the direction of our small project organisation to answer this key question. Highly valuable knowledge, experience and last but not least a lot of intellectual energy was input by Twente companies, institutions, residents, interest groups and organisations in the fields of nature and the environment. This participation and interaction were instrumental in fully working out and examining the two most promising directions for a development programme. All of this work was done in accordance with the remit given by the The Lower House of Parliament, the Overijssel provincial executive and the Enschede municipal council. The Lower House of Parliament also put forward its ideas for establishing a widely supported plan. There are now two solid plans. Both make allowance for the wish of the aforementioned administrative bodies to have interchangeable functions. Both plans produced a positive cost/benefit outcome for society and a reasonable financial outcome as regards the value of the land. Each plan utilises and strengthens in its own particular way the distinctive character and existing amenities of Lonnekerland. This

is reflected by the substantial restoration of brooks and enlargement of nature, for example. A sustainable development will be supported in this way. Good opportunities for elaborating the plans sustainably were clearly indicated.

Nevertheless, there is one plan that economically, ecologically and financially offers the best opportunities for creating a true flywheel for Twente. It is the plan with the compact airport embedded in a green setting, connected with the existing national infrastructure. Besides getting good scores on the environment and financing, this plan makes a decisively better economic contribution to the region by offering space for new, innovative economic activities and leisure and a substantial number of new jobs for Twente.

We wish to take this opportunity to thank everybody who made a contribution to producing the plans and all the associated research, designs and calculations. We keenly hope that this will facilitate the sustainable growth and flourishing of beautiful Twente, with the regional airport driving a strong and robust region in the east of the Netherlands.

**Peter Kuenzli en Leo Kramer,  
VTM i.o. quartermasters,  
Amersfoort.**





# **Part 1: Introduction and description of process**





## Part 1: Introduction and description of process

### 1. Introduction

#### 1.1 Background

Central government, the Overijssel provincial authority and the municipality of Enschede have been working together since 1 June 2007 on the development of the area where the former Twente airbase is located. For their joint account and risk, they together set up a project organisation called 'Vliegwiel Twente Maatschappij' (VTM i.o.) to prepare the establishment of a development company that will develop the area. The mission of VTM i.o., currently in the process of being registered, is 'to transform the present airbase into a flywheel for an economically stronger and more sustainable Twente'.

In autumn 2008 a report by Vliegwiel Twente Maatschappij (VTM i.o.) entitled 'A Flywheel for Twente' (Een Vliegwiel voor Twente) was discussed by the Municipal Council of Enschede, the provincial executive of Overijssel and the Ministerial Principals' Consultation Forum of central government. VTM i.o. was given the task of elaborating layout plans A and B into two spatial development strategies.

VTM i.o. was asked to indicate by means of transparent argumentation which of the two spatial development strategies will ultimately be best for Twente. This assessment must be compatible with the mission of VTM i.o.. This report fulfils that task.

#### 1.2 Planning area & study area

The government-owned land of the former Twente airbase is situated in the triangle between the towns of Enschede, Hengelo and Oldenzaal. This area consists of the airbase (414 ha), Zuidkamp (43 ha), Prins Bernhardpark (10 ha) and Overmaat (1.5 ha). The Ministry of Defence continues to use a few clusters in the area, including

the southern part of the airbase and a centrally located part of Zuidkamp (totalling approximately 23.5 ha). This gives the planning area of the government-owned land to be developed a total size of approximately 469 ha See illustration 1.1.

Outside the government-owned land, some sites around the airbase (approximately 157 ha) and the area north of the airbase adjacent to the A1 motorway and the Amsterdam-Berlin railway line (approximately 90 ha) were made subject to the provisions of the Municipalities (Preferential Rights) Act. These areas were examined in more detail to accommodate development programmes and accessibility before they could be acquired and used for the planning area. The plots of land essential for fulfilment of the plans will be put into the area development company. The maps of the two spatial development strategies show the definitive planning area. See part 4 of this report.

Outside the planning area and the plots of land covered by the Act, VTM i.o. has defined a study area for the purpose of analysing the planning area in a wider context. The study area is the point of departure for parts 2 and 3 of this report (Spatial inventory and Policy frameworks). (III. 1.1)

#### 1.3 Planning process

Under the new Spatial Planning Act (which entered into force in July 2008), a spatial development strategy is a strategic policy document that makes pronouncements about the spatial developments desired in a certain area. This policy instrument has replaced three other instruments, namely the Key Planning Decision (central government), Regional Plan (provincial executive) and Structure Plan (municipality). The spatial development strategy sets out the development framework for an elaboration

into regulations, planning maps and explanatory notes of a zoning plan.

VTM i.o.'s remit is to advise, based on two spatial development strategies, on which of the two spatial development strategies provides the economically, financially and ecologically most desirable spatial, programming and financial framework for developing the Twente airport area and surroundings. VTM i.o.'s advice to its stakeholders is based on the building blocks of (1) a qualitative assessment and (2) a quantitative assessment of the two spatial development strategies:

- The qualitative assessment is based on the degree to which the spatial development strategies are compatible with the policy objectives as formulated in 'A Flywheel for Twente' [59, p.12]. The spatial development strategies also need to be as compatible as possible with the policy objectives of central government, the province and the municipalities. An opportunities map for sustainability in the development of the two plans will also receive a great deal of attention.
- For the quantitative assessment, VTM i.o. uses a multi-criteria analysis (MCA) to weigh up the plans based on the scores obtained for environmental effects, economic effects and financial results. The environmental effects and the economic effects of the two plans weigh equally in the multi-criteria analysis for 40%. The input for the environmental effects and economic effects will be determined by an Environmental Impact Assessment (EIA) and a Costs/Benefits Analysis (CBA), respectively. The financial results have a weighting of 20% and will be determined by the VTM i.o. land exploitations. The CBA, like the MCA an integrated assessment tool, is used separately to the benefit of this quantitative assessment of the recommendations.

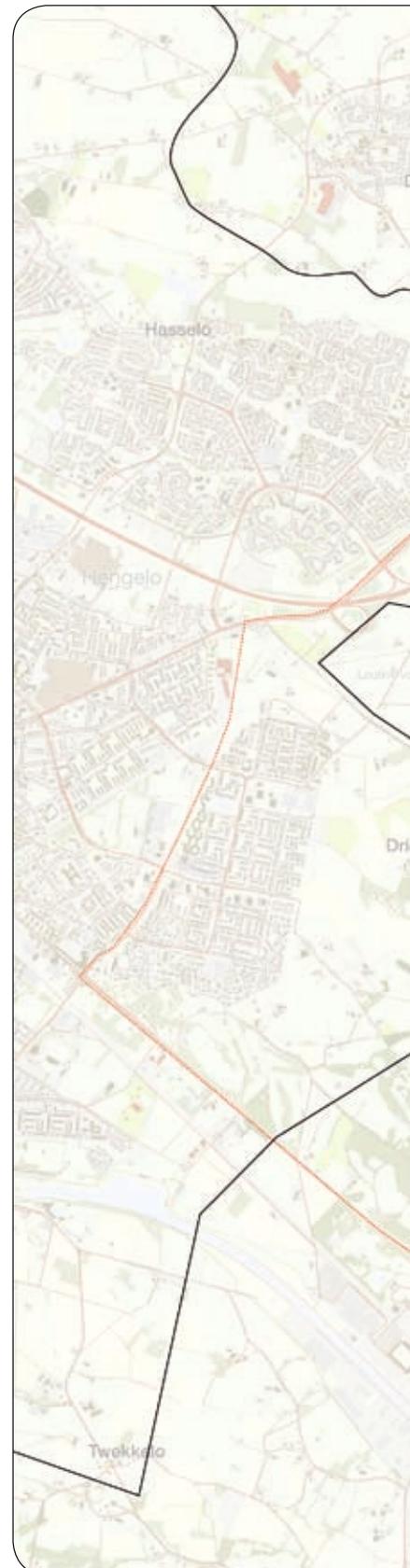
At each step in the planning process the

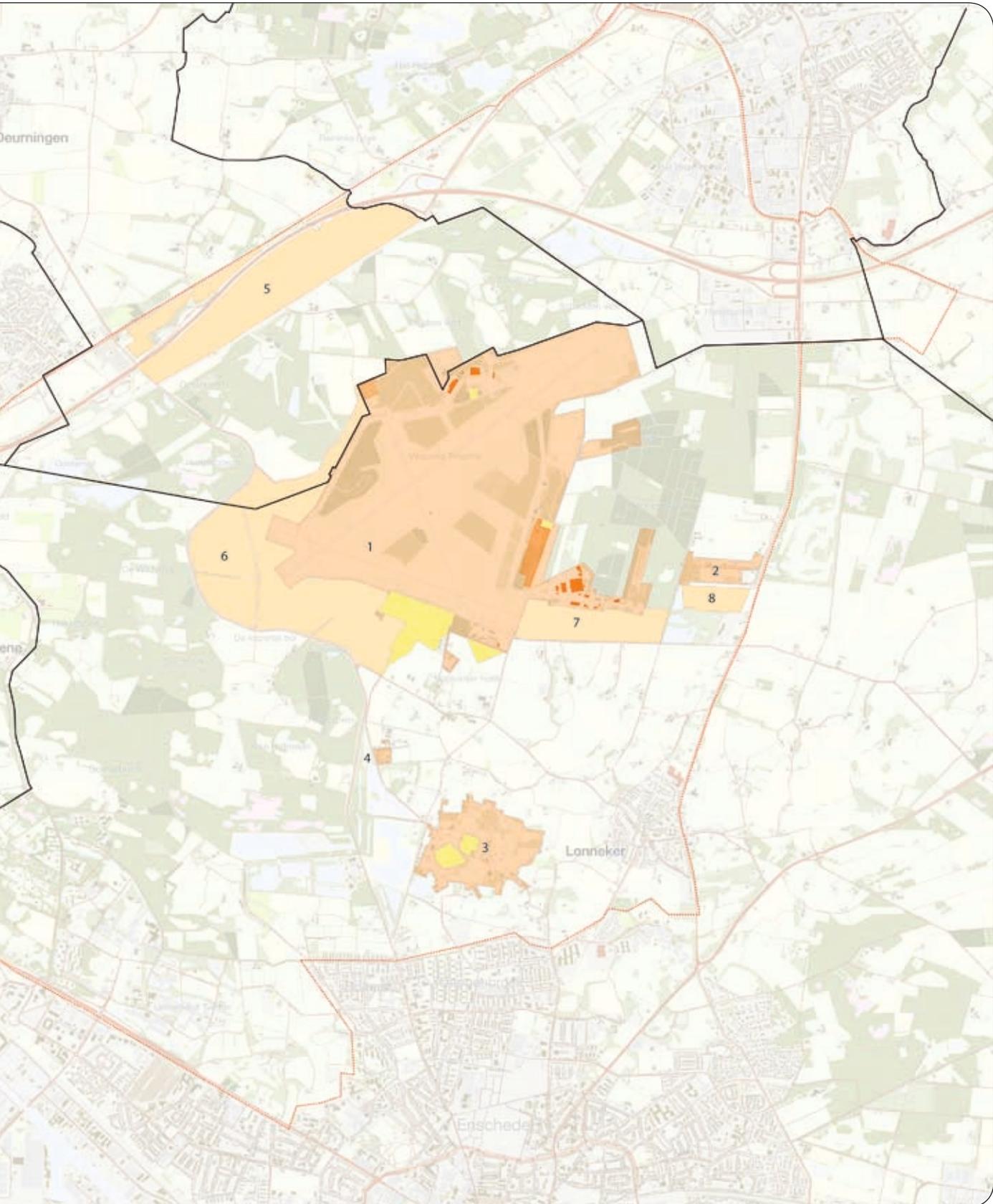
**Illustration 1.1: Study and planning area for developing Twente Airport area and surroundings.**

	Government-owned land: to be developed	
	Subject to Municipalities (Preferential Rights) Act ('the Act')	
	Government-owned land: continued use by Min. of Defence	
	Study area	

1	Former airbase	414,87 ha
2	Prins Bernardkamp	0,42 ha
3	Zuidkamp	43,00 ha
4	Overmaat	1,70 ha
5	A1 subject to the Act	90,38 ha
6	Weerseloseweg, subject to the Act	118,93 ha
7	Oostkamp, subject to the Act	28,40 ha
8	Prins Bernardkamp, subject to the Act	9,29 ha





environmental effects will be described in accordance with the recommendations made by the Environmental Impact Assessment Committee. In a previous phase an impact study was published [5x] and the EIA Committee subsequently gave its advice on the report. In the current phase, a planning EIA will be produced, describing the effects on matters such as landscape, traffic, external safety and noise.

The CBA will identify all the effects that the alternatives will have on prosperity. To allow comparison they will be expressed in monetary terms as far as possible. Therefore, the CBA will not be confined to the financial/economic effects, but will also factor in social effects such as employment opportunities, mobility, surroundings/environment and so on.

The planning process will also address sustainability, by working out an opportunities map for the area development presented in the two plans.

## 2 Planning process and public participation

### 2.1 Introduction

This chapter describes the reason for setting up VTM i.o.. Three public parties are cooperating in VTM i.o. with a view to developing the targeted area in Twente. It is fairly unique for three public parties jointly to take on the orchestration of a project of this kind. Similarly, the way non-governmental organisations are participating in this process is exceptional. The approach adopted is entirely in line with modern views of participation as propagated by the Dutch Cabinet (Elverding Committee).

### 2.2 Process to June 2007

A process to privatise Enschede Airport Twente (EAT) was started in 2000 because of the discontinuation of subsidies from central government and the provincial and municipal authorities. Central government said it would make available a lump sum on condition that a private investor makes a substantial investment and the region assists in the privatisation. An important precondition for a business case is that EAT can make civil co-use of the military facilities. On 8 April 2003, the Enschede municipal council approved privatisation of EAT, subject to certain conditions, and made available a budget for this purpose. The Overijssel provincial executive had taken a similar decision in February 2003. The surrounding municipalities agreed to provide a contribution per inhabitant, additional to the investments from the business community. On 26 June 2003, the privatisation of EAT was set down in a participation agreement [9x].

The Ministry of Defence unexpectedly announced on 23 June 2003 that military activities at the Twente airbase would be terminated in 2007 at the latest because of proposed spending cuts. The municipality of Enschede and the local business community responded to this news by studying the feasibility of a relaunch for the airport. An important reason for this study was the loss of around 1,100 direct jobs and 1,700 indirect jobs in the vicinity [55x]. On the initiative of the Chamber of Commerce and others a synopsis was produced of the chances of such a relaunch [7x].

The study conducted by ACM/DHV [13x] concluded that a relaunch was possible for EAT, subject to certain conditions, even after closure of the military airbase. The municipality of Enschede - both the executive and the council - attach great importance to the airport as an important factor for the establishment of businesses

in the area and as a driver of employment opportunities. The Enschede municipal council gave the go-ahead on 20 December 2004 for a relaunch of a commercial civil airport variant in combination with commercial business and recreational air traffic. The Enschede municipal council laid down in that decision a number of frameworks for the functioning of the airport.

The Overijssel provincial authority and the municipalities of Hengelo and Oldenzaal gave their conditional approvals in February/March 2005 and the municipality took the first steps towards the relaunch of the airport.

In the subsequent process there was a large difference between the asking price of the Ministry of Defence and the value assigned to the land by Enschede. In February 2006, the Enschede municipal council debated the initial exploratory steps. Redevelopment of the airport was the central consideration [20x]. It was pointed out that the redevelopment of the Twente airbase was a supra-local project. The municipality of Enschede was already working closely with the Overijssel provincial authority and regular civil service and administrative consultations were organised with the municipalities of Hengelo and Oldenzaal.

Several new facts relevant to the redevelopment of the airport emerged in spring 2007. Firstly, the negotiations between the municipality and central government about the transfer of ownership of the airport had failed to produce a result. The differences of view about costs, revenues and risks were very considerable. Secondly, the EIA Committee had made recommendations about the guidelines for the EIA study, an important precondition for the project. The EIA Committee took the view that, contrary to the examined proposal, it was also necessary to study the variant without aviation activities.



### 2.3 Process from June 2007 to the present

A new approach was adopted to the project in 2007. The first change of direction was that Enschede would no longer be independently responsible for redeveloping the airport, but that central government, the municipality and provincial authority would jointly take on the development challenge. The first step in this direction occurred on 1 June 2007 with the establishment of a joint project organisation (VTM i.o., registration pending) with as its stakeholders central government (40%), the Overijssel provincial authority (20%) and the municipality of Enschede (40%). The central government representative is the State Property and Development Agency (RVOB). In this phase the Ministry of Finance is the central government principal in relation to RVOB. Both the provincial authority and the municipality and central government provided a project director for VTM i.o..

The administrative consultative forum controls VTM i.o.. This forum consists of the Mayor of Enschede (chairman) and the alderman responsible for Economic Development and Youth & Education of the municipality of Enschede, the member of the Overijssel provincial executive responsible for Land, Housing & Environment and the Director of GOB of central government. The director of the Urban Development and Management Department (DSOB) of the municipality of Enschede and the director of Strategy of the Overijssel provincial authority attended the talks.

Under the WEHOLD umbrella, there were administrative and civil service consultations with the Regge and Dinkel water board and the municipalities of Enschede, Hengelo, Oldenzaal, Losser and Dinkelland.

From this time on VTM i.o. started working on development scenarios with and without an airport function. Four models were presented in spring 2008. They were:

- Eco-park Twente; a concept without airport, with extensive buildings and a heavy emphasis on nature;
- Resortpark Twente; a concept without airport, with a more intensive programme, with central place for Care, Cure, Leisure and Wellness;
- Airpark Twente; a concept with an airport, but leaning mainly towards general aviation, housing and leisure functions;
- Airport Twente; a concept with a compact commercial civil airport set in green.

A large number of non-governmental organisations (representing both supporters and opponents of an airport) additionally produced a fifth model, i.e. one without an airport, called T-Xchange. The models were whittled down from five to two in mid-2008. The five models were examined by means of a multi-criteria analysis, based on their scores for environmental effects [5x], economic effects and financial results. The 'T-Xchange' model and the 'compact airport set in green' obtained the best scores. On the strength of this outcome, VTM i.o. put forward its first formal recommendation entitled 'A Flywheel for Twente' [59]. This advisory document contains proposals including elaborating the two layout plans with the best scores into spatial development strategies.

In autumn 2008, the Enschede municipal council, the Overijssel provincial executive and the Ministerial Principals' Consultation Forum of central government adopted the recommendation made by VTM i.o., based on information evenings, public inspection of the proposals, a response memorandum written by VTM i.o. and an assessment made by the EIA Committee. It was agreed to elaborate the plan called 'De Twentse Basis' of Stichting Alternatieven Vliegveld Twente as a potential embodiment of the plan without an airport.

### 2.4 Involvement of councils and executives

From the change of direction in June 2007, VTM i.o. embarked on a path to seek a further consensus with the councils of the surrounding municipalities and the Overijssel provincial executive. Among other things the municipal council members and the provincial executive members were able to examine on-site the T-Xchange process with non-government organisations and received further information at the kick-off session in June 2008. The VTM i.o. quartermasters took time out to explain the area development process at municipal council and provincial executive meetings and meetings of their committees. The same occurred with the neighbouring German municipality of Bad Bentheim, with which a few meetings were held about the plans.

### 2.5 Public participation

From 2005 onwards, the municipality of Enschede and the Overijssel provincial authority began organising a Public Platform, a consultative structure in which about 35 organisations participate. The platform is actively involved in developing the Twente airport area and surroundings.

VTM i.o. organised the participation process in the following way:

- intensive exploration of the ideas and wishes of 35 non-governmental organisations. The working structure of T-Xchange that leads to the embodiment of those wishes in a supported development of the area with the layout and addition of functions;
- support by the VTM i.o. project organisation and interim exchanges with the working process of VTM i.o..

#### Outcomes of the process:

- the T-Xchange process provided a basis for cohesion in the ideas

and wishes of non-governmental organisations for development of the area without an airport;

- the greenish blue skeleton is the carrier of the rural and urban development embodiment and also the carrier of the airport variant;
- an open and intensive participation process, with the outcome being factored into the next phase; T-Xchange will be elaborated into layout plan A.

### Structure plan phase

In the spatial development strategy phase, the participation process was continued in a new form from September 2008. The objective was to mobilise the involvement of relevant non-governmental organisations and interest organisations representing the Twente business community in an equivalent elaboration of layout plan A (including De Twentse Basis) and layout plan B into spatial development strategies. This was done by way of continuation of the T-Xchange process, by means of which the organisations in the Public Platform had formulated their joint objectives.

### Participation

A participation workgroup was established consisting of the following participating organisations: Chamber of Commerce, Landschap Overijssel, Natuurmonumenten Foundation, Stichting Alternatieven Vliegveld Twente (SAVT), Stichting Lonnekerland, VNO/NCW (Confederation of Netherlands Industry and Employers), Oost NV (agenda member providing input via the Chamber of Commerce).

The participation workgroup discusses the process of developing the area, including the status of market consultations, the drafting of spatial development strategies, studies, workshops, sustainability, economic debate, memorandums for EIA, CBA and similar, and provides input for the process and content.

At the organised workshops, drawings and calculations were made for various spatial

issues together with members of the Public Platform, Participation Workgroup and Water Board. The subjects chosen applied to both spatial development strategies. The participants received support from designers, planning economists and VTM i.o. staff. Examples include restoration of brooks, Zuidkamp, A1 Zone and Oostkamp. Atelier Overijssel was involved in preparing and carrying out the design workshops with the Public Platform. Similar design workshops were held with businesses so as to examine possibilities for embedding their concept in one of the two or both layout plans. A separate workshop was held to examine the embedding of the concept of De Twentse Basis in spatial development strategy A. SAVT decided not to participate in the workshops and design workshops.

The Public Platform meets three or four times each year. The meetings discuss such matters as developments in the participation workgroup, the current status of VTM i.o.'s work process and the planning of political and administrative decision-making.

## 2.6 Next steps

This report will be submitted to the municipal executive of Enschede, the Overijssel provincial executive and the Ministerial Principals' Consultation Forum in The Hague. After the executive bodies have chosen one of the two spatial development strategies and adopted the advice of VTM i.o., a period will start in which the proposals will be made available for public inspection. Immediately after the summer holiday period there will be debating evenings in the municipalities concerned, and in autumn the spatial development strategy is scheduled to be adopted definitively.

The full report will be submitted to the WEHOLD municipalities and they will be requested to make known their views on the report.

If spatial development strategy B is chosen, part of the spatial development strategy will concern land of the municipality of Dinkelland. This part of the spatial development strategy will then be submitted for adoption to the Dinkelland municipal executive.







# **Part 2: Creation, habitation and current situation of Lonnekerland**





## Part 2: Creation, habitation and current situation of Lonnekerland

### 3 Habitation history and landscape

#### 3.1 until 1850; potstal

The government-owned land of the former Twente airbase is located on the flank of the lateral moraine of Lonnekerberg. The soil there consists mainly of coarse sandy soil. In elevation the area descends westerly and is intersected by various brooks. The landscape of the airbase and surroundings consists of cleared heathland. The flanks of the lateral moraine were probably used as fields already before the Middle Ages [30].

The sandy lands, originally wooded, were part of the potstal system in the Middle Ages, i.e. mixed farming system characterised by small fields and extensive areas of common farming. This agricultural system was built on three entities: the open field (a communal complex of fields for food production) or enclosed fields (small and individual fields), the brook valley or grub (for livestock grazing) and barren land (mainly heath) where livestock grazed and sods were cut. The farms were clustered mainly around the open fields or were scattered in the landscape, coupled to enclosed fields or one-man open fields.

This agricultural system revolved entirely around the shortage of nutrients for arable farming and horticulture. Essentially, it boiled down to the natural soil fertility of a large acreage (heath, barren land) being concentrated in a small acreage (the open field). This agricultural system made it possible to feed a larger population and thus formed the basis for the first urban development on sandy soil.

The landscape that was the product of this agricultural system was characterised at the end of the 19th century by a great degree of openness. The largest acreage of the landscape was taken up by heaths and barren land, which were virtually treeless

because of intensive grazing. The heath to the west of Lonnekerberg probably represented the largest open space in the Twente landscape [30], with views far into the distance.

Zuidkamp and Kamp Overmaat form part of a different type of landscape that is characteristic of the lower sandy soil. This is referred to as an enclosed field landscape, with scattered small enclosed fields or one-man fields, brook valleys a small distance away and smaller plots of barren land. These elements are interspersed with lanes and small woods, which has created a park-like look and feel. As late as in the 19th century, there were still small heathlands to the south of Kamp Overmaat, and they were not cleared until the 20th century. In the south of Vaneker there were plots of barren land for a long time [30]. (III 3.1)

#### 3.2 Seizing the emptiness

Around 1850 the textile industry developed in Twente and Twente towns grew rapidly. The expansion of Enschede and Hengelo and the prosperity of a small social upper-class put a considerable squeeze on the surrounding open area. When large plots of land quickly became available in the late 19th century and early 20th century, all kinds of urban functions found a place on the once barren lands north of Enschede.

The centuries-old potstal system was turned upside down in the 19th century during the industrial revolution by the advent of fertiliser and agricultural competition from overseas. This resulted in a more efficient and less sizeable method for keeping soil fertility up to standard.

The introduction of the Marke Act of 1886 hastened the dividing up and clearing of communal barren lands. In the Dutch sandy areas this meant that an enormous acreage of land became available for other functions. Parts of the barren lands were

wooded, while others were turned into agricultural land. The large-scale clearance of heaths was characterised by a rational structure with long straight lines in the sandy landscape. Therefore, the airbase landscape is still relatively young.

The textile barons built country estates or expanded existing ones to be able to live rurally yet still close to the town (t Holthuis, Oosterveld) and put up forests on the barren land for the production of wood and for hunting. For the drinking water supply of Enschede, a water extraction area was developed with reservoirs, the current Vitens site. These new types of land usage acted like an enclave. Enclaves in this context are understood to be non-agricultural entities that in several respects stood out from their surroundings and usually had an urban origin. Roughly speaking the enclaves differ in four ways from their surroundings: spatially, functionally, administratively and/or in terms of accessibility [10].

In 1921 a few Twente businessmen took the initiative to create a field for recreational aviation. Ten years later it was expanded into a commercial airport. In the 1930s there was a daily air service to Amsterdam's Schiphol Airport. Towards the end of the summer of 1940, the Germans began a large-scale enlargement of the airport to create Fliegerhorst. The area was enlarged from 64 to 1800 ha. At the end of the war bombing raids destroyed large parts of the airbase. Reconstruction began immediately after the Second World War, the Ministry of Defence became the airport's owner and it was greatly reduced in size to less than 500 ha. Plots of land were being redeveloped and buildings were being added all the way through to the 1990s. The final aircraft departed from the Twente military airbase in 2007 [30].

Today the airport forms the largest enclave on the former barren lands to the north of Enschede. (III. 3.2)

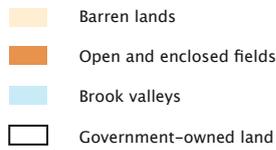


Illustration 3.1: Historical map showing barren land and branches of brooks

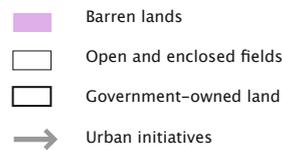


Illustration 3.2: Urban development exerts pressure on large-scale heath developments

### 3.3 Retention of large scale

The airport was able to develop at this location thanks to the great degree of openness of the landscape. Conversely, on account of its function as an airport, the area remained open in the 20th century, with impressive panoramic views up to a distance of approximately 4 km. This gives the area a large and dramatic contrast with its small-scale surroundings and also with the rest of Twente. Elsewhere in Twente this large scale has disappeared because of urbanisation and forestation of the former barren lands. The monumental openness of the planning area is an important quality [30]. The airport is the last remaining open location in Twente and can be regarded as a monument for all the former heathlands. The landscape of Zuidkamp, part of the enclosed field landscape, has retained its small-scale character because of the

military function. The Twenthe airbase thus assured the retention of most of the original open nature, while the landscape in the surroundings has changed markedly in the past decades.

### 3.4 Twenthe airbase as an estate

Compared with the surrounding country estates, the airport had a strong internal organisation and was closed off by fences from the surroundings. The site was levelled to create a flat embedding for the runways. There were also far-reaching interventions in the original water system. On account of drainage requirements, the area was drained intensively and the original system of brooks disappeared. (Ill. 3.3)

Het Oversticht (a centre of excellence for spatial quality and spatial heritage) has produced a cultural heritage valuation for the Twenthe airbase [30]. The organisation mentions four historical layers for this 'estate', which have had their effect on the internal arrangement of the area:

- 1 Old Landscape, to 1940
- 1. Old War, 1940-1945
- 2. Cold War, 1945-1989
- 3. New Airport 1989-2004

The Old Landscape of the Twenthe airbase is characterised by its great degree of openness. The founders of the first airport utilised this great openness and the availability of barren land that had fallen into disuse. The Old War is characterised by the use of camouflage, particularly from the air, by means of urban development and architectural measures.

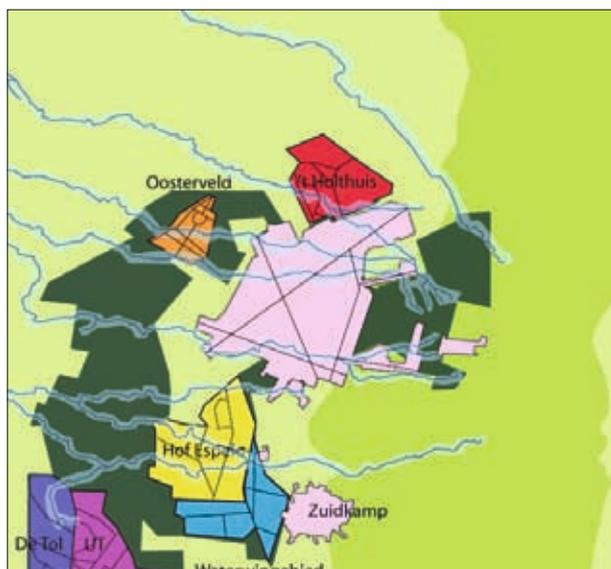


Illustration 3.3: internal organisation of the airbase and surrounding estates

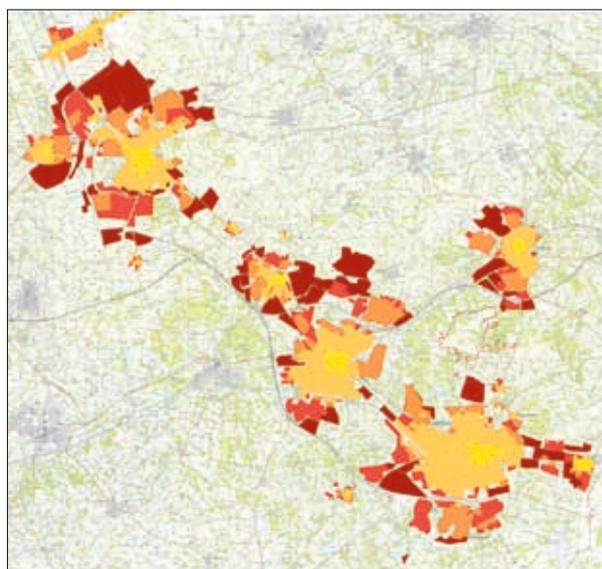


Illustration 3.4: Urban development timeline [47]

The buildings on Fliegerhorst were divided into small enclosed fields that were designed to look like agricultural settlements from the air. The architecture of the military buildings was based on traditional countryside architecture, as is easily recognisable in Zuidkamp. Camouflage was used differently during the Cold War, namely by covering bunkers and shelters with earth and vegetation. The buildings were modified to meet the needs of a stationed army, with more 'ordinary' operational buildings.

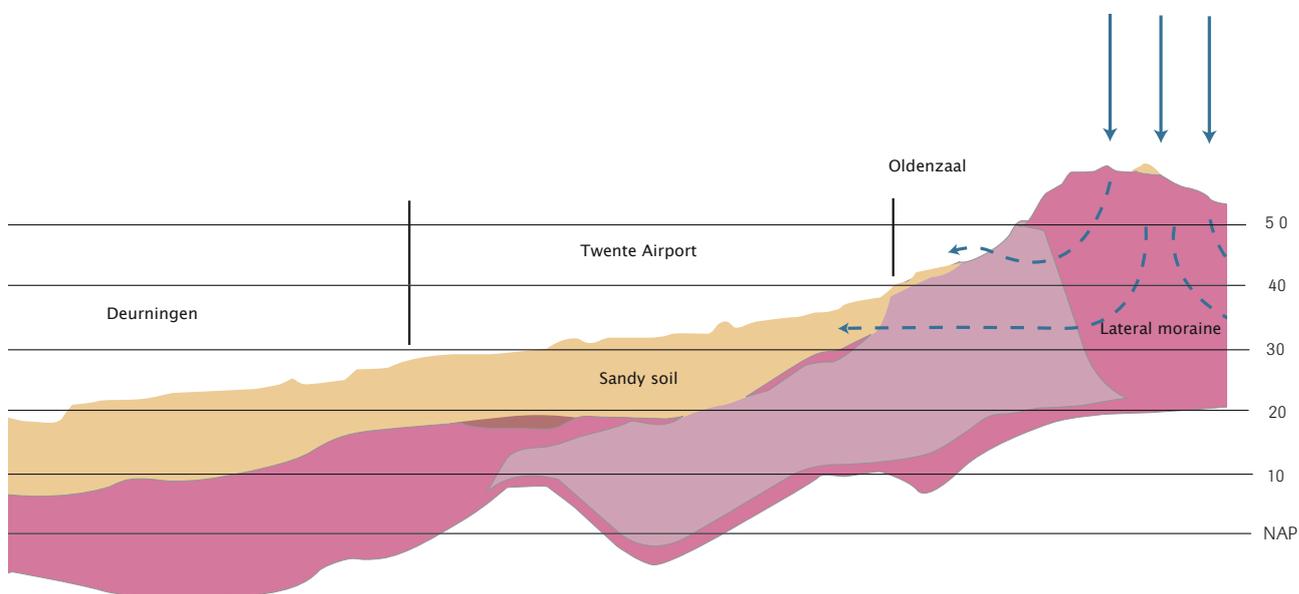
In the 'New Airport' period, there was expansion mainly in the southeast corner of the airbase for the purpose of civil aviation. Camouflage was no longer a dominant theme.

### 3.5 Urbanisation

From individual towns, the string of Twente towns of Almelo, Borne, Hengelo and Enschede have developed over the past century into a substantial conurbation in which they have almost merged into each other. Illustration 3.4 shows this development over the years. Geographically, Oldenzaal remains separated from the aforementioned towns. Together, the towns form part of a networked city. Between Enschede, Hengelo and Oldenzaal there is something akin to twinning. The middle area between the towns of Enschede, Hengelo and Oldenzaal has remained relatively open, partly because of the location and the noise contours of the Twente military airbase. The growth of Hengelo and Enschede developed along large infrastructural lines such as the national motorways A35 and A1.

The towns are expected to converge still further in the years ahead and urbanisation will gradually squeeze the triangle between Enschede, Hengelo and Oldenzaal. This development is already visible. Hengelo is expanding to the north and east, while Oldenzaal is developing to the west. Simultaneously, Enschede is developing a residential area called 't Vaneker to the north. (Ill. 3.4)

Illustration 4.1: Soil, relief and lateral moraine



## 4 Description of present situation

### 4.1 Soil & relief

By Dutch standards the planning area has a substantial variation in elevation. The area is located at the transition of Lonnekerberg (maximum 56 meters +NAP) to the flatter and lower-lying terrace. NAP is the Amsterdam Ordnance Datum. From east to west the elevation of the planning area decreases from a maximum of 40 m +NAP to 30 m +NAP; see illustration 4.1.

As a result of the pushing of layers of earth, Lonnekerberg has a very varied soil composition (including sand and tertiary clay). Tertiary clay occurs on the surface of the high eastern flank of the planning area. To the west of Lonnekerberg, fluvial-glacial sand has settled over a width of approximately 500 m. The rest of the area lies on a post-glacial alluvium or low terrace consisting of layered fine sands with clay banks and peat islands and here and there coarser and finer shingle. The soil consists of gleyic podsol with low-loam and slightly loamy fine sand.

### 4.2 Archaeology

The municipality of Enschede conducted archaeological desk research for the entire site of the Twenthe airbase in 2007 [8].

The planning area has a predominantly low archaeological expectation on the archaeological expectations map of the municipality of Enschede. As regards the finding of archaeological treasures from the hunters/collectors period, there is a medium expectation in at least part of the site, on account of a fossil brook branch. However, the airfield was severely damaged on several occasions during the war. In all probability these hostilities were accompanied by soil disruptions. The earth on the airfield was also ploughed up a few times in order to



restore the natural condition of nutrition. As archaeological treasures from the hunters/collectors period are usually located just below the surface, the likelihood of intact treasures from this period still being found is fairly small.

### 4.3 Soil contamination and munitions

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A soil quality map was produced for the airbase in spring 2008 [24]. The map shows where there are serious soil contaminations that must be remediated by law. They are located in concentrated areas to the north of the runway and in Oostkamp. There is additionally scattered contamination for which the necessity of remediation will depend on the intended use of the land. The survey does not cover the entire area of the airbase. Soil remediation measures depend on the degree of contamination and on the function that the contaminated parts of the former airbase will fulfil in the future.

The likelihood of the presence of munitions on the airbase was identified. There is a great likelihood of munitions on the western side and around the runway [24].

Similarly, there are a few cases of soil contamination here and there in Zuidkamp and there is also a small likelihood of finding munitions [24]. Prins Bernhardpark and Overmaat have no appreciable cases requiring remediation and both locations are suspect with regard to the presence of explosives to a limited extent. (III. 4.2, 4.3)

### 4.4 Water system

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Lonnekerberg is part of the Twente lateral moraine complex, where several brooks originate. On account of the thin aquifer on the lateral moraine, the brook system naturally responds very quickly: shortly after a shower the brooks are full of water, after which they return to their original level very

quickly. The brooks in the planning area belong to the upper courses and for that reason they are relatively narrow.

Lonnekerberg is the source region of Jufferbeek in the north and Leutinkbeek in the south. It was originally the source of two other brooks: Hesbeek and Blankenbellingsbeek. In the 19th century, gullies (ditches) were made on Lonnekerberg to allow forestation, thus accelerating the drainage of water from the hill. Intensive drainage of the airfield greatly changed the water management at the airbase and Hesbeek and Blankenbellingsbeek were 'cut off' and sunk. They are fed from drainpipes of the airfield. Further downstream to the west the water system has been changed through human intervention and Hesbeek, Blankenbellingsbeek and Leutinkbeek have been routed around Hengelo via Koppelleiding to the Twente Canal. Jufferbeek, which becomes Deurningerbeek, still has the most naturally meandering nature.

To the north of Zuidkamp runs Eschbeek, with a fairly natural look and meandering nature. A small distance south of Zuidkamp there is Vanekerbeek that runs along the suburban area of Enschede. This is a deeply sunken brook. (III. 4.4)

### 4.5 Flora and fauna

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The airbase has rich flora and fauna with various species on the red list [36]. The combination of nutrient-restored grasslands with relatively young deciduous woods, coniferous woods and scrubs and the differences in groundwater and soil composition have resulted in a varied spectrum of flora and fauna. Among other things it is one of the most butterfly-rich places in the Netherlands. It has birds such as the skylark, wheatear, yellowhammer and quail that hardly exist any more on the arable land outside the airbase. Scattered across

the airbase and Zuidkamp there are pools that are important to amphibians like frogs, the great crested newt and the smooth newt. Bats have made their home in some bunkers on the airbase. At Zuidkamp there is also a variety of bat species. At valuable locations on the map there are exceptional vegetations that are coupled to the thin, open and wet growing conditions or thin heathland vegetations.

Zuidkamp, Overmaat and Prins Bernhardpark are ecologically less valuable than the airbase, despite the small variation on the site. This is due to the limited size and the location amidst nature-devoid and agriculturally intensively managed land. (Ill. 4.5)

#### 4.6 Country estates

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Around the airfield there is a belt of old and 19th-century country estates, including Lonnekerberg, 't Holthuis, Oosterveld, Oosterhof, Het Leutink and Hof Espelo.

The Landschap Overijssel Foundation has purchased a number of the country estates. Oosterveld is privately owned and open to the public under the Nature Conservation Act. Characteristic features of the country estates include a park-like layout, a contrast of curved and straight lines and the presence of exceptional types of shrubs and trees like rhododendron, the red beech, the bald cypress and other varieties and species. (Ill. 4.6)

#### 4.7 Infrastructure

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The airfield is located near the main infrastructure. North of the airbase there is the A1 motorway (Amsterdam-Berlin). Running parallel to this north of the motorway is the N342 road (Hengelosestraat). Running parallel to the south of the A1 is the Amsterdam – Berlin railway line.

From the A1, Vliegveldweg/Weerseloseweg (N737) is the westerly access road along the airbase to Enschede-North. Kamp Overmaat and Zuidkamp are located on Vargershuizenweg and Braakweg that run to the east of this. On the eastern side of the airbase there is the N733 (Oldenzaalsestraat), on which Prins Bernhardpark is situated. At right angles to the N733 there are two roads: Noordergrensweg and Oude Deventerweg. These roads lead to the airbase on the eastern side [30]

The airbase site itself has a runway of 3 km long, a system of taxiways, a ring road and other road infrastructure that forms part of the military base. Within Zuidkamp there is a finely-meshed set of roads, with Zuidkampweg as the principal road. (Ill. 4.7)

#### 4.8 Recreational network

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Important elements for recreation and tourism are the route structures and the connections between the rural and urban areas in the triangle of Enschede, Hengelo and Oldenzaal. Around the airbase there is a finely-meshed network of cycle paths, footpaths and bridle paths. This network was designed partly by Twente Region, which means that longer routes are possible through the outlying area. The town edges form an important recreational area, with an emphasis on enjoying nature and the countryside in combination with manifestations of art and culture. This is combined as much as possible with playing fields, flower picking meadows, picnic spots and barbecue spots. The 'Enschede tour' is a good example of how this works, because it uses existing recreational routes through the area.

The airbase itself is surrounded by fences and is not accessible to the public. Opportunities can be created for new recreational routes in the area if the fences (or some of them) are removed. In the

current situation, the airbase is used for recreational air traffic (power planes, model aircraft and hang-gliders). (Ill. 4.8)

#### 4.9 Buildings

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The land of the former Twente airbase and the camps are located in a cultivated landscape with agricultural buildings, characterised by its openness. On the government-owned lands of the former Twente airbase there is a diverse spectrum of buildings in low densities, dating from different periods of time.

##### Airbase

Around the open heart of the airbase, i.e. the runway, there are several clusters of buildings, built between 1940 and 2000. In total there is approximately 70,000 m<sup>2</sup> of gross floor space. We have made a distinction between:

##### 1. Noordzijde (North side)

This includes the 'bunch of grapes' consisting of shelters (covered parking areas for aircraft), a few hangars and operational buildings.

##### 2. De Strip

On the flank of Lonnekerberg there are buildings that include the control tower, fire station, command bunker, a few other bunkers and a number of relatively new buildings.

##### 3. Oostkamp

This area includes a few large hangars and the 'munitions street', i.e. a series of munitions bunkers and operational buildings.

##### 4. Zuidzijde (South side)

This includes the terminal building for civil aviation and, adjacent to this (outside the planning area), the military buildings.

Scattered across the airbase site there are distinctive personal shelters, i.e. small concrete shelters for military personnel.

Illustration 4.2: Soil quality at the airbase [24]

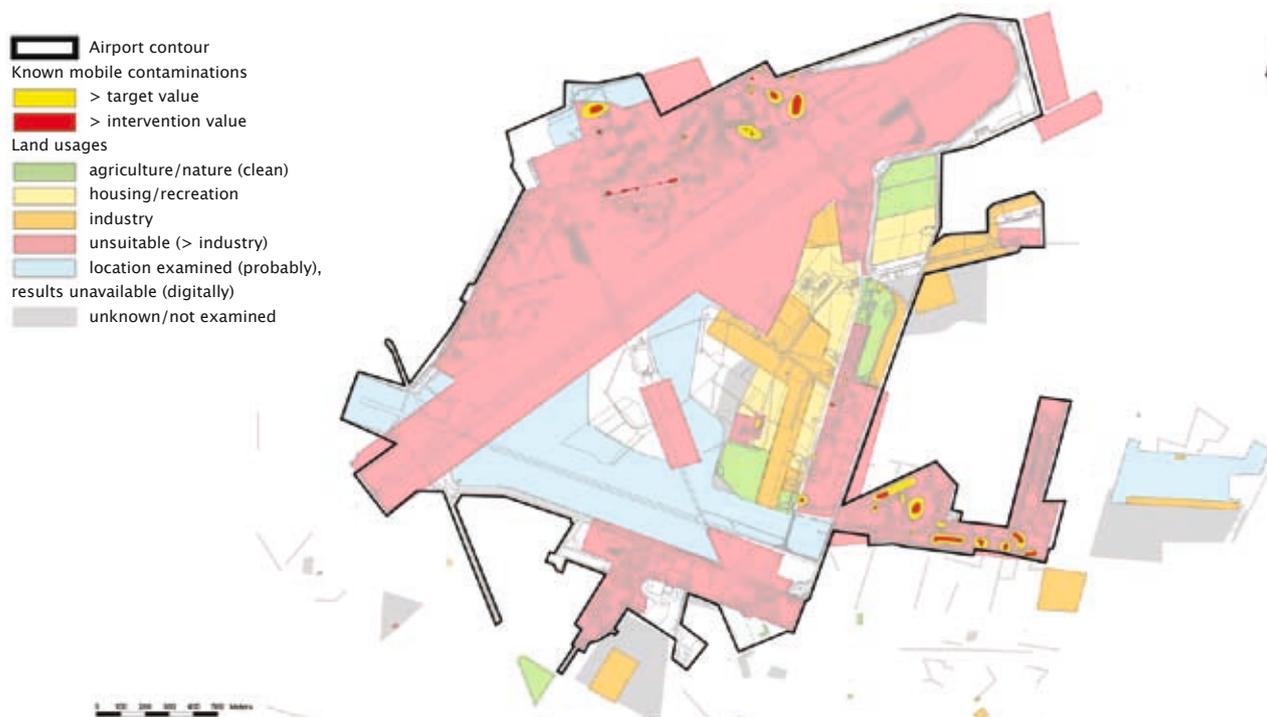


Illustration 4.3: Map showing likely places of explosives based on past research [24]

### **Prins Bernhardpark**

The park includes buildings dating from the German occupation in the Second World War, with distinctive architecture inspired by the regional styles of construction, including the former officers' mess and guardroom building. In total, this area is ca 3,700 m<sup>2</sup> GFA.

### **Zuidkamp**

Zuidkamp is characterised by buildings from the German occupation, including buildings at the entrance, a former chapel, a training building, an auditorium and a mortuary. There are also a few workshops and living quarters. Zuidkamp further has a relatively new officers' mess and a few sports fields. In total, this area measures ca 36,500 m<sup>2</sup> GFA.

### **Kamp Overmaat**

In Kamp Overmaat there are a few former German military houses, the former dining room and a kitchen in country manor style, currently used as an office. In total, this area is ca 1,100 m<sup>2</sup> GFA.

Oversticht has a number of valuable individual buildings, ensembles of buildings, structuring line elements and valuable landscape/park/wood for each of these areas. Refer to [30].

## **4.10 Military structures and sites to be retained**

Scattered across the area there are a few military assets and sites that will be retained. In some cases these are small enclaves, in others large areas on the southern edge of the airbase. The Ministry of Defence will continue to use a total of 19 ha for CIMIC purposes (Civil Military Cooperation), two transmitter complexes and a radar installation. See illustration 4.9. On Zuidkamp the Ministry of Defence will remain the owner of two clusters with a combined surface area of 4.5 ha, where a personnel restaurant and a number of living quarters are situated. (Ill. 4.9)

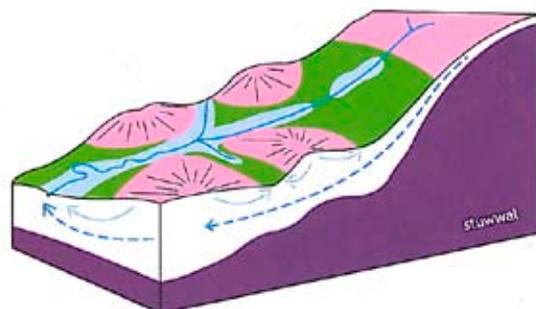
## **4.11 Spatial limitations**

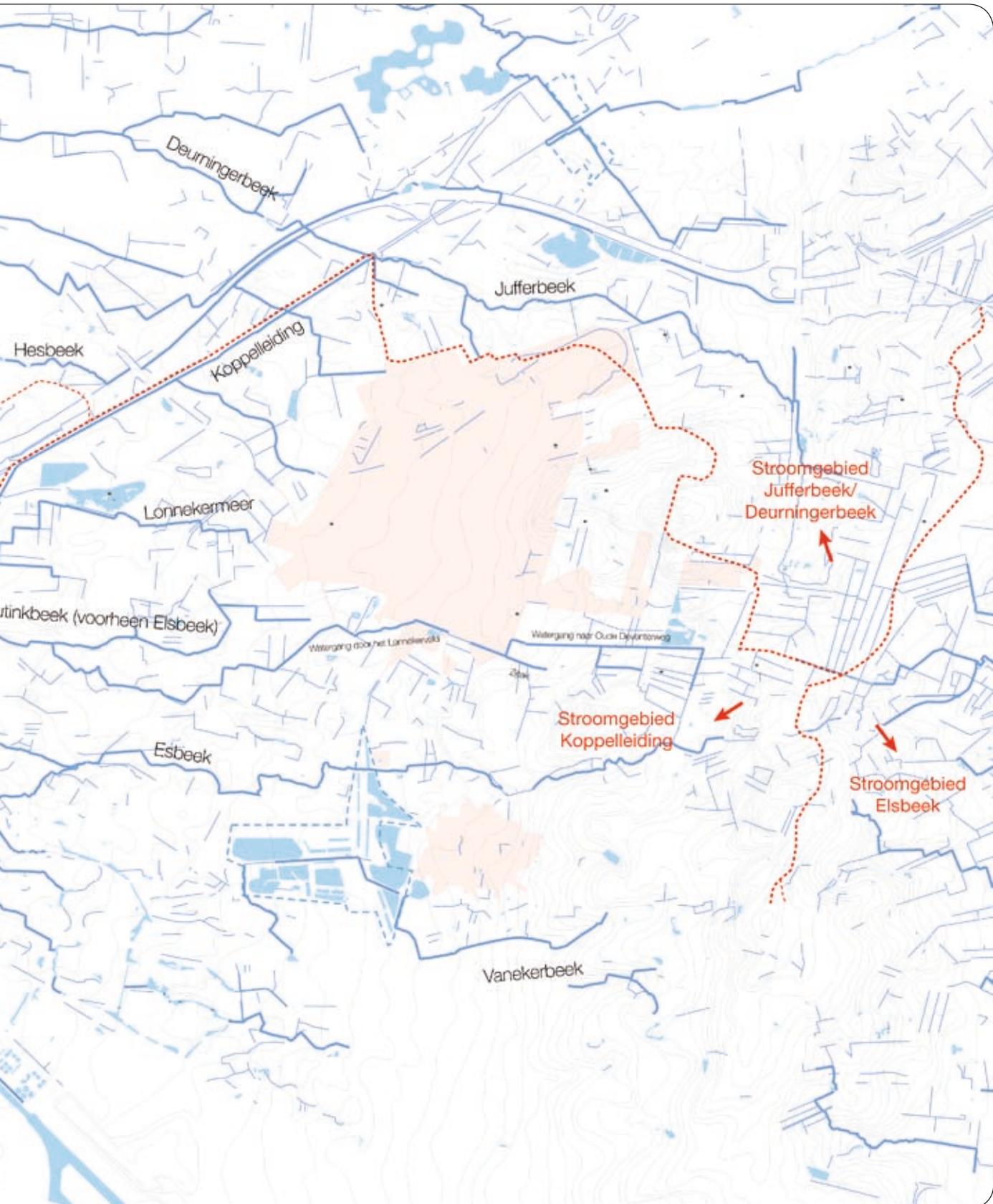
On the airbase there is equipment that imposes restrictions on the height of buildings in the vicinity. The maximum height of buildings will be determined in consultation with the Ministry of Defence. The assets concerned are two LVL/GL radio systems and a MASS radar. Within a radius of 600 meters of the radio systems and within a radius of 500 meters of the radar system there is a maximum permissible building height of 22 meters. Refer to illustration 4.10. The MASS radar imposes building restrictions in a radius of 15 NM (15 nautical miles is approximately 27.8 km); the maximum permissible height of buildings in this area is 45 meters relative to ground level at the position of the radar [37].

From the A1 motorway there is a pipeline along Vliegveldweg. A number of pipelines run through the area that is subject to the Municipalities (Preferential Rights) Act, including three pipelines to the airbase. The airbase itself falls outside the noise contour of the A1. In the southeast corner of the airbase there is an obstruction zone a buffer around an operational building. (Ill. 4.9)



**Illustration 4.4: Contour map and water system**





### Illustration 4.5: Variety of vegetation types

-  Confines of study
-  Government-owned land
-  Meadow
-  Deciduous woods
-  Mixed woods
-  Coniferous woods
-  Orchard/fruit farm
-  Heath





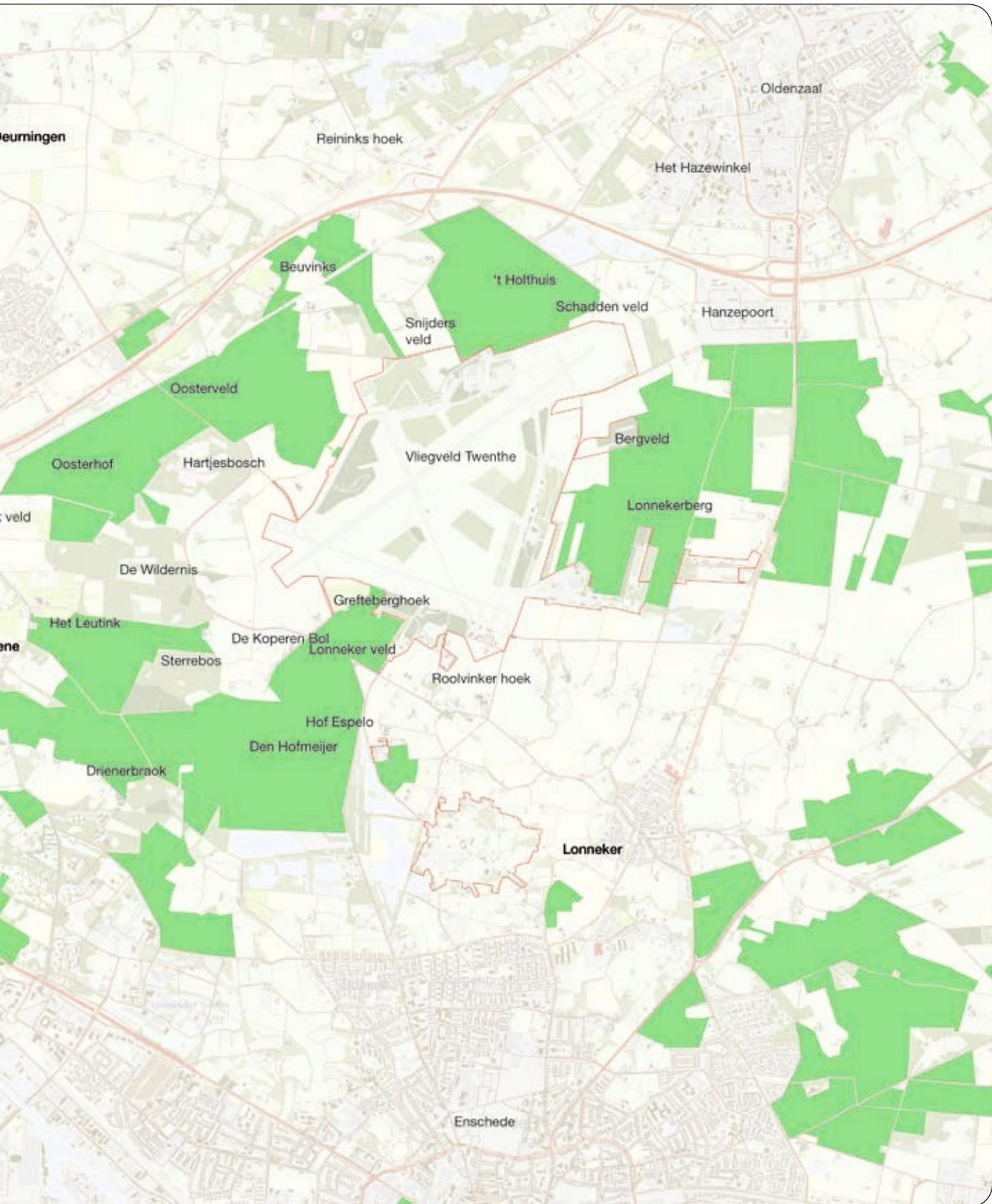
0 1.000 2.000 3.000 4.000 5.000m



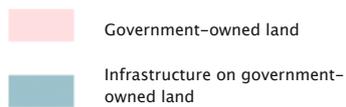
### Illustration 4.6: Country estates around the airbase

-  Government-owned land
-  Country estate

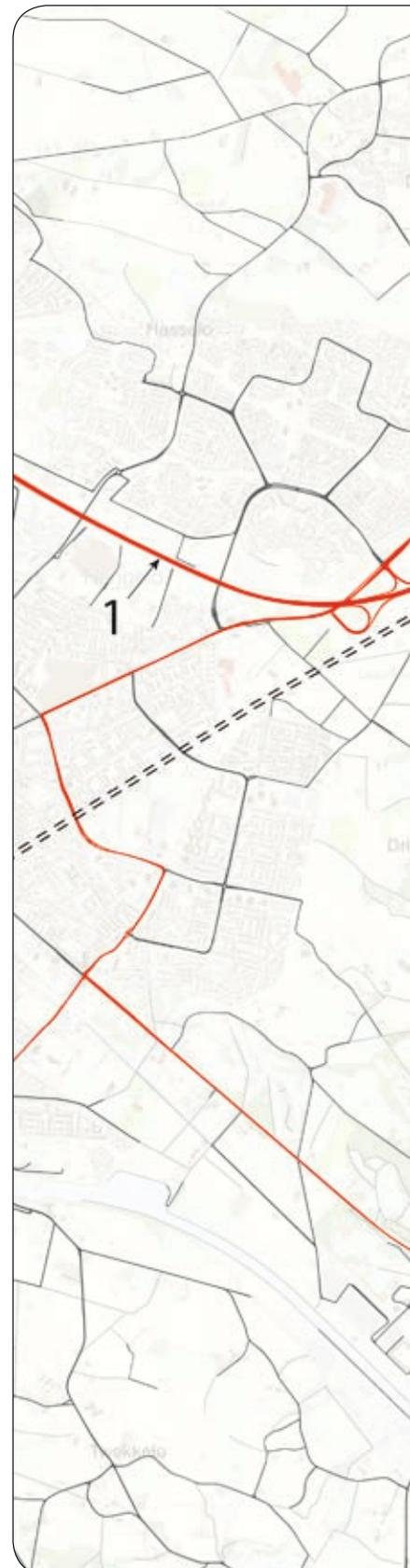


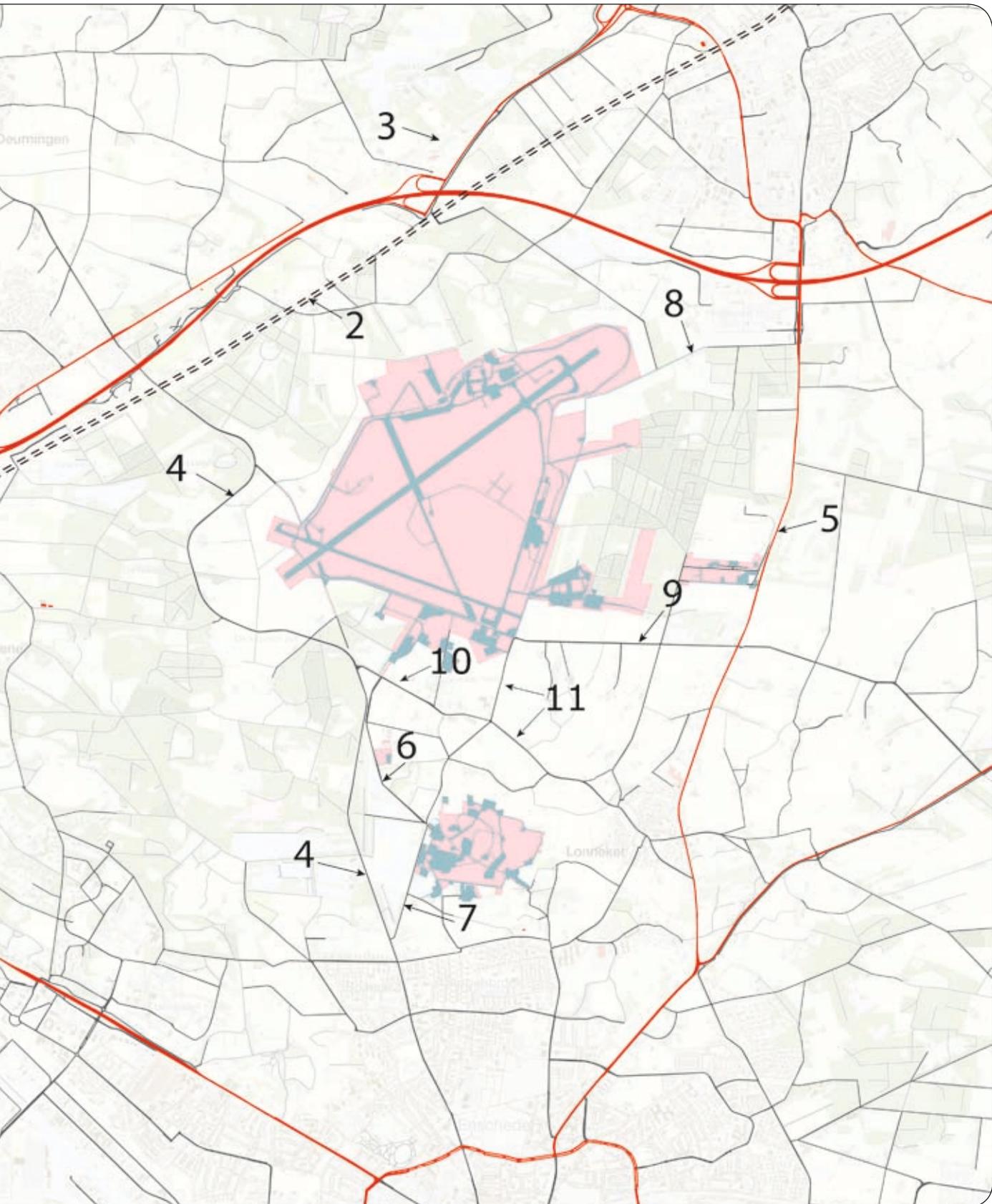


## Illustration 4.7: Infrastructure network on and around the airbase



- 1 A1 motorway
- 2 Amsterdam-Berlin railway line
- 3 Provincial road N 342, Hengelosestraat
- 4 Vliegveldstraat – Weerseloseweg
- 5 Oldenzaalstraat, N733
- 6 Vargershuizenweg
- 7 Braakweg
- 8 Noordergrensweg
- 9 Oude Deventerweg
- 10 Snellenweg
- 11 Vliegveldweg

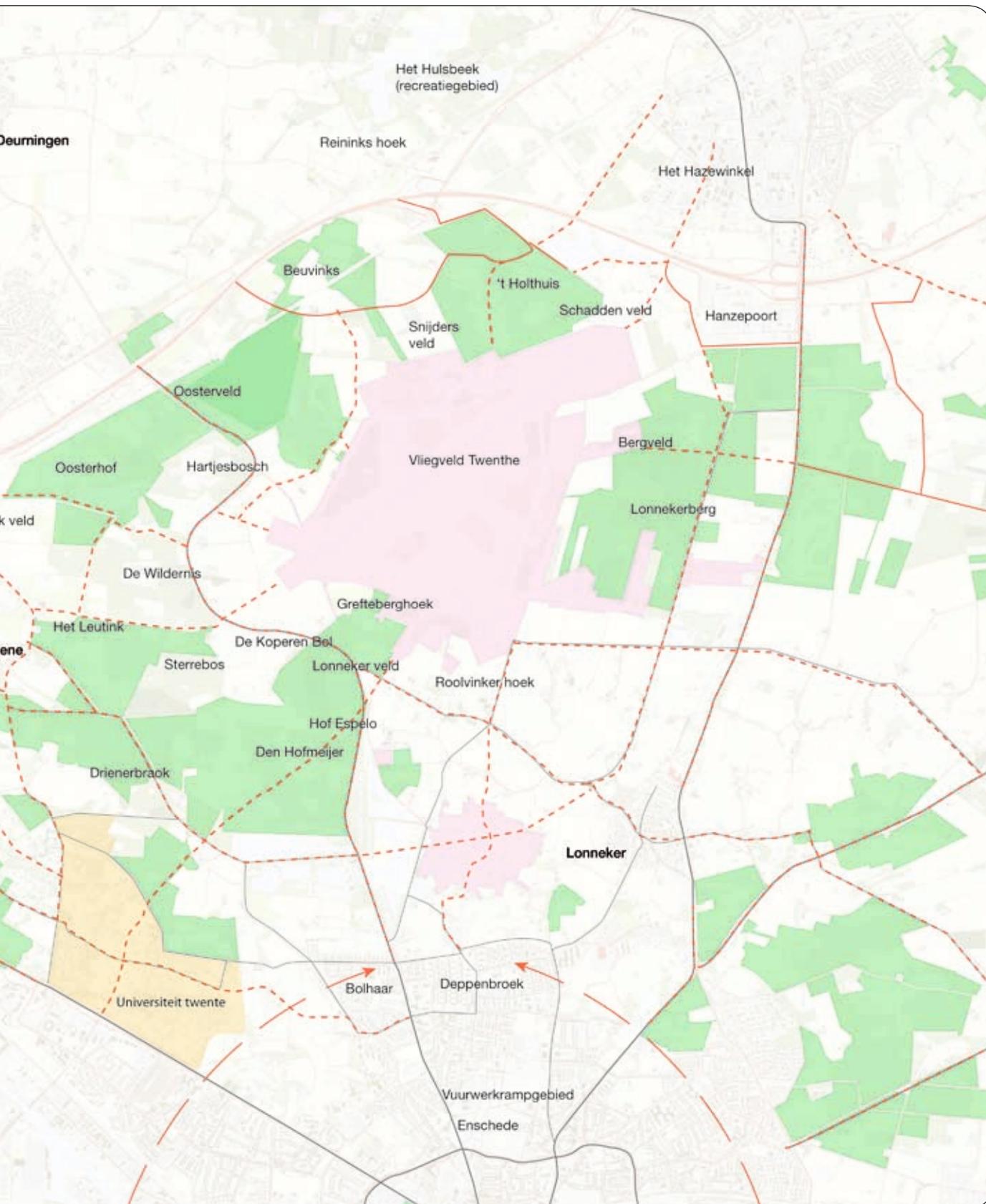




## Illustration 4.8: Recreational route network around the airport

-  'Tour of Enschede' (in production)
-  Isolated cycle path
-  Cycleway over local road or parallel road
-  Primary cycle paths (Municipality of Enschede)
-  Secondary cycle paths (Municipality of Enschede)
-  Country estate
-  Government-owned land
-  Twente University

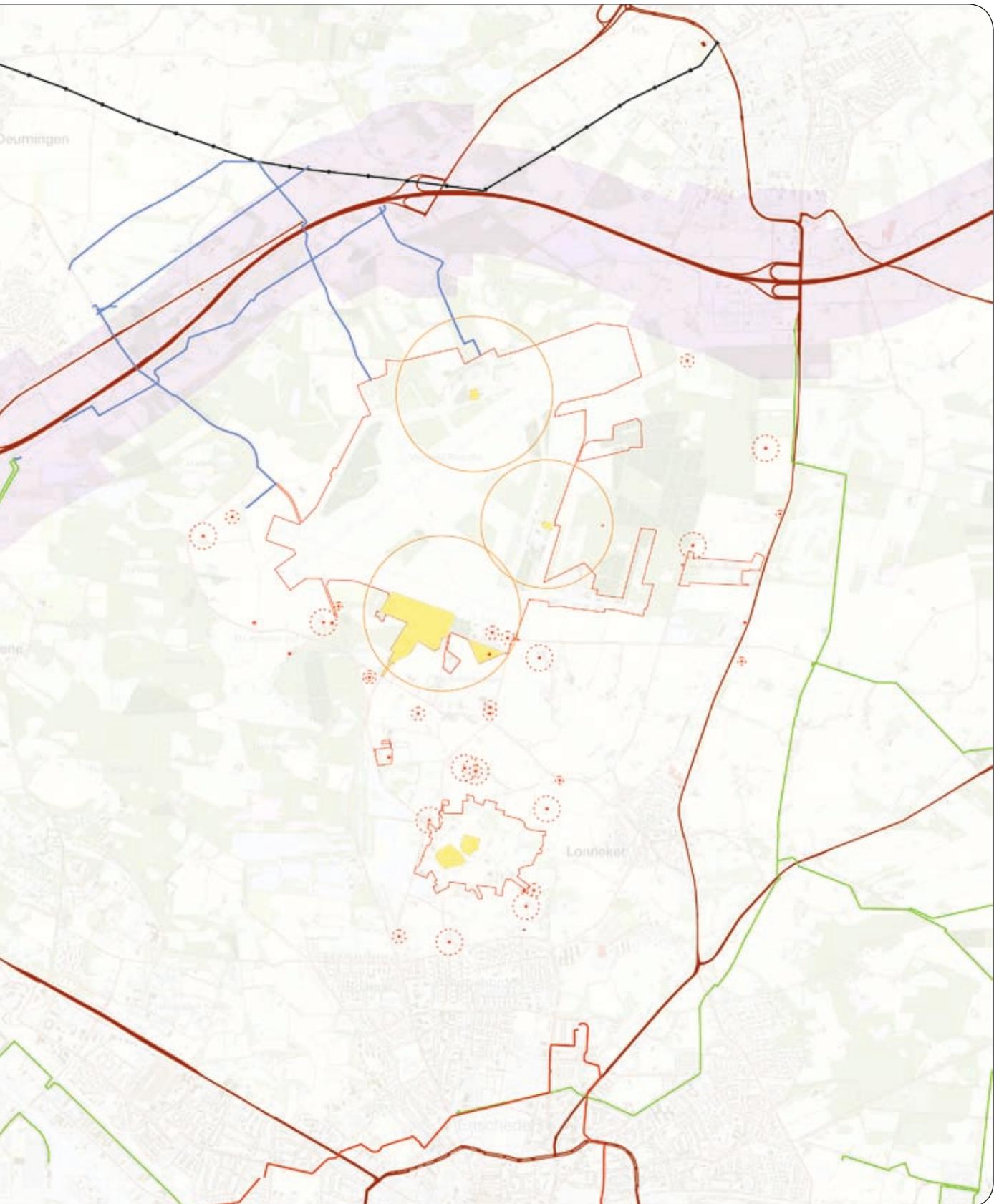




## Illustration 4.9: Spatial limitations on and around the airbase

-  Government-owned land
-  Military assets and sites to be retained
-  Obstruction zones/maximum building height
-  Inventory of businesses: other | agricultural
-  Inventory of businesses\_buffer
-  Enschede high-voltage line
-  Enschede gas line
-  Dinkelland lines
-  High-voltage line  
Regional plan Overijssel 2000+  
planning map 4 obstructions
-  Study of A1 motorway noise contour
-  WVG
-  Municipality borders









# **Part 3:** **Validation** **of policy**





## Part 3: Validation of policy

This part of the document outlines the context in which the plans were drawn up and allows an assessment of the complementarity of the plans on the adoption of policy and with current policy initiatives. This does not necessarily mean that VTM i.o. supports all the described intentions.

### 5 Central government

#### 5.1 Spatial quality

Under the Spatial Planning Memorandum, Twente has been designated as a national urban network. Netwerkstad Twente thus forms part of the National Spatial Structure. The policy memorandum states that it is essential to promote the intermediary function between the northern wing of the Randstad, Berlin and Eastern Europe for such purposes as its development as an international core area. A promising factor in this context is the strengthening of the existing combination of education, technology focused among other things on the medical sector, and healthcare. Attracting people with higher qualifications and stepping up the existing cooperation within EUREGIO are considered challenges.

Central government is currently devoting considerable attention to 'Mooi Nederland' as a synthesis point of a number of policy goals that form the context of current policy. A number of them are highly relevant to Twente. In arbitrary order they include:

- the refurbishing/restructuring of industrial sites to limit the need for new industrial sites (SER ladder, Noordanus Committee);
- the 'Mooi Nederland' innovation programme, which is promoting spatial quality and sustainability;
- the 'spatial quality of industrial sites' pilot project;

- the recreational greening of the suburban areas;
- improvement of the core qualities of the national landscapes.

Each and every one of these items is more than a pointer for the spatial development strategy and its elaboration into concrete plans.

#### 5.2 Nature and landscape

One of the goals stated by central government for the transformation of military sites into civil use is the strengthening of nature and landscape by fulfilling greening goals and retaining ecological qualities of the area. There must be explicit attention to proposals for further nature quality improvements (including restoring brooks) and ecological connections with the nearby Twente national landscape.

There must be a careful approach to the improvement of access to the area on account of the airfield's location in and near the national ecological network, including the Natura 2000 area of Lonnekermeer and the ecological connection of the Twente national landscape to the Sallandse Heuvelrug.

For the strengthening of nature and landscape, it is important to let the desired development of the site fit in with the Nature and Landscape Area Plan of the Province of Overijssel and the greening for spatial quality envisaged by central government under the 'Mooi Nederland' programme.

#### 5.3 Cultural heritage (military fields)

At the interfaces of cultural heritage and spatial planning, the ambitions of central government are set out in the Belvedere policy [50]. The purpose of this policy is, within today's complex and dynamic

spatial developments, to provide for the preservation and utilisation of the community buildings that form part of the nation's cultural heritage, archaeology and the culture landscape. The policy seeks to create conditions and gives the cultural motive and interest an important place within the integral spatial challenges, and it has helped to ensure that the cultural heritage now figures more prominently in setting the direction for the utilisation of space.

In response to a string of protection requests, the National Heritage Board (RACM) has inventoried in cooperation with the Ministry of Defence all military airfields dating from the Second World War [49]. Partly on the basis of a recommendation made by the Council of Culture, it was decided to place only the Deelen airfield integrally under government protection, although Zuidkamp at the Twente airfield was also highly valued.

RACM assigns to the Twente airbase an historical military significance and, specifically, Zuidkamp is highly valued for its pristine condition and the spatial, historical and functional cohesion between the assets within the landscape. Central government takes the view that Zuidkamp has qualities of national importance.

Some assets on the former Twente military airbase site, however, are subject to provisional central government protection. A ministerial decree on the designation or rejection of the assets as monuments is likely to be issued in 2009.

#### 5.4 Economy

Twente comes second after the Eindhoven region on the innovation ladder. This position is supported not only by the University of Twente and related institutions, but also by a number of leading international companies established in the region.

The Peaks in the Delta policy memorandum [38] can be considered the start of a new area-dedicated policy under which attention will shift from backward regions to regional opportunities for international excellence. The policy memorandum refers to Twente as Technology Valley. With regard to the economic performances/opportunities, the memorandum mentions 'push factors' like the major congestion and shortage of space in the west of the Netherlands, and 'pull factors' like the attractive residential and working climate. Knowledge concentration, leveraging of the location near the German cities and mobility are important sources of development.

Economic priorities for the region are [38]:

- Kennispark Twente;
- stimulation of the urban economy;
- innovation in technology;
- strengthening of the regional economic structure;
- promotion of regional economic development (Oost NV).

There are a number of sites in Twente where internationally competitive innovation occurs. This concerns mainly health & care, mechatronics, broadband, materials and high-tech systems.

Further improvement of mobility and the solving of bottlenecks are matters being worked out in the consultations that take place between the Ministry of Transport, Public Works and Water Management, the Ministry of Housing, Spatial Planning and the Environment and the Twente Region collaborative venture through planning and decision-making on the Multiyear Programme for Infrastructure, Spatial Planning and Transport (MIRT).

## 5.5 Aviation

Central government is addressing a new phase in aviation policy. The Senate

approved the Civil and Military Airport Regulations (RML) at year-end 2008 and made them law. The legislation will enter into force in a few stages. An important element of the legislation is that the provincial government will hold authority for airports of regional significance.

The decision regarding the position of various airports has been placed in the wider perspective of 'optimum accessibility of the Netherlands by air'. The Aviation Policy Memorandum [51] that elaborates this matter was submitted by the Minister of Transport, Public Works and Water Management to the House of Representatives in April 2009.

The policy memorandum states that the Netherlands has a public interest in ensuring good international accessibility in a competitive and sustainable context. The development of aviation must be aligned to this interest. Therefore, the objective of Dutch aviation policy for the coming years will be 'the further development of optimum network quality, combined with a competitive and sustainable aviation sector'.

Good international accessibility by air is determined by the quality of the network of connections. Optimum network quality means that it is not only the number of connections that counts, but also the quality and competitiveness of the network as a whole. In this setting, Twente airport is important.

This makes clear that Twente is an airport of national significance. After parliamentary approval of this policy memorandum, the power to designate Twente as an airport will be held by central government, if the airport function is retained. Although of national significance, Twente is not considered part of a national system of cooperating airports. This system includes those airports that are of importance to international accessibility from the point of view of national economic

ambitions. These airports are Schiphol, Lelystad, Eindhoven and Rotterdam.

As part of preparation of the Aviation Policy Memorandum, there was a wide consultation about the future of Schiphol (among other things the latitude that exists for noise). The 'Alderstafel' concluded in 2008 that Schiphol's latitude for noise will be exhausted in the coming decades. Initially, the overflow from Schiphol will then have to be absorbed by Eindhoven and Lelystad. Regional Alderstafels have been organised at both these airports to work out plans.

The Cabinet stated in the Aviation Policy Memorandum that the Netherlands has a major public interest in international accessibility by air. The Netherlands must handle air traffic more cheaply and more efficiently in order to be affordable and competitive and to assure availability. Additionally, the memorandum states that the Netherlands aspires to a pioneering role with regard to the negative aspects of aviation; it must be made cleaner, quieter, more economical and safer. In view of the Twente knowledge triangle the space available at the present airfield, it is desirable to study emphatically the possibilities that Twente offers to drive knowledge and production in this field. A few large international companies in the region are involved in innovations in this setting. Operationally, the Cabinet states that Twente airport must be available to provide spare capacity for the Schiphol overflows, besides accommodating its autonomous needs (particularly those in the region). If it transpires that there are insufficient possibilities to accommodate the 70,000 aircraft movements at Eindhoven and Lelystad airports, Twente will be the first airport that will be considered for absorbing the demand.

The Aviation Policy Memorandum [51] indicates in a number of models what the possible contribution of Twente airport might



be to taking overflow from Schiphol. Further decision-making is still required on the issue.

The Aviation Policy Memorandum makes a few explicit pronouncements about the development of the former Twente air force base. For the Cabinet, too, the prime consideration is to respect the decision-making path for area development with or without an airport, as is taking place under the VTM i.o. umbrella.

- Additionally, it is stated that if a plan with an airport is chosen:
- it must be possible to limit the current military noise contour;
- there will be no night flights;
- after decision-making on Twente, air traffic control must be available;
- military co-usage must be possible;
- the accommodating of commercial and non-commercial flights for point-to-point destinations, general and business aviation must be factored in.

## 6 Province of Overijssel

### 6.1 Vision of the locality

Sustainability and spatial quality are leading themes in the vision for the area developed by the Province of Overijssel [44]. The provincial authority is striving for a strong economy in a beautiful landscape. The authority intends to achieve sustainability by means of a transparent and balanced weighing up of ecological, economic and socio-cultural policy ambitions. The planning EIA instrument is regarded by Overijssel province as the means for assessing sustainability.

Besides protection the Overijssel provincial authority wants to achieve spatial quality mainly by connecting existing qualities and by new developments; also see illustration 6.1. For this purpose the province is

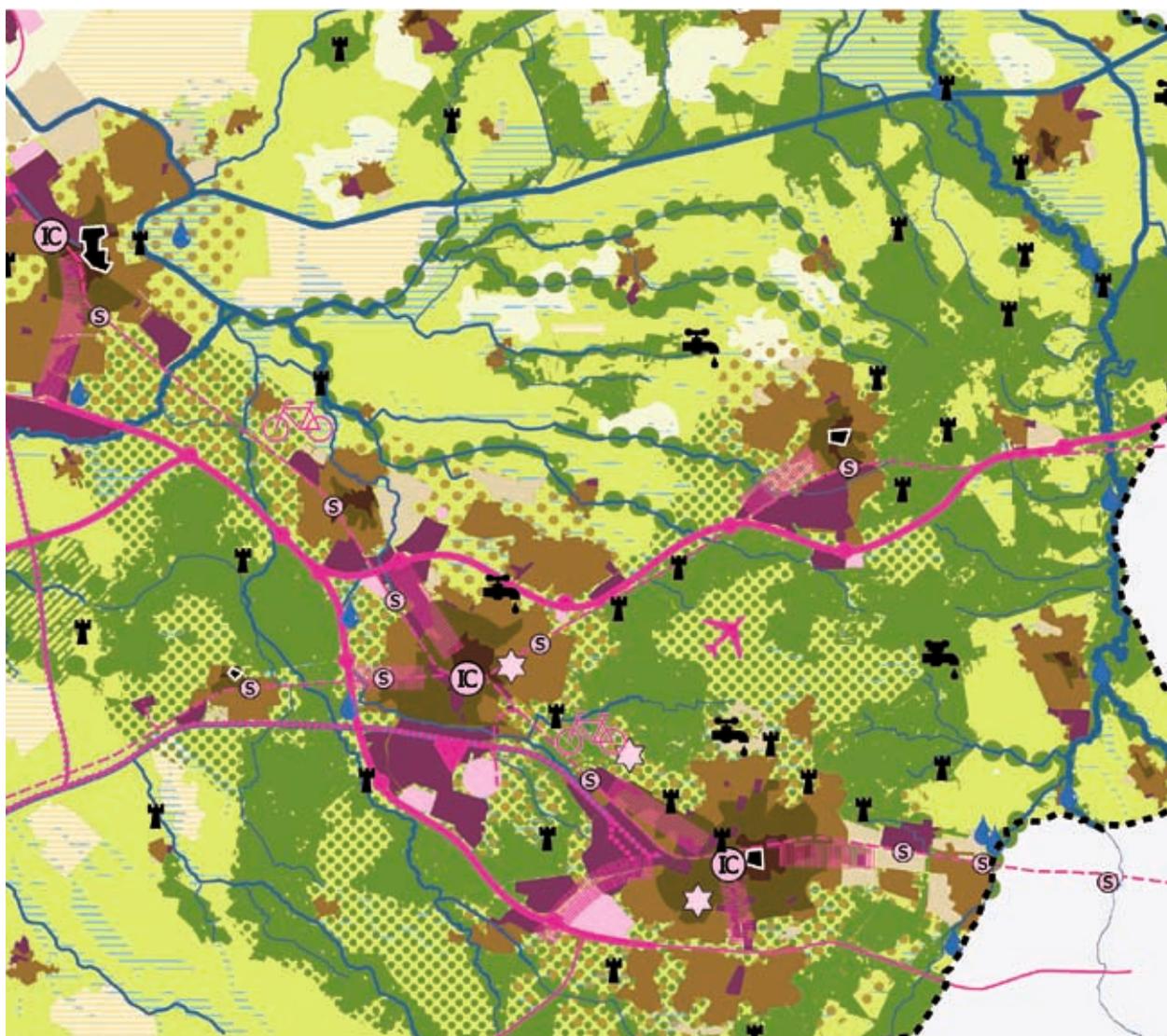
pursuing seven ambitions against which substantial interventions will be tested [44]:

- Providing a wide array of residential, working and mixed environments; each hamlet, village and town must have its own colour.
- Building further upon the characteristic structures of the agricultural landscapes.
- Using nature as a backbone, with improved mobility in the flanks.
- Ensuring a visible and enjoyable beautiful landscape.
- Strengthening the contrast between dynamic and quiet areas by means of the infrastructure network.
- Assuring a continuous and enjoyable water system as a supporting structure of Overijssel.
- Making strong spatial identities brands for Overijssel.

The Locality Vision further seeks to fulfil a number of policy ambitions, for nine central themes for Overijssel [44]:

- Residential environment: flexible offering of residential environments and the availability of high-quality amenities.
- Economy & business climate: pursuit of vital work locations (high-quality manufacturing industry and SMEs), scaling-up and widening of agriculture, and tourism and recreation.
- Nature: cohesive system of nature areas, including creation of a national ecological network ('EHS') by 2018 by means of re-delineation, balancing and compensation.
- Towns and landscape: diversity of landscapes and villages, cultural heritage and core qualities of towns and their centres.
- Mobility: good mobility and multi-modality (car, public transport, bicycle and goods traffic).
- Water system & climate: optimum water conditions, climate-proof and safe.
- Safety & health: water safety, external safety, road safety and a healthy living environment.

Illustration 6.1: Policy perspectives for the Twente sandy soil sub-area [44]



- Energy: promotion of sustainable energy generation and limitation of greenhouse gases.
- Subsoil: balance between usage and protection of subsoils.

This spectrum of ambitions has been translated into the development of the Twente airport area. A more generic policy

objective is to apply the SER ladder to the construction of housing, business locations and amenities in the urban environment. Consequently, existing buildings and restructuring must first be used before any expansion can occur. On the other hand, the principle of economical and careful use of space also applies.

## 6.2 National ecological network

The national ecological network ('EHS') was re-delineated by the Overijssel province in 2009. The detailed delineation was laid down in the draft locality regulation that the provincial executive adopted early March 2009. The locality vision and locality



regulation will be adopted by the Provincial Council on 1 July 2009. The airport is located largely outside the EHS. On the northern side of the runway and in Oostkamp, part of the planning area is located within the EHS.

The 'EHS rules' will apply to interventions in the national ecological network that will impair the values that are present. The rules indicate when and how to deal with compensation and re-delineation of the EHS and/or possibly the 'EHS balancing approach'. The Spatial Planning Policy Memorandum, the new Spatial Planning Act and the General Administrative Order for Spatial Planning form the framework within which the EHS rules will be applied. Application of EHS rules is a power held by the provincial authorities. Various nature laws also apply to interventions in the national ecological network. Those laws include conditions that might apply to mitigation, restoration and compensation. Here again, the provincial authorities are often the competent authority. Both the spatial development strategies offer possibilities for the implementation of these rules.

### **Natura 2000**

The Lonnekermeer area, to the north-west of the airport site, is one of the Natura 2000 areas designated by central government. Undertaking activities in and around a Natura 2000 area may have consequences for nature in the area. As the Lonnekermeer area borders directly on the airport site, there is a sensitive relationship between the proposed protective measures for Lonnekermeer and the development of the Twente airport area.

### **6.3 'Mobility in A1 zone' Study**

In the MIRT framework, the Province of Overijssel is working with the Province of Gelderland and central government on a future vision for the integral development of the area along the A1 motorway. Within this area there are roughly all locations from

Apeldoorn to the border with Germany. There are four economic clusters within the area. They are: Apeldoorn, Deventer, Rijssen and Twente. The planning area of these spatial development strategies is located within the Twente cluster. The objective is to harmonise policy efforts in this corridor and to ensure the development of synergy effects between choices for spatial development, quality and infrastructure.

The purpose of the 'A1 zone programme' is to utilise the development opportunities of the A1 and to retain and strengthen the qualities in a way that makes the zone an attribute for the east of the Netherlands. Within the programme the focus is on cohesion, but also interaction between the region's economic opportunities, mobility and the quality of the living environment.

The report entitled 'Mobility in the A1 zone' [29] cites 'mobility' as the most important criterion. Mobility is defined as the number of people that can reach a place within an acceptable travelling time. The report makes clear how certain improvements in the infrastructure and timetables (public transport) can influence the economic potential of a location in the relevant area along the A1 motorway.

### **6.4 Land usage plan for Enschede-North**

The Overijssel provincial executive adopted the Enschede-North land usage plan [14] on 28 October 2008. The plan provides for a rearrangement of various functions that occur in the area roughly located between Hengelo, Oldenzaal and Enschede. The planning area covers roughly 4600 ha and was drawn up by a land usage committee consisting of administrative representatives of the municipalities of Enschede, Hengelo, Oldenzaal and Dinkelland, the Regge and Dinkel water board, the agricultural sector, nature and the country estates. The Twente

airfield site is situated like an enclave in the middle of the planning area.

The reason for the land usage plan is the less than perfect parcelling of land of the agricultural businesses and the wish for more space for nature and landscape, recreation and the living environment. The work period spans more than ten years and will be carried out in modules. In connection with the development of the plans for the airfield, the committee will start with the module on the eastern side of the planning area. Also refer to illustration 6.2.

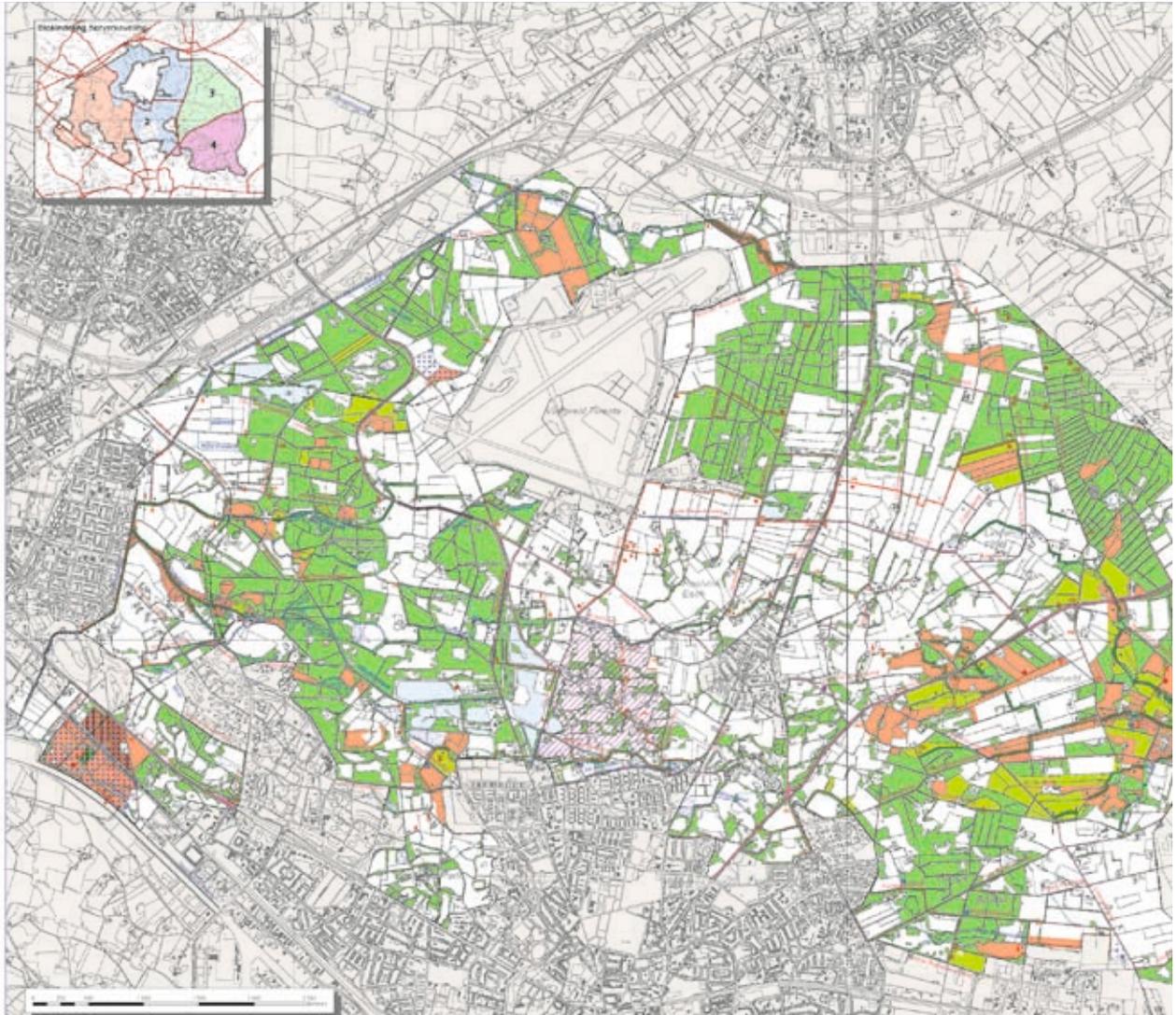
Agricultural parties have an important task in respect of the maintenance and management of the outlying area. The plan ensures that the parcelling of land of agricultural businesses will improve, with an emphasis on enlarging the parcels of land of the farms, the concentration of parcels and the reduction of the distance to the house parcel. The plan makes allowance for the relocation of a few farms.

Nature areas are interconnected via the national ecological network and the ecological connecting zones in Enschede-North. Within Enschede-North the objective is to create approximately 400 ha of new nature. Passages for fauna will be created at the busiest roads (including Weerseloseweg and Oldenzaalsestraat).

The connection between Jufferbeek and Deurningerbeek forms one of the four ecological connecting zones contained in the Zuid-Twente nature area plan.

Cycle paths, footpaths and bridle paths will be built in the outlying area to create an uninterrupted recreational network. Road closures will be placed in various roads to spare nature areas, including to the south of the Natura 2000 area of Lonnekermeer. (Ill. 6.2)

Illustration 6.2: Land usage plan for Enschede-North [14]





## 7 Regional policy and municipalities of Hengelo, Oldenzaal and Losser

### 7.1 Administrative authority: Twente Region & Netwerkstad Twente

The Twente Region is a collaborative venture of the fourteen Twente municipalities under the Joint Arrangements Act (WGR). Netwerkstad Twente ('NT') has been designated by the Ministry of Housing, Spatial Planning and the Environment as a national urban network. Since 2005 there has been NT collaboration between the municipalities of Enschede, Hengelo, Almelo, Oldenzaal and Borne.

#### Area and development agenda

Under the Multiyear Programme for Infrastructure, Spatial Planning and Transport (MIRT) and for the purpose of widening the A1 motorway, the central government, the provinces of Overijssel and Gelderland, the Twente municipalities and the Arnhem-Nijmegen urban region are drawing up an area agenda for Twente [42].

An important building block for this product is the Twente Area Agenda, which was drafted in collaboration with the central government, the province of Overijssel and the Twente Region [57]. The agenda is an integral development perspective for 2010-2020, in which the cohesion between the major spatial economic developments and the infrastructure in the region will be marked out. Besides the vision part of the document, the area agenda includes a list of projects of the most important spatio-economic and infrastructural projects. The spearhead of the area agenda is the envisioned development of the 'Twente Innovation Triangle'. This includes the major area developments of Hart van Zuid, Twente Airport and Kennispark, which show

the cohesion between spatio-economic developments and infrastructure. The innovation triangle will seek to strengthen the regional economic structure. From that point of view, research and development could take place at Kennispark within the innovation triangle, Hart van Zuid could serve as a place for business services for marketing innovative technology and Twente Airport could provide the (platform-dedicated) production, assembly and distribution of products and knowledge by offering development opportunities for innovative economic activity. National and regional aviation know-how can be used to make cleaner and quieter aircraft.

The Twente Area Agenda mentions as one of the regional projects the restructuring of the crossroads of the provincial roads (Vliegveldweg and N342) and the railway line crossing at Frans op den Bult. The Twente Area Agenda will be adopted in autumn 2009 and will ultimately be integrated in the East Netherlands Area Vision in order to establish a relationship with the MIRT Area Agenda of central government for the purpose of allocating public funds in Twente.

At the request of the Ministry of Housing, Spatial Planning and the Environment, the municipalities within Netwerkstad Twente drew up a Spatial Development Agenda 2010-2020 in 2005. Development of the Twente airport area is one of the major projects in the agenda. The updated version of the spatial planning agenda, now called the REO agenda because of a more robust economic section, will be adopted administratively during 2009. In the REO agenda, the innovation triangle (the area developments of Hart van Zuid, Kennispark and Twente Airport) occupy a prominent place.

#### Regional Mobility Plan

The network analysis is one of the important elements for establishment of the Regional Mobility Plan 2007-2011 (RMP) [47]. In this

document, the Twente Region describes how it wants to work in the years ahead on improved mobility, safety and liveability. The future mobility/improved access (for all modalities) of the economic core areas, including Twente Airport, are important subjects in this context. Keeping up to the required quality standard of Twente's external connections (national and international) over the A1, N18, N35, by rail (Agglonet) and water is an important spearhead. The RMP was adopted in 2007. The most important traffic bottlenecks identified by the network analysis were the increasing congestion on the A1/A35, particularly as a result of increased road haulage vehicles, the congestion on access roads to the major towns in Twente and the absence of alternative access in the event of major incidents.

### **Regional Economic Development Plan (REOP 2005)**

Based on its conurbation with approximately 620,000 inhabitants, the Twente Region wants to work in the coming years on more far-reaching economic structure-strengthening by means of the Regional Economic Development Perspective (REOP) [82]. In the REOP, Twente is striving to fulfil economic ambitions in those fields in which the region already performs well and in which it possesses demonstrable advantages compared with other regions. For that reason there will be investment in:

- Knowledge and innovation;
- New entrepreneurship;
- Business environment;
- Tourism;
- Labour market and employment opportunities;

These themes form part of the spatial development strategies for the area being developed by VTM i.o..

### **Recreation and tourism**

The Twente Region has adopted a development vision for Hulsbeek recreation park to the north of the A1 and the Twente Airport. It provides for the required physical expansions and for qualitative improvements in the park's offering [46].

## **7.2 Municipality of Hengelo**

The municipality of Hengelo has embarked on a number of development directions that might have a relationship with the development of the Twente airport area and surroundings. These have relationships with spatial visions and projects including those mentioned below.

### **Spatial development strategy 2030**

Under the 'From growth to quality' banner, Hengelo has formulated a spatial development strategy for 2030 [28]. Hengelo is both a town and village and wants to continue developing that particular strength. Based on these qualities and trends in society, the municipality of Hengelo has formulated a number of ambitions in its exploratory study for the future (including economic structure-strengthening, the inner-city as an attractive meeting place and the further pursuit of urban and rural quality). These ambitions have been set down in four key projects, which the municipality wants to firm up in liaison with its inhabitants: The 'pearl chain', Vital districts (Hengelo-South), Suburbs (landscape into the city), and 'Archipunctuur'.

### **Hart van Zuid**

The overall Hart van Zuid project is an inner-city industrial site of 50 ha located between Hengelo railway station and the Twente Canal. The local picture is still dominated by major factory complexes of companies including Stork and Siemens, but a new city district will be created in 2030, i.e. a modern, high-quality urban environment, where people will be able to live, work and

recreate pleasantly. The cornerstones will be urbanisation, mobility, a mix of functions, retention of industrial heritage, sustainability and the strengthening of spatial quality. Work is in progress on creating an innovative combination of Twente's traditionally strong and innovative manufacturing industry, with modern educational and cultural facilities, housing and business services in the new Euregional business district/WTC, based partly on improved international accessibility of the city. Located on the transport axis between the Netherlands and Germany/Eastern Europe, Hengelo is working towards its improved international accessibility by upgrading Twente Central Station to a Euregional public transport hub.

## **7.3 Municipality of Oldenzaal**

The municipality of Oldenzaal is pursuing several spatial developments that may be related to the development of the Twente Airport area and surroundings. The visions and policy documents stated below are among the important frameworks for this purpose.

### **Vision for Eekte Hazewinkel**

The municipality of Oldenzaal has given high priority to revitalising the Eekte Hazewinkel industrial site. In preparation for the revitalisation and zoning plan, which must be revised, the municipality has prepared an image quality plan. The plan sets out a vision of the future structure and possible functional and spatial developments at the site. A draft version of the master revitalisation plan is ready.

### **Jufferbeek Zuid zoning plan**

The provincial authority approved the Jufferbeek Zuid zoning plan in 2007. The zoning plan gives substance to the spatial development strategy for industrial sites in Oldenzaal (1997) and to the economic activity plan dating from December 2004. The zoning plan allows for the developments into industrial sites. In addition to space for



new companies, the plan further provides for the retention and development of a green strip of approximately 75 m wide that will serve as an ecological zone.

### **Stationspark Oldenzaal Centraal Master Plan**

A spatial development strategy for the Oldenzaal railway station area was adopted in 2005. The Oldenzaal Centraal project is on the Twente regional development agenda. In the Stationspark Oldenzaal Centraal Master Plan, a spatial development strategy adopted in 2005, an area of approximately 36 ha will be transformed from an industrial site-cum-residential area into high-quality residential environments (with 500-700 dwellings). The railway line will be sunk over a length of 1.8 km, with a new railway station and bus station, creating new north-south connections. The project area is located within the prevailing noise contour of the Twente military airbase.

### **Restructuring of Zuid-Berghuizen**

At various places in the Zuid-Berghuizen district, development and redevelopment locations have been designated. They are below the prevailing military noise contour (35 Ke) of the Twente airbase, which imposes spatial restrictions on these locations within the district.

## **7.4 Municipality of Losser**

The most important spatial developments, as proposed by the municipality of Losser, have been set out in a number of visions and policy documents. A relationship may be established between these and the development of the Twente airport area and surroundings. This applies especially to the spatial development strategy for De Lutte, the Outlying Area Framework Policy Memorandum and Elaboration Plan for Losser. The objectives include Losser's improved connection to the A1 motorway.

## **8 Municipality of Enschede**

### **8.1 Prevailing spatial policy**

The municipality of Enschede is striving for sustainable spatial developments that will contribute to:

- a stronger city;
- a larger offering of selective residential environments for higher incomes;
- better mobility;
- improved tourism infrastructure and greening around the city;
- increased employment opportunities.

This ambition has been set down in the policy documents discussed in the following sections.

### **Future vision for Enschede 2020**

In 2008, Enschede prepared a future vision for 2020, describing its spatial and socio-economic ambitions [26]. By 2020, Enschede must be a city with a reputation in Europe as a knowledge & innovation city. It must be the pulsating heart of the Euregional area that connects Netwerkstad Twente and the German cities of Münster and Osnabrück. People must be able to live, reside, work and recreate in an environment that is inviting, liveable, sustainable and green. Economic development is one of the cornerstones of this vision, partly with a view to strengthening the socio-economic structure and thus making the city more attractive to more highly educated workers. Good mobility (multimodal) is crucially important. Therefore, the future vision spells out five ambitions for an Enschede that:

- occupies a very strong central position in the Euregion, with the allure of a large city and cultural look and feel;
- has a very strong function for providing employment opportunities

in the Euregion and a highly-educated working population;

- has connected greening and sustainability inextricably with time spent in the city;
- has achieved social climbing and secured the loyalty of its residents;
- has the image of a European city of knowledge.

### **Spatial planning vision 2015 – 2030**

The Spatial Planning Vision [17] concerns the entire municipal area, both the city and outlying area. The document names the areas that qualify for future urbanisation and those where large-scale restructuring needs to occur.

The main objectives of the Spatial Planning Vision are:

- rectify the lopsided composition of the population; higher income groups must be more strongly represented;
- strengthen the core qualities of the city: the 'green residential city', the 'modern working city' (employment function in the services sector and knowledge-intensive economic activity) and the 'Euregional amenities city' (city-centre functions for education, care, tourism and culture).
- bring about sustainable spatial development. This will be pursued through an emphasis on infill development and the restructuring of existing urban area, by retaining and modernising the 'treasures of Enschede' and by managing surface water flows.

A start was made in 2008 on updating the Spatial Planning Vision for 2015-2030 and it will be readopted in 2009. With regard to the development of the Twente Airport area and surroundings, the new vision provides space for distinctive additions in the fields of housing, employment, leisure and care, which are not competitive for other developments in Enschede.

### **Outlying area**

The prevailing usage assigned to the entire airport site (in 'Buitengebied 1996') is 'airport and military purposes'.

The Buitenkans report of 2008 [22] states that developments may create economic opportunities for the outlying area, but also for a greater public wealth in the form of nature, cultural heritage, calm, darkness, biodiversity and mobility. However, large-scale developments with urban relevance, like the redevelopment of the airport site, are not tested against the preconditions for the outlying area, but are weighed up in an urban perspective.

## **8.2 Other prevailing policy**

### **'Working on Housing', Housing Vision 2005–2015**

The urban housing framework has been laid down in the strategic programme for housing and is elaborated in more detail in a Housing Vision document entitled 'Woonvisie' [21]. The document makes a distinction between two main objectives:

- contributing to strengthening the socio-economic position of Enschede by retaining and attracting more higher income groups to the city;
- increasing the quality of housing for all residents, with the consumer's wishes as the central consideration.

An important principle underlying municipal housing policy is the urban objective of structure- strengthening by attracting and retaining medium and higher income groups. In order to attract and retain these income groups, there will be the creation of dwellings and residential environments aligned to the demand existing among this target group. Therefore, the Woonvisie document states that, on average over the entire city, not more than 20% of the newly built housing stock will be in the low-income segment, 30% in the medium income

segment and at least 50% in the high income segment. It has also been decided that 150 private sector housing parcels must be offered each year.

### **Housing and care**

On 26 January 2004, the municipalities, housing corporations, care and welfare providers and the care administration office signed a covenant (voluntary agreement) on housing, welfare and care. The agreement states that all citizens, particularly vulnerable ones, must have access to adequate housing, welfare and care, in a liveable and safe environment.

### **Mobility Vision 2020**

The Mobility Vision for 2020 [27] is focused on improving external mobility, with the goal of reinforcing the position of especially Enschede-Centre and Enschede-West. This goal is being pursued by such means as:

- improving external access, both by road and by rail;
- accelerating the radials for road traffic;
- working on a modal shift by means of a mix of measures (physical and policy, compulsory and facilitating).

The possibilities for an improved 'Noorderval' access are being explored in more detail.

### **Water Vision**

As the water storage capacity of the urban area is insufficient, the outlying area of Enschede must provide extra storage space in retention areas on the periphery of the city. Places designated for this purpose in the Water Vision document [18] include the site of the University of Twente and the middle area between Hengelo and Enschede.

### **Culture and technology & Care and technology**

The Cultural and Technological programme [19] is directly related to the European competitive position of Enschede. A high-quality knowledge-driven economy

and cultural offering reinforce each other. The municipality of Enschede regards care and technology as sectors with great opportunities for creating economic activity and for increasing the competitive strength of the city and region.

An action programme has been fleshed out along the following three programme lines: strengthening the education and research infrastructure, strengthening entrepreneurship and stimulating the forming of clusters and collaborative ventures.

For that reason Enschede is pursuing in a regional context an 'Innovation Triangle' between the core economic areas of Kennispark/University of Twente, Twente Airport and Hart van Zuid/WTC/CS Twente.

### **Course and action programme for Enschede's leisure economy**

In its Course and Action Programme for the Leisure Economy, called 'The Enschede Experience', the city has set out the course that it will pursue [23]. With its modernising course, Enschede is aiming for a year-on-year growth of the number of jobs from 2010 onwards. Businesses will not structurally create new jobs until there is a stable growth in the numbers of visitors. In 2015 there must be 750 more direct jobs than there are now, after a correction for the national trend.

Enschede can be successful in this endeavour by adopting a coordinated approach simultaneously on three fronts. These fronts are Tourism marketing (Selling), Events policy (Celebrating) and the expansion and reinforcement of the range of amenities (Strengthening).

## **8.3 't Vaneker**

The 't Vaneker plan seeks to create a high-quality residential environment on the northern side of Enschede in the existing



landscape. The area is located to the north of the Deppenbroek residential district on the city's northern periphery, to the south of Twente Airport and to the west of the village of Lonneker. The planning area 't Vaneker includes, in addition to Zuidkamp, the region that lies like a shell around the government-owned land of Zuidkamp and has a surface area of approximately 57 ha

't Vaneker has been designated as a priority location for developing a residential landscape. In the Major Cities Policy covenant concluded in 2000 between central government, the Province of Overijssel and the municipality of Enschede, 't Vaneker is named as an important location for housing construction, one that must help to create attractive housing and residential environments so as to attract and retain medium and higher income groups as part of the socio-economic structure-strengthening of Enschede.

An image quality plan for 't Vaneker was adopted on 30 March 2009 [25]. The image plan for 't Vaneker includes design guidelines for buildings and for the public and private open spaces. These guidelines for establishing the desired image will assure the spatial quality of the individual buildings and public and private open spaces, but more importantly the spatial unity within the plan will also be guaranteed.

## 9 Municipality of Dinkelland

### 9.1 Policy & developments in relation to area development

The municipality of Dinkelland has declared the Municipalities (Preferential Rights) Act applicable to its land between, roughly speaking, the A1 motorway and the railway line, or the 'A1 zone'. This means that the municipality is involved actively in the

design and development process of the Twente airport area and surroundings. The area covered by the provisions of the Act is related to three prevailing zoning plans and a number of policy frameworks and developments:

- in connection with the location close to the Natura 2000 area of Lonnekermeer, a management plan is under preparation and it will become part of the procedure in 2010; although the planning area does not form part of the Natura 2000 area, the management plan is nevertheless relevant, in connection with the study into significant effects that the developments may have on the Natura 2000 area;
- new zoning plan for the outlying area is under preparation. The consultation phase has finished and the draft plan is expected to be made available for public inspection after summer 2009. The area in which the municipality has established a preferential right does not form part of this plan.

### Spatial development strategy for Dinkelland under in preparation

A draft has been prepared of a spatial development strategy for the entire Dinkelland area. The draft will be released in the coming months for public consultation. The Dinkelland spatial development strategy is expected to be adopted before the end of 2009.

In the draft-spatial development strategy for Dinkelland, a development into a 'working landscape' is envisaged for the area between the A1 motorway and the railway line. It should be noted that during the debating of the industrial site vision of the municipality by the council and executive a request was made to conduct a study into possibilities for developments in the area around the A1 motorway.

## 10 Other policy and studies

### 10.1 Regge and Dinkel Water Board

#### Policy

The water policy of the water board for the planning area can be summarised in a few items; see [63].

#### 1. Retain - store - drain

For safety reasons, the avoidance of nuisance and on account of expected climate change, it is necessary to retain water longer and to drain it more slowly. Depending on factors such as land usage functions, the way that groundwater is managed will be adjusted accordingly. For nature areas (including new ones) there is a need for groundwater harmonisation in relation to the desired nature objective. The confines of new nature will be harmonised so as to establish the required water management [43]. Infiltration areas located higher, like the Lonnekerberg nature area of Landschap Overijssel, are suitable for capturing rainwater in the subsoil and draining it slowly as groundwater.

#### 2. Restore natural water systems

Brooks like Jufferbeek are of high quality and have been designated as a water treasure. High priority has been given to restoring a water system that is as natural as possible [54]. The other (former) brooks possess a similar quality. This requires sufficient space for natural development. Restoration/improvement of drainage on the catchment area of Jufferbeek/Deurningerbeek has been given the highest priority in order to separate rural and urban water and to meet the EU Water Framework Directive [64, 68]. The highest level of ambition applies to Deurningerbeek under the Water Framework Directive. The brook has also been designated as a provincial ecological connecting zone. This means there is an

extra reason for restoring a natural system of brooks with auxiliary zones for the migration of species [43].

#### 3. Improve water quality

Besides a good hydrological water system, good water quality is very important for the natural functioning of the brooks in the area. After infiltration/storage in the brooks system, the rainwater can be drained away. Infiltration and storage will be used as a way of raising water quality to the required level [62].

#### Envisioned brooks structure

The restoration of the historical watercourse structure and the eco-hydrological restoration of Lonnekerberg and surroundings form the basis for restoring the natural water system. Water management on Lonnekerberg is the source for the water system. The backbone of the area is formed by the system of brooks. An arrangement of the brook system based on the above-mentioned policy aspects is desirable. Illustration 10.1 shows the original watercourses. It shows the four brooks systems from north to south, i.e. Jufferbeek, Hesbeek, Blankenbellingsbeek and Leutinkbeek. The Regge and Dinkel water board produced an elaboration for both spatial development strategies of the ideal brooks system and it was used as input for the design process of VTM i.o. [30].

### 10.2 Landschap Overijssel: Lonnekerberg

The Lonnekerberg nature area is owned largely by Landschap Overijssel. The total wooded area is approximately 200 ha. Of this, 149 ha became the Lonnekerberg nature area in 1999 [35].

Lonnekerberg lies directly to the east of the airport. Roughly 15 ha of the nature area is situated within the fences of the airfield. The zoning plan for the outlying area of the municipality of Enschede has earmarked this

as a Nature Area and Wood with ecological values.

Lonnekerberg is a lateral moraine with its highest point at 56 m +NAP, roughly 25 m higher than the lowest point of the airbase (30 m +NAP). Part of the hill consists of pushed tertiary clay. Where this is located near the surface, there are damper sites with source areas and brook branches. The area is almost entirely wooded, consisting predominantly of exotic coniferous trees. Relic species, which are characteristic of old, damp deciduous forests, occur here and there in the wood. The area has a high floristic value, with 75 provincial species requiring attention, including 13 on the red list. There are 56 species of brooding birds, including four on the red list.

The objectives being pursued for Lonnekerberg are focused on the one hand on restoring, retaining and optimising nature values, while on the other a possibility must be offered for recreation 'to enjoy and to appreciate the area'.

Management must address the restoration of the original hydrological situation. This includes the objective of connecting the source system on the hill to the brooks on the western and northern sides of the airport. For this restoration it is desirable to dismantle the drainage and rainwater sewers on the airport, so as to enable a seepage zone to be created again at the foot of the lateral moraine, which will feed the brook branches. Within the wooded area, the draining ditches will be dammed or closed, ensuring that the source systems are no longer tapped. Among the most promising spots, the 'forest pearls', Bergsveld is the most valuable and sizeable. Here there is a widely-branched network of sources and source brooks, which supply their water via a culvert under the runway to an ancillary brook of Jufferbeek. Similarly, the source system of Blankenbellingsbeek on the southern side of the hill is very important. This pristine source system is interrupted,



however, by the row of munitions bunkers on Oostkamp.

Landschap Overijssel is willing to examine how the rural relationship between Lonnekerberg and the airport can be improved. The management vision and the objectives do not currently provide for such harmonisation.

### 10.3 Euregion

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The Euregion comprises a large area that includes, in addition to Twente, De Achterhoek, Hardenberg and Coevorden and, on the German side, Lower Saxony and part of North Rhine Westphalia (Munsterland). Since 1958 work has been in progress on strengthening the cross-border structures through consultation and joint projects. This concerns the following fields:

- socio-cultural integration;
- socio-economic development;
- advice to members of the public;
- inter-communal cooperation;
- inter-regional cooperation.

Themes for inter-communal cooperation include public transport and traffic. As part of the cross-border cooperation, the directly involved municipalities (including Bad Bentheim) and other collaborative platforms are being kept informed of the developments and the spatial development strategy will also be made available in German.





# **Part 4: Spatial development strategies A and B**





## Part 4: Spatial development strategies A and B

### 11 Programme-based vision

#### 11.1 Twente: positioning and segmentation

Twente is one of the main knowledge and innovation clusters in the Netherlands. From an international perspective, Twente is ideally located for a number of economic segments and is an attractive alternative to densely populated urban conglomerations such as the Randstad or the Brabantse Stedenrij. Twente has a high-quality green investment climate located midway between the economic core areas of the Randstad and the German Ruhrgebiet [51]. Knowledge and innovation clusters in the region provide important links for new (international) commercial activities and productivity development. Other important economic strengths in the area are the innovative interrelationships between ICT, Materials, Mechatronics & Maintenance (M3) and the construction and medical sectors [59]. In these sectors, Twente is home to a number of internationally renowned companies. Last but not least, Twente's natural and cultural qualities further strengthen an already favourable business environment.

Based on its Area Agenda (Gebiedsagenda) [57], Twente is aiming to further develop its qualities as an internationally renowned knowledge region [51]. In this agenda, the development of the areas of Twente Airport, the Knowledge Park/University of Twente and Heart of the South (Hart van Zuid)/WTC/Central Station Twente, called the 'Innovation Triangle', are of vital strategic importance. The mutually complementary programme-based development of these projects is the basis for strengthening Twente's (social) economic structure. One of the main challenges for Twente as a knowledge economy is therefore to attract more highly educated people and retaining them for longer. This is consistent with the core ambitions of the Regional Economic

Development Plan for the Twente region (REOP Regio Twente/Netwerkstad) [45]. The aim of the Innovation Triangle is to give greater volume to these ambitions for Twente and to speed up their realisation. Last but not least, the multimodal accessibility of the Euregio is contributing to the development of the region into an internationally prominent knowledge and innovation centre [51].

The mission behind the plans to develop the Twente Airport area and surroundings – to strengthen the economic structure, with equal focus on the surroundings and on sustainability – is fully compatible with these ambitions for Twente. For that reason, VTM i.o. is searching for programmes and development strategies that complement the strong sectors already active in the area. Moreover, a strong sense of cohesiveness in the area will help Twente to put its unique selling points as a residential, working and recreational landscape (Landgoed Twente) even more firmly on the national and international map.

#### 11.2 The process of market consultation

The report 'A Flywheel for Twente' (Een Vliegwiel voor Twente) [59], which defined the provisional spatial frameworks for a complementary programme, was used as the starting point for an intensification of the ongoing market consultation procedure. Both for temporary letting in the short term and for stimulating the development of the area in the long term. This is consistent with the desire of the central, provincial and local governments to focus on a more far-reaching market approach in the development plan. The consultation procedure consists of four mainstays:

- a. consulting with businesses, housing corporations, project developers, experts and interest groups, including design studios

- b. coordinating market surveys for both variants of the plan (A and B)
- c. organising a Care & Cure expert meeting
- d. participating in (international) conferences and symposiums in order to expand the network and gather knowledge about trends and developments

*Ad. b*

**The following market surveys were conducted under the supervision of VTM i.o.:**

- From Airport to Careport (Twynstra Gudde) [56]
- Care, Cure, Wellness and Leisure (KPMG) [33]
- Commercial Civilian Airport (L.E.K. Consulting)
- Multifunctional Airport (Del Canho and Engelfriet) [12]
- Special residential environments (Motivaction) [41]
- Large-scale amusement park in Twente (Huyskens & Leisure Consultants) [31]

The information gathered from these four mainstays (A to D) has been used as input for the market-oriented validation of the programme in VTM i.o.'s land development and business case. This information is explained in detail in the following section, in which the most feasible programmes and development approaches are also described.

**11.3 Market conditions and the need for space**

In this section, the main developments and possibilities are explained for each market segment.

**11.3.1 The aviation market**

The projections for the aviation market are that, despite the current economic downturn, the global demand for aviation

will continue to grow in the long term due to increasing international competition and the emergence of new economic centres [51]. In addition, climate, the environment, security and spatial planning related to the future development of the aviation sector are becoming increasingly important. Innovation has an important role to play in reducing the external effects of aviation. Lastly, liberalisation is becoming more extensive due to cross-border alliances, while at the same time airlines are tending to consolidate more. This is closely related to the network quality of the Netherlands in a global perspective, thus creating new opportunities. In order to examine these developments in relation to each other, the Dutch government has formulated policy for the airports in the Netherlands: the Aviation Policy Memorandum [51].

**Aviation Policy Memorandum and the recommendations of the Alders Commission**

In the framework of the Aviation Policy Memorandum, based on regional discussions supervised by the Alders Commission, the Government is researching the possibility of switching 70,000 aircraft movements (non-mainport linked) from airports of national significance to Lelystad and Eindhoven airports. It will then be examined how other airports of national significance, particularly Twente, can provide support in accommodating extra capacity alongside their own autonomous activities. The Aviation Policy Memorandum [51] contains a number of models illustrating the potential contribution of Twente Airport to the overflow of Schiphol, including the option of military co-use. Further decision-making is still required on the issue. As one of the two possible development variants, Twente is described in the memorandum as a 'compact civilian airport in the green belt'.

**Twente's catchment area**

The Spatial Planning Agency has indicated that Twente Airport has a one-hour catchment area potential of 4.9 million

inhabitants and 34.1 million inhabitants within two hours by road. Earlier research [13] found that, based on this catchment area, Twente Airport has a possible market potential of 4.1 million passengers in the long term. Further study has shown that Twente Airport is close to several competing airports, including Münster-Osnabrück and Weeze. Schiphol and Düsseldorf can also be regarded as competitors, given their strong position on the aviation market. Partly for this reason, it is uncertain whether the aforementioned long-term potential is feasible.

**A multifunctional airport**

Del Canho & Engelfriet [12] conducted a market survey for VTM i.o. into the most feasible concept for a multifunctional airport in Twente, focusing on industrial and platform-based commercial activities and commercial leisure activities. Del Canho & Engelfriet concluded that Twente is a compact civilian airport in the green belt, based on the four mainstays: passenger transport, freight transport, platform-related industry and leisure. For passenger transport, they calculate the possible emergence of potential market space of 1.2 million passengers by 2030 for leisure/low-cost holiday destinations and air traffic to the larger European cities. For freight transport, they see possibilities in "trucking" (centre), European distribution, "value-added" logistics and military transport.

VTM i.o. has held consultations with a number of operators who have indicated that they would be seriously interested in Twente Airport if the decision turns out that way. It also emerged from the consultations that smaller corporate aviation companies, aimed at the higher segment, are also interested in Twente – that is, regional jets with destinations in Europe, the Middle East and North Africa. Talks were also held with aviation training institutes, flying schools, simulation training institutes and medical aviation initiatives deemed to be realistic.



### 11.3.2 Care, Cure, Wellness and Leisure (CCWL)

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At first glance, various developments at macro level seem to point to a market for care, cure, wellness and leisure (CCWL) in Twente. For example, the greater demand for care as the population ages, the greater willingness and ability of people to pay more for care due to increased affluence, and the fact that people attach increasing value to a healthy lifestyle. Furthermore, the increasing market forces are playing a major role, making it possible to provide high-quality care products in combination with wellness. In the area of technological development, important breakthroughs are making it possible to combine a longer life span with a higher quality of life. However, the care market is extremely complex and the primary services on a regional level have already reached their saturation point. For a feasible concept, specific niches will have to be found.

KPMG was asked to conduct a market survey into a Care, Cure, Wellness and Leisure concept in Twente, partly inspired by the De Twentse Basis business case from the foundation for alternative solutions for the airbase (Stichting Alternatieven Vliegveld Twente). The main conclusion of KPMG's market survey is that a CCWL concept in the proposed form is not considered feasible in Twente. However, a number of elements in the concept are considered to have potential. Also the combinations with sustainability and equestrian sport are seen as interesting possible developments. The most feasible care elements singled out in the survey are:- Independent treatment centres, such as:

- eye laser clinics and plastic surgery clinics;
- A care hotel (supplementary to a broader concept);
- Wellness concepts (thermal baths, health spas, etc.).

It also emerged from the survey that the focus on one single core proposition that engenders organic growth would have a greater chance of success.

It emerged from talks with representatives of the care sector in the region that a medical park in the vicinity of an airport is seen as an interesting development. Dutch people living abroad are regarded as a possible target group, as they are assumed to prefer treatment in Dutch hospitals. This target group is increasing all the time: a growing number of retirees have chosen to live temporarily or permanently in warmer parts of Europe (Côte d'Azur, Spanish coast, the Algarve, Lake Geneva). The power of this concept is that it can offer an integral health care package. A return flight from Twente, full (operative) treatment combined with preparatory care and aftercare in a nearby high-quality hotel in scenic surroundings.

Preparatory care and aftercare also lend themselves to a combination with wellness facilities (sauna, solarium, massage centre, etc.). The planned medical park close to the airport could integrate the most feasible care elements in an innovative care concept. At the expert meeting convened to assess KPMG's market survey, this concept was positively received by the experts (advisers and a medical insurance company). A supplementary market survey should indicate the size of the target group and other possible target groups (for example, military personnel) and whether this concept meets their needs and requirements.

### 11.3.3 Housing market

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The quality on all levels of the supply side of the housing market in the area needs to be expanded [59, 75]. This will create space for new concepts. Opportunities in this area are particularly to be found in urban and rural settings, where there is space for the development of distinctive residential concepts and environments [59,74]. This

is underlined by the Motivation market survey commissioned by VTM i.o. [41]. Motivation concluded that there are plenty of opportunities for theme-based residential enclaves, each with its own strong identity (or sub-identity). In the talks with market parties and housing corporations, the possible concepts included residential & care concepts, an equine-based residential neighbourhood/equestrian living, and theme-based homes and facilities allied to the Indian culture. At the same time, one of the policy objectives of the Municipality of Enschede is to expand the number of homes in the higher segment of the housing market in order to attract and retain more highly qualified people.

#### **11.3.4 Business premises, industry and offices**

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With regard to the business premises market and office market, which is a replacement market in Twente, there is a need for a qualitative stimulus to improve the current supply. The demand for relatively small and independent business units is increasing steadily [53, 59]. At the same time, the Overijssel Provincial Executive has stated that in Overijssel the (future) number of regular business premises is more than sufficient to meet the projected trends. This strategy of the Provincial Executive has resulted in a smaller number of plans for building new and developing existing business premises that were distributed among the local governments in Twente as a preparatory measure [44]. This underlines VTM i.o.'s plan to focus on specific programmes for commercial activities in and re-use of existing buildings and premises.

In the case of the airport variant, Del Canho & Engelfriet's study shows that there are opportunities for platform-related industry in the form of clusters of commercial activities in the aircraft production sector and aircraft maintenance industry, including R&D and training. Del Canho & Engelfriet particularly

identified opportunities for Twente in the maintenance and repair operations sector (MRO) in assembly & disassembly and small-scale maintenance. They estimated the need for a total market space for a gross surface area of 65,000 m<sup>2</sup>. Furthermore, they identified extra market opportunities at the terminal for the retail sector, parking and R&D/training/corporate services in office spaces.

The group of interested aviation-related commercial organisations that were consulted focus mainly on MRO activities and related training. For most MRO companies, repair & maintenance activities are auxiliary and/or supplementary to their primary business activities. This is a good combination that results in excellent synergy advantages. The smaller innovative (technical) companies also expressed a great deal of interest.

#### **11.3.5 Leisure, recreation and events**

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The target groups that visit Twente for holidays or day trips exhibit a slightly different distribution than the rest of the Netherlands. The recreational and leisure market in Twente is aimed at short-term recreation (day trips), where particularly senior citizens and DINKY's (couples without children) are the main target group [31]. On a national level, Twente's market share in leisure activities for families is relatively low, which can be partly explained by the limited supply of facilities for this group.

Twente has no large-scale public attraction or national event and has a relatively limited and one-sided supply of accommodation. There are relatively few hotels and relatively many campsites and holiday villages. In terms of visitors and brand recognition, the current cultural facilities, attractions and events do not go beyond the regional scale level.

There would seem to be space on the market for a large-scale public attraction in Twente. For that reason, VTM i.o. commissioned the Huyskens & Leisure Consultants syndicate to conduct a market survey in this area [31]. They concluded that a large-scale public attraction – provided it is run in a businesslike way and based on a strong, attractive concept for Twente's economy and image – can provide a positive stimulus consistent with the ambitions defined for the region [31]. For a large-scale public attraction, visitor numbers of between 400,000 and 750,000 are possible, depending on the degree of innovation, national appeal and layout as a holiday destination rather than a day-trip destination. If those conditions are met, a figure of 1,000,000 visitors is not inconceivable in the long-term. This new flow of tourists will particularly stimulate an increase in the number of hotels and the existing capacity in holiday villages and campsites. In addition, the interests, accommodation wishes and holiday dates of this relatively new flow of tourists are generally compatible with the wishes and capacities of the current leisure target group in Twente.

At the same time, in their market survey [12] into a multifunctional airport Del Canho & Engelfriet identified market opportunities for the leisure sector on a site of 40 hectares, with the focus on a 'flagship' attraction. The categories of theme parks, amusement parks, culture, wellness/beauty/relaxation and events have the greatest potential.

Based on the exploratory talks with businesses, VTM i.o. has found that there was a good deal of interest in realising a large-scale public attraction at or near the airport.



### 11.3.6 From market consultation to spatial development strategy

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The market consultations showed that the market is interested, so it is important that the spatial planning framework for further elaboration of the spatial development strategy is flexible enough to facilitate the best possible spatial integration and development of the programmes. Combinations of functions should not be excluded out of hand. For this reason, when the programmes are being allocated during the various implementation phases the market will be shown the necessary flexibility in the spatial and programme-oriented framework.

## 12 Spatial development strategy Model A

### 12.1 Spatial development strategy Model A

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This spatial development strategy is based on the extensive reprogramming of the former military airbase in Twente. The restoration of the natural water system and the transformation of the runway and the area south of the runway into a new area of natural beauty, country estates and agricultural lands will strengthen the natural values of the site and make the ecological main structure north of the airbase more robust. In this new landscape, the structure and the architecture of the former airbase will be clearly recognisable. The infrastructure of the airbase and a number of buildings will be re-used in the new programmes that become established in the area. When reprogramming the area, the emphasis to the north of the former airstrip will be on care and cure and tourism in the shape of leisure and a resort park. To the south of the airstrip, besides the new area of natural beauty a mix of theme-based residential clusters and leisure functions will give colour to the area. These new programmes on an airbase that used to be tightly secured and isolated will be made accessible by a system of lanes that interlace the site and embed the location in its wider surroundings. The old infrastructure of the base will play an important role in this network of transport links.

This spatial development strategy is explained in the following sections by first of all describing four important underlying motifs that largely determined the spatial choices that were made when the vision was being formulated. These motifs are part of the area's current spatial and functional characteristics. In the spatial development strategy, these motifs are worked out in detail and strengthened as future carriers of the spatial quality.

Following this, the four constituent layers of the spatial development strategy are explained. These four layers are the landscape, the infrastructure, the cultural heritage of the area and the programme. Finally, the subareas to be defined are described and explained in detail. The emphasis here is on the way the areas have been or can be reprogrammed and what this can produce in terms of programme-based density and quality. This description of the subareas is then worked out into a plan sketch, which visualises a possible final configuration to be created on the basis of this spatial development strategy.

### 12.2 Design motifs

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#### The former airfield as a country estate

The area between Hengelo, Enschede and Oldenzaal (the planning area), can be typified as a patchwork of enclaves embedded in a landscape of open fields, woods, brooks and meadows. The enclaves are non-agricultural units that differ in a number of respects from their surroundings and generally have urban origins. At present, the airfield and the camps are like private and semi-public enclaves in the area and in that sense can be compared to the existing estates of Hof Espelo, Oosterveld, and 't Holthuis. This characteristic of the estates, which were designed as formal and autonomous structures that manage and run the planning area, is one of the guiding design motifs for this structural sketch. The planned enclaves will be linked by a system of access lanes to the transport network, making them accessible to motor traffic. Other than these access lanes, no new infrastructure will be added. This will ensure that no new through-traffic network for motor traffic is introduced into the area. (Ill. 12.2 and 12.3)

## Illustration 12.1: Spatial development strategy Model A

	Government-owned land
	Municipal boundaries
	Care + Cure
	Leisure/innovative economic activity
	Housing
	Housing/Leisure/Innovative economic activity
	Defence
	Green/Landscape
	Country estates
	Agriculture/Nature
	Lane
	Sight lines
	Main access
	Existing brook
	New upper watercourse Lonnekerberg
	New middle watercourse

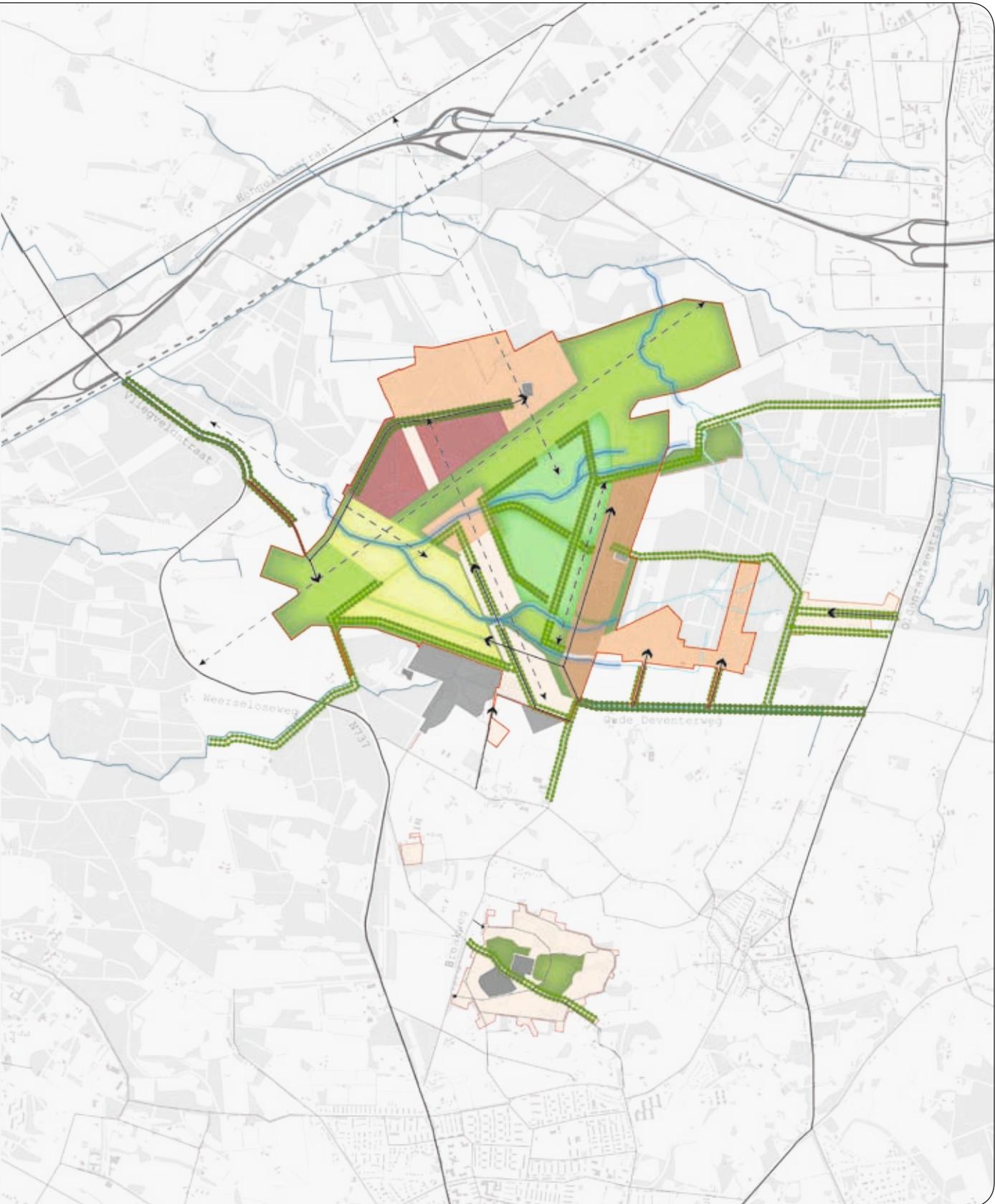


Illustration 12.2 Weldam estate



Illustration 12.3 The former airbase



### **Contrast between nature and culture**

The contrast between the culture and the natural surroundings is very characteristic for the landscape between Hengelo, Oldenzaal and Enschede. This contrast can be seen, for example, between the specially designed landscape of country estates with lanes, sight lines and artificial lakes and the natural water system and the natural land topography. There is also a unique contrast between the indigenous vegetation such as oak and alder and exotic plants and trees such as red beech, sequoia and horse chestnut on the estates. Moreover, the Twente landscape as a whole is mainly a cultural landscape in which man has shaped the natural surroundings. Very few of the natural water systems in the area have not

been re-directed by man, and all the forests in the area have been planted.

The landscape design for the planning area explicitly focuses on this contrast between nature and culture and shapes it in a new way. In doing this, the design includes many references to features of the existing estates.

### **Contrast between intimacy and openness**

Up to just a few decades ago, there were major contrasts in the Twente landscape between its open and enclosed character. The large-scale open areas were quite recently reclaimed heaths, while the small-scale enclosed areas were located in and around the old landscape of open fields, brook valleys and villages. At most locations

in Twente, this striking contrast has now disappeared, but it is still largely discernible in the landscape north of Enschede, thanks to the military's use of the area over the past 65 years.

The forests are also mainly located on the former heaths and they too have the characteristic large scale and straight lines. Zuidkamp is an example of a very small-scale old cultural landscape, while the landscape around the former military airbase has the characteristic openness and straight lines of the recent heathland reclamations. If you squint at the landscape and in your mind's eye replace the colour of grass and concrete with purple, you could easily imagine yourself to be on a 19th-century heath. This typical contrast is the dominant spatial quality of the area. However, the edges of the open space are quite arbitrary and 'uneven', and so the current situation does not do full justice to the monumental nature of the openness. In the structural sketch, the contrast is further increased by formally encircling the open plain of the runway with a subtle system of open fields, giving it a certain orientation and optically anchoring it in its surroundings with strong sight lines. From the access lanes and the edges of the planning area, the central open space is then perceived as a logical hub and the pattern of the open spaces structures the landscape surrounding the airbase. In this way, the Lonnekerland is given a new élan but still retains its cultural heritage.

### **Dynamism versus tranquillity**

The open plain of the current runway divides the planning area in two. On the north-western side there is the area between the A1 motorway and the runway, and on the south-eastern side the landscape of Lonnekerberg. This dichotomy and proximity of the A1 to the northern side has inspired a logical programme-based zoning of the planning area. To the north-west of the runway, directly accessible from the A1, will be the intensive and dynamic programmes that benefit from

Illustration 12.5 Intimacy



Illustration 12.6 Large-scale openness



Illustration 12.7 Existing open spaces



accessibility. On the south-eastern side, accessible from Oldenzaalsestraat, will be the less intensive programmes that focus on residential functions and more exclusive types of commercial activity and recreation. (ill. 12.5, 12.6 and 12.7)

### 12.3 Landscape

#### Open space and long sight lines

The large-scale openness on the site of the current airbase is an important landscape feature. The dimensions of the space in the airbase create a spectacular and dramatic contrast with the small-scale surroundings and also with the rest of Twente. The former airbase is a monument to the stark emptiness of the barren land, which has characterised the Twente landscape for many centuries. The design therefore carefully preserves that openness and sometimes even restores it. The design includes four large open spaces that structure the programme on the former airbase and that also connect the area with the surroundings. The variety in the dimensions of the space, the planting on the boundaries or the panorama, and the differences in the programming give each space its own specific character.

The existing space of the former runway will be the central open space. This section will be designed as an area of natural beauty, featuring wet grassland, in which the runway will largely be retained as a relic. By removing the current drainage systems, the current dry grassland will gradually become wet again. The combination of a soil low in nutrients and moist conditions has become a rarity in the Netherlands and it is expected that wetting the soil will lead to new, higher natural values. Existing and new fringes of the woods will line the boundary of this open space. Buildings will be interspersed throughout this area.

Illustration 12.8 Dynamism



The second space is the entrance space from Vliegvelddstraat-Weerseloseweg. This space consists of a brook that flows through wet grassland and meadows in agricultural use. The boundaries consist of woods. The entrance space provides a view of the open space around the former runway.

The third space is linked to the eastern entrance, a continuation of Oude Deventerweg. Along the existing taxiway, homes in the character of equestrian living can be developed with their own pastures.

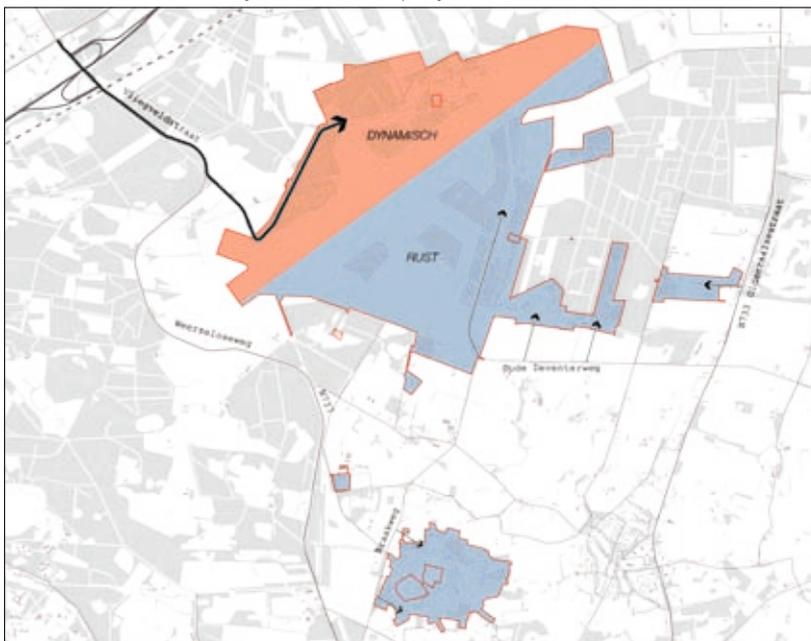
Illustration 12.9 Tranquility



The fourth space stretches from the A1 motorway as far as the runway. Using the existing open space created by a former pipeline, the heathland can be restored in an elongated space in accordance with the Land Use Commission. That will evoke the memory of the open and silent heathland of the past and will also create a symbolic link with the fast-moving world of the 21st century. This space will be bordered by woods.

Between the new watercourses of the Jufferbeek and Blankenbellingsbeek brooks, a lookout hill will be created beside the former runway. The hill will be covered in lilac shrubs (Seringenberg) similar to those on the De Horsten estate near Wassenaar. When the lilacs blossom in April and May the hill will be a wonderful attraction, and during the rest of the year it will be a place from where people can admire the newly created landscape.

Illustration 12.10 Model A: Dynamism and tranquility



### The national ecological network and nature development

In the current situation, the airbase is like a recess in the national ecological network; there is a bottleneck in the national ecological network between the business park of Hanzepoort in Oldenzaal and the top of the former runway. With the development of model A, there is now a proposal to review the boundary of the national ecological network. In spatial development



strategy model A, the ecological structure is significantly strengthened by restoring the natural water system of the Jufferbeek brook. Restoration of the Jufferbeek brook means that, in the future, the national ecological network can be widened where it is now at its narrowest. On the northern side of the airbase, there is a proposal to move the boundary of the national ecological network in a northerly direction due to of the development of the leisure programme there. In the A1 zone, the north-western connector area of 12 hectares around the Jufferbeek-Deurningerbeek brooks will be strengthened as part of the planning framework for land development. On the south-western side of the planning area, agriculture has been programmed, which means that the ecological values there are expected to be low.

The total area of natural and green development occupies some 250 hectares. Of this total, ca 50 ha is zoned for the national ecological network. The balance of a new and an old national ecological network to be realised inside the planning area will amount to some 15 hectares net. Some 175 hectares (gross) of the total of approximately 225 hectares will be allocated for the establishment of nature areas comprising about 60 hectares of country estates, some 55 hectares of agricultural land and about 60 hectares of grassland.

### **Restoring the natural water system**

With regard to restoring the natural water system in the area, VTM i.o. will follow the recommendations of the Regge & Dinkel Water Board [64]. In the past, the airbase was drained intensively and this considerably disrupted the natural water management system [39, 64]. Moreover, the site has been levelled off, causing the original land topography to disappear. There are now no traces to be found in the soil of the original watercourses or brook valleys. Restoring the natural water system therefore means creating entirely new brooks that become

the missing links between the (new) upper watercourses on Lonnekerberg and the amputated watercourses downstream of the airfield. The emphasis is therefore on restoring the natural water system in its entirety and not just restoring a bygone historical situation. Restoration of the system can give an enormous stimulus to the natural values in the area. On Lonnekerberg, the Landschap Overijssel Foundation is filling in ditches, which is improving the sponge effect of the lateral moraine and creating new upper watercourses.

In spatial development strategy model A, the water system will be restored by removing the drainage systems on large areas of the site. By digging new watercourses on the site of the former airbase, the brooks can again flow in a westerly direction from the source area of Lonnekerberg, based on a management proposal made by the Regge and Dinkel Water Board. The Jufferbeek brook will be restored with a new branch that originating from Lonnekerberg. The Hesbeek brook will be restored on the flank of Lonnekerberg north of the strip. At the southern side of the strip, the catchment area of the Blankenbellingsbeek brook will also be restored.

Both new watercourses for the Blankenbellingsbeek and Hesbeek brooks will join together in the watercourse of the current Hesbeek brook. These brooks will be merged because this produces the most robust water system with a main flow that will always carry water. If both brooks were to continue as individual brooks, the watercourses would dry up in the summer, which is undesirable [64].

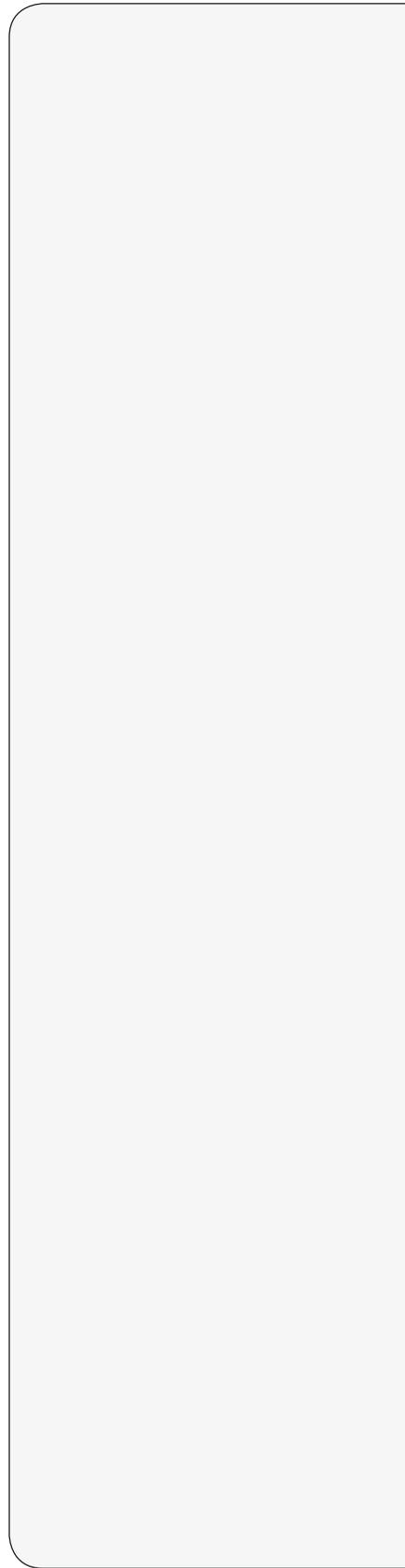
In the entrance area to the 'care estate' at Vliegvelddstraat, the retention area of the combined Hesbeek brook will be increased. This will give the entrance a special natural look and feel, with a panoramic view of the brook valley and the surrounding wet grassland.

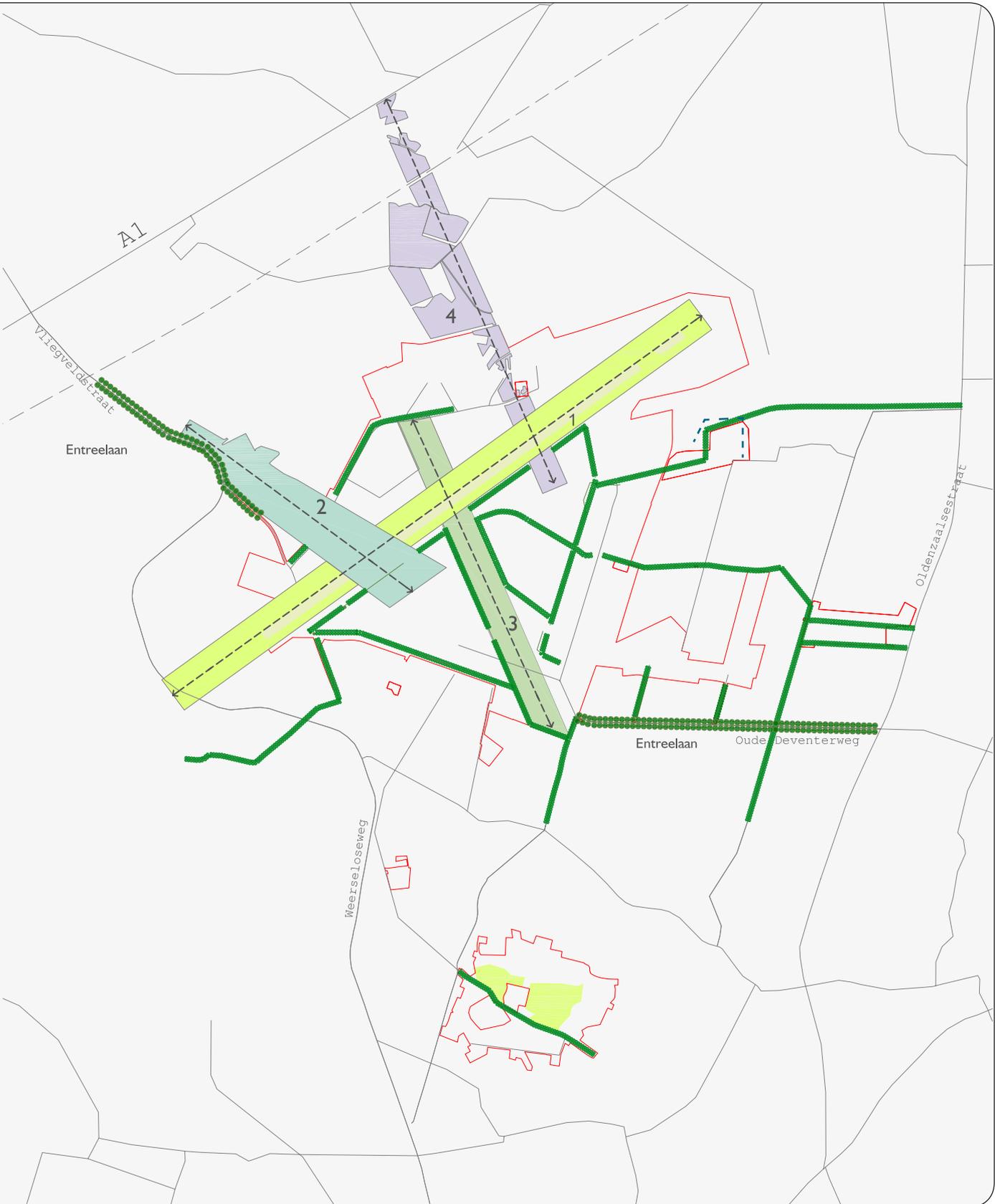
The removal of the nutrition-rich top layer of the soil will create a slightly lower zone on both sides of the brook that could develop into a brook valley in the long term. These zones will be up to 120m wide downstream and up to 70 m wide upstream and will be constructed with an 'accolade profile', thus creating space for a 'co-flowing water storage'. The brooks themselves, like most of Twente's brooks, will form narrow and fast-reacting brooklets that can flow outside their banks during rainfall peaks. In many cases, hiking paths will be constructed at the edges of the brook valleys. In that way, the brook valleys will function as threads that connect the different components of the landscape and make them accessible to hikers. (Ill. 12.13, 12.14, 12.15, 12.16, 12.17 and 12.18)

### **Landscape structure**

The landscape map gives an impression of the landscape structure to be created when the aforementioned landscape elements are combined. The restored brooks will be the first, rugged layer in the future landscape structure of the former airbase. The second layer will be created by a system of entrance lanes and other lanes that structure the landscape and link it to the surroundings. The third layer will be formed by the essential open spaces, each with its own colour and character, such as heaths, wet grassland and meadows. These spaces will be defined as much as possible by existing copses or areas of new forest to be planted. This will give rise to a clear notion of space, consistent with the vision of the former airbase as an estate in the middle of other estates. In addition, any buildings will be integrated into the new woods or copses. In the south-western corner, the former airbase will be the most open area because of the farm to be established there. In the ecologically valuable transition area from Lonnekerberg, there will be space for the development of valuable seepage vegetation. The artificial hill with a view over the landscape will be an eye-catching landmark.

**Illustration 12.11: Essential open spaces and lane system**

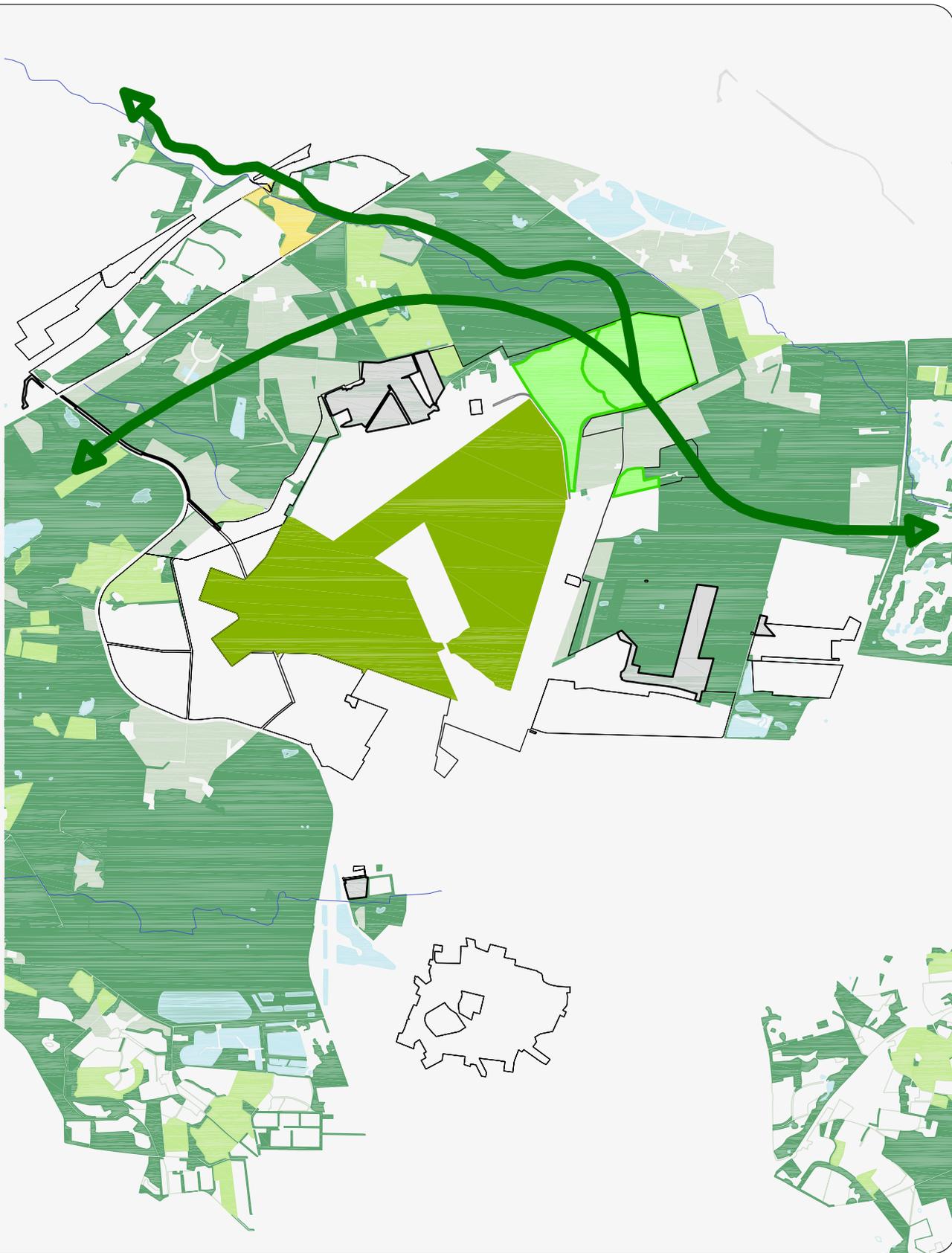




## Illustration 12.12 Model A: Strengthening the national ecological network

-  Government-owned land
  -  Municipalities (Preferential Rights) Act
  -  National ecological network – natural forest
  -  National ecological network – new natural area
  -  National ecological network – management area
  -  National ecological network – water
  -  Brooks to be laid out in a natural way
  -  Reduction of the existing national ecological network  
Total surface area ca 35 hectares.
  -  Expansion of the existing national ecological network on government-owned land  
Total surface area ca 50 hectares.
  -  Nature (grasslands/agriculture/estates): ca 200 ha
  -  Nature development zone Jufferbeek  
(indicative surface area 10 hectares)
  -  Strengthened link national ecological network
- Balance: Total new nature development ca 250 ha
- Total new EHS ca 50 ha
- Balance new EHS ca 15 ha

0 1.000 2.000m



## Illustration 12.14 Model A: New brook system

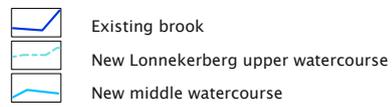


Illustration 12.13 Restoration of the natural water system in the Water Board Management Decision for model A

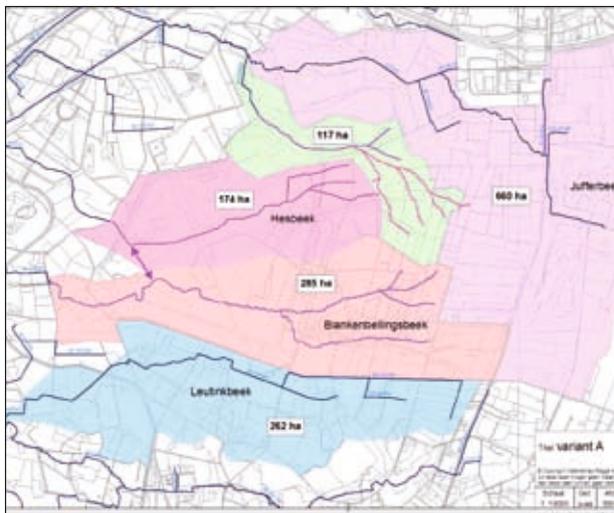
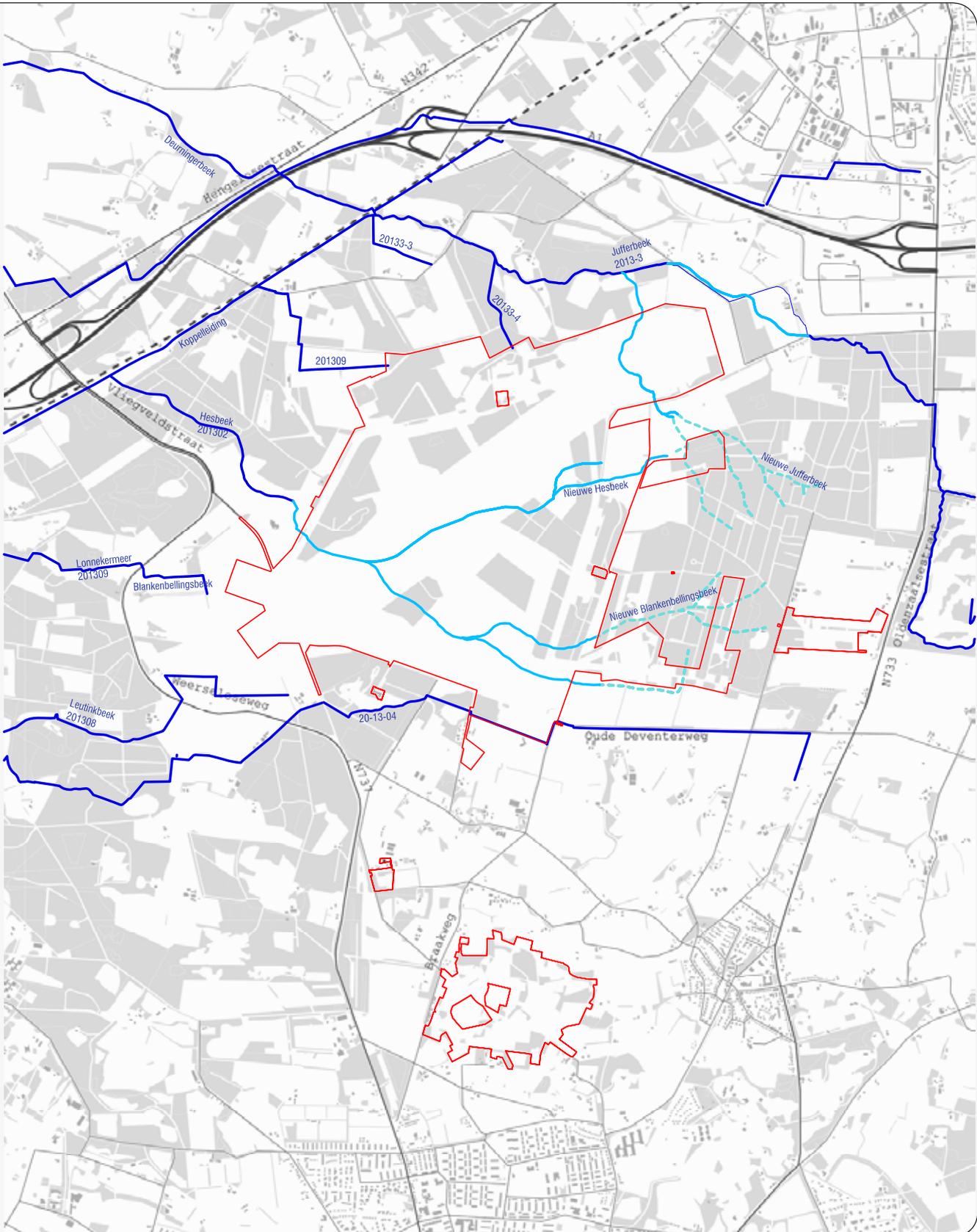


Illustration 12.15 Brook valley with accolade profile and footpath



Illustration 12.16 Brook valley with accolade profile during high water





## Illustration 12.19: Model A: Landscape map



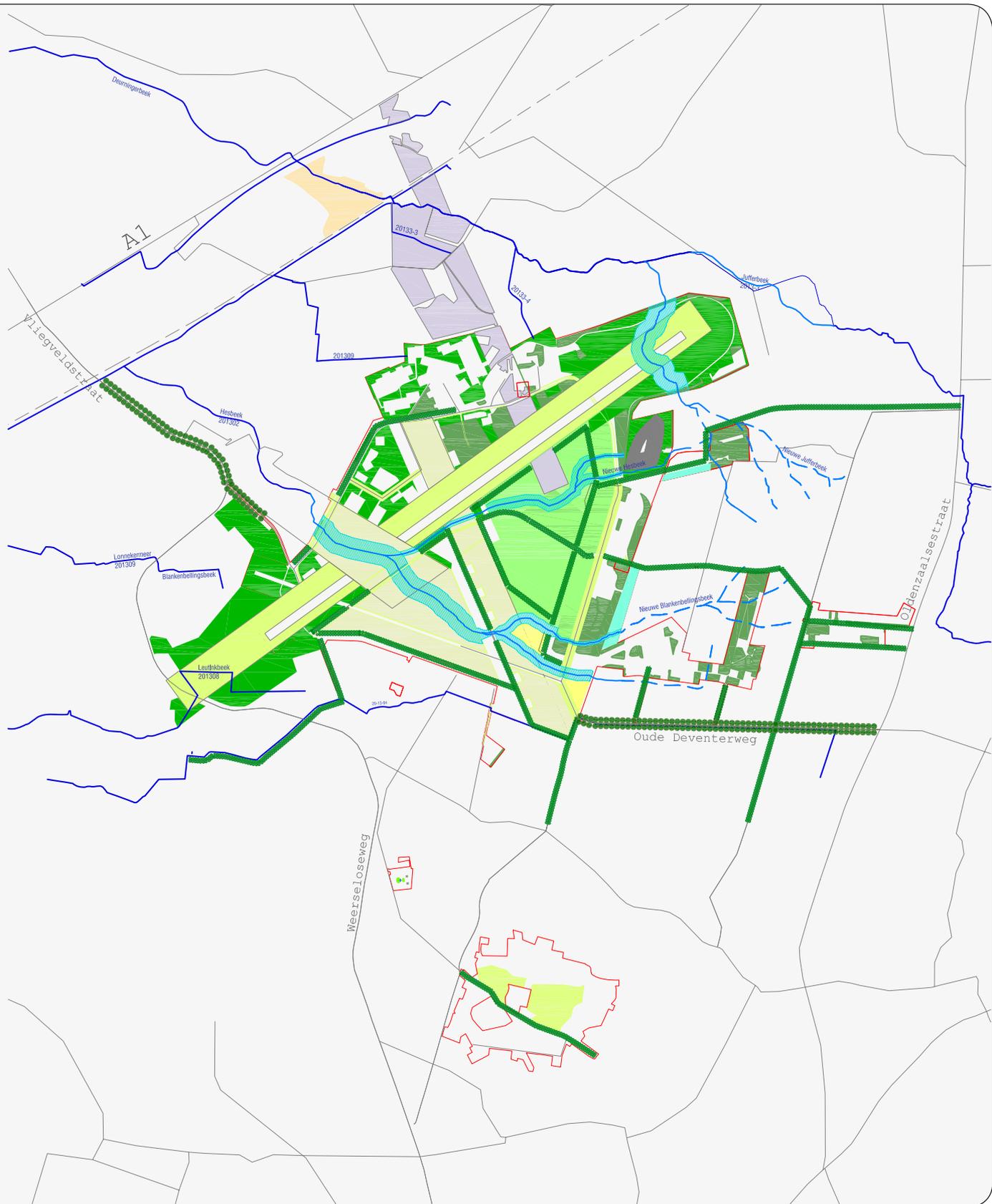


Illustration 12.17 Lookout hill (Seringenberg)



Prins Bernhardpark will continue to have a landscape structure, with two lanes with buildings in between in a park-like layout.

In Zuidkamp, the informal landscape structure will be absorbed with two green strips on the central lane.

Kamp Overmaat will retain its park-like layout. (ill. 12.19)

### 13.4 Infrastructure

The planning area is strategically situated between three through-traffic infrastructures in the region: in the north by the combination of the Amsterdam-Berlin rail link, the A1 motorway and the N342 (the A1 zone); in the west by the N737 (Weerseloseweg), which provides access to the north of Enschede; and in the east by the N733 (Oldenzaalsestraat), which provides access in the north to the A1. At the southern side of the former airfield, the area is accessible by means of four lanes: Oude Deventerweg, Snellenweg, Braakweg and Vliegveldstraat, that link up with Weerseloseweg and Oldenzaalsestraat. Only Braakweg is suitable for through traffic, as the other three come to a dead end at the fence of the former military base.

Behind the fence on the site of the airfield, a ring road runs around the runway and links all the former airfield functions. A system of taxiways links the runway with the hangars and the current terminal. (ill. 12.20, 12.21 and 12.22)

#### Car network

Elaborating on this characteristic of a potentially easily accessible but at the same time isolated enclave, the various locations will be accessible to motor traffic by a system of access lanes that link up with the existing road structure. These access lanes are not linked to each other and therefore do not create a network for through traffic.

To the north-west of the former runway, linked to Weerseloseweg, the existing infrastructure of the airbase will be used as a central lane that will provide access to the new programmes.

A traffic engineering study has shown that autonomous traffic development will cause congestion problems on the access roads from and to the area in the future. In addition, extra programmes will be added as a follow-on to this redevelopment. This will function as the basis for an adjustment of the traffic infrastructure as currently proposed. The 'Regional Traffic model 2004, update 2006', which includes the other planned

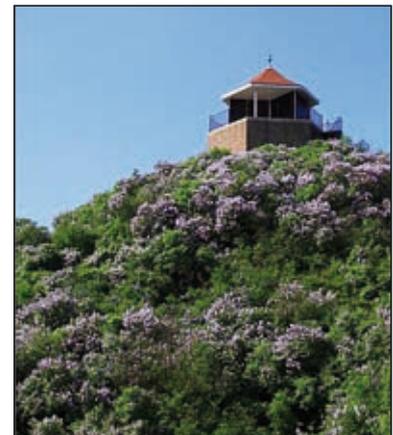


Illustration 12.18 Seringenberg reference photograph from the De Horsten estate

regional developments, was used to perform the calculations [61].

In the long term, it is proposed linking the A1 with the N737 with a direct slip road close to Frans op den Bult. Initially, the current link road to the A1 at Hengelo-Oost will be used. Between this new link and Oude Vliegveldweg, the road will be widened to two times two lanes with a parallel road for slow and agricultural traffic. This road width will effectively handle the expected traffic load.

Prins Bernhardpark opens up onto Oldenzaalsestraat. Oostkamp, the airfield strip and the residential enclaves will be accessible by a system of branching lanes that link up with Oude Deventerweg and largely use the airfield's present taxiways and ring road. It is possible that the Oude Deventerweg will be provided with a bicycle path. The residential enclaves of Zuidkamp and Kamp Overmaat will be accessible to motor traffic from Braakweg and Vargershuizenweg, respectively; this will not require any change in the road width. In Zuidkamp ? in accordance with the 't Vaneker planning development ? the ring-shaped structure of the existing roads will be used for access by motor traffic. In this way, the centrally located Zuidkampweg can be upgraded as a limited-traffic/free central axis in the park-like residential area.

The location of Defence to the south of the former airbase will continue to be accessible from Lonnekerveldweg. (Ill. 12.23 and 12.24)

### Bicycle network

The redevelopment of the former airbase will make it possible to add the system of taxiways and the ring-shaped road structure around the runway to the slow-traffic network in the surroundings. The creation of a number of strategic "couplings" will create a finely-meshed structure of slow traffic routes. Both in a north-south direction and in an east-west direction, this will create interesting through-traffic routes for recreational use that interlace the location of the former airfield. From Zuidkamp, it will be possible to reach Lonnekerberg by two routes. Unlike the limited access for cars, this structure firmly embeds the redeveloped enclaves in the region for cyclists and pedestrians. (Ill. 12.25, 12.26 and 12.27)

Illustration 12.20 Model A: Impression of the central open area with wet grassland and a care institution



Illustration 12.21 Model A: Impression from the Vliegveldstraat access point with a view over the Hesbeek brook valley



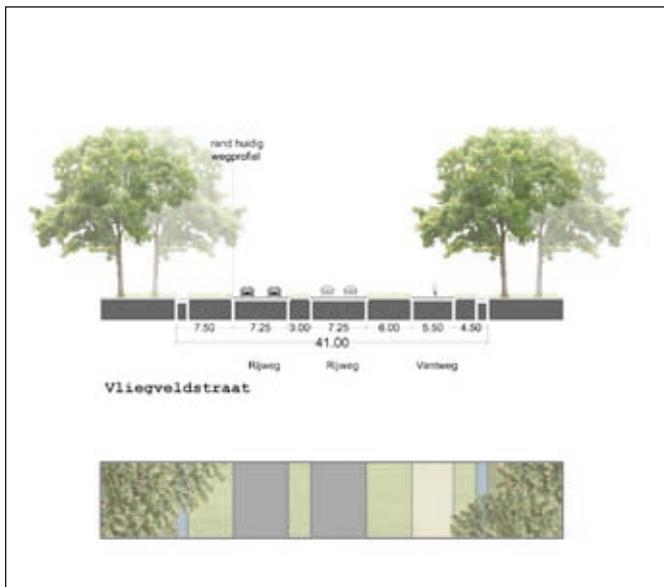
Illustration 12.22 Model A: Impression of the Oude Deventerweg access point

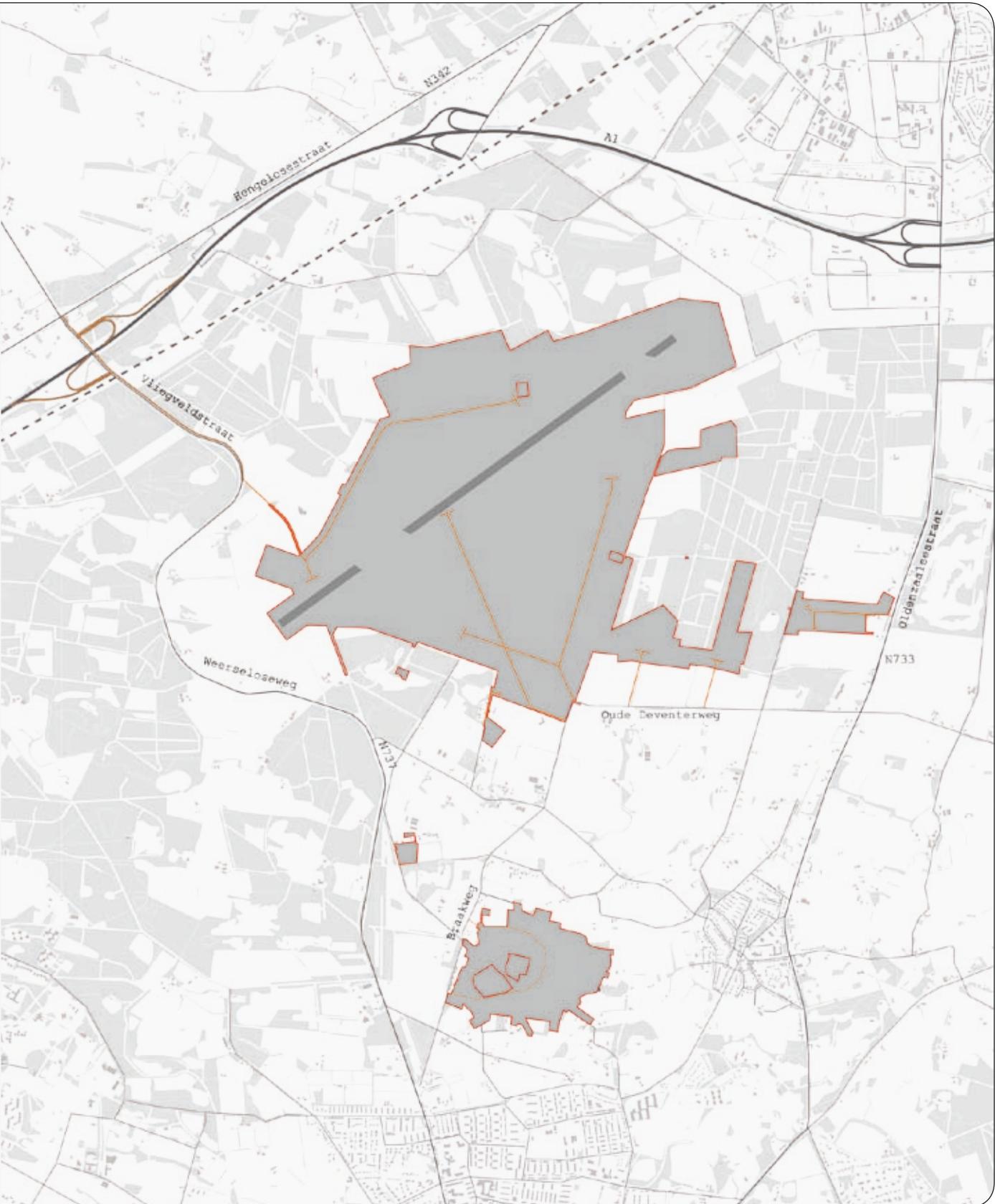


## Illustration 12.24 Model A: Car network

-  access road
-  widening Vliegveldstraat
-  new exit A1

Illustration 12.23 Cross-section A, Vliegveldstraat, N737





## 12.5 Cultural heritage and natural values

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### Base

The location of the various runways and taxiways will determine the appearance of the airbase.

This existing structure will be the template for the new car and bicycle links on the site.

The wide, open elevation of the taxiways will be used to make the area accessible to cars.

The circular inspection road around the taxiways and landing strips will be used as a cycle route.

Characteristic buildings such as the fire station and the traffic control tower along the north-south taxiway are included in the plan. These buildings, together with the surrounding buildings and shelters, characterise the site and provide ample opportunities for redevelopment.

In addition, various valuable elements such as “the bunch of grapes”, Munitiestraat and various hangars (including H11), will be included in the plan.

Where possible, locations with important natural values, such as ponds, the sites of special plant species and bunkers in which bats shelter, will be integrated in the development.

### Prins Bernhardpark

The dispersed locations of the buildings in the woods, called urban planning camouflage, are characteristic for this area.

The original area contained more buildings, but they no longer exist. All the remaining buildings will be retained and redeveloped. Any new buildings that are added will blend in with the original level of density and dispersal and the current height of the trees.

### Zuidkamp

Zuidkamp is characterised by a rural structure in which the buildings are randomly dispersed in a small-scale agricultural landscape. In the plan, as many of the existing buildings as possible will be retained – particularly the binding structure of Zuidkampweg, where historical buildings are located in a park-like setting.

### Kamp Overmaat

The park-like ensemble with a country house, lake and rows of trees will be retained. The house will be reduced to its original shape. There is the possibility of adding several outhouses to the residence. (ill. 12.28 and 12.29)

## 12.6 Programme

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The very accessible northern plan component of spatial development strategy A permits more intensive programmes and includes functions for leisure, care, cure and wellness facilities and, to a limited extent, living/working combinations. The leisure function includes possibilities for a resort park with more than 100 homes and specific public attractions.

The construction of homes is proposed in various parts of the plan. These additions are particularly aimed at the upper market segments, in accordance with the plans and policy vision of the Municipality of Enschede. To make this possible, every attempt was made to find differentiations and niches in the market. These niches in, for example, equestrian living, care concepts and community living, will be financed by market initiatives and developing parties. In addition, six new estates will be proposed in a nature zone of approx. 60 hectares in the southern subarea. The other residential building zone – for a total of almost 285 homes – will be located in Zuidkamp, Prins Bernhardpark and the southern plan component of the airbase.

In Oostkamp (25 hectares), the potential and qualities of the existing property will be utilised to a significant extent. This property covers a gross surface area of approx. 25,500 m<sup>2</sup> and will facilitate leisure, events and innovative commercial activities. Oostkamp will be accessible from Oude Deventerweg, from where it will also be possible to access the strip. The nearby strip on the eastern side of the airbase and at the foot of Lonnekerberg will be home to a collection of special buildings in terms of both their cultural heritage and their function. In this area of almost 25 hectares, a limited programme for innovative commercial activities and services and a few residential buildings are envisioned that blend in with the landscape and shape itself to and merge with the landscape qualities and the existing characteristic features. In this way, opportunities will be created for new enterprise, still to be strictly defined. It may involve very extensive forms of enterprise, such as a brandy blending centre that finds a suitable location in the former munitions bunkers. Or the combination of living and working on large lots that can be fleshed out extensively. In such a case, the existing property can be recycled and new buildings can be constructed on a limited scale. (ill. 12.30)

## 12.7 Model A plan sketch

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The plan sketch illustrates a possible final impression produced by the spatial development strategy for model A. The former runway will be transformed into an elongated, historical heathland, interlaced with the brook valleys of the Jufferbeek, Blankenbellingsbeek and Hesbeek brooks. The elongated central space is a reminder of the former runway. The grass strip will be embedded spatially in the surrounding landscape with four sight lines, thus increasing its scenic quality. The landscape will be structured with a system of tree-lined lanes that provide access to the programmes nestled in the area. As part of the new



recreational network, the access lanes will be lined with pedestrian paths.

The brick-paved road of the former airfield links all the functions around the elongated grass strip to each other and into a single circuit for slow recreational traffic.

North of the airstrip, the care & cure-related programme is situated in a campus-like setting of pavilions. The location of “the bunch of grapes” contains space for a resort park and the large sheds and hangars have plenty of space for a leisure programme such as a theme park.

South of the grass strip, the programme consists of estates, agricultural land and an “equine-based residential neighbourhood” along one of the former taxiways. Along the taxiway at the foot of Lonnekerberg hill, the strip of historical airfield buildings can be recycled in combination with limited options for new buildings in an ambience of homes for living and working on large lots. The former traffic control tower is a landmark component of this strip.

The Zuidkamp, Prins Bernhardpark and Kamp Overmaat camps will be transformed into residential enclaves pleasingly nestled in the landscape. The majority of the historical buildings and the character of the original spatial structure will be integrated into the redevelopment as indicators of the future quality of the development. Oostkamp will be bisected by a bicycle and hiking route that divides the area into two locations, which will be accessible by means of two access lanes linked directly with Oude Deventerweg. On the site around hangar 11, there will be space for organising events. The eastern section will include space for an extensive leisure programme/innovative commercial activities with re-use of the existing munitions bunkers. (ill. 12.31 and 12.32)

## 12.8 Phasing and planned economy

This chapter deals with the programme-based and financial aspects of the subareas in the following order:

- Airbase
- Oostkamp
- Zuidkamp
- Prins Bernhardpark
- Kamp Overmaat

The final summary displays the total result for spatial development strategy A. This is followed by an analysis of the risks associated with the realisation of spatial development strategy A.

### Airbase

The airbase subarea covers ca 414 hectares of government-owned land. In addition, 2 hectares of land still to be acquired have been added to the development area to accommodate the main access road (including green fencing).

This subarea will be developed in phases over the period up to and including 2020. The allocation will start in the north and Oostkamp (from 2012), followed by the middle (to be allocated from 2014) and lastly the east (to be allocated from 2017). The investments will be made prior to this. The existing property will be deployed from the start. This phasing will make it possible to satisfy the requirement to have started constructing the national ecological network before 2018.

Excluding Oostkamp, the space at the airbase will be used in the following way: (table 12.1)

With the inclusion of 133 hectares of natural and green development, the share of green and water in spatial development strategy A comes to 35% for the airbase (excl. Oostkamp).

### Oostkamp

Oostkamp covers an area of more than 25 hectares, which also includes the new access roads in the development area. The development of Oostkamp can start in the short term, independently of the other developments at the airbase. It is assumed that the allocation of land can be completed by around 2014. The existing property, more than 25,000 m<sup>2</sup> of gross surface area, will be sold off in smaller lots in phases after the decision has been taken about the area.

The following table indicates the use of space for Oostkamp. (table 12.3)

The existing area (approx. 95% of the subarea) will be allocated with all the existing infrastructure, which is in satisfactory to good condition.

### Zuidkamp

Zuidkamp is an area that covers more than 43 hectares. The area will be redeveloped into a green and luxurious residential area, and the existing green and road structure will largely be integrated into the new development.

Zuidkamp will be developed in phases, and several lots will be sold every year over a lengthy period (2012 through 2023). Investment will follow the same pace. In this subarea, 154 homes will be realised. (table 12.3)

The programme has allowed for the option for a commercial facility and a differentiated residential programme. The aim of the programme is to utilise and harness the existing quality of the area. To achieve this, the programme will preserve as much of the existing property as possible.

### Prins Bernhardpark

Prins Bernhardpark covers an area of more than 10 hectares. In addition to the existing four homes, 15 new spacious lots will be developed in line with the spatial development strategy. The officers' mess will

## Illustration 12.27 Model A: Bicycle network

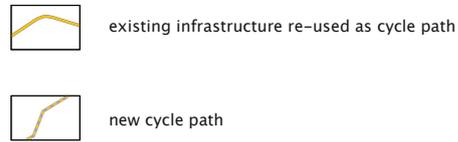


Illustration 12.25 Cross-section B, cycle route through estates

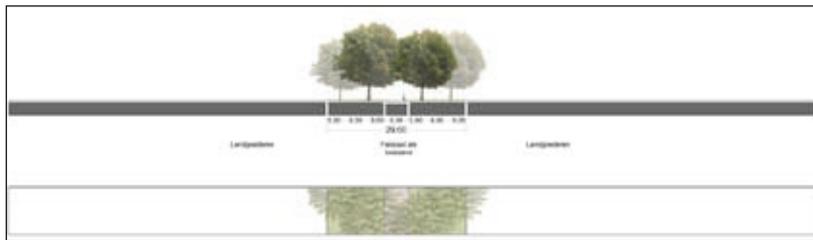


Illustration 12.26 Cross-section C, cycle route through estates

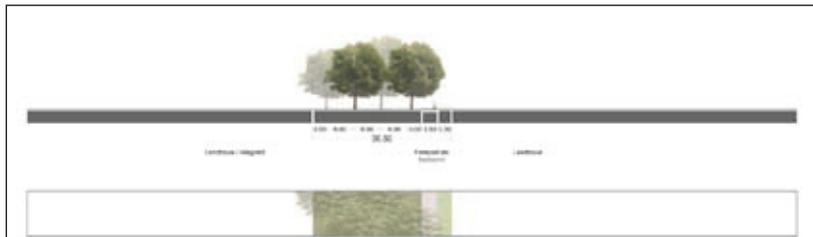
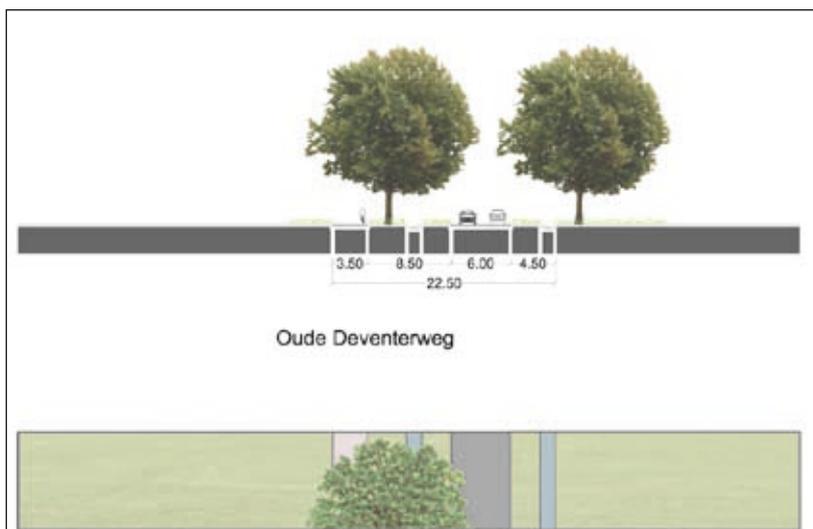
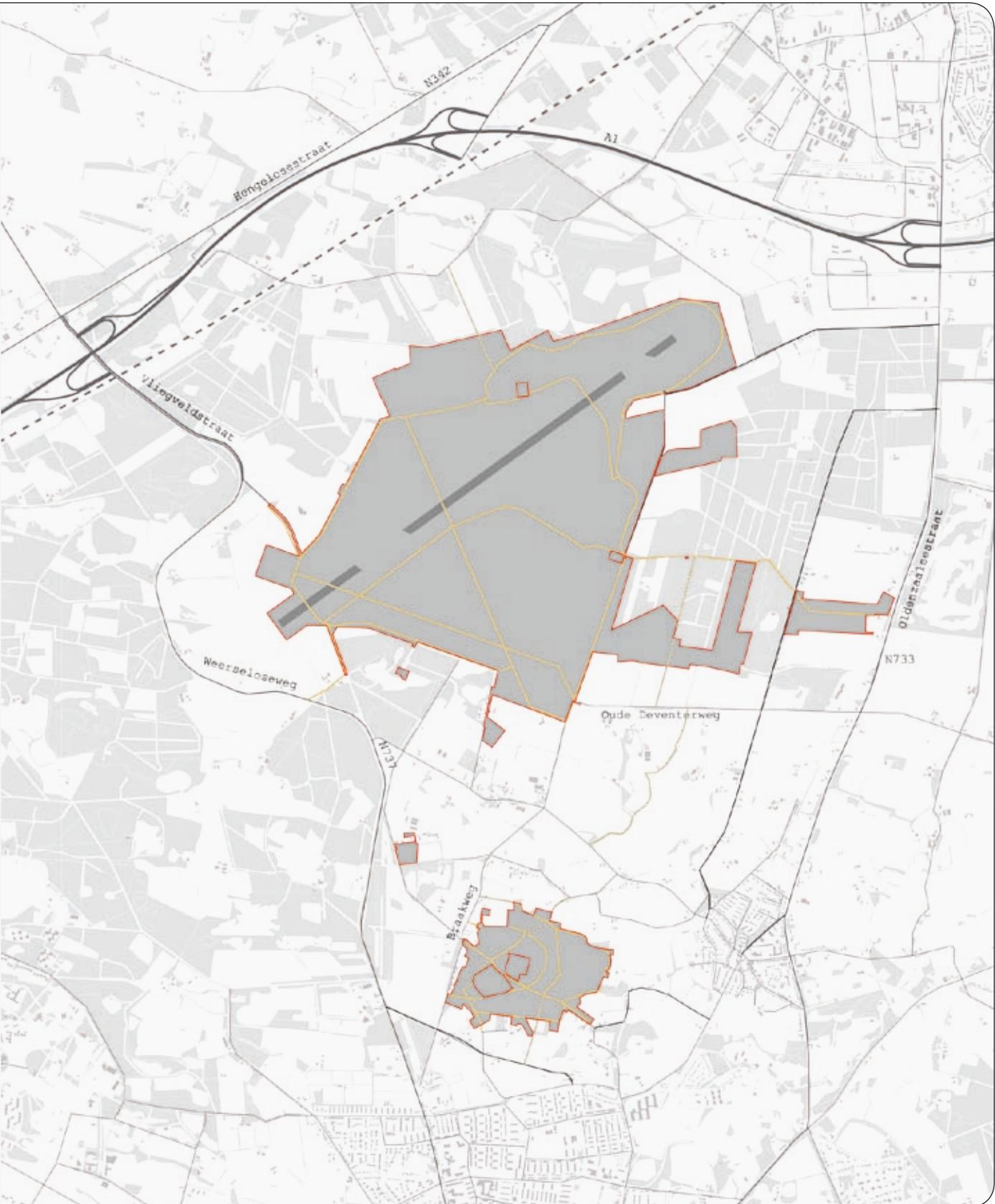


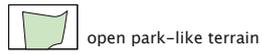
Illustration 12.28 Cross-section D - Oude Deventerweg





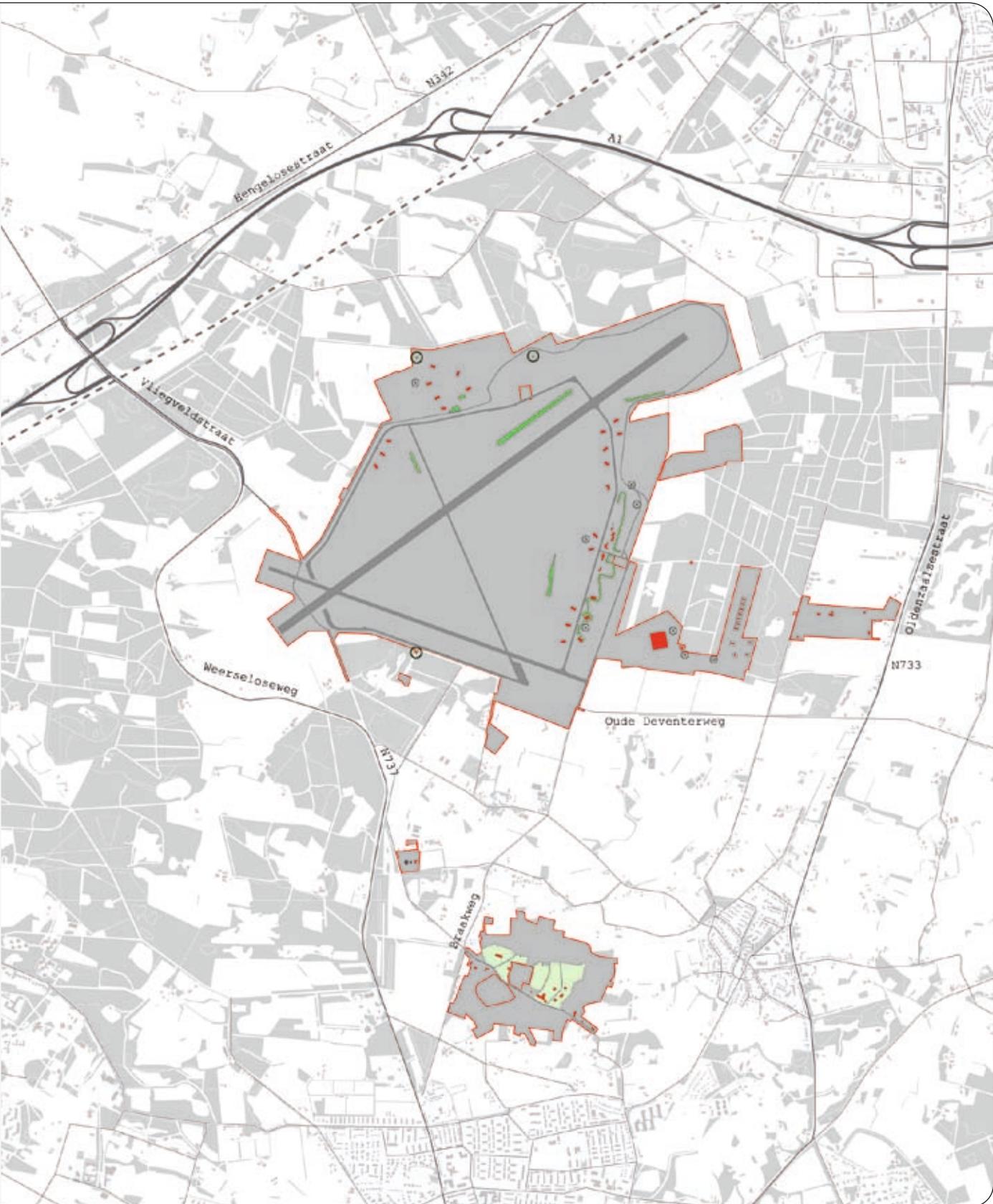
## Illustration 12.29: Valuable buildings, flora and fauna

intended integration of natural values:



intended preservation of buildings  
of cultural value:





## Illustration 12.30: Programme model A

- 1 care and cure
- 2 residential and working units
- 3 healthcare farm
- 4 innovative companies/learning park
- 5 leisure
- 6 resort park/leisure
- 7 sports centre/riding school
- 8 equestrian living
- 9 residential
- 10 nature
- 11 country estates
- 12 residential/innovative commercial activities
- 13 leisure
- 14 leisure/innovative commercial activities
- 15 residential
- 16 residential
- 17 residential/services
- 18 residential/services
- 19 defence
- 20 agriculture/nature



Table 12.1

Airbase Total	ha	
Available for allocation	228	55%
Surfacing	41	10%
Green and water	146	35%
Total (rounded)	416	

Table 12.2

Oostkamp	ha	
Available for allocation	24	95%
Surfacing	1	4%
Green and water	0	1%
Total (rounded)	25	

Table 12.3

Zuidkamp	ha	
Available for allocation	22	51%
Surfacing	5	11%
Green and water	16	38%
Total (rounded)	43	

Table 12.4

Prins Bernhardpark	ha	
Available for allocation	5	43%
Surfacing	1	9%
Green and water	5	47%
Total (rounded)	10	

Table 12.5

Overmaat	ha	
Available for allocation	2	91%
Surfacing	0	9%
Green and water		0%
Total (rounded)	2	

Table 12.6

Land complexes	ha	ha allocated	m <sup>2</sup> gross surface area	# homes	NCW land development (million €)
Airbase	416	228	105.700	221	
Zuidkamp	43	22		154	
Prins Bernhardpark	10	5	1.860	19	
Kamp Overmaat	2	2	1.500	1	
<b>TOTAAL land complexes</b>	<b>471</b>	<b>256</b>	<b>109.060</b>	<b>395</b>	<b>29,6</b>
<b>Other components BuCa</b>					<b>NCW total (million €)</b>
VTM i.o., subsidies, temporary property management					-3,8
<b>NCV land exploitation A TOTAL</b>	<b>471</b>	<b>256</b>	<b>109.060</b>	<b>395</b>	<b>25,8</b>



be put to a different use. The development of Prins Bernhardpark can start in the short term so that the allocation can be completed by around 2015. (table 12.4)

Based on the aforementioned spatial and programme-oriented basic principles, less than half of the area will be developed.

### **Kamp Overmaat**

Kamp Overmaat covers an area of approx. 1.65 hectares and consists of a disused camp building (1940), public space and an office building that is currently being used by the State Property Department (Domeinen). (table 12.6)

According to the plan, the area will not be refurbished and the existing property will be sold off in smaller lots. This will take place as quickly as possible (planned for 2011).

### **Total result**

The total result of spatial development strategy A (including other components of the development: VTM i.o. organisation, subsidies and temporary property management) amounts to NCV € 25.8 million.

This is the residual land value, as yet excluding the acquisition costs of the government-owned land. (tabel 12.6)

### **Result of Risk Analysis - Spatial development strategy A**

A risk analysis was carried out to assess the possible risks associated with the implementation of spatial development strategy A. This analysis was done with the support of a Civil Engineering Cost Agency and Twynstra Gudde Risk Management.

Given the project phase, the analysis focuses on the financial risks of the land developments.

The risks are subdivided into spread risks and pure risks.

Spread risks are - usually regular - ambiguities in the estimates resulting from price fluctuations and uncertainties in the base figures (amounts) of the estimates.

Pure risks concern events or situations that occur and have been anticipated in the estimates (i.e. not forming part of the regular distributions). These risks are determined by looking at the chance of an event occurring and its effect.

Monte Carlo simulations have shown how the land development outcomes relate to the values with a 50% and 90% certainty in the case of both spread risks and pure risks (see P50 and P90). This can be used to calculate the so-called risk reserve, which varies from some € 14 million (P50) to about € 19.5 million in plan A (P90).

For the time being, it concerns a risk indication that can be adjusted downward by means of additional research, managerial agreements and the relevant control measures.

#### *Controlling the main risks*

In terms of the spread risks, the discount rate and the rise in revenue of housing are key parameters that influence the outcomes of the land development to a large extent. The interim and final result will have to be compared with the guiding principles of the land development, on the basis of financing agreements for the execution of the project and the value/tendering value of land. This will allow timely intervention in the event of deviations. Proper economic supervision and guidance will also play a contributing role in this regard.

In the case of pure risks, the main elements are the risks related to remediation and explosives and not being able to implement the leisure-time destinations in the plan.

For remediation and explosives, in which case it also entails the risk above the soil

remediation agreements made at central government level, additional funds are needed to gain better insight into the contaminated locations. Good insight is important because these risks determine the abovementioned risk reserve to a large extent. Without the risk for remediation and explosives, the calculated risk reserve declines to about € 11 million (P90).

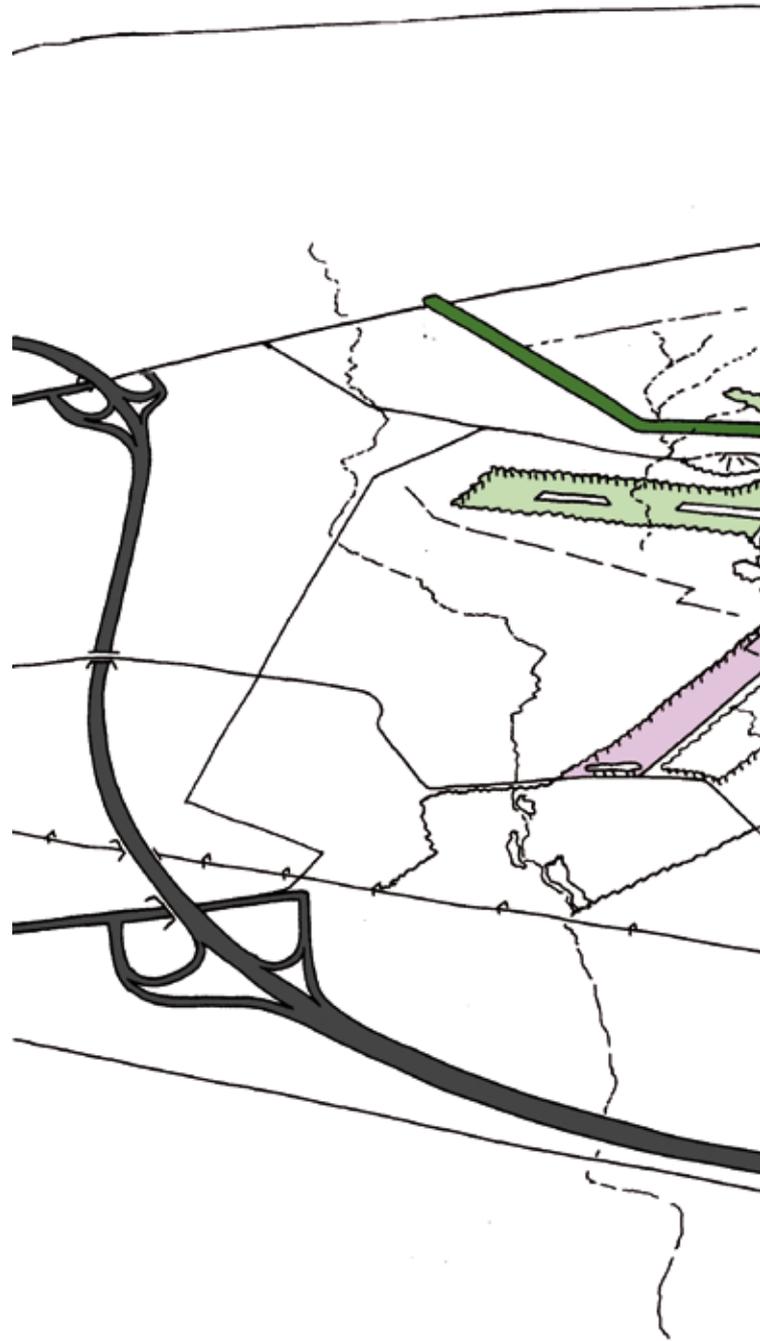
Failure to attract operators for the leisure-time sector can lead to a broadening of the scope of possible alternative programmes (leisure-related and otherwise). For that reason, it is important that the plan is kept sufficiently flexible.

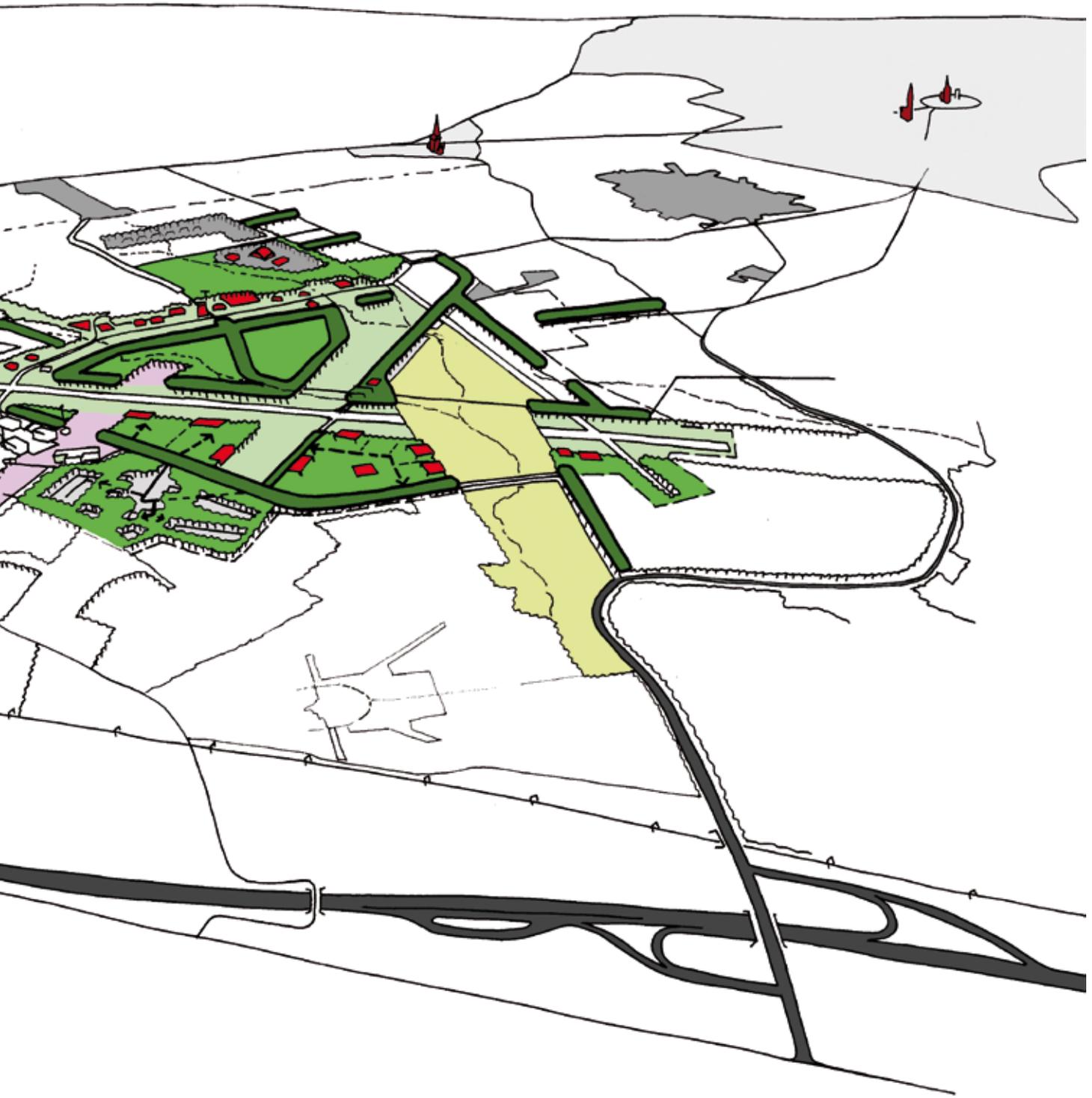
## Illustration 12.31: Plan sketch Model A

	new buildings
	existing buildings
	brook/brook valley
	cycle path
	motorway
	tree-lined access lane
	existing forest
	new forest
	wet grassland
	dry grassland/pasture
	heathland



**Illustration 12.32: Overview plan sketch Model A**









## 13 Spatial development strategy Model B

### 13.1 Spatial development strategy Model B

This spatial development strategy is based on the transformation of the former military airbase into a civilian airport in a robust landscape setting. The basic principle is that the airfield can handle a capacity of 1,2 million passengers in the long term. The airfield will use the former runway of the military base. The functions related to the airport, such as parking, commercial activities and leisure are all located north of the runway and will be accessible from the A1 motorway. To the south of the airfield at the foot of Lonnekerberg, the emphasis is on developing the landscape quality of the area. Restoration of the natural water system and the development of new natural features open the perspective to a new link in the national ecological network south of the airport. In this landscape south of the airport, there is space at the location of the former camps for theme-based residential clusters and extensive types of leisure and commercial activities. This reprogramming variant explicitly includes the existing buildings, which are part of the area's cultural heritage. These partly new programmes on the former well-secured and isolated enclaves of the airbase will be made accessible by a system of lanes that interlace the site and embed the location in its wider surroundings. The old infrastructure of the base will play an important role in this network of transport links.

This spatial development strategy is explained in the following sections by first of all describing four important underlying motifs that largely determined the spatial choices that were made when the vision was being formulated. These motifs are part of the area's current spatial and functional characteristics. In the spatial development strategy, these motifs are worked out in

detail and strengthened as future carriers of the spatial quality.

Following this, the four constituent layers of the spatial development strategy are explained. These four layers are the landscape, the infrastructure, the cultural heritage of the area and, lastly, the programme. The emphasis here is on the way the areas have been or can be reprogrammed and what this can produce in terms of programme-based density and quality. This description of the subareas is then worked out into a plan sketch, which visualises a possible final configuration to be created on the basis of this spatial development strategy. (ill. 13.1)

### 13.2 Design motifs

#### The airfield as a country estate

The area between Hengelo, Enschede and Oldenzaal (the planning area) can be typified as a patchwork of enclaves embedded in a landscape of open fields, woods, brooks and meadows. The enclaves are non-agricultural units that differ in a number of respects from their surroundings and generally have urban origins. At present, the airfield and the camps are like private and semi-public enclaves in the area and in that sense can be compared to the existing estates of Hof Espelo, Oosterveld, and 't Holthuis. This characteristic of the estates, which were designed as formal and autonomous structures that manage and run the planning area, is one of the guiding design motifs for this structural sketch. The planned enclaves will be linked by a system of access lanes to the transport network, making them accessible to motor traffic. Other than these access lanes, no new infrastructure will be added. This will ensure that no new through-traffic network for motor traffic is introduced into the area. (ill. 13.2 and 13.3)

## Illustration 13.1: Spatial development strategy Model B

	Government-owned land
	Municipal boundaries
	Airport facilities/platform-related economic activity
	Parking
	Airport airside
	Leisure/Innovative economic activity
	Leisure/Airport-related economic activity
	Living
	NS suburban station + Transferium/offices
	Defence
	Green/landscape
	Lane
	Sight lines
	Main access
	Existing brook
	New upper watercourse Lonnekerberg
	New middle watercourse
	Compensation Oostkamp

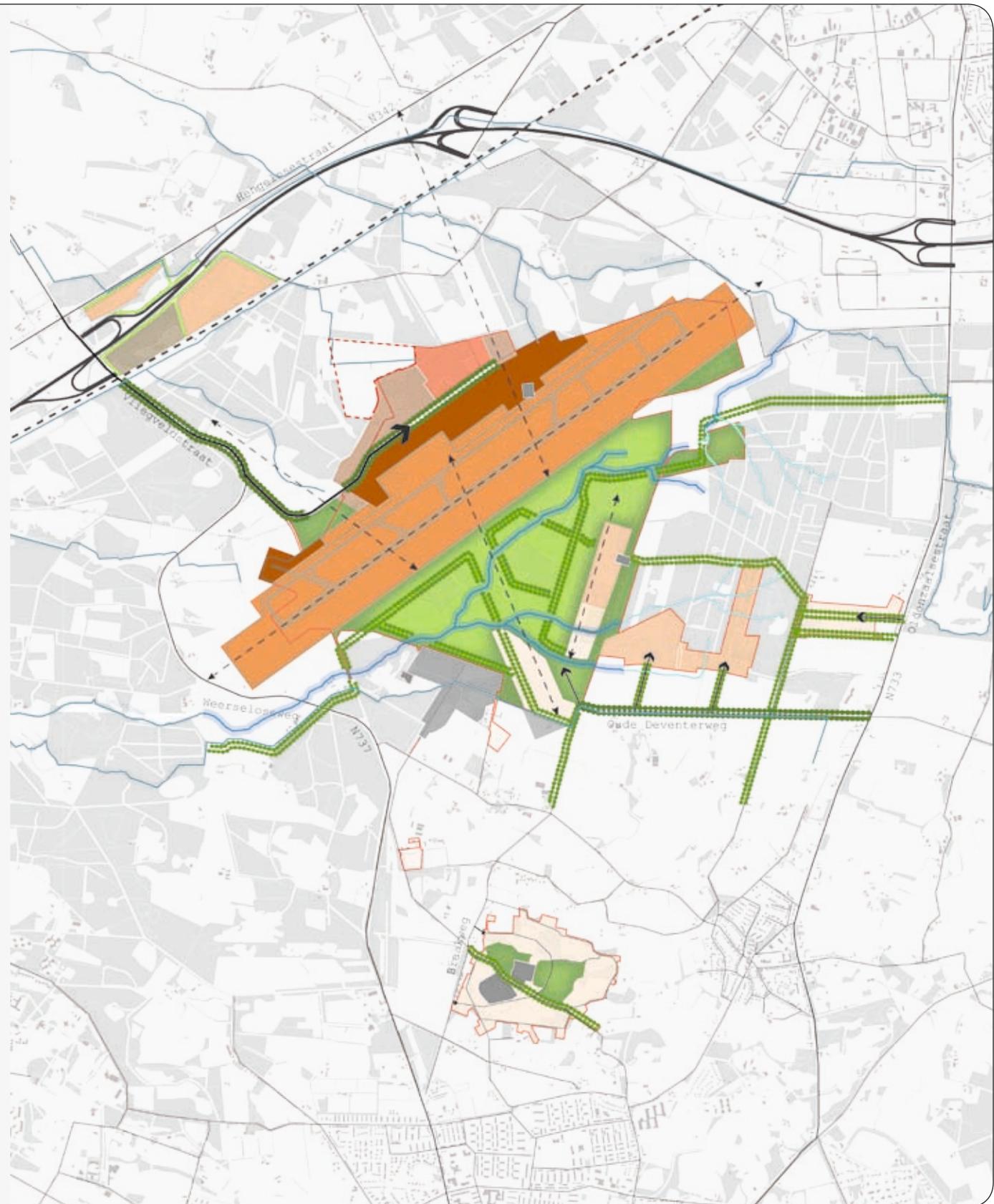


Illustration 13.2 Weldam estate



Illustration 13.3 The former airbase



### **Contrast between nature and culture**

The contrast between the culture and the natural surroundings is very characteristic for the landscape between Hengelo, Oldenzaal and Enschede. This contrast can be seen, for example, between the specially designed landscape of country estates with lanes, sight lines and artificial lakes and the natural water system and the natural land topography. There is also a unique contrast between the indigenous vegetation such as oak and alder and exotic plants and trees such as red beech, sequoia and horse chestnut on the estates. Moreover, the Twente landscape as a whole is mainly a cultural landscape in which man has shaped the natural surroundings. Very few of the natural water systems in the area have not

been influenced by man, and all the forests in the area have planted.

The landscape design for the planning area explicitly focuses on this contrast between nature and culture and shapes it in a new way. In doing this, the design makes many references to features of the existing estates.

### **Contrast between intimacy and openness**

Up to just a few decades ago, there were major contrasts in the Twente landscape between its open and enclosed character. The large-scale open areas were quite recently reclaimed heaths, while the small-scale enclosed areas were located in and around the old landscape of open fields, brook valleys and villages. At most locations

in Twente, this striking contrast has now disappeared, but it is still largely present in the landscape north of Enschede, thanks to the military's use of the area over the past 65 years.

The forests are also mainly located on the former heaths and they too have the characteristic large scale and straight lines. Zuidkamp is an example of a very small-scale old cultural landscape, while the landscape around the former military airbase has the characteristic openness and straight lines of the recent heathland reclamations. If you squint at the landscape and in your mind's eye replace the colour of grass and concrete with purple, you could easily imagine yourself to be on a 19th-century heath. This typical contrast is the dominant spatial quality of the area. However, the edges of the open space are quite arbitrary and 'uneven', and so the current situation does not do full justice to the monumental nature of the openness. In the structural sketch, the contrast is further increased by formally encircling the open plain of the runway with a subtle system of open fields, giving it a certain orientation and optically anchoring it in its surroundings using strong sight lines. From the access lanes and the edges of the planning area, the central open space is then perceived as a logical hub and the pattern of the open spaces structures the landscape surrounding the airbase. In this way, the Lonnekerland is given a new élan but still retains its cultural heritage. (ill. 13.5, 13.6 and 13.7)

### **Dynamism versus tranquillity**

The open plain of the current runway divides the planning area in two. On the north-western side there is the area between the A1 motorway and the runway, and on the south-eastern side the landscape of Lonnekerberg. This dichotomy and the proximity of the A1 to the northern side has inspired the logical programme-based zoning of the planning area. To the north-west of the runway, directly accessible from the A1 and a future suburban railway

Illustration 13.5 Intimacy



Illustration 13.6 Large-scale openness



Illustration 13.7 Existing open spaces



station, will be the intensive and dynamic programmes that benefit from accessibility. On the south-eastern side, accessible from Oldenzaalsestraat, will be the less intensive programmes that focus on residential functions and more exclusive types of commercial activity and recreation. (Ill. 13.8, 13.9 and 13.10)

### 13.3 Landscape

#### Open space and long sight lines

The large-scale openness on the site of the current airbase is an important landscape feature. The dimensions of the space at the airbase create a spectacular and dramatic contrast with the small-scale surroundings and also with the rest of Twente. The former airbase is a monument to the stark emptiness of the barren land, which has characterised the Twente landscape for many centuries. The design therefore carefully preserves that openness and sometimes even restores it. The design includes four large open spaces that structure the programme on the former airbase and that also connect the area with the surroundings. The variety in the dimensions of the space, the planting on the boundaries or the panorama, and the differences in the programming give each space its own specific character.

The future space of the runway will be the central open space. This space consists of the runway surrounded by dry grassland, with the accompanying infrastructure of taxiways and platforms. Due to the years of minimal management by the Ministry of Defence, the dry grassland has acquired a high botanical value. On the northern side, the space is bordered by sheds and the terminal. The southern side will consist of lanes lined with trees and woods.

The second space is the entrance space from Vliegenveldstraat-Weerseloseweg. This space consists of a brook that flows

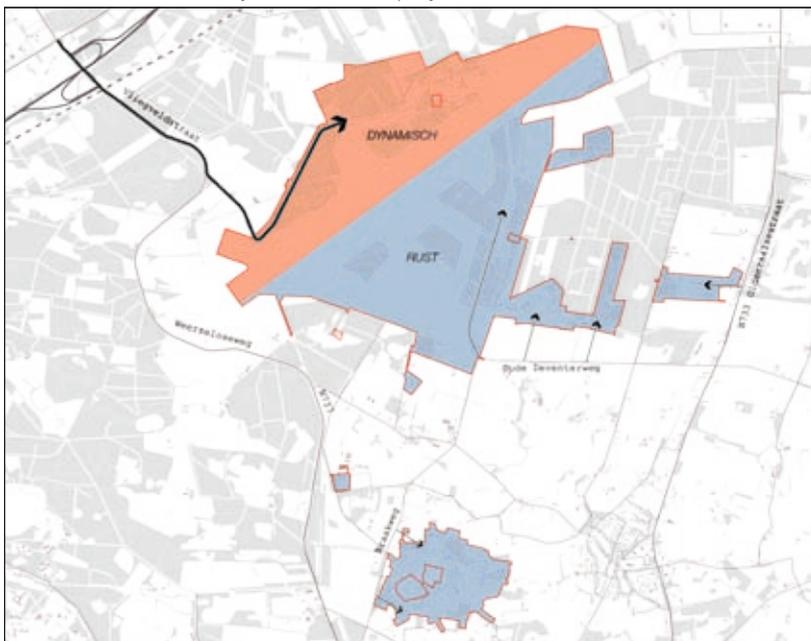
Illustration 13.8 Dynamism



Illustration 13.9 Tranquility



Illustration 13.10 Model B: dynamism and tranquility



through wet grassland and meadows still in agricultural use. The boundaries are formed by woods. The entrance space provides a panoramic view of the open space around the former runway, of aircraft parked along the side of the runway, and of the airport's public buildings, such as the terminal, the baggage hall and the hotel. This deliberately gives the airport a scenic and stately entrance, like the entrance to a country manor.

The third space is linked to the eastern entrance, a continuation of Oude Deventerweg, homes in the character of equestrian living can be developed with their own pastures.

The fourth space extends from the A1 motorway to the runway. By utilising the existing openness created by a former pipeline route, the heathland can be restored in an elongated space in accordance with the Land Use Commission. That will evoke the memory of the open and silent heathland of the past and will also create a symbolic link with the fast-moving world of the 21st century.

Between the new watercourses of the Jufferbeek and Blankenbellingsbeek brooks, a lookout hill will be built beside the former runway. The hill will be covered in lilac shrubs (Seringenberg) similar to those on the De Horsten estate near Wassenaar. In April, when the lilacs are in blossom, it will be a wonderful attraction, while during the rest of the year it will be a place from where people can admire the newly created landscape. (ill. 13.11)

### The national ecological network and nature development

In the current situation, the airbase is like a recess in the national ecological network; there is a bottleneck in the national ecological network between the business park of Hanzepoort and the top of the former runway. With the development of model B,



a proposal is being submitted to review the boundary of the national ecological network. On the northern and north-western sides, the national ecological network is reduced somewhat by the development of the airfield and the accompanying programme (business premises, leisure locations, car parks). In model B, the national ecological network will be greatly strengthened by adding a zone of approximately 127 hectares to the southern side of the runway. That will add a new and robust ecological link to the southern side of the runway, thus resolving the bottleneck in the national ecological network on the northern side. The natural water system will be restored by introducing new brooks from Lonnekerberg, branching onto the Leutinkbeek brook and a new branch of the Jufferbeek brook. In the A1 zone, the north-western connector area of 12 hectares around the Jufferbeek-Deurningerbeek brooks will be strengthened as part of the planning framework for land-use development. It is desirable that part of the A1 zone retains its landscaping features and is designated as a landscape buffer zone. In the long term, a national ecological network swap may be made, with the western part of Oostkamp being returned to nature and compensation for the equivalent surface area being received on the northern side of the airport for commercial activities.

The total amount of nature and green to be developed in the area will cover some 187 hectares. Of this total, ca 127 ha is zoned for EHS. The balance of new and old national ecological network to be realised inside the planning area will amount to approximately 73 hectares net. In addition, some 60 hectares of the total of approximately 187 hectares have been allocated for the establishment of pioneer vegetation on the southern side of the runway. (ill. 13.12)

### Restoring the natural water system

With regard to restoring the natural water system in the area, VTM i.o. will follow the recommendations of the Regge &

Dinkel Water Board [64]. In the past, the airbase was drained intensively, and this considerably disrupted the natural water management system [64]. Moreover, the site has been levelled off, causing the original land topography to disappear. There are now no traces to be found in the soil of the original watercourses or brook valleys. Restoring the natural water system therefore means creating entirely new brooks that become the missing links between the (new) upper watercourses on Lonnekerberg and the amputated watercourses downstream of the airfield. The emphasis is therefore on restoring the natural water system in its entirety and not just restoring a bygone historical situation. Restoration of the system can give an enormous stimulus to the natural values in the area. On Lonnekerberg, the Landschap Overijssel Foundation is filling in ditches, which is improving the sponge effect of the lateral moraine and creating new upper watercourses.

In spatial development strategy model B, the water system will be restored by removing the drainage systems from large areas of the site, particularly on the southern side of the runway. However, in the northern part of the airbase, on the site of the future airfield, drainage will continue to be necessary because of the drainage requirements for the runway and airport buildings.

By digging new watercourses on the site of the former airbase, the brooks can again flow in a westerly direction from the source area of Lonnekerberg. This is based on a management decision of the Regge and Dinkel Water Board. The Jufferbeek brook will be restored with a new branch originating from Lonnekerberg. This new branch will be led around the runway ring road. The Hesbeek brook will be restored on the flank of Lonnekerberg north of the strip. At the southern side of the strip, the same will be done for the Blankenbellingsbeek brook. Because of the requisite width of the new runway, both new watercourses will be joined together and linked to the

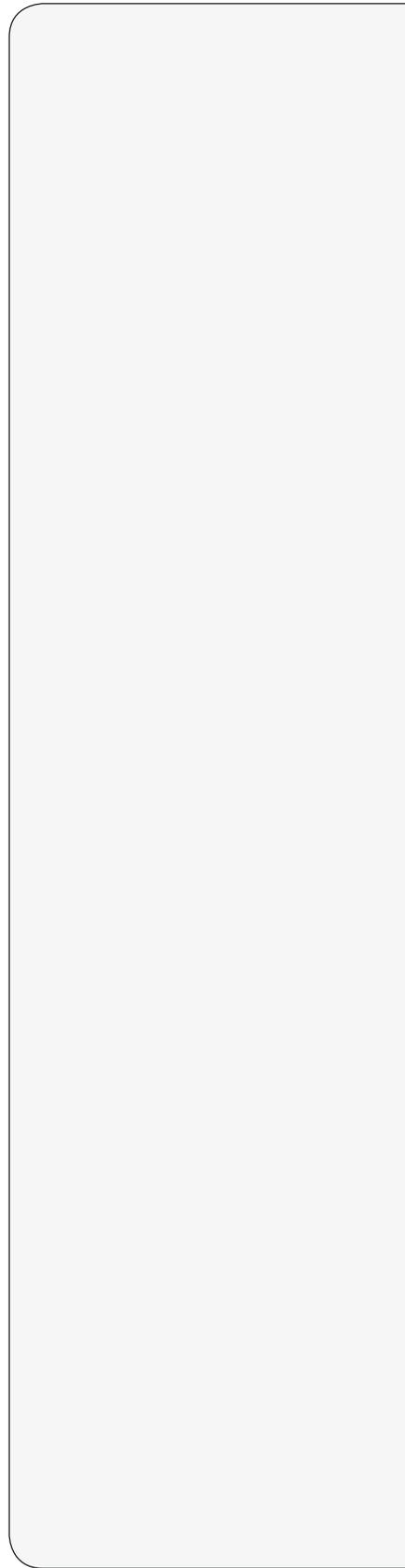
Leutinkbeek brook west of the airbase. The Leutinkbeek brook should also be included in the restoration plans outside the planning area because of the larger volumes of water the brook will have to deal with. In the current situation, the Jufferbeek and Leutinkbeek brooks are already the brooks with the highest ecological quality. By linking the new upper watercourses on Lonnekerberg to these brooks, the ecological structure will be strengthened even further.

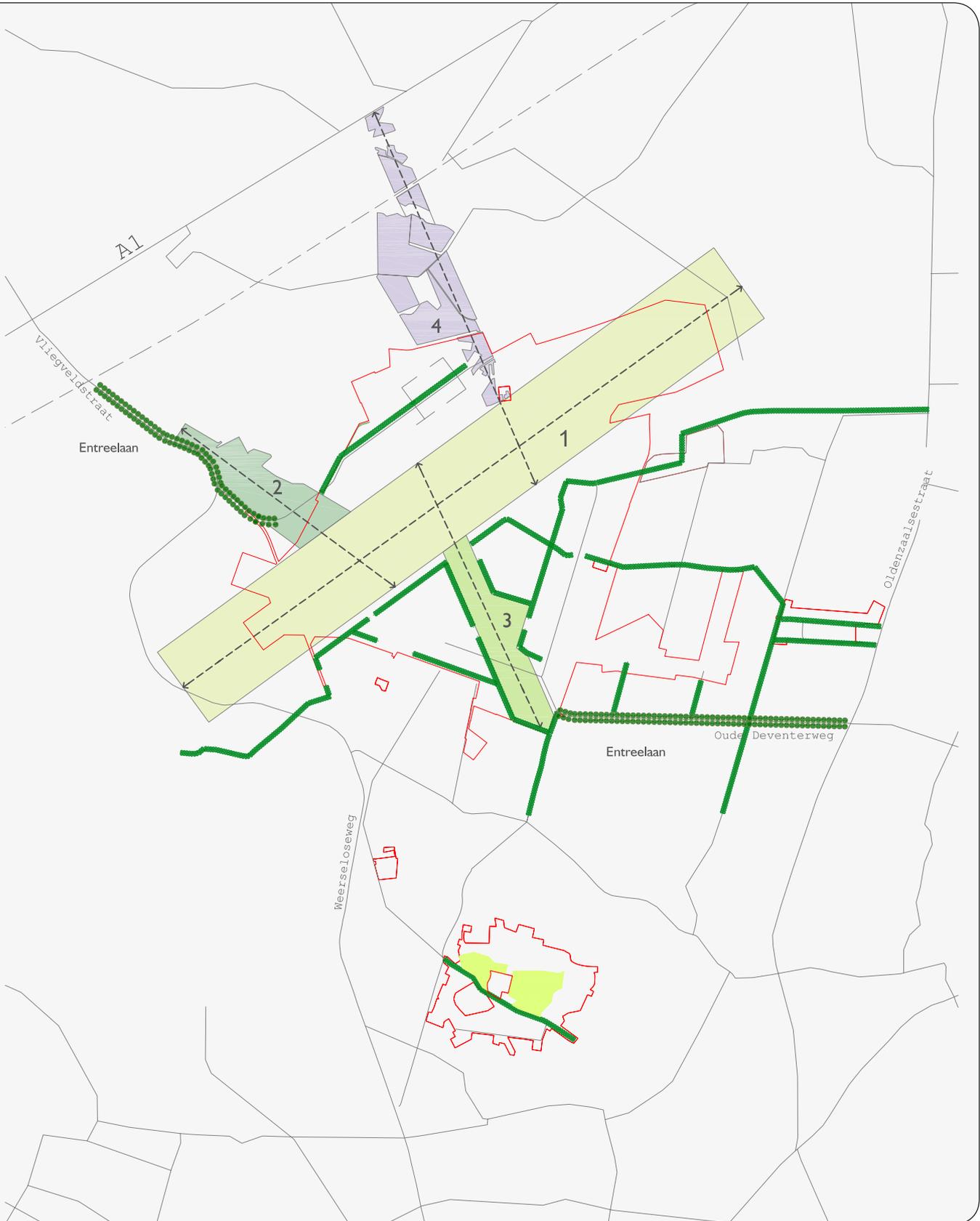
The removal of the nutrition-rich top layer of the soil will create a slightly lower zone on both sides of the brook that could develop into a brook valley in the long term. These zones will be up to 120m wide downstream and up to 70 m wide upstream. These zones will be constructed with an 'accolade profile', thus creating space for a 'co-flowing water storage'. The brooks themselves, like most of Twente's brooks, will form narrow, fast-reacting brooklets that can flow outside their banks during rainfall peaks. In many cases, hiking paths will be constructed at the edges of the brook valleys. In that way, the brook valleys will function as threads that connect the different components of the landscape and make them accessible to hikers. (ill. 13.13, 13.14, 13.15, 13.16, 13.17 and 13.18)

### Landscape structure

The landscape map gives an impression of the landscape structure to be created when the aforementioned landscape elements are combined. The restored brooks will be the first, rugged layer in the future landscape structure of the former airbase. The second layer will be created by a system of entrance lanes and other lanes that structure the landscape and link it to the surroundings. The third layer will be formed by the essential open spaces, each with its own colour and character, such as the runway, heathland, wet grassland and meadows. On the northern side, the runway will be overlooked by buildings that belong to the airfield. On the southern side, the design will be green and scenic.

**Illustration 13.11 Model B: Essential open spaces and lane system**

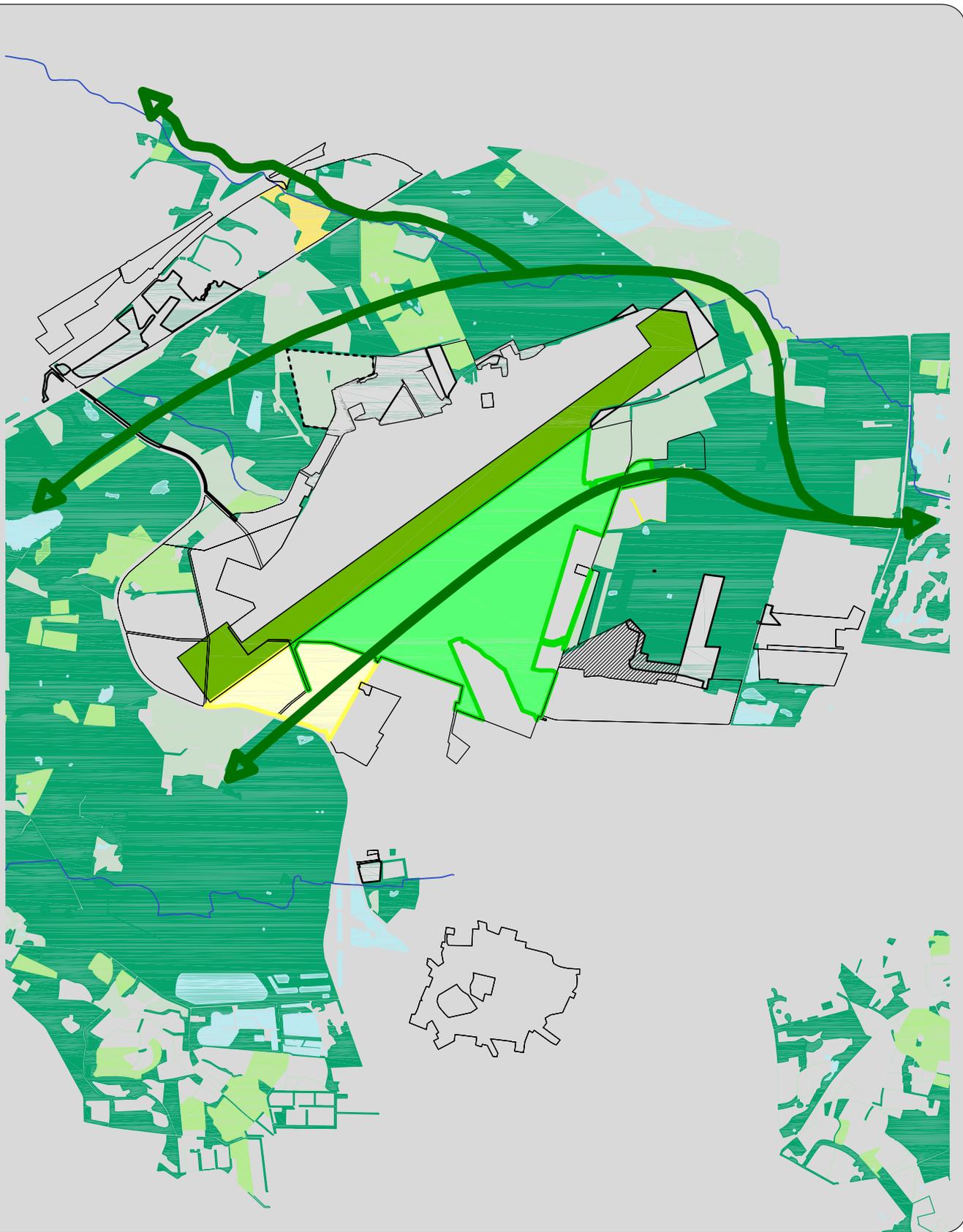




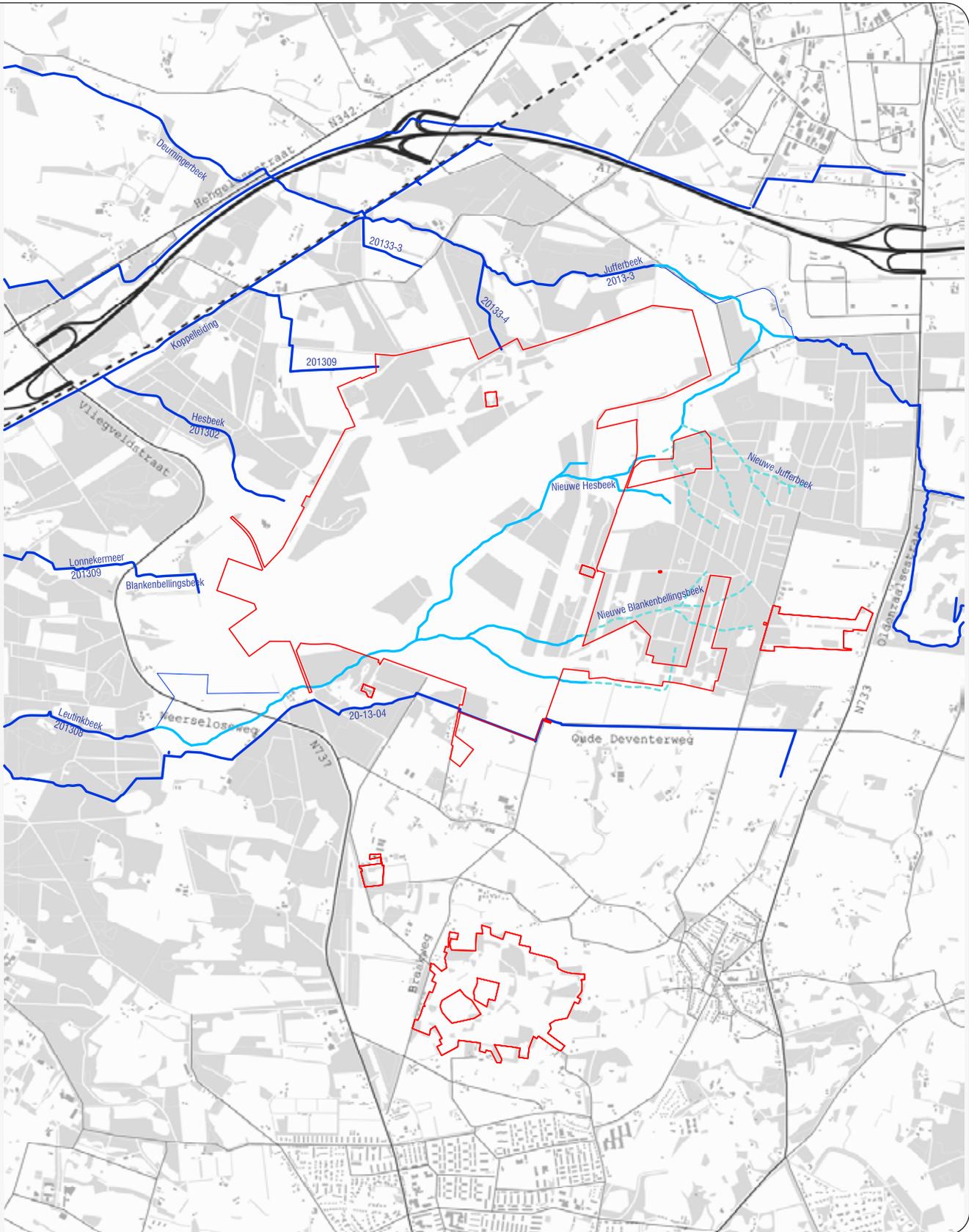
## Illustration 13.12 Model B: Strengthening the national ecological network

-  Government-owned land
  -  Municipalities (Preferential Rights) Act
  -  National ecological network - natural forest
  -  National ecological network - new nature
  -  National ecological network - management area
  -  National ecological network - water
  -  Brooks to be laid out in a natural way
  -  Reduction of the existing national ecological network  
Total surface area ca 55 hectares
  -  Expansion of the existing national ecological network  
inside government-owned land  
Total surface area ca 127 hectares
  -  Expansion of the existing national ecological network  
outside government-owned land by means of Land-use  
Development/Provincial Executive (indicative surface area  
ca 30 hectares)
  -  Other new nature and green 72 hectare  
(grasslands)
  -  Nature development Jufferbeek zone  
(indicative surface area 10 hectares)
  -  Strengthened link national ecological network
  -  Oostkamp (surface area 13.8 hectares)  
Return to nature
  -  Expand business park (surface area 13.8 hectares) as  
compensation for Oostkamp
- Totaal new nature / green: ca 230 ha**  
**Totaal new EHS ca 127 ha**  
**Saldo new EHS ca 73 ha**

0 1.000 2.000m







## Illustration 13.19 Model B: Landscape map



	Existing brook
	New Lonnekerberg upper watercourse
	New middle watercourse
	Brook valley
	Lane
	Existing woods, copse
	Woods, copse to be planted
	Lookout hill
	Wet grassland
	Infertile grassland
	Heath
	Nature
	Meadow
	Herbaceous vegetation seepage zone
	Open field Zuidkamp
	Landscape buffer zone A1

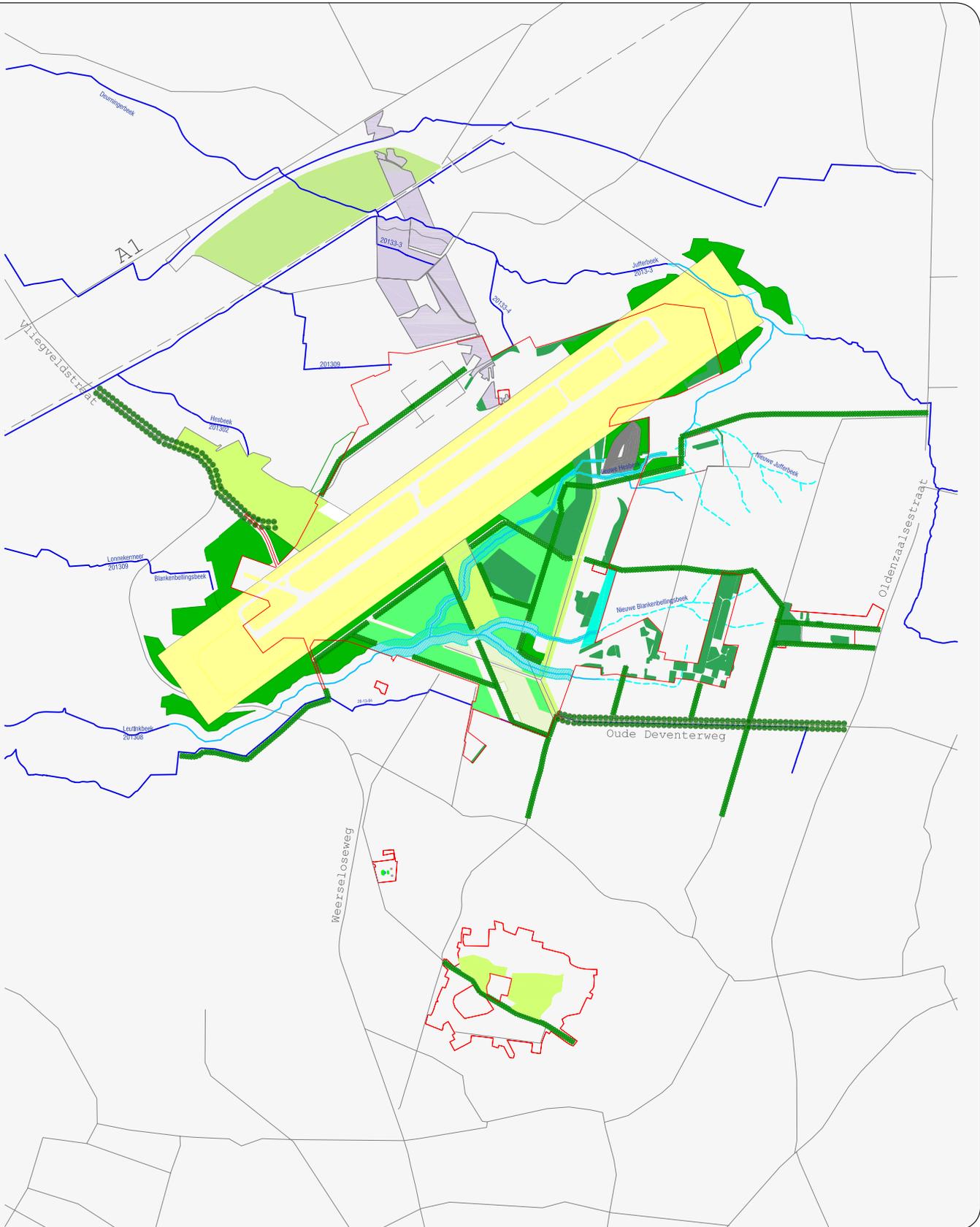


Illustration 13.17 Lookout hill (Seringenberg)



The other open spaces will be defined as much as possible by existing copses or areas of new woods to be planted. That will create a clear space, consistent with the vision of the airbase as a country estate in the middle of other country estates. In addition, any new buildings will be integrated into the new woods or copses. In the ecologically valuable transition area from Lonnekerberg, there will be space for the development of valuable seepage vegetation. The artificial hill, from which aircraft can be observed, will be an eye-catching landmark. (ill. 13.19, 13.20, 13.21, 13.22)

Prins Bernhardpark, Zuidkamp and Kamp Overmaat have the same plan development as in spatial development strategy A.

Prins Bernhardpark will continue to have a landscape structure, with two lanes with buildings in between in a park-like layout.

In Zuidkamp, the informal landscape structure will be strengthened with two greens strips in the central lane.

Kamp Overmaat will retain its park-like layout.

### 13.4 Infrastructure

The planning area is strategically situated between three through-traffic infrastructures in the region: in the north by the combination of the Amsterdam-Berlin rail link, the A1 motorway and Hengelosestraat (the A1 zone); in the west by Weerseloseweg, which provides access to the north of Enschede via Hengelosestraat; and in the east by Oldenzaalsestraat, which provides access in the north to the A1. At the southern side of the former airfield, the area is accessible by means of four lanes: Oude Deventerweg, Snellenweg, Braakweg and Vliegvelddstraat, that link up with Weerseloseweg and Oldenzaalsestraat. Only Braakweg is suitable for through traffic, as the other three come to a dead end at the fence of the former military base.

Behind the fence on the site of the airfield, a ring road runs around the runway and links all the former airfield functions. A system of taxiways links the runway with the hangars and the current terminal.

#### Car network

Elaborating on this characteristic of a potentially easily accessible but at the same time isolated enclave, the airport and the leisure park on the north-western side and the various locations at the south-east of

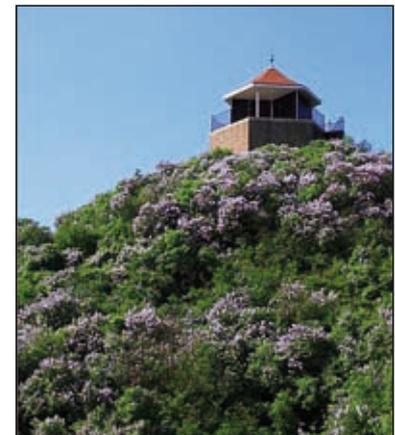


Illustration 13.18 Seringenberg reference photograph from the De Horsten estate

the airfield will be made accessible to motor traffic by a system of access lanes. These access lanes will be linked to the existing road structure but not to each other. That means that there will be no through-traffic network for motor traffic between the airport and the area at the south-east of the airfield.

A traffic engineering study has shown that autonomous traffic development will cause congestion problems on the access roads from and to the area in the future. In addition, extra programmes will be added as a follow-on to this redevelopment. This will function as the basis for an adjustment of the

traffic infrastructure as currently proposed. The 'Regional Traffic model 2004, update 2006', which includes the other planned regional developments, was used to perform the calculations [61].

The traffic-intensive functions of the airport will be made accessible from the A1 by building a link road with Weerseloseweg in the long term. The current link on the A1 at Hengelo-Oost will be used initially. The programmes at the south-east of the airfield, which focus more on the quality of the landscape and the quality of accommodation, will be accessible from Oldenzaalsestraat and Oude Deventerweg.

To the north-west of the runway, following on from Weerseloseweg, a central access road is being proposed that provides access to the airfield, the parking facilities, the business park and the leisure park. This park-like access road will be wide enough to accommodate two double traffic lanes with a central reservation. Between the link on the A1 and the access road to the airfield, Weerseloseweg will be widened, with the possibility of two double traffic lanes with a parallel road for slow and agricultural traffic. This road width can efficiently process the expected traffic load.

Prins Bernhardpark opens up onto Oldenzaalsestraat. Oostkamp, the airfield strip near the former traffic control tower and the equine-based residential neighbourhood will be made accessible by a system of branching lanes that link up with Oude Deventerweg and largely use the airfield's present taxiways and ring road. It is possible that Oude Deventerweg will be provided with a bicycle path. The residential enclaves of Zuidkamp and Kamp Overmaat will be made accessible to motor traffic through Braakweg and Vargershuizenweg, respectively; this will not require any extra measures in the road width. In Zuidkamp the ring-shaped structure of the existing roads will be used for access by motor traffic. In this way, the centrally located Zuidkampweg

Illustration 13.20 Model B: Artist's impression of the central open space of the runway



Illustration 13.21 Model B: Artist's impression of the entrance lane with view of brook valley of the Hesbeek brook and airport



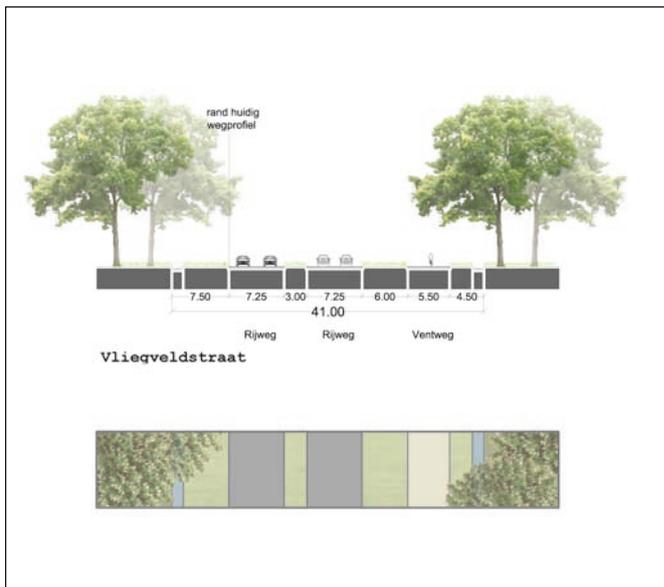
Illustration 13.22 Model B: Artist's impression of the Oude Deventerweg entrance lane

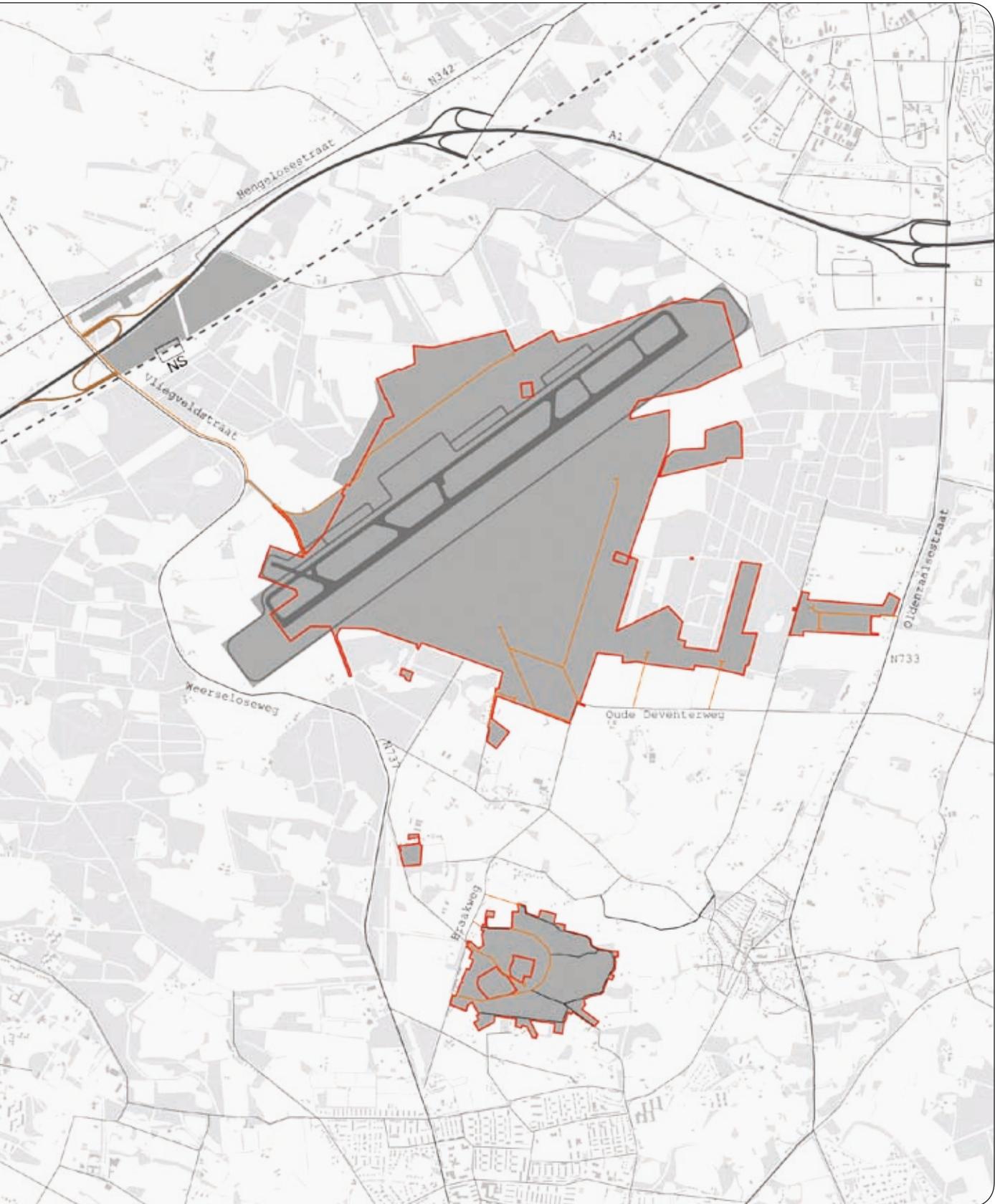


## Illustration 13.24 Model B: Car network

-  access road
-  widening Vliegveldstraat
-  new exit A1
-  possible location trainstation

Illustration 13.23 Cross-section A, Vliegveldstraat, N737





can be upgraded as a limited-traffic/free central axis in the park-like residential area. The location of Defence to the south of the former airbase will continue to be accessible from Lonnekerveldweg. (ill. 13.23 and 13.24)

### **Bicycle network**

Due to the re-use of the former taxiways and parts of the road infrastructure of the former military airbase, the landscape at the south-east of the airfield will be opened up for recreational use. The creation of a number of strategic “couplings” will give rise to a finely-meshed structure of slow traffic routes in this area that embed the area in the region’s recreational network. From Zuidkamp, it will be possible to reach Lonnekerberg by two routes. From Lonnekerberg, it will be possible to cycle in south-western direction along the airfield to Weerseloseweg. On the north-eastern side, the routes along the Seringenberg lookout hill will link the area with the surroundings of Oldenzaal.

At the side of the airfield, one coupling will be proposed between the access road and Oude Postweg. This cycle path/footpath will function as a link for slow traffic between the airfield and Oldenzaal and surroundings. Unlike the controlled access for cars, this structure for slow-moving through traffic routes firmly anchors the areas to the north and south of the runway in the regional network. (ill. 13.25, 13.26 and 13.27)

## **13.5 Cultural heritage and natural values**

### **Base**

The new airfield will be located to the north of the existing runway, which will continue to function as such. To give the airfield a logical and more efficient structure, a new main structure will be constructed on this side. To achieve this, the “bunch of grapes” will have to be demolished. At the southern side of the runway, every effort will be made to preserve the present cultural heritage value.

For example, the existing runways and taxiways will be retained, and this characteristic structure will become the carrier for the new car and bicycle links on the site. Characteristic buildings such as the fire station and the traffic control tower along the north-south taxiway are included in the plan. These buildings, together with the surrounding buildings and shelters, are characteristic for the site and provide ample opportunities for redevelopment. Furthermore, a number of valuable elements are included in the plan, such as Munitiestraat and various hangars (including H11).

Locations with important natural values will be integrated where possible, such as ponds, growing locations for special plant species and bunkers in which bats shelter.

### **Prins Bernhardpark**

The dispersed locations of the buildings in the woods, called urban planning camouflage, are characteristic for this area. The original area contained more buildings, but they no longer exist. All the remaining buildings will be retained and redeveloped. Any new buildings that are added will blend in with the original level of density and dispersal and the current height of the trees.

### **Zuidkamp**

Zuidkamp is characterised by a rural structure in which the buildings are randomly dispersed in a small-scale agricultural landscape. In the plan, as many of the existing buildings as possible will be retained – particularly the binding structure of Zuidkampweg, where historical buildings are located in a park-like setting.

### **Kamp Overmaat**

The park-like ensemble with a country house, lake and rows of trees will be retained. The house will be reduced to its original shape. There is the possibility of adding several outhouses to the residence. (ill. 13.28 and 13.29)

## **13.6 Programme**

In spatial development strategy B, the most eye-catching feature is the demarcation of the airport area to the northern side of the area. Inside this airport area, the runway is integrated with the corresponding airport programmes such as the terminal, baggage hall and fire station. It also provides space for the integration of the boarding platforms for aircraft. The parking facilities (approx. 6,700 parking spaces), consistent with an airport development for 1.2 million passengers and leisure functions for around 500,000 visitors per year, are situated in the vicinity of the terminal and the leisure site and are directly accessible from the main link road. This leisure site on the northern side can be exchanged for a programme for airport-related commercial activities. The same applies to parking, provided that enough parking spaces are realised. The commercial activities for platform-linked commercial activities are also included in the this area. This involves an area of almost 30 hectares (gross) in the direct vicinity of the runway, accessible from the main link road.

The southern side of the area is characterised by a large plot of land – around 130 hectares – for a new area of natural beauty, making it possible to expand the national ecological network. This area includes a small amount of land for residential construction. There will also be homes in the surrounding camps (Zuidkamp and Prins Bernhardpark). In total, there will be around 230 homes at this location. These new homes are particularly aimed at the upper segments in the market, in line with the developments in the plans and policy vision of the Municipality of Enschede. To make this possible, every attempt has been made to find differentiations and niches in the market. These niches in equestrian living, care concepts and community living, amongst others, will be financed by market initiatives and project developers.



In Oostkamp (25 hectares), the possibilities and qualities of the existing property will be utilised to a large extent. This property covers a gross surface area of approx. 25,000 m<sup>2</sup> and will be used for leisure, events and innovative commercial activities. Oostkamp will be accessible from Oude Deventerweg, from where it will also be possible to access the strip. The nearby strip on the eastern side of the airbase and at the foot of Lonnekerberg will be home to a collection of special buildings in terms of both their cultural heritage and their function. In this area of almost 25 hectares, a limited programme for innovative commercial activities, services and a few residential buildings is envisioned that blend in with the landscape and shape itself to and merge with the landscape qualities and the existing characteristic features.

In this way, opportunities will be created for new enterprise, still to be strictly defined. It may involve very upmarket forms of enterprise, such as a brandy blending centre that finds a suitable location in the former munitions bunkers. Or a medical park with links to the airport and the green surroundings, in which small-scale clinics are realised for international patient exchange with preliminary or follow-up treatment.

In the zone along the A1, a new access road linked to the motorway and a suburban railway station (P+R) is projected. The accompanying parking facilities can also function as overflow solutions for the airport. In addition, space has been reserved for a top leisure facility with an expected number of visitors of more than 500,000 per year.

There will also be limited space for commercial activities, as well as office functions at the suburban railway station.

The development of the airport and the new connection to the A1 will generate a demand for hospitality facilities and stimulate the creation of extra facilities around this

multimodal junction with an eye to cargo transport.

The land allocation of the A1 zone can only start after the development of the airport has been put out to tender.

### 13.7 The logistics of the airfield

#### Airport area

The airport area is a demarcated area around the runway that will be zoned as the 'airport'; see the illustration with the area boundaries in this section. The spatial development strategy will provide space for construction according to code E, where aircraft such as the B747, B777, A330 and A340 can be accommodated. If desired, the airfield can be transformed into a smaller structure in accordance with category D. The decision for the airport area includes rules about the purpose and use of the land in that specific area insofar as those rules are necessary with a view to using the area as an airport [60]. The decision for the airport area is a mandatory part of the draft Airport Decision that will be taken by the competent authority for the airport. Amongst other things, the airport area should contain the terminal with accompanying facilities such as a restaurant, health facilities, customs, the Royal Netherlands Marechaussee (KMAR), etc. In addition, the platform includes space for parking and handling passengers and goods, and spaces should be available for maintenance, emergency aid and parking facilities. Furthermore, in harmonisation with the airport operator and in accordance with the regulation, the possible integration of a glider airfield will be examined. (ill. 13.31)

#### Glide funnels

Due to security considerations when starting and landing aircraft, every airport requires a mandatory obstacle-free zone, a called 'glide funnel'. This three-dimensional zone uses a spatial scale of 1:7 and so limits the height of obstacles in the immediate surroundings. Every seven metres on both sides of the

runway from a given distance results in a possible one extra metre in construction height. For more information, see the illustration with this section. (ill. 13.32 and 13.33)

#### The logistics of the airfield

The permitted military noise exposure contour (35 Ke) represents a high optional value for the airport area. The strategic asset for the airport is to preserve a large noise space and in that way avoid unnecessary restrictions for the surroundings. The proposal is to establish a spatial reservation that specifies the limitation area via an Airport Decision, via an indication of national importance (in the sense of the Spatial Planning Act). (ill. 13.34)

It will be expected that not more than 1.2 million pax will be realised within the period up to 2030 [12]. Occasional military co-use (for example, for logistical operations) is not excluded. The design of the area with its parking facilities is based on the above specification. The land site of the airport, with the terminal, cargo handling, etc. provides sufficient capacity to facilitate a development. There are various ways of catering for the extra need for parking spaces, with the use of the Transferium in the A1 zone, or the construction of facilities or the expansion of the parking facilities in the vicinity. The traffic increase will be accommodated through the widened Vliegvelddstraat.

In accordance with the Regulations for Civilian and Military Airports Act (RBML), contours of noise burden and external safety risks for an airport are defined in an Airport Decision. Restrictions for spatial development (buildings) apply within the contours or a consideration of the development possibilities is required.

The restriction and consideration areas, the airport area and the external safety contours will be set out in the final Airport Decision, following the submission of the relevant

## Illustration 13.27 Model B: Bicycle network

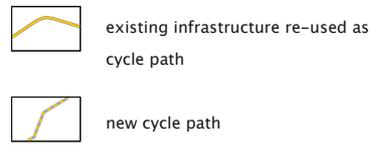


Illustration 13.25 Cross-section B, cycle route through estates

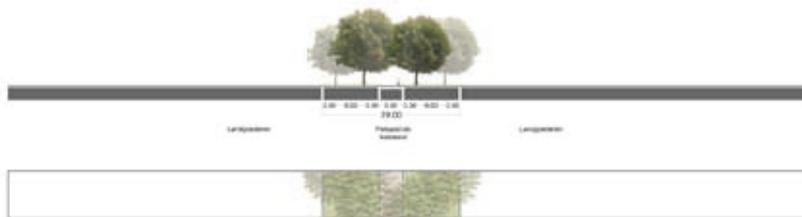


Illustration 13.26 Cross-section C, cycle route through estates

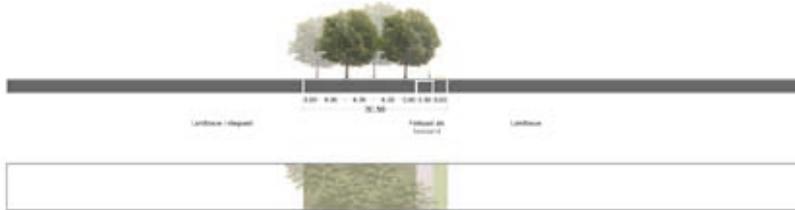
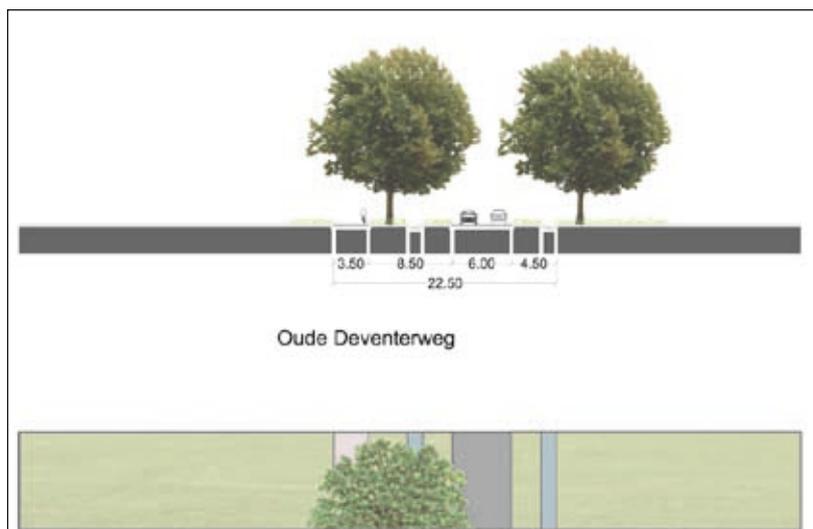
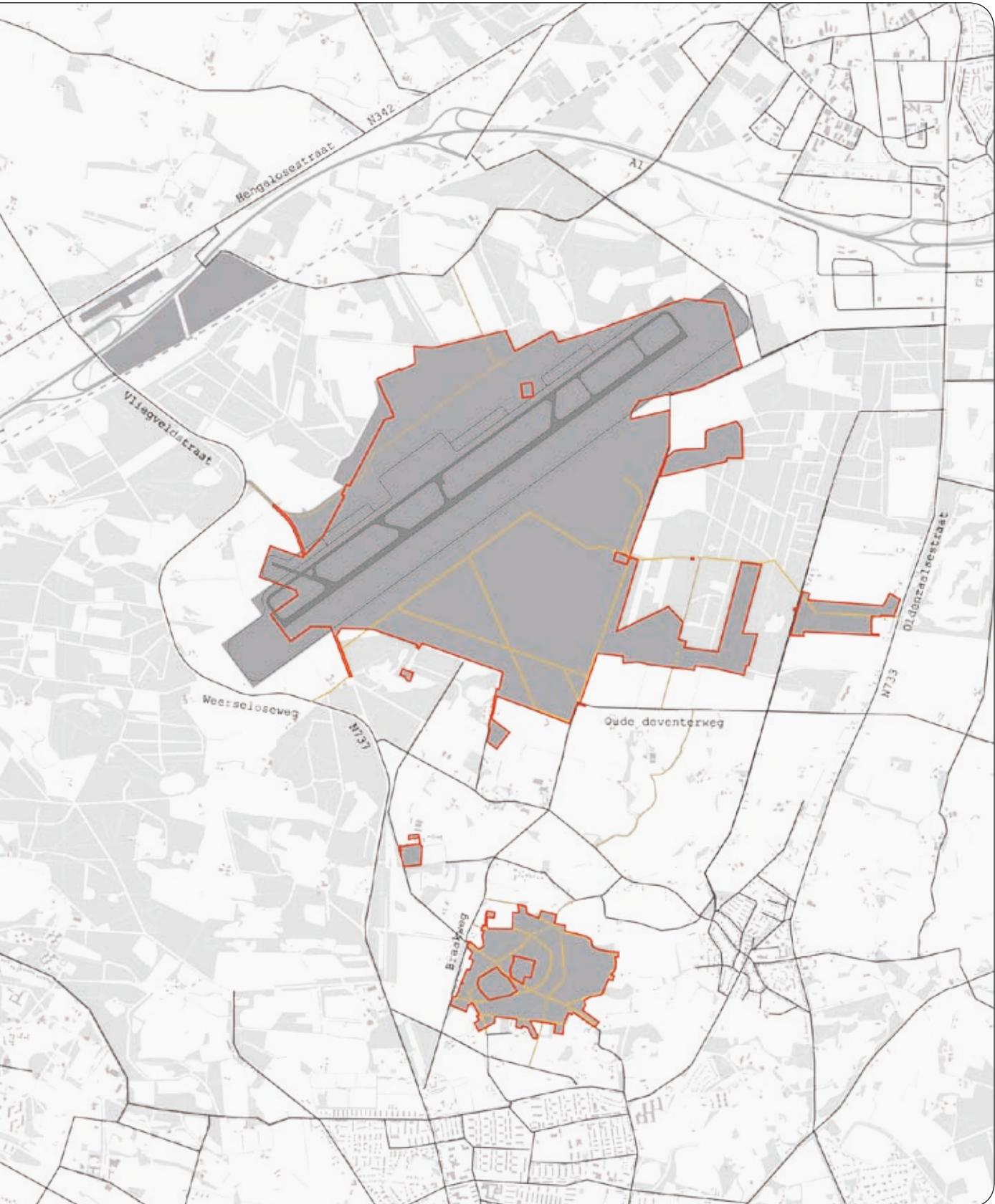


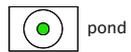
Illustration 13.28 Cross-section D, Oude Deventerweg





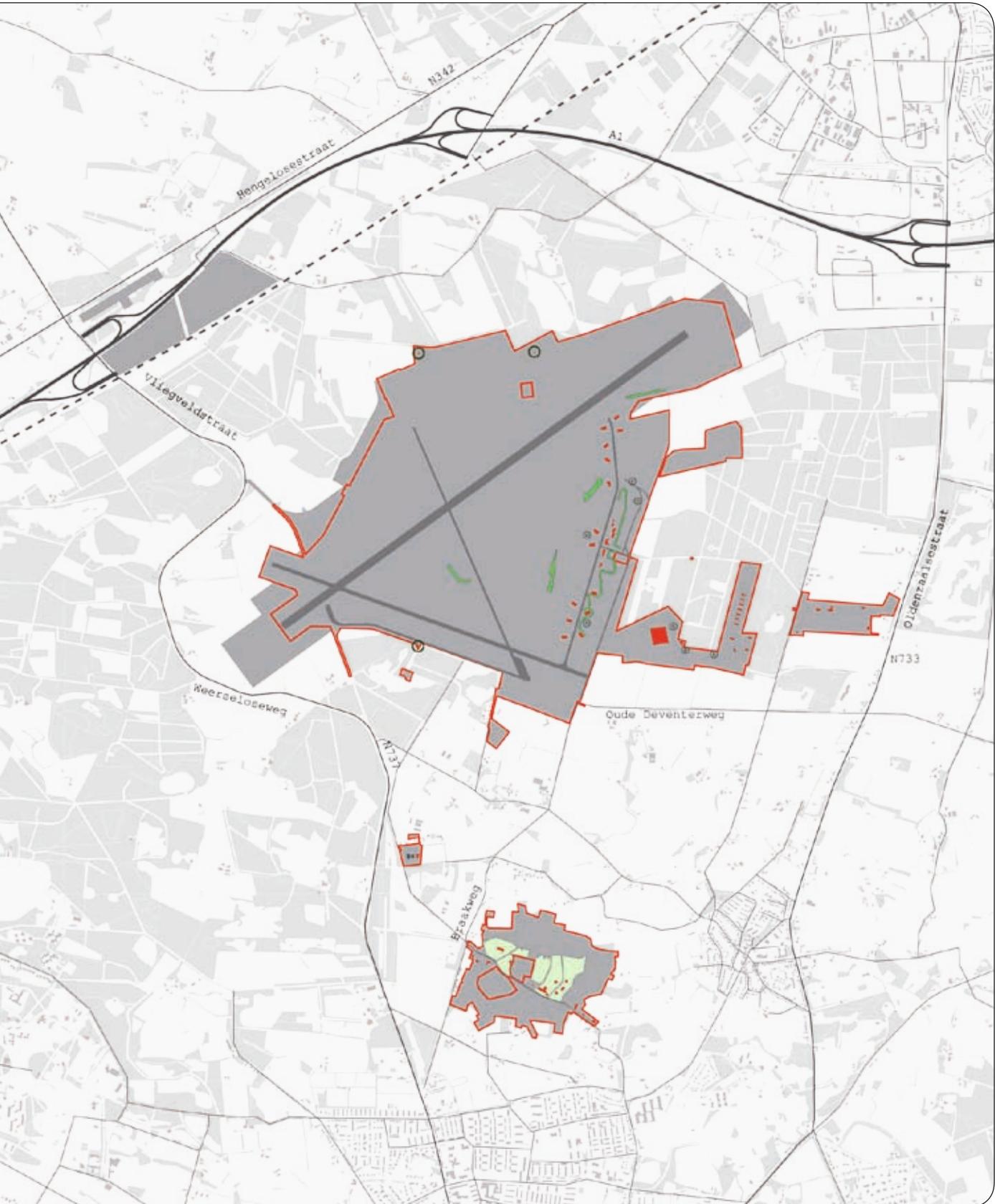
## Illustration 13.29: Valuable buildings, flora and fauna

intended integration of natural values:



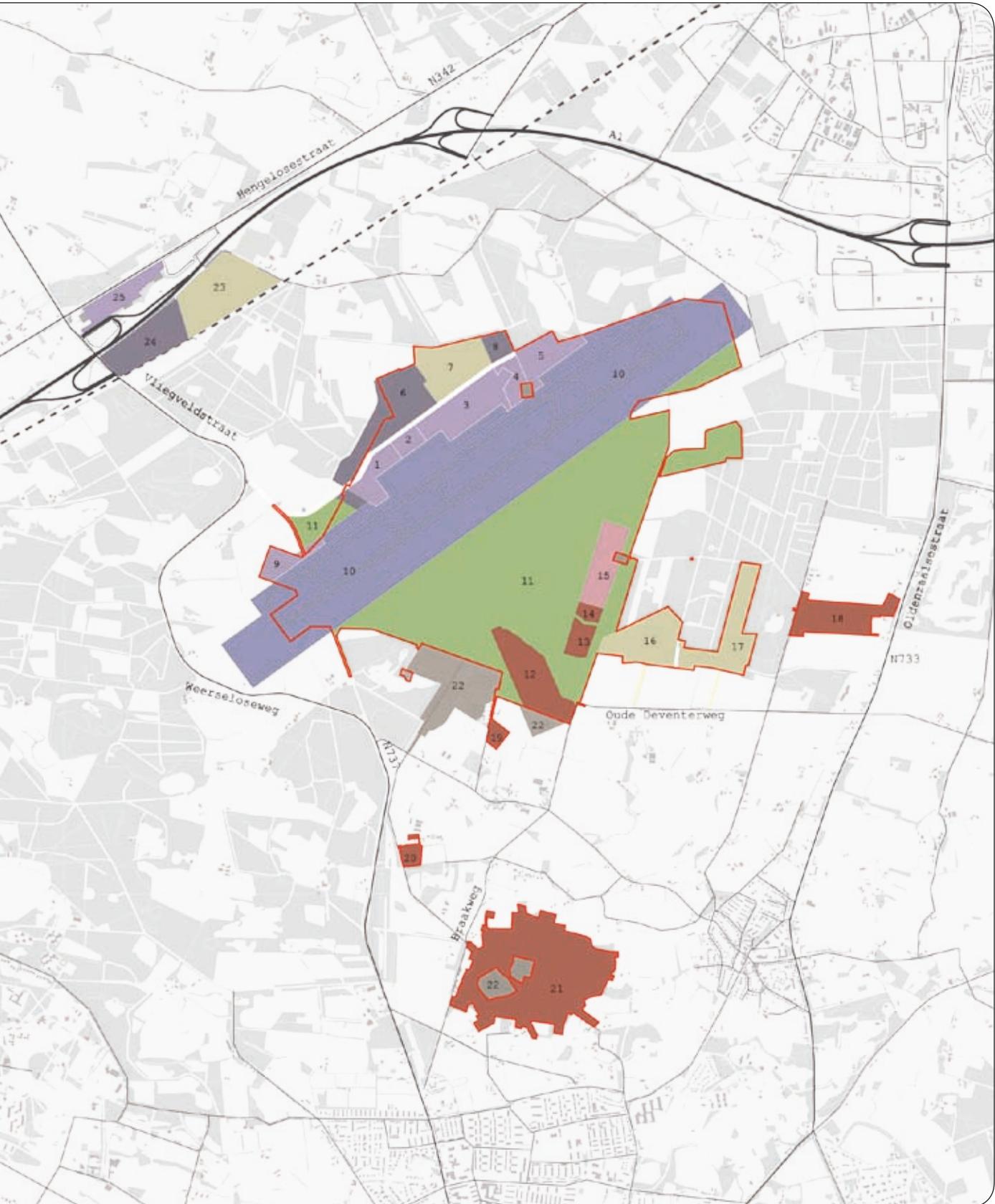
intended preservation of buildings  
of cultural value:



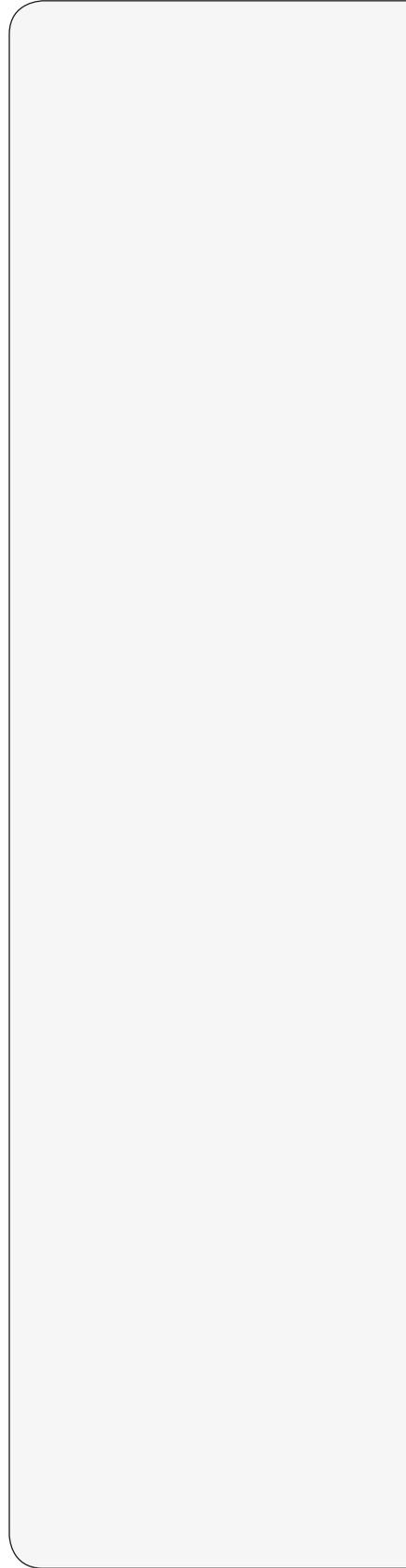


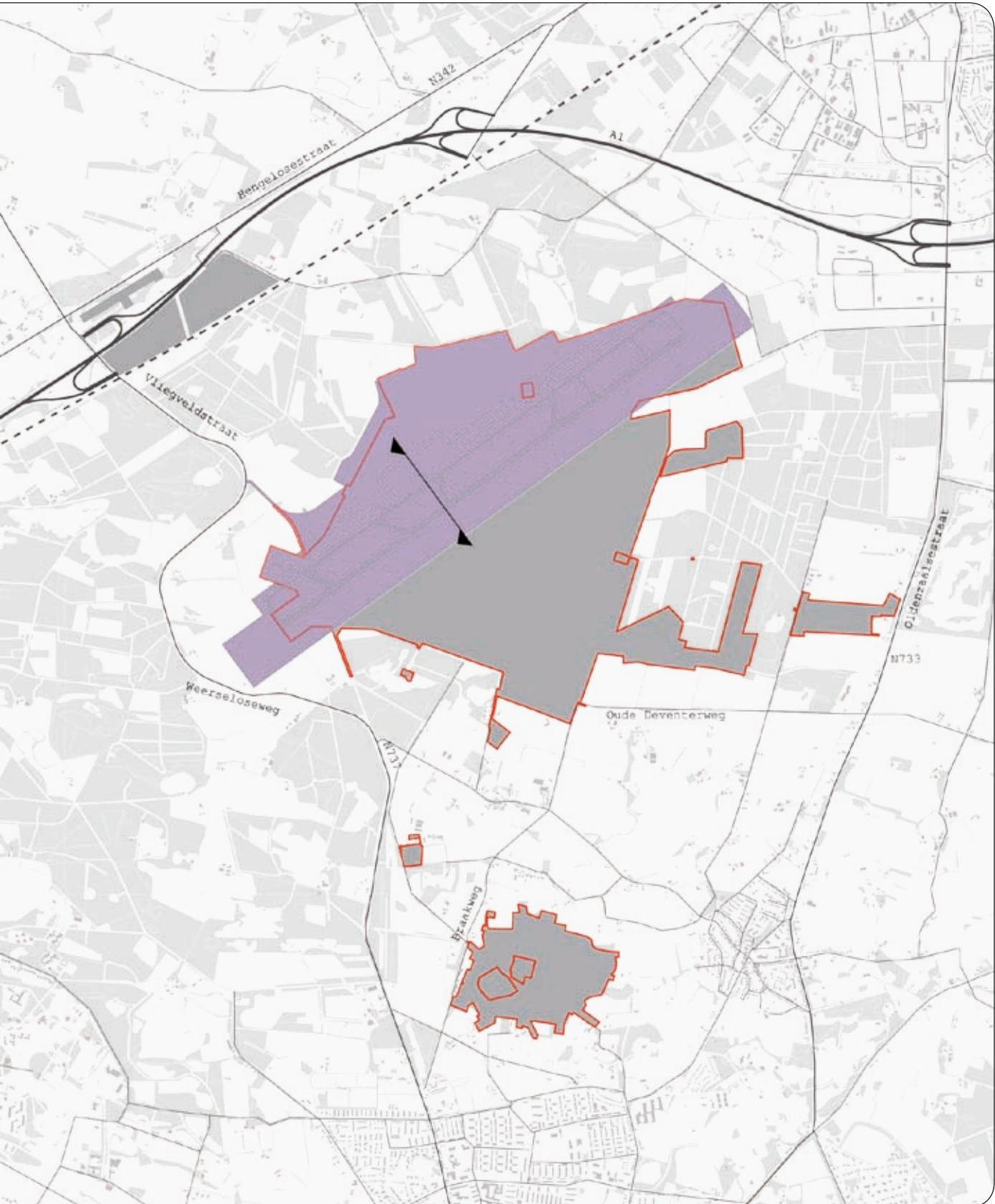
## Illustration 13.30 Model B: programme map

- 1 terminal/airport facilities
- 2 baggage hall/airport facilities
- 3 platform-linked commercial activities
- 4 platform-linked commercial activities
- 5 platform-linked commercial activities/fire department drill centre
- 6 parking
- 7 leisure/airport-linked commercial activities
- 8 parking
- 9 general aviation/airport-linked commercial activities
- 10 airside
- 11 nature
- 12 equestrian living
- 13 residential area/services
- 14 residential area/services
- 15 residential area/services/innovative commercial activities
- 16 leisure
- 17 leisure/innovative commercial activities
- 18 residential area
- 19 residential area
- 20 residential area/services
- 21 residential area/services
- 22 defence
- 23 leisure
- 24 suburban station/offices/Park & Ride
- 25 airport-related activities/hotels, restaurants and bars



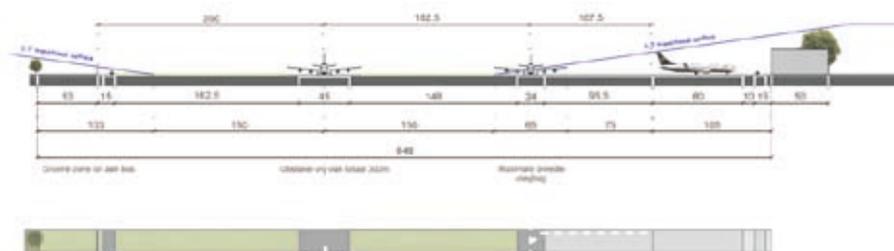
**Illustration 13.31: Airport area**

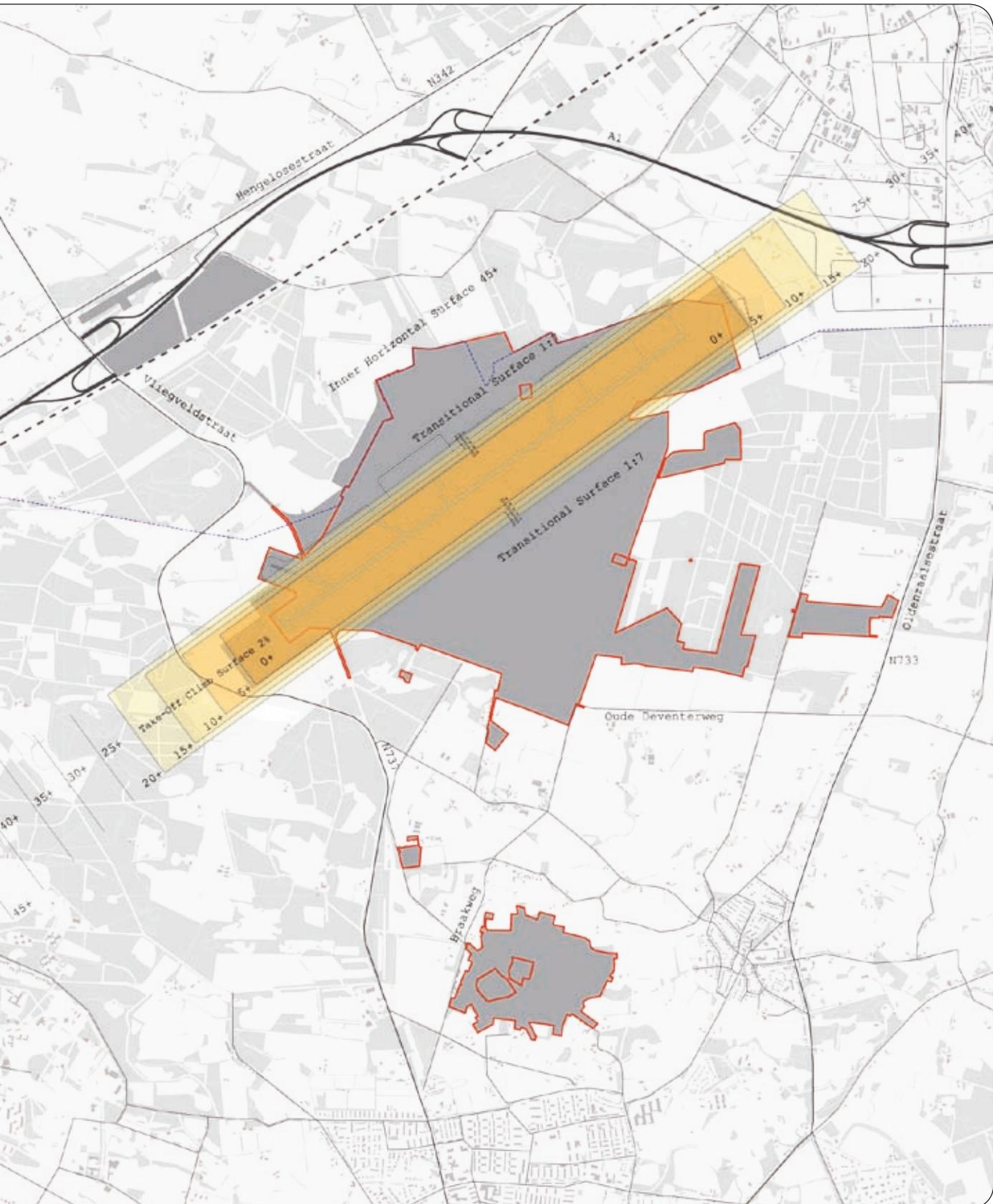




### Illustration 13.33: Glide funnels

Illustration 13.32 Cross-section H, airside





application and zoning plan by the airport operator. A report on the environmental effects will also be formulated for this decision in due course. (ill. 13.34)

No construction of new housing or noise-sensitive buildings is allowed within the limitation area, except in the case of a certificate of no objection against company houses or the replacement of an existing building. The field to which the spatial limitations apply has been reduced from 38.71 km<sup>2</sup> to some 11 km<sup>2</sup>. The external safety contours fall within the proposed spatial reservation.

VTM i.o. has ordered an investigation into the effect of noise from the traffic routes from Twente Airport in the immediate vicinity (including residential areas) for both smaller and large-scale air traffic (civil and otherwise) [4, 60], specifically for Oldenzaal, De Lutte, Hengelo, Enschede, Bentheim (D), Nordhorn (D) and Haaksbergen [3].

### 13.8 Model B plan sketch

The plan sketch displays a possible final configuration produced by the spatial development strategy for model B. The former military airfield will be transformed into a civilian airport suitable for processing 1.2 million passengers per year. The car parks, the airport terminal, the platforms and the associated platform-linked commercial activities will be situated north-west of the runway. All of these airport functions will be accessed by means of a historical access road directly linked to the A1 motorway by the widened Weerseloseweg. North of this access road, there will be space for a leisure programme or for airport-related commercial activities. Parking for the airport and the possible leisure programme will also be located north of the access road.

The new brook valleys of the Leutinkbeek and the Jufferbeek brooks will not traverse the runway, which means that these brooks

can be developed uninterrupted and in the most efficient way. The historical open space of the airstrip will be embedded spatially in the surrounding landscape by four sight lines, thus increasing its scenic quality.

South of the airfield, the emphasis will be on landscape development. The national ecological network of the area will be further strengthened by this landscape zone south of the airport.

The landscape will be interlaced with a system of tree-lined access lanes that will function partly as a recreational route and partly as an access road for the programmes nestled in the area.

In addition to scenic surroundings, this programme consists of an "equine-based residential neighbourhood" along one of the former taxiways south of the Leutinkbeek brook. Along the taxiway at the foot of Lonnekerberg, the strip provides space for the re-use of historical airfield buildings in combination with limited possibilities for new buildings in the ambience of a medical park. The former traffic control tower will function as a landmark in this strip.

The camps Zuidkamp, Prins Bernhardpark and Kamp Overmaat will be transformed into residential enclaves that are pleasantly situated in the landscape. In the redevelopment, the majority of the historical buildings and the characteristic of the original spatial structure will function as carriers for the future quality of the programme.

Oostkamp will be made accessible by means of two access lanes running directly from Oude Deventerweg. The current buildings will provide space for commercial and leisure functions. (ill. 13.36 and 13.37)

### 13.9 Phases and planned economy

This chapter deals with the programme-based and financial aspects of the following subareas:

- Airbase
- Oostkamp
- Zuidkamp
- Prins Bernhardpark
- Kamp Overmaat
- A1 zone

The total result for spatial development strategy B is displayed in the final summary, followed by a discussion of the risks associated with the realisation of spatial development strategy B.

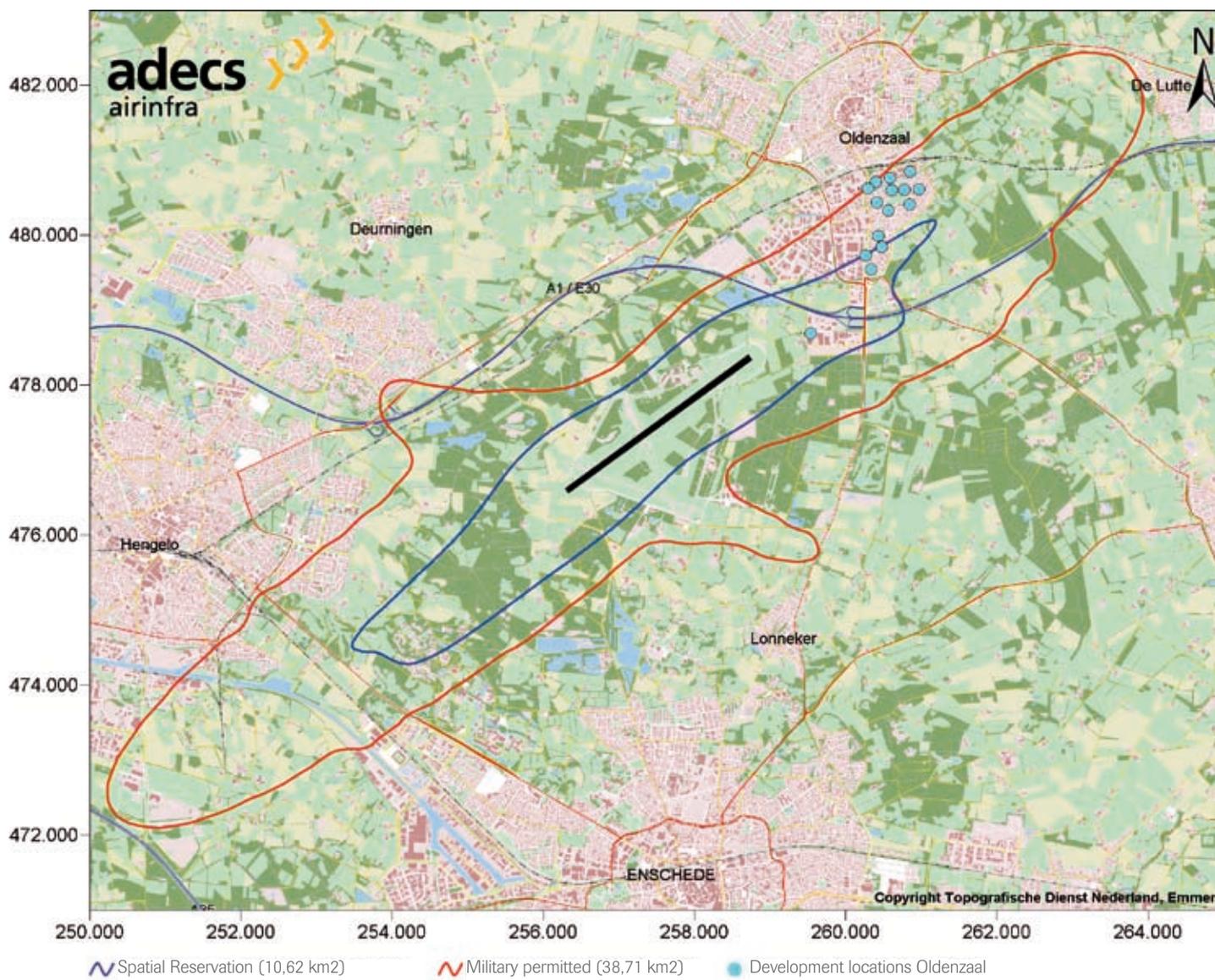
#### Airbase

The airbase subarea covers an area of 414 hectares of government-owned land. In addition, 13 hectares of land still to be acquired has been added to the development area for the main access road (including green fencing) and parking capacity. In addition, the land development of ca 17 ha has been included as reserved land for the runway head for the purpose of air infrastructure.

With respect to the phases for developing the area for this part of the plan, the following basic principles have been formulated, and they also apply to the land developments:

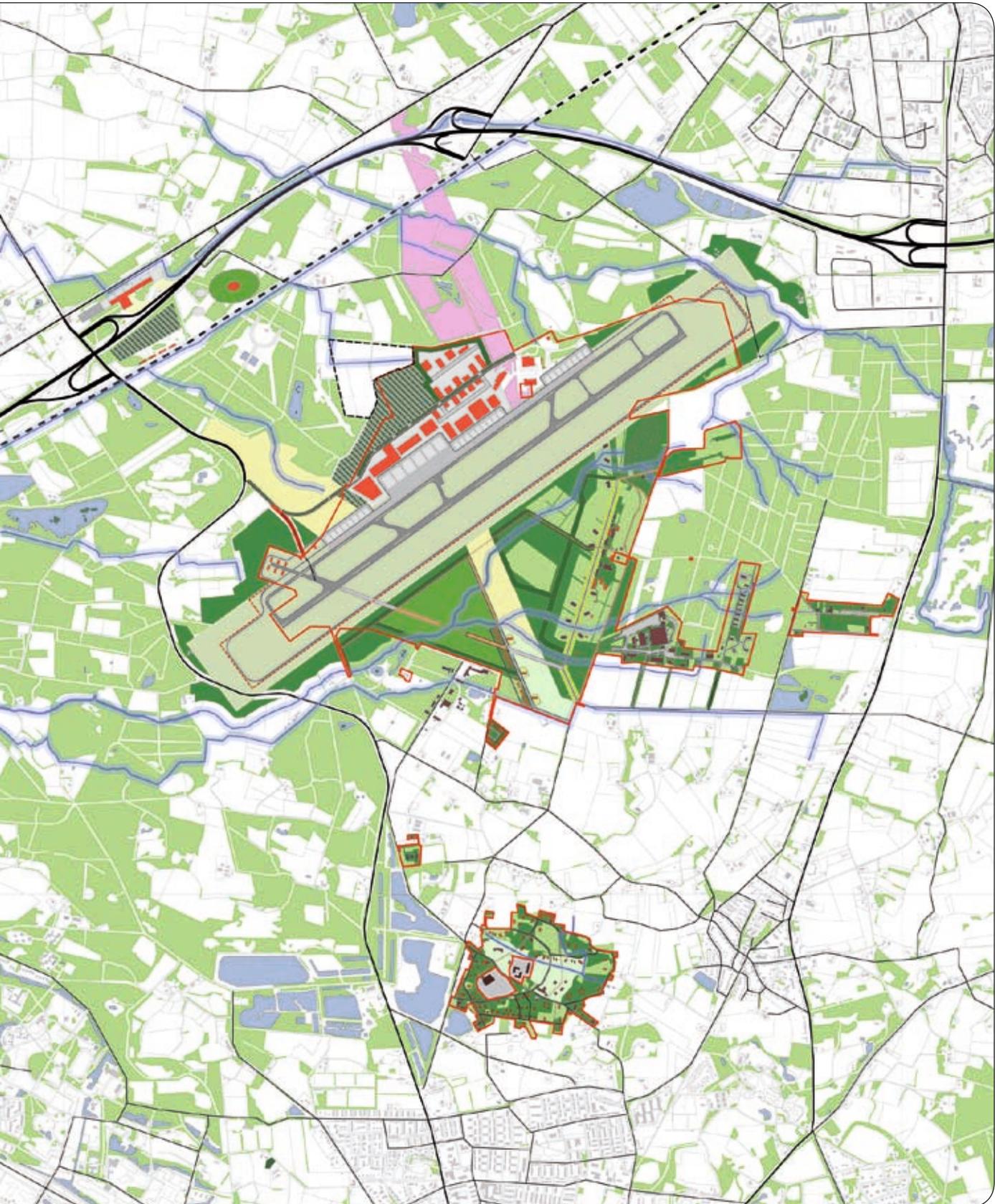
- The airport development will be initiated during the period 2010-2020. During that period, the market development of the airport must become active and grow to a substantial level in order to justify follow-up investments.
- In around 2019, the southern zone of the current airfield area will become entirely free for the development of an area of natural beauty. The most appropriate phasing will be chosen so that the construction of the national ecological network can start before 2018.

Illustration 13.34 Spatial reservation



## Illustration 13.35: Model B plan sketch

	new buildings
	existing buildings
	brook + brook valley
	cycle path
	motorway
	parking
	tree-lined access lane
	existing forest
	new forest
	wet grassland
	dry grassland/pasture
	heath
	compensation Oostkamp



- The thematic living component can be developed during the period 2020-2025. These phases also apply to the eastern strip (the area around the current traffic control tower).
- The development of the natural resources (including development of the natural water system) can be tackled dynamically from 2020 onward.
- The northern side of the premises will be added onto Vliegvelddstraat as early as 2012. The realisation of the first branch of Vliegvelddstraat (northern side) is anticipated for 2015 (temporary measure).

Following this, the development of the airport can start there in conjunction with the development of the commercial activities and the parking areas. The completely new northern main entrance will then be completed in 2020. It is expected that during the development period up to 2030 all 30 hectares of land to be allocated for business premises can be sold.

Excluding Oostkamp, the table below displays the use of space on the airbase: see table 13.1

The share of green and water in spatial development strategy B amounts to 35% for the airbase (excl Oostkamp). Of that, it is suggested that 130 ha of new natural areas should be included, with the option of strengthening the EHS.

### Oostkamp

Oostkamp covers an area of more than 25 hectares, which also includes the new access roads in the development area. The development of Oostkamp can start in the short term, independently of the other developments at the airbase. It is assumed that the allocation of land can be completed by mid-2014. The existing property, more than 25,500 m<sup>2</sup> of gross surface area, will be sold off in smaller lots in phases after the decision has been taken about the area.

Following this, during the phase in which the airport area on the southern side becomes free, the new access roads will be constructed and work will start on restoring the natural water system.

The following table specifies the use of space. (table 13.2)

The existing area (approx. 95% of the subarea) will be allocated with all the existing infrastructure, which is in satisfactory to good condition.

### Zuidkamp

Zuidkamp covers more than 43 hectares. Added to this, Defence has another 4 hectares in ownership. The area will be redeveloped into a green and luxurious residential area, and the existing green and road structure will largely be integrated into the new development. The Zuidkamp plan component will be developed in phases, and several lots will be sold every year over a lengthy period (2012 through 2023). Investment will follow the same pace. In this subarea, 154 homes will be realised. (table 13.3)

The programme has allowed for the option for a commercial facility (a restaurant) and a differentiated residential programme. The aim of the programme is to utilise the existing quality of the area. To achieve this, the programme will preserve as much of the existing property as possible.

### Prins Bernhardpark

Prins Bernhardpark covers an area of more than 10 hectares. In addition to the existing four homes, 15 new spacious lots will be developed in line with the spatial development strategy. The officers' mess will be put to a different use. The development of Prins Bernhardpark can start in the short term so that the allocation can be completed by around 2015. (table 13.4)

Based on the aforementioned spatial and programme-oriented basic principles, less than half of the area will be developed.

### Kamp Overmaat

Kamp Overmaat covers an area of approx. 1.65 hectares and consists of a disused camp building (1940), public space and an office building that is currently being used by the State Property Department (Domeinen). (table 13.5)

According to the plan, the area will not be refurbished and the existing property will be sold off in smaller lots. This will take place as quickly as possible (planned for 2011).

### A1 zone

The area to the west of Oude Postweg is regarded as an area with active production of building land. In total, it amounts to more than 34 hectares of gross development area.

The development of the A1 zone is a long-term development. The area will first have to be acquired before it can be developed. This is governed by the Municipalities (Preferential Rights) Act. The aim of this act is to give the public parties power over the spatial planning process at an early stage of the planning process in order to safeguard the spatial qualities of the development.

In the land development, the development of the largest part of the area between 2015 and 2027 was taken into account for the time being. The land allocation of this area can only start after the development of the airport has been put out to tender. (table 13.6)

In the area, a total of more than 23 hectares of land can be allocated. This land will be allocated for parking at a future suburban station, offices at the station location and an area of approx. 15 hectares for a leisure park (theme park), with limited space for commercial activities. It is only possible to start implementing the land allocation after



the development of the airport has been put out to tender.

The development of the airport and the new connection to the A1 will generate a demand for hospitality facilities and stimulate the creation of extra facilities around this multimodal junction with an eye to cargo transport.

The economic analysis shows that if no large-scale soil contamination is encountered, a cost-effective land development is at the least possible with the specified programme. This will partly depend on the pace in which the location can be developed after the acquisition of land and the development of land prices in the area.

### Total result

The total result of spatial development strategy B (including other components of the development: VTM i.o. organisation, subsidies and temporary property management) amounts to NCV € 30.4 million.

This is the residual land value, as yet excluding the acquisition costs of the government-owned land. (table 13.7)

### Result of Risk Analysis - Spatial development strategy B

A risk analysis was carried out to assess the possible risks associated with the implementation of spatial development strategy B. This analysis was done with the support of a Civil Engineering Cost Agency and Twynstra Gudde Risk Management.

Given the project phase, the analysis focuses on the financial risks of the land developments.

The risks are subdivided into spread risks and pure risks.

Spread risks are - usually regular - ambiguities in the estimates resulting from

Table 13.1

Airbase Total	ha	
Available for allocation	247	58%
Surfacing	30	7%
Green and water	165	35%
<b>Total (rounded)</b>	<b>427</b>	

Table 13.3

Zuidkamp	ha	
Available for allocation	22	51%
Surfacing	5	11%
Green and water	16	38%
<b>Total (rounded)</b>	<b>43</b>	

Table 13.5

Overmaat	ha	
Available for allocation	2	91%
Surfacing	0	9%
Green and water		0%
<b>Total (rounded)</b>	<b>2</b>	

Table 13.2

Oostkamp	ha	
Available for allocation	24	95%
Surfacing	1	4%
Green and water	0	1%
<b>Total (rounded)</b>	<b>25</b>	

Table 13.4

Prins Bernhardpark	ha	
Available for allocation	5	43%
Surfacing	1	9%
Green and water	5	47%
<b>Total (rounded)</b>	<b>10</b>	

Table 13.6

A1 zone	ha	
Available for allocation	23	68%
Surfacing	1	2%
Green and water	10	30%
<b>Total (rounded)</b>	<b>34</b>	

price fluctuations and uncertainties in the base figures (amounts) of the estimates.

Pure risks concern events or situations that occur and have been anticipated in the estimates (i.e. not forming part of the regular distributions). These risks are determined by looking at the chance of an event occurring and its effect.

Monte Carlo simulations have shown how the land development outcomes relate to the values with a 50% and 90% certainty in the case of both spread risks and pure risks (see P50 and P90). This can be used to calculate the so-called risk reserve, which varies from some € 9 million (P50) to about € 15 million in plan B (P90).

For the time being, it concerns a risk indication that can be adjusted downward by means of additional research, managerial agreements and the relevant control measures.

#### *Controlling the main risks*

In terms of spread risks, the discount rate and the rise in revenue of housing are key parameters that influence the outcomes of the land development to a large extent. The interim and final result will have to be compared with the guiding principles of the land development, on the basis of financing agreements for the execution of the project and the value/tendering value of land. This will allow timely intervention in the event of deviations. Proper economic supervision and guidance will also play a contributing role in this regard.

In the case of pure risks, the main elements are the risk related to remediation and explosives and not being able to implement the leisure-time destinations in the plan.

For remediation and explosives, in which case it also entails the risk above the soil remediation agreements made at central government level, additional funds are

needed to gain better insight into the contaminated locations. Good insight is important because these risks determine the abovementioned risk reserve to a large extent. Without the risk for remediation and explosives, the calculated risk reserve declines to about € 11 million (P90).

To attract an operator for the airport, external market and financial support will ensure proper preparations for the tendering process. The creation of an advantageous and attractive offer for the market, with sufficient development possibilities and flexibility, will form part of this.

Any chances to the cash flow prognosis will require good planning support and guidance of the land exploitation to make the relevant adjustments possible as needed.

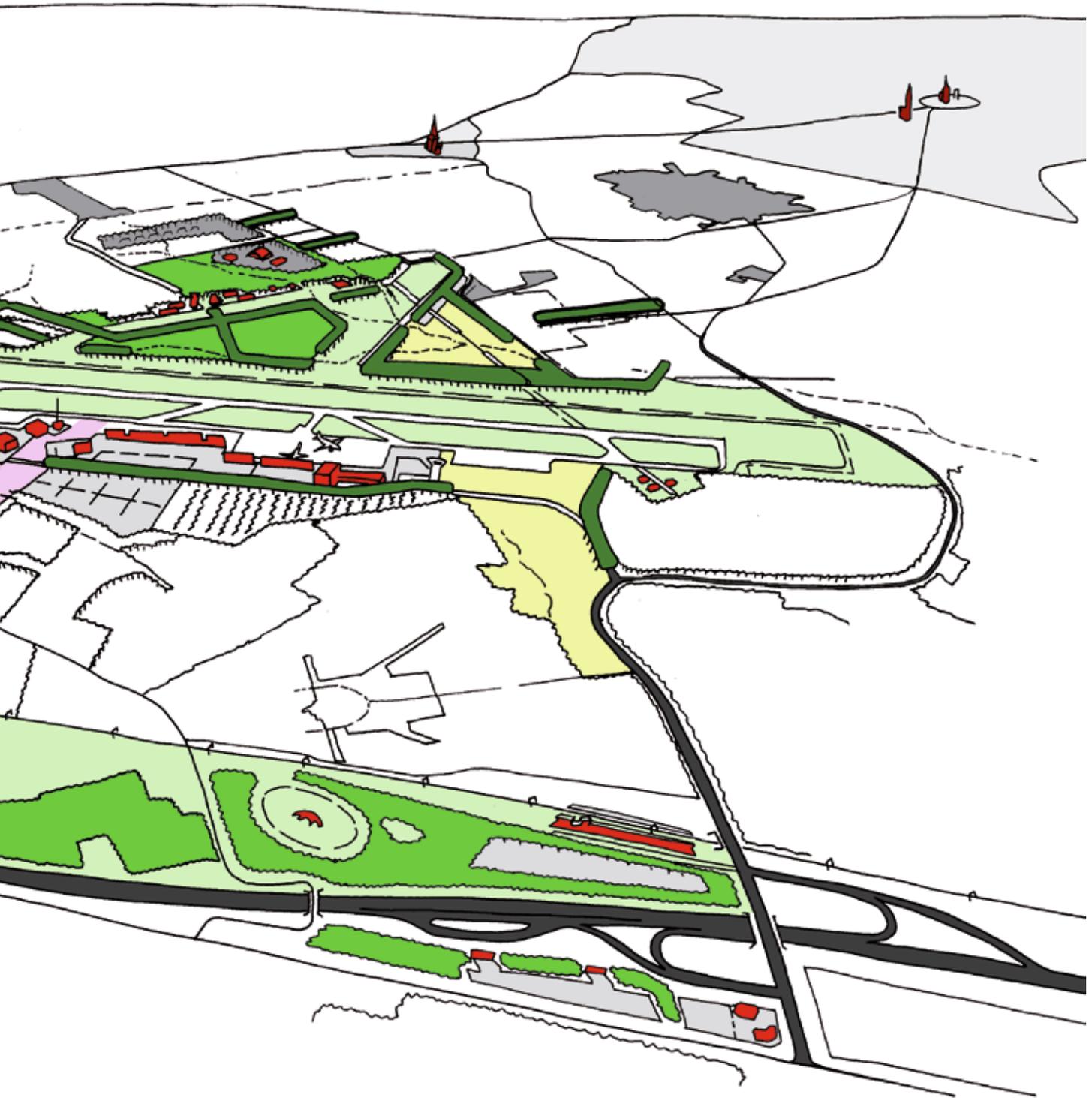


Table 13.7

Land complexes	ha	ha allocated	m2 gross surface area	# parking spaces	# homes	NCW land development (million €)
Airport	427	247	255.000	6.700	54	
Zuidkamp	43	22			154	
Prins Bernhardpark	10	5	1.860		19	
Kamp Overmaat	2	2	1.500		1	
A1 zone	34	23	50.000	1.500		
Land complexes total	516	299	308.360	8.200	228	34,2
<b>Other components BuCa</b>						NCW total (million €)
<b>VTM i.o., subsidies, temporary property management</b>						-3,8
<b>NCW Land exploitation</b>	516	299	308.360	8.200	228	30,4
<b>B TOTAL</b>						

**Illustration 13.36: Overview plan sketch model B**









# **Part 5:** **Recommendation**





## Part 5: Recommendation

### 14 Performance, deliberation and recommendation

#### 14.1 Introduction

In autumn 2008, the recommendations contained in the memorandum entitled 'A flywheel for Twente' [59] were adopted for the most part by the Ministerial Principals Conference of central government, the provincial executive of Overijssel and the municipal council of Enschede. VTM i.o. was given the task of working out two usage plans into spatial development strategies for the area.

The mission formulated for this redevelopment is:

**'To transform the present airbase into a flywheel for an economically stronger and more sustainable Twente.'**

The objective is to bring about a development that responds to a new dynamic in the economy, but at the same time remains rooted in the local culture and connected to the landscape of Lonnekerland. With a balanced People, Planet and Prosperity approach, the redevelopment can truly add something to the region.

The redevelopment must create new opportunities for

- The development of new nature and the strengthening of ecosystems;
- Careful embedding of the long lines in the area and the valuable use of buildings from the cultural heritage and finding an appropriate use for them;
- Retention and where possible strengthening of the multimodal accessibility of the region by road, rail, water and air;

- The connection of housing in the towns and suburbs to new recreational networks and amenities;
- Selective expansion of new permanent and temporary forms of housing connected to the unique dividends of landscape, occupation history and infrastructure of the area;
- Providing scope to new amenities that add something to the high-quality offering of amenities in the region for residents and visitors;
- Offering of space for modern high-tech research, development and economic activity that in terms of the conduct business satisfy the stringent requirements for environmental quality and safety, tie in with the strong economic clusters in Twente and leverage specific conditions in the area for the establishment of businesses.

This means that pivotal aspects of our vision for the redevelopment of the Twente airport and surroundings are [59]:

- Modernisation and strengthening of the nature of Lonnekerland;
- Offering space for impulses specific and innovative to this location that reinforce the business climate and create new employment opportunities in Twente, among other things by improving infrastructure networks and mobility.

These objectives have been worked out in the following way in the two spatial development strategies (Table 14.1)

Both plans are a good fit for the defined objectives and provide a programme and spatial embodiment appropriate to the landscape and habitation history. In the northern part of the planning area, Plan A has a stronger emphasis on the re-use of existing buildings and the embedding of ecological values and the national ecological network. Brooks and recreational routes may intersect the area in the north-south

direction. The plan includes a substantial housing programme.

Plan B has a stronger emphasis on economic activity and complete utilisation of the opportunities for multimodal accessibility of the region as the primary business establishment factor. The preference in this variant with an airport is a compact airport in a green environment so as to make a large part of the present airport site available for the restoration of brooks and the development of nature, including a robust expansion of the national ecological network on the southern side.

The decision that must now be taken is which of the spatial development strategies offers the best prospects for an economically stronger and more sustainable Twente. The arguments stem from the expected effects of the two plans in the environmental, economic and exploitation fields.

However, we also took into consideration at this stage the extent to which the plans contribute to fulfilling the policy goals of the stakeholders as laid down in documents including the Aviation Policy Memorandum of the Ministry of Transport, Public Works and Water Management [51], the Spatial Memorandum of the Ministry of Housing, Spatial Planning and the Environment [40], central government policy on the national ecological network and water in the 21st-century, the area vision of the province of Overijssel [44], the policy on the Twente Area Agenda 2010-2020 [57] and the Future Vision of the municipality of Enschede [26]. An important connecting element is the embodiment of the concept of sustainability embedded in the mission of VTM i.o..

#### 14.2 Sustainability

Sustainable development meets the need of the current generation without jeopardising opportunities for meeting the needs of future generations [11].

Table 14.1 VTM i.o. goals and spatial development strategies

	Spatial development strategy A	Spatial development strategy B
<b>Newly developed greening</b>	Approx. 250 ha	Approx. 230 ha
<b>Of which national ecological network enlargement</b>	Approx. 50 ha	Approx. 127 ha
<b>Strengthening of ecosystems</b>	Restoration of old brook valleys. Water leaves the area of relatively quickly.  <b>Embedding of habitats of protected species.</b>	Longer brook courses that connect to ecologically valuable brooks with clean water. More surfacing on the northern side.  <b>Embedding of virtually all habitats and where necessary compensation by means of new growing places.</b>
<b>Embedding of open space</b>	Elongated central area reminiscent of former runway and will be anchored in the landscape by means of four lines of sight and made perceptible.	Monumental open space around the runway will be anchored in the landscape by means of four lines of sight and made perceptible.
<b>Embedding of cultural heritage buildings with appropriate usage</b>	Careful embedding of camps.  <b>Major part of the present values will be retained and embedded.</b>	Careful embedding of camps.  <b>Major part of the present values on the south side will be retained. In the northern part there will be large hangars used appropriately besides new effective access.</b>
<b>Multimodal accessibility</b>	Airport closed. Increase capacity of Vliegveldstraat. North-South links for slow traffic.	Multimodal node, compact airport with A1 motorway and (in due course) possible new suburban railway station.  <b>Enlargement of network for slow traffic.</b>
<b>Linking recreational networks to suburbs</b>	New routes to adjacent towns and villages.  <b>Length: approx. 13 km</b>	New routes to adjacent towns and villages.  <b>Length: approx. 9 km.</b>
<b>Selective expansion of housing</b>	395 homes in niches	228 homes in niches
<b>Space for new amenities</b>	Care, cure, wellness and leisure amenities	Space for theme parks on airport site and along the A1 motorway. Appropriate facilities on the airport site. Plan offers space for medical park.
<b>Space for innovative economic activity</b>	Care and cure, approx. 31 ha  <b>Innovative economic activity approx. 37 ha</b>	Apron and aviation related activity approx. 36 ha  <b>Other innovative economic activity approx. 33 ha</b>



The spatial development strategies include a number of spatial bearers for sustainable development of the area, such as:

- Restoration of the sources and brooks system of Lonnekerberg;
- Offering of opportunities for greater biodiversity through the creation of new, robust nature and embedding of habitats of protected species;
- Re-use and embedding of existing real estate and elements of valuable cultural heritage.

To increase the opportunities for sustainable elaboration even further, the opportunities map for sustainable area development was prepared as part of the spatial development strategy [52].

This integrally devotes attention to related aspects such as nature developments, ecosystems, water management, cultural heritage, social structures, economic development, energy supplies/energy use, construction systems and product development, soil remediation and the development of knowledge. The purpose of the opportunities map is to indicate highly promising directions for seeking a firm and cohesive sustainability concept for the two alternatives. Sustainability has been interpreted as the adding of value to the development of the area. It is about creating a living environment that is such that people will want to live, work and recreate here, now and in the longer term, and will be willing to invest in this structurally. Besides environmental quality, economic quality, spatial quality and social quality, this makes cooperation between stakeholders an important fifth dimension of sustainable development. The achievement of a sustainable development of the area hinges on the choice of sustainability as a bearer of the developments and this will literally have to be conveyed in a sustainable manner. It is important for the plans to offer sufficient flexibility to continue responding to changing social conditions and needs. A robust and

resolute process, programme and project management of the development of the area form a critical success factor for achieving the shared ambitions and for controlling the risks of both concepts.

For the spatial development strategy without airport (A), the sustainability options are concentrated mainly around energy, local food production, cradle2cradle (C2C) and nature development. The runway of approximately 135,000 ms that will be freed up has great potential for energy generation, whereby the released space is usable as experimental space for sustainable energy. This may be an important economic bearer, besides local biological food production. The nature (including new nature) will be usable nature to a significant extent, tying in with new functions for care, cure, wellness and leisure. The possible cohesion of these functions and the management and maintenance of nature might possibly be attractive, e.g. by letting people contribute to the landscape from a treatment perspective and recreationally.

In the 'Footprint Zero' concept for spatial development strategy A, there will be a self-supporting area through net sustainable energy generation, local biological food production and small-scale processing of waste and wastewater. Buildings and public works will be designed in a C2C way and produced as far as possible using local materials. Residents and users will

contribute to sustainable exploitation to the best of their ability and in cooperation with each other [52].

This means that the opportunities map for spatial development strategy A will look like this: table 14.2

Sustainability in spatial development strategy B will be achieved by simultaneously strengthening the economy and ecology, in terms of mobility and in cohesion with other scales. The objective will be to create a 'Sustainable Airport Twente' to be positioned as a strong brand. The possibilities for creating a sustainable airport exist if from the outset sustainability is taken as the point of departure for its development. In this concept the airport will be a pivotal experimental garden for a sustainable mobility network/knowledge and development centre in cooperation with knowledge institutions and the business community. The goal will be to develop modernising mobility concepts centred on this multimodal node while at the same time creating links to transportation issues elsewhere. Goals will include limiting the number of car kilometres. At the airport companies will use each other's residual streams (equipment and energy). As a result of the scale of the area and the relatively large demand for energy that will be created in the area, the sustaining of energy supplies is likely to be promising. The business sites around the airport offer

Table 14.2 Opportunities map for sustainability of spatial development strategy A [52]

<b>Economic</b>	<b>Social</b>
Self-supporting Local organic food production Development of care, cure and leisure	Sustainable social structures: 'Twents Noaberschap' (Twente neighbourliness) Multiple private clientship
<b>Environmental</b>	<b>Spatial</b>
Net sustainable energy generation Regional C2C development Closed mass balance	Strengthening green structures Development of public green spaces

opportunities for reallocation of companies that adversely affect liveability elsewhere because of matters like their noise profile. Around the compact airport there will be a lot of space for robust nature development and for strengthening the ecological quality of woods and nature. The effects of the extra CO2 emissions could be counterbalanced by leveraging possibilities offered by the connection of the airport to the DPO (Defence Pipeline Organisation) [15]. The inward supply of Jet A1 fuel for the airport by pipeline is not only approximately €300,000 cheaper per year compared with the use of tanker trucks, it is also extremely reliable and will reduce emissions by approximately 25% or approximately 70,000 tonnes per year. If this system were also to be used to meet the regional need for other fuels, it would be possible, under certain conditions, to reduce CO2 emissions by up to 670,000 tonnes [15].

The opportunities map for spatial development strategy B looks like this: table 14.3.

### 14.3 Environmental performance

An Environmental Impact Assessment (EIA) was produced for both plans [6]. This planning EIA is appropriate to the present spatial development strategy level of the plans. If a number of elements are worked out in more detail, the EIA Decision will follow at a later stage. These studies will give environmental interests a fully-fledged place in deliberations and decision-making on the plans.

If we examine the overview of the environmental effects, we can see that the two spatial development strategies get predominantly positive to very positive scores. In respect of ten items in the EIA, both plans get equal environmental scores. Across the board plan A is the one with the most favourable environmental impact

through better effects in the fields of water and soil, cultural heritage, recreation and agriculture, with less disruption through the disappearance of the airport.

Plan B gets better scores in some respects because of the development of nature on the southern side of the compact airport and the opportunities for (regional) public transport offered by the passenger streams around the airport.

The negative impact of the plans stems from the increased burden on the road network caused by the programmes in both plans. It will result in more noise load and emissions. Plan A has 384 fewer homes within the 56 dB contour than plan B. The EIA shows that the total emissions of the airport come to 2% of the total emissions of spatial development strategy B [44, p. 84].

**For further information on the environmental effects, see the complete environmental impact assessment and summary [6].**

An important consideration is that both plans offer great opportunities for strengthening nature and the environment particularly through a lot of brook restoration and the related ecological connections. Both spatial development strategies offer opportunities for disconnecting rainwater and restoring the groundwater system. For local residents

and visitors, the area will (in due course) be more easily reachable, providing positive impulses for strengthening the tourism and recreational profile of Twente. Numerous characteristic elements in landscape and buildings will be embedded. (Table 14.4)

### Safety Impact Assessment (SIA)

The Environmental Impact Assessment includes a Safety Impact Assessment for both spatial development strategies. It provides a toolkit for controlling safety risks in the follow-on phases of the plans. Important matters include making two-sided access possible for emergencies, while the importance is underscored of having good public transport accessibility and sufficient parking space. The transport of fuels by pipeline will contribute to greater safety and reliability.

### 14.4 Economic performance

Jobs were lost in the region when the decision to close the Twente airbase was taken in 2003. Besides employment opportunities at the bottom end of the labour market, it is important to offer sufficient opportunities and challenges by means of innovative economic activity to graduates of institutions of higher education in Twente. Therefore, the number of additional new jobs in Twente for people

Table 14.3 Opportunities map for sustainability of spatial development strategy B [52]

<b>Economic</b>	<b>Social</b>
<ul style="list-style-type: none"> <li>· Airport as economic driving force</li> <li>· Sustainable mobility knowledge centre</li> </ul>	<ul style="list-style-type: none"> <li>· Improvement of liveability elsewhere</li> </ul>
<b>Environmental</b>	<b>Spatial</b>
<ul style="list-style-type: none"> <li>· Preservation of ecological values</li> <li>· CO<sub>2</sub> compensation/green airport</li> <li>· C2C building development</li> <li>· Industrial ecology</li> </ul>	<ul style="list-style-type: none"> <li>· Sustainable mobility system</li> <li>· Clear separation of functions</li> </ul>



Table 14.4 EIA scores of spatial development strategies A and B [6]

Environmental aspect	Criterion	Reference situation	Spatial development strategy A	Spatial development strategy B
Traffic	Load capacity of road network (intensity/road capacity)	0	-	-
	Road safety	0	-	-
	Opportunities for public transport	0	+	++
Noise	Surface area within 56 dB Lden contour	0	+++	+
	Number of homes within 56 dB Lden contour	0	+	0
Air	NO2	0	0	0
	PM10	0	0	0
External safety	Surface area within 10-6 PR contour	0	+++	++
	Number of homes within 10-6 PR contour	0	+++	+++
Nature	Destruction (space seized from nature)	0	++	+++
	Fragmentation (ecological cohesion)	0	++	++
	Disruption (of protected species and habitats)	0	++	-
	Drying (changes in groundwater and surface water)	0	++	++
Landscape, cultural heritage	Effect on landscape values (structures, patterns, elements)	0	++	+
	Effect on landscape experience (cohesion, recognisability, orientation, accessibility, bricking)	0	++	+
	Effect on cultural heritage values (structures, patterns, elements)	0	++	-
	Effect on valuable buildings	0	0	-
Archaeology	Located on or near a site on the Archaeological Monuments Map (AMK) and/or observation or reporting of finds stated in Archis II	0	0	0
	Located in an area with a medium or high probability of finding valuable archaeological items based on desk research, IKAW and/or municipal expectation map.	0	--	---
Soil	Changed environmental health quality because of remediation measures for the rearrangement of land	0	++	+
	Effects of future usage on the environmental health soil quality	0	++	+
Water	Influencing of water management/opportunities	0	++	+
	Intersection of water courses	0	0	0
	Disconnection of rainwater into water courses	0	++	+
	Influencing of water quality (groundwater and surface water)	0	+	+
	Influencing of groundwater quantity	0	++	+
Spatial planning	Influence on recreation	0	+++	++
	Influence on agriculture	0	++	-

with lower and higher levels of education is the most important factor for assessing the economic performance of the two spatial development strategies. The employment opportunities effects were measured by Ecorys in the cost/benefit analysis (CBA) by providing a transparent picture of the labour market benefits (indirect effect). Another factor of importance when measuring prosperity effects is the travelling time effect (direct effect). It represents the travelling time gains for goods and people expressed as a monetary amount. Based on the results of these two effects, we will weigh up the economic performance of the two spatial development strategies.

The total number of jobs that will be created, i.e. the gross employment opportunities, varies from 1,500 FTEs in spatial development strategy A to 3,440 FTEs in spatial development strategy B. If we examine the additional employment opportunities in Twente for people with low and high levels of education, corrected for relocating employment opportunities within Twente, spatial development strategy A provides 1,300 FTEs in structurally new employment opportunities and spatial development strategy B provides 2,770 FTEs [16]. (Table 14.5)

The CBA makes clear the effects on travelling time of spatial development strategies A and B on a regional and national scale. In the case of spatial development strategy A, it is expected that the travelling time effect will be very small and that the value will approach nil, with a limited negative or positive variance. It is assumed that, given the offering of Care and Cure, patients would otherwise go to the normal healthcare institutions in the region and that there would therefore be no travelling time effects [16]. For spatial development strategy B, the total benefits will come to €15.2 million at regional level and €35.8 million at national level as regards the prosperity effects of travelling time, especially by putting the airport into operation. (Table 14.6)

Table 14.5 Additional employment opportunities for Twente [16]

Additional employment opportunities Twente*	Spatial development strategy A	Spatial development strategy B
Direct (100%)	1,090	2,100
Indirect (50%)	210	670
<b>Total</b>	<b>1,300</b>	<b>2,770</b>

\*These values are used for the MCA and they differ from those used for the calculation of labour benefits in the CBA.

Table 14.6 Travelling time effects for spatial development strategies A and B [16]

Travel time effects	Spatial development strategy A	Spatial development strategy B*
Travel time effects (in euro millions)	PM (0)	15.2 (35.8)
<b>Total</b>	<b>PM (0)</b>	<b>15.2 (35.8)</b>

\*tussen haakjes de effecten op nationaal niveau

Table 14.7 Financial performance for spatial development strategies A and B

	Spatial development strategy A	Spatial development strategy B
Land values	25.8 million	30.4 million
Risk reservations	19.7 million	15.1 million
<b>Total scale of investment</b>	<b>81.2 million (NCV)</b>	<b>77.2 million (NCV)</b>

Table 14.8 Regional prosperity effects of spatial development strategies A and B [16]

	Net current value, in euro millions	
	Spatial development strategy A	Spatial development strategy B *
Land exploitation	6,6	9,4
Direct effects	0	15,2 (35,8)
Travel time effects	PM	15,2
Indirect effects	20,3 (21,8)	34,2 (41,5)
Labour market benefits, housing	0,7 (1,0)	0,3 (0,6)
Labour market benefits, work	18,4 (19,6)	12,5 (13,2)
Labour market benefits, leisure	1,2	0,8
Labour market benefits, airport	0	18,7 (25)
Real estate and land value increase	0	1,9
External effects	-9,7 (-9,7)	-31,6 (-28,3)
Emissions of road traffic	-1,7	-2,5 (0,8)
Emissions of air traffic	0	-2,5
Emissions of company-related sources	-11,5	-19,7
Noise	0	-8,6
External safety	0	0
Road safety	PM (-)	PM (-)
Nature and landscape	3,5 +PM (++)	1,7 +PM (+)
<b>Total</b>	<b>17,2 + PM (+) (18,7)</b>	<b>27,2 + PM (0) (58,4)</b>

\*The national prosperity that differ from the regional effects are stated in brackets.

Table 14.9 Vision and weighting factors for MCA [2]

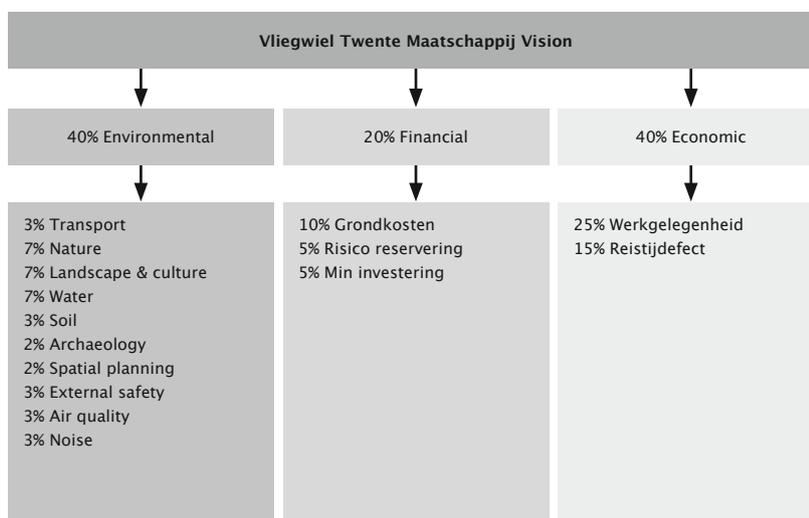
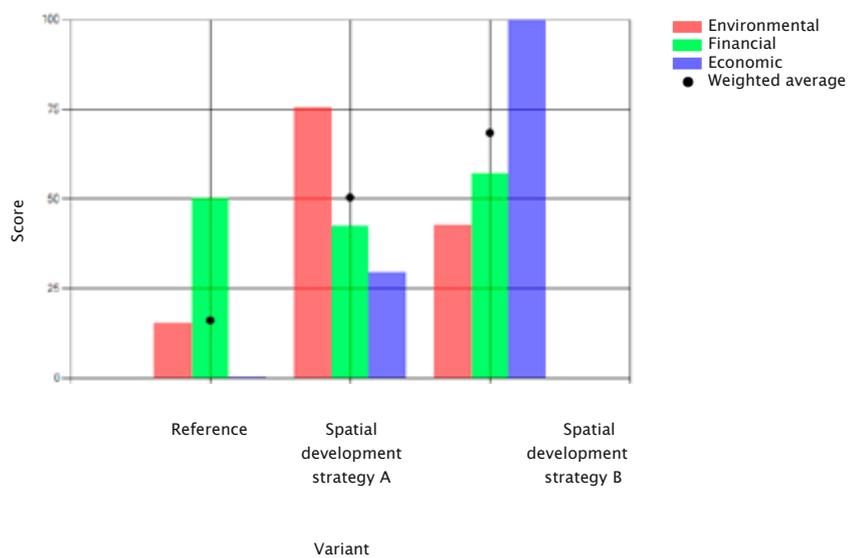


Table 14.10 The variant scores and cluster scores for each variant [2]

MCA: Variant scores



**For further information on the costs and benefits analysis, see the complete KBA report [16].**

#### 14.5 Financial performance

The financial performance of both plans was computed. This was done based on the land exploitation calculations that identify all costs and revenues of the development of the area over time, fleshed out with other relevant exploitation data.

The main parameters for the financial performance on the (residual) land values, the risk profiles and the total level of investment (total volume in investments required for fulfilment of the spatial development strategies).

#### Spatial development strategy A

From a financial point of view spatial development strategy B performs better than spatial development strategy A, not only in terms of the result, but also in terms of the risk profile. This is due mainly to the greater the mediation and sales risk for housing construction..

#### 14.6 Integral deliberation

Two instruments were used for the integral deliberation of the plans in quantitative terms. Firstly, the multi-criteria analysis was used because it is a method that allows comparison of the results with regard to the economy, environment and finance, viewed from the angle of consistency of the process as a whole.

Secondly, a costs/benefits analysis was performed. A CBA identifies the prosperity effects (indirect, direct and external) of spatial plans at national and regional level, and expresses the effects as far as possible in monetary units. For this purpose it measures, for example, the effects on employment opportunities and travelling times, but the

costs and benefits of the impact on nature and landscape are also translated as far as possible into monetary terms. This means that a CBA, like an MCA, can be considered an instrument for integrally weighing up plans. The MCA and CBA were both guiding factors for this recommendation in addition to the qualitative analysis.

#### Multi-criteria analysis (MCA)

Just as in June 2008, a multi-criteria analysis (MCA) was performed [2]. The weighting applied in the MCA follows from VTM i.o.'s mission in which sustainability and the economy are guiding factors. This produced the following outcome: the economic performance and environmental performance have a 40% weighting in the deliberation process and the financial performance of both spatial development strategies each have a weighting of the remaining 20%. This ties in with the weightings used in 'A flywheel for Twente' [59]. (Table 14.9)

If spatial development strategies A and B are compared, it is noticeable that spatial development strategy A scores better on the environmental cluster, while spatial development strategy B scores substantially better on the economy cluster. The financial cluster shows only minor differences between the two spatial development strategies. The weighting produces a clear final score: 50 for spatial development strategy A and 68 for spatial development strategy B [2].

Sensitivity analyses were performed to determine the robustness of the results of the final scores. This involves looking at the extent to which the outcomes would be influenced by choosing a different weighting over the clusters or over the different effects within a cluster. These analyses show that the final result can be considered robust [2]. (Table 14.10)

**For further information on the multicriteria analysis, see the complete MCA report [2]**

#### Costs/benefits analysis

The programmes of the spatial development strategy and the land exploitations were the basis for the CBAs for both spatial development strategies. Additionally, the economic effects were calculated of the business exploitations of the care & cure facilities in plan A and the airport in plan B. Overall this results in a total picture of prosperity effects, as shown in the accompanying table.

On balance both spatial development strategies have a positive effect on prosperity. Plan B has a substantially more positive effect in terms of the regional prosperity effects. At national level it is as much as three times greater, mainly thanks to the differences in travelling time effects. The compact airport placed in a green setting with 1.2 million passengers and the anticipated development opportunities is the best plan based on the outcomes of the CBA. The national and regional prosperity effects of plan B may increase sharply if more than 1.2 million passengers are transported via Twente. (table 14.8)

#### 14.7 Proposed decision

The development of the airport area, in the middle of the region and close to the infrastructure of the A1 motorway and railway line, offers great opportunities for the economy, welfare and nature.

The task now is to utilise the best opportunities for Twente and choose the plan that will form the best flywheel for strengthening the regional economy and ecology.

VTM i.o. explored numerous possibilities in a highly interactive process with all



stakeholders. Research, drawing and calculating went hand-in-hand at all stages.

There was a careful search for niches in the market that add to the potential present in Twente in terms of housing, work landscapes, amenities, leisure possibilities and connections.

In particular, there was an examination of development opportunities in the longer term. When the economy revives Twente must be ready to accommodate appropriate investments and to respond to structural socio-economic and socio-cultural trends.

Against this background, VTM i.o. suggests adopting the spatial development strategy based on a compact airport placed in a green setting. By concentrating the airport in the northern area in due course, close to the A1 motorway and railway line, there will be space on the southern side for approximately 130 ha of new natural areas with the option of strengthening the national ecological network. The airport is of national significance, supports multimodal accessibility of the region and strengthens the business establishment climate in Twente for national and international companies and institutions.

It offers the Twente business community and Twente citizens their own window to the world in a structural perspective of permanently growing global trade and mobility. An airport in Twente may be typified as a mid-sized regional airport so this is comfortably compatible with the interests of liveability and nature development for the local town residents and visitors. The spatial reservations and associated restrictions can be reduced considerably, as regards the military noise space, which means that Oldenzaal in particular will again get space for urban development. As a result, an airport will be created that, in terms of size and scale, fits in the landscape of Twente. As the airport must be developed from scratch, it will be possible from the outset to devote a lot of attention to maximising

sustainability. The explicit naming and developing of the sustainability opportunities map offers opportunities, in cooperation with the University of Twente, Saxion University and the business community, for developing innovative research, education and economic activity. The costs/benefits analysis that was performed shows that this spatial development strategy will make the greatest contribution to prosperity effects for Twente, offers the most additional employment opportunities and has the highest yield in terms of the business case.

The plan further offers attractive opportunities for attracting new affluent residents in the highest segment by providing new residential environments.

From a provincial perspective, plan B fits in well with the objectives of the Local Vision. The plan offers all possible opportunities for a strong economy in a beautiful landscape. Viewed from central government objectives, too, the compact airport in a green setting is an excellent fit.

A highly usable and strategic part of the air infrastructure with a major option value will be retained and will be usable in the years ahead, for instance when Schiphol approaches the limits of its growth and the overflow cannot be accommodated entirely by Eindhoven and Lelystad airports. The suggested development of the southern area with ca 130 ha of new natural area in plan B ties in well with the policy goals of the Ministry of Agriculture, Nature and Food Quality. For the Ministry of Housing, Spatial Planning and Environment and the Ministry of Transport, Public Works and Water Management, the airport development at Twente can stand as an example of harmonised infrastructure and spatial development within a sustainable area development. The innovation triangle (Hart van Zuid / Twente Central Station, Kennispark and the airport) will be a truly synergetic triangle only if plan B is chosen, which fits in well with the East Netherlands

Area Agenda and the Twente Area Agenda. This mutual synergy provides good opportunities for the further development of top technology and innovative economic activity at and around the airport, or for programmes of Kennispark and Hart van Zuid/Twente Central Station.

Space for incidental shared military use will remain present at Twente. The proceeds of the government-owned land can be determined based on jointly developed plans and settled with regional and local authorities in Twente.

#### **Decision-making status**

The subject of decision-making is the choice between the two spatial development strategies and the adoption of the strategy as a test framework for the elaboration into municipal zoning plans or a provincial embedding plan. The spatial development strategy map with the explanatory facet maps, proposed construction programme and written notes to maps and programmes will be adopted. Matters that will not be adopted are the trial parcels of land and the map with the plan sketch. These are purely by way of illustration of a potential elaboration of the spatial development strategies and are solely of an indicative nature. A land exploitation plan and a risk analysis were produced for the financial validation of both plans. On account of the market-sensitive nature of this information it will not be made public. The spatial development strategies deal in general terms with the financial outcomes of both plans. Information from the land exploitation plans and the risk analysis was also used as input for the costs/benefits analysis (CBA) and the multi-criteria analysis (MCA).

## RECOMMENDATION 1:

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### **Approve the choice of spatial development strategy B as the economically, financially and ecologically most desirable spatial, programmed and financial framework for redevelopment of the former Twente airbase;**

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#### **Basic principles of airport decision**

If spatial development strategy B is chosen, it will be necessary, based on Twente Airport's designation in the Aviation Policy Memorandum, to adopt an airport decision. The competent authority for adoption of the airport decision is the Minister of Transport, Public Works and Water Management. The definitive airport decision cannot be prepared until the airport operator has submitted an application with a business plan for that purpose. An environmental impact assessment will be prepared for this decision in due course. In the Aviation Policy Memorandum, the sound contour and other issues will be formally determined.

For local residents and the municipalities involved, it is important for the basic principles to be clear as regards the choice of the spatial development strategy applicable to the envisaged regional airport. These basic principles must set clear limits on the possible growth of air traffic and associated nuisance. It is important in this respect to rule out night flights. Therefore, flights at Twente should be confined to between 06:00 and 23:00 hrs, apart from emergencies and delays.

The airport design is based on airport layout code E, with complete use of the runway of 3000 metres, which in principle will also be suitable for intercontinental air traffic (heavier aircraft). However, the decision in this matter will be up to the operator. If there is a delay until a formal aviation policy memorandum

is set down, the citizens and municipalities involved will remain for a considerable time in a state of uncertainty about the starting points. Therefore, in anticipation of the aviation policy memorandum, it is suggested that steps be taken now. To offer clarity regarding the deliberations and restricted area associated with the airport, it is necessary to weigh up the reservation of sufficient strategic noise space without imposing unnecessary restrictions on the urban environment. Market research indicates that a regional Twente airport has the prospect of handling 1.2 million passengers in 2030. In conjunction with the spatial development strategy (planning horizon 2020), it is proposed to lay down a spatial reservation (in terms of the Wro), within which the restricted area will be regulated in due course by means of an airport decision, via a designation of national importance. This means that the area for which spatial restrictions apply can be reduced from 38.71 km<sup>2</sup> to approximately 11 km<sup>2</sup>. Refer to image 13.34.

## RECOMMENDATION 2:

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### **Adopt the joint basic principles of central government and the region for the airport decision.**

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Land exploitation as a basis for central government region settlement and phasing

VTM i.o. began with the principle that the three governmental parties can best cooperate on producing a good plan with a shared mission and that from there the residual value will follow of the government owned lands. The plan is now on the table with a completely computed land exploitation. The value of the land that follows from this is at least € 30 million.

It is proposed to use this as a basis for the central government/region settlement on the sale of the government-owned land to the

region. In the elaboration of this transaction it will be necessary to agree in an administrative agreement further arrangements for such matters as a continued central government involvement in the airport this airport of national significance, the way in which a good accessibility of the site can be assured and the way in which a market party will be selected to operate the airport. Similarly, it will be necessary to agree arrangements regarding the risks of soil remediation and the clearing up of explosives with the central government in addition to the arrangements already agreed.

The plans are based on an expansion of the national ecological network and phasing whereby a start can be made not later than 1 January 2018 on work on the national ecological network in view of the prevailing agreements between the Ministry of agriculture, nature and food quality and the provincial authorities. This means that the transformation of the present airport into the impact airport must be completed within a period of between 8 and 10 years. This phasing must also form part of the agreed arrangements.

## RECOMMENDATION 3:

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### **Central government and the region will determine the value of the government-owned land on the sale to the region based on the land exploitation for spatial development strategy B and will agree in an administrative agreement further arrangements about the prevailing frameworks for the elaboration by the region of the development of the area.**

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Vliegwiél Twente Maatschappij



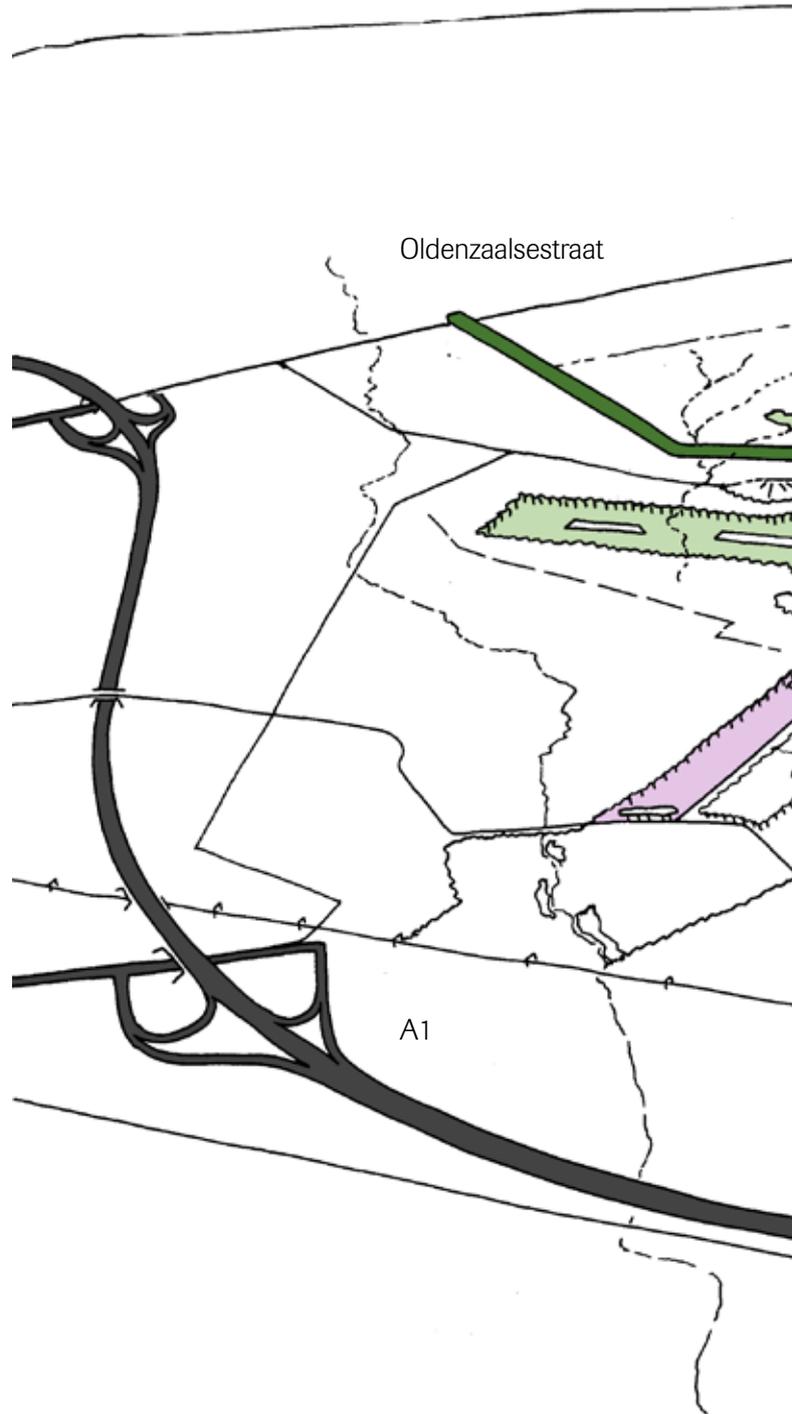
# Structuurvisies Gebiedsontwikkeling Luchthaven Twente e.o.

## Bijlage Model A

**STROOTMAN** LANDSCHAPSARCHITECTEN

**PALMBOUT**  
Urban Landscapes.

**Bijlage 1.1.2 Uitwerking in plandelen**

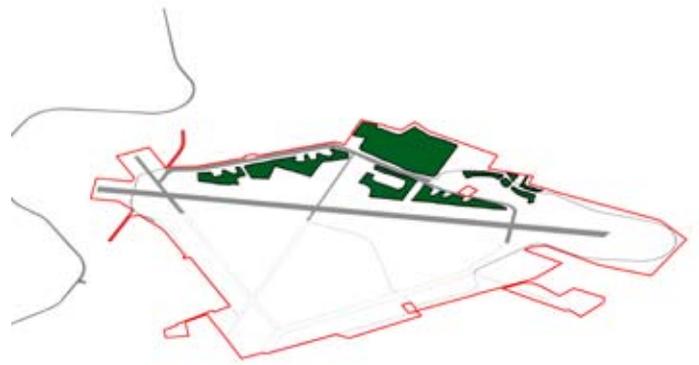




## **Bijlage 1.1.1 Basis noord**

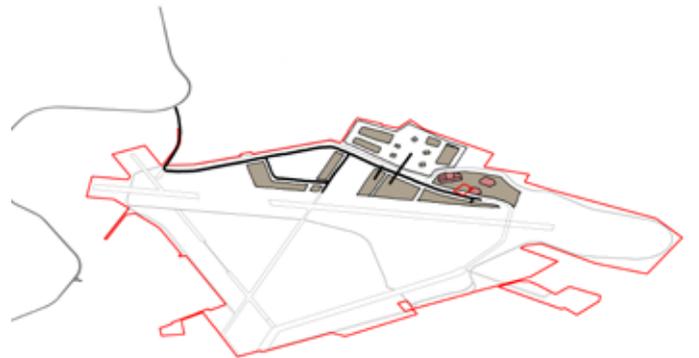
### Bestaande situatie

Bestaand bos langs de noordrand van de vliegbasis waar een stelsel van taxi- en startbanen doorheen loopt.



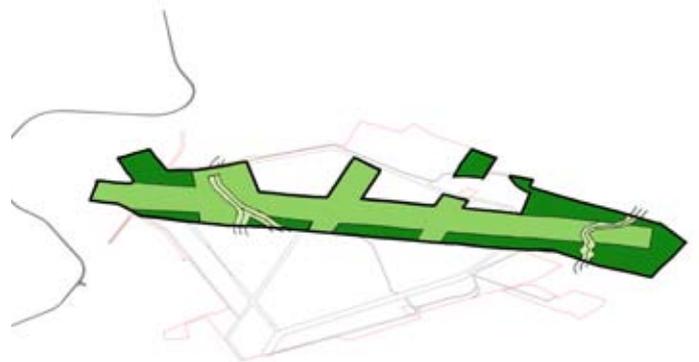
### Ontsluiting en uitgeefbaar

De taxibaan aan de noordzijde wordt de nieuwe ontsluiting vanaf de Weerseloseweg. Nieuw programma direct ontsloten vanaf centrale ontsluitingsweg. Doorgaande fietsroute over bestaande ringweg.

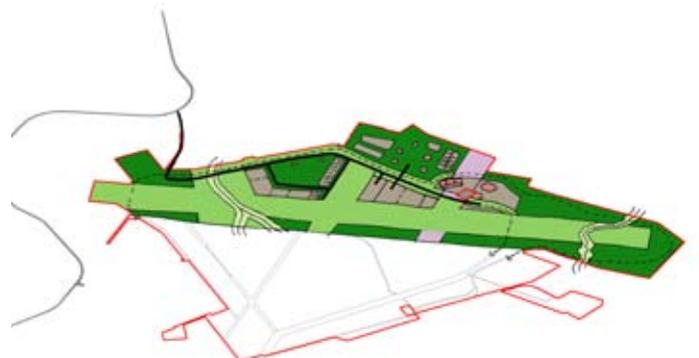


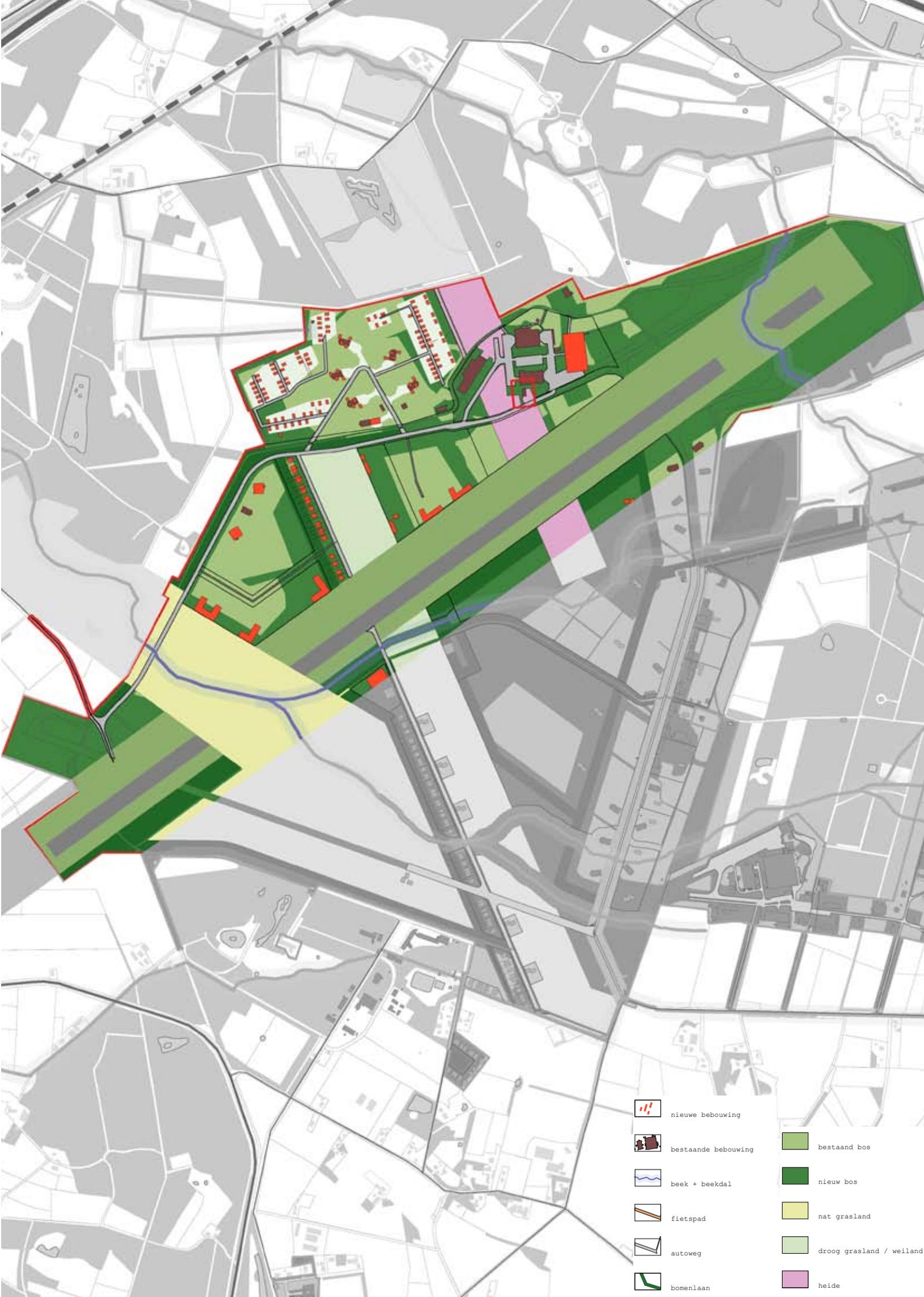
### Landschap

Open ruimte van de voormalige startbaan met twee beekzones.



### Planschets basis noord, model A





nieuwe bebouwing



bestaande bebouwing



beek + beekdal



fietspad



autoweg



bomenlaan

bestaand bos

nieuw bos

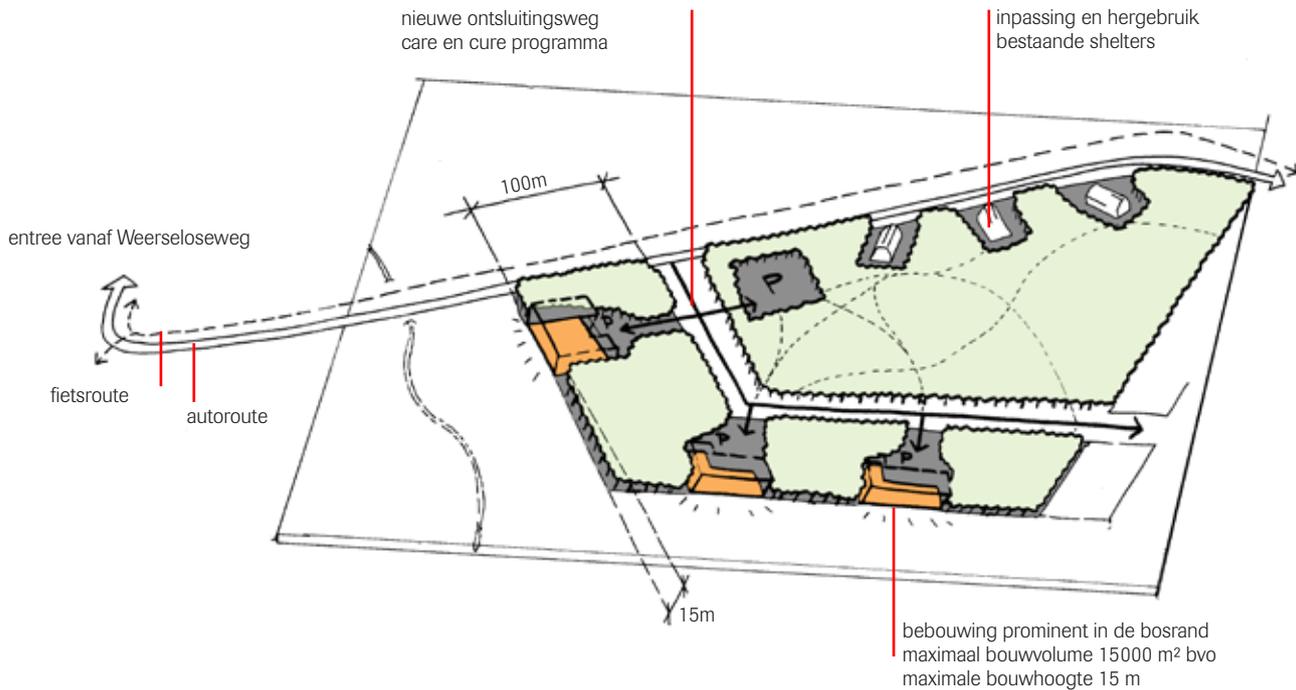
nat grasland

droog grasland / weiland

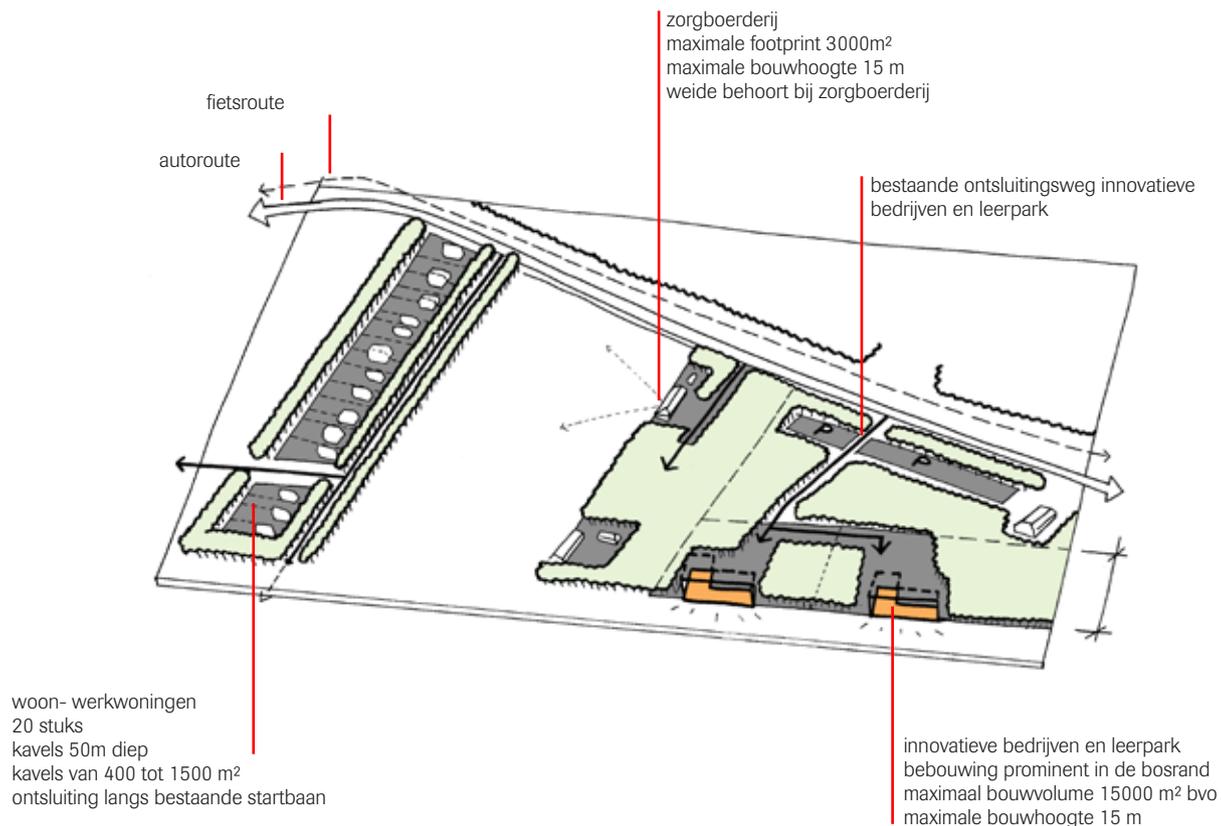
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## Bijlage 1.1.1 Basis noord

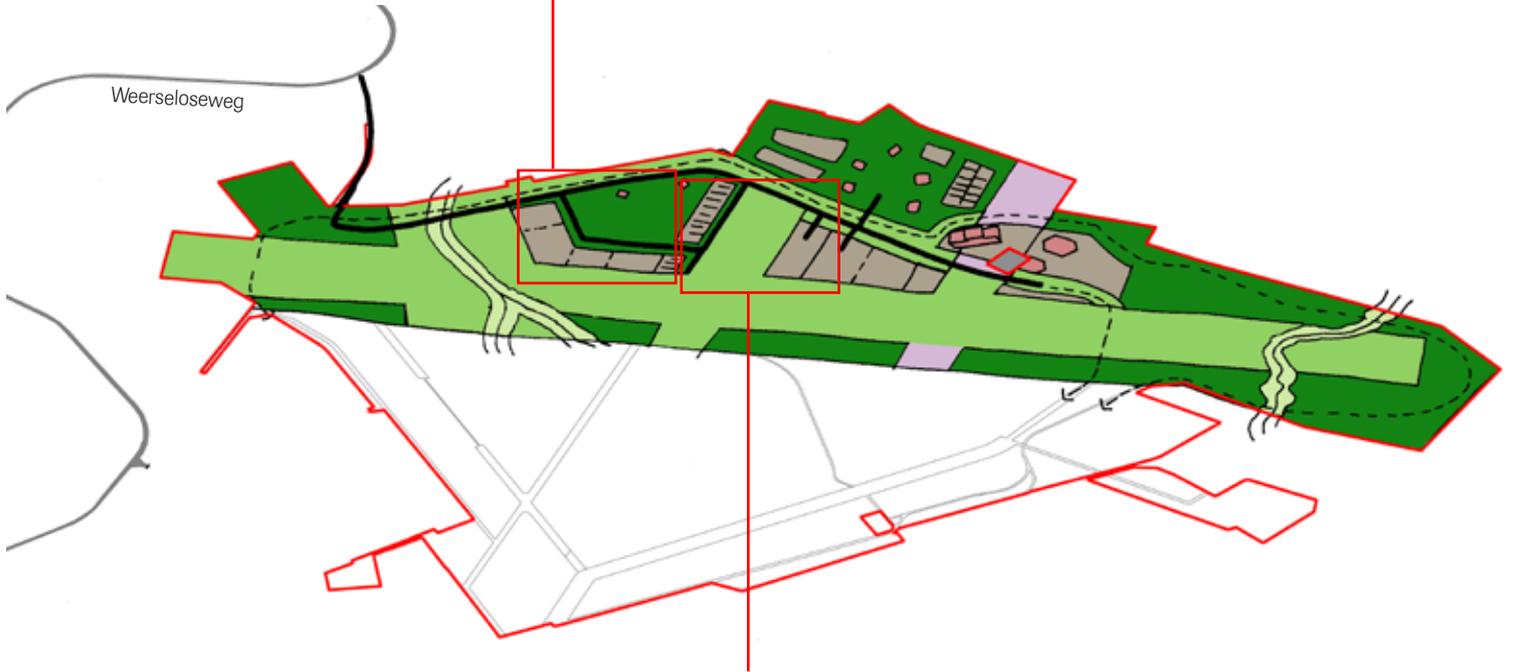
### 1. care en cure programma



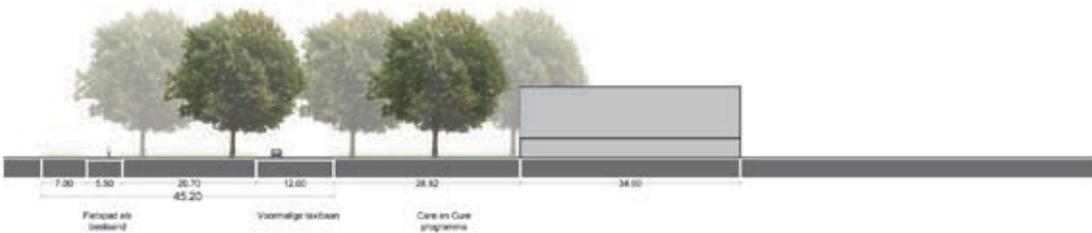
### 2. zorgboerderij/ leerpark/ woon- werkwoningen/ innovatieve bedrijven



1. care en cure programma



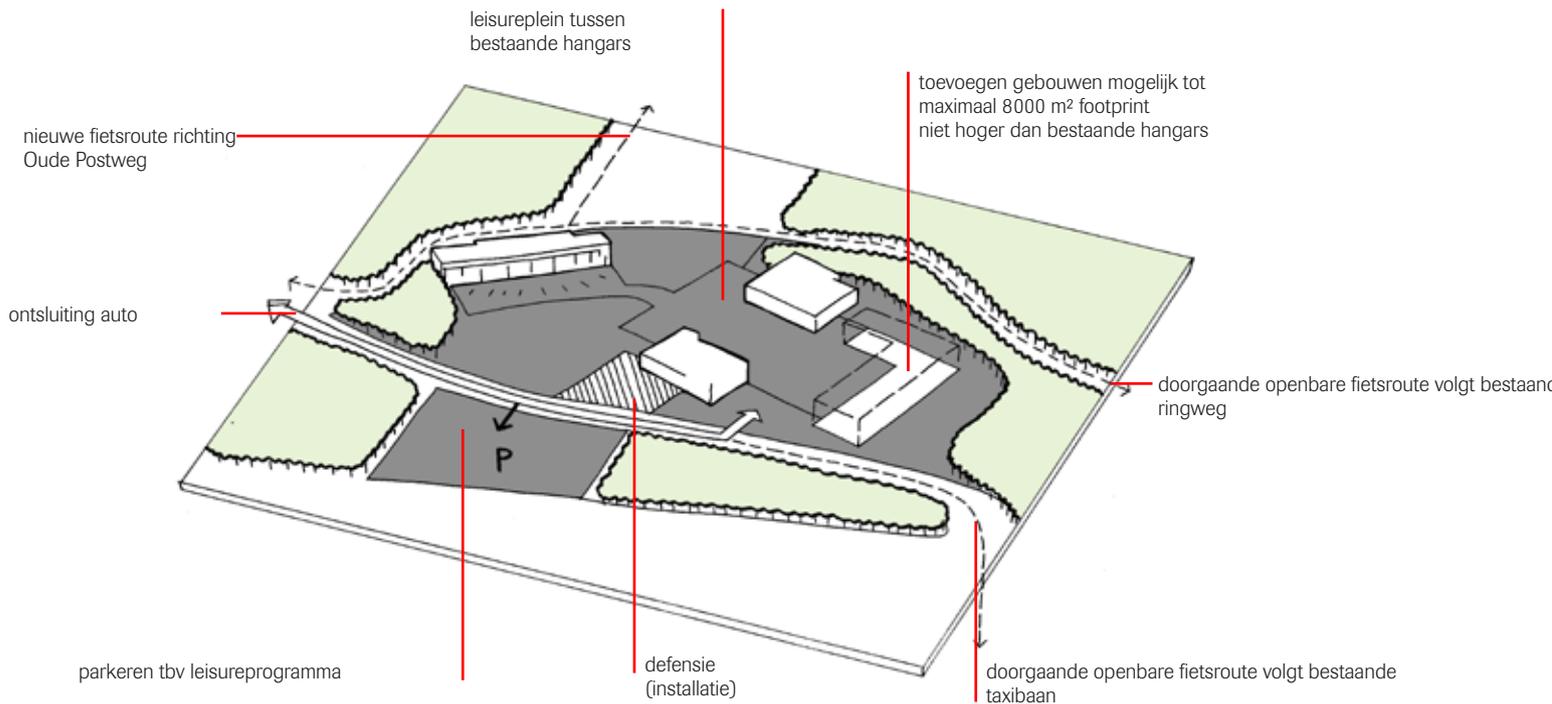
2. zorgboerderij/ leerpark/ woon- werkwoningen/  
innovatieve bedrijven



doorsnede E, Toegangsweg

## Bijlage 1.1.1 Basis noord

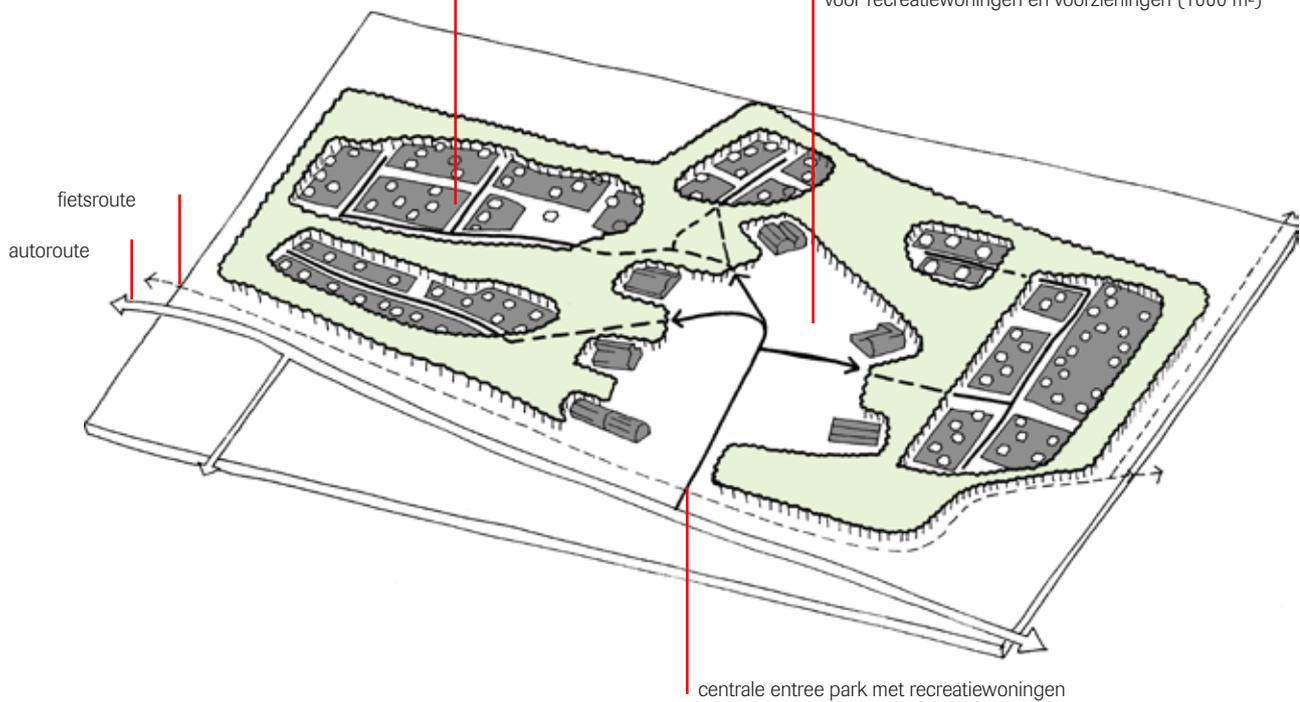
### 3. leisure



### 4. Resort park

recreatiewoningen op open plekken in het deels bestaande bos  
maximaal 110 woningen  
kavels 500 m<sup>2</sup>  
maximale bouwhoogte 6m

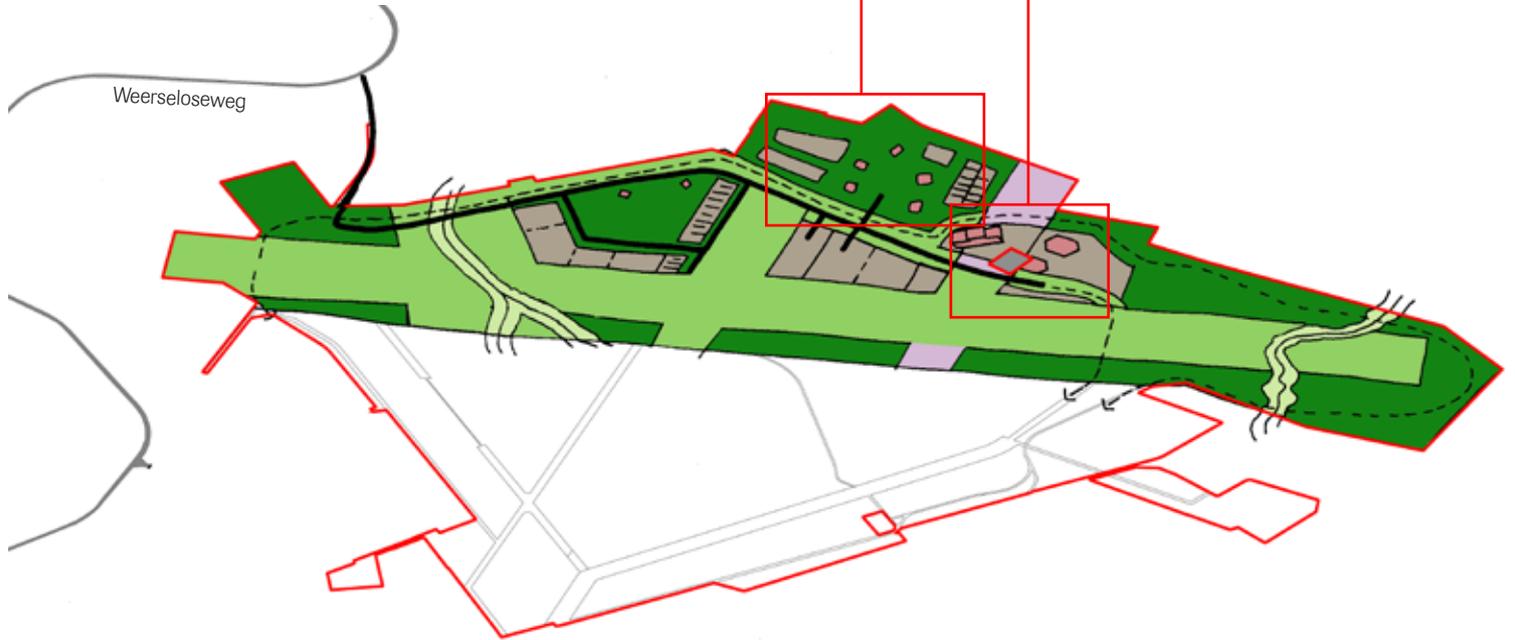
collectief erf met hergebruik van de bestaande druiventros voor recreatiewoningen en voorzieningen (1000 m<sup>2</sup>)



4. resort park

3. leisure

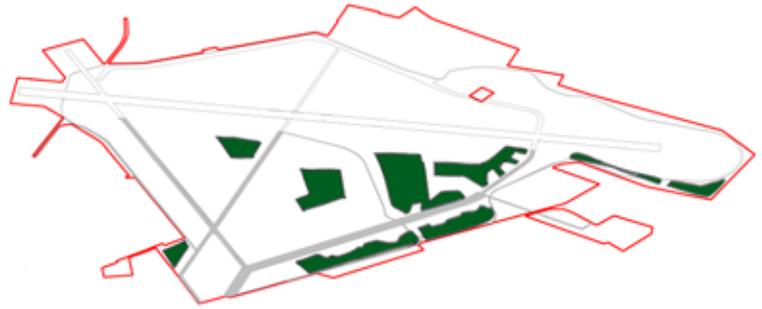
Weerseloseweg



## Bijlage 1.1.2 Basis zuid

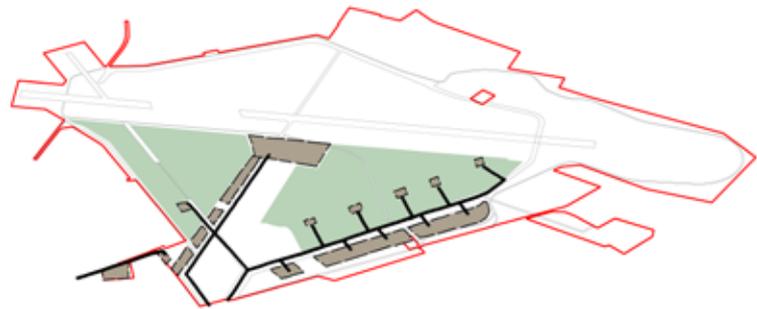
### Bestaande situatie

De zuidzijde van de vliegbasis met verschaald grasland, verspreid bos en een stelsel van start- en taxibanen.



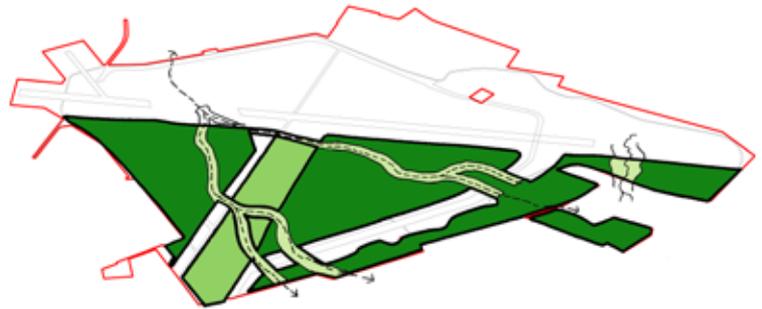
### Ontsluiting en uitgeefbaar

Oprijlanen vanaf de Oude Deventerweg ontsluiten het programma (landgoederen en landbouw) dat langs de bestaande infrastructuur ligt.



### Landschap

Programma als landbouw en landgoederen maakt een groen kader voor de voormalige aan de zuidzijde van de vliegbasis



planschets model A, basis noord

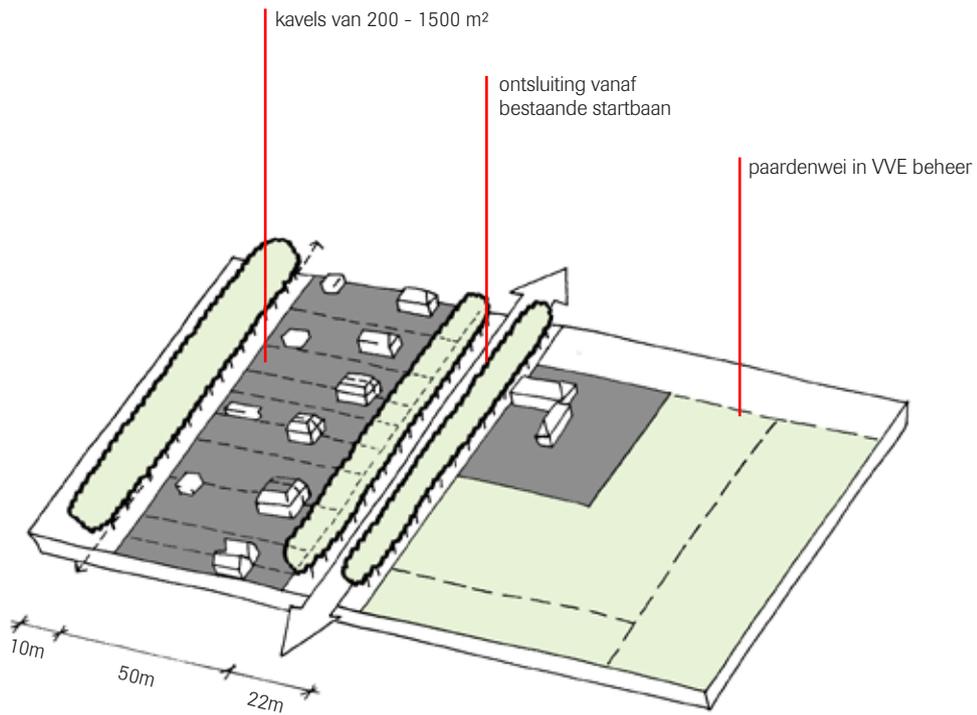




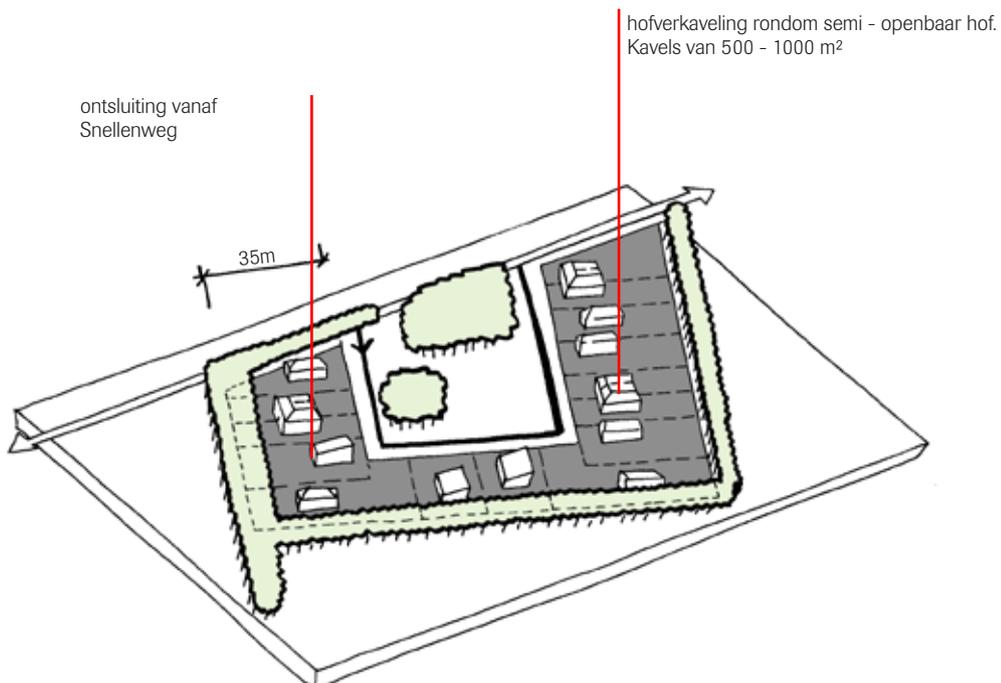
- |   |                     |   |                          |
|---|---------------------|---|--------------------------|
|  | nieuwe bebouwing    |  | bestaand bos             |
|  | bestaande bebouwing |  | nieuw bos                |
|  | beek + beekdal      |  | nat grasland             |
|  | fietspad            |  | droog grasland / weiland |
|  | autoweg             |  | heide                    |
|  | bomenlaan           |   |                          |

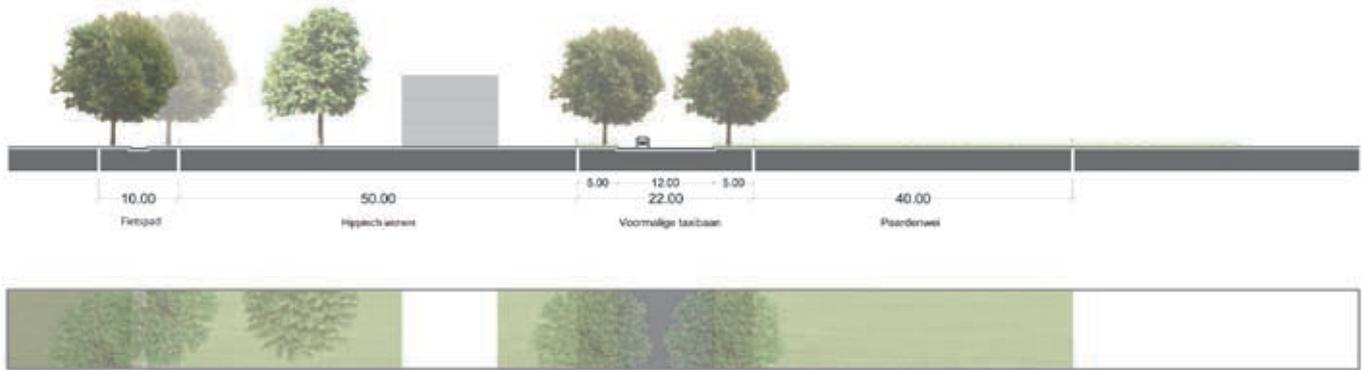
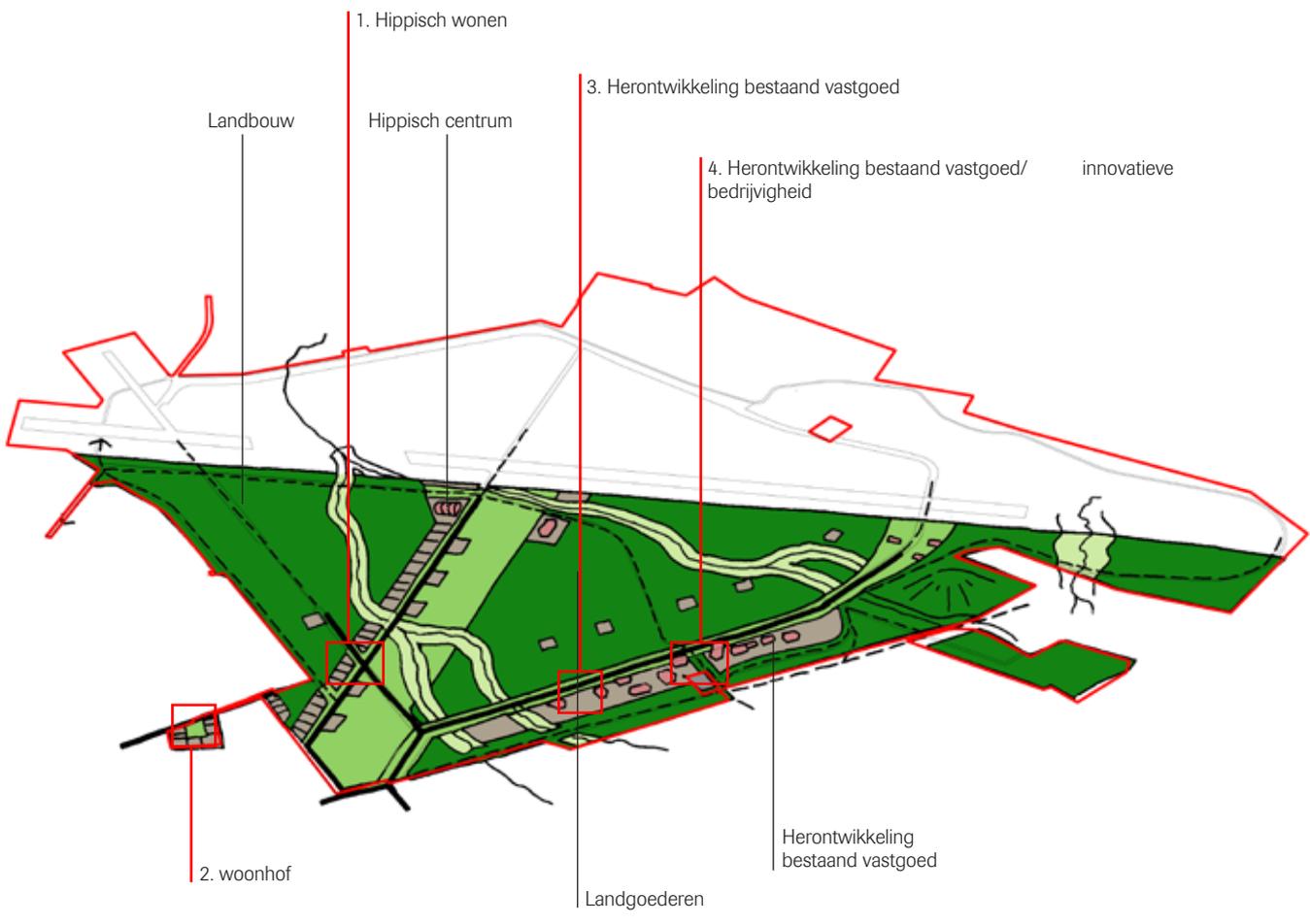
## Bijlage 1.1.2 Basis zuid (midden)

### 1. Hippisch wonen



### 2. woonhof



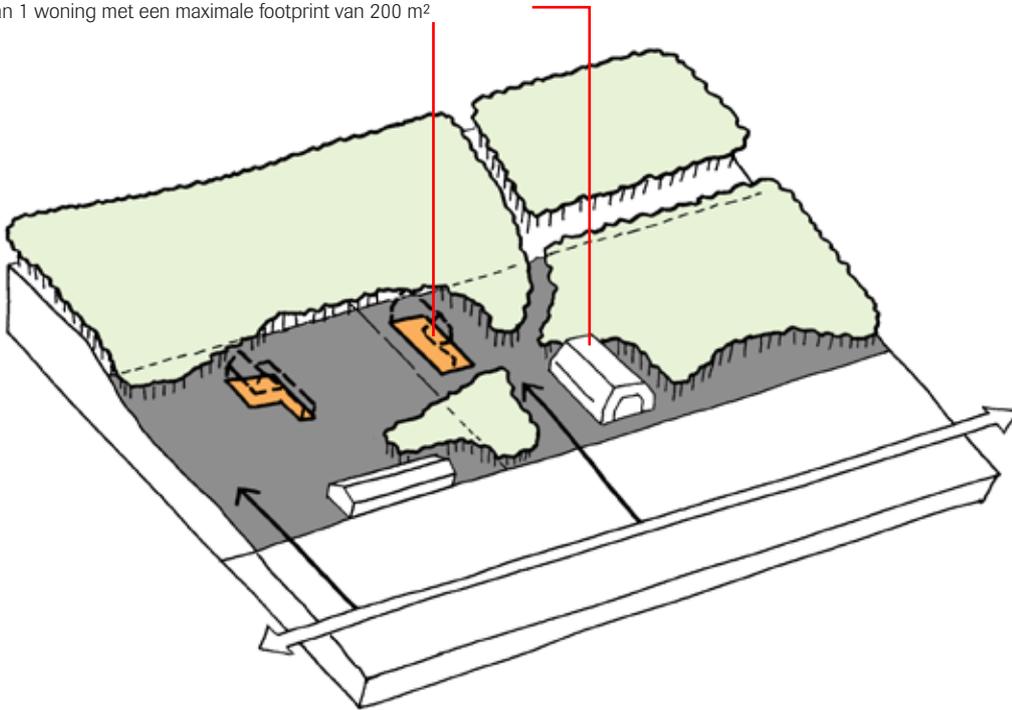


doorsnede F, taxibaan langs hippisch wonen

## Bijlage 1.1.2 Basis zuid (strip)

### 3. Herontwikkeling bestaand vastgoed

8 kavels van ca 375 m<sup>2</sup> footprint per kavel.  
Hergebruik bestaand vastgoed met de mogelijkheid voor het toevoegen van 1 woning met een maximale footprint van 200 m<sup>2</sup>



### 4. Herontwikkeling bestaand waardevol vastgoed

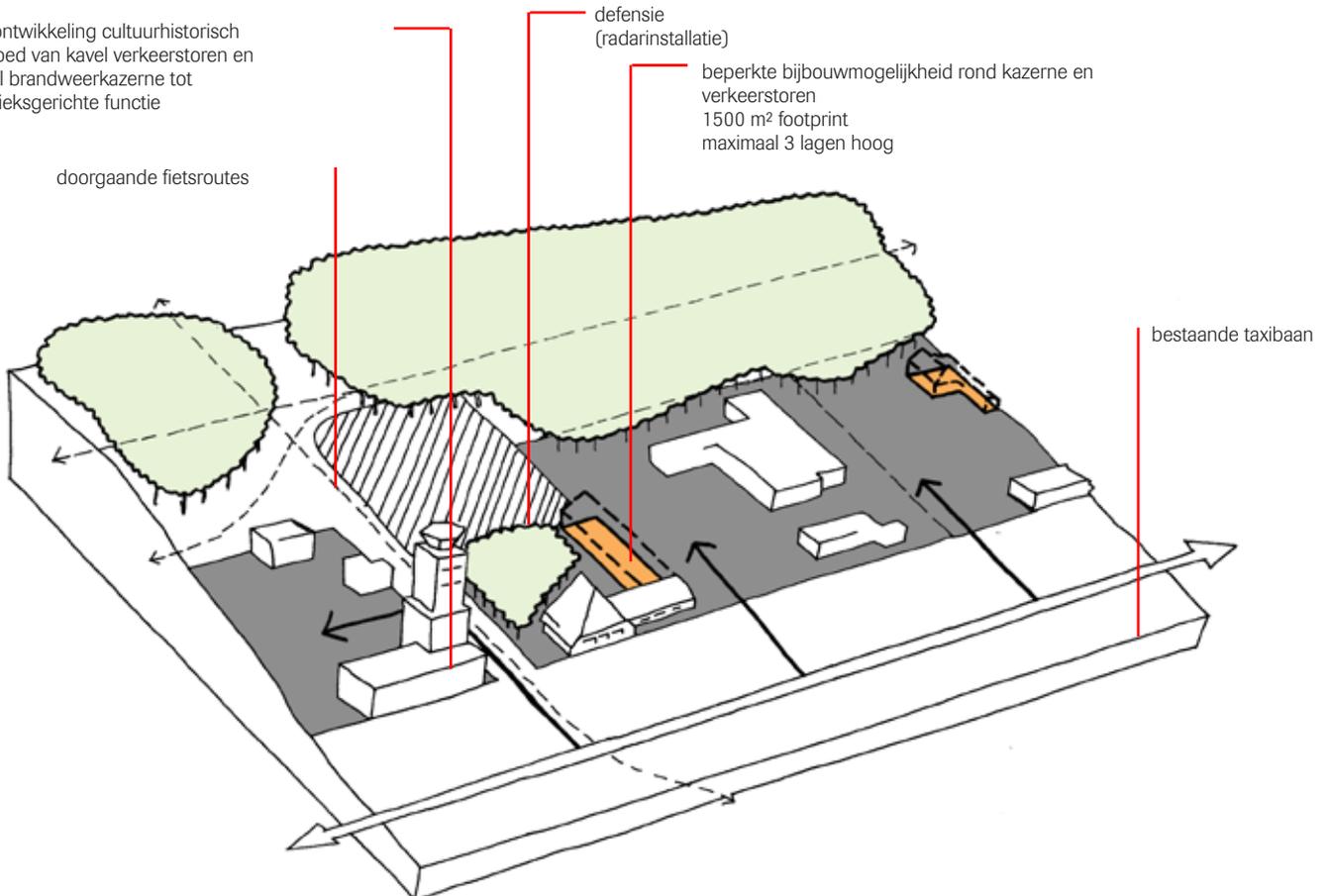
Herontwikkeling cultuurhistorisch erfgoed van kavel verkeerstoren en kavel brandweerkazerne tot publieksgerichte functie

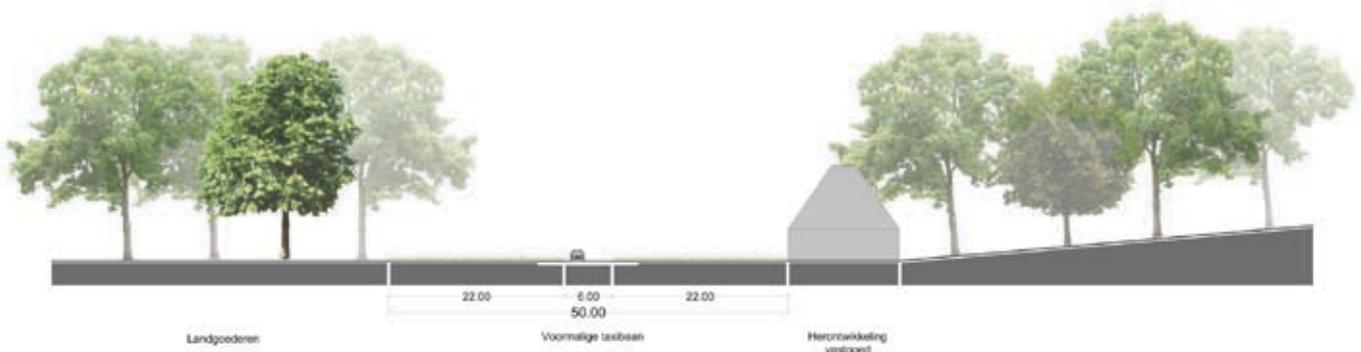
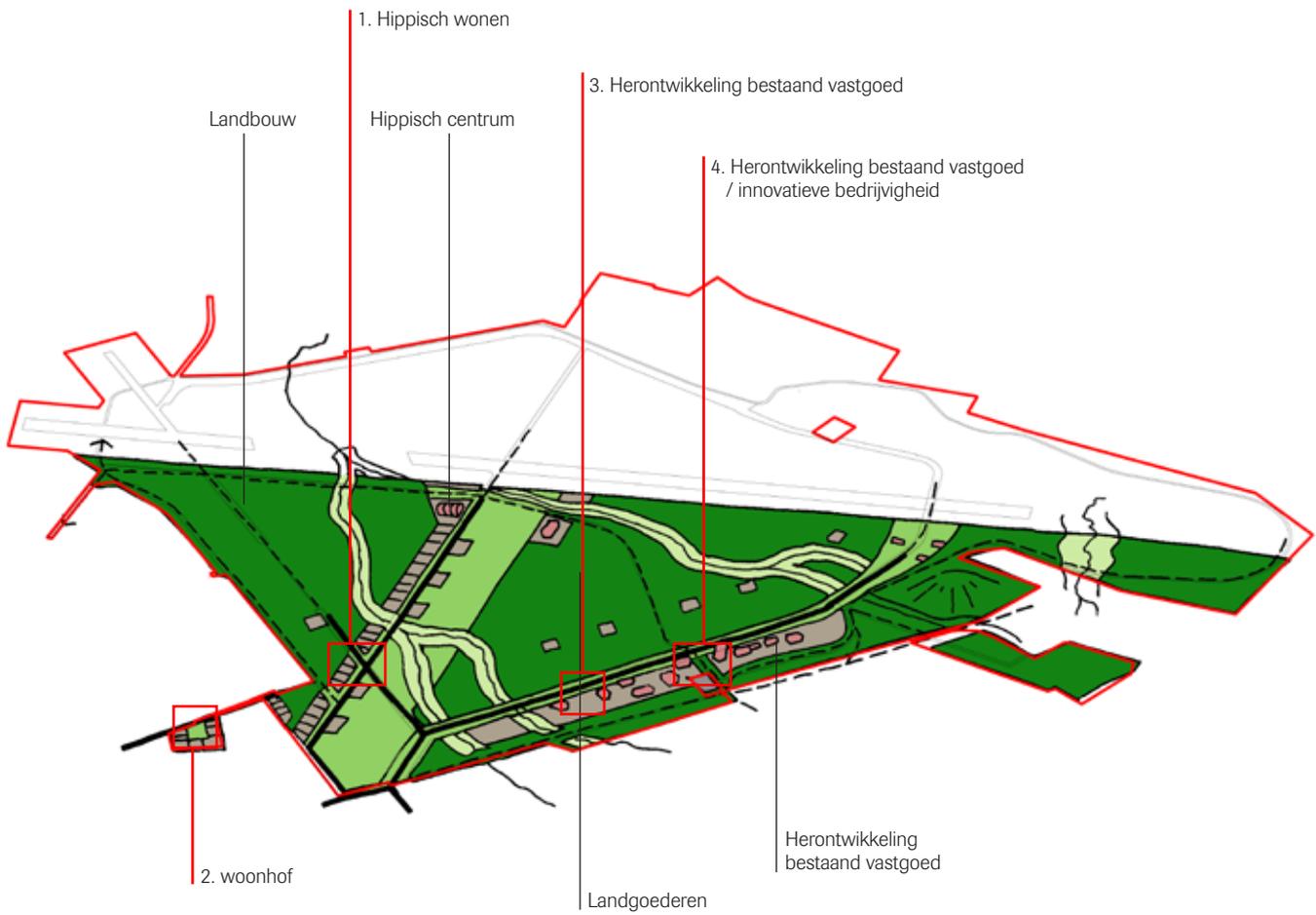
doorgaande fietsroutes

defensie (radarinstallatie)

bepaalde bijbouwmogelijkheid rond kazerne en verkeerstoren  
1500 m<sup>2</sup> footprint  
maximaal 3 lagen hoog

bestaande taxibaan





doorsnede G, taxibaan langs verkeerstoren en brandweerkazerne

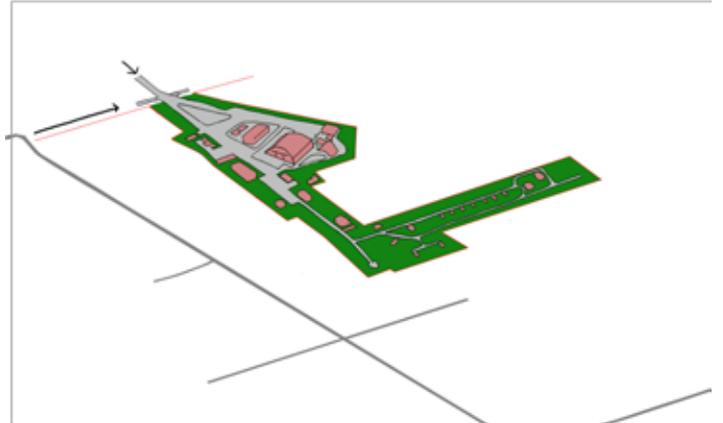
## Bijlage 1.1.3 Oostkamp

### Bestaande situatie

Oostkamp is aangesloten op de vliegbasis via een bestaande taxibaan.

Groene rand rondom Oostkamp benadrukt Oostkamp als enclave op de Lonnekerberg.

Oostkamp bestaat uit twee gedeeltes met een verschillende karakteristiek; het verharde gedeelte rond hangar 11 en de munitiestraat in een meer natuurlijke omgeving



### Landschap

Oostkamp losmaken van de vliegbasis.

Opdelen Oostkamp in twee enclaves.

Introductie van beken op en langs het terrein.

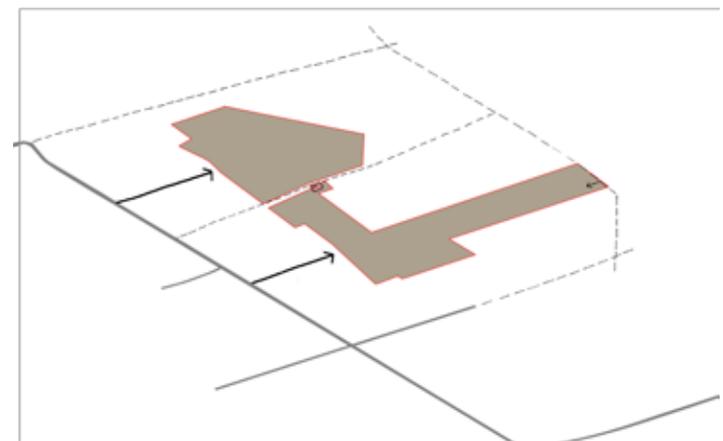
Munitiestraat herontwikkelen als landschappelijk element



### Ontsluiting en uitgeefbaar

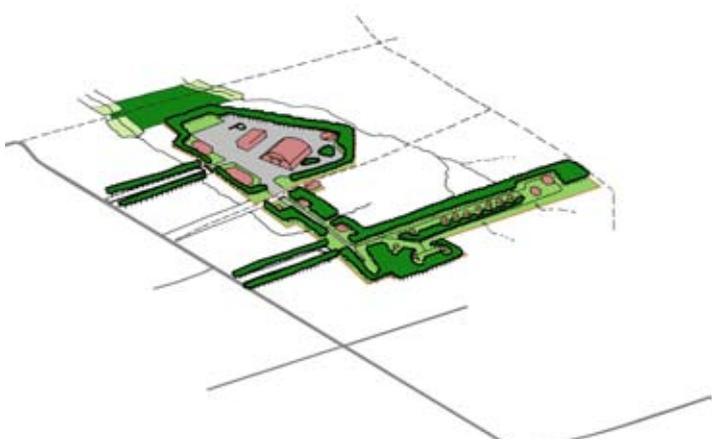
Oostkamp is opgedeeld in twee uitgeefbare terreinen.

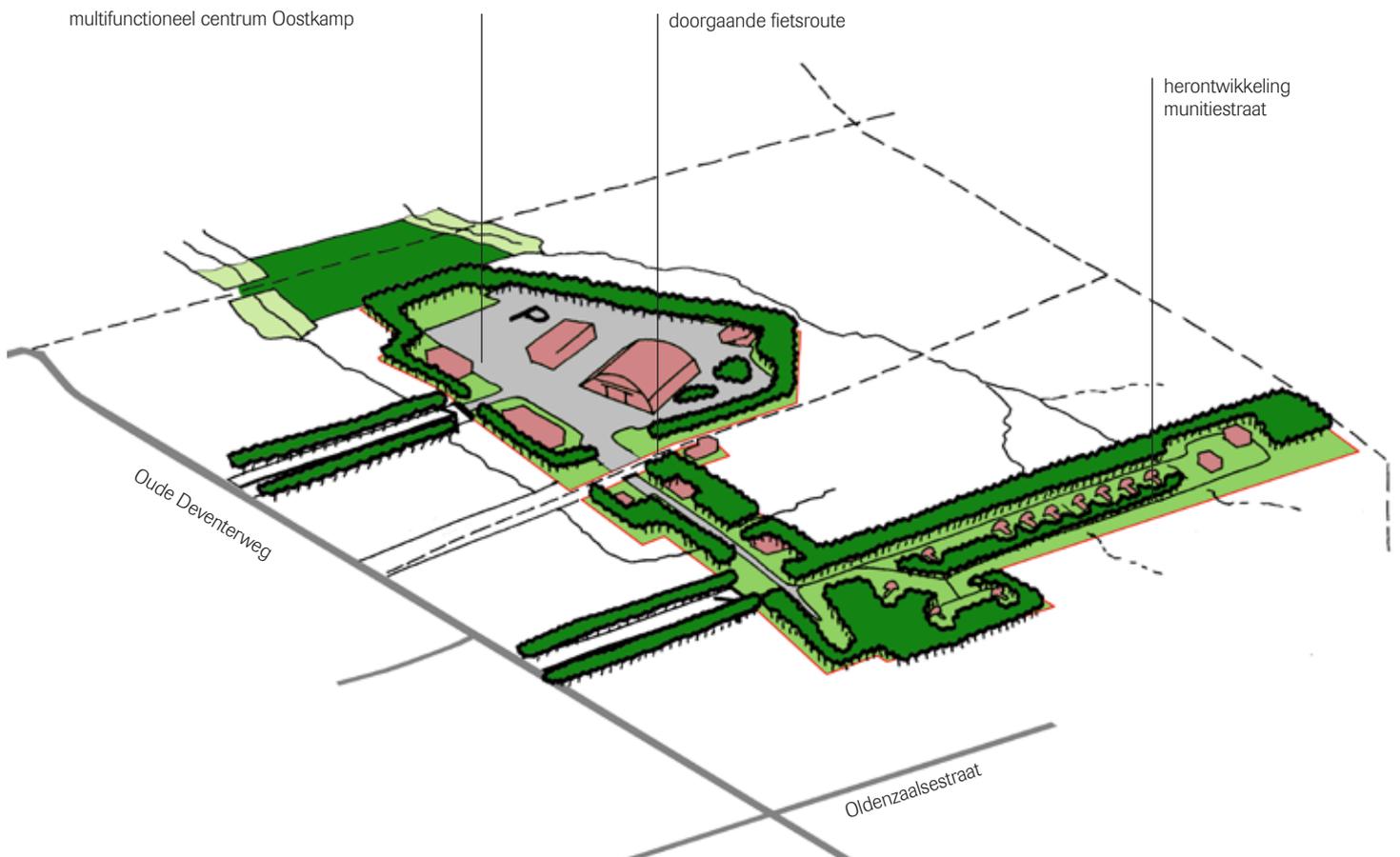
Ontsluiting met twee oprijlanen vanaf Oude Deventerweg



### Planschets Oostkamp, model A

Twee karakteristieke enclaves op de Lonnekerberg

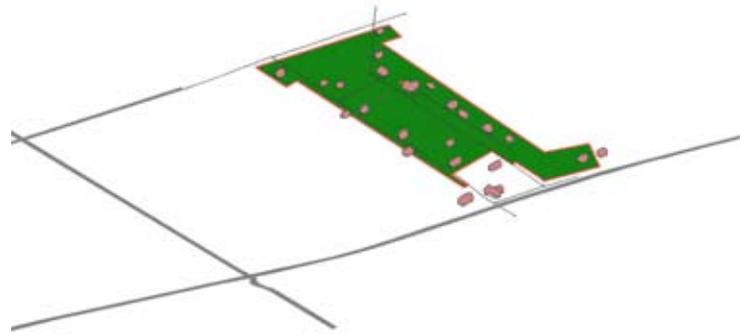




## Bijlage 1.1.4 Prins Bernhardpark

### Historische situatie

Tijdens de tweede wereldoorlog hebben de Duitsers het Prins Bernhardkamp aangelegd als een verstrooid patroon van bebouwing in het Twentse landschap. Dit patroon heeft gediend als inspiratiebron voor de herbestemming.



### Bestaande situatie en landschap

De door de Duitsers gebouwde woningen zijn grotendeels verdwenen.

Verspreid over het terrein staan nu nog een vijftal gebouwen waarvan de officiersmess de meest cultuurhistorische waarde heeft.

Rond deze bebouwing staat een robuust bos verdunnend richting de Oldenzaalsestraat. Een lanenstelsel karakteriseert het gebied.

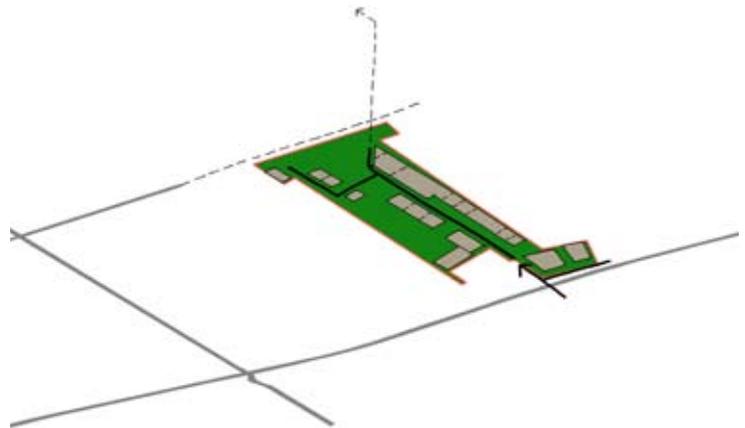
Twee lanen structureren het gebied.



### Ontsluiting en uitgeefbaar

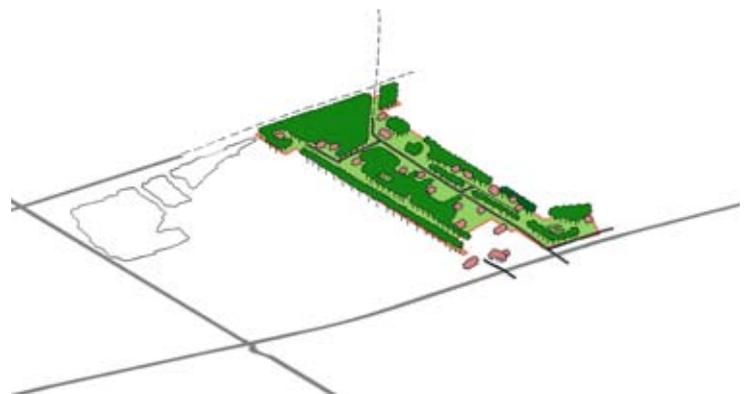
Het Duitse kamp sloot aan de zuidzijde aan op de Oldenzaalsestraat. De nieuwe aansluiting wordt iets noordelijk gelegd en geeft zodoende direct toegang tot de centrale laan van het kamp.

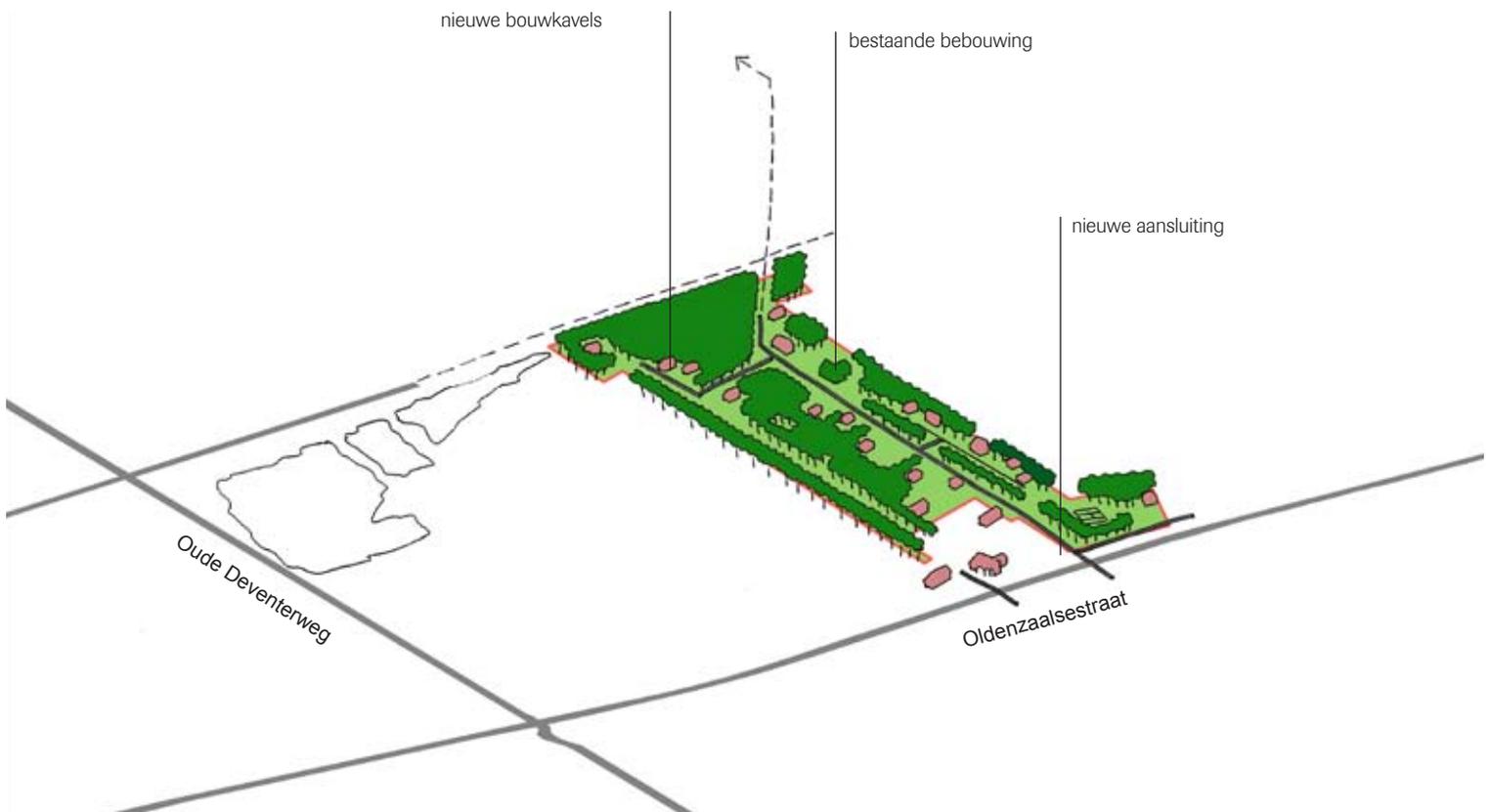
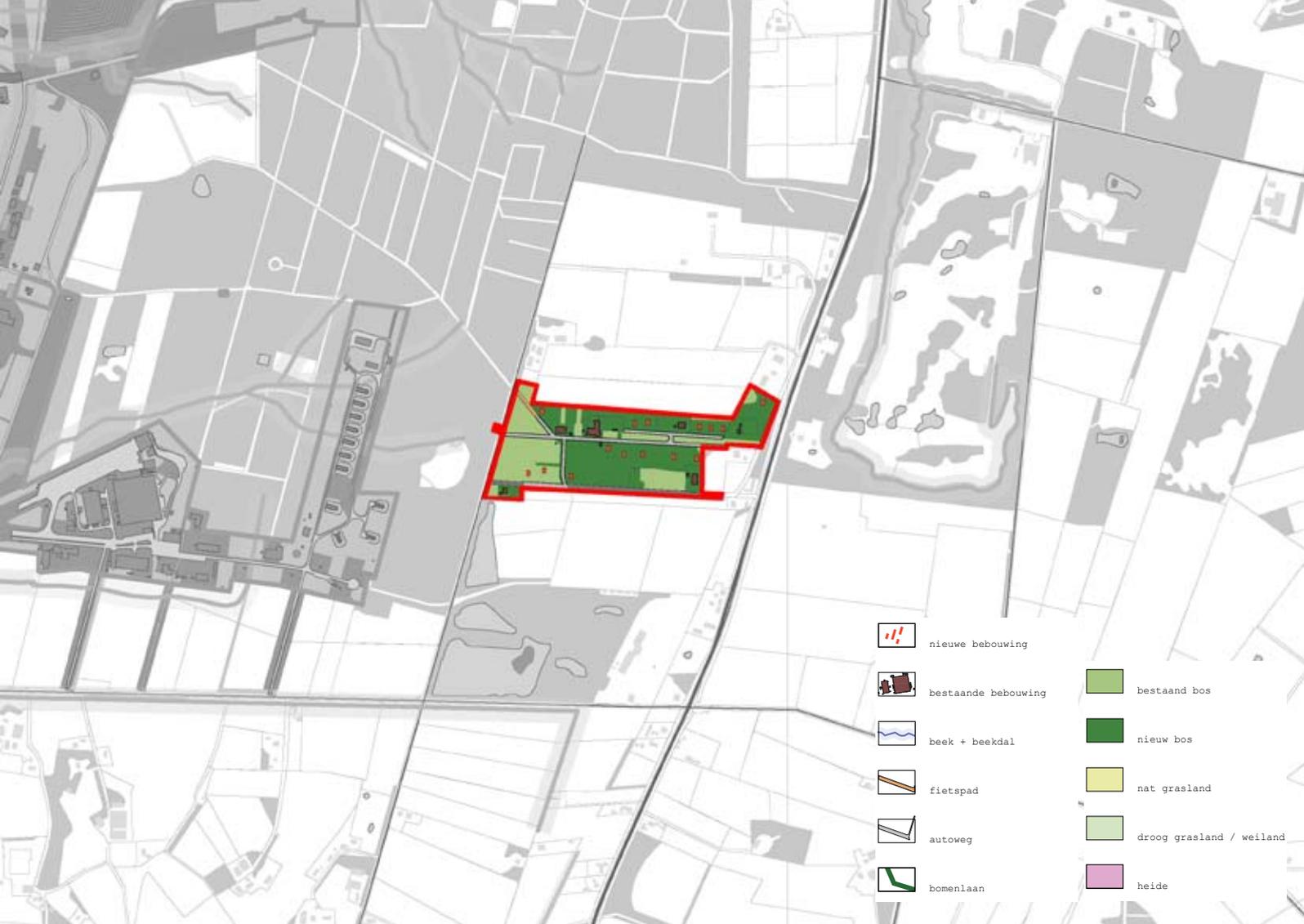
Langs deze ontsluiting zijn tussen de bossen 15 verspreide en kavels getekend met een extensieve invulling.



### Planschets Prins Bernhardpark

Door de bebouwing niet strak in het gelid te zetten ontstaat een patroon dat het gebied voorziet van een nieuw, doch cultuurhistorisch elan.

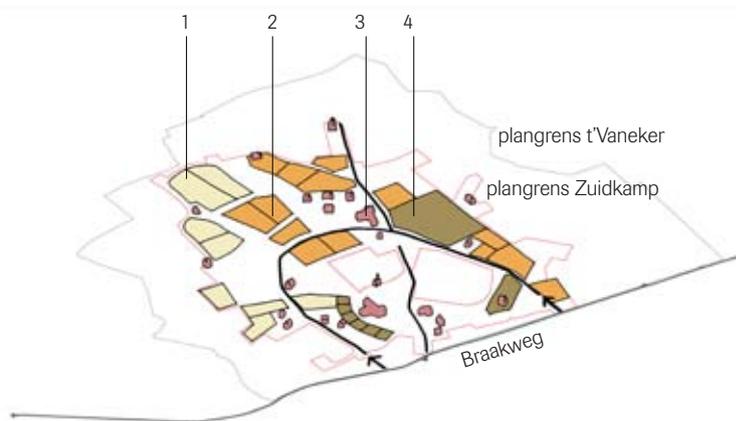




## Bijlage 1.1.5 Zuidkamp

Stedenbouwkundig plan t'Vaneker in Zuidkamp  
Landschappelijk plan met grote kavels en de volgende typologieën:

1. Landhuis
2. Twents cluster
3. Hergebruik bestaand vastgoed
4. Villa Zuidkamp



### Landschap

Middenin blijven twee terreinen in gebruik bij defensie. Rondom het gedeelte van defensie een afwisselend landschap met bos, open landschap, parkachtig middengebied en een sportterrein.



### Kansen voor ontwikkeling

Zuidkampweg als centrale as met daarlangs de toekomstige monumenten van Zuidkamp.  
de Zuidkampweg ontwikkelen als een parkachtig middengebied met twee 'greens'.  
Fietsroutes via de parkachtige middengebieden verbinden Enschede met de Lonnekerberg.



### Structuurvisie basis zuid model A

Beschermen van cultuurhistorisch belangrijke bebouwing.

Waar mogelijk herontwikkelen van het overige bestaande vastgoed, door nieuwbouw mogelijkheid te bieden bij het bestaande vastgoed.

Toevoegen van 3 typologieën aan t'Vaneker.

1. Woningen zonder tuin langs het parkachtig middengebied
2. Verdichten op de locatie van de sportvelden
3. Toevoegen van enkele boskavels aan Zuidkamp

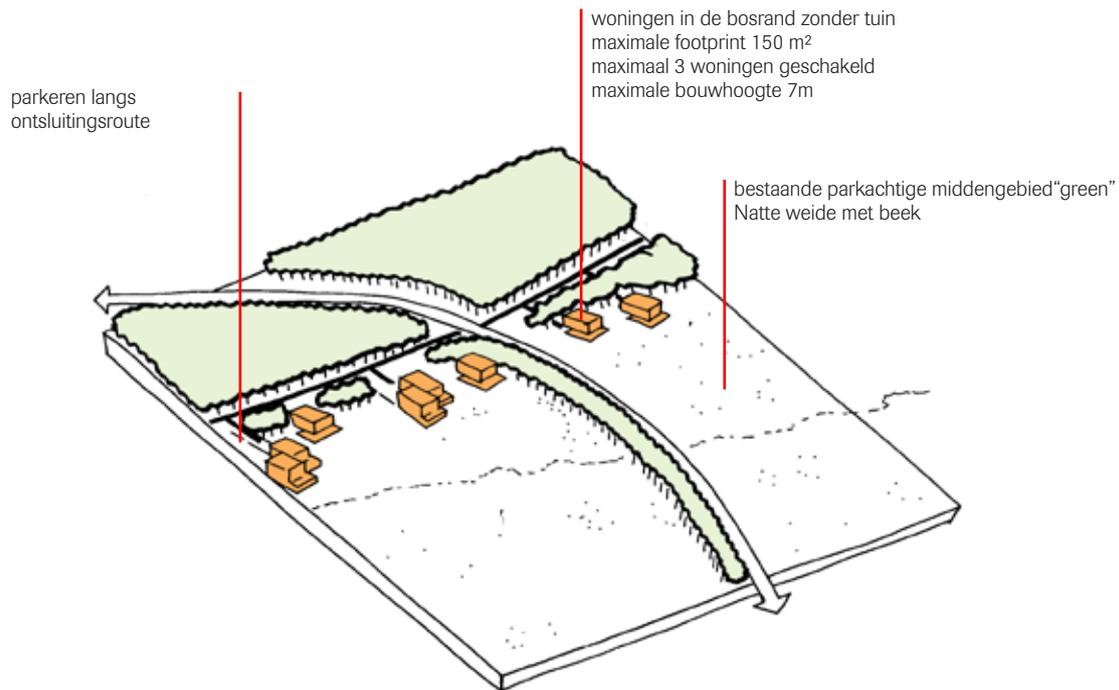




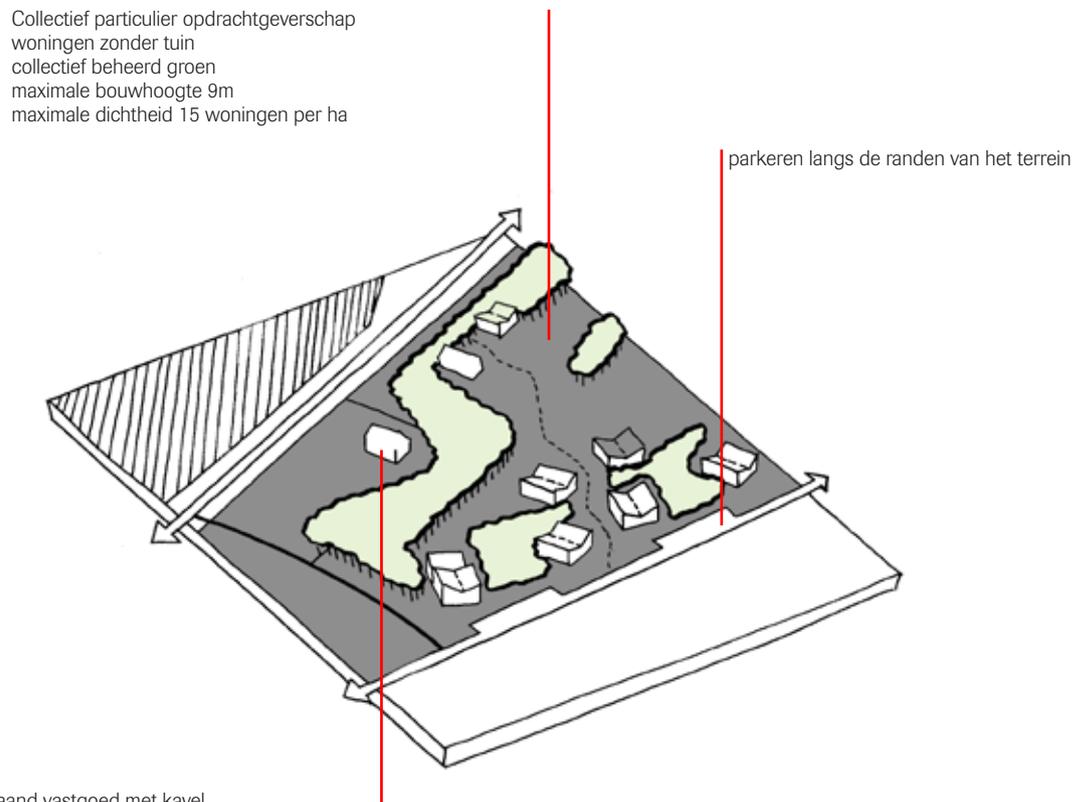
- |   |                     |   |                          |
|---|---------------------|---|--------------------------|
|  | nieuwe bebouwing    |  | bestaand bos             |
|  | bestaande bebouwing |  | nieuw bos                |
|  | beek + beekdal      |  | nat grasland             |
|  | fietspad            |  | droog grasland / weiland |
|  | autoweg             |  | heide                    |
|  | bomenlaan           |   |                          |

## Bijlage 1.1.5 Zuidkamp

### 1. woningen zonder tuin langs het parkachtige middengebied



### 2. Verdichten op locatie van de sportvelden

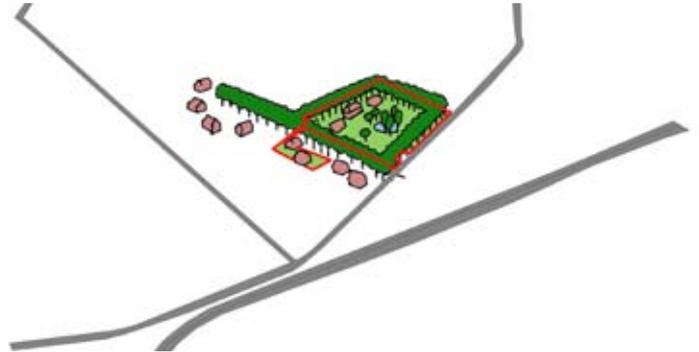




## Bijlage 1.1.6 Kamp Overmaat

### Historische situatie

Bebouwingslint met aan de noordzijde vrijstaande huizen/ barakken en aan de zuidzijde een landhuis met tuin (voormalige eetzaal).



### Bestaande situatie en landschap

De bestaande situatie is grotendeel hetzelfde als de oorspronkelijke situatie.

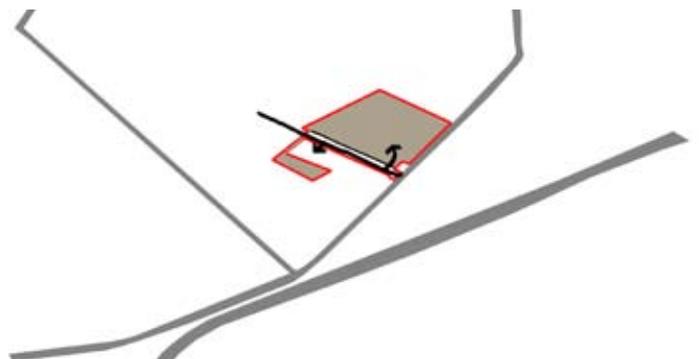
Aan het landhuis zijn verschillende ruimtes toegevoegd en de bijgebouwen zijn verdwenen.



### Ontsluiting en uitgeefbaar

Ontsluiting als bestaand via de centrale entreeweg vanaf de Vargershuizenweg.

Binnen de rijksgrenzen kunnen twee kavels ontwikkeld worden.

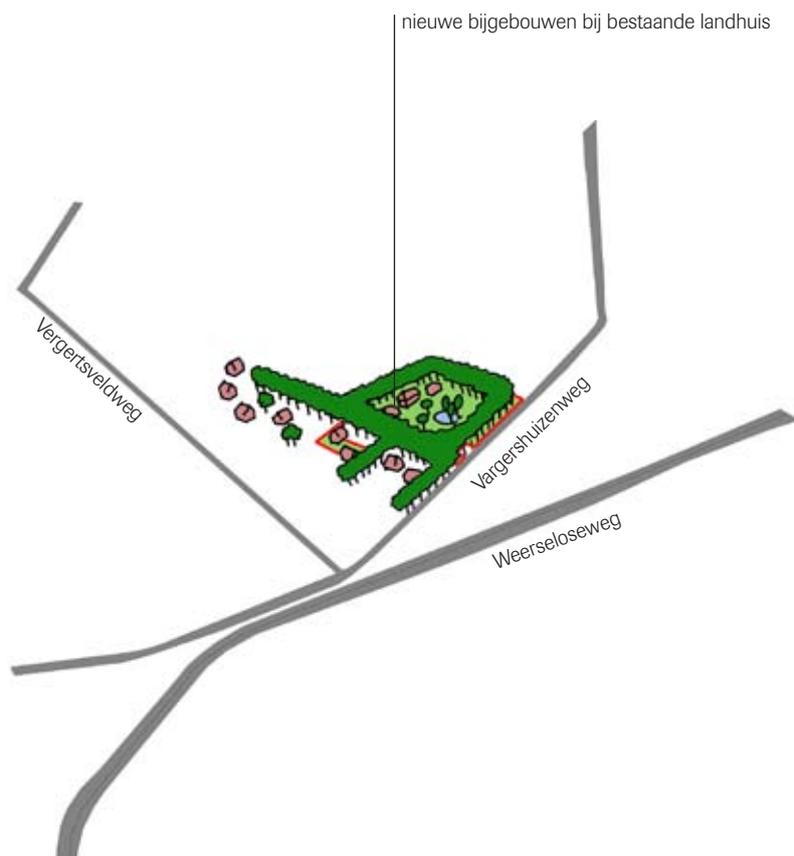


### Planschets Overmaat, model A

ontwikkeling landhuis met nieuwe bijgebouwen en een herstelde tuin aan de noordzijde van de weg.

Woonhuis aan de zuidzijde van de weg.









Vliegwiél Twente Maatschappij



BIJLAGEN

# Structuurvisies Gebiedsontwikkeling Luchthaven Twente e.o.

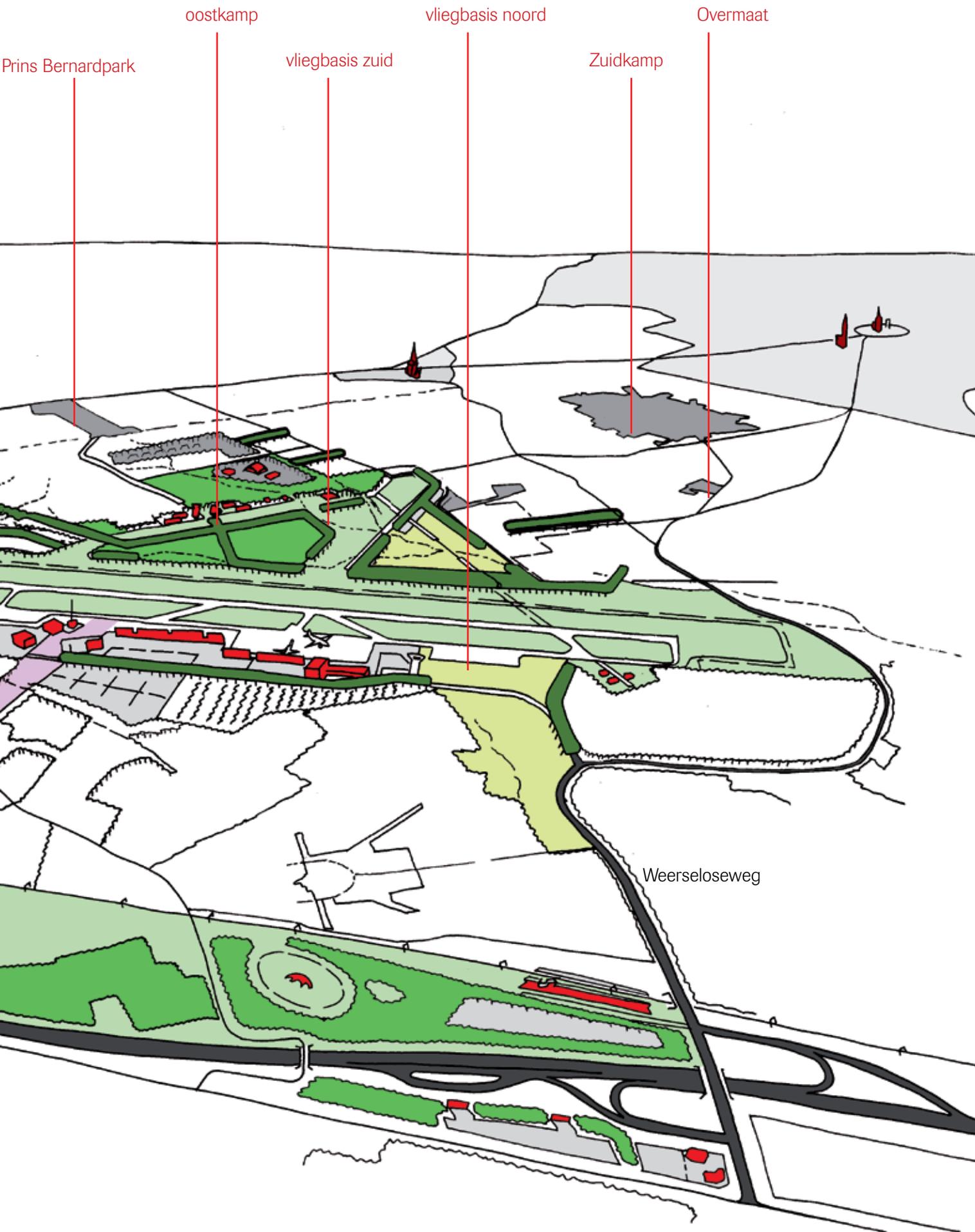
## Bijlage Model B

STROOTMAN LANDSCHAPSARCHITECTEN

PALMBOUT  
Urban Landscapes.

**Bijlage 2.1 Uitwerking in plandelen**

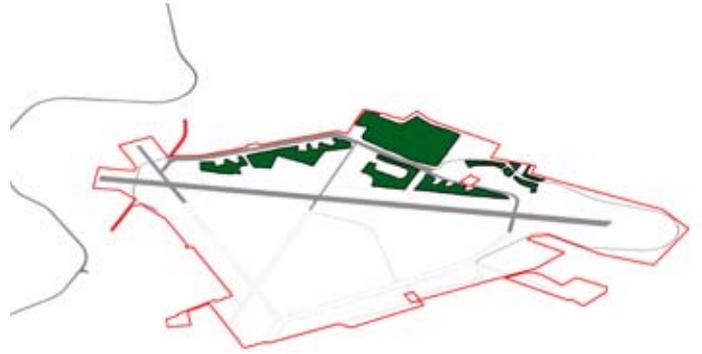




## Bijlage 2.1.1 Basis noord

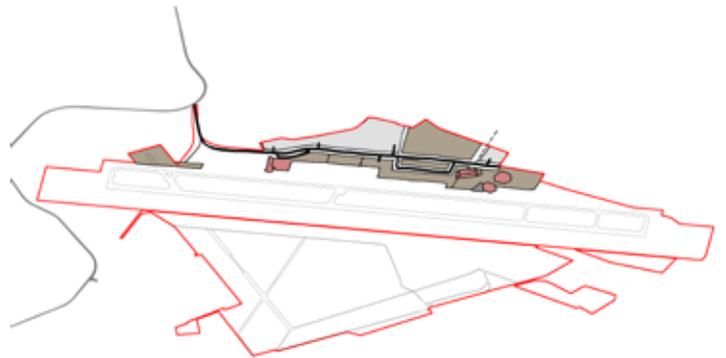
### Bestaande situatie

Bestaand bos langs de noordrand van de vliegbasis waar een stelsel van taxi- en startbanen doorheen loopt.



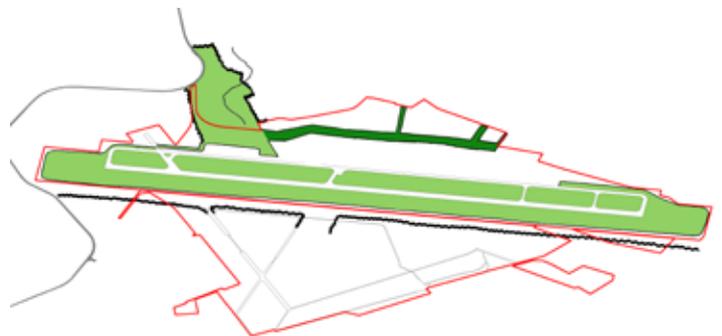
### Ontsluiting en uitgeefbaar

De nieuwe, efficiënte hoofdstructuur van het vliegveld reorganiseert de gehele noordrand van de basis. De hoofdontsluiting wordt parallel aan de startbaan gelegd. De terminalzone en publieksfuncties liggen vlak na de entree aan de Weerseloseweg, de bedrijvigheid daarachter.



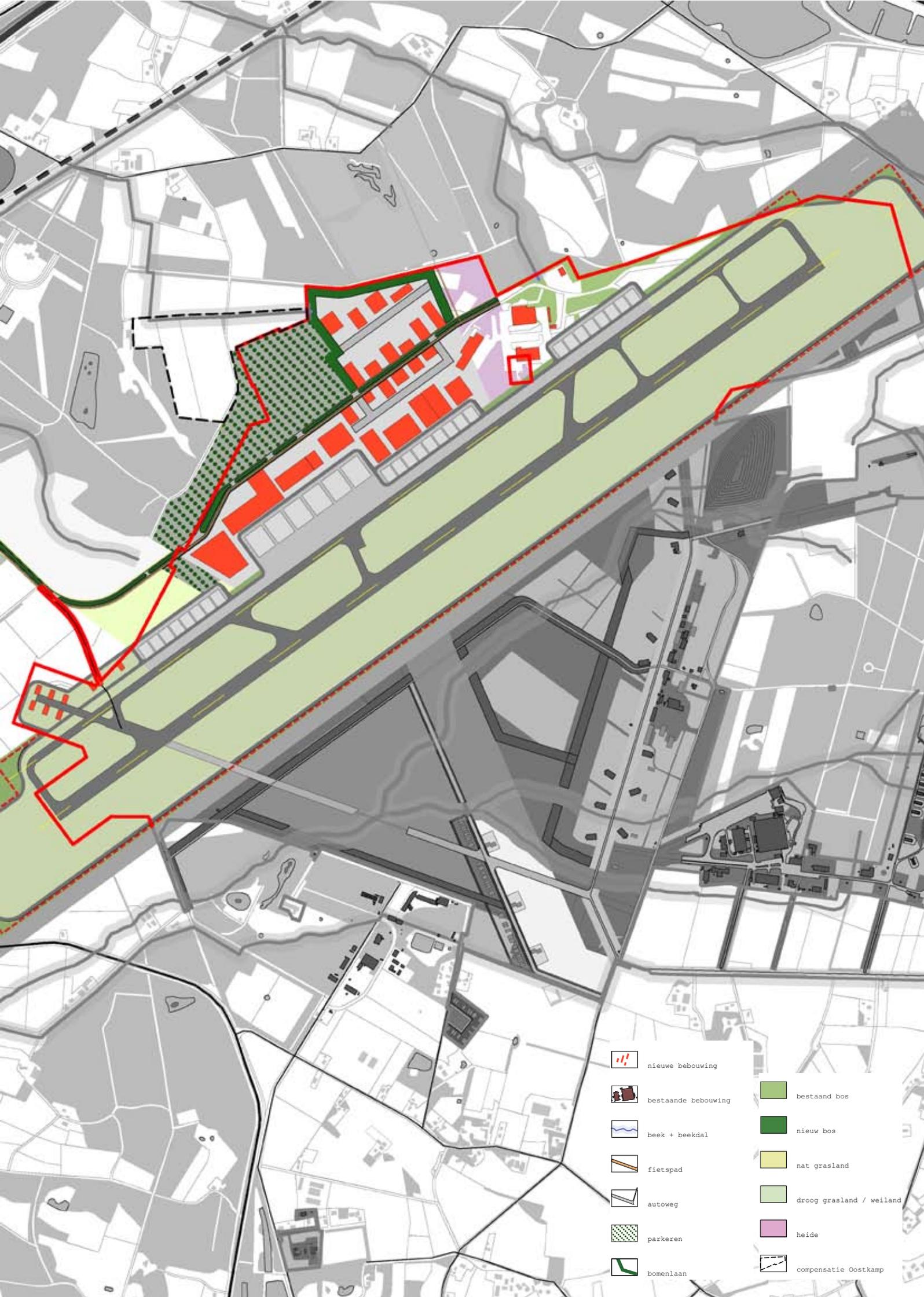
### Landschap

De nieuwe groenstructuur volgt de hoofdontsluiting van het vliegveld.



### Planschets basis noord, model B

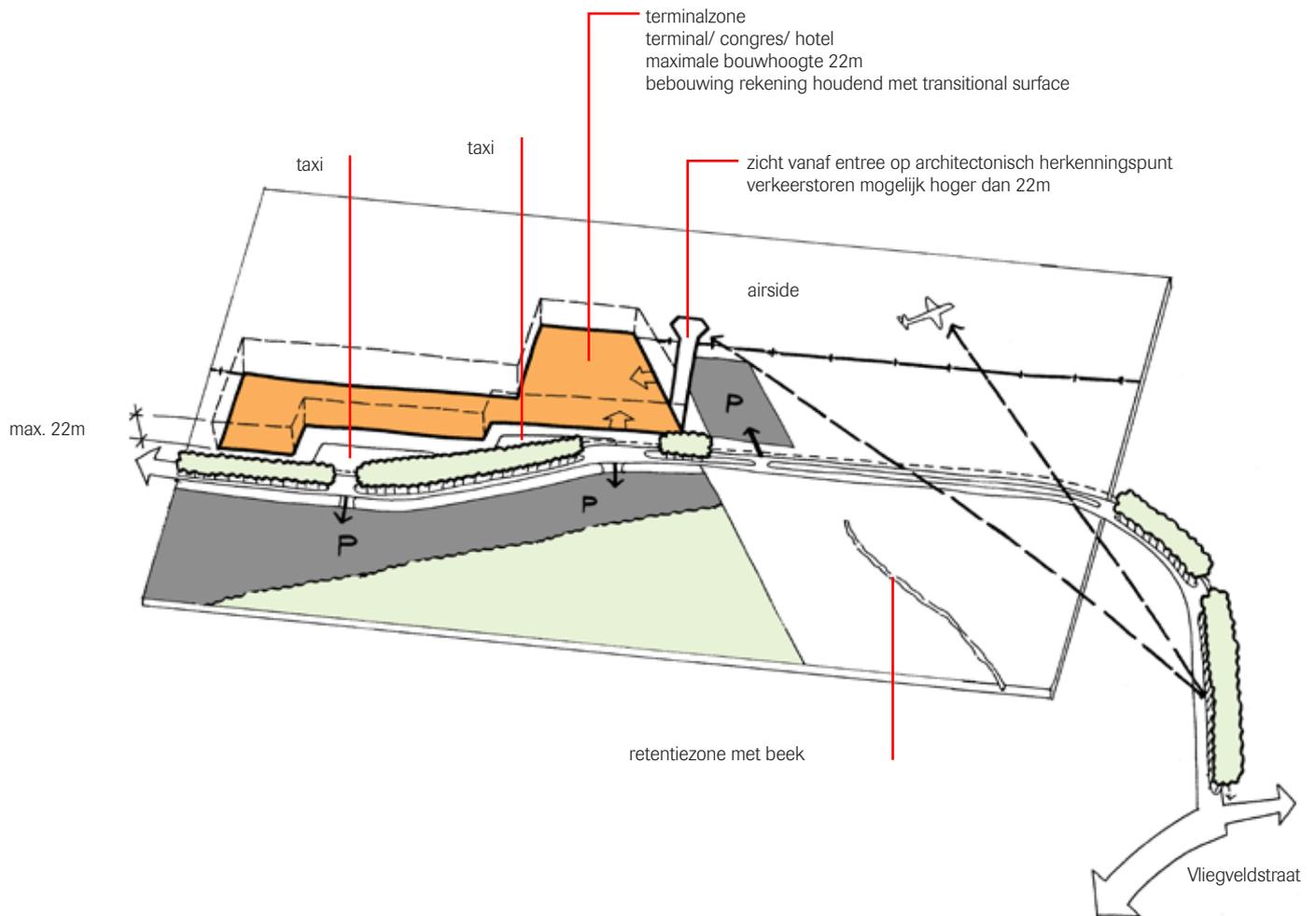




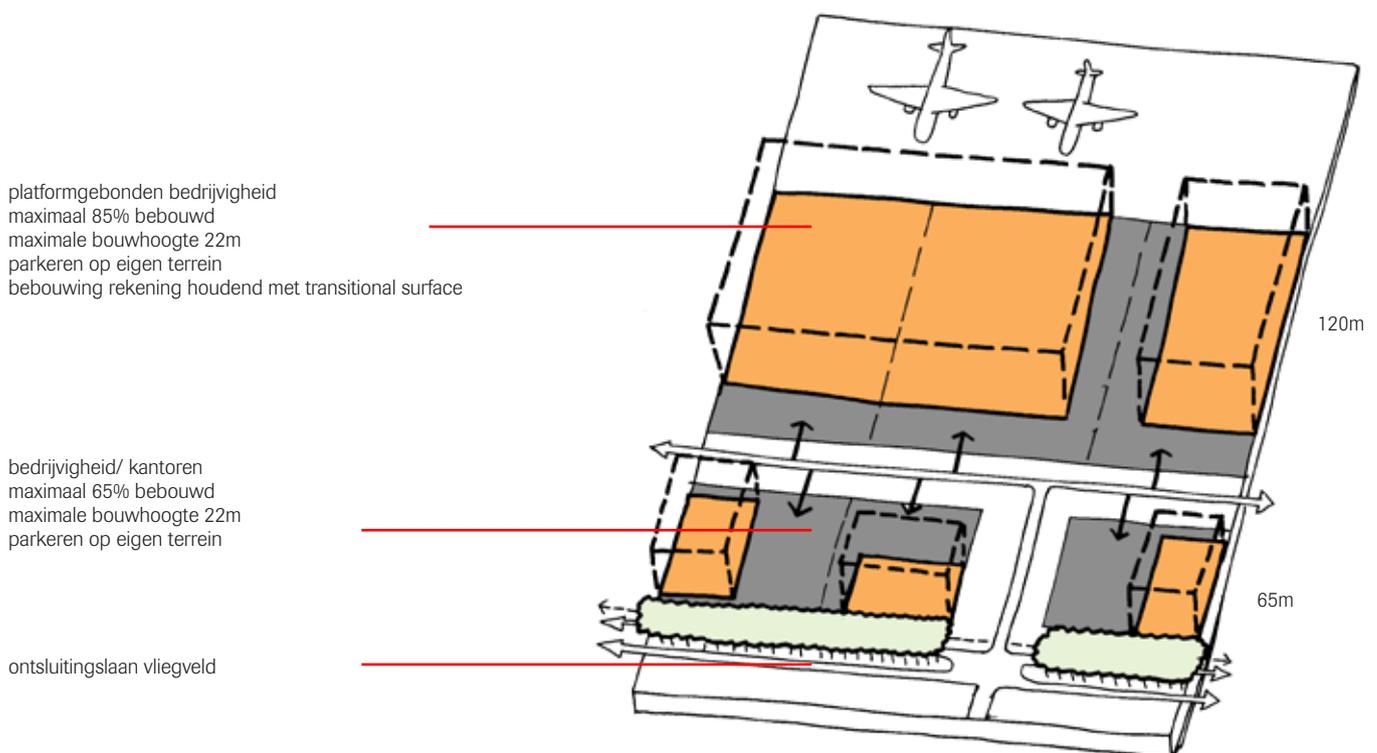
- |   |                     |   |                          |
|---|---------------------|---|--------------------------|
|  | nieuwe bebouwing    |  | bestaand bos             |
|  | bestaande bebouwing |  | nieuw bos                |
|  | beek + beekdal      |  | nat grasland             |
|  | fietspad            |  | droog grasland / weiland |
|  | autoweg             |  | heide                    |
|  | parkeren            |  | compensatie Oostkamp     |
|  | bomenlaan           |   |                          |

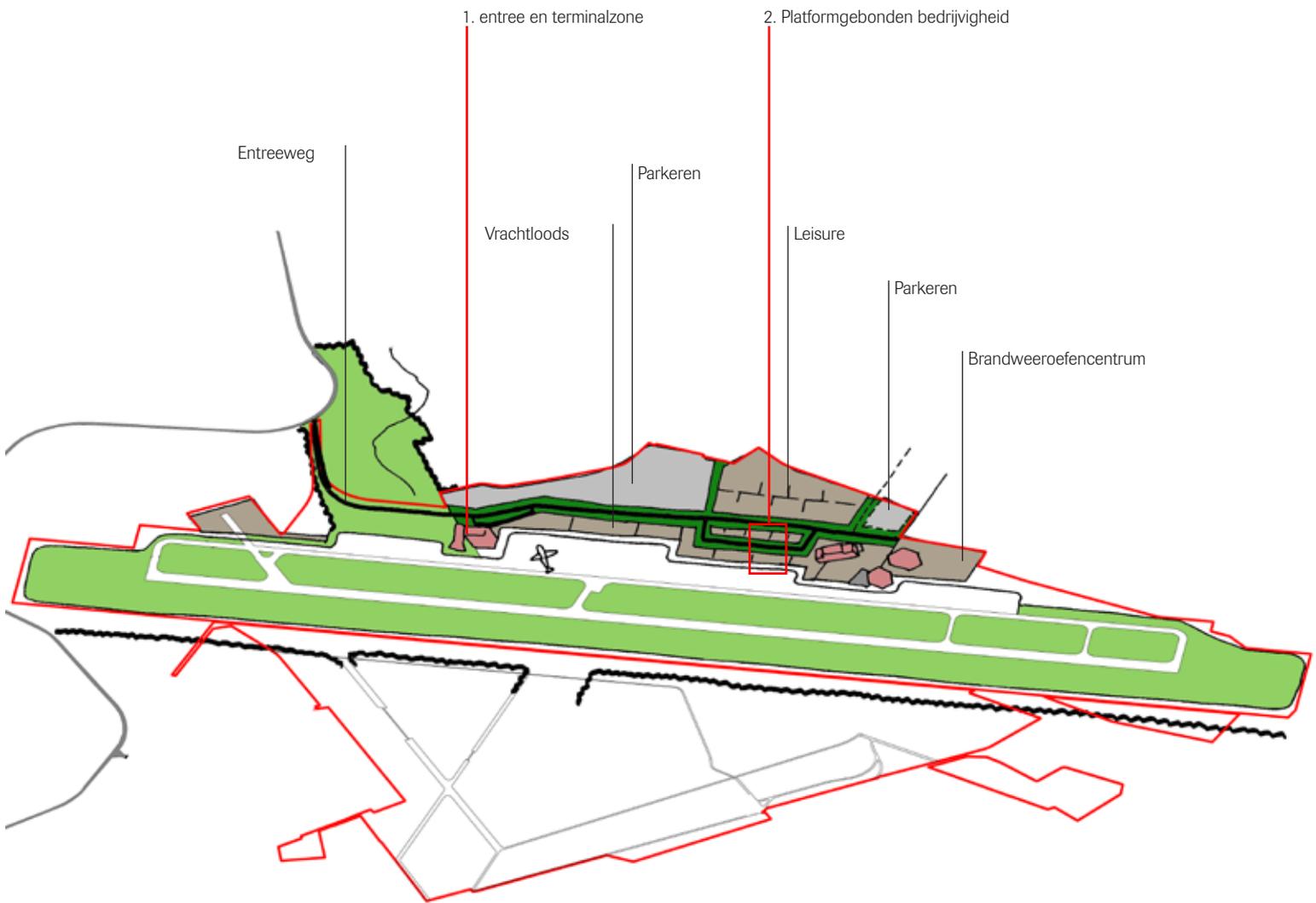
## Bijlage 2.1.1 Basis noord

### 1. entree en terminalzone



### 2. platformgebonden bedrijvigheid



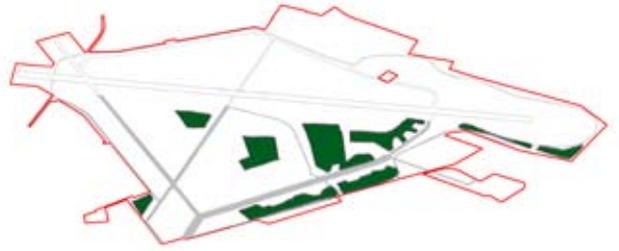


doorsnede E, Vliegveldaan

## Bijlage 2.1.2 Basis Zuid

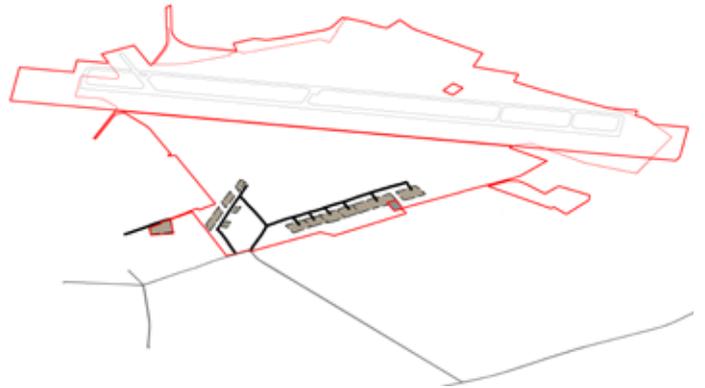
### Bestaande situatie

De zuidzijde van de vliegbasis met verschaald grasland, verspreid bos en een stelsel van start- en taxibanen.



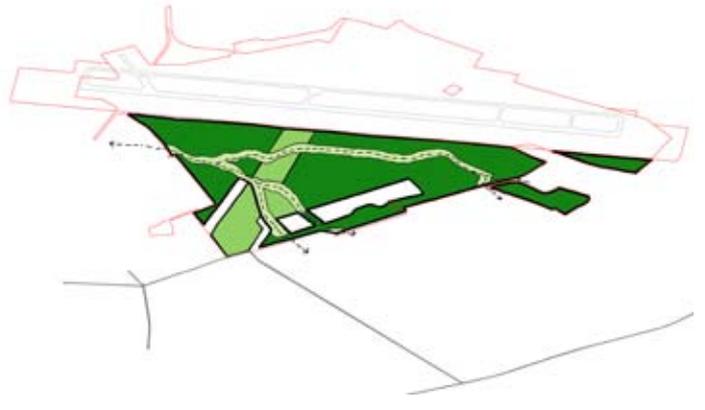
### Ontsluiting en uitgeefbaar

Oprijlanen vanaf de Oude Deventerweg ontsluiten het programma dat langs de bestaande infrastructuur ligt.

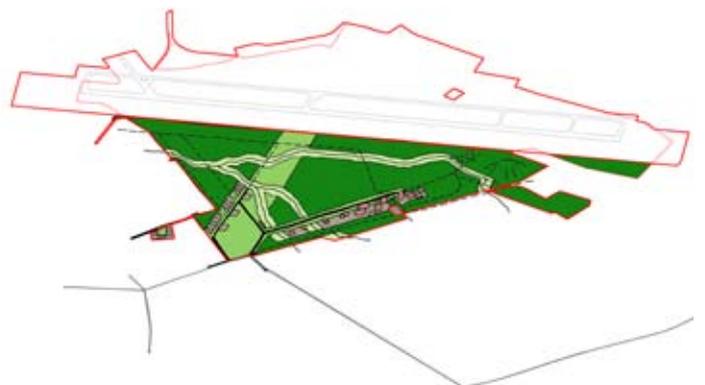


### Landschap

Natuurontwikkeling aan de zuidzijde van de vliegbasis verstevigt de ecologische hoofdstructuur.



### Planschets basis zuid, model B

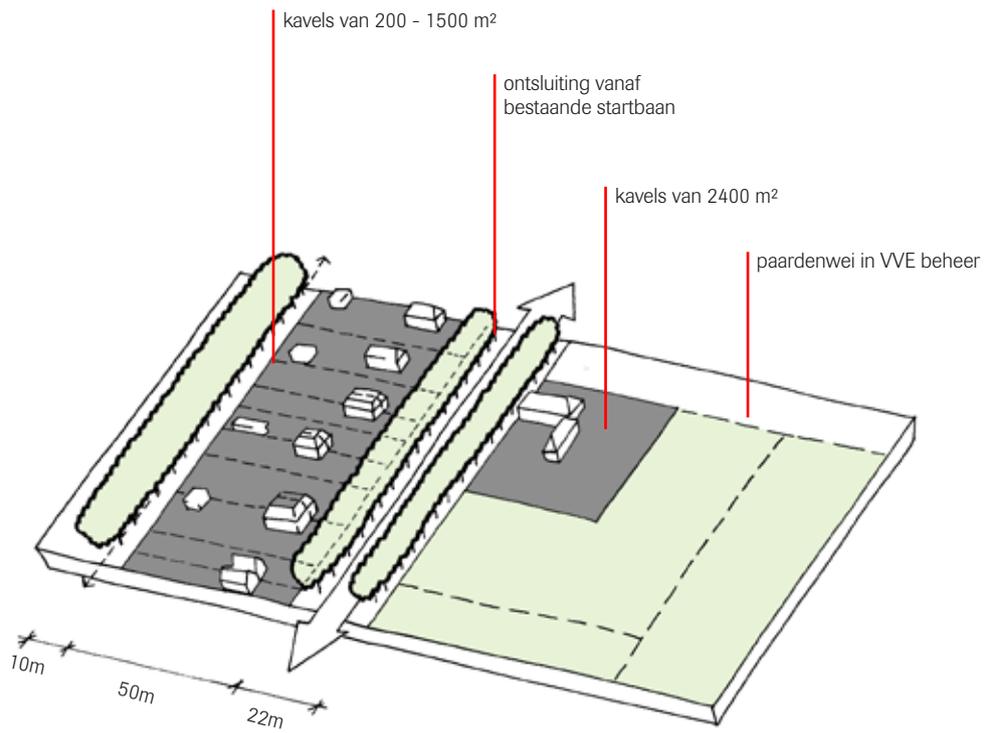




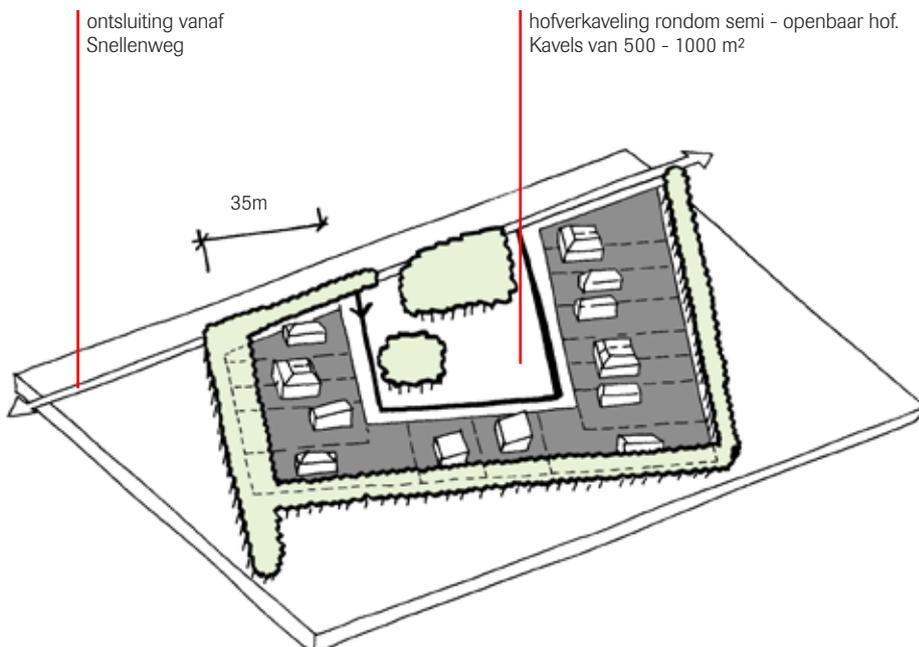
- |   |                     |   |                          |
|---|---------------------|---|--------------------------|
|  | nieuwe bebouwing    |  | bestaand bos             |
|  | bestaande bebouwing |  | nieuw bos                |
|  | beek + beekdal      |  | nat grasland             |
|  | fietspad            |  | droog grasland / weiland |
|  | autoweg             |  | heide                    |
|  | parkeren            |  | compensatie Oostkamp     |
|  | bomenlaan           |   |                          |

## Bijlage 2.1.2 Basis Zuid (midden)

### 1. hippisch wonen



### 2. woonhof

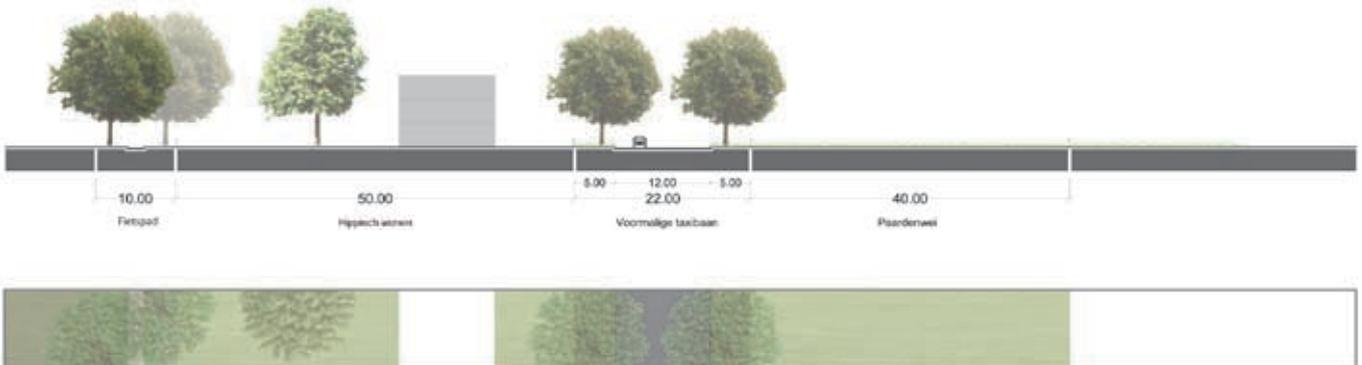
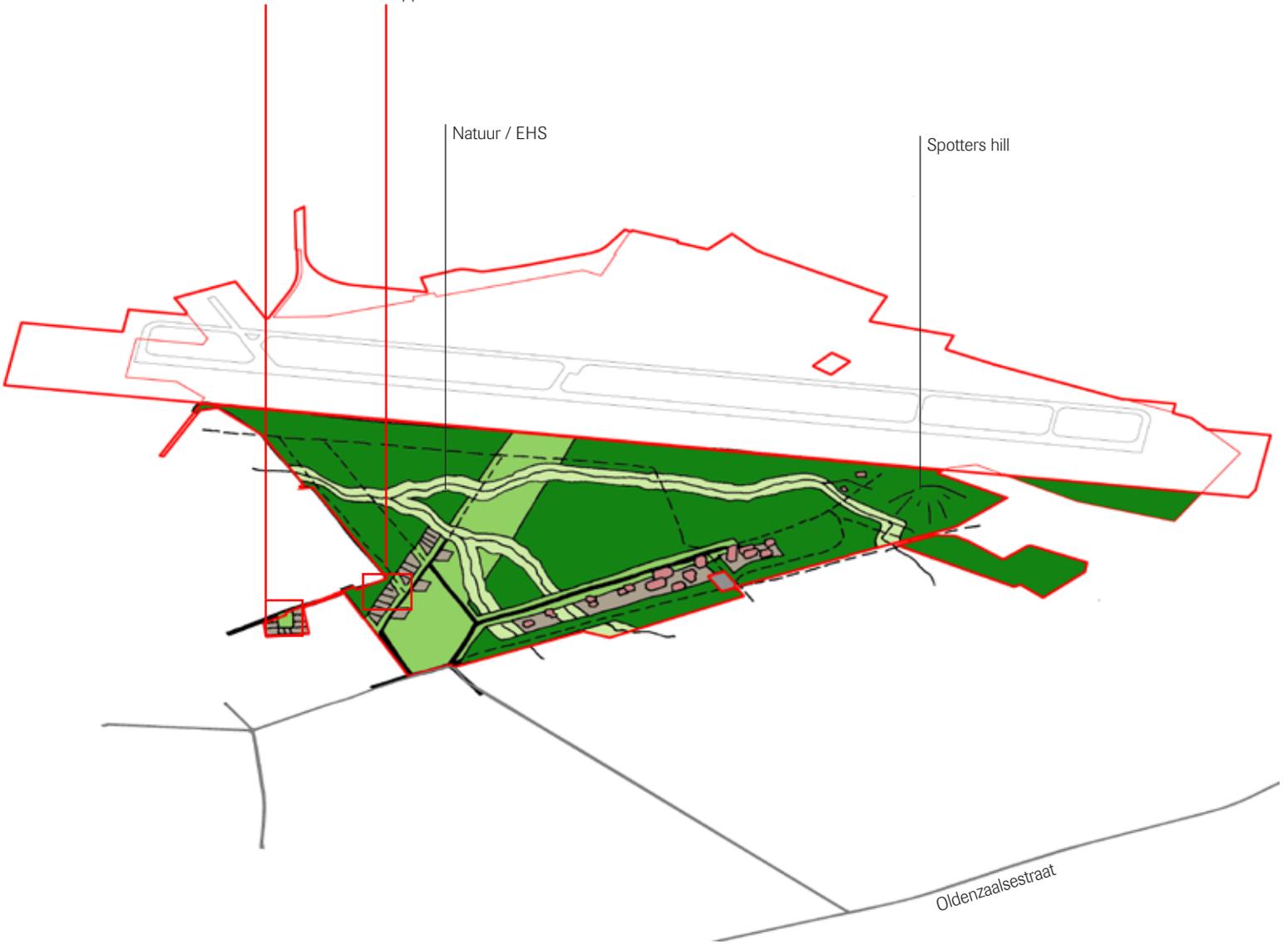


2. woonhof

1. hippisch wonen

Natuur / EHS

Spotters hill

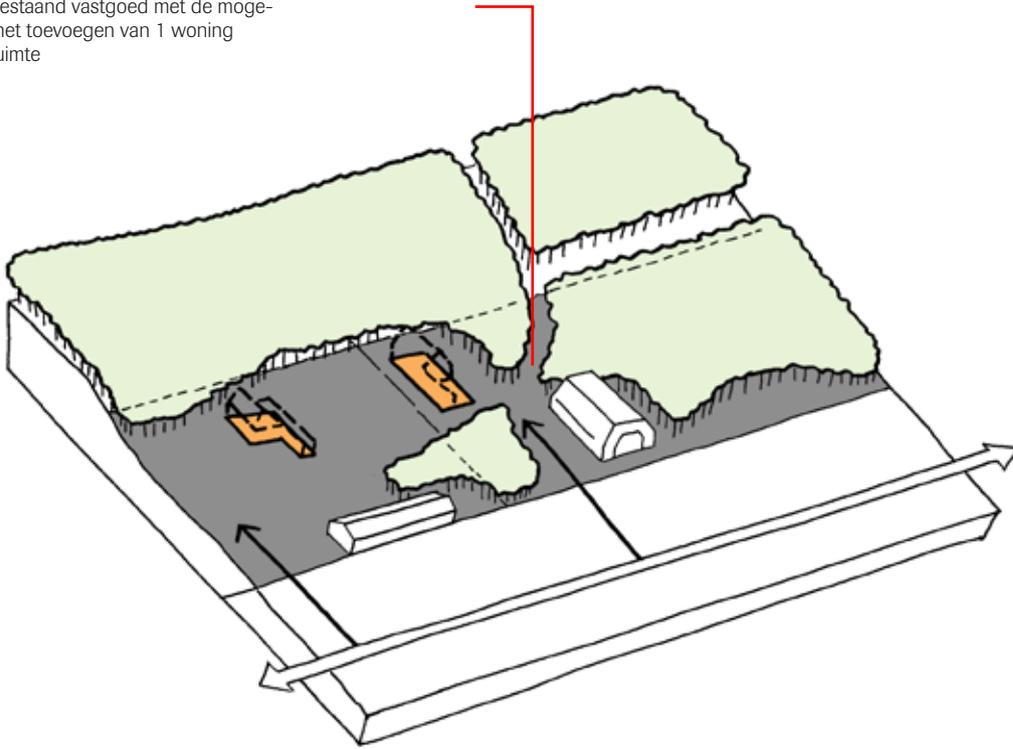


doorsnede F, taxibaan langs hippisch wonen

## Bijlage 2.1.2 Basis Zuid (strip)

### 3. Herontwikkeling bestaand vastgoed

4 kavels van ca 1 ha.  
Hergebruik bestaand vastgoed met de mogelijkheid voor het toevoegen van 1 woning met bedrijfsruimte



### 4. Herontwikkeling bestaand waardevol vastgoed/ dienstverlening - innovatieve bedrijven

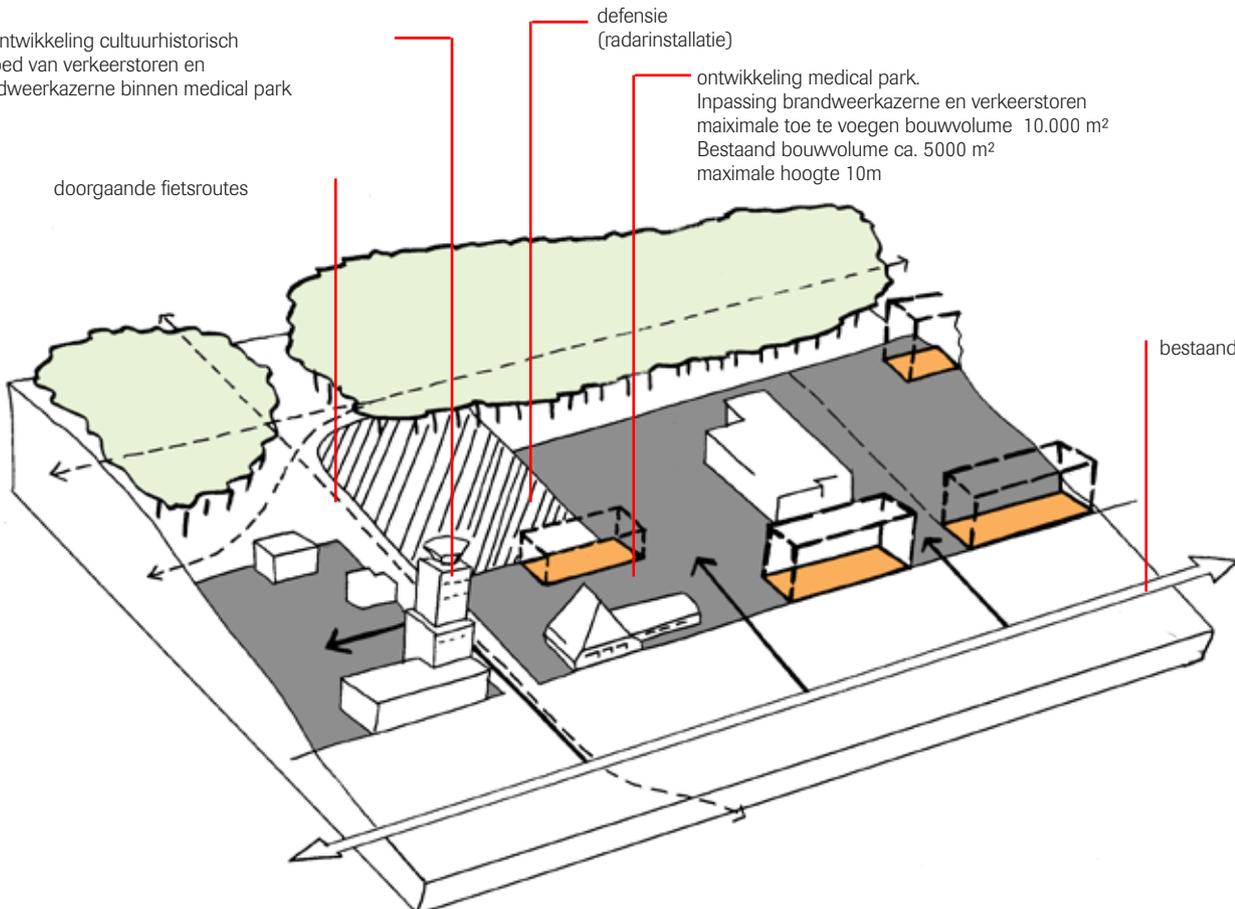
Herontwikkeling cultuurhistorisch erfgoed van verkeerstoren en brandweerkazerne binnen medical park

doorgaande fietsroutes

defensie  
(radarinstallatie)

ontwikkeling medical park.  
Inpassing brandweerkazerne en verkeerstoren  
maximale toe te voegen bouwvolume 10.000 m<sup>2</sup>  
Bestaand bouwvolume ca. 5000 m<sup>2</sup>  
maximale hoogte 10m

bestaande taxibaan





doorsnede G, taxibaan langs verkeerstoren en brandweerkazerne

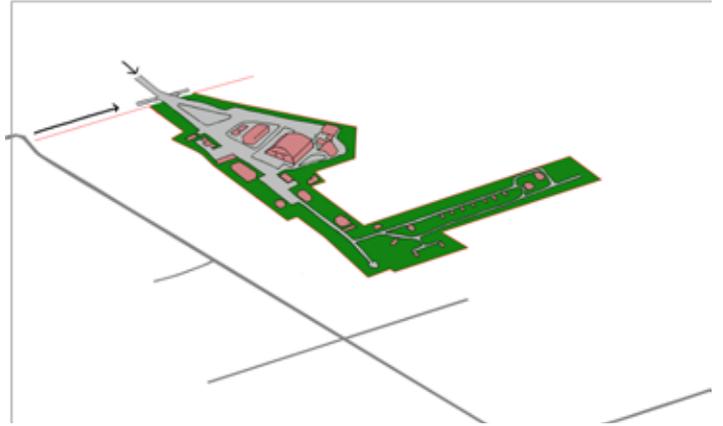
## Bijlage 2.1.3 Oostkamp

### Bestaande situatie

Oostkamp is aangesloten op de vliegbasis via een bestaande taxibaan.

Groene rand rondom Oostkamp benadrukt Oostkamp als enclave op de Lonnekerberg.

Oostkamp bestaat uit twee gedeeltes met een verschillende karakteristiek; het verharde gedeelte rond hangar 11 en de munitiestraat in een meer natuurlijke omgeving



### Landschap

Oostkamp losmaken van de vliegbasis.

Opdelen Oostkamp in twee enclaves.

Introductie van beken op en langs het terrein.

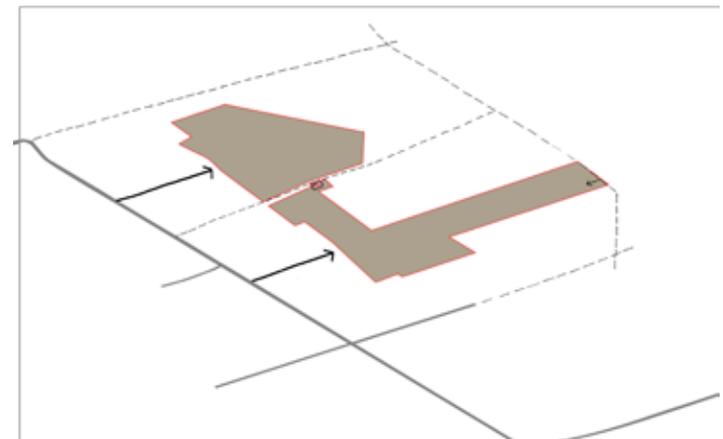
Munitiestraat herontwikkelen als landschappelijk element



### Ontsluiting en uitgeefbaar

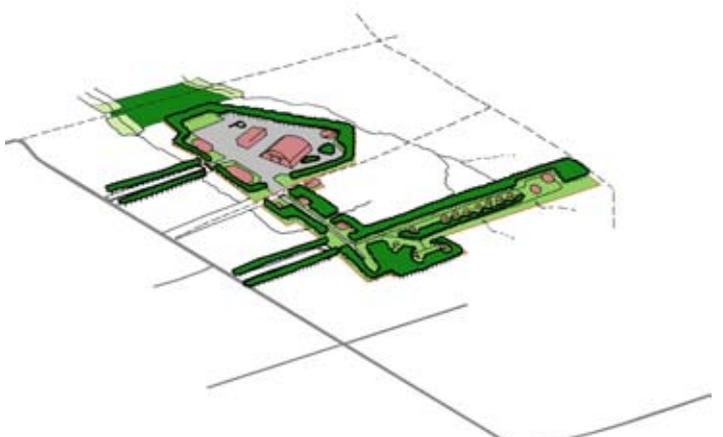
Oostkamp is opgedeeld in twee uitgeefbare terreinen.

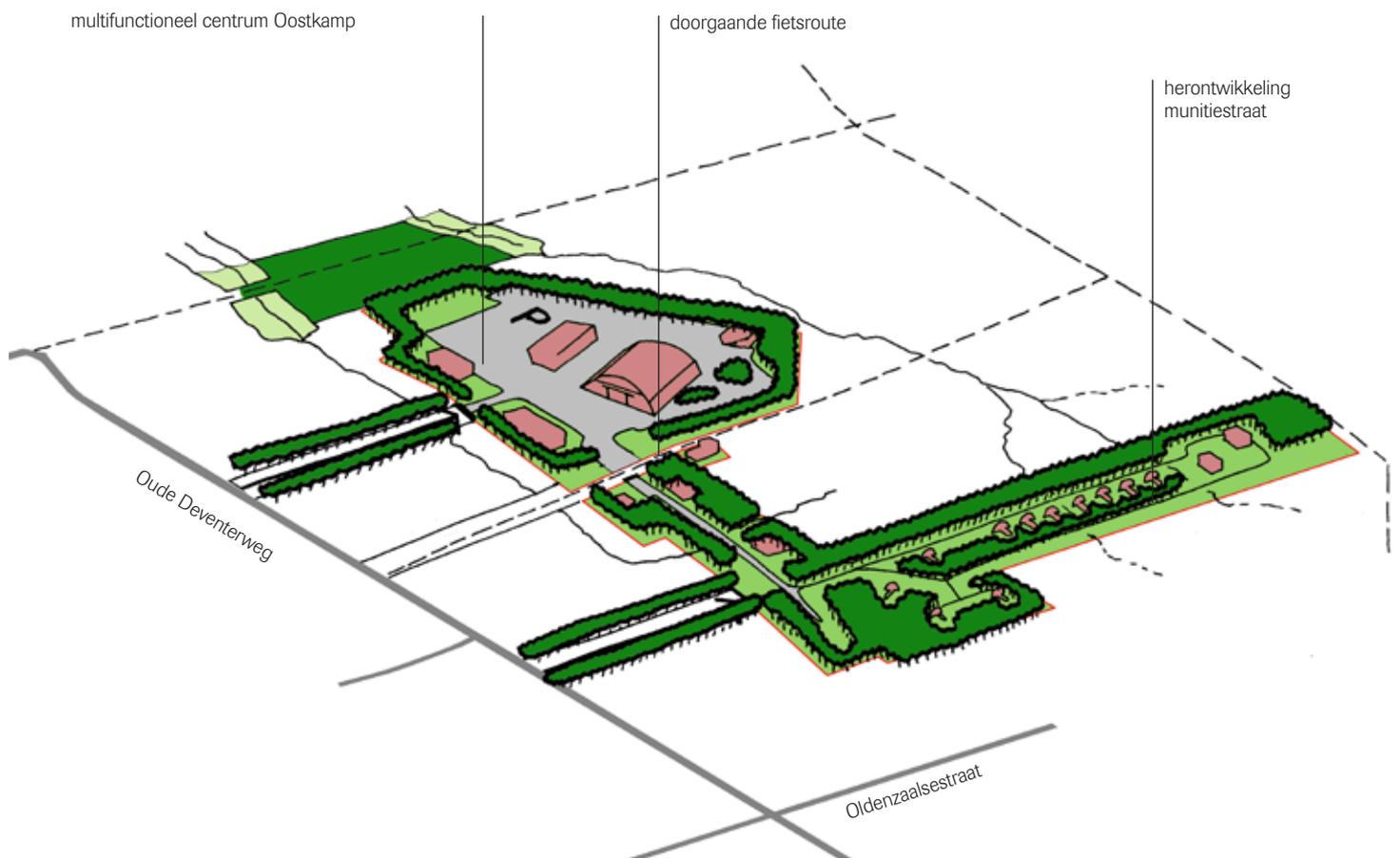
Ontsluiting met twee oprijlanen vanaf Oude Deventerweg



### Planschets Oostkamp

Twee karakteristieke enclaves op de Lonnekerberg

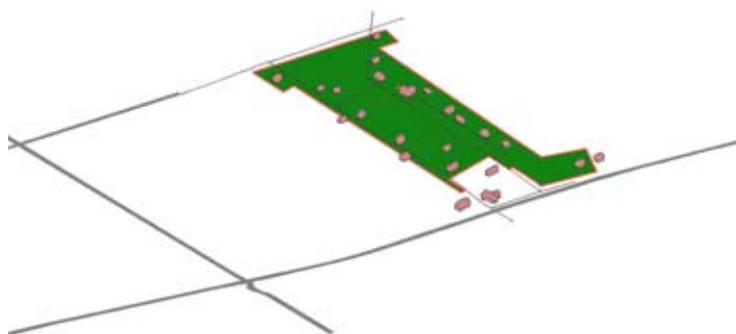




## Bijlage 2.1.4 Prins Bernhardpark

### Historische situatie

Tijdens de tweede wereldoorlog hebben de Duitsers het Prins Bernhardkamp aangelegd als een verstrooid patroon van bebouwing in het Twentse landschap. Dit patroon heeft gediend als inspiratiebron voor de herbestemming.



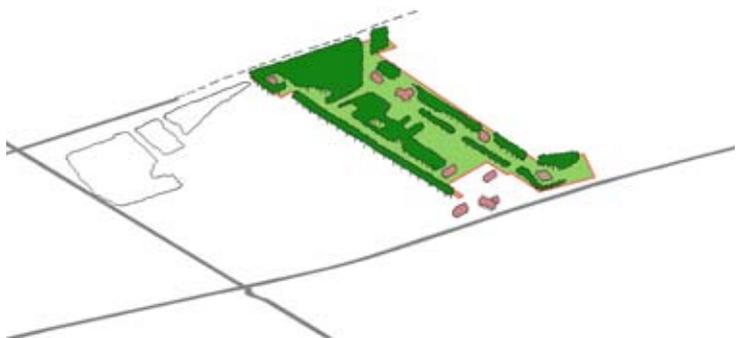
### Bestaande situatie en landschap

De door de Duitsers gebouwde woningen zijn grotendeels verdwenen.

Verspreid over het terrein staan nu nog een vijftal gebouwen waarvan de officiersmess de meest cultuurhistorische waarde heeft.

Rond deze bebouwing staat een robuust bos verdunnend richting de Oldenzaalsestraat. Een lanenstelsel karakteriseert het gebied.

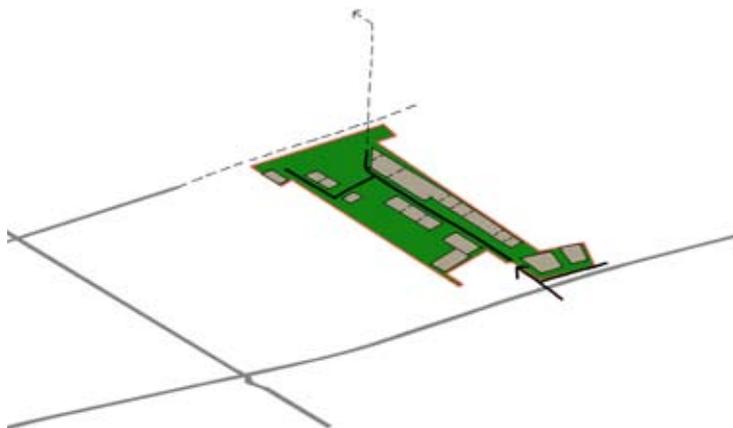
Twee lanen structureren het gebied.



### Ontsluiting en uitgeefbaar

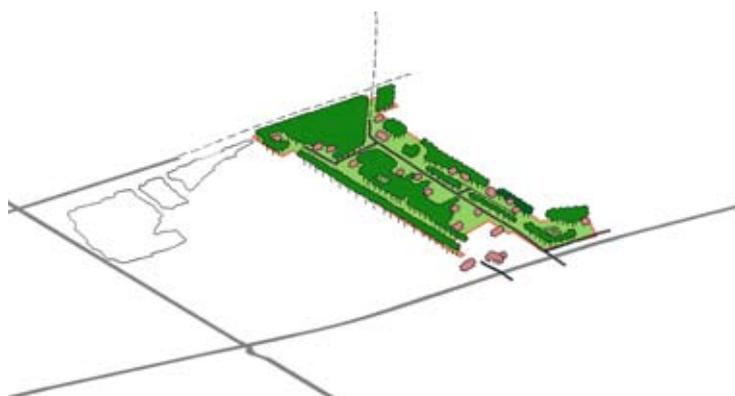
Het Duitse kamp sloot aan de zuidzijde aan op de Oldenzaalsestraat. De nieuwe aansluiting wordt iets noordelijk gelegd en geeft zodoende direct toegang tot de centrale laan van het kamp.

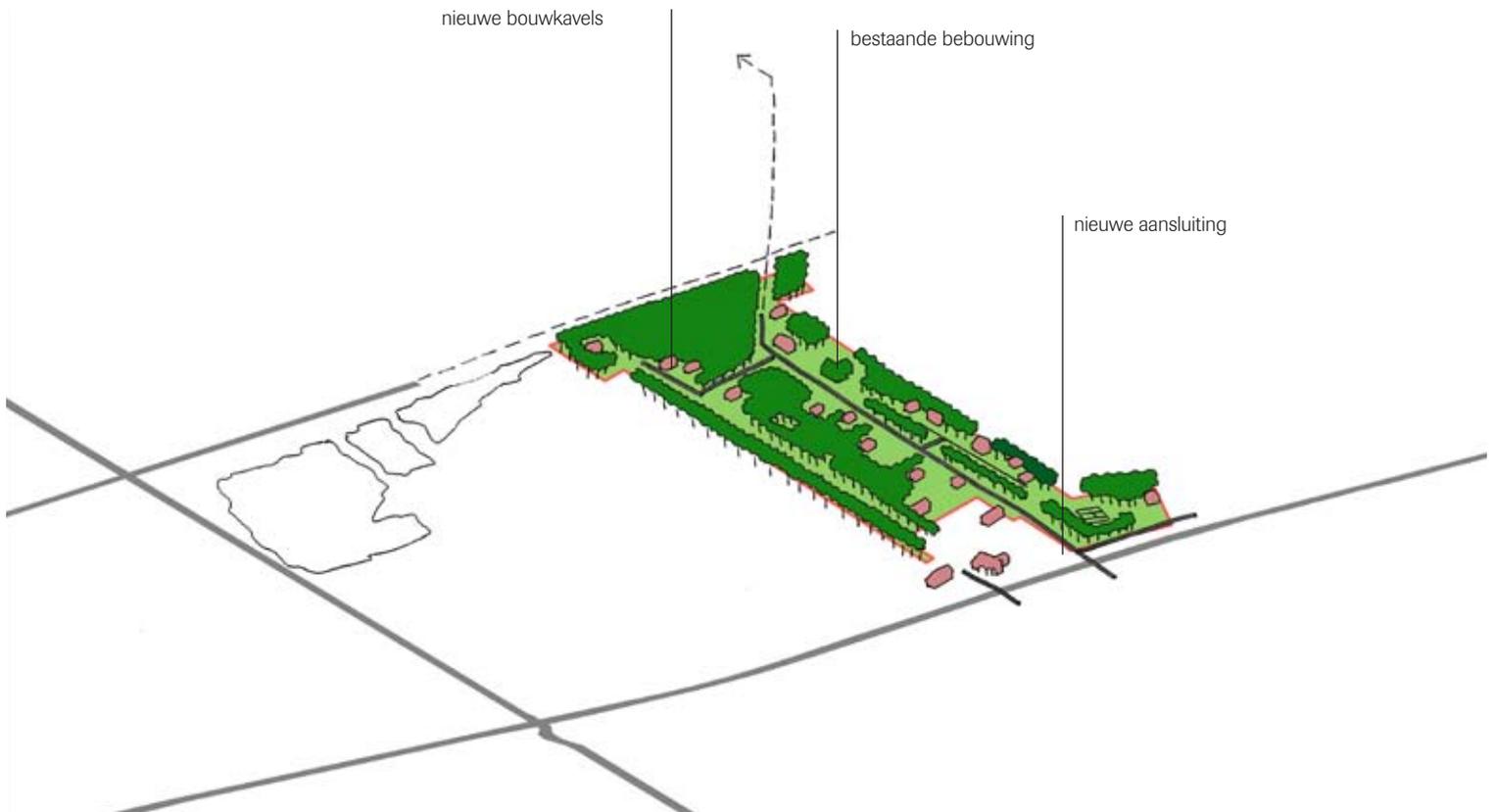
Langs deze ontsluiting zijn tussen de bossen 15 verspreide en kavels getekend met een extensieve invulling.



### Planschets Prins Bernhardpark

Door de bebouwing niet strak in het gelid te zetten ontstaat een patroon dat het gebied voorziet van een nieuw, doch cultuurhistorisch elan.

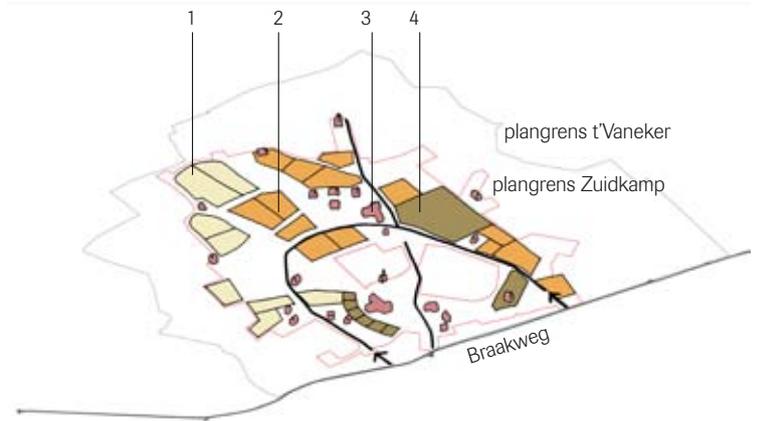




## Bijlage 2.1.5 Zuidkamp

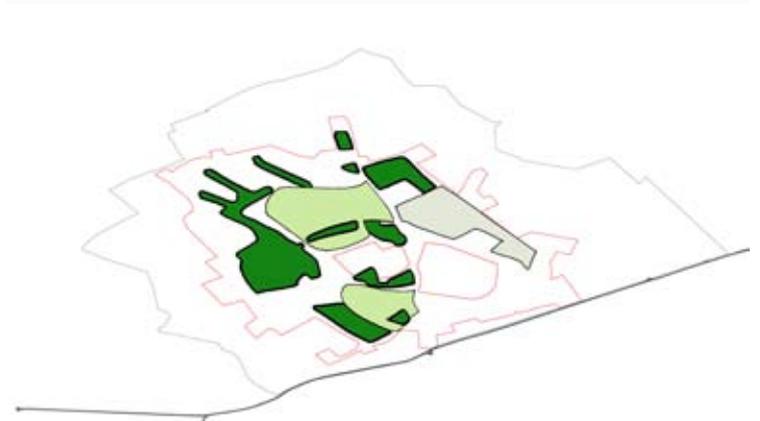
Stedenbouwkundig plan t'Vaneker in Zuidkamp  
Landschappelijk plan met grote kavels en de volgende typologieën:

1. Landhuis
2. Twents cluster
3. Hergebruik bestaand vastgoed
4. Villa Zuidkamp



### Landschap

Middenin blijven twee terrein in gebruik bij defensie.  
Rondom het gedeelte van defensie een afwisselend landschap met bos, open landschap, parkachtig middegebied en een sportterrein.



### Kansen voor ontwikkeling

Zuidkampweg als centrale as met daarlangs de toekomstige monumenten van Zuidkamp.  
de Zuidkampweg ontwikkelen als een parkachtig middegebied met twee 'greens'.  
Fietsroutes via de parkachtige middegebieden verbinden Enschede met de Lonnekerberg.



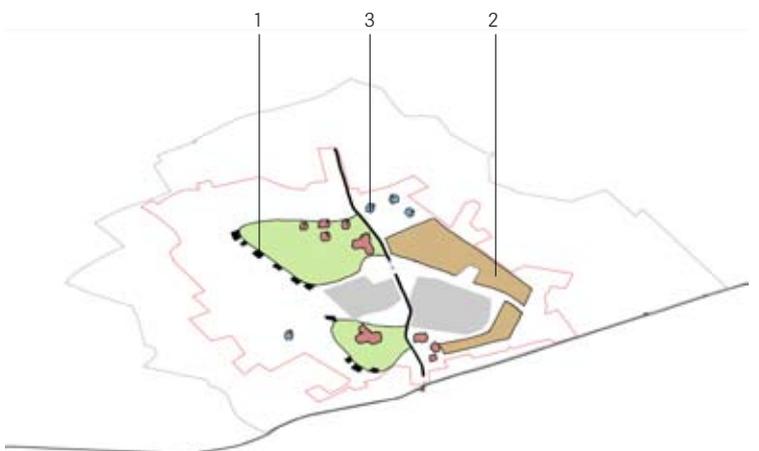
### Structuurvisie basis zuid

Beschermen van cultuurhistorisch belangrijke bebouwing.

Waar mogelijk herontwikkelen van het overige bestaande vastgoed.

Toevoegen van 3 typologieën aan t'Vaneker.

1. Woningen zonder tuin langs het parkachtig middegebied
2. Verdichten op de locatie van de sportvelden
3. Toevoegen van enkele boskavels aan Zuidkamp





 nieuwe bebouwing

 bestaande bebouwing

 beek + beekdal

 fietspad

 autoweg

 parkeren

 bomenlaan

 bestaand bos

 nieuw bos

 nat grasland

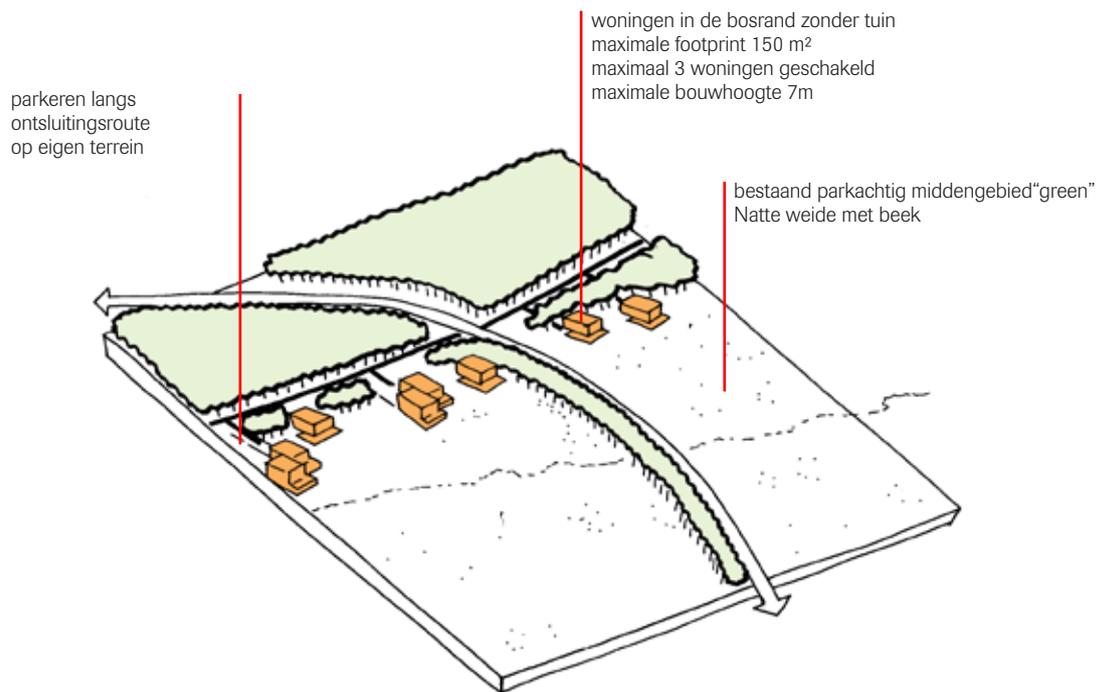
 droog grasland / weiland

 heide

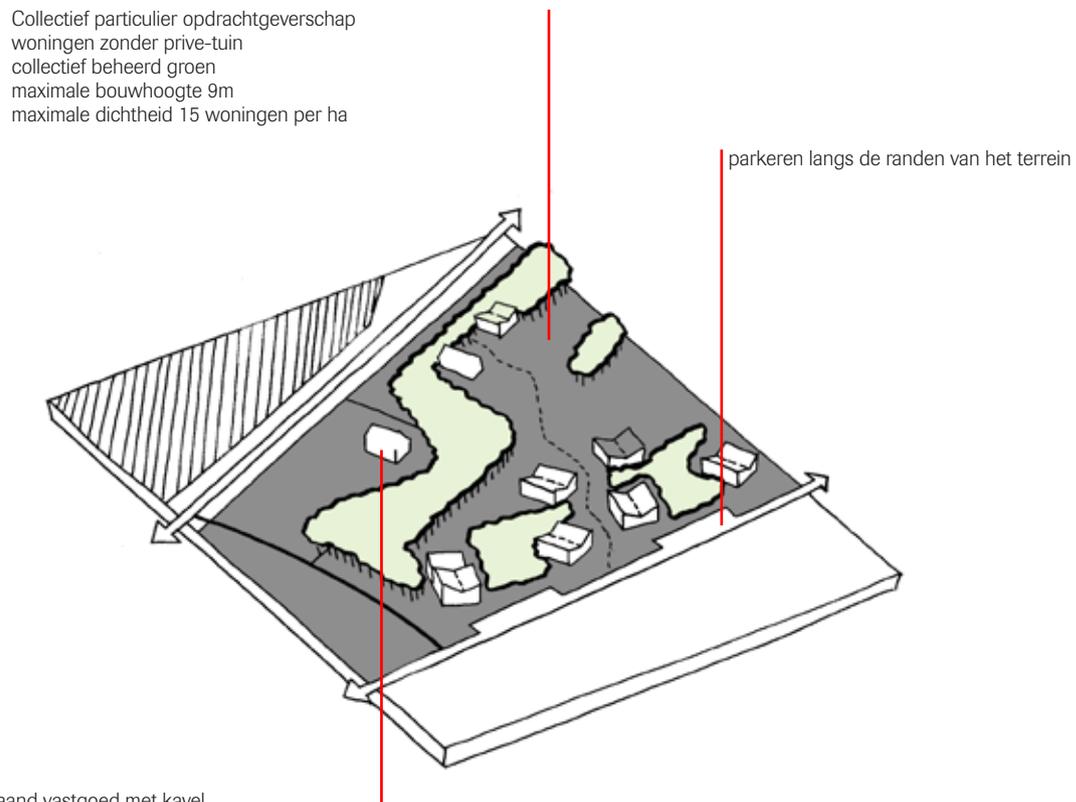
 compensatie Oostkamp

## Bijlage 2.1.5 Zuidkamp

### 1. woningen zonder tuin langs het parkachtige middengebied



### 2. Verdichten op locatie van de sportvelden

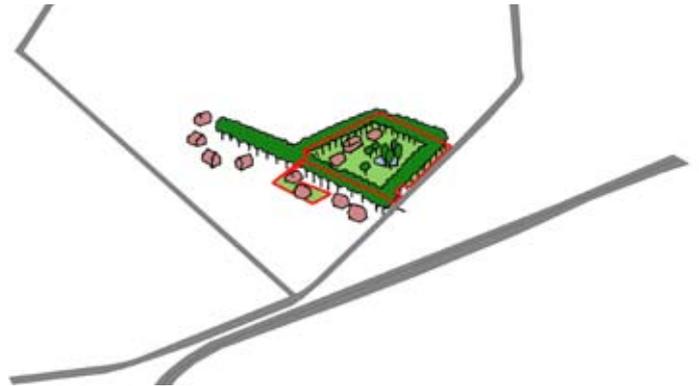




## Bijlage 2.1.6 Kamp Overmaat

### Historische situatie

Bebouwingslint met aan de noordzijde vrijstaande huizen/ barakken en aan de zuidzijde een landhuis met tuin (voormalige eetzaal).



### Bestaande situatie en landschap

De bestaande situatie is grotendeel hetzelfde als de oorspronkelijke situatie.

Aan het landhuis zijn verschillende ruimtes toegevoegd en de bijgebouwen zijn verdwenen.



### Ontsluiting en uitgeefbaar

Ontsluiting als bestaand via de centrale entree weg vanaf de Vargershuizenweg.

Binnen de rijksgrenzen kunnen twee kavels ontwikkeld worden.

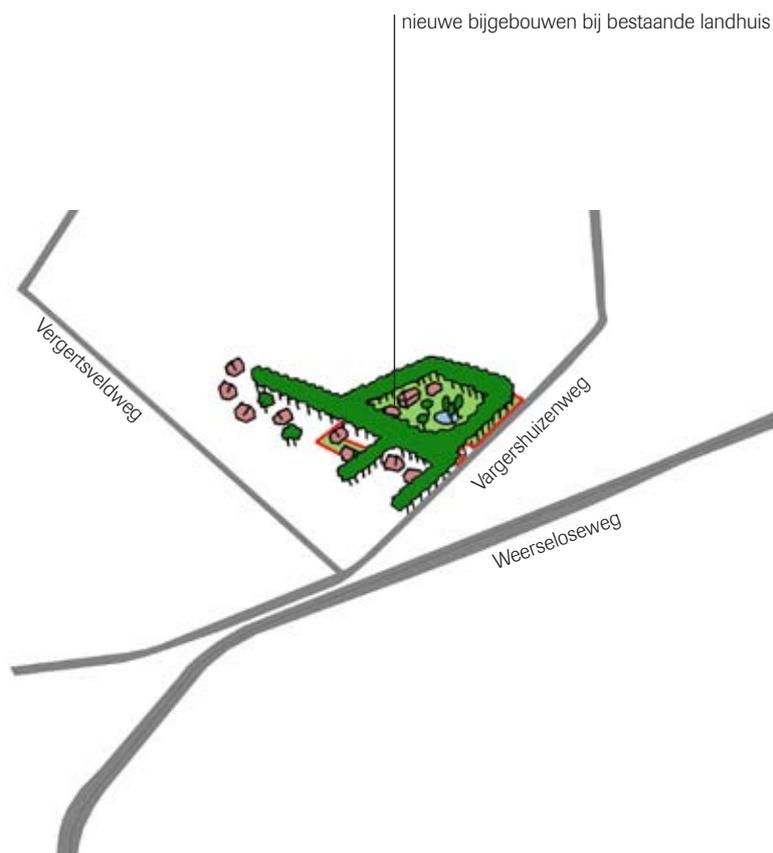


### Planschets Overmaat

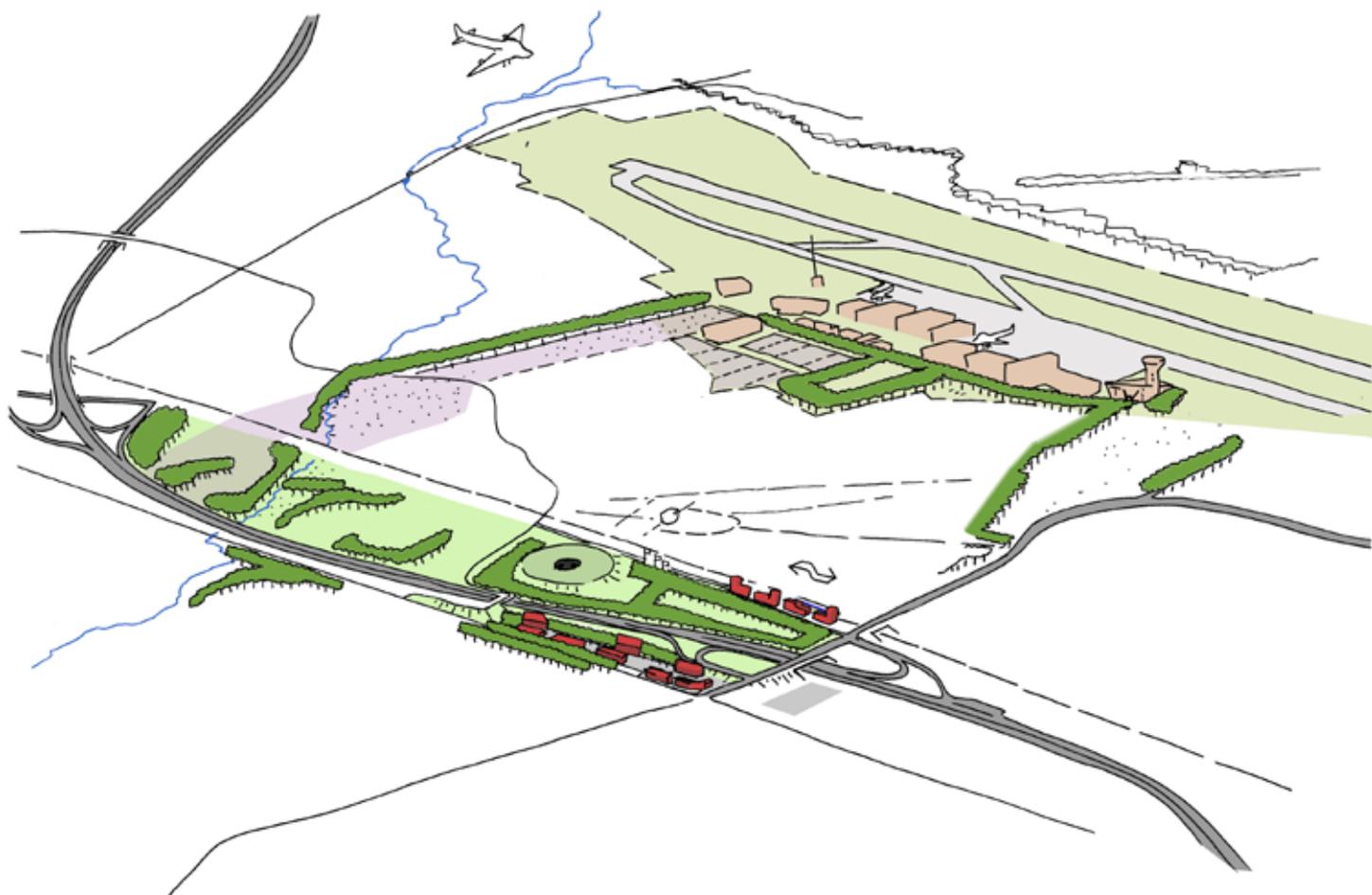
ontwikkeling landhuis met nieuwe bijgebouwen en een herstelde tuin aan de noordzijde van de weg.

Woonhuis aan de zuidzijde van de weg.





**Bijlage 2.1.7 A1 zone**



## **Bijlage 2.1.10 A1 zone**

Een directe aansluiting op de A1 is voor een burgerluchthaven van essentieel belang. Uit een ruimtelijke en verkeerskundige verkenning [30] blijkt dat het maken van een nieuwe afslag ter hoogte van 'Frans op den Bult' de beste mogelijkheden biedt. Deze nieuwe aansluiting ontlast de Oldenzaalsestraat in Hengelo van zijn functie als toegangsweg naar de luchthaven. Bovendien kan in het verlengde van deze ingreep de bereikbaarheid van Enschede / Kennispark vanaf de A1 worden verbeterd. Een verbreding van de Weerseloseweg is aan de orde bij de toenemende congestieproblemen. Die ontwikkeling biedt het momentum om de gelijkvloerse kruising van het spoor met de Weerseloseweg integraal te transformeren tot een ongelijkvloerse overgang, overeenkomstig met de ambities van ProRail. Tot slot biedt de nieuwe afslag de mogelijkheid om de noordelijke (toekomstige) wijken van Hengelo op termijn vanaf de noordoostzijde te ontsluiten.

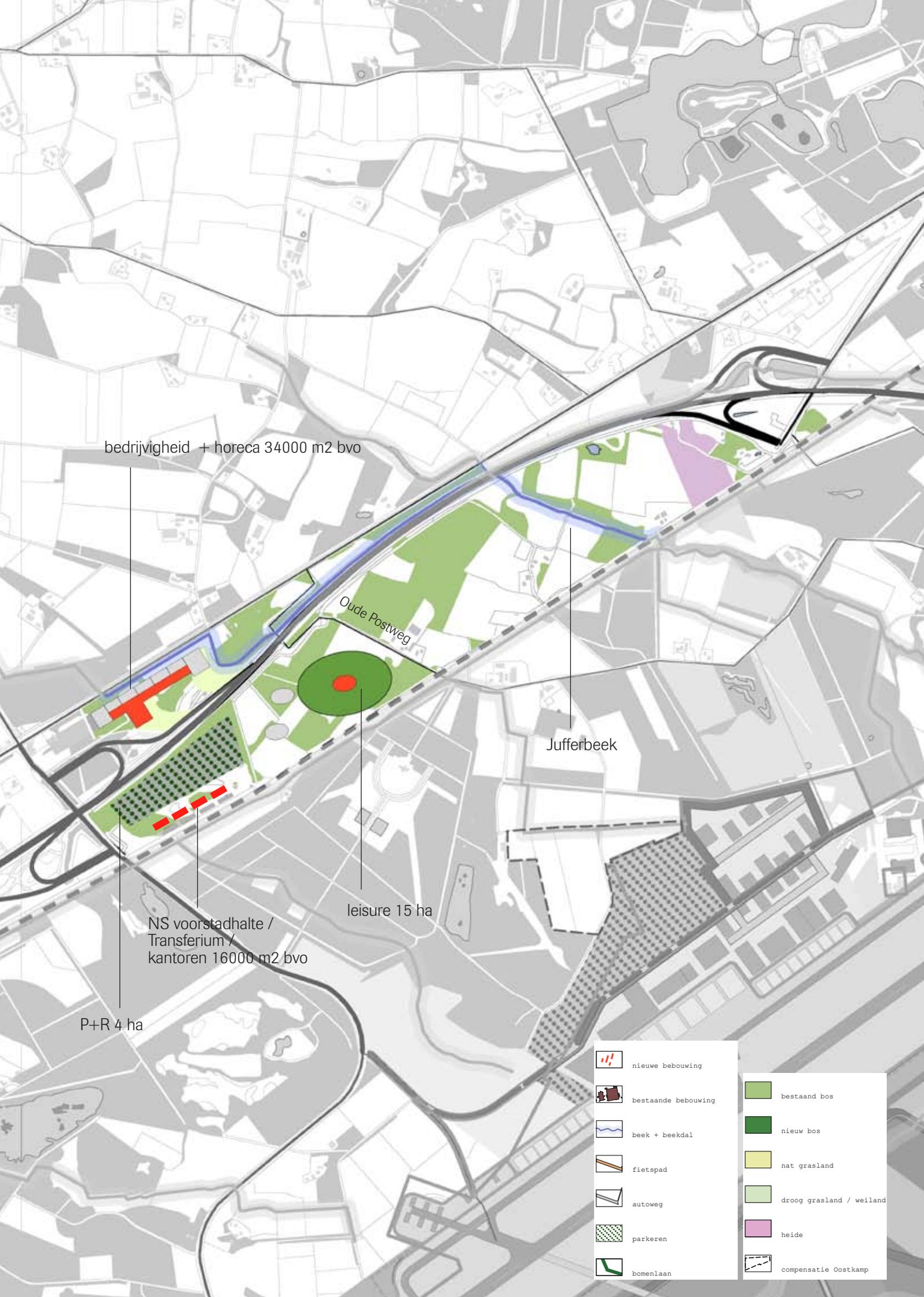
Gecombineerd met de nieuwe afslag van de A1 zou het voor de bereikbaarheid van de luchthaven met het openbaar vervoer aantrekkelijk zijn om een voorstadhalte van de NS te vestigen. Deze multimodale knoop biedt ontwikkelingspotentieel voor een geconcentreerde hoeveelheid kantoren in de commerciële dienstverlening. De concentratie en combinatie van directe snelwegaansluiting, voorstadhalte, kantoren en de nabijheid van een luchthaven maakt het projecteren van een goed geoutilleerd P&R-terrein (transferium) tussen de A1 en het spoor kansrijk. Dit dient op termijn in samenhang te gaan met het realiseren van een openbare vervoershuttle tussen de luchthaven en het NS station / P&R transferium. Daarmee kan ook de parkeerdruk op het vliegveld worden verkleind.

De geografische combinatie van snelweg/A1 en spoorlijn in de nabijheid van de luchthaven maken deze lokatie tot een multimodale knoop, en vormt een strategische asset voor de luchthaven.

Een directe aansluiting op de A1 is van groot belang voor een burgerluchthaven. In combinatie met deze aansluiting is het aantrekkelijk om een NS-voorstadhalte te realiseren, waarmee de openbaar vervoerkansen voor de bereikbaarheid van de luchthaven belangrijk winnen.

Met de realisatie van deze multimodale knoop groeit de ontwikkelingspotentie van deze A1-zone. Gekoppeld aan de NS-voorstadhalte kan een transferium en een compact kantorenprogramma gerealiseerd worden. De parkeerfaciliteiten kunnen ook de naastgelegen leisurefunctie met een grootschalige publieksattractie bedienen. Deze ontwikkelingen zijn geprojecteerd in het gebied tussen de Vliegveldstraat en de Oude Postweg. In het oostelijke groene deel van het gebied is de natuurontwikkeling rond de Jufferbeek opgenomen, zoals vastgelegd in het Landinrichtingsplan.

Tussen de A1 en de provinciale weg is er – naast het ruimtebeslag voor de nieuwe A1-aansluiting – gelegenheid voor aan de ontwikkeling van de luchthaven verbonden bedrijvigheid en horeca. Het gaat daarbij om een beperkte omvang van programma's die ontsloten worden vanaf de provinciale weg N342.



bedrijvigheid + horeca 34000 m2 bvo

Oude Postweg

Jufferbeek

leisure 15 ha

NS voorstadhalte /  
Transferium /  
kantoren 16000 m2 bvo

P+R 4 ha

	nieuwe bebouwing		bestaand bos
	bestaande bebouwing		nieuw bos
	beek + beekdal		nat grasland
	fietspad		droog grasland / weiland
	autoweg		heide
	parkeren		compensatie Oostkamp
	bomenlaan		

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