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Office Parks, Accessibility and Location Policy

An Analysis of the Dutch Case

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Contents

List of Tables.....	iii
List of Figures.....	iv
Acknowledgments.....	v
Abstract.....	vi
About the Author.....	vii
1. INTRODUCTION.....	1
1.1 Research Scope.....	2
1.2 Objectives of the Research.....	3
1.3 Research Design.....	3
1.4 Methodology.....	4
2. CONCEPTUALISATION.....	4
2.1 Business Parks and Office Parks.....	4
2.2 Sustainable Office Parks.....	5
2.3 Accessibility.....	6
2.4 Land use Planning.....	7
2.5 Framework for Location Policy for the Office Parks.....	8
3. LOCATION POLICY FOR THE OFFICE PARKS.....	9
3.1 Public Domain.....	10
3.2 Private Domain.....	16
4. DUTCH CASE.....	20
4.1 Analysis Framework.....	20
4.1.1 Land use Change.....	22
4.1.2 Urban versus Rural Areas.....	23
4.1.3 Inner City versus Peripheral Locations.....	24
4.1.4 Parking Policy.....	25
4.2 Discussion: Analysis Results.....	26
5. CONCLUDING REMARKS AND RECOMMENDATIONS.....	27
REFERENCES.....	29

List of Tables

Table 1. Examples of options for sustainable production processes and sustainable site arrangements	6
Table 2. The relationship between land use planning and transport	7
Table 3. Operationalisation of the options for accessibility of the sustainable business parks	9
Table 4. Governmental division of responsibilities in the Dutch spatial planning.....	10
Table 5. Urban and rural areas with population densities.....	12
Table 6. Private actors in developing office parks	16
Table 7. Highly rated local locational factors	19
Table 8. The most important location factors for service sector at the regional and local levels	19
Table 9. Distribution of land use in the Netherlands	22

List of Figures

Figure 1. Activity type.....	2
Figure 2. Perspective.....	3
Figure 3. Geographical level.....	3
Figure 4. Accessibility in the land use and transport systems.....	7
Figure 5. Distribution of the Office Parks in the Dutch provinces.....	21
Figure 6. Distribution of the Office Parks per province with respect to BVO.....	21
Figure 7. Distribution of the Office Parks vis-à-vis degree of urbanization.....	23
Figure 8. Distribution of the Office Parks vis-à-vis distinction of inner city/peripheral locations.....	24
Figure 9. Office Parks with parking norms vis-à-vis distinction of inner city/peripheral locations.....	25

Abstract

Road-transport is an important source of congestion in the cities. Office parks, which are recognized with their high intensity of labour and visitors, contribute to road-based commuter and business transport. Consequently, their accessibility by environmentally friendly means of transport is crucial for the environment and economy. The aim of this paper is to analyse the role of location policy in The Netherlands in determining the extent of office parks' accessibility by environmentally friendly means of transport.

Initially, leading location policy principles relevant for the accessibility of office parks are examined. Selected policy principles coincide with each other in their explicitly or implicitly stated underlying goal: preventing suburbanisation. Secondly, implementation of these principles are analyzed in the light of four selected criteria: Land use change; urban versus rural areas; inner city versus peripheral locations; and presence of parking policy. Common to these criteria is that they provide insight for the spatial distribution of office parks and use of public transport as environmentally friendly alternative.

Results indicate initially that land use change is being experienced in favour of more urbanization. The second result is that majority of the office parks are found to be located in the urban areas in The Netherlands. Thirdly, distribution of the office parks within the urban areas displays a nearly equal representation between the inner city and peripheral locations. However, this trend is expected to change at the expense of inner city office parks. And finally, presence of parking policy does not always provide sufficient results for improving accessibility. Combination of these results leads one to conclude that demand for accessibility by car, which is a strong location factor in the eyes of office based companies, is dealt with a (rather) flexible approach by the governmental organisations. In that, national policy goal of keeping the economic vitality and competitiveness of the regions and cities plays a determinant role.

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Office Parks, Accessibility and Location Policy: An Analysis of the Dutch Case

Fatma Saçli

1. INTRODUCTION

It is acknowledged that transport is a derived effect of human activities. Economic activities play a crucial role in generating transport. Particularly, car transport driven by economic motives indicates high figures. For instance commuter and business transport makes up 42 % and 21 %, respectively, of the total car kilometers in The Netherlands (Ministry of Economic Affairs 1999).

This study focuses on the accessibility of the office parks. Accessibility is a crucial phenomenon for the economy and the environment. However, current situation indicate problems related to accessibility of the office parks. There are two significant trends in this context, which are causally interlinked. The first trend is the increasing distances between work locations and other activities, and the second one refers to the use of non-environmentally friendly means of transport to overcome these distances. As a result, various environmentally and economically undesirable circumstances such as air and noise pollution, safety issues, traffic congestion, etc. occur. Among these circumstances, congestion is considered as a striking problem for accessibility especially when it reaches to a stage of affecting the functioning of economic system such as leading to a loss of for instance "approximately 26 million working hours in 1996 in the traffic jams" (Ministry of Economic Affairs 1999, 87).

Accessibility of the office parks is not only related to the transport systems but also to their location choice. The latter falls within the scope of land use planning and partially overlaps with the transport policy. Actually, transport and land use planning are interdependent policy fields. They are prone to the influence of exogenous factors such as socio-economic developments. Office parks in this context are described as the business sites, which are dependent on intensive commuter and possibly business

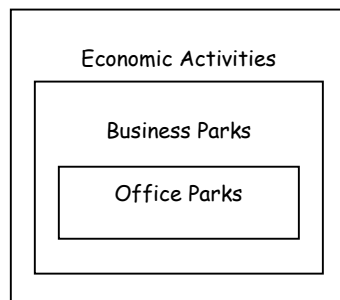
transport. This nature of office parks makes the inner city locations ideal places, which are rich in public transport infrastructure. It is evident that location choice and availability of public transport infrastructure play a role in influencing the modal choice of the passengers.

This paper¹ aims to analyze the extent that accessibility is considered as a *location factor* for the Dutch office parks. Currently, demand for office locations is biased towards peripheral areas. Practice shows that supply of office space in the periphery is increasing. There are various factors that force the demand and actual supply shift away from the inner city locations. Accessibility by car appears as one of the leading location factors. This situation leads us to examine the role of sustainable accessibility of office parks vis-à-vis the choice of their locations.

1.1 Research Scope

The research of accessibility of office parks is structured around three lines of thinking: activity type, perspective and geographical level. Keywords of the research are placed in these lines, ranging from general to specific. Scope of the research, which corresponds to the evolution of all keywords, is outlined in figures 1, 2 and 3:

Figure 1: Activity Type



Economic activities can take place in either a physically scattered manner or in proximity. Companies in physical proximity in a designated area form the business parks. Office parks are but one type of business parks, which have high employment intensity and therefore high dependency on 'passenger' accessibility. Therefore, office parks are the first foci of this research.

¹ This research is a sub-component of a PhD research that the author is currently involved in. Overall goal of the PhD research is to examine the role of integrated land use and transport policy for the accessibility of a selected group of business parks in the Netherlands. Office parks constitute a single part of the selected business parks. Selection of other type business parks is under consideration.

Sustainable development aims to keep balance between economic development, environmental quality and social responsibility. Accessibility by environmentally friendly means of transport is considered as a way for achieving sustainability. Land use planning is an important policy instrument for the fulfilment of this goal. Therefore, two other foci of this research are accessibility and land-use planning.

Figure 2: Perspective

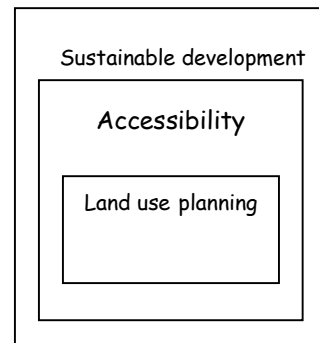
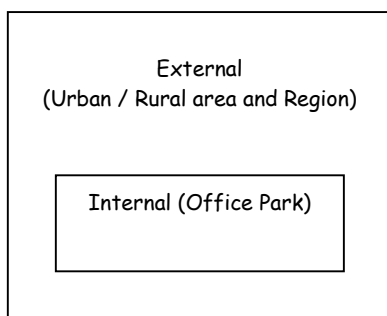


Figure 3: Geographical level



Land use planning of an office park as related to accessibility is linked to two geographical levels: Externally, office park is linked to a region and urban /rural area and its accessibility is influenced by its relative location in these areas. Internally, parking policy is a tool to determine the extent of accessibility within an office park.

To sum up, this research focuses on the interrelation of three components: Office parks, accessibility and land use planning. This interrelation comes into existence with the following question: *What is the role of land use planning in achieving accessible office parks?* The analysis covers external connection of office parks to the region and urban areas on the hand, and parking policy at internal level on the other hand.

1.2 Objectives of the Research

This research aims to grasp the extent that location choice plays a role for achieving accessible office parks in the Netherlands. The analysis examines two processes in the selection office parks' locations: (1) Public policy making (2) Influence of the private actors in the decision-making and implementation process. The aim is to identify the discrepancies between policy plans and implementation and the underlying reasons for these discrepancies.

1.3 Research Design

The *first chapter* of this report deals with a brief introduction of the subject matter, statement of the research objectives and the methodology. The *second chapter*

identifies the concepts, which form the backbone of this research; and explains the interrelation between them. In the *third chapter*, location decision-making process is analyzed from two viewpoints: Public and private domains. Initially, office parks' location and accessibility issues are examined in the Dutch spatial planning context. Following that, it is attempted to examine the influence of private domain in curbing the trends towards peripheral office locations and hence accessibility by car. Underlying conditions for the discrepancies are identified. The *fourth chapter* aims to reflect upon the policy analysis by examining the actual situation of office parks' locations and future plans. The *fifth chapter* provides concluding remarks and formulates policy recommendations for the Netherlands, and other EU member states including the accession countries.

1.4 Methodology

Two methods are employed in this research: Data consolidation and policy assessment. *Data consolidation* relies on literature review and policy analysis. This method facilitates construction of the theoretical basis of the research. *Policy assessment* method is conducted by reviewing the implementation of the policy plans.

2. CONCEPTUALIZATION

2.1 Business Parks and Office Parks

A business park is a site that is designated for economic activities in the field of trade, industry and commercial services (IBIS 2002b). Public actors decide on the locations of business parks in spatial plans. Private actors are also involved in this process by influencing the quantity, quality and location of supply.

Business parks are agglomeration of companies in physical proximity. These features provide certain benefits. Local authorities favor the establishment of business parks to ensure intensive use of land and create strong business environments in their localities. In the private sector, companies receive various benefits from being a part of the business parks. First, the agglomeration factor leads to decreased costs for common maintenance services. Secondly, parks with companies in similar sectors benefit from joined marketing activities and increased exposure. Thirdly, business parks embody conditions for synergy between companies. Synergy can be based on activities such as sharing and exchanging of materials and streams, professional knowledge and expertise etc.

The Dutch Ministry of Economic Affairs (EZ) and Ministry of Housing, Spatial Planning and Environment (VROM) define five types of business parks (cited in IBIS 2002a). (1) Heavy industrial parks, (2) Harbor sites, (3) Mixed business parks, (4) High value business parks, (5) Distribution parks (for other classifications, see Geerlings and Saçli 2002).

One can observe that the sites, which are solely composed of offices, are not considered as a part of the business parks' debate in the Netherlands. However, the sites, which are partially occupied by offices, are named business parks. In the Dutch context, office parks are considered a separate group of economic activity and are called as 'office locations'. An office location refers to a parcel or a group of adjacent parcels, where buildings are constructed primarily for office functions (IBIS 2002b). The criterion defining office locations is related to their size: "The existing and planned (to be realized) gross floor space of the offices should be at least 10 000 m²" (IBIS 2002b).

As mentioned above, office parks, whether treated as a single entity or a sort of business park, share common features. Therefore, we consider office parks as part of the business parks.

2.2 Sustainable Office Parks

Concerns for sustainability in relation to the functioning of office parks bring in two new dimensions to the activities in progress: temporal dimension and multi-disciplinarity. With respect to *temporality*, sustainable development is a concern not only for the office parks at the planning and development phase but also for the existing parks which might be in relatively good state or in need of restructuring. Furthermore, incorporation of sustainable development principles into the functioning of office parks is not a final goal but a *continuous process*. Secondly, the extent of sustainability efforts covers a large variety of activities, which demand *multi-disciplinarity*. These activities can be categorized in two groups in Pellenbarg's (2002) terms, which are listed in Table 1:

Table 1: Examples of options for sustainable production processes and sustainable site arrangements

Sustainable Site Arrangements	Sustainable Production Processes
More intensive use of space Public utilities with many useful effects Joint commercial firm facilities Multi-modal transport and high-quality public transport	Joint use of utilities and firm functions Collective gathering and removal of waste materials Managing people's transport

Source: Pellenburg (2002) (adapted)

Table 1 shows that numerous activities are needed to achieve sustainable office parks. These activities facilitate the sustainable site arrangements and sustainable production processes. Accessibility is one of the implicit goals for sustainable business parks. Van der Heijde (2002) indicates that the working hours lost in the traffic jams cause a loss of approximately one billion Euros per year in the Netherlands. It can be observed that accessibility of the office parks becomes a critical issue especially when congestion turns into an alarming problem. This situation raises questions about how economically driven accessibility concerns may lead to a sustainable situation since environmental and social aspects of accessibility also need attention.

2.3 Accessibility

Accessibility is a term used in various disciplines. Our conceptualization of accessibility is based on the work of Geurs and Ritsema van Eck (2001, 36) who suggest that:

Accessibility is the extent to which land use and transport system enables (groups of) individuals or goods to reach activities or destinations by means of a (combination of) transport mode(s).

For clarity reasons, it is important to note that our accessibility conceptualization is a normative one. We assume that only accessibility by means of environmentally friendly means of transport can contribute to sustainable development. These modalities in the Dutch context are public transport and cycling (and walking if possible).

There are four components inherent in the accessibility concept: land use, transport, time and individual (Geurs and Ritsema van Eck 2001). None of these components dominate another and they all interact. However, in practice, land use planning and transportation, are the two components, where there is a strong tradition of policy making. They are, to some extent, able to affect temporal and individual components of accessibility. Interdependency between transport and land use planning are summarized in Table 2.

Table 2: The relationship between land use planning and transport

- Higher population density decreases distance traveled and use of the car;
- Provision of local facilities decreases distance traveled;
- Larger settlement sizes are associated with shorter trips and a lower proportion of car use. The exception is very large cities where longer trips occur.
- Within a city, trips made are shorter in the inner area, increasing towards the edge and decreasing again at the periphery where stand-alone towns are located;
- People living close to a bus stop or railway station make a lower proportion of car journeys;
- Areas of compact mixed use (e.g. areas close to city centres) are associated with shorter trips and a lower proportion of car use.

Source: University of Southampton, Transport Research Group,
<http://www.trg.soton.ac.uk/research/TVNetwork/themes/theme3/overview.htm>

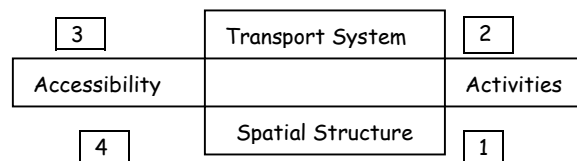
In the light of transport and land use interconnection, the focus is refined towards the land use component of accessibility.

2.4 Land-use planning

Land use plan is a coherent set of decisions about the use of land and ways to achieve the desired use (FAO 1993). It is an important instrument of the planning process at different administrative levels, such as national, regional, local etc. The land use planning process is primarily concerned with guiding and shaping new development and redevelopment of the way land is allocated and utilized for different goals.

Land use planning policies indicate close links with other policy fields in the region such as socio-economic policies, welfare policies etc. Consequently, space has to be distributed for different activities. These activities have among others, residential, commercial, industrial, business, recreational nature. Therefore, land use planning emerges as a policy field, in which all the other policy principles are reflected. We assume that land use planning influences first and foremost accessibility. Figure 4 shows how spatial structure plays an initial role in structuring the interdependencies between the activities, transport system and accessibility in a region.

Figure 4: Accessibility in the Land use and Transport systems



Source: Wegener 1987 (adapted)

According to the figure developed by Wegener (1987), spatial structure of the regions demarcates distribution of activities in space (1). Activities generate traffic in the transport system (2). Response of the transport system affects accessibility of the locations (3). Locations with high accessibility attract more development than the less accessible ones, thus changing the spatial structure (4).

When accessibility is examined from the land use planning perspective, proximity factor becomes important. Accessibility, in other terms, refers to the process of bridging physical gaps between activity locations. That is to say, the distances between activities need to be overcome in order to access from one location to the other. Land use-planning plays a role in determining the distance and route between an origin and a destination. Distance and route affect the transport modal choice and in this way, land use planning exerts (an indirect) influence on accessibility.

2.5 Framework for Location Policy for the Office Parks

It is essential to consider accessibility of the office parks in two levels, namely, external and internal levels.

External level refers to the relative positioning of an office park in the region with respect to other activity locations in the urban and rural areas and region. Location choice for office parks is directly linked to regional spatial policy as well as socio-economic conditions. Relative location of an office park demarcates - from the accessibility point of view - distances that commuters and business visitors have to travel. Furthermore, level and quality of transport infrastructure determines modes of transport, routes and travel times. Evidently, location decision for office parks plays a basic role in settling the extent of accessibility. However, the role of transport planning and management should not be disregarded in complementing the performance of land use policies in order to provide accessibility. According to van Wee (1997, 62):

Location policy primarily aims to influence the transport modal choice of passengers. However, land use planning itself alone is not capable of stimulating radical changes in the modal choice.

A similar statement is reflected in the Public Policy Guidance Note No 13, Transport in England quoted by Pharoah (1996):

Land use planning by itself can only make it possible for people to rely less on the car; it does not ensure that people will choose to use their cars less. That will depend on the quality of the alternatives, public transport fares, motoring taxes and other factors.

Internal level is related to land use planning within the internal boundaries of an office park. Location decisions for different firms with different activities; for transport infrastructure including vehicle-parking areas; and for public spaces etc. demonstrate the accessibility level of a business park. At the internal level, three options (already presented in Table 1 in page 6 become prominent. These options are "more intensive use of space, multi-modal transport and high quality public transport, and combining the transport of people". Operationalisation of these options is presented in Table 3. Third column of the table illustrates how options for accessibility can be realized in practice.

Table 3: Operationalisation of the Options for Accessibility of the Sustainable Business Parks

Action area	Options	Operationalisation
Sustainable Site Arrangements	More intensive use of space	<ul style="list-style-type: none"> • Piling of firms / activities on the same floor space, high-rise building • Collective buildings for small firms • Joint parking facilities • Collective storage of goods and materials • Strategic land reserves • Collective land reserves • Redevelopment of land becoming vacant
	Multi-modal transport and high quality public transport	<ul style="list-style-type: none"> • Public terminals with access to rail, water, pipelines • Transferia and free bus routes • Combinations of train, light rail, bus, train taxi • Site transport systems (shared cars, cabs, bicycles)
Sustainable Production Processes	Managing people's transport	<ul style="list-style-type: none"> • Collective bus services for employees (door to door) • Collective coordination of car pooling • Collective sharing systems for cars, taxis, bicycles

Source: Pellenbarg (2002)

Geographically, we focus at the external level, i.e. the location choice for office parks and at the internal level, i.e. implementation of the parking policy in the office parks.

3. LOCATION POLICY FOR THE OFFICE PARKS

Numerous actors are involved in the process of planning, development and management of office parks. The location choice of office parks falls in the authority of public domain and interests of the private domain. Each of these domains introduces different actors with diverging interests. Therefore, it is crucial to examine how location policy

for the office parks is formulated and its implementation is modified in the public and private domains.

3.1 Public Domain

3.1.1 Public Actors

Public actors are national government, provincial and/or regional governments and local governments. These organizations hold the authority of structuring overall policy and detailed planning for land use.

Spatial planning policies in the Netherlands are organized hierarchically according to national, regional and local level with increasing levels of specificity and land use planning detail (Marchbanks 2001). The *central government* makes core planning decisions, which present broad national policy guidelines; *provincial governments* formulate regional structure plans for the whole or part of the province (region), with an overview of the provincial planning policy; and *local governments* interpret the regional structure plans at the local level, by means of land use allocation plans and local framework plans. *Land use allocation plans* provide maps and regulations for specific locations in the municipality whereas *local framework plans* set out policy guidelines for a municipality or a combination of municipalities (See Table 4).

Table 4: Governmental division of responsibilities in the Dutch spatial planning

Tier of government	Legal spatial plan	Area	Content
Central government	Planning core decision	All country	Broad national policy guidelines
Provinces	Regional structure plan	Province or a part of the province	An overview of the provincial planning policy
Municipalities	Land allocation plan (<i>bestemmingsplan</i>)	Part of a municipality	Binding maps and regulations
	Local framework plan (<i>structuurplan</i>)	Municipality or a combination of municipality	Municipal policy guidelines

Source: van der Valk (2002, 206)

Table 4 shows that mainly public organizations determine the supply of office locations. In practice, the supply of office locations is not solely a decision of public authorities. Private actors exert influence on the supply of office locations as well (see section 3.2.1).

3.1.2 Policy Context

According to Priemus (1999), urban development in Europe is a result of a combination of spatial planning and market dynamics. Allocation of the space for office parks in the Netherlands is in line with the above statement, namely that economic and spatial policies provide the framework for accessibility and land use planning.

3.1.2.1 Geographical Scope

The EU (1997, 20) suggests that "the linkage between economic development policy and spatial development is generally most evident at the regional level". This statement is clearly evident in the Netherlands where regions are the administrative and/or planning units. In Perloff's (1968) words (cited by Skelcher 1982, 125):

Planning at the regional level is concerned with the ordering of activities and facilities in space at a scale greater than a single community, and less than a nation. Such planning focuses on clarifying objectives and designing means to influence behaviour (particularly locational decisions) so as to increase the probabilities of development in desired directions.

Provinces are the administrative regions in the Netherlands. For planning purposes, sub-regions are created which may cover more than one provincial area. With another possibility, the boundaries of a sub-region may coincide with specific locations in a number of provinces. Regions are attached an important role with respect to their economic potential as well. However, economic profile of the regions depends on the economic performance of cities and towns. In this sense, urban and rural areas appear as the operational units of spatial policy implementation in the regions.

In comparison with other European countries, the Netherlands can be characterized as a densely populated and urbanized country (Haartsen et al. 2003). According to OECD²'s (1994) urban and rural definitions, a minor part of the (1.45%) Dutch population lives in the rural category at local community level (NUTS 5) (based on CBS 1992).

² Urban and rural definitions of OECD (1994) are based on two hierarchical levels of territorial units: local and regional (Boscacci et al. 1999, 7-8). (1) At local community level (NUTS 5), rural areas denote to the communities with a population density below 150 inhabitants per km². (2) At regional level (mainly NUTS 3), OECD distinguishes larger functional or administrative units by their degree of rurality, depending on what share of the region's population lives in the rural communities. Regions are then grouped into three types: (a) Predominantly rural regions: over 50 % of the population living in rural communities; (b) Significantly rural regions: 15 to 50 % of the population living in rural communities; (c) Predominantly urban regions: less than 15 % of the population living in rural communities.

VROM and EZ use the criterion of 'address density of the surrounding area' in order to define whether a location is an urban or rural area in the Netherlands. According to the classification presented in Table 5, there are five types of urban and rural areas.

Table 5: Urban and rural Areas with Population densities

Type of Area	Address Density (per km ²)	Population size (%)
Very strongly urbanized areas	More than 2500	17.8
Strongly urbanized areas	1500-2500	26.5
Moderately urbanized areas	1000-1500	20.6
Slightly urbanized areas	500-1000	21.5
Non-urban areas	Less than 500	13.6

Source: based on CBS (2002)

Based on these figures, one can conclude that majority of the Dutch population (86.4 %) lives in urbanized areas.

3.1.2.2 Leading Principles of the Location Policy: A Brief Historical Perspective

Various policy principles dominated the land use planning process in The Netherlands. It can be claimed that 'preventing urban sprawl' has been a significant policy principle during the last three decades. It is a phenomenon, which is triggered especially by development and/or relocation of residential and business areas at the edge of the cities. Office parks contribute to urban sprawl as well due to their location policy. This situation is justified by what Louw (1996, 239) notes:

City centre, where spatial economies have been the greatest, has long been the location of choice for the offices because of its good accessibility. Inner city is no longer the only place where organizations establish their offices. Large amounts of office space have been built on the edge of the city, along expressways and airports.

Therefore, another feature of location policy in The Netherlands appears as "to accommodate the expansion of business without expanding urban areas" (OECD 1996, 35).

For the purpose of this paper, a number of leading principles are identified, which outline the development of spatial policies in the last three decades: growth centres; compact city; network cities; intensive land use; and business location policy.

Development of *growth centres (groei-kernen)* became the leading policy principle of the 1970s. The underlying idea of the growth centres was to create self-sufficient (in terms of residential areas and work opportunities) urban centres in the vicinity of metropolitan

areas, where lack of housing and of other facilities exerted pressure. In practice, most of these centres could not go beyond providing sufficient housing but creating dormitory cities, which in turn contributed to the increasing level of car-based commuter transport (Priemus 1999).

The 1990s were led by the *compact city* principle, introduced by the Fourth Policy Plan for Spatial Planning. The underlying idea of compact city is to intensify the land use within the existing settlements (van der Valk 2002). This is mainly to be achieved by decreasing the distances between different activities. In addition to the intensification, mixed land use is a part of the compact city principle. In order to benefit from this principle, activities of different nature (residential, employment, services, recreational locations etc.) need to be located at a proximate distance to each other. The compact city is favored especially with respect to energy saving in transport facilities since shortened distances between the activities create less dependence on the motorized means of transport, particularly on automobility (see Newman and Kenworthy, 1996). However, environmental and energy related benefits of compact cities depend largely on the size and structure of incoming and outgoing commuting flows, as well as on the workplace locations (Nijkamp and Rienstra 1996).

Since the end of 1990s, there have been discussions on the applicability of compact city principle in The Netherlands. The transition towards network economy requires a novel approach for defining the geographical level of economic activities; hence, policy debates shift from *compact city* towards *network cities (or urban networks)*. The concept of network cities principle does not necessarily contradict with the compact city principle. While compact city refers to individual cities, "network cities consist of diverse urban centres and nodal points" (VROM *et al.* 1999 cited in Priemus 1999). This means that the geographical scope is widened from urban to regional level. The emphasis on the mix of functions (such as residential areas, work areas, green space and watercourses etc.) in the cities remains present with an extra condition: connecting the different cities and nodal points in a region by different types of transport infrastructure.

In addition to the changes in the urban policy in The Netherlands, the principle of *intensive land use* remained important in influencing the location choice of office parks.

Intensive land use refers to optimizing gross floor space in comparison to land surface area (EZ 2002). OECD (1996) considers the intensive land use policy as a tool for controlling the level of urban peripheral development. Another term, sometimes used with reference to the intensive land use, is multiple land use (*meervoudig ruimtegebruik*). This concept comprises of efficient, mixed and intensive use and management of land and considered as a policy that aims to prevent urban sprawl. Office parks fulfill the intensive land use principle by for example high-rise buildings and subterranean parking space, etc. (van der Valk 2002).

Business location policy (ABC³ Location Policy) was coined by the Fourth Policy Plan for Spatial Planning, with the motto of "right businesses at the right location". The main idea of this policy is to decrease the level of car use and to encourage the use of alternatives such as carpooling, public transport and biking etc. by means of location policy for the economic activities. This policy is about matching the "accessibility profile of a location"⁴ and the "mobility profile of a firm"⁵(van Wee and van der Hoorn 1996).

Companies in the office parks match the accessibility profiles of A- and B-type of locations. This is due to high mobility profile of office parks by commuters and business visitors and their lack of dependency for freight transport. Therefore, connection to motorways is not primarily important, but proximity to public transport nodal points (international, national, regional and local) is essential.

However, some empirical researches indicate that a large number of companies in the Netherlands are situated in A- or B-locations, but the majority are found to be in the C-type of locations (Koster and Buffing 1990; van Dinteren, et al. 1991; Heidemij, et al. 1991; Hilbers and Verroen 1991; and Wallen and Buit 1993 cited in Van Wee and Van der

³ Characteristics of the A, B and C locations are as follows (van Wee and van der Hoorn, 1996):

A Locations: (a) Close to public transport interchanges of national or regional importance, (b) In cities and towns with an intercity/ Euro city railway station; nearby the station, (c) High employment density, (d) Few parking facilities (10 parking areas per 100 employees in Randstad; 20 elsewhere, (e) Connection to the motorway system is not of prime importance.

B Locations: (a) Close to public transport connections of local / regional importance, (b) Near a major local road/ motorway connection, (c) Lower employment density than the A locations, (d) More parking facilities (new offices with 20 (maximum) spaces for 100 employees, 40 elsewhere.

C Locations: (a) Close to a motorway connection, (b) In / on the periphery of the urban areas, (c) Public transport connections are of no importance, (d) No upper limit to the parking capacity being provided.

⁴ (a) Accessibility by different transport modalities, and (b) quantity of parking facilities

⁵ (a) Labour- and (b) visitor-intensity, (c) car dependence in performing business and (d) dependence upon freight transport by road.

Hoorn 1996). This trend can be explained by, amongst others, demand of companies for accessibility by car. C-type of locations facilitate accessibility by car since easy access to motorways and flexible parking policy are their basic features.

Practice shows that currently ABC location policy is not strictly followed. In order to preserve and develop the economically competitive power of the cities, municipalities face problems in resisting the specific locational demands of companies. As a result, more office parks are developed in the peripheral areas where there is good car accessibility; and less strict parking policy is provided in the inner cities. It is stated in the proposed Fifth Policy Plan for Spatial Planning (2001, 55) that "location policy for the companies and services (ABC Location Policy) (...) are replaced by an integrated location policy". The new location policy identified a residential-work environment typology of three groups (VROM 2000, 181):

1. *Central areas:* Concentration in and around the nodal points in the city network such as station areas, inner cities and centre of the other parts of the cities.
2. *Specific work areas:* Business parks and other concentrations such as multimodal locations along the transport corridors, and exceptionally shopping- and recreational-complexes.
3. *Mixed areas:* Small-scale centres at the neighborhood level and individually dispersed establishments, either out-of-centres & green urban areas or village areas.

When the new typology is examined with respect to office park locations, it is found out that offices with high visitor intensity suit to the functionally mixed, good connected and accessible (by multiple modalities) central areas. Intensive land use remains a part of this policy by means of high-rise buildings and underground parking facilities. Accessibility is considered to be important for preserving the attractiveness of the central areas for business investments. A striking feature of the recent policy changes is that it is acceptable to have accessibility by a combination of transport modalities. For instance, equal attention is paid to both car- and public transport-accessibility. The proposed policy changes indicate a perceptual change: attitude towards car use in general and in the inner city in particular is becoming more flexible in order to preserve the economic growth.

3.2 Private Domain

3.2.1 Private Actors⁶

A number of private actors exert influence on the office parks' locations. The most influential of these actors are "property developers, investors, real estate agencies and financial institutions" (Louw 1996, 96). In addition to these actors, there are:

1. Land owners and companies, which develop, own and use the buildings;
2. Companies which own and use the buildings, and
3. Companies, which rent the buildings.

These activities, which are described in Table 6, take place in the demand and supply sides of three sectors: land market, construction sector and building market.

Table 6: Private Actors in developing Office Parks

Name of the Actor	Activity at the Demand Side	Activity at the Supply Side
Land owners	-	Selling land to government, property developers or users
Property Developers	Buying land from land owners	Selling office buildings to investors or users; or renting buildings to users
Investor	Buying office buildings from property developers or other parties	Renting office buildings to the users
Financial institutions	-	Providing credits to other actors of supply side which would like to realize office buildings.
Real Estate Agencies	-	Mediating the process of selling or renting office buildings
Owner-user Companies	Buying land and/or office buildings	(Possibly) renting or selling part of the office buildings
Companies	Renting offices or buildings	-

Source: Based on Louw (1996)

Among these actors, *property developers* play a significant role. Property development refers to "the (risk-bearing) initiation, organization, implementation and coordination of all the tasks, which are necessary for producing real estate property, including land purchase" (Regenboog 1984 quoted in Louw 1996, 97). Property developers are influential both on the demand and supply sides because they purchase the land and conduct building projects on it, which they expect to sell or rent. *Investors* initially appear at the demand side of the market because they buy the buildings from property developers or other actors. Once they own the buildings, they offer their buildings for rent in the supply market. *Financial institutions* provide external source of finance for actors such as property developers or owner-user companies, who would like to develop buildings. Finally, *real estate agencies* function as intermediate bodies during the processes of selling or renting the office buildings. Common to all these actors is that office

⁶ This sub-section is to a large extent based on Louw (1996).

buildings' development is one way or another at the core of their economic activities. Therefore, profitability is a driving motive in their behaviour. Louw (1996) draws the framework of these actors' behaviour in the following words:

Project developers develop buildings in which users would be willing to move immediately (p. 98). (...) In order to keep the value of investment high, investors influence renting policy (by determining price and selecting the renters etc.) and make decisions about maintenance and renovation (p.100).

According to Jonkheer (1994, quoted in Louw 1996, 104):

Financial institutions, which give credits for the fulfillment of projects, play an important role for developing real estate market. They do that by for example influencing large price fluctuations and through offices remaining unnecessarily unoccupied.

At the final stage, real estate agencies try to preserve their position in the market by becoming involved in the process as early as possible. They, for instance, would like to identify the users, who are willing to move or whose contracts end soon (Lukkes and Van Rooden 1986 quoted in Louw 1996, 103). It is evident that for all these actors it is a strategic issue to detect the characteristics of the demand for office locations and the potential users of these locations.

Among these actors, property developers have a central role in influencing the trends in the supply market. According to the analysis of Moor (1979, cited in Louw 1996), spatial behaviour of property developers is dependent on three factors:

1. Obtaining the land promptly and for a reasonable price,
2. Availability of construction permits in a specific location (allocation of parcels, parking possibilities etc.).
3. Certainty on being able to sell or rent the buildings to the customers.

These factors were found to be true to a large extent in a study of Louw in which he compared five Dutch locations in 1994 (p. 110):

There were strong indications that property developers are especially active where there are not many procedures and within fairly short time office locations can be realized. Mostly these are at the edge of the cities and the parks, already developed by the municipalities.

Louw pointed out that developing office locations in the inner cities is a complex task, because property development in these locations is time consuming and costly. Hence, constructing building before finding customers is not without risk.

Locational choice of supply side actors, especially of property developers, is decisive for the spatial pattern of offices. Louw (2000) defines a new trend, in which property developers are increasingly willing to keep land at their disposal. This trend is facilitated by the reluctance of (especially) small municipalities in buying land with the fear of making loss in the land development. As a reaction to this situation, Government adapted its regulations and by revising the Act on Municipal Right of First Refusal (*Wet Voorkeursrecht Gemeenten, WVG*), which means that a land owner who wants to sell the land will have to offer to a municipality first and only if the municipality refuses, can the owner sell the land to a third party (p. 90). In addition, two other developments occurred at the organizational basis. Municipalities decided to cooperate (a) with other urban agencies, (b) sometimes even with private sector or with each other in order to produce large-scale business sites.

3.2.2 Location Factors for the Office-based Companies

With respect to the location factors of office-based companies, two types can be considered:

1. Companies, which are at the establishment phase and consequently looking for ideal location,
2. Existing companies, which plan to move.

It is especially the second category, which contributes largely to the spatial mobility of economic activities. For office companies, it is relatively easy to relocate. In the Netherlands, approximately 90% of the office space needs is caused by the business migration (Louw and Hiethaar 2001 cited in Pen 2002).

A number of factors influence the locational distribution of office parks. Louw (1996) describes some of the factors:

1. Building factors (e.g., architectural quality, prestige, etc.)
2. Functional factors (e.g., desired floor space area, options to change the floor plan, etc.)
3. Technical factors: Technical equipment of the building (e.g. including telecommunication, security, heating, air conditioning etc.)
4. Financial and contractual factors: Price and rental conditions in the rental agreements (e.g., maintenance costs, duration of the rental contracts etc.)

5. Location factors: Factors related to the spatial situation of the office buildings (e.g., proximity to the services, accessibility, type of neighborhood, parking facilities etc.)

As can be observed, accessibility (which is not clearly stated as whether by car or by public transport) is one of the location-related factors for the offices. A brief historical overview of significant locational factors would show the position of accessibility in the location-choice factors.

Slob (1979) researched location factors and assessed how far accessibility is an important factor for business establishments. He rated the top eight location factors (see Table 7) for commuter and business transport. Accessibility for commuters and visitors were ranked by 88 % of the companies as the second and third most important factors.

Table 7: Highly rated local locational factors

Rank	Local Locational factors	%
1	Usefulness of built floor-space	90
2	Accessibility for personnel by car	88
3	Accessibility for visitors by car	88
4	Floor area of buildings	87
5	Size of plot	80
6	Room for expansion	76
7	Costs of real estate	73
8	Prestige value of the location	68

Source: Slob (1979)

Since the 1980s, accessibility by car has been a criterion for location choice among others. (Dwarskasing et al. 1988, BGC 1989; van der Mede et al. 1989 cited in van Wee and van der Hoorn 1996). Likewise, the research of B&A Groep in 1997 (see Table 8) indicates that *parking* and *road accessibility* are the first two most important location factors for the service sector while *accessibility by public transport* as the seventh.

Table 8: The Most Important Location Factors for Service Sector at the Regional and Local Levels

1. Parking
2. Road accessibility
3. Personnel
4. Building
5. Telecom facilities
6. Representative characteristics of the surrounding areas
7. Accessibility by public transport
8. Rent / land price
9. Landscape quality of the surrounding areas
10. Physical enlargement possibilities

Source: B & A Groep 1997 (quoted in Ministry of Economic Affairs 1997, Ministry of Economic Affairs 1999 and Pen 2002)

The number and size of office spaces in the peripheral locations is increasing. In explaining this trend, Louw (1996) refers to a number of reasons:

1. Deterioration of accessibility in the inner cities due to traffic congestion,
2. Limited space in the inner cities for office space development, and,
3. Specialization of companies, leading to less dependency on the external services.

He makes a distinction between the location choices of companies in The Netherlands depending on their market area. Office-based companies with interests at the *local and city-region levels* prefer inner city areas. It is because these locations are physically proximate to the city centre as well as to the services. Office companies with market interests at the *national or international levels* do select suburban areas with adequate car accessibility.

It is evident that throughout the last decades accessibility by car has been of importance as a location factor. Demand for car accessibility influences the land use planning process. These impacts in the Dutch context are discussed in Chapter 4.

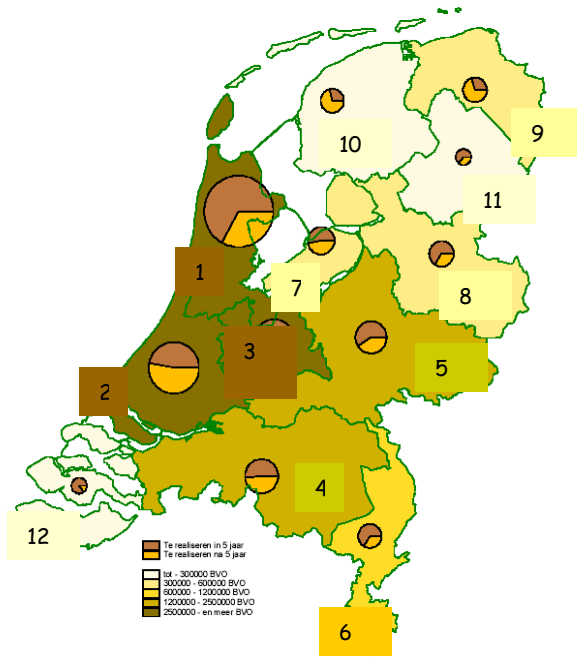
4. DUTCH CASE

4.1 Analysis Framework

Economic activities are a part of the complex activity-system in the built-up areas. They cover nearly one third (98000 hectares) of the built-up areas in the Netherlands (Mattemaker 2002). Within the current economic activities, there are 551 office parks, which cover a gross office floor space (BVO)⁷ of 22 million m² (IBIS 2002b). Plans show that during the period 2002-2007 and after 2007, there will be respectively about 10 million m² and 8 million m² new BVO developed.

⁷ In the remainder of this paper, "gross floor space" will be replaced by its Dutch acronym "BVO" (Bruto Vloer Oppervlakte). The unit for measuring BVO is m².

Figure 5: Distribution of Office Parks in the Dutch Provinces



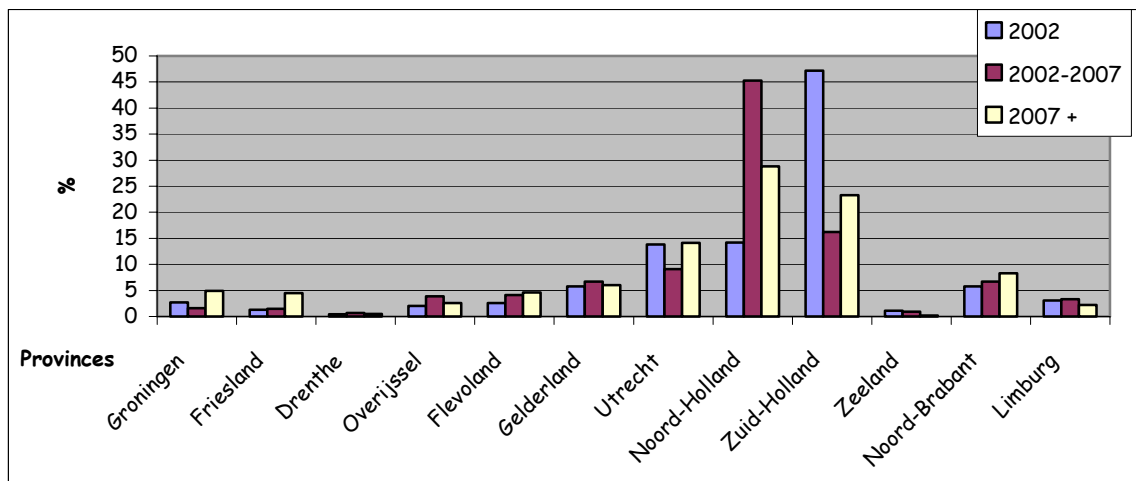
Provinces in the map are in the following order:

1. Province of Noord Holland,
2. Province of Zuid Holland,
3. Province of Utrecht,
4. Province of Noord Brabant,
5. Province of Gelderland,
6. Province of Limburg,
7. Province of Flevoland,
8. Province of Drenthe,
9. Province of Groningen,
10. Province of Friesland,
11. Province of Overijssel,
12. Province of Zeeland

Source: IBIS (2002a)

Figures 5 and 6 show the distribution of office parks in Dutch provinces. The western Provinces (Noord Holland, Zuid Holland and Utrecht) have the main share of office parks, followed by the provinces Gelderland and Noord Brabant. Plans for the period 2002-2007 show that the majority of the office parks will be developed in the western provinces of which the lion's share will go to Noord Holland. Provinces of rural nature with proportionately fewer office parks such as Groningen and Friesland will see an increase in office space development after 2007.

Figure 6: Distribution of the office parks per Province with respect to BVO



Source: based on IBIS (2002b)

The analysis deals with the locational distribution of office parks vis-à-vis accessibility at present and in the near future. It is based on a number of criteria, which have been selected according to the trends and leading principles dominating the policy development process. These criteria, which relate accessibility of office parks to their location choice, are as follows:

1. Land use change
2. Urban versus rural areas
3. Inner city versus peripheral locations
4. Parking policy

4.1.1 Land Use Change

The Netherlands covers an area of more than 4 million hectares including inland water. Built-up areas comprise 12%, agricultural areas 57%, forests and nature reserves 12% of the total surface (see Table 9). The distribution of land use in the Netherlands will change. Plans show that some of the agricultural areas will be converted to urban and recreational purposes, which will lead to 5 % increase in the forests and nature areas and 2 % increase in the built-up areas.

Table 9: Distribution of Land use in the Netherlands (%)

Type of land use	Current	Future
Built-up areas	12	14
Agricultural areas	57	50
Forests and nature	12	17
Freshwater	8	8
Sea	11	11
TOTAL	100	100

Source: Van Eck et al. (2002)

Land use change in the Netherlands affects protected areas, namely, National Landscape areas and Belvedere areas (Van Eck et al. 2002). *National Landscape areas* are characterized with unique landscape-ecological, cultural-historical and recreational values. Fifth National Policy Plan for Spatial Planning identifies seven National Landscape areas, which cover nearly 20% of the country. This amounts to 780 000 hectares, of which about 10 % are built-up areas. Land claims for residential and economic purposes in these areas will increase by 5 % (p.3). *Belvedere areas* are designated to preserve cultural heritage. They cover approximately 1,250,000 hectares, of which 8 % are built-up areas. It is expected that land claims for residential and economic purposes will increase the built-up areas by 16% (p. 3-5).

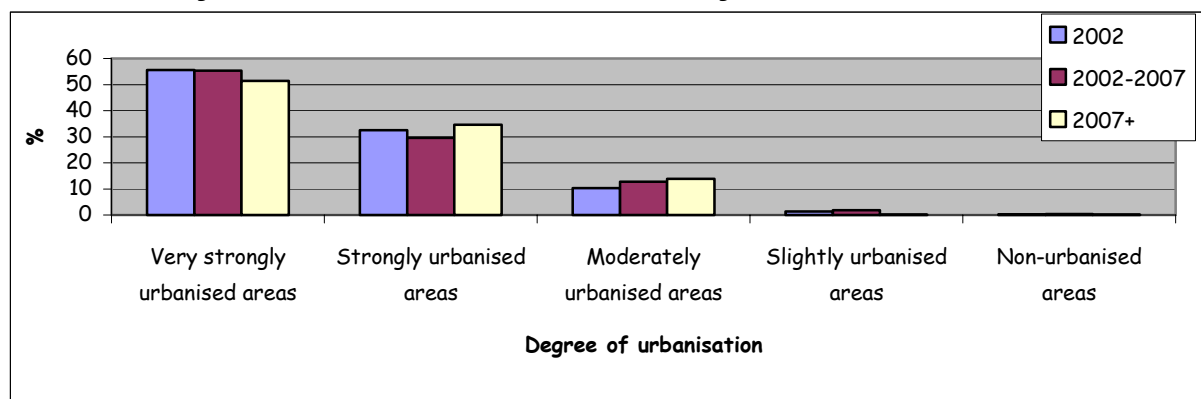
These figures show that increased urbanization is an important feature of land use change in The Netherlands, particularly driven by economic activities. This situation raises concerns regarding the protection of rural areas especially in National Landscape and Belvedere areas.

4.1.2 Urban versus Rural Areas

Land claims for built-up areas raises the concern for keeping urbanization process under control. One of the negative impacts of unplanned and uncontrolled growth is urban expansion. It causes a deterioration of both natural and built-up environment. One of the results of this deterioration is limiting accessibility by environmentally friendly means of transport. This concern was reflected in the Fifth Policy Plan for Spatial Planning (2001, 26) under the principle of "keeping a strict distinction between urban and rural areas".

Figure 7 indicates that majority of the office parks are concentrated in *very strongly* and *strongly urbanized* areas as of 2002. This means that of the 22 million m² BVO, approximately 55 % is located in the *very strongly urbanized areas* and about 33 % in the *strongly urbanized areas*. During 2002-2007, the BVO is expected to increase by 10 million m², of which 55 % is in the *very strongly urbanized areas* and 30 % in the *strongly urbanized areas*. In the period beyond 2007 the BVO is expected to increase by another 8 million m², 51% of which will be located in the *very strongly urbanized areas* and 35% of which in the *strongly urban areas*. In the time being, *moderately urbanized areas* are expected to see a gradual increase of 13% for the period 2002-2007 and 14% beyond 2007. Besides, the BVO share of *slightly urbanized* and *non-urbanized areas* remains considerably low and is expected to diminish gradually.

Figure 7: Distribution of the Office Parks vis-à-vis Degree of Urbanization



Source: based on figures presented in CBS (2002) and IBIS (2002b)

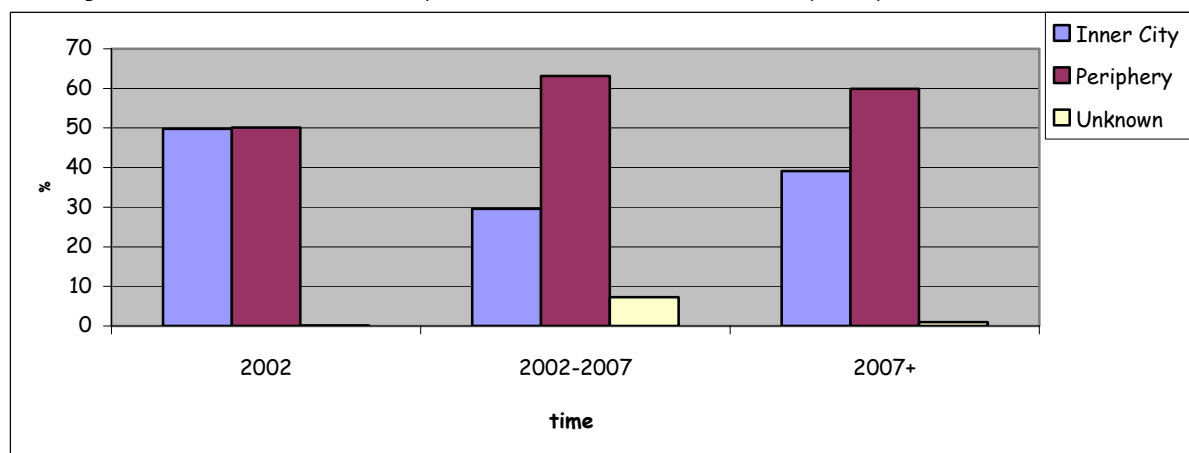
It can be concluded from Figure 7 that the policy principle of 'urban-rural distinction' is followed in the Netherlands. According to this principle, spatial distribution of economic activities, among others, needs to be restricted to urban areas, where 86.4 % of the population lives.

4.1.2 Inner city versus Peripheral Locations⁸

IBIS database (2002a) identifies two types of office parks with respect to their locations: Inner city areas and urban periphery. Office parks in the *inner city areas* are identified with multi-functionality and accessibility by public transport, cycling and walking. *Urban periphery* office parks are mono-functional and accessibility by car is essential.

In general, it can be concluded that office parks, which have strong demand for commuter and business transport, are suitable for inner city areas, where adequate public transport infrastructure is available. Since economic space creation takes 6 to 8 years (Louw 2000, 86; and Louw and Needham 2003, 4), the origin of some of the plans for office supply in the coming years originally dates back to mid-1990s, for which compact city and ABC location policy were still dominant.

Figure 8: Distribution of the office parks vis-à-vis Distinction of Inner City /Peripheral Locations



Source: based on figures presented in CBS (2002) and IBIS (2002b)

⁸ Data on the size of office parks in the inner city and peripheral locations are based on IBIS database (2002a and 200b). However, some errors are detected in the inner city-peripheral distribution of office parks in Rotterdam in the pages 279-280 in the document "Werklocaties 2002 - Tabellenboek". These errors are corrected in consultation with Klaas-Bart van den Berg from OBR, Municipality of Rotterdam via electronic correspondence. Therefore, one might find out differences between the outcomes of this section and the original document IBIS (2002b). Please note that these circumstances are also valid for the analysis in Section 4.1.4.

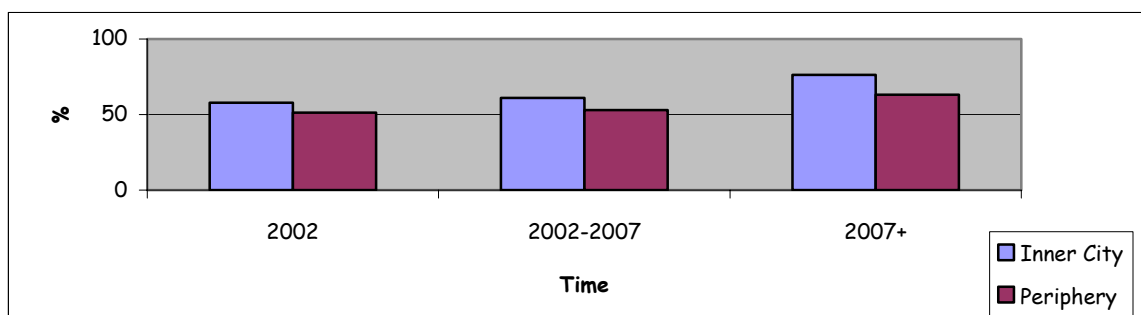
The distribution of office parks in the inner cities and peripheral areas is presented in Figure 8. Results show an increasing demand for new and upmarket office locations. In 2002, office parks in the Netherlands were almost equally distributed between inner city areas and periphery. The 10 million m² extra BVO to be developed in 2002-2007 is expected to change this picture drastically: approximately 30 % will be realized in the inner city and 63 % in the peripheral locations. After 2007, some extra 8 million m² will be developed, of which 39% will be in the inner city and 60% in peripheral locations. Increase of office parks at the urban periphery confirms the trend towards "suburbanization of employment (also called as counter-urbanization or extended suburbanization)" (Nijkamp and Rienstra 1996) in the Netherlands.

4.1.3 Parking Policy

It is possible to come across in seemingly distinct but interrelated policy fields such as land use planning, transport infrastructure and transport management that parking policy is an important tool. In this research, parking policy is regarded as a land use planning and management tool, which is benefited from at the internal level of office parks. Municipalities define the parking policy, by determining the maximum number of parking spaces per office park according to either the size of BVO or foreseen number of employees.

Figure 9 suggests that by 2002, approximately 58 % of the inner city office parks and 51 % of peripheral office parks had parking norms. In the following years, percentage of new office space with parking norms will increase. During the period 2002-2007 and after 2007, respectively 61 % and 76 % of the inner city office parks are expected to have parking norms. A similar trend will be realized at the peripheral office parks. In the peripheral locations, parking norms will be present in 53 % and 63 % of the office parks.

Figure 9: Office parks with parking norms vis-à-vis Distinction of Inner City-Peripheral Locations



Source: based on figures presented in CBS (2002) and IBIS (2002b)

An overall interpretation of Figure 9 suggests that percentage of inner city office parks where parking norms are present remains low. Although new developments will increase the presence of parking norms, the percentage of all inner city office parks with parking norms after 2007 will be restricted to a modest 61 %. This situation may lead to further congestion problems in the inner cities. However, recent policies for increasing the number of paid-parking spaces in the inner cities counterbalance the limited number of parking norms.

4.2 Discussion: Analysis Results

Results of the analysis indicate that there are discrepancies between location policy principles and their implementation in the Dutch office parks. This result was achieved by scrutinizing the four criteria: (1) Land use change, (2) Urban-rural distinction (3) Inner city versus peripheral areas (4) Parking policy.

The examination of *land use change* criterion indicated that the proportion of urban areas is rising in the Netherlands. Whether this expansion occurs at the expense of rural areas is examined under the second criterion. It was found out that the *distinction between urban and non-urban areas* is preserved since almost all the office parks are located in the urban areas. This result has positive implications for keeping suburbanization under control and hence limiting automobility. However, the examination of third and fourth criteria indicates a counter effect. According to *inner city versus peripheral areas* distinction, suburbanization appears as a significantly likely outcome of the location policy for office parks. This is due to the policy plans, which aim for a relatively higher level of office parks at the urban periphery in the near future. The *parking policy* demonstrates a complementary outcome to the third criterion. Business parking policy in the inner cities is found to be less than the policy requirements of the last decade.

One has to bear in mind that after 2007 total size of office parks is expected to reach approximately 40 million m². Of this, 55 % is already available (22 million m² BVO in 2002); and development of 25% in the second phase (2002-2007) has already started. This means that roughly two thirds of the planned office parks have already been developed. Considering that development of business sites takes more than half a decade, it would be expected that these office parks have been planned in the mid-1990s when principles of compact city and ABC Location policy were still dominant.

Therefore, a remarkable result of this analysis is that location policy applied to majority of the Dutch office parks does not coincide with current policies. This leads to a conclusion that policy implementation had already started to change before new policy principles with more flexible nature were introduced.

Changes in the policy implementation are mainly induced by the companies, which demand for location factors such as sufficient parking facilities and accessibility by car. Private actors such as property developers, investors, real estate agencies etc. for whom economic profitability is essential recognize the need for these location factors. Their influence on the supply side of the market is prominent in the municipal decision making processes. This is particularly due to the national policy goal of preserving and developing the economic vitality of regions and cities. Because municipalities are expected to protect and develop the competitive power of their localities by means of attracting new investments, they tend to implement the location policy measures in a rather flexible manner.

5. Concluding Remarks and Recommendations

In this paper, location policy for the office parks was examined with a focus on accessibility by environmentally friendly means of transport. To that aim, leading policy principles were selected as compact city, network city, and intensive land use and business location policies. There were two underlying reasons for selecting these principles: First, location policy for the office parks in The Netherlands is largely dealt with at the intersection of spatial planning policies and economic policies. Second, 'prevention of suburbanization while expanding the business areas' has been a hidden principle in the selected policies.

Comparison of the policy principles and its implementation confirms that office parks are largely situated in the urban areas. However, there is an increasing trend towards peripheral office park locations in the coming years. In addition, parking policy for the inner city office parks are becoming less stringent than the policy requirements of the second half of 1990s.

These results highlight the necessity to carefully overview the dynamics of the relations between public and private actors in location decision-making. It is apparent that

location policy is becoming less restrictive and this raises concerns for increasing suburbanization and automobility, which are unambiguously stimulated for the sake of economic development.

For more precise insights, there is need for further analysis. More clearly, analysis of the selected criteria need to be deepened: Examining the urban-rural distribution of inner city and peripheral office parks no doubt would provide clearer insights about where suburbanization is likely to become a bottleneck. There is no doubt that the presence of parking norms is important in order to evaluate the stringent policies for the office parks, with respect to sustainable accessibility. However, the presence of parking norms does not always provide sufficient insights for interpreting their efficiency. For that reason, further work is required in order to find out the exact number of parking lots allocated per employee or per square meter, which would help assess quality and effectiveness of the parking norm.

This analysis indicates some lessons to be learned by The Netherlands and other EU-member countries as well as accession countries.

It is clear that land use planning is an inevitable part of accessibility debates, because land use planning and transport fields are interlinked and require to be studied in an integrated manner. This has already been recognized in The Netherlands. However, there is certainly need to continue with such projects in order to envision the multiple dimensions of this field.

The leading policy principles with respect to decreasing automobility in the city centers and keeping the physical boundaries of urbanization under control are becoming less strict. Developing the economic dynamics of the cities and regions is the driving factor in this transition towards less strict rules. 'Keeping balance between economic activities and environment' has been emphasized in the National Policy Plans for Spatial Planning. However, recent developments in the policy perceptions and implementation show that in this balance, economic activities are prioritized over the environment and society. The concerns for sustainable development call for strengthening 'sustainability commitment' by public and private actors. The Netherlands has been considered exemplary for its spatial planning tradition and its efforts to promote the use of more environmentally

friendly means of transport. There is an ostensible need for strengthening this reputation by good practices.

Although recent changes in the Dutch policy refer to a shift from strict rules for environment and society, it might still be interesting for other EU-member states and accession countries to examine evolution of business location policy in Netherlands. Examining for instance the ABC location policy, which has already aroused international interest, might provide new visions to other countries.

It is not an easy task to give clear-cut recommendations for the other countries since Netherlands exhibits unique socio-economic and geographical characteristics. A relatively small surface area and a high population density in an advanced economy briefly characterize the Netherlands. Countries, which are large in size and with low-density population, have certainly different circumstances. Interesting results could be obtained by conducting comparative research on accessibility and location choice for office parks between countries which represent significantly diverging geographical and/or socio-economic characteristics, e.g. the Netherlands and Sweden/Finland (large in size and with low density population); the Netherlands and an accession country with emerging economy such as Poland (relatively sizable and with higher level of population) or Slovakia (with small surface area and low level of population).

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