NEW FUNCTIONS AND ROLES FOR PUBLIC PARKS IN EUROPE

THE FUTURE RELATION BETWEEN PUBLIC SPACE AND PUBLIC HEALTH

EURÓPAI KÖZPARKOK ÚJ SZEREPKÖRE ÉS FUNKCIÓI

A SZABADTEREK ÉS A KÖZEGÉSZSÉGÜGY KAPCSOLATA A JÖVŐBEN

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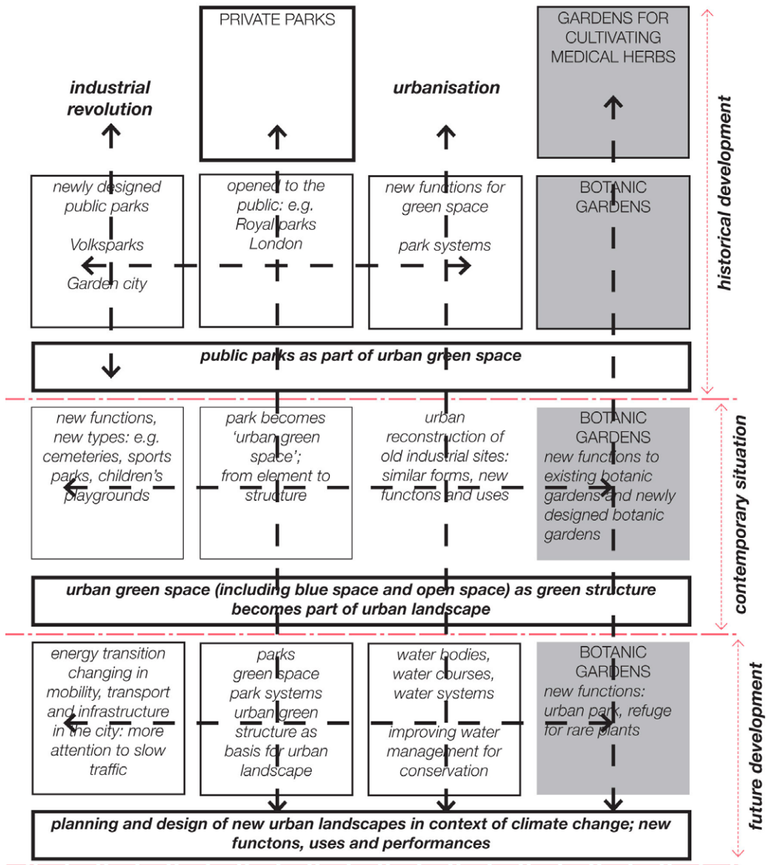


ABSTRACT

This article deals with the changes in function, use and form of public parks in the context of climate change. The scope is the European context and special attention will be paid to the public health in relation to public parks in the future.

Key research question is how landscape architects can plan and design public parks for the future by giving form to the global challenge of climate change and how that can be tackled for the local conditions.

The main line of reasoning follows the triad past, present and future. In the first part a short overview of the development of public parks is presented. In the second part some aspects of contemporary public parks in relation to education are elaborated. In the last part three case studies are put forward to illustrate developments to come in the context of climate change. Core of the conclusions is the continuity and change in the planning and design of public parks and the design role of landscape architects.

Keywords: landscape architecture; climate change; design knowledge; urban landscape; design & health

1. INTRODUCTION

The subject of the Conference 'The educational role of public parks' has two key issues. First 'public parks' and secondly their 'educational role'.

The issue of 'public parks' refers to a special type of parks that emerged in Europe from the 18th century on and was at that time associated with the Industrial revolution and people moving to the cities.

The issue of their educational role can be diverse; it can comprise learning about plants, vegetation or animals but it can also be an adventure playground where children can built with rest materials, old pallets or other building materials their own huts and other creations. Moreover, the educational role can refer to different age groups, from children to families with children and grown-ups.

Public parks are a large work domain in landscape architecture and there is also a substantial body of design knowledge for this type of projects although this is still largely implicit. In the context of climate change, also for public parks new functions and uses will emerge in which public health will play a key role.

Scope and outline

The study focusses on the future of public parks in Europe in the context of climate change and what landscape architects can contribute in that field. It is further limited by special attention for the educational role that public parks can play.

We start with two main issues; the public park in the past and nowadays and the new functions and uses in the climate change. In the last part these new functions and uses are elaborated into some case studies in which the educational role is emphasised.

Research questions and research approach

The research approach is based on the idea of learning from design experience in projects from the past and making use of that design knowledge in developing new functions for public parks. This development of design knowledge is a continuum not an abrupt change.

The general research question is what landscape architects can contribute to climate change in the domain of planning and design of public parks from an educational point of view. It can be divided in three sub-questions:

– What can we learn from the history of public parks and its development over time?
– How are contemporary public parks functioning and used?
– What could be the role of public parks in the future in the context of climate change?

Definitions and terminology

Public park

Fleming et al. (1998) define 'public park' as:

A park made for and usually maintained at the expense of an urban population.

Three aspects form the core of what a 'public park' is or should be. First access for the general public, second the goals of recreation and the improvement of social classes. Third the contribution to public health in some form.

Training

Training or instruction comprises the acquisition of skills. In most cases it is quite straightforward in scope and goals; learning a skill such as a computer program, the pruning of fruit trees or how to draw a cross section.

Learning

Learning takes place at a school in the form of acquiring knowledge. In landscape architecture there are different teaching modes such as lectures courses, studio, field work. For each of them different teaching goals and learning goals have to be defined before, depending on level, prerequisites, cultural backgrounds of students.

In landscape architecture teaching at a University level, the BSc-level teaching comprises learning how and why while at the Master level the general approach is on why and how. The generic goal in university education is learning to think independently by integrating skills, knowledge into a personal development. Core of university education is based on the competence of abstraction.

Education

The most comprehensive form of teaching is 'education' which comprises skills, knowledge and insight as a basis for further professional and personal development.

In landscape architecture this takes place mainly in the studio where for instance during presentations of work the studio-master makes remarks and draws relations with what the students have learned in other courses, in the field or relates the work to practice. Gaining insight is a generic goal of all university-level education and continues also after finishing the studies at the University.

During periods of practice students gain insight in the relation between theory and practice, which is also the case with excursions abroad where students see projects and meet their peers in other countries.

The term 'education' can have different meanings. In most cases we first think of schools as part of public education. It is a form of 'institutional' education and is in most countries included in the constitution.

Public education is not only geared towards acquiring of knowledge but also to become part of a culture and learning to communicate with others in society.

Education can also be related to specific social groups such as families, age groups, car drivers etc. The common goals of a social group can sometimes be achieved by some form of education. In the Netherlands during the first part of the 20th century, nature conservation organisations set up a system to introduce school children into the natural environment as part of their living environment. It was called 'nature education'.

Finally education can also refer to individuals who want to broaden their horizon or orient themselves into other types of work. Physical education by learning a sport is an example. In the Netherlands sports that are related to water such as swimming, sailing and rowing are also culturally engrained as part of a culture that has always been oriented and dependent on the sea.

Education takes also place outside specific institutions of the public education system. The general public is also – in an indirect manner – educated through media, governments at different levels, cultural institutions.

Landscape architecture

We use a definition by the European Council of Landscape Architecture Schools (ECLAS) which includes many aspects of others and is coherent and up-to-date (http://eclas.org/content/landscape-architecture/landscape-architecture_main. php, 2004):

"Landscape architecture is the discipline concerned with mankind's conscious shaping of his external environment. It involves planning, design and management of the landscape to create, maintain, protect and enhance places so as to be both functional, beautiful and sustainable (in every sense of the word), and appropriate to diverse human and ecological needs. The multifaceted nature of the landscape and mankind's interaction with it, means that the subject area is one of unusual breadth, drawing on and integrating concepts and approaches, not just from two sides of the traditional divide between the creative arts and the natural sciences, but incorporating many aspects of the humanities and technology as well." (…) Landscape Architecture is both a professional activity and an academic discipline. It encompasses the fields of landscape planning, landscape management and landscape design in both urban and rural areas and at the local and regional level. It is concerned with the conservation and enhancement of the landscape and its associated values for the benefit of current and future generations.

Landscape

Landscape is object of study for many disciplines such as geography, geodesy, geology, anthropology, history. For landscape architecture the landscape is object of planning and design which distinguishes it from all other disciplines engaged in study of landscape and other design disciplines.

Usually a distinction can be made between urban, rural and infralandscapes. Infralandscapes are landscapes that are directly or indirectly influenced by infrastructure, flows and movement of people, matter, energy & information. In this study the focus will be on urban landscapes.

2. A BRIEF HISTORY OF PUBLIC PARKS

Public parks date back essentially from the 18th century and were associated with people moving to the cities to find work in mining and industrial production (Toorn, 2005; 2014 [2]). Before there were green spaces but only for a limited group in society and for different functions and use. Some of the public parks we know nowadays have their origin in a long history as private park for the well-to-do and were opened to the public in the 19th century such as the Royal Parks in London (Chadwick, 1966; Vercelloni & Vercelloni, 2009).

Botanic gardens are a special category in this context. Chadwick (1966) puts

Fig. 1: Gropius (1955) in fact rationalised the principles of open space between buildings in a diagrammatic relation between building height and space between buildings.

forward that botanic gardens can be considered the first public parks because they have always been – and still are – open to the general public. Note that the function of botanic gardens is scientific research first into plants for medical use later on into the field of plant sciences and taxonomy in particular.

In the 20th century we see this development of the landscape as public space extended outside the cities as urban landscapes (Vroom, 1992). In the Netherlands the landscape plans for linear plantations along major roads and waterways from 1916 on and from the 30s on the landscape plans for the new Zuiderzee polders. The 20th century in Europe marked the emergence of the planning and design of the landscape as public space as a major new work domain for landscape architecture (Toorn, 2008).

Konijnendijk et al. (2005) give an extensive overview of urban forests and their history but do include also trees in parks, linear plantations along streets and boulevards and urban plaza's.

2.1 THE RISE OF THE PUBLIC PARK IN WESTERN AND CENTRAL EUROPE

The emergence of the need for public parks as open space for the general public was based on concerns about the alarming state of public health in the cities that had extended explosively but unplanned and in the cheapest possible way, with a few exceptions (Vercelloni & Vercelloni, 2009).

'Hygeia'

Public parks as open space that most citizens lacked, both in their living environment and in their working environment, were a first reaction to improve the bad living conditions.

One of the first initiatives to improve these bad living conditions in the city came from Sir Benjamin W. Richardson (1828-1896) a British physician who specialised on public hygiene and infectious diseases. In 1875 he presented his well-known 'Hygeia' [the Goddess of good health, cleanliness, and sanitation] at a conference for the Social Science Association. The concept of 'Hygeia' was published in the same year under the title of 'City of health' (Richardson, 1875). It described basically how an ideal city might be planned from the viewpoint of public health; a functionalist approach to town planning with no concern for the aesthetic aspects of town planning of most architects of that time.

Richardson describes in great detail the need of sunlight in streets and dwellings, private gardens, sewage systems, no underground spaces or transport, chimneys in all private dwellings. For the layout of the city he mentions factories to be located outside the residential quarters, the same for the sewage works, the water works. He gives a detailed description of the hospital as an important public building, the same for houses for the aged and asylums. Apart from the private gardens, he also mentions swimming pools, playgrounds, gymnasia. Special attention is given to the cemeteries and burial grounds.

According to Richardson, every city should have a sanitary officer to watch over the sanitary welfare and well-being.

Howard; Garden cities of tomorrow

While Richardson's 'Hygeia' was – and still is – largely unknown even among professional landscape architects and architects, the opposite is the case for Howard's 'Garden cities of tomorrow'.

Sir Ebenezer Howard (1850-1928) the self-made utopian thinker and writer, published in 1989 'A Peaceful Path to Real Reform'. It can be seen as a manifesto for the overcrowding of cities during the Industrial revolution because of people moving to the cities to work in the factories. According to Howard part of the cause of the problem was the land, not being available for workers and the lower classes and thus being housed in unliveable small dwellings.

In 1902 he published a revised version under the title 'Garden cities of tomorrow', largely based on ideas of social reform and town planning. The publication can be viewed as a blueprint for an ideal society, in which he formulated his solution to these problems in the form of a graphic layout for new settlements outside the big cities, also called 'garden cities' as self-contained communities surrounded by greenbelts containing proportionate areas of residences, industry and agriculture.

Letchworth, the first of the garden cities to be built and founded in 1903, was not a great success. Despite being owned and developed by a company, in the long run it proved to be too expensive for workers and other low-income groups. In general the garden city concept is based on low densities which is far more expensive than high density and high rise.

The concept of 'garden cities' was followed, often in adapted form, in the UK and abroad. Some people even consider the garden city movement as the start of suburbanisation.

Developments in Central Europe

In most history of landscape architecture books, the development of public parks in Central and Eastern Europe is not dealt with (Toorn, 2018 [3]). Gothein (1979), still a classic source, is hardly mentioning Central and Eastern Europe but even the few public parks that are mentioned are not described or analysed.

The study of Csepely-Knorr (2016) is a recent example of a thorough study based on analysis of archival material of public parks in Budapest. Hopefully more of these type of studies will be done, also for other cities and countries in the region because this is a 'white spot' in the history of European landscape architecture. Recent research shows how the emergence of public urban parks also took place in Central and Eastern Europe. For example the park 'Maksimir' in Zagreb realised by Bishop Juraj Haulik (1788-1869), is one of the many examples of public parks in the region (Taylor, 2008; Šćitaroci & Šćitaroci, 2014; Rechner Dika & Toorn, 2018). The 'Varosliget' park is another example of a public park in Budapest (Taylor, 2008; Szilágyi & Veréb, 2014; Jámbor, 2016).

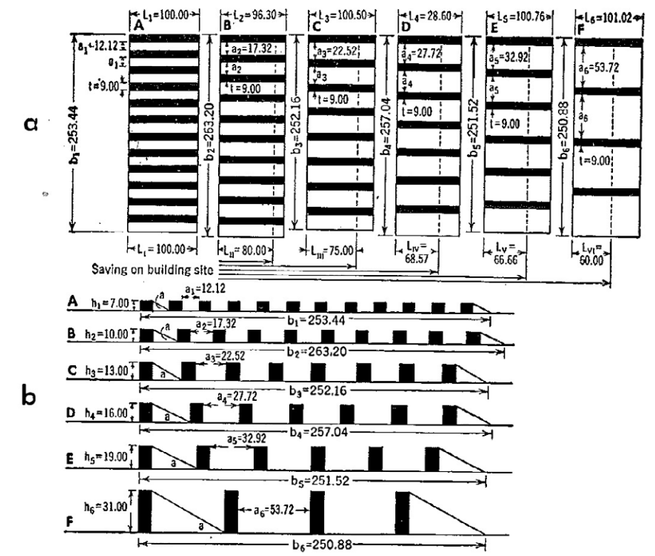
In the book published on the occasion of the 25th anniversary of the Faculty of Landscape architecture and urbanism in Budapest, a number of research projects on public parks is mentioned, some of them related to climate change (Csemez et al. 2018).

Fekete (2007) did a number of studies on historical parks and gardens of mansions in Transylvania (Romania), most of them outside the larger cities. Nearly all of them are in bad state of maintenance and local and regional governments are studying the possibility of restoring a number of them and giving them a new function as public park. The Maros river is a regional landscape in Romania, which could have a potential for the creation of a landscape park (Fekete & Toorn, 2016).

From public parks as elements in the urban landscape to park systems at the structural level

The restructuring of Paris under Haussmann also resulted in the emergence of 'park systems' (Saalman, 1971). Preoccupied to contribute to the health and wellbeing of the urban population, the Emperor Napoleon III provided the conditions for Haussmann and his collaborators to reorganise the urban landscape of Paris at a structural level.

Alphand (1817-1891) – the park designer under Haussmann – introduced a new style of public parks, partly based on existing forests (Bois de Boulogne, Bois de Vincennes) but also newly designed such as the Parc Monceau.



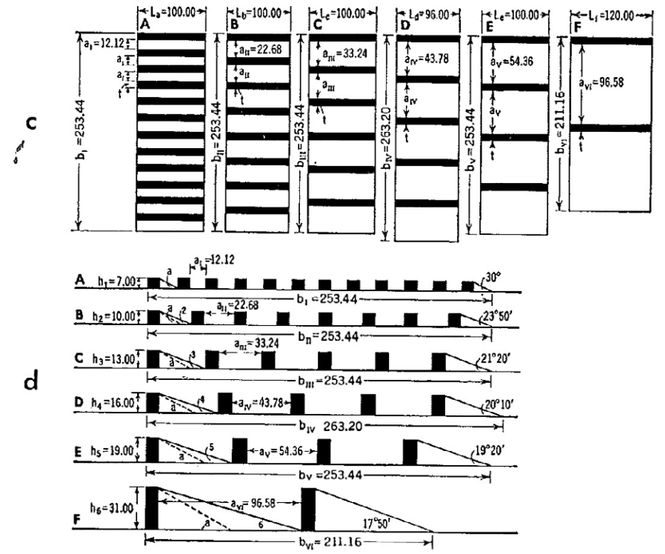


Fig. 40 a, b, c, d: Diagram showing the development of a rectangular site with parallel rows of apartment blocks of different heights. Conditions as to air, sun, view and distance from neighbor block are improved with increased height of the blocks in c and d. In a and b these conditions are constant, but the higher the buildings the less land is needed for the same amount of living space.

These new style parks were adapted to public use with pathways, small gardens, restaurants, water bodies.

At the beginning of the 20th century the Champs-de-Mars – the former site of the 'Exposition Universelle' in Paris in 1900 – was partly re-designed by J.C.N. Forestier (1861-1930) in which he developed a new eclecticism in French parks. It was Forestier who developed also the concept of park systems theoretically in which different types of parks were connected and integrated into the urban landscape, together creating a new green structure of open space, water bodies, linear plantations along boulevards (Leclerc, 1994; Leclerc & Cid, 1997). Forestier's concept of park systems was also applied abroad especially in South America.

In Stockholm at the end of the 30s a new development was initiated in the parks by director of parks Oswald Almqvist (1884-1950) and finished by his successor Holger Blom; the Stockholm park system (Nilsson & Burch, 2006). It comprises a coherent system as urban green system consisting of physically linked parks based on a concept which would later be called the 'Stockholm School of Park Design'. It can be considered as part of the modernist movement (Taylor, 2008). The new parks had a strong political impetus as a reaction to the urban development during the industrial revolution in the 19th century. These parks were more informal, fit for everyday park life for multiple use by all citizens.

In the second part of the last century, the green structure of Rotterdam also developed into a 'park system' but in this case the green structure was partly based on the structure of the landscape with the rivers Maas as the main water course and the small river Rotte as key landscape structures (Goossens et al., 1995). The whole system of ports is part of a man-made structure although it is also related to the river Maas.

2.2 VOLKSPARK

The concept of the Volkspark was founded in Germany and the first projects of Volksparks in Germany were: Ostpark Frankfurt (1906), Ludwig Lesser Park Berlin (1908) Schillerpark Berlin (1913), Vorgebirgspark (1911) Cologne (Vercelloni & Vercelloni, 2009).

Volksparks are designed as multifunctional urban green spaces (Pohl, 1993). Important elements in the concept of the Volkspark are an open green space or meadow as a multifunctional space for different types of uses, a water body and an urban forest. The 'urban forest' fits in the German idea of nature, very different from the landscape style forest in other countries.

One of the best-known Volksparks is the 'Stadtpark' in the city of Hamburg, designed by Schumacher in 1909. In the plan for the Stadtpark the three main elements come back; the 'great meadow', the 'Stadtpark lake' as part of the water system and the 'urban forest'. Next to smaller elements such as playgrounds, sports facilities, open air theatre, school gardens, these elements are part of a larger – mostly axial – structure. In the 'Stadtpark Hamburg' this axis forms a line from main entrance to the Planetarium (a former water tower, located at the highest point) and this axis organises the space also visually.

Note that the Volksparks lack any form of romanticism as we see in the landscape style and their plans are based on functional requirements of active and passive use of urban green space (Pohl, 1993). The planning and design backgrounds were explicitly not anti-urban as was later on the case in the 30s during the Nazi-regime.

Andela (1981) gives a historical overview of the development of the public park in the Netherlands and how it related to developments abroad, especially the Volkspark in Germany.

The concept of the Volkspark was also attractive as design approach because of its functional approach to the design of green space (Pohl, 1993). Implicit background of the concept of the Volkspark was the intricate relation between physical and mental health, a principle already engrained in the classical Greek culture.

2.3 THE MODERN MOVEMENT

The ideas of Richardson, Howard and others, resulting in more open space in the industrial city, were certainly part of the thinking and doing of the architects of the Modern Movement but the whole concept of the Modern Movement had a far larger scope. The Moderns wanted to create a new world designed by architects that used new materials, new ideas for better housing of people. They wanted to break with history, which was in their eyes a disaster and did not offer any inspiration for the new world they had in mind.

In relation to open space they developed new design principles (Fig. 1) in which there was enough open space between the buildings to let sunlight in and the buildings exposed to the sun in order to let in the sunlight into the interior (Gropius, 1955). Open space between buildings was a new function they introduced for the planning and layout of new urban extensions as was proposed in some of their CIAM meetings (Es et al., 2014). The architects of the Modern Movement extended the work domain of individual buildings to the organisation of these buildings in open space. For the Modern architects urban open space was a complement to their architecture.

Immediately after the WWII, in the Netherlands these principles were certainly applied and gave even in high rise neighbourhoods enough open space between buildings. The design of the open space was not part of their design approach, for them open space was needed for health reasons (a functional approach) but there was very few – in any – attention for an integration between buildings and space. For the Moderns the landscape served only as background to their buildings and the landscape as such was certainly not object of planning and design.

Also in Budapest there are fine examples of these types of neighbourhoods from the period after WWII, in which the organisation of open space is exceptional compared to contemporary examples. Unfortunately these post-war neighbourhoods have been transformed in bad ways; the open space has for a large part been transformed into parking space for cars. In that sense they still function really well.

The Modern Movement was based on art and architecture, fields where also fundamental changes took place in that period. This was quite different from landscape architecture where the main change was the extension of the work domain from exclusively private gardens and parks to the planning and design of the landscape as public space (Toorn, 2005).

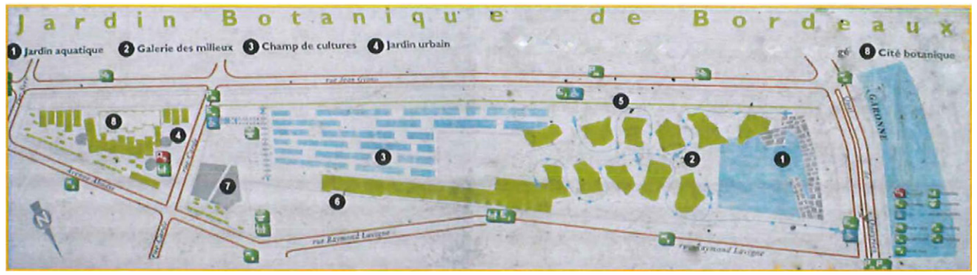
3. THE PRESENT SITUATION; WHAT IS THE ROLE OF PUBLIC PARKS NOWADAYS?

3.1 FUNCTION, USE AND ROLE OF PUBLIC PARKS

History and development over time

Before the 18th century there were no public parks in the real sense of the word; the botanic gardens were open to the general public but their main function was not public park.

One of the most important functions of parks before the 18th century was hunting, in the private gardens it was mostly pleasure, comfort



and in some case the collection and cultivation of rare plants.

Taylor (1995) gives an overview of functions of urban parks in 19th century Britain such as the park as a representation of nature in the city, as an artistic expression or as social places.

Kostof (2004) states that the public park is also an open space belonging to the public as of right. He considers the squares in London as urban open spaces that were in some or another way still related to the people and and surrounding dwellings. In his view the public park was a new phenomenon and explicitly related to the industrial revolution. The transition from private or royal park was a gradual development. He mentions as example the Englischer Garten in München as an example of a public park in the strict sense, heavily influenced by the German idea of the Volkspark. He cites Loudon who considered the function of public parks also a means to raise the intellectual character of the lower classes. This is also the main idea behind the Derby Arboretum, which was designed by Loudon and for which the land was given by a philanthropist to the city of Derby.

Kostof views urban development as a process where different forces such as natural disasters, human interventions, war, big fires and planned interventions such as the creation of new boulevards by Haussmann in Paris, together create the form of the city.

Lund (1997) describes a great many gardens and parks designed by Danish landscape architects. What is interesting in this chronological overview is the wide range of types of parks but especially their design backgrounds. To mention two design approaches; the functional, as in the design of sports facilities vs. the relation to the existing site and its topography as a basis for the structure of the park as in the example of housing estates, open air theatres and urban parks.

What are the benefits of public parks for people?

Konijnendijk et al. (2013) give a systematic overview of the benefits of urban parks. If we first distinguish the factors that influence the landscape as a system (natural, socio-economic and cultural), we can list them as follows:

- natural system
  - biodiversity
  - air quality, carbon sequestration
  - water management
  - microclimate
- socio-economic system
  - social cohesion; Francis, 2006; Nolin, 2006
  - tourism
  - house prices
- cultural system
  - identity
  - relation to nature
  - cultural monument

If we add to this outline the relation to people, as individual, as social groups and as society at large, we come to a matrix that represents the different relations. For each park the matrix can be filled in differently because of differences in site, time period and culture.

Note that Konijnendijk et al. explicitly refers to the role of trees in the urban landscape, not only in urban parks but also in linear plantations, urban plazas and solitary trees in the city. In Hungary Szabó et al. (2019) have set up research projects that investigate the role of urban trees in the urban climate and the relation with the urban heat island.

3.2 BOTANIC GARDENS

Botanic gardens are, in most cases, public gardens devoted to the cultivation of plants for scientific or educational purposes. Botanic gardens are distinguished from other gardens by the practice of arranging plants by some scheme that is helpful to the student of botany or horticulture and by complete and accurate labelling of all plant specimens. Already in history, botanic gardens had also other functions apart from scientific research; organise educational programmes to create environmental awareness among children, students and train teachers in environmental education but also inspire poets, writers and other artists by providing aesthetic experiences and pleasure.

Italy can be seen as the cradle of botanic gardens, founded on an ancient tradition of growing plants for medical uses. The origin of modern botanic gardens is generally traced to the appointment of professors of botany to the medical faculties of universities in 16th century Renaissance Italy, which also included the curation of a medicinal garden. The botanic gardens of Padua and Florence were founded in 1545, followed by the ones in Pisa and Bologna only a few years later.

In the contemporary times, botanic gardens are also important tourist attractions but can also be considered as the last refuge for some rare plants.

In Paris the Jardin des Plantes was established in the 17th century but originated from a nearby monastery and medical garden; the 'jardin du Roi' on the left bank of the Seine (Chadych and Leborgne, 1999). Overall the grounds are oriented on the river Seine. The buildings are both on the end and alongside of the axial system that is oriented to the river. In the jardin des Plantes organisation of plants is based on the system of Buffon (1739-1788), who became director of the garden and

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Fig. 2: The newly designed botanic garden in Bordeaux on the right bank of the Garonne (Mosbach, 2010)

transformed it into a major centre of research. The plants are organised by family, based on an evolutionary principle of development, fitting into the original layout from the 17th century.

The Jardin des Plantes is an extraordinary example of integration and urban quality, where all functions are beautifully integrated into a top quality design (Chadych and Leborgne, 1999). New additions, like the Museum are beautifully fit into the existing situation both from an architectural point of view (Bezombes and Bourgeois, 1994) as from a landscape architectural point of view. The garden is also a top quality urban public space where all urban activities you can think of are being used (Leveque, 1980). A superb urban space both naturally and culturally. Here the existing structure of the garden and its buildings is so strong that it can easily accommodate new interventions of various sorts.

In Bordeaux the botanic garden was displaced from the city centre to the right bank and was completely redesigned in 2007 by Mosbach as landscape architect and Jourda as architect (Fig. 2). The plan was based on three main requirements in the program; scientific research, informing the public, showing the regional natural landscape of the Aquitaine region. Mosbach searched for a concept that could inform urban people on the natural landscape right in the middle of the city (Fieldwork, 2006). The plan takes the historical parcelling of the agricultural land of the site as a point of departure. The relation between garden and city is important also in terms of physical borders in which the 'water garden' forms a transition to the river (Mosbach, 2010). The garden is organised in three main zones; the 'urban garden', the 'field of crops' and the 'gallery of natural landscapes'. The field of crops shows plants such as wheat, flax, oats; typically plants that people in the city don't recognise anymore. In the materialisation of form the sculptural aspects of plants and groups of plants is also included. The gallery of natural landscapes shows different landscapes of the Aquitaine region. In fact, the plan for the botanic garden is a search for giving form to the relation between nature and culture in the city, an issue that has played a role in landscape architectural projects since its long history (Glacken, 1990). Bullivant (2007) includes the plan in her series of plans on 'activating nature' in the city.

While Chadwick (1966) puts forward the idea of botanic gardens as the first public parks, Tomasi (1991) comes to the conclusion that they might be the first step to modernisation of garden architecture because functional principles for the growing of medical plants and rare plants formed the basis for the design instead of aesthetic and style principles.

3.3 THEME PARKS, CHILDREN'S PLAYGROUNDS

Sørensen

The Danish landscape architect Sørensen (1893-1979) was the first to develop the concept of adventure playgrounds (Allen of Hurtwood, 1974; Lund, 1997). In 1931 he wrote 'Parkpolitik i sogn og kobstad' (Park Politics in Parish and Borough), a book still relevant today. Its most important contribution was the idea of adventure playgrounds which later spread all over Europe. Sorensen's idea of the 'skrammellegeplads' (adventure playgrounds) was first realised in Emdrup near Copenhagen in 1943, and later on in 1956 in the public housing development of Tingbjerg.

In the study of Lambert & Pearson (1974) an international overview of adventure playgrounds of different types and in different settings, is given. They include many projects from Denmark and the UK. It looks as if in that period the idea of adventure playgrounds was much more popular than nowadays. It is not entirely clear why.

Lady Allen of Hurtwood

Lady Allen of Hurtwood did a study on different types of adventure playgrounds in different countries (Allen of Hurtwood, 1974). While Sørensen had launched the idea in the 30s in Danemark, Lady Allen of Hurtwood has published a first overview of international experiences dealing with the phenomenon of play for children as part of their education in general. She has chosen a great variety of playgrounds, such as for different types of schools, in neighbourhoods, in parks but even in hospital settings. Not surprisingly the cases she describes and analyses come for a large part from Scandinavia.

Playing in the street or at dedicated playgrounds?

The Dutch architect Herman Hertzberger did a study on the relation between architecture, space and learning and the design of learning environments (Hertzberger, 2008). In this study he first of all states that the street could be an ideal place to play, learn and grow up in the outdoors but that it has been taken over by the car and become too dangerous for children. He distinguishes three learning environments for children; the classroom, the school as 'micro' city and the city as 'macro' school. The design of learning environments has always been an important domain for him as an architect.

Abu-Ghazzeh (1998) did a study in Jordan on the use of streets as environment for play for children. Like Hertzberger, he also remarks that nowadays streets could be ideal play environments for children but are too dangerous because of the contemporary 'Holy Cow' (which has much more space and privileges than the Holy Cows in India): the car. He studied how children did use the streets as playground in a neighbourhood in Amman in Jordan. He considers the street an important part of the growing up in a city and advocates for such a layout of streets that both the car and children will be able to use it.

Hayward et al. (1974) compare different types and forms of playgrounds in three study sites in the US. They distinguish three types; traditional, contemporary and adventure, all were located in neighbourhood settings. One of the recommendations for further research is to find out how these organised, and mostly designed playgrounds, relate to the non-specific playing sites in the experience of children and how they contribute to the general education and growing up.

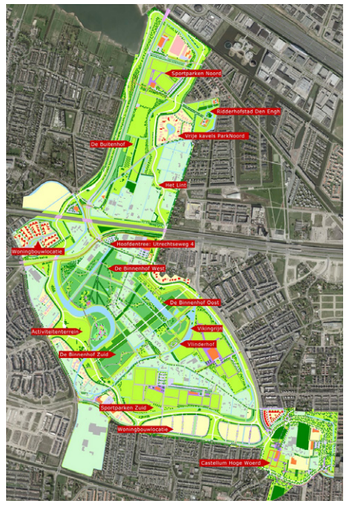
For children playgrounds are much more than only sites where they can enjoy the outdoors; discovery, experiment, social learning and contact with the real world are prime educational aspects for them. Depending on the design, layout and materials in the playground the scope of discovery and experimentation are hard to overestimate and are all experiences that cannot be learned in the classroom.

4. WHAT COULD BE THE ROLE OF PUBLIC PARKS IN THE FUTURE?

Landscape architecture is getting more evidence-based as we can see now in dealing with climate change.

Climate change is modelled on the basis of physics, the earth sciences and how it relates to and affects society at large. This scientific modelling is highly dynamic; as soon as new data are put into the model, the model changes. Models in science are based on a reduction of the everyday reality. In the building of models there are inevitably assumptions included, which are not always explicit. Models are first of all needed to get insight into backgrounds of the changes in real life and secondly to predict on the bases of results.

Landscape architects — and for that matter all other design disciplines



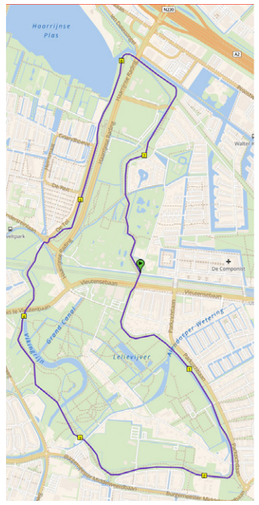


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Fig. 3: The Maxima park in Utrecht, Leidsche Rijn On the left the line [het lint], in the middle an overview of different elements, structures and context, on the right the park in relation to the traffic system with the motorway A2 on top and the former branch of the river Rhine.

— deal with climate change in a completely different way. They approach the problem in a designerly way and work in real time and in real life. The scientific approach and the design approach complement and influence each other (Fekete & Toorn, 2019).

Climate change will undoubtedly also affect the function, form and use of public parks. The issue of public health will play a major role in functioning and role of public parks in the future.

Existing functions of public parks will largely remain but also new functions will emerge and consequently new types of use, users.

Functions as part of the landscape as a natural system will become more explicit and be extended. Not only will parks maintain their traditional role of 'lungs' of the city but this will become even more important due to the still rising air pollution. The function of parks as part of the water system will become more important due to the increased chances for peak discharges, parks can function as temporary buffer for water storage. The need for water in parks will also change the form; not only due to earlier mentioned temporary storage in case of peak discharges but also as an important factor that influences the microclimate. Water surfaces, fountains and flowing water have a mitigating effect on the urban heat islands, a principle already practiced in the design of historic gardens (Jellicoe & Jellicoe, 1971).

Main changes in use will be increased use for physical exercise and the need for sunlight in the ever growing urban developments. The form of parks and open spaces will be more influenced by access; people should be able to reach urban parks and green spaces at reasonable distance from their home, a very similar principle as used for public transport.

In Europe, since the start of the industrial revolution, public parks have always had an educational role next to their functions and other types of use, by giving opportunities to the general public to experience the outdoors, for physical exercise and have a contact with nature. This educational role became more and more important since larger numbers of people moved to the cities for work. In their living and working environments of that time, they lacked any direct contact with the outdoors and with nature. This process of moving to the (large) cities is still continuing. These living environments also gave rise to a growing number of infectious diseases thus calling for more attention for public health.

4.1 PUBLIC PARKS AND PUBLIC HEALTH

The WHO Europe has published a number of studies on the general issue of health in urban planning and design (Barton et al., 2003). The concept of health is not as clear as it should be for everybody, that's why the WHO Europe has published studies on 'health literacy' (Kickbush et al., 2013; Leeuw et al., 2014).

Public health is directly related to public space in the sense that public space can create conditions for clean air, clean water and quality soils by improving the landscape as a natural system (Conway, 2000; Ward Thompson, 2011).

Especially in the urban landscape it is hard to imagine how public health is not related to public space; it always is. Bowler et al. (2010) analysed 25 sites in the UK — both natural (public parks and green university campuses) and 'synthetic' (indoor and outdoor built-up areas) — on their effect on public health and well-being. There was a clear evidence that the natural environments scored better than the 'synthetic' ones. Frumkin (2003) did a similar study in the US, searching for evidence that natural environments score better in terms of public health and well-being. He concluded with four aspects of the built environment, at different spatial scales, that were identified as offering promising opportunities for empirical research on public health: nature contact, building design, public spaces, urban form. Vlahov et al. (2004) focussed their research on the relation between urban form and health. They concluded with three key questions in considering how cities may affect health: what are the specific features of cities that are causally related to health?, to what extent are features unique to a particular city or different between cities?, to what extent are features of cities modifiable? All three studies are based on research from the fields of medicine and public health. Maas et al. (2006) searched for the specific relations between green space, urbanity and health. The study is based on social sciences research and concludes that the percentage of green space in people's living environment has a positive association with the perceived general health of residents. Green space seems to be more than just a luxury and

consequently the development of green space should be allocated a more central position in spatial planning policy.

Lachowycz & Jones (2012) developed a theoretical framework in which the relation between health and green space is represented in for individuals, for social groups and for society at large.

All five studies refer – in different ways and from different disciplinary fields – to the major importance for the planning and design of (urban) landscapes because they give evidence for the importance of green space, access and proximity for citizens for public health and well-being.

Even though there is wide evidence for the key role of urban green space for public health, we should not forget that public green areas can only be realised and maintained if supported by political support and planning instruments such as urban development plans and zoning plans. Generally speaking, despite political preferences and the available set of instruments, green areas remain a peripheral phenomenon compared with the increasing pressure of constructed development and space for traffic. Green areas in towns and cities remain vulnerable with their lack of financial yield they must maintain their position in towns and cities within a system that is geared toward economic gain and development.

In the present context of climate change new aspects are introduced that also affect public health, the function and form of green space and the organisation of transport and mobility that have become so important in contemporary environments (Fekete & Toorn, 2019).

For this study we focus on three key issues related to climate change, energy transition, improvement of water management and the creation of comfort and healthy environments for people. All three will also affect public health and liveability in the urban landscapes.

The energy transition from carbon-based fuels to renewables will also affect the air pollution and as such also contribute to public health. The improvement of water management will affect the micro-climate in the urban landscape because of new temporary storage of peak discharges in the city. The creation of comfort by means of bringing more fresh air in the city through new urban parks will mitigate the effects of urban heat islands (Brown et al., 2015). Without mentioning all, it is clear that these changes will greatly improve the quality of life in the urban landscapes both physically and eventually also mentally thus contributing to a new type of urbanity.

4.2 A NEW RELATION TO NATURE FOR THE 21ST CENTURY?

Over time we have seen major changes in our relation to nature (Glacken, 1990). In the Middle Ages the walled cities protected its citizens from the dangers of aggressors, enemies, intruders but also from nature. Nature was considered dangerous and was almost exclusively located outside the cities.

During the Enlightenment not only the attitudes and viewpoints towards authorities changed but also the interest into nature as object of study started to develop as the first steps into science and scientific research. Nature became object of study and especially in the study of plants it had its effects on production of food and the use of plants for creating comfort, for pleasure. Nature was regarded as an object of investigation rather than a force or attraction in its own right.

As a reaction to the ideas of the Enlightenment, in the 18th century romanticism emerged in which the relation with nature played a key role. Rousseau (1712-1778) was a key figure in this movement which also influenced politics, education and society at large, think of the French Revolution in 1789. In landscape architecture romanticism also caused a revolution in Europe; all parks in the baroque style were transformed and redesigned according to the principles of the landscape style.

The changing relation to nature as part of the landscape as a cultural system

One of the key aspects of the landscape as a cultural system is our relation to nature. Historically Hunt (2000) distinguishes between three ‘natures’:

1st nature; the wilderness, nature untouched by man

In the Netherlands we don't have any wilderness anymore only some ecologists think they can create a 'new' wilderness which mostly comes down to bringing back a situation from the past which they consider to be important for ecology.

2nd nature; the cultural landscape, man-made landscapes

Landscape architects usually distinguish two types of cultural landscapes; the rural cultural landscapes, historic cities and other urban landscapes (Duby & Agulhon, 1958; Rasmussen, 1982; Kostof, 1999)

3rd nature; designed landscapes, gardens

Examples from the development over time of different types of gardens, parks and landscapes that were designed and are still existing (Taylor, 2008).

The mansions and their gardens from the 17-19th centuries.

In landscape design we distinguish between 'nature' both as physical and as mental phenomenon, 'environment' which often is used in relation to pollution and sustainability and 'landscape', the living and working environment for people (Ward Thompson, 2013).

Our relation with nature in the 21st century will not only be influenced by the search for a new relation with nature due to our changing working environments where less and less people have a direct contact with nature in their daily work.

Society at large should also learn to become aware of the invisible but crucial aspects of nature that relates to working of the landscape as a natural system that provides us with clean air, clean water and healthy soils. Drawing attention to the working of the landscape as a natural system and its key role for our living environment will demand information on the functioning of the natural system which is not directly visible and showing why that is essential. Contrary to green space such as urban parks which functions are visible and can be experienced directly, the water system is almost the opposite; even for professionals it is not always easy to find out how it works on specific sites.

This is not only a matter of informing people but also for landscape architects to show how the natural system works in the city, for instance by showing how a drainage system works on a plaza. Most of such a drainage system is now underground but it could be redesigned to show where rainwater goes.

In the urban landscape the experience of nature in our daily environment can be greatly enhanced by putting more emphasis on slow traffic (pedestrians, cyclists) and giving them more space so that the actual danger of traffic accidents by cars is diminished.

Ann Spirn, who taught landscape architecture at Penn and MIT, has already at an early stage drawn attention to the importance of 'urban nature' in cities (Spirn, 1998). Tillie (2018) has developed plans for urban agriculture in the city of Rotterdam as part of the Waterplan. It can be viewed as a form of food production but at the same time an active way of working with nature and natural processes.

The concept of public health will also be influenced by the climate change due to a different relation to nature as part of our culture.

4.3 THREE EXAMPLES OF CREATION OF COMFORT AND HEALTHY ENVIRONMENTS FOR PEOPLE

From the multitude of possibilities and potentials for the creation of comfort and healthy environments for people, we have chosen three issues as examples; role of physical exercise, the direct contact with nature for children and the role of more attention and space of slow traffic.

4.3.1 PHYSICAL EXERCISE; FROM PHYSICAL AND MENTAL HEALTH TO WELL-BEING

Already the classic Greek civilisation was aware of the importance of physical health in relation to mental health. For them the two were directly related which is still a basic presumption in contemporary context. This is also the relation that Catherine Ward Thompson (2011; 2013) is referring to both in terms of physical exercise and in the direct contact with nature and natural environments.

When the first private parks were opened to the public, the exposure to daylight, fresh air and open space was the first important function and use. Towards the end of the 19th century with the emergence of the concept of the Volkspark in Germany the importance of physical exercise in the outdoors became a major issue for public health. The concept of the Volkspark added a new dimension to function, use and role of parks and green space in the city in general. Maass (1980) uses the term: 'culture in the open air' which was made available for everybody. She also mentions the functional basis of the plan making for the Volksparks.

In the second part of the 20th century we see the rise of 'sports parks', areas dedicated exclusively to sports in the outdoors, from swimming to rugby. Such sports parks often accommodate a series of spaces for different types of organised sports of groups, often with a competitive character.

Towards the end of the 20th century we see the rise of parks and green spaces as 'urban landscapes', green, open and blue space as integral part of the city. The best known case is the Parc de la Villette in Paris – often referred to as a 'park for the 21st century' – which can also be considered as a 'laboratory and experimental ground' for a new type of urbanity.

In the Maxima park in the city of Utrecht, designed by West8 landscape architects, we see the concept of a park as integrated into the urban landscape in a completely different form than in Parc de la Villette.

The park – with a surface of 300 ha and as large as the old centre of the city – is located in the recently designed urban extension for ±80.000 new residents west of the old city and is called 'Leidsche Rijn (Fig. 3).

The park consists of six main parts:

- The line [het lint]. A strip of 8 km's long and 3 meters wide that surrounds the entire park and is used for walking, skating, cycling, running, jogging. For horseback riding there is a separate path. The line is connected to all other parts of the park and to the adjacent neighbourhoods both for pedestrians and cyclists.
- The inner court [binnenhof] forms the central part of the park and is 45 ha in surface. An old course of the river Rhine [Vikingrijn] crosses it.
- The butterfly garden [vlindertuin], designed by the garden architect Piet Oudolf, has special flowers and plants that attract butterflies and other insects.
- The Rhine of the Vikings [Vikingrijn] is a former course of the river Rhine in the area and has been used in the past by the Vikings and the Romans. It is now used for boating and other water-related activities.
- The pergola [park pergola] surrounds the inner court and is a built wall of 6 meters high in the form of a honeycomb pattern which can be used by vines, insects, birds and other animals.
- The outer court [buitenhof] located in the northern part of the park which is more natural and where less activities are located.

The park is a major success in different ways; in functioning as an attractive green space for the neighbourhoods around, as space for activities and sports of all sorts and in general as part of the urban landscape also for other parts of the city of Utrecht.

The line [het lint] defines the contour of the park but at the same time organises the use. It is intensely used thus leaving the inner court largely very quiet. It organises the access for slow traffic from the adjacent neighbourhoods independently and safely from car traffic and railway.

4

Fig. 4: School gardens in Slovenia (Nature's, 2017 Examples of school gardens in Slovenia, both historical and contemporary cases.)

4.3.2 SCHOOL GARDENS; LEARNING OUTSIDE THE CLASSROOM

It is extremely important that every young person should experience the world beyond the classroom as an essential part of learning and personal development, whatever their age, ability or circumstances.

Learning outside the classroom is not an end in itself but rather a vehicle to develop the capacity to learn. It provides a framework for learning that uses surroundings and communities outside the classroom. This enables young people to construct their own learning and live successfully in the world that surrounds them.

Places may refer to a location, activity or workshop, but regardless of where learning outside the classroom takes place, the purpose is the same. Give young people a real-world learning experience that will set them up for success in life beyond school. Learning outside the classroom experiences differ from those that arise through conventional teaching methods as students may be encouraged to engage a broader range of soft skills such as teamwork, leadership and compromise in their learning environment.

There is strong evidence that learning outside the classroom adds much value to classroom learning. It can lead to a deeper understanding of the concepts that span traditional subject boundaries and which are frequently difficult to teach effectively using classroom methods alone. It provides a context for learning in many areas: general and subject based knowledge; thinking and problem-solving skills; life skills such as co-operation and interpersonal communication (Ward Thompson, 2013).

Learning experiences outside the classroom are forms of experiential learning (Dewey, 1997). These experiences are rooted in the simple principle that “experience is the best teacher.”

School gardens; learning about nature by doing, learning outside the classroom

Learning outside the classroom can be accomplished in different ways.

One way is taking school children out into the landscape by means of organised field visits.

Schools in a rural setting around Bourg en Bresse, north east of Lyon, have organised field visits with school children into the rural landscape around (Oddou-Daragon & Nelson, 1984). In the publication 'Pays — paysage à l'école' [Land — Landscape at school], the authors describe the outline of an intelligent and well-thought-of approach of a number of sessions in the outdoors in the vicinity of the school. The program was well-structured in a series of exercises ranging from landscape perception, farm visits, learning about the different plants and meeting local people.

At a Conference in Dordrecht on 'School History Museums & Collections' a most interesting and charming presentation was made about the experience of school gardens in Slovenia (Nature’s, 2017). The images — both historical and recent — are very convincing and show a diversity of activities in school gardens in Slovenian schools (Fig. 4). Given the large number of examples of schools that have school gardens, it seems that the Slovenian educational policy is stimulating for the use of school gardens in basic education at schools all over the country.

In the 'Volksparks' one of the characteristic elements were the school gardens (Vercelloni & Vercelloni, 2009). School gardens were from the very beginning part of the Volksparks and are still functioning in the same way as they were meant for when the plans were made. Even on Google Maps it is easy to find school gardens in Volksparks for instance in Hamburg and Berlin.

Many botanic gardens have special programs for school children.

The new botanic garden of Bordeaux, designed by Mosbach landscape architects and Jourda architects, comprises issues of biodiversity, renewable natural resources and the dynamics and mutation of landscapes. The garden is organised into six sections, including an arboretum, fields of grain, an alley of vines, and a water garden (1250 m²). It also contains greenhouses, as well as eleven landscapes representing the environments of Aquitaine, including dune, cliff, wet grassland, moorland and school gardens for children from the city (Mosbach, 2010).

In a manual on school gardens of the World Food Program, examples are given from school gardens in Gambia (School, 2013). Here the school gardens have a primary function on food production and teach school children how to manage, maintain a house garden for food production on their own.

It is remarkable that in recent references on education, learning in the outdoors is considered to be an excellent complement to classroom learning but that educators and thinkers about education — except for Piaget and Montessori — only mention it rarely (Palmer et al., 2010; Pelt, 2015).

4.3.3 STIMULATING SLOW TRAFFIC; CREATION OF SPECIAL INFRASTRUCTURE FOR PEDESTRIANS AND BICYCLES; THE CITY OF UTRECHT

Many studies on climate change and climate design pay exclusively attention to buildings and clusters of buildings, they focus on architecture and urban design (Givoni, 1998). So far very few pay attention to the role of traffic, mobility and transport

Even though the Netherlands is historically known for the popularity of bicycle use, the car is still most used as means of transportation. Use of bicycles in the last decades did increase despite the rise of car use. In the Netherlands investments in motorways and road systems for cars are still dominant compared to investments in public transport and in bicycle infrastructure. The climate change has increased the general interest in cycling because of efficiency of energy use, no pollution and major health benefits over car use. The bicycle and bicycle use is also well-known outside the Netherlands; for instance Richardson (1875) was one of the earliest advocates of bicycling; he wrote 'Cycling as an Intellectual Pursuit' for *Longman's Magazine* in 1883.

Because of the active and stimulating attitude of the city of Utrecht for bicycle use as part of their traffic system (Fig. 5), we use it as a case study (Actieplan, 2015). Utrecht is a city with 350.000 inhabitants.

Utrecht pays attention to different types of bicycle use, but the improvement of the bicycle system to enable use for commuting now gets special attention and will give best results from viewpoint of health, pollution and efficiency of use of space.

Planning and design of traffic systems for the bicycle affects all three levels of intervention.

At the strategic level it is in the case of the city of Utrecht a matter of policy which enables interventions on the level of structure and the level of element and material form. At this level the relation to climate change is fundamental; cycling is a form of transport and movement that is based on renewable energy. A second fundamental point is the improvement of health through cycling since it is a daily physical exercise which does not pollute (Fraser & Lock, 2010; Terzano & Morckel, 2011). All together this policy contributes greatly to the creation of healthy environments for people (Chapman, 2007; Pucher & Buehler, 2010; Litman, 2013).

The organisation of the entire urban transportation system is also part of

the strategic level. The bicycle plan in Utrecht is based on a design principle in traffic engineering of separating the different traffic modes. In this case we distinguish between: motorised traffic or fast traffic, public transport and non-motorised or slow traffic (pedestrians and cyclists)

For the bicycle tracks a special distinction should be made between those who pedal and those who do not pedal; only those who pedal should be allowed on the bicycle tracks, so no motorised cycles, no (neither carbon-powered nor electric) scooters. This is not yet the case in Utrecht.

This political choice is not automatic because of the number of cars and car owners who are also backed by influential pressure groups. The city puts much effort in the organisation of the participation of the citizens; regularly meetings are organised to stay up-to-date on the experiences and opinions of cyclists in the city.

At the structural level, the relation of the network to location of users and the structure of the urban landscape is at stake. Another important issue is the continuity of the linear structure and the facilities as hubs in the network; the line is viewed as a 'chain' of structural elements such as crossings, bridges and hubs in the network (Ketenaanpak, 2015).

At the level of element the materialisation of the traffic system is dealt with. Space requirements for different intensities of use, the separation between traffic systems for bicycles, pedestrians and cars is of prime importance to improve the safety. Specific elements are crossings, facilities for bicycle parking for individuals, neighbourhoods and the city at large (Bach et al, 2006; Actieplan, 2015).

Different organisations, also European and worldwide, have rated the bicycle system, use and active stimulation of the city as one of the highest in the world. Recently Utrecht came out even higher than Copenhagen in a rating according to the German insurance company Coya.

For landscape architects, the planning and design of road systems and facilities for bicycles at different levels has been part of the work for a long time (Toorn & Fekete, 2018). For the design of road systems in the city, see for instance the classic study on urban roads, boulevards and other types of Allen Jacobs from UC Berkeley (Jacobs, 2001).

Safety is a major issue because of the vulnerability of cyclists in relation to cars (Hartog et al., 2010; Rojas-Rueda et al., 2011). For planning and design of traffic systems and facilities for bicycles a number of issues are important.

First of all the types of bicycles and their use; technical aspects
There are different types of bicycles; regular bikes of daily use, racing bicycles (mostly for leisure), e-bikes for commuting and for leisure and in the last decade the cargo bikes for deliveries, transport and for children (Bach et al, 2006; Handboek, 2010; Handboek, 2018). All have different sizes, speeds.

The type of use and users; traffic systems
We usually distinguish three types of use for bicycles; for use in the daily living environment, for commuting and for leisure (Bach et al, 2006; Bendiks et al., 2011).

The planning and design of traffic systems for the bicycle in the landscape at large
These types of use can be related to the bicycle as means of transportation and how that influences the planning and design in the context of spatial planning; technical aspects of the facilities and systems, the traffic system and users, the relation to the (urban) landscape (Banister et al., 1997). The integration of these bicycle facilities in

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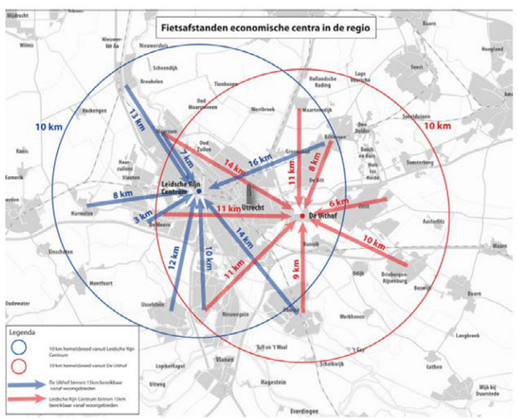
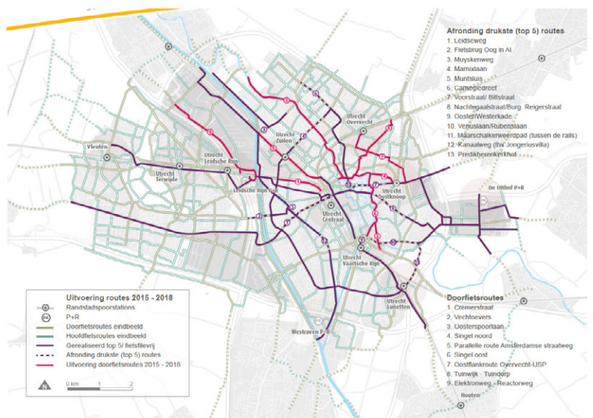
Fig. 5: New bicycle infrastructure for the city of Utrecht as part of urban mobility, transport and traffic plan (Actieplan, 2015)





60% woont binnen 15 km van de werkplek en zou op de fiets kunnen.

the urban traffic system and in the urban landscape in general could also greatly improve the quality of the urban environment but also the liveability because of the better air quality (Bach, 1989; Frank & Engelke, 2001; Martens, 2004; Ward Thompson, 2013).

CONCLUSIONS

- In the development of public parks over time we see continuity and change. In the continuity we have to search of design principles that worked well and can be applied in contemporary context of place and time. The change – as nowadays climate change – offer new challenges for landscape architects to develop new ideas, concepts and approaches based on design as research and design experiments.
- Core of the changes in educational role of public parks will be on public health. Public health and public space are intricately related and influence each other. All public space has a function in public health but public health comprises more than public space. The concept of public health will also be changed by the developments in climate change. The educational role of public parks extended from providing fresh air and physical exercise for citizens into a more comprehensive concept of contributing to a different attitude to nature in the city and well-being
- Overall we see a development in European parks from private to public (19th century),
from physical health to mental health to comfort and well-being, from individual green spaces as elements towards green structure as basis for the urban landscape development in the long run.
The function and use of public parks has evolved over time, from providing green and open space in the polluted cities to an integrated part of the green structure in the urban landscape with different functions.
- The Volkspark in Germany not only stood for new functions and use of the public park but introduced also a new functionalist design approach as opposed to the principles of the former 'landscape style'.
- Botanic gardens have kept their original function and use but have also maintained their role as part of the public park system in the urban landscape.
- The contribution of landscape architecture in the future of public parks is first of all in its design role; integrating different functions and uses into meaningful environments for people and for society at large. This search for new synthesis on the basis of the existing site and new demands from society forms the core of landscape architecture as design discipline.
- The effect of stimulating bicycle traffic for daily transport in the living environment has two major effects for public health; first of all a far lower pollution, secondly the daily physical exercise.
- In the 20th century we see this development of the planning and design of the landscape as public space extended also outside the cities. In the Netherlands two major developments took place before WWII; the making of landscape plans for linear plantations along major roads and waterways from 1916 on and from the 30s on for the new Zuiderzee polders.
- It would be interesting to investigate the level of pollution in the 19th century industrial city to the pollution in the contemporary cities. At first sight it looks as if the pollution nowadays is dominated by traffic using carbon-based fuels.

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ÖSSZEFOGLALÓ

EURÓPAI KÖZPARKOK ÚJ SZEREPKÖRE ÉS FUNKCIÓI – A SZABADTEREK ÉS A KÖZEGÉSZSÉGÜGY KAPCSOLATA A JÖVŐBEN

A cikk a közparkok funkcióinak, használatának és megjelenésének változásaival foglalkozik, a klímaváltozás tükrében. Az európai szintű áttekintésben kiemelt figyelmet kap a közparkok jövőbeli közegészségügyi szerepe.

A kutatás kulcskérdése, hogy milyen eszközökkel tudnak a tájépítészek a klímaváltozás okozta kihívásoknak megfelelő közparkokat tervezni, és hogyan lehet azokat a helyi viszonyoknak megfelelően alkalmazni.

A kifejtés a múlt, jelen és jövő hármasára épül. Az első rész rövid áttekintést ad a közparkok történetéről. Ezt a kortárs közparkok egyes oktatási-nevelési vonatkozásainak ismertetése követi. Végül, a harmadik rész három esettanulmányt ismertet a klímaváltozással kapcsolatos fejlesztési trendek illusztrálására. A következtetések fókuszában a közparkok tervezéstörténetének folyamatossága és változása, valamint a tájépítészek tervezésben betöltött szerepe áll.