

**LANDSCAPE DESIGN AND NATURE IN HOLLAND**  
**Sustainability and the creation of new qualities in historic**  
**landscapes**

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- *Abstract:*

In this paper we want to state that the quality of good design in the landscape can integrate functional, natural and historical qualities into a new unity that is more than its separate parts. This integrated approach also can contribute to a more sustainable environment because existing qualities can be transformed into a contemporary form that allows for readability of the landscape. We see design as a way of creating new knowledge both professionally and in terms of new experiences for users. To research this thesis we have analysed three plans at the regional scale. The three examples are landscape plans that have been designed in the 50-ties and 60-ties of the last century and which by now show their full qualities. These plans also illustrate nicely the concept of sustainability; in landscape architecture it is broader and also comprises the structure of landscapes and cities that have been functioning for a long time and also have a historical value.

- *Keywords:*

landscape architecture, theory in landscape architecture, research in design disciplines, sustainability, theory as a knowledge system

## 0. INTRODUCTION

Landscape architecture, like all design disciplines, is basically a practical profession. The practice of making plans forms the core of the profession. With this growing experience of making plans, gradually the profession is seeking for a generalised background; a theoretical framework. A theory is not only necessary for landscape architecture as an academic discipline but it can also help to clarify its position in relation to other (design) disciplines. It is more or less the 'natural' development of any practical profession to organise its experience into a systematic and explicit body of knowledge to show its place in the academic community. A theory, because of its abstraction of practical experience, can also be of use in reflection and critique. Last but not least such a theory can also help to give insight into the contribution of the discipline to society at large; what does landscape architecture do about the problems of everyday life in society?

For landscape architecture as a discipline the development of a theory is a prime issue. What is theory in a design discipline? Lynch [8] works out a nice example of a theory in his seminal book: 'A theory of good city form'. A more recent example is the

overview of Swaffield [17], although he does not describe what he considers as a theory in a design discipline like landscape architecture. In this paper we will put forward the idea of theory as a knowledge system that can be of use for the profession, for the academic community and for society at large.

In the research we have analysed a series of plans at a regional level. The question is how design can create new meanings in the everyday environment that generates new experiences and new ways of use.

The paper is set up in four parts. First we start out with the definition of the problem in terms of design as a knowledge producer in relation to landscape design.

In the second part three case studies are analysed. The landscape plan of 'Walcheren', the plan for the 'Veerse Bos' and the plan for the 'Bosdijk'. In the third part both plans are compared from the viewpoint of approach; the role of methodology and design approach in the creation of distinct differences and the design means that have been used. Finally, the integration of new qualities is dealt with: sustainability, readability and history.

# 1. THE DESIGN PROJECT AS CREATOR OF NEW KNOWLEDGE IN DESIGN DISCIPLINES

Design in landscape architecture, has for a long time been seen either as an ‘artistic’ activity or — in modern times — as a problem solving activity to solve spatial problems. Both visions only refer to certain aspects of the design process. The act of transforming the existing landscape on the basis of a program is the essential aspect of design; creating a new unity in space and time. This process creates new design experience for the profession. It also creates new environments that will create possibilities for new types of use and experience for users in daily life.

Thus we see design as a way of creating new knowledge [18]; by making use of existing knowledge and integrating new ideas and experience on the basis of design interventions. This is first of all reached by the experience of designers about this type of practice; in this way the design project adds new knowledge to the existing by building up experience.

In this context theory can be seen as a knowledge system where the accumulated experience of the profession is organised in a coherent system that forms the basis of practice, thought and insights.

Finally, research in design disciplines can be seen as a form of creating and organising knowledge.

Research in design disciplines can generate new knowledge in different ways:

- the design project as a knowledge producer; design by research and producing new experiences for users
- design research; typological research, plan analysis
- research of design; historical analysis
- research by design; design experiments and competitions

In relation to society, landscape design can be seen as a cultural act; it contributes to the giving form to contemporary society.

Knowledge creation in a design discipline like landscape architecture is threefold:

- For the profession of landscape architecture: new experience in making plans
- For landscape architecture as a discipline — a systematic and explicit body of knowledge — the development of a theoretical framework
- For society: first of all it creates new experiences for every day use, secondly a contribution to the giving form of contemporary society, a cultural act

Plan analysis, like worked out in this paper, is one of the ways of developing such a theoretical framework. By analysing and comparing these plans, new knowledge in a generalised form is added to theory as a knowledge system.

## 2. CASE-STUDIES

The choice of case studies has been based on the following criteria; we have sought for less known examples than you will find in recent overviews of

Dutch landscape architecture [1], [3], [4], [5], [6], [11], [20], [21]. At the same time we have selected specifically Dutch examples. This last point not only refers to the specific Dutch situation of the ‘Low Countries’ [7], [19] but also to the strong tradition of design at the regional level in Holland [21].

We could distinguish four plan typologies of design at the regional scale in Holland:

- Landscape plans for major infrastructural works like motorways, waterways, railways
- Landscape plans for reallocation plans
- Landscape plans for the ‘IJsselmeerpolders’
- Landscape plans for the ‘Deltaworks’

This Dutch tradition of design at the regional level has developed strongly in the last century. This is partly because of landscape architects were asked to solve questions at that scale. At the same time the 20th century landscape became ‘public space’ in the context of society of that time. All four plan typologies refer implicitly to that spatial vision; how to design at this scale a ‘landscape as public space’? This tradition of design at this scale was very Dutch in the sense that it relies heavily on the experiences of land reclamation in the peat landscapes of the west and the making of polders [12], [13].

The three case studies chosen in this paper all fall in the category; landscape plans for reallocation plans.

Finally the choice for examples in the urban context is not difficult in Holland. The Dutch landscape is almost everywhere under urban influence, especially the western part of the country.

### 2.1 Walcheren; a post-war reconstruction of a historic landscape

- Project name and typology

The ‘new landscape plan for Walcheren’ [10]. A landscape plan at the regional scale. ‘Walcheren’ is a former island located in the south-western part of Holland; the province of ‘Zeeland’.

- Background information

The plan for Walcheren was made just after WW II. In 1944, the last year of the war, the dikes were bombed by the RAF at four places to dislodge the German forces. Walcheren was inundated for almost one year. This meant that nearly all vegetation was dead because of the inundation by salt water. Walcheren looked like a ‘moon’ landscape; all vegetation was dead.

Before the war Walcheren was a small scale agricultural landscape surrounded by coastal dunes on two sides. At that time recreation and tourism were already important because of the coast and historic cities like Veere and Middelburg. Walcheren was called ‘the garden of Zeeland’; referring to a small scale with lots of flowering Hawthorns in summer. It was also an attractive landscape to live in; there have been hundreds of mansions with gardens and parks. The coast of Zeeland has always been famous for tourism: think of Mondrian in Domburg.

- Problem and assignment



Fig. 2 Walcheren: plantation before WW II



Fig. 2 Walcheren: landscape plan



Fig. 3 Walcheren: road map present situation

Immediately after the war the reconstruction of the landscape was started. After the dikes had been repaired, the commission for the new landscape plan to be made asked for a reconstruction of ‘the garden of Zeeland’ but at the same time create conditions for a modernisation of agriculture and the development of new potentials for recreation and tourism. It was for the first time after the plan for the Wieringermeer by Bijhouwer in 1932, that landscape architects were asked to make a plan at such a scale.

• Form and context

Walcheren is a former island and still is surrounded by water from three sides; this context did not change. The study area was more or less defined by the area that had been inundated. The main change due to the plan intervention took place at the level of landscape structure of Walcheren as such.

• Levels of intervention

Nico de Jonge (1920-1997), a landscape architect who was appointed as the principal designer of the plan, approached the problem at three levels.

First of all at the level of Walcheren as a whole. He developed a strategy in headlines to develop the coastal edges for recreation and the interior for agriculture.

For the restructuring of the agricultural landscape, he made use of the existing geomorphological structure based on the sandy ridges from former creeks and the lower clay basins in between.

At the level of element, he paid special attention to the four points where the dikes were bombed. At these places huge creeks had been formed because of the tidal movement. In the plan he developed these areas partly for tourism and recreation, partly for residential development of nearby cities (Veere, Vlissingen). In the plan he also developed large new forests close to the dunes as a basis for recreational development.

• Design means

At the level of Walcheren as a whole, three types of intervention were done:

- The transformation of the four points where the dike was bombed
- The emphasising of the coastal edge; important as a defence against the sea and for tourism
- The modernisation of agriculture by clearing the lower areas into open spaces at a large scale, to make them fit for large-scale agriculture. Of course this only could be done by modernising the drainage system in these areas.

This strategy was based on the making use of and even strengthening of the geomorphology of the landscape. You could say a form of adaptation of the existing topography.

At the structural level, the distinction between agricultural use and the road system that formed the basis for the occupation. This took place at the ridges, the traditional locations of roads, buildings. The plan emphasised these ridges by intensive roadside plantations to create protection from the windy coastal climate at Walcheren.

At the level of materialisation of form, plantation was used in three different ways

- As roadside plantation; emphasising the linear structure and giving protection against the wind
- As forest plantation; green mass
- As edge plantations around the creeks that create an illusion of forest

The approach of the landscape plan for Walcheren was very multifunctional for that time.

## 2.2 Veerse Bos; design of a new landscape structure as part of a landscape plan

### • Project name and typology

The 'Veerse Bos' is a landscape structure plan [2]. It was part of the 'new landscape plan for Walcheren'. The 'Veerse Bos' is located in the north-eastern part of Walcheren, west of Veere.

### • Background information

Just west of the city of Veere, was one of the four places where the bombing of the dike had created an enormous hole through which two times a day the tide came in. It had created After the war, not only the dikes had to be repaired, but also the city of Veere needed an urban extension.

The form can be distinguished in two types; the form of the fortified city of Veere and the pattern of the tidal creek.

### • Problem and assignment

The site was defined by this 'accidental intervention' of the bombing that had nothing to do with the place as such.

As part of the landscape plan the remnants of the tidal creek were vast and were unfit for agriculture. The question was how this water could be developed for future use. At the same time the city of Veere asked for an urban extension. Special attention was asked for the historic qualities of the old fortifications of the city.

### • Form and context

The form is primarily defined by the stereotypical pattern of the tidal creek. The location of the urban extension of Veere was between this tidal creek and the existing city.

### • Levels of intervention

The plan provided a new ensemble in the form of a structure plan. It created a multifunctional space; as an extension for the city of Veere and a new node in the recreational network of Walcheren. The spatial intervention took place primarily at the local level in the form of plantations of different types.

At the level of Walcheren as a whole the site is marked in the landscape plan as one of the four places where the dike was bombed.

The internal structure is realised by functional relations for the different types of land use; for agriculture, recreation and the residential area. The area around the water was meant for recreation. The residential area that is part of the whole landscape structure is located in a heavily planted area. Agricultural use takes place in between the other two types of land use. The overall atmosphere that has been created is one of enclosure.

### • Design means



Fig. 4 Veerse Bos: landscape plan



Fig. 5 Veerse Bos: topographic map before WW II

Materialisation of landscape form is achieved by plantation and the different relations with the water. Plantation was used in three ways:

- > As an edge surrounding the water to separate it from agricultural land. At the same time making it fit for recreation like footpath, bicycle tracks etc.
- > Planting of a clump of trees as a mass from which lots could be cut out for the urban extension.
- > As roadside plantations that connected to the road system of Walcheren

### 2.3 Bosdijk; design of a small recreational element as part of the reallotment scheme ‘Oukoop - Kortrijk’

- Project name and typology  
‘Bosdijk’, a new landscape element in a network of recreational routes as part of the reallotment scheme ‘Oukoop - Kortrijk’ [20].
- Background information

Already before the Second World War, the Ministry of Agriculture started a relatively modest plan to modernise agricultural production and to improve the living and working conditions of the people on the land. When during the War the Dutch population had had a shortage of food, the Government decided after the War to set up a program to raise agricultural production. ‘Oukoop - Kortrijk’ was one of the post-war reallocation plans in the 60-ies. It is situated in the Green Heart and is primarily a peat landscape that is used for dairy farming. In the reallotment scheme not only the farms were enlarged and some-



Fig. 6 Veerse Bos: topographic map 1980

times rebuilt at different locations, also the water system and the road system was greatly improved to be brought at the level of modern agricultural use. The landscape plan was made by Hans Warnau

- Problem and assignment

The creation of new recreational node as part of a network that should not interfere with agricultural use. The making of a place for non-agricultural use.

- Form and context

The form of the element is linear mass of plantation in the large open space of the Green Heart. The landscape plan provided a certain creation of space that would enable the upscaling of the farms and at the same time create places for non-agricultural use.

- Levels of intervention

At the general level the plan provide a node in the recreational network in an agricultural landscape.

The element as such is organised in around an open space provided by water. Clumps of forest do create a separation and a certain enclosure for recreational use of different kinds like fishing, picnicking, hiking etc. At the small scale a composition of mass and space (water and grass) provided by plantation.

- Design means

This newly designed element is the transformation of an existing element in the open peat landscape.

The new road has moved up to the east; creating a space in between. The structure of the new space is created by plantation, water and grass; exactly the materials that are the main materials in a peat landscape. The former road is transformed into a bicycle path, creating a ‘slow’ side and a ‘fast’ side. Some-



Fig. 7 Bosdijk: topographic map 1980

times there are views towards the open space of the surrounding open peat landscape.

The former crossing point of two networks (road and footpath) were transformed in a distinct landscape element made up of mass and spaces that referred to the form vocabulary of long, narrow parcels typical for the peat landscape with the system of ditches organising them in a hydrological unit.

The materialisation of this place creates a place of enclosure in an open space; a place in space.

### 3. DESIGN APPROACH, METHODOLOGY AND DESIGN MEANS

What can be described as a summary of these three projects in terms of design approach, methodology and design means?

#### • Design approach

The design approach in these three projects was based on:

- The assignment or program that formed the basis for this landscape architectural intervention.
- The existing situation as a starting point for the design process.
- Design ideas and viewpoints like the relation between nature and culture, between man and environment and between historical and future development.

#### • Methodology

In landscape architecture such a design approach is integrated into the methodology by means of a concept for the design as a first step in the design process.

Secondly the design methodology is defined by the following aspects.

> The dynamics of landscape form, perception and design process do put a special emphasis at the methodology. The most important are:

- The need for a constant feedback in the process of ideas, program and existing situation transforming into a new entity. The design process is not a only a linear process from program to plan; during this main line there are constant 'loops' to earlier steps that require fine tuning with goals that have been set.
- Due to sheer size and scale, working at different levels is part of every methodology. Literally this size of interventions cannot be overseen at once and always do need the aid of maps, aerial photographs. To make the method manageable not only the problem has to be split up in smaller parts, also a number of different scale levels have to be distinguished. In landscape architecture we always make a distinction between the project in its context (process), the internal structure of the project (structure) and the elements that are part of that structure (element).

- Each of these levels have their own design means in the form of design approach, design materials and design principles [18].

At the most abstract level of 'process', the direction of landscape development is defined, the main types of land use and the division and location of different densities of land use are defined.

At the level of structure the main criteria for design are the different ways of reaction to the existing structure; insertion, adaptation and complete change.

At the level of element, the materialisation of form is the main issue. We make a distinction between the three classic material in landscape architecture; ground/topography, water/water system, plantation/vegetation.

#### 4. IN SEARCH OF NEW QUALITIES IN HISTORIC LANDSCAPES: SUSTAINABILITY, READABILITY, CULTURAL HERITAGE AND A NEW IDENTITY

If we look over the three projects, what could we say as a form of conclusion about the results of the plans and the qualities that have been achieved through design intervention?

In the following diagram we have summarised in key words.

|              | Walcheren                                                                                                          | Veerse Bos                                                                                  | Bosdijk                                                                     |
|--------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| approach     | 1.<br><i>complete change</i><br>Reconstruction of historical landscape.<br>Creating new potential for multiple use | 2.<br><i>adaptation</i><br>Making a new transition between the city and the rural landscape | 3.<br><i>insertion</i><br>Making a new place in space                       |
| methodology  | 4.<br>Strategy for landscape development on the long run on the basis of geomorphological pattern                  | 5.<br>Making a new landscape structure that is both autonomous and part of larger whole     | 6.<br>Design of new element as hub in a recreational network                |
| design means | 7.<br>- geomorphology<br>- water<br>- plantation                                                                   | 8.<br>- tidal creek<br>- water<br>- plantation                                              | 9.<br>- existing crossing of old roads and paths<br>- water<br>- plantation |

•The concept of sustainability

In this paper we want to put forward that in landscape architecture, contrary to usual interpretations the concept of sustainability is not limited to the ecological aspects, but encompasses more than that. We see 'sustainability' as a broader concept; also historical patterns like the layout of landscapes and cities do contribute to sustainability.

In Holland the polder the 'Beemster' is a good example of the more broader interpretation of sustainability. The structure of the polder in the form of the water system and the road system has not been

changed in headlines over the last centuries. New developments, both in the road system and the water system, took place but were fitted into this existing structure. At the same time, while large parts of the Dutch agricultural landscape were reallocated, the Beemster never needed to. Yet the polder is still a prime agricultural landscape that can cope with the most modern agricultural developments. Recently the polder the Beemster was added to the list of 'World Heritage' of the Unesco. The polder — slightly more than 400 years old — contributes greatly to the concept of sustainability by still mak-

ing use of this historical structure. At the same time it can integrate new landscape developments without interfering with both the historical values and the contemporary functions like modern agriculture.

All three plans are examples of this broader concept of sustainability. The project of Bosdijk can be interpreted as a reference to the reclamation of the peat landscape in the Middle Ages. The plan makes use of the same design materials of the peat landscape; water, plantation and grass. In Walcheren it refers to the roadsystem and watersystem and the landscape structure at large that refers to the formation of the



basic topography. The recent history of WWII is also made readable by integrating the tidal creeks into the existing landscape.

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