Landscape Architecture between Politics and Science

An integrative perspective on landscape planning and design in the network society

Jannemarie de Jonge

Promotoren:
Prof. dr. A.J.J. van der Valk, Hoogleraar Landgebruiksplanning, Wageningen Universiteit
Prof. dr. J. Koh, Hoogleraar Landschapsarchitectuur, Wageningen Universiteit

Promotiecommissie:
Prof. dr. A.K.F. Faludi, Technische Universiteit Delft
Prof. dr. ir. V.J. Meyer, Technische Universiteit Delft
Prof. dr. C. Steinitz, Graduate School of Design, Harvard University, Cambridge, USA
Prof. dr. ir. A. Veldkamp, Wageningen Universiteit

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Abstract

This thesis examines the typical nature of design thinking, which is compared and contrasted with scientific and political thinking. A theoretical framework is formulated and applied to landscape planning and design. As a scientific and professional discipline that serves society, landscape architecture naturally responds to societal changes and demands. Significant changes in professional activities arising from the transition from a hierarchical, industrial society into a networked, knowledge society are explored in a retrospective on Dutch landscape planning and design in the 20th century. During this period the established operational orientation in landscape architecture was accompanied by an emerging strategic design approach. This approach, referred to as 'research by design', is studied in two cases of large-scale landscape planning and design in the Netherlands: the Restructuring of the Sandy Soil Areas programme and the Stork Plan for the Rhine-Meuse floodplain in the central belt of the Netherlands. Landscape design dialogue is described as a knowledge generation and communication method for a strategic design approach to landscape planning.

Keywords

Landscape architecture, landscape planning and design, co-design, procedural design theory, planning theory, reflective practice, Aristotle, intellectual virtues, dialogue.

Acknowledgements

‘Having experienced what it takes to do a PhD, would you do it again?’ people ask me now the work is nearly done. My answer is a straightforward ‘yes’. It has been difficult combining my research with my job and running a family, so I might organise it differently: more focused from the start and less as a lonely adventure. But that is wisdom with hindsight. What I have learned is that personal commitment, genuine curiosity and a desire to find answers to my own questions is what kept me going. Two people in particular are responsible for this attitude: my parents. They have always encouraged me to make the most of my talents, but in doing so to maintain a careful balance between ‘heart, hands and mind’. To me they are fine examples of people with practical wisdom – the phronimos I write about in this thesis – and I am grateful that I can still learn from them.

Although the act of writing and thinking is a lonely one, there was always a team of supporters around me or in the background. They never questioned my ambition, although they knew they would sometimes come second. First of all, my husband and children, who willingly accepted that my thoughts would occasionally be elsewhere even if I was physically present. In the summer of 2007 I isolated myself in the family cottage in Schouwen to fully concentrate on some crucial parts of my thesis. I only had my viola, Bach and the sea to distract me. It was a necessary and very productive time, but it also taught me that I am not made for a solitary life. Jaap, Anoek and Adriaan, thank you for being there and tolerating my mental absence. To all other family members and friends who I have neglected now and again: thank you for your compassion and for dragging me ‘out of my head’ by playing string quartets, making dinner together or taking me out for a long walk or a weekend break.

Second, I am indebted to my business partners at Wing. I sometimes compared the process of launching our company in 2007 while finishing my PhD to giving birth and raising twin babies. I know from experience that both cause sleep deprivation, but they also improve one’s multitasking capacities and are highly enjoyable, satisfying and rewarding. Henk, Dorien and Joost, thank you for agreeing to my temporary twin-management task. Let us now enjoy the growth of our company.

One of the sources of inspiration for Wing as well as my thesis is Peter Smeets. As my boss at Alterra research institute he firmly advocated a transdisciplinary research practice, with a prominent position for research by design. I have good

memories of our ‘regional dialogues’ and the group of colleagues with a shared ambition to literally create knowledge outside the institute. Peter supported us in the pursuit of our aims not just by tolerating our activities, but also by encouraging methods that were out of the ordinary. As we both found out, this attitude is difficult to uphold in a bureaucratic environment.
I feel privileged that I have had two supervisors with different academic and national backgrounds. Arnold and Jusuck freely gave me the benefit of their wisdom and rich experience in the field of planning and design in the Netherlands and worldwide. The three of us met only twice: once in 2003 to discuss the first research proposal and once in 2008 to discuss the first full draft of my thesis. I am grateful that – as far as I know – my work has never been the subject of serious debate between the two of you. Moreover, I hope that my thesis will contribute to forging stronger links between education and research in land use planning and landscape architecture. I must admit that this has been my hidden agenda for a long time.

Lastly, I want to thank all those who helped me in the final stage of transforming my thesis into a printable book, and two people in particular: Harry, who took the risk of being my publisher (although he knows that designers are not keen readers), and Derek, who copy-edited the final text. He is not only a native English speaker, but also originally a planner by profession and very patient. This combination resulted in some pleasant telephone conversations to clarify ambiguities and discuss nuances in the text.

I am grateful to all of you who supported me and expressed an interest in my work. I hope you enjoy the result as much as I enjoyed the process of getting there.

Contents

Part I Introduction and Conceptual Framework

1 Exploration of the Research Problem

1.1. Introduction

Meto Vroom, the Dutch landscape architect and professor emeritus, writes in his Lexicon of Garden and Landscape Architecture:

> Defining the area of expertise of landscape architecture is a difficult task. Both the history of the discipline and its relations with neighbouring and older disciplines are complicated. Thanks to the rapid expansion of the profession during the 20th century in terms of the scope and scale of its assignments, its limits are hard to pin down. Its activities have expanded from the design of private gardens to the design of public outdoor spaces to landscape planning, and even to town and country planning. (Vroom, 2006: 9)

My professional career as a landscape architect started at the municipal council of a medium-seized, fast-growing Dutch city with an extensive rural area. The job was very versatile: it varied from designing parking areas, a market square and the green structure for a housing development plan to farmyards in the rural area. Most of these plans were eventually put into practice. At the same time I was engaged in a strategic, long-term spatial development plan for all 30,000 hectares of the municipal territory, consisting of agricultural land, small villages and a large nature reserve of national importance.

My next job was at a provincial planning authority. Whereas I used to work at scales varying from 1:100 to 1:25,000, maps were now on a scale of at least 1:25,000 to 1:200,000. The work was more about long-term strategic concepts and less about short-term operational plans. Days were filled with consulting local, regional and national stakeholders, supervising research activities, for example on ecology and cultural history, or informing politicians about the latest developments. In short, it was more talking and less drawing. I felt I was moving away from my landscape architectural background. Nevertheless, others often regarded my 'landscape design approach' as being different from a policy planner's approach. But what was the difference?

After ten years I switched from a policy environment to a research setting. I was appointed as a landscape researcher in a large institute for 'green world research', especially to strengthen a 'research-by-design' approach, for example conducting scenario studies. Moving from policy to research came as quite a culture shock. Suddenly I had to account for methods and references used or explain

my disciplinary 'paradigms'. On the one hand it was a relief to be more detached from the day-to-day political power play and to be able to freely explore new directions. On the other hand, I was amazed by the strong belief in analytical models that were used to support planning practice; how these models could fit in with a real planning process, with 'real people', seemed to be not so much of an issue. And then there was the difficulty of interdisciplinary cooperation, between natural and social scientists, or between scientists and designers.

The need for better connections between research and planning practice, and for better cooperation between disciplines, was an upcoming item in the institute's strategy. It was believed by the management at that time (towards the end of the last century) that designers could play an integrative role, both between theory and practice as well as between various disciplines. This belief was also expressed in documents by authoritative Dutch advisory boards (see text box in §1.3). To me it was interesting to discover what contribution designers could make to this integrative process and to reflect on this process. Gradually, an inspiring group of researchers with varied backgrounds emerged who investigated and experimented with a 'transdisciplinary approach' to landscape development. Projects were set up as cooperative exercises between (planning) practitioners and researchers to explore innovative regional or thematic concepts (e.g. de Jonge and van Mansfeld, 2002; Smeets, 2003; Groot and van Mansfeld, 2005). In this transdisciplinary practice my practical planning and design experience at the local and provincial level turned out to be an important experiential resource. Although this kind of work is only a small niche within the profession of landscape architecture, combining a (landscape) design approach with the methods of the natural and social sciences, the humanities and collaborative policy making is an exciting and rewarding challenge.

As it can be expected that such transdisciplinary cooperation will only become more important, it would be informative to explain in what way design, or research by design, relates to a scientific approach and to political action, and whether, why and how it can deliver specific added value. This task appeared to be of a completely different nature than just practically showing 'how it works'. Nevertheless, this thesis is the result of that effort.

Focus 1.2

My home base discipline is landscape architecture. In the previous section I sketched a broad area of expertise that is included in this domain. 'Landscape

architecture is simply the design and planning of physical environments' states Olin (Olin, 1997: 15). This comprehensive character makes the discipline exciting as well as confusing. Difficulty with defining the professional and scientific domain of landscape architecture, to myself and to others, may have been one of the main motives behind this thesis. The nature of contemporary landscape architecture, like many practice-oriented disciplines, is such that collaboration with other disciplines is almost a matter of course. Being a part of such collaborative efforts makes it important to clarify one's own disciplinary base.

In the following paragraphs I set out some operational principles as an initial frame of reference for the reader. As these issues are also objects of study in the thesis itself, they mainly serve as points of departure.

Theory / Practice

Landscape architecture is the central discipline in this thesis. Architecture can be defined as 'the *art and science* of designing structures and their surroundings in keeping with aesthetic, functional or other criteria' (Fleming et al., 1999). Architectural theory goes back to Vitruvius and the lost ancient Greek writings on which he relied. As Vitruvius indicates in the first part of 'De Architectura' (Vitruvius and Morgan, 1960), in Roman times the architect was expected to be equipped with knowledge of many branches of study and varied kinds of learning, *both practice and theory*: geometry, history, philosophy, music, medicine, jurisdiction and astronomy, to mention but a few.

Although landscape architecture shares traditional roots with architecture, its actual practice is also formed by disciplines like horticulture and land cultivation. As the landscape is of a different nature than the built environment, it is dangerous to simply apply architectural principles to landscape architecture (Koh and Beck, 2007; in prep.). However what is relevant here is that landscape architecture encompasses both theory (science) and practice (art). Like many other professions (e.g. medicine, music, or more similarly, planning) the discipline has both a practical and a theoretical component and these are strongly interrelated. The act (or art) of designing is the practice. Research on the *object of design* (in this case the landscape, including both its natural and social aspects), on the *design activities* or on *design results* can be conducted according to scientific rules and conventions.[1]This leads to substantive or procedural design theory (see also: Lang, 1987; de Jong and van der Voordt, 2002). In general, we see that the practice of landscape architecture, especially at the higher scales, is no longer an applied art-and-craft approach but a combination of creative thinking, systematic procedures and applied scientific knowledge (Vroom, 2006: 94). Although such design is based on research findings, the design

1 Within the academic community the scientific rules and conventions are not uncontested, especially regarding the social sciences and the applied sciences, and more generally the relationship between theory and practice. I return to this subject in § 1.3.

itself is not 'scientific' because it is within the field of practice.

Chapter 2 deals with this issue of theory and practice on a more fundamental level. The debate on the position of (landscape) architecture in the academic community is a cultural, time-tied phenomenon. It fits the 20th century, modernist society characterised by disciplinary and professional specialisation, rationality and supremacy of scientific knowledge over practical knowledge (see also Chapter 4). Going back much further in history to Greek philosophy, I conclude that design knowledge (like planning, see next section) has its roots in the practical knowledge of *techne* which is concerned with making, performing or strategically intervening. In my conceptual framework I have defined design and planning basically as an intellectual activity of creative imagination and reflective judgement, continuously integrating various sources of practical and theoretical knowledge.

Landscape / Spatial planning and design

As will be elaborated in Chapter 3, landscape to me is 'the interface where nature and culture, object and subject, meet'. As a consequence the study of landscape relates to both natural and social science. The word 'space' in a planning context is more or less synonymous with 'environment'. The Netherlands has a strong tradition in governmental environmental planning, which is usually referred to as 'spatial planning'. 'Spatial ordering' (*ruimtelijke ordening*) refers to the land use planning and other measures taken by government authorities regarding spatial development and conservation. Spatial planning is the coordination of these measures. (Faludi and van der Valk, 1994: 77). In practice, spatial planning is therefore very much associated with government policy.

Although this administrative context of 'spatial planning' is relevant in practice, this thesis is primarily about '*landscape* planning and design' (unless referring to a specific administrative spatial planning process). In this view, landscape is both the rural and the urban landscape. Whereas 'space' is an abstract concept, 'landscape' appeals to one's imagination. Or to quote my former colleague Peter Smeets, 'a landscape approach provides spatial planning with the human dimension'.

Design / Plan

In everyday language, 'plan' and 'design' are often used as synonyms. In professional practice too, designing and planning are activities that overlap considerably. In the context of this thesis I consider both landscape planning and design to be practical acts of landscape architecture. However 'the art of planning' also has a scientific companion in planning science (in Dutch: *planologie*), a field of

research based mainly in the social sciences. In the Netherlands it obtained a recognised position in academia around the 1960s (see Chapter 4). Even though planning and design overlap in professional practice, there is a certain division of activities, although it is impossible to pin down a clear borderline. That is why in this thesis the combination of planning and design is often mentioned when discussing professional activities. In general, I label the overall societal challenge of 'deliberate conduct' of an area as 'planning'.

As Vroom states, there is confusion about the 'distinction between landscape planning and landscape design, as the nature of the activity depends on a personal approach' (Vroom, 2006: 93). Chapter 5, a case study on the Restructuring of the Dutch Sandy Soil Areas, deals with these personal differences in regional planning and design, as well as differences in professional culture. Roughly speaking, we can make a distinction between the regional design activities focusing on creating, visualising and concretising concepts and proposals that play a role in a (public) decision-making process, whereas the regional planning activities chiefly focus on the organisation of the process of decision making by defining the choice situations. This also indicates the field of overlap and complementarity.

Scale, area and issues

Within the broad field of landscape architecture I confine my investigations to large-scale issues. At these scales, practice is referred to as 'regional landscape architecture' which has a strong relationship with (regional) landscape planning, or town and country planning. In this case the region is usually not an administrative region (like the provincial authorities in the Netherlands) but a region with a contextual border, depending on the issue at stake and taking both physical and social aspects into consideration. The fact that landscape is a nested system, however, implies that one cannot restrict design to only one level of scale.

My thesis is about landscape architecture in the Netherlands, a country with a remarkable tradition in landscape planning and design, and more generally in environmental and spatial planning. Its position in the fertile delta of the Rhine and Meuse has always forced the inhabitants to cooperate to protect the land against flooding. The high population density in this 'delta metropolis' calls for a strong and coordinated planning endeavour and innovative strategies. Despite this strong tradition, the general public and the political and professional communities now agree that new approaches are necessary to deal with the emerging complex problems. These are caused by a combination of trends, including progressive urbanisation, globalisation, high demands for landscape quality, the changing position of agriculture and, last but not least, climate change. The major

issues for landscape planning and design in the Netherlands are water management related to climate change, high quality (sub)urbanisation and infrastructure planning, nature development and conservation, and issues connected to changes in agriculture.

Operational / Strategic planning and design

A distinction is often made between operational and strategic design and planning. Operational activities are oriented towards realisation and implementation; the plan is an instruction for action. Strategic designs or plans are considered to be an intentional 'frame of reference', serving as guideline for future decisions.[2] Strategic planning has its historical roots in a military context and in the 1950s became popular in the corporate sector in the US. Large corporations were in need of strategic visions to manage an increasingly uncertain future. In the public sector, strategic planning first came onto the scene with the construction of the post-war welfare state and in the turbulent 1970s, when the oil crisis and changing values troubled politicians and administrators (Salet and Faludi, 2000; Albrechts, 2004). The lack of certainty regarding future developments was also an important motive behind strategic planning in landscape planning. As learning by trial and error is inappropriate when dealing with our environment and its inhabitants, we have to perform experiments in our minds. The idea is that by exploring future possibilities in the 'laboratory of strategic planning' we can simulate changing trends and will then be better prepared for unexpected changes (Liedtka, 2000).

Landscape is 'by nature' a phenomenon that is evolutionary and emerging rather than constructed all at once, as in most architectural practice. Certainly on the regional scale, landscape development is the outcome of many decisions and interventions by private and public parties. This requires a strategic approach for the large scale, in which design and planning are an ongoing effort. A strategic approach enables people to wait for unique opportunities or to adapt to sudden changes; it is more fluid and flexible than an operational design or planning mode. Regional landscape architecture thus adopts a specific position in the professional domain of planning and design. It is less of a form-directed approach and more of a principle- and process-directed approach. The Netherlands Council for Housing, Spatial Planning and the Environment (the VROM-raad, or VROM Council) has articulated the view that design on higher levels of scale is a specific craft or métier. '...one should work with living materials and reckon with societal processes. This type of design has a more strategic character and should reach its goals with specific means, often indirectly. Too often regional problems are approached via the architectonic idiom. The Council therefore pleads for further development of

2 As Faludi and van der Valk (1994) state: the criterion for operational planning is 'plan conformance', for strategic planning this is 'plan performance'.

this regional design metier' (VROM-raad, 2001: 4). This thesis aims to support such 'further development' by providing a theoretical framework for this regional design métier.

Distinction does not imply disconnection

I make a distinction between the above concepts (theory/practice, large scale/ small scale, strategic/operational) only to clarify my main focus. However, these are mainly theoretical, abstract notions. Disconnecting *theory* from *practice* is inadequate for an applied science and art like landscape architecture, as is disconnecting *large-scale* from *small-scale* design. The material or substantive object of this research is the landscape, which is a cohesive system: the detail cannot be disconnected from the total and vice versa. An important characteristic of the design process is to move across scale as well as time, so in practice one cannot sensibly make a *strategic design* proposal without thinking about possible implementation, just as *operational design* will be judged within a conceptual context of general principles. To summarise: abstract distinctions for the sake of theoretical explorations are useful, but this cannot be an argument for a disconnected approach to practice.

1.3 Context: politics and science, power and knowledge

Professional planning and design activities on large scale issues take place in a political, value-oriented context. Politics traditionally has a strong relationship with science; governmental departments and central government are advised by a broad range of scientific councils and established political parties all have their scientific bureaus. This study on large-scale planning and design practice in the Netherlands should therefore consider both politics and science in the larger societal context.

A central feature of the 21st century is what the sociologist Castells characterises as the *network society* (Castells, 1996, 1997, 1998). Information and Communication Technology have caused changes in society which are as fundamental as those of the Industrial Revolution. Elaboration of these phenomena goes beyond the framework of this thesis, but a crucial feature of the network society that affects planning and design practice is the shift *from government to governance*. We deal with a fluid, multiactor and multilayered reality. Governance can be defined as '...the sum of the many ways individuals and institutions, public and private, manage their common affairs. It is a continuing process through which conflicting

or diverse interests may be accommodated and cooperative action may be taken. It includes formal institutions and regimes empowered to enforce compliance, as well as informal arrangements that people and institutions either have agreed to or perceive to be in their interest' (Commission of Global Governance, 1995).

Two important ingredients of planning and design processes are power and knowledge.[3] In the network society, these factors are not centralised or cannot be clearly localised. Power, as well as knowledge, is distributed in networks. In the following sections these themes will be discussed briefly to explain my point of departure in the actual academic discourses.

Power

According to Friedmann (1998) there is strong ambivalence among planning scientists about the issue of power. For planning research it is necessary to distinguish between what is actually happening in politics and planning as opposed to what researchers would (normatively) like to happen[4] (Friedmann, 1998). This is especially relevant with regard to Habermas's theory of communicative rationality ('the unconstrained, unifying, consensus-bringing force of argumentative speech'; Habermas, 1984: 10) and his conception of consensus. This idea(l) has influenced many scholars and practitioners and led to 'the communicative turn in planning theory' (Healey, 1997). As empirical research on planning practice is increasingly demonstrating, this ideal is rarely achieved (Hillier, 2003; Flyvbjerg, 1998: 41). According to Flyvbjerg, the weakness of Habermas's theory is its lack of agreement between ideal and reality, which for the most part is because his theory is rooted in an insufficient conception of power. Following Foucault and Nietzsche, Flyvbjerg takes the position that power is always present and that communication is at all times penetrated by power (Flyvbjerg, 2001: 93).

My point of departure is that the existence of power is indeed omnipresent and that it cannot be excluded in practice. By studying the mechanisms of power in planning we can learn how to deal with it and how to use it strategically in desired processes of change. An example of such research is in Chapter 9 about the Rhine-Meuse floodplain in the central belt of the Netherlands. Regarding the idea(l) of consensus, I take the position that this is not an either/or question. Conflicting values are inherent in a pluralistic democratic society and can be a source of creativity and innovation. Overall consensus is therefore not possible, and not even desirable. Coordinated action, however, requires some degree of consensus. Planners and designers not only shape physical spaces, but also deliberative spaces, or 'dialogic spaces' (Forester, 1999: 63). Many collaborative or communicative planning approaches are influenced by, but not in conformance with,

3 Knowledge can also be considered a part of power. See also Chapter 9.
4 Cf 'theory in use' and 'espoused theory' as introduced by Argyris (1996).

Habermasian ideals about communicative rationality, which make consensus a central concept. In a well facilitated dialogue, conflict or competition can be a trigger for finding creative solutions that go beyond compromise or 'lowest common denominator solutions' (Innes, 2004). Conflicting values and different points of view are not necessarily negatives that should be eliminated, but can be valued positively (Hillier, 2003; Teisman, 2000). This view goes beyond the idea of consensus-formation as the Holy Grail of collaboration; instead, planning and design practice should exploit differences as a source of 'creative transformation'.

Knowledge

Among Greek philosophers theoretical knowledge was superior to practical knowledge because universality and explanatory power in general were highly valued. But Aristotle also recognised that what makes knowledge theoretically powerful does not coincide with what makes it practically effective. He admitted that in practice men of experience might succeed more than those who have theory without experience (Dunne, 1993: 282). Whereas in modern times (positivistic) science long seemed to claim a monopoly position regarding 'knowledge', now the relationship between science and society and politics is coming under increasing discussion. A recurring issue here is the relationship between theory and practice. The supremacy of theoretical knowledge over practical knowledge is no longer taken for granted, not only among practitioners but also among scientists.

New approaches are emerging among those in the academic community that are engaged in sustainable development and planning. Theory – by definition – presupposes context independence, leading to general rules and laws. Flyvbjerg (2001) criticises such limited interpretation of science, or research activities, because it causes serious trouble for the social sciences and all other researchers dealing with the particular. Flyvbjerg makes clear that scientists and researchers can perform more than only the 'epistemic role'. He argues that context independence is impossible in the study of social affairs because human activity cannot be reduced to a set of rules. This is what Flyvbjerg labels the 'tacit skills argument' for social sciences to go beyond theory. He therefore discerns '*phronetic* social science' from '*epistemic* science' (*phronesis* is 'practical wisdom', see Chapter 2). He does not opt for a theoretical *or* a practical approach, for rules *or* the particular, but instead promotes a dualistic and pluralistic *both-and* formula. Within practice, Flyvbjerg seeks a new balance between value rationality, related to *phronetic* social science, and instrumental rationality, related to *epistemic* science. An important reason for this is that 'problems with both biosphere and sociosphere indicate that social and political development based on instrumental rationality alone is not

5 Critics often claim that explicit and tacit knowledge can be converted into each other by means of articulation, however difficult this may be in the case of 'tacit knowledge'. What they stress, is the importance of sharing 'tacit knowledge', not only through language but by sharing experience and learning by doing. Opposing views argue that tacit knowledge (or rather 'knowing') is a component of all knowledge and as such cannot be converted into explicit knowledge (van Baalen et al, 2005). While not denying the relevance of this epistemological debate, I leave it to others.

sustainable' (Flyvbjerg, 2001: 53).

For many researchers an important reason for considering new research approaches seems to be that the conventional interpretation of (epistemic) science as producing context-free knowledge capable of explaining and predicting is not very helpful in cases of societal change. Also, the academic organisation in specialised disciplines, in which theory and practice are separated, hinders learning between and beyond disciplinary borders.

The increasing number of studies on knowledge creation and (social) learning illustrate the need for better understanding of the processes of human learning, both interpersonally and intrapersonally (e.g. Dreyfus and Dreyfus, 1986; Nonaka and Takeuchi, 1995; Kroch et al., 2000; Leeuwis and Pyburn, 2002; Wenger et al., 2002). A much cited concept here is Polanyi's 'tacit knowing'. Polanyi (Polanyi, 1966) stressed the importance of personal knowledge, acknowledging that the tacit dimension is far more sizable than what we can express in words and figures. According to Polanyi, 'we can know more than we can tell'. In the field of knowledge management and related disciplines the concept of 'tacit *knowing*' is often altered into 'tacit *knowledge*' as complementary to 'explicit knowledge' or 'codified knowledge', which are central in science. Tacit 'knowing' is more precise though, because it is tied to a person and cannot be separated as independent 'knowledge'. Since the successful launch of Nonaka and Tacheuchi's book *The Knowledge-Creating Company* (1995), the complex distinction between tacit and explicit knowledge has been widely accepted. Despite criticism,[5] most views acknowledge the importance of tacit knowing (or knowledge) in processes of knowledge production that are *practically* effective. As a consequence, interpersonal knowledge-sharing in practice and between practitioners and researchers is needed to support knowledge integration and cross-fertilisation between intellectual sources.

This insight is at the heart of new scientific orientations that argue for a more integrative, inter- and transdisciplinary approach[6] to research to make it more supportive to well-considered societal change, or more specifically, to sustainable development. Such change has far-reaching impacts on existing institutions. 'With transdisciplinarity, the relationship between science and society and policy is in fact redefined. The context in which knowledge is developed and applied thereby gains greater emphasis than in traditional monodisciplinary and fundamental research' (de Boer et al., 2006: 15).

The transdisciplinary approach might be seen as an emerging new 'paradigm'[7] that will affect the way in which researchers, planning and design practitioners, policy makers and practical innovators work together. The search for new research

6 In disciplinary studies one stays within the boundary of one's own discipline. In multidisciplinary research participants exchange knowledge, but research is still organised along parallel disciplinary efforts. Paradigms are not bridged and the passive cooperation will not result in new unifying concepts. Interdisciplinary projects, however, involve several unrelated academic disciplines in a way that forces them to cross subject boundaries to create new knowledge and theories for solving a common research goal. Transdisciplinarity even goes beyond a strict scientific approach: it implies co-production of knowledge by different (unrelated) disciplines and non-academic partners. (Tress et al, 2003; Rotmans, 2005)

approaches is mirrored in the language that is used by the pioneers in this field. They feel the need to distinguish their approach from 'normal science' or 'traditional science'. Among others, Gibbons et al. speak about 'mode 1 and mode 2 knowledge production' (Gibbons, et al., 1994) and Russel and Ison about 'first-order and second order R&D' (Russell and Ison, 2000).

Landscape architecture as co-design practice

It is beyond the scope of this thesis to further elaborate on these issues. What is relevant, however, is that policy, science and research create the conditions that allow institutions to look beyond the boundaries of their own fields, acknowledging interdependencies and experimenting with new forms of cooperation. In government, this is the shift from *government* to *governance*. In science, this is the shift from chiefly *disciplinary* to *transdisciplinary* approaches. This context is very relevant for large-scale landscape architecture.

Both as a scientific discipline and a professional practice working in a political context, landscape architecture is affected by the same societal driving forces mentioned above. Like many professional domains, it is redefining its position and methods, adapting to the circumstances of the network society. As in research and policy making, there is a growing interest among architects in seeking collaboration beyond their own disciplinary boundaries. In this thesis I call this *co-design*.

This *rapprochement* between design disciplines and the research and policy communities is a mutual one. Over the last decade various authoritative Dutch institutions in domains of environmental and social science and related policy fields have pointed out the urgent need for a design approach and design contributions in planning processes, especially at higher scales, such as regional planning (see text box).

1.4 Research problem and research objective

Despite the fact that authoritative institutions argue strongly in favour of a design approach in large-scale planning issues, few provide a well informed explanation of the nature of such a design approach. Keywords that often come up in descriptions of the design process include 'integrative', 'creative', 'imaginative' and 'explorative', to mention just a few, but the actual design process remains something of a mystery. This does not contribute to productive cooperation with other disciplines, such as policy planning or research.[8]

The theoretical base for landscape architecture, particularly on the large scale,

7 Kuhn coined the notion of a 'paradigm' in The Structure of Scientific Revolutions (1962), defining it as a 'model from which springs a particular coherent tradition of scientific research'. The concept has been criticised, among others by Toulmin, and Kuhn partly adapted his theory in a postscript in the reversed version of 1969 (Foreword by Chris Buskens to Kuhn, 2003). However, the notion of a paradigm as the 'deeply rooted (often implicit) accepted ways of working of a research community' (Dorst, 2003a: 27) has become general language. The transdisciplinary approach is not yet generally accepted and only applied by small numbers of researchers. So, to be precise, it is too early to speak of a new paradigm yet.

Calls for a Design Approach

The Netherlands Scientific Council for Government Policy advises in its report on Spatial Development Politics to give more attention to integrative design at regional level. In this context the development of 'research by design' deserves more attention (WRR, 1998).

The National Council for Agricultural Research subscribes to the advice given by the Council and elaborates on the issue in several documents (Hillebrand et al., 2003; Nationale Raad voor Landbouwkundig Onderzoek, 1998; Rutten and van Oosten, 1999). They especially acknowledge the importance of design for innovative strategies in rural areas. The arguments include the need for creative solutions and an integral approach, and the value of design as an instrument for exchanging and forming opinions on spatial quality in a participatory approach. 'Designing studies will be particularly suitable for revealing new – technological or spatial – possibilities while at the same time incorporating the knowledge and experience of other stakeholders into the design process' (Hillebrand et al., 2003: 3).

In the Third Policy Document on Architecture ('Designing the Netherlands') (Ministeries OCW, VROM, V&W, LNV, 2000), the four government departments involved in spatial quality and cultural affairs formulate their ambition to make better use of the integrating and researching power of design disciplines, at higher scales and in the preliminary stage of defining the planning brief and programme. Another goal of the report is to bring architecture into the realm of public debate. The authors foresee that this is not yet business as usual as they cautiously state that 'it is not impossible that architecture and architects find themselves in a phase of re-orientation' (Ministeries OCW, VROM, V&W, LNV, 2000: 35).

is poor. This tends to be the case in the design disciplines in general (Cross, 1982), especially for a relatively young domain like landscape architecture. This was identified as a problem some 20 years ago by Meeus and Vroom, whose observations still hold true:

> Landscape appears to be a cultural phenomenon in which form and process, space and meaning are interconnected. A precise definition on the basis of empirical evidence may be relevant for isolated phenomena, but not for the whole. The architecture of landscape cannot therefore rely on a theory based on the natural and social sciences. A new theory bridging the scientific and cultural bases has to be developed. Landscape architecture and landscape planning are sadly lacking such a theoretical base. (Meeus and Vroom, 1986)

8 Chapter 5 on the Restructuring case is an illustration of this observation.

After some decades of relative silence in the field of design methodology, we now see a revival of interest in design methods. The pressure of sustainability and the multiactor structure of development processes has led to renewed interest in practical theories and methods. In general, the background of this revival can be found in the need for collaboration as a way of tackling the complexity of the design task (Achten et al., 2005). However, when it comes to practical theories on co-design in *landscape* architecture, either on local or regional scales, contributions written from the designer's point of view are hard to find.[9]

Enserink and Monnikhof (2003) state that involvement of stakeholders in the actual design process in spatial planning is still rare. Moreover, the results often seem to be disappointing. Their research offers several explanations for the disappointing results from participatory design processes, such as a lack of firm results or the failure of the methods used to stimulate the creativity of participants. These explanations can lead to prescriptive recommendations for the co-design process. However, Enserink and Monnikhof state that underlying these explanations is a deeper cultural factor: in traditional governmental and semi-governmental organisations we find a closed culture, a defensive attitude and a strong instrumental approach.

The above observations stress the need to go beyond instrumental improvement of design methods and take the wider context into account, including the routines in design practice, policy planning and scientific research, which are often taken for granted.

In the social sciences there are many theories and methods on collaborative or participatory planning. Most focus on the process of communication and decision making in 'bottom-up' planning situations, and many contributions offer general guidelines for structuring and organising the planning process. Theories that include postmodern conditions of distributed knowledge and power are a valuable contribution to a theory of landscape co-design. In section 7.2 I give a general overview of different approaches. While these contributions can teach us much about a collaborative approach, it is not specifically related to design and to the nature of the design process. A practical theory for landscape co-design requires a comprehensive perspective, integrating design theory with (social science) planning theory, and positioning this in the actual context of the network society.

My research objective is to contribute to a theoretical basis for co-design in large-scale landscape architecture. Such a theoretical basis might form an integrative

9 A recent example on case studies in Kenya is Duchhart, 2007. See also Hare and Nielsen (2003) who have studied community involvement in landscape design in the United Kingdom. They conclude that despite the increasing centrality of an interactive approach in landscape architecture practice, there is a serious lack of evaluation, publicity and debate on this subject. Useful experience is not successfully disseminated to and between the wider professions. The same mistakes are made over and over for want of successful dissemination and education.

perspective for the practice of landscape planning and design in the context of science and politics: a practice that should effectively support sustainable development of the environment and create meaningful landscapes for current and future generations.

Methodological approach and research path 1.5

Grounded theory approach

The methodological approach can be described as that which is often referred to as the 'grounded theory approach'. In this qualitative research methodology one does not depart from a given theoretical concept or hypotheses to be tested. Instead, a theory or theoretical concept materialises slowly in the course of the research trajectory.

The grounded theory approach is especially suitable if theoretical insights have to be developed in a new area or an area that has not yet been studied thoroughly. This applies to my research problem. The approach is also more suitable for developing practical theories with a limited universal character than abstract general theories. In my case, the 'grounded theory' on co-design in landscape architecture is developed in the specific context of (Dutch) landscape planning and design practice, where it can be of practical value. Outside this context the value will have to be tested through new comparisons and, if necessary, elaborated and modified for specific use (Verschuren and Doorewaard, 1999; Strauss and Corbin, 1990).

The grounded theory approach has two essential characteristics: first, the inquisitive or *hermeneutical* attitude that the researcher is supposed to demonstrate (the practice of interpretation), and second, the method of *continuous comparison* of empirical findings and theoretical concepts. The research process in a grounded theory approach is like an exploratory expedition in which 'the researcher incessantly is engaged in a process of comparing findings with previously found phenomena or interpretations, or with ideas and notions others before him have published on the subject' (Verschuren and Doorewaard, 1999: 172).

Research path and overview of thesis

The research path has been a nonlinear itinerary in which goal seeking, exploration, observation and reflection have alternated continuously. In this section I explain the process that has been performed, largely as a reconstruction with hindsight.

Part I explores the research problem. After the introductory chapter, two cen-

tral concepts of this thesis are studied from a theoretical perspective: design and landscape. The leading question has been: *What characterises a design approach and, more specifically, what characterises a landscape-design approach?* Chapter 2 approaches design as an intellectual activity and professional skill. Design is related to Aristotle's intellectual virtues *techne, episteme and phronesis.* Chapter 3 further defines the concept of landscape as the interface where nature and culture, and object and subject, meet. In the landscape concept, three dimensions are discerned: mindscape, matterscape and powerscape. This leads to a specification of the nature of design for landscape architecture. The chapter concludes with a conceptual framework.

Chapter 4 provides an overview of the practice of landscape planning and design in the Netherlands in the 20th century. In the concluding paragraph the usability of the conceptual framework is tested by asking: *How can history, the actual situation and the challenges of the profession of landscape architecture be understood and explained in the light of the conceptual framework?* Studying the development of the professional domain of Dutch landscape architecture in a broader context helped me to understand the barriers and bridges between disciplinary paradigms and professional routines as I experienced them in praxis. It also helped to delineate and focus the research.

Part II explores the question: *What are the characteristics, challenges and demands of a landscape design approach in the actual network society*?' It starts with a case study to describe how a complex regional planning problem – in this case the Restructuring of the Dutch Sandy Soil Areas – is approached, and how this is valued by policy planners and landscape designers. It illuminates the ambivalence and discrepancy between an advised 'explorative design approach' and the usual instrumental mode of governmental spatial policy planning.

Chapter 6 goes into contemporary procedural design research to find an explanation for the observed ambivalence in the Restructuring case. One is found in the existence of two descriptive paradigms that seem to keep the domain of planning and design divided: Rational Problem Solving and Reflective Practice. This distinction matches the dual interpretation of Aristotle's *techne*: *epistemic techne* for stable situations and *phronetic techne* when dealing with uncertainty. However, what can be separated in theory (they are *descriptive* paradigms) appears in practice to be two sides of the same coin.

Chapter 6 offers insight into the individual design process. Large-scale landscape design is not an individual matter; it requires co-design. Chapter 7 is an exploration of landscape planning and design in a pluralistic, democratic society

and under circumstances of distributed knowledge and power. It focuses on processes of intersubjective valuation and decision making, or the landscape dimension 'powerscape' (Chapter 3). The central question in Chapter 7 is: *How can the powerscape dimension be incorporated into a design approach?*' By using social science theory on structuring policy problems and collaborative planning approaches, and combining this with insights in the design process, the contours of a model for co-design as reflective practice emerge. This is not intended to be prescriptive, but rather to support the preparation for, analysis of and reflection on planning and design situations.

Part III elaborates on the collaborative dimension of large-scale, strategic landscape design. The conceptual framework in Part I depicted the act of designing as a process of integrating different intellectual virtues that takes place in the form of a 'conversation'. The challenges formulated in Part II prompt further exploration of the conditions needed to conduct this social 'conversation' in a way that matches the characteristics of the network society and contributes to the development of meaningful and sustainable landscapes. *Dialogue* is a mode of conversation that seems especially valid.

In Chapter 8 the general principles of dialogue are expanded with the characteristics of a landscape-design approach to compile principles for design dialogue. A remarkable episode in Dutch planning history, the development and effectuation of the 'Stork Plan' (*Plan Ooievaar*), is analysed in Chapter 9. It tells us more about the metaphor of *design dialogue* and how circumstances of distributed knowledge and power play a role in the development of design concepts, and their influence on implementation and intervention.

Chapter 10 presents a summary of the main findings related to the initial research objective and a discussion of some implications for the practice of landscape planning, design and research.

2 On Design

2.1 Designing as forethought in making

Designing is a basic human capacity and a distinctive mental activity (Lawson, 2006). In this chapter I explore the nature of this basic activity, of design as a verb. Designing is also a professional activity, executed by 'designers'. In the domain of spatial design we encounter architects, interior designers, urban designers and landscape architects. Even if the basics of designing as a human capacity remain constant, as a professional discipline, design has changed over time and it will continue changing, adapting to the conditions in society.

Approaching today's complex problems requires close collaboration between many different disciplines and actors in society. In this collaboration design thinking and 'designers' are an indispensable component. Understanding the nature of design is a requirement for better cooperation with those in domains involving very different activities, in particular the professions that have 'researching' as their core activity and professions that are engaged in 'governing' – or to put it differently, in science and politics.

Over the last fifty years a growing body of knowledge has become available in the field of design studies that helps us to understand the basic nature of designing and design thinking.[1] From the start of the design methods movement in the 1960s, scholars have made an effort to position 'designing' in the scientific discourse, which was then predominantly positivistic. Important sources include Herbert Simon, Horst Rittel, Donald Schön, Nigel Cross and Brian Lawson. What these academics share is curiosity in designing *in comparison with scientific thinking*. Simon, for example, coined the phrase 'a science of the *artificial*' to indicate design theory. With this he made clear that for designing *arte*facts different principles apply than for discovering phenomena, which is central in the *natural* sciences. (Simon, 1967, 1981). Rittel, a mathematician, convincingly demonstrated that design problems, which he called *wicked problems*, have a very different nature than scientific problems and consequently need a different approach. His work can be considered a turning point in procedural design theory and has been very influential not only in the domain of design, but also in fields like policy analysis. (Rittel and Webber, 1984; Bazjanac, 1974). Donald Schön explored the relationship between theory and practice, the general and the particular, noticing that practitioners, who deal with variable situations, cannot limit themselves to applying universal rules or theory as is the aim in the natural sciences. Using the design process and the way architecture students

1 The following is a brief summary of highlights in the development of procedural design theory. This is discussed further in Chapter 6.

learn as an exemplar he developed the concept of the *reflective practitioner* (Schön, 1983), which is still well regarded today. Nigel Cross coined the term *a designerly way of knowing*. Thorough empirical investigation led to his conclusion that design skills and design knowledge should be considered as distinct from scientific knowing (Cross, 1982). And finally, Brian Lawson combines an educational background in architecture and psychology to integrate many of the above and has further explored the design process and design knowledge through close observation of experienced and successful designers. This has deepened our understanding of the nature of the design process and design thinking and the importance of experiential learning. His latest (revised) works about 'how designers think' and 'what designers know' is a culmination of forty years' research and largely demystifies the design process. It places designing in an autonomous position, next to (not derived from) scientific research, making clear that where the latter has its strength in analysis and contexts of necessity and universals, the former has its strength in synthesis and contexts of uncertainty and the particular. This makes his work an essential resource in interdisciplinary cooperation (Lawson, 2004; Lawson, 2006).

Back to basics

These contributions have all been developed in a modernist academic context in which design thinking, being different from the dominant discourse, has had to defend itself as an autonomous domain, or prove that it is 'scientific' after all. Both positions were (and still are) taken. As mentioned in the introductory chapter, this dominant scientific paradigm is coming increasingly into question, especially within the social sciences and in research domains engaged in processes of societal change.

Aware of this contemporary cultural context, I searched for a more fundamental approach to different modes of thinking and reasoning, one that was not influenced by the modern (Western) spirit. I therefore turned to the ideas on human intellectual virtues laid out by Greek philosophers, especially Aristotle. I go back to the Greek philosophers not because I consider their models to be the truth or an ideal. After all, contemporary society cannot be compared with classical Greek society. The value of Aristotle's work on intellectual virtues is that it clarifies some fundamental characteristics of the basic human capacities of *thinking, acting and making*. This turned out to be very useful for understanding not only design thinking, but also how 'design' relates to science and politics.

My aim is not to go back to history, but to reuse the intellectual heritage of Aristotle to understand and interpret the present-day intellectual debates on design, planning and research in a political context. For this contemporary interpretation, inspiration was found especially in the work of Joseph Dunne, opening up inquiry

into practical knowledge and connecting this with modern philosophy and Aristotle, Hannah Arendt on the subject of judgement and Bent Flyvbjerg on the subject of value rationality, power and the position of the social sciences (Dunne, 1993; Arendt, 1968; Flyvbjerg, 2001; Aristoteles, 1999).

In various works like his *Nicomachean Ethics* and the *Poetics*, Aristotle describes the human capacity to 'make' things as an integrative, synthetic activity. With regard to making, or *poiesis* in Greek, Aristotle further distinguished the element of forethought from the specific production or performance activities. Artificial generation is divided into *noesis* and *poiesis*, the latter being the execution of the steps which have already been worked out intentionally in the (deliberative) process of the former. Dunne interprets Aristotle such that the process of *noesis* and *poiesis* are not separable, linear sequences. Rather, they are interwoven in one process, which is at the same time intelligent and productive, going on in the materials as much as in the minds of the 'maker' (Dunne, 1993: 338) It seems that in most texts Aristotle uses *poiesis* in a sense that also includes *noesis*. For the sake of readability I will also just use the term *poiesis*.

This process of (forethought in) making was regarded as a 'master' art, concerned with discovery, invention, argument and planning related to specific purposes. It subsequently became known as *design.* (Buchanan, 1995). It is this basic notion of a design as a mental construct, and designing as 'forethought in making' – although not separated from the actual process of making – that I take as point of departure for the following exploration of the nature of designing.

2.2 Three intellectual virtues

As 'making' is an integrative and synthetic activity, so is the mental activity of forethought that precedes it: designing. Aristotle depicts the field in which this integration takes place by naming the three intellectual virtues of *techne, episteme and phronesis*, which accompany the basic human capacities *making*, *thinking and acting.* Aristotle explains that making (*poiesis)* is different from, but closely related to thinking and learning that stands behind the theoretical sciences (*theioria)* and the moral virtues of judging and valuing that stand behind action (*praxis)*. This triad is explained below.[2]

Theory and Practice

The first distinction between modes of knowledge, made not only by the Greek philosophers but still today, is between theoretical and non-theoretical knowledge.

2 Sources: Aristoteles, 1999; Buchanan, 1995; Flyvbjerg, 2001; Kessels et al., 2002; Coulter and Wiens, 2002; Dunne, 1993; Arendt (1958, 1968)

Following Plato, Aristotle called theoretical knowledge *episteme*. In the realm of practice he distinguished between *techne* and *phronesis,* or productive and practical knowledge. Whereas *techne* and *phronesis* both have practical import, *episteme* was considered to be 'loved for its own sake'. Theory, according to Aristotle, remained aloof from practical concerns and was not meant to be applied in the practical business of life (Dunne, 1993: 237/239).

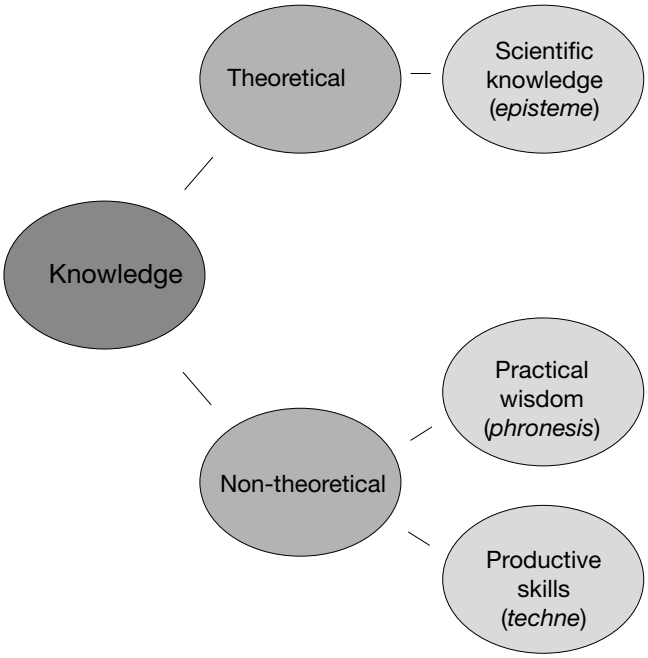


Figure 2-1 Modes of knowledge

Turning to architectural knowledge, Vitruvius opens the first chapter of his *Ten Books on Architecture* with the education of the architect. Architects should be equipped with a broad variety of knowledge, which is said to be

> the child of practice and theory....Architects who have aimed at acquiring manual skills without scholarship have never been able to reach a position of authority to correspond to their pains, while those who relied only upon theories and scholarship were obviously hunting the shadow, not the substance. But those who have a thorough knowledge of both, like men armed at all points, have the sooner attained their object and carried authority with them. (Vitruvius and Morgan, 1960: 5)

Episteme

Episteme, often translated as scientific knowledge, is knowledge representing universal principles. It can be acquired by the theoretical activity of investigating and analysing the world. The analytical rationality that goes with *theioria* leads to understanding and explanations of the necessity of phenomena. 'Induction introduces principles and universals, while deduction starts from universals' as Aristotle says. Epistemic knowledge, therefore, is invariable in time and space.

Epistemic knowledge can be made explicit and placed 'outside' the knowing subject. Aristotle explains this as follows: 'Thus scientific knowledge [episteme-JMJ] is a demonstrative state, (i.e. a state of mind capable of demonstrating what it knows)....i.e., a person has scientific knowledge when his belief is conditioned in a certain way, and the first principles are known to him...'[3] The model of epistemic science was objective, context-independent knowledge. It relates to the universal and not to the particular, which makes it abstract and conceptual. *Episteme* corresponds to the modern scientific ideal of the natural sciences. The Greek word can still be recognised in the term 'epistemology' and is often translated or interpreted just as 'science', when actually natural science is meant. It is a clear demonstration of the scientific ideal that has prevailed since the Enlightenment.

Techne

Techne is the knowledge[4] of the productive practitioner, whether a builder, architect, cobbler, medical doctor or musician. It comprises skills in arts as well as crafts. It is primarily based on a practical, instrumental rationality, governed by the conscious goal of producing or performing something.

Poiesis, the practice of making *arte-facts ('*artificially produced', i.e. not made by nature), and *techne,* the practical skills to do so, were understood as a unity. In the 17th and 18th century this unity fell apart. *Techne* became a separate body of instrumental or productive knowledge (the practical arts), and *poiesis* became associated with autonomous creation of subjective and aesthetic reality (cf. poetics, fine arts). This separation coincided with the origin of modern science (technology) and modern aesthetics (art) (Corner, 1990; Buchanan, 1995).

An artefact that is made presupposes a maker. Subject and object are joined in the judgement on the fitness of the artefact in a given situation. The suitability or fitness of a creation depends on the given circumstances, in the particular situation. Therefore, one has to assess and value the situation in which the product will be used. This makes *techne* a form of knowing that cannot be caught in rules, but that is variable and context-dependent. Imagining the future situation, and judging the possible outcome before really creating it, is an important intellectual

3 Nichomachean Ethics, 1139b18-36, cited in Flyvbjerg, 2002: 55.

4 'Knowledge' in this thesis is not limited to scientific, explicit knowledge. It includes all three virtues as described here and is seen primarily as a personal attribute that has little practical value outside a 'knower'

competence that is learned by experience.

This connection between subject and object, between maker and artefact, can be weak in the case of mass production or the negation of unique circumstances, as has been increasingly the case in the modern era. Only in such cases can 'technical knowledge' be interpreted as objective and general.

It will be clear that *techne*, as meant here, is not the equivalent of today's technical knowledge. Like any practice, it is primarily concerned with the particular and it includes the stages of forethought as well as the making itself, arts as well as crafts. These distinctions have only come to the fore because of the Enlightenment, as the precursor of the Industrial Revolution, a period of ever increasing professional specialisation.

Phronesis

For Aristotle, two basic activities are essential in practice: making and acting. *Poiesis* is practice as craft and arts, which is contrasted with practice as moral-political action, specified as *praxis*. Making is a transformative verb, the maker makes an artefact; the subject needs an object. Acting, however, is in-transformative; the actor acts. This unity of actor and acting, and in a way the absence of a concrete object, is characteristic for the intellectual virtue needed in *praxis*: namely *phronesis*. Whereas *techne* is primarily instrumental (goal-directed) knowing, *phronesis* has a substantial character, which in philosophical terms means that one reflects on actual situations in the perspective of ethical principles.

Phronesis is the intellectual virtue most relevant to political deliberation. Dealing with values one enters the world of power and conflict and, in a democracy, the world of public deliberation. Explaining *phronesis*, and contrasting it to *episteme,* Aristotle says that 'nobody deliberates about things that are invariable or about things he cannot realise himself' (Aristoteles, 1999: 1140 a 30-35) *Praxis* consists of judgement and action, shaped by deliberation, unlike theory/*episteme*, which is about describing/explaining natural phenomena and therefore does not require further deliberation.

Phronesis has no contemporary equivalent, but may be translated as practical wisdom or prudence. *Phronesis* is oriented towards action in a particular situation, so it is variable, context-dependent knowledge (or 'knowing', as it does not exist outside the knower). In a specific situation one has to make value judgements about what is the 'right' position, the position of the 'master', a person who masters the situation. This knowing is developed by experience and systematic reflection. Through experience a wise person, a *phronimos,* has formed practical 'rules' that can be related to the given situation; judgement and choices are made

in the interaction between the general and the concrete. These are not objective, value-free choices. *Phronesis* comes with value rationality.

The kind of embodied principles that are put into service in judging concrete situations cannot be as explicitly articulated as the universals in *episteme.* Because *phronesis* combines practical (personally developed) rules and situational judgement, one way of making *phronesis* explicit is by using metaphors, analogies or narrative exemplars. These verbal references can represent practical principles (like universals) behind the judgement in the concrete situation, while leaving the exact interpretation to the listener.

Table 2-1 Three intellectual virtues and human capacities

Human capacity	Thinking (*Theioria)*	Making *(Poiesis)*	Acting *(Praxis)*
Intellectual virtue	Scientific scholarship *(Episteme)*	Skillfulness, craftsmanship *(Techne)*	Practical wisdom, prudence *(Phronesis)*
Rationality	Theoretical, analytical	Practical, productive	Practical, value focused
Type of knowledge	Person- and context-independent, universal	Personal, context-dependent	Personal, context-dependent
Relevant professional domain	Science	Arts, crafts, professional practice	Ethics and politics

2.3 A richer concept of techne

Techne is the main kind of knowledge behind planning and design. I have therefore made a closer study of this concept as described by Aristotle as well as modern philosophers. My main source here is Joseph Dunne's work on *phronesis* and *techne*, *Back to the Rough Ground* (1993). The study uncovered a concept richer than the widely accepted concept of *techne*.

The 'official' concept of techne

Even though *techne* is oriented to practice and application in particular cases, it is usually depicted as very close to theory and the universal. Aristotle's writings give reason for this interpretation and this 'official' concept of *techne* remained in the tradition. For example, more than 1500 years later Thomas Aquinas wrote that in contrast to *phronesis* (*prudentia*), *techne* (*ars*) is very close to theory (*scientia)*: 'when the theoretical reason makes something, an argument for instance, then it proceeds according to fixed and classical methods which is the rule of ars rather than pruden-

tia. One may envisage a theoretical ars but scarcely a theoretical prudentia' (cited in Dunne, 1993: 253). Strengthened by the Enlightenment and modernism, this has been the leading interpretation of a 'theoretical *techne*' ever since.

Joseph Dunne (1993) however makes us aware of yet another side of Aristotle's concept of *techne*, which has hardly been given attention by later philosophers. The 'official' concept involves a selectivity which does not do justice to the full range of Aristotle's *techne*. The enriched perspective on *techne* that Dunne offers us seems to be a welcome and necessary supplement for understanding the very nature and variety of '*techne*-based practices', and for positioning the various practices in relation to the domains of science and politics.

Techne and opportunity: a 'phronetic techne'

The usual interpretation is that *techne* is concerned with the purposeful production of man-made things. The ends, such as building a house, are given. The builder has knowledge about dwellings, materials and form, and the client's brief, and finds appropriate means to produce a good house. However, this distinction between ends and means is rather problematic. We do not always know the end in advance, which makes deliberation about ends as necessary as deliberation about means. Often we are trying to work out what is a worthwhile end *in the given situation*.

This is more obvious in tasks that involve a great deal of uncertainty in themselves. There are many examples of *techne* in which we cannot speak of a tangible and feasible product like a (familiar) building. Aristotle often indicates military strategy, navigation or the case of medicine as fields of *techne*. There is a result of these exercises, like victory, a safe journey or a person's good health, but this is a state of affairs rather than a product. These *technai* do not deal with stable materials in a straightforward process of fabrication, but they intervene in a field of forces that are unpredictable and not under their control. Such situations cannot be 'mastered'; the desired outcomes must be brought about in a shifting field of forces through strategy and a talent for improvisation. This is the kind of design task we face in regional landscape planning and design. Consequently, 'master plans' in such cases are not suitable.

What characterises this kind of *techne* is a close relationship with the opportune (*kairos)* and chance. Success is to be achieved

> not so much by keeping one's gaze fixed on the preconceived form which one will impose on the material, but by a flexible kind of responsiveness to the dynamism of the material itself. It is sensitivity or attunement rather than mastery or domination that one strives for. One's actions may have to be quick and decisive but they arise within a certain kind of passivity. This is the meaning of 'grasping the kairos'; one's active interven-

> tion has skilfully waited until one's polyvalent materials – be it the wind and waves in play upon one's boat or the changing humors in the sick body – are at their most propitious. (Dunne, 1993: 256)

Dunne's interpretation is that this kind of *techne* is a quite different conceptual paradigm, one which bears strong resemblances to *phronesis*. In these circumstances one has to think out what is appropriate for the occasion; general rules can hardly be applied.

> ...what has emerged in the alternative concept, however, is what might be called a 'phronetic' techne, i.e., one whose responsiveness to the situation is not fully specifiable in advance and which is experiential, charged with perceptiveness, and rooted in the sensory and emotional life. Moreover, this alternative concept might be said to make paradigmatic those technai which I earlier called technai of the kairos and compared with phronesis. (Dunne, 1993*: 355)*

Connecting the general and the particular: the importance of experience

Neither Aristotle nor Dunne draws a clear demarcation between this type of 'phronetic *techne*' and the 'official' type that is closer to epistemic theory. It is more like a sliding scale in the degree to which the complexity of an individual case can be dealt with by general rules. The more stable and predictable an object of *techne* is, the less variety one finds in particular cases and the more one can rely on general rules. And the opposite is that in contexts of greater uncertainty, instability and uncontrollability, general rules are only of limited use and one needs to rely primarily on personal experience to judge the particular situation. The balance between the 'phronetic' and the 'epistemic' approach in *techne* depends on the character of the task at hand. Since there are always elements of irregularity or uncertainty in (creative) productive tasks, the *technites* will use general knowledge *and* will know through experience when to bend or break the rules to find the best solution.

This brings us to the role of experience in *techne*. Aristotle's ambiguity towards experience in *techne* is a major item in Dunne's study on *techne* and *phronesis* in Aristotle and modern philosophy: 'It is a weakness in Aristotle's position here that he does not show how *techne* and experience can link up fruitfully in order to provide a masterly piece' (Dunne, 1993: 285). Aristotle does not clearly distinguish between *techne* as an ability to analyse and *techne* as an ability to make or perform. But the explanatory form in analysis (as in theory) is the productive form in the process of making. We can analyse what is already there, but both unpredictable situations (e.g. in navigation or military strategy) and the conception of *new* forms introduce unexpected elements that need practical judgement. Experience

5 The importance of experience and how this influences the interpretation and handling of a task by the professional is the subject of research by e.g. Donald Schön (reflective practitioner) and the Dreyfus brothers (a model of human learning). These insights are applied by Dorst from a perspective of design education and design paradigms and by Flyvbjerg for developing his concept of 'phronetic social science' as method of social inquiry. This thesis builds on their insights. See Schön (1983,1987); Dreyfus (1986); Flyvbjerg (2001); Dorst (2003a, 2005) and also Chapter 6

alone is the seedbed for such judgement.

In some passages, though, Aristotle does discriminate between theoretical knowledge (*episteme*) and ethical and productive knowledge (*phronesis* and *techne*). To become excellent in theoretical knowledge it is enough to know about the nature of the objects of such sciences like geometry or physics. But the end of productive and political knowledge is different. For example, knowledge *of* medicine is not sufficient 'for the task of being a doctor'. This kind of knowledge becomes available through experience, which is the case in both *techne* and *phronesis*[5] (Dunne, 1993: 229–234).

To conclude this passage, Dunne claims that *techne* certainly involves an experiential element; an element that is not absent from Aristotle's thought, but can easily be overlooked. The action of experience and judgement in *techne* is to strongly connect the virtues of *techne* and *phronesis*; just as the role of analysis in *techne* is to connect the virtues of *techne* and *episteme*.

Designing as the meeting of intellectual virtues 2.4

In this section I combine insights about *episteme*, *techne* and *phronesis* with more recent insights from design theory to generate a conceptual model for designing in the context of the discerned intellectual virtues.

According to Aristotle, *techne, episteme* and *phronesis* are distinct intellectual virtues. In the integrative activity of designing, which is a distinct mental activity in itself, they are closely related. How this process of integration takes place is both fascinating and irritatingly chaotic, especially for those comparing it with processes that stay within the epistemic realm. Citing Lawson: 'One of the essential difficulties and fascinations of design is the need to embrace so many different kinds of thought and knowledge. Design involves a sophisticated mental process capable of manipulating many kinds of information, blending them all into a coherent set of ideas and finally generating some realisation of those ideas' (Lawson, 2006:13–14).

Some fundamentals of the design process

At this stage I will summarise some fundamentals of the design process from the work of various design theorists since about the 1970s[6] and will relate these to the three Aristotelian intellectual virtues. Two persistent misunderstandings of the design process are dealt with. These are:

– the often supposed logical order of design steps;
– the myth of separating problem definition and solution.

6 The development of procedural design theory will be discussed more extensively in Part II of this thesis, especially Chapter 6

The basic ingredients for designing are often defined as analysis, synthesis and evaluation (Jones, 1980; Lawson, 2006). Relating this to Aristotle, analysis reflects *episteme*, synthesis reflects *techne* and (e)valuation reflects *phronesis*. Many researchers who have tried to map the design process have positioned analysis, synthesis and evaluation in this same 'logical' order. When a first generation of linear design maps was found to be unrealistic, a second generation added feedback loops from evaluation to analysis, proposing a cyclic process.

Nowadays most design theorists have abandoned the idea that the design process can be captured in procedural prescriptions. Empirical evidence has shown that the apparently logical maps in which clearly defined phases like problem analysis and solution synthesis are separated are not realistic. Nor is it realistic to think that designers always start by thinking in abstract terms or on higher scales and then become more concrete and detailed. The statement by the American architect Robert Venturi is illustrative here: 'We have a saying that sometimes the detail wags the dog. You don't necessarily go from the general to the particular, but rather often you do detailing at the beginning very much to inform' (Lawson, 2006). This quotation also illustrates that certain design moves are really made 'to inform', to learn from rather than to propose.

The way designers approach a problem has a different logic than 'epistemic logic'.[7] Articulation of a problem situation usually mirrors the ideas that already exist about possible solutions and analysing the problem usually does not lead to solutions outside the known problem frame. In fact, designers use a strategy of analysis *through* synthesis rather than the other way around. They learn about problems through attempts to create solutions, continuously evaluating their course of action in every design move. In so doing the perception of the problem evolves, as does the understanding of possible solutions. Design problems, being unstructured by nature (what Rittel labelled 'wickedness'[8]), are made manageable to a certain degree through a process of reframing the design task through the process of searching for solutions and vice versa. Design moves (i.e. the articulation of solution ideas) take place in a coherent problem-solution space.

The design process can thus be seen as a kind of 'negotiation between problem and solution' (Lawson, 2006: 49) in the three activities of analysis, synthesis and evaluation, which in turn are based in epistemic, 'technic' and phronetic modes of reasoning. (Lawson, 2006; Schön, 1983; Buchanan, 1992)

Creative imagination and reflective judgement

Making design moves requires creative imagination. Creative in this context means seeing situations in a new perspective so that as yet unseen and useful possibili-

7 Cf a statement by Pierre Bourdieu: 'Practice has a logic which is not that of logic' (cited in Flyvbjerg, 2002: 38

8 The inseparability of problem finding and solution forming in design problems (or so-called 'wicked problems') was first put forward by Horst Rittel in 1972 (see Chapter 6).

ties are brought into view.[9] An idea that is only novel is not necessarily creative. The criterion of usefulness implies that the idea is valued in the context of its appreciation in use (Csikszentmihalyi, 1999; Amabile, 1983).

This element of valuation links creative imagination to judgement. Immanuel Kant makes a distinction between determinant judgement and reflective judgement. In *determinant* judgement the general rule is given and can be used to develop standards to judge the particular. In Dutch spatial planning some design principles have been formulated in legal rules, such as those for building volumes and heights, and applying and enforcing these rules can be considered a technical or instrumental matter. In determinant judgement, meaning is primarily found in the universal.

Reflective judgement, however, is judgement for which no general rule is available. The rule has to be found in the given situation; meaning is primarily found in the particular. This is the case when performing a design move: rules are only partly available, such as technical principles or legally prescribed rules like volume or height. The overall judgement however is a reflective one.

For Kant, reflective judgement was primarily concerned with aesthetic taste. No universal concept of beauty can be applied to judge a work of art. Kant's ideas inspired Hannah Arendt to generate a contemporary conception of reflective judgement in particular situations (Coulter and Wiens, 2002). Essential elements in Arendt's vision on judgement are *imagination* and public *dialogue*. For Arendt, connecting the particular to the general can only be accomplished by using the imagination to envision various new perspectives on the matter. In our context this is like making design moves. As no community standards are available to value the imagined situation, good judgement for Arendt is not a matter of objective knowledge or of subjective opinion. Becoming a good judge depends largely on one's capacity to consider other viewpoints of the same experience, 'to look upon the same world from another's standpoint, to see the same in very different and frequently opposing aspects' (Arendt, 1968: 51). The capacity to judge such situations, according to Arendt, can be built up through dialogue and what she calls 'visiting' – carefully listening to the perspectives of others. This is comparable to explorative activities in a design process when the brief is (re)interpreted through close attention to the values and wishes of clients and users.

Arendt's emphasis on the particular over the universal, practice over theory and the need for reflective judgement is in line with Donald Schön's conception of the reflective practitioner. Schön (1983) uses the metaphor 'a conversation with the situation' to indicate the reflective judging process when making design moves.

9 It is no coincidence that in this sentence the bodily sense of the eye is often referred to (seeing situations, yet unseen possibilities, brought into view). It is not just an abstract mental thought; it is made concrete through imagination.

The meeting of intellectual virtues

Creative imagination and reflective judgement can be considered the heart of any design process and they have a reciprocal relationship. Creativity implies a reflective judgement on appreciation, fitness and usefulness. Judgement of particular situations requires imagination to link the particular to the universal. The design process involves integration of different kinds of knowledge from the domains of *techne* and *phronesis* (mainly tacit, embodied knowledge) and *episteme* (explicit or codified knowledge). After all, a design has to perform in a practical way, it cannot deny general epistemic principles and, above all, it needs approval and support in *praxis'.* In general, the further a design process progresses, the more we can test the design proposal against explicit criteria; we gradually shift from a *phronetic* to an *epistemic techne*.

Poiesis, the practice of making, supposes tuning in to both the practice of acting 'wisely' in the public domain and of thinking analytically and objectively in the theoretical domain, or in everyday language: in the design process the skill of the artisan meets the logic of the scientist and the practical wisdom of the leader.

This integrative process of intellectual virtues is often referred to in terms of negotiation, conversation, deliberation or dialogue (cf. Lawson, Schön, de Haas,[10] Forester, Arendt). Metaphorically, this conversation (con-versare = to turn to each other) takes place in the designer's mind and literally in the interaction between clients, users, experts and designers. Nowadays designers often cooperate in broad expert teams and multiactor groups. What is performed here is collaborative design (co-design) in 'design dialogue'. In the 'meeting of minds' new perspectives appear within the problem solution space. This metaphor of design dialogue will be elaborated in Part III.

10 The combination of reflective judgement and conversation is also found in 'Planning as conversation' (Planning als gesprek) by Wim de Haas, a Dutch scholar and planning practitioner (de Haas, 2006). De Haas defines planning as creating passages between 'genres' like designing, researching, decision making and intervening. Passages are the places where genres meet and where knowledge merges and new knowledge can emerge. In his view the passage from one genre to another takes the form of a conversation and requires

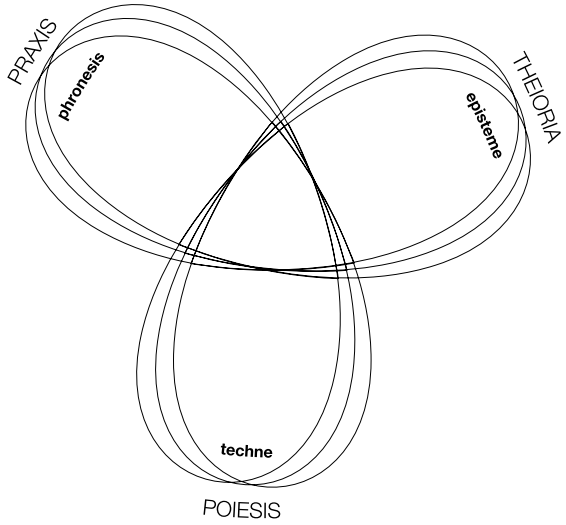


Figure 2-2 Designing as the meeting of intellectual virtues

reflective judgement. Though his ideas in many ways resemble the central ideas in this thesis, I fundamentally disagree with his differentiation between planning and design. In his definition, 'design' seems to be restricted to creative imagination and does not include judgement or research.

3 On Landscape

3.1 Linguistic origins of 'landscape'

The word 'landscape' entered the English language in the 16th century. It is derived from the Middle Dutch word *landschap* that was used to describe a picture representing outdoor scenery. The adaptation of this Dutch word across Europe indicates the fame of the Flemish and Dutch landscape painters. In contemporary Dutch we still say *landschap*, in German *Landschaft* and in Danish *landskab* (Spirn, 1998; Lörzing 2001).

Land-scape associates people and place. The root 'land' means both place and the people living there. In 'scape' we can recognise both 'to shape' and '-ship' meaning association, as in partnership or friendship.[1] This linguistic background refers both to the 'purposefully shaped' and to 'the dynamic connection between place and those who dwell there' (Spirn, 1998: 126).

In many languages landscape has the dual meaning of 'land, area or region' as well as the 'visual picture or view'. So it is both the *object* itself and the *subjective* image of it. Lörzing (2001) has pursued an interesting quest into the meaning of landscape in different languages throughout the world. He offers a good illustration of the subject-object duality in the landscape concept which he derives from Russia. The Russian language has two words for landscape, depending on the specific meaning. Both words are borrowed from other European languages. The word *peyzazh* (cf. the French paysage) 'denotes the subjective aspect, emphasising its poetical, pictorial and emotional aspects. Its counterpart, the word *landshaft* (transcription of the German Landschaft) points at a more technical way of thinking about landscapes, making it possible to study landscape features and find approaches changing them' (Lörzing 2001).

3.2 Interface between nature and culture, object and subject

Although the word *landscape* did not exist in Roman times, Cicero did make a distinction between what we would now call the natural and the cultural landscape. He referred to the latter as *alteram naturam*, the second nature, indicating the man-made landscape of bridges, roads, harbours and fields. Although Cicero does not specify what the 'first nature' is, we may take it that this is wilderness, or at least a world without interference by man. In 16th century Italy Jacopo Bonfadio

1 In Dutch the word *waterschap* is still in use, being the public authority for water management.

introduced yet another nature: *una terza natura.* This notion of a 'third nature' was applied to 'nature incorporated with art', which manifested itself in the Italian gardens, which were beginning to flourish at that time (Hunt, 1992/2002; Vroom, 2006).

We see that people relate to their surroundings in different ways. The concept of landscape itself is a social construct that probably originated in the early Middle Ages when the Dutch and Flemish wetlands were brought into cultivation. From that time a certain 'landscape-consciousness' developed out of a desire and ability to view the world as an observer. It is no coincidence that this occurred at the same time as the invention of the painters' perspective view, which we can consider to be a manifestation of the division between the observing subject and the observed object. This legacy of the Enlightenment lies at the basis of the natural sciences (Kolen and Lemaire, 1999).

The romantic period, with its renewed interest for natural beauty, also influenced the perception of landscape. Whereas objective rationality and general truth were characteristic of the Enlightenment, these were complemented in the romantic movement by intuition, imagination, the uniqueness of things and the centrality of the individual. These two apparently exclusive visions, one referring to nature, the other to culture, are the cornerstones on which modernity is built (Kolen and Lemaire, 1999; Wierdsma, 2001)

The landscape is still interpreted in different ways today. What is meant by the concept of landscape depends on cultural or professional background, research discipline or even linguistic origin (see also Antrop, 2007). For landscape planning and design, matters of time and scale are always very relevant. Regarding time, the essential characteristic of the landscape is its dynamic nature; regarding scale, the landscape can be observed as a nested hierarchy.

Definitions of landscape each reflect a particular perspective. The European Landscape Convention for example defines landscape as 'an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors' (Council of Europe, 2000). Behind this definition we can discern two different landscape discourses: one focusing on ecology and considering human activities increasingly as disturbance to ecological balance, the other focusing on cultural meanings and closely related to landscape perception (Cosgrove, 2003). The concept of landscape thus includes the extremes of objectivism and subjectivism, nature and culture, science and the arts, and everything in between. I consider these dualities not as exclusive, but as complementary aspects. Landscape as a whole is synthetic; it is the *interface* where nature and culture come together so obviously.[2]

2 Koh (2004) has presented three principles for landscape design that reflect my interpretation of the landscape concept: *Inclusive unity with people and place, Creative balance* (a dynamic balance between opposing principles, bringing about irreversible change) and *Complementarity* (integration of man-nature, subject-object, thinking and feeling).

3.3 Landscape as matterscape, powerscape and mindscape

Now that the extremes of the landscape concept have been defined, and I have chosen to use the entire playing field between these corner posts, the question is whether or not it is possible to effectively work with this concept without evoking a Babylonian confusion of tongues. After all, different discourses do exist and will not disappear by just declaring that landscape should be treated in a holistic or integrative way. The problem of fragmented knowledge and incompatible discourses is often stated,[3] but how can it be dealt with?

A helpful theoretical contribution for disentangling the complex debates on landscape issues has been developed by Maarten Jacobs (Jacobs, 2002, 2004, 2006). The core of his theory is that one can divide reality into three different modes: physical reality, social reality and inner reality. Each mode has its own validity and value, and all three exist simultaneously. In each of these modes, landscape appears as a different phenomenon. Jacobs calls these three landscape phenomena 'matterscape', 'powerscape' and 'mindscape'.

Statements regarding matterscape, powerscape and mindscape reflect different validity claims. For this epistemological dimension Jacobs turns to Habermas' three validity claims of 'truth, justness and truthfulness'. In matterscape, which deals with the physical reality and objective states of affair, statements can be *true.* In powerscape, where social reality gives prime consideration to the inter-subjective norm of a group, statements can be *just.* And in mindscape, which corresponds to the inner reality of subjective thoughts of the conscious mind, statements can be *truthful*.

Table 3-1 Matterscape, powerscape and mindscape (after Jacobs, 2006)

Landscape phenomenon	Matterscape	Powerscape	Mindscape
Mode of reality	Physical reality	Social reality	Inner reality
Corresponding with…	Objective state of affairs	Inter-subjective norms	Conscious mind of the subject
Validity claim	'True'	'Just'	'Truthful'

This 'tripartite theory of landscape' provides a valuable framework for communicating landscape issues. Not only does it help to make clear that arguments arising in 'different realities' can exist alongside each other, that they are all valid, but it also makes clear that often a 'problem' that has its roots in one reality cannot be solved with 'tools' that belong to another reality. Jacobs gives the example that many people experience the Dutch metropolitan landscape to be very crowded and subject to multiple claims on land (mindscape). The dominant policy strategy

3 See e.g Spirn (1998: 129): 'professionals who specialize…often fail to understand landscape as a whole. Once those who transformed landscapes were generalists…now pieces of landscapes are shaped by those whose narrowness of knowledge, experience, values, and concerns leads them to read and tell only fragments of the story.' See also Tress et al. (2005) on the landscape concept and advocating integrative approaches and interdisciplinary and transdisciplinary research.

for tackling this is to increase efficiency and promote 'multiple land use' (powerscape). The research programmes and professional activities on multiple land use concentrate on technical ('matterscape') solutions such as underground space or high-rise buildings. The question is whether or not these matterscape solutions alone are an adequate response to the perceived crowding. The way in which people experience the landscape (mindscape) has received considerably less attention in research or policy (Jacobs, 2004). In landscape planning and design this approach helps to obtain a more complete picture by systematically examining all three dimensions and their interrelations. By specifying and explaining the various aspects, misunderstandings like the example mentioned above can be brought to light and deficiencies in knowledge or perceptions revealed.

On landscape planning and design 3.4

In Chapter 2 designing as 'forethought in making' was described as an integrative process of creative imagination and reflective judgement in which the intellectual virtues *techne, phronesis* and *episteme* meet in a virtual 'problem-solution space'. This meeting takes the form of intrapersonal and interpersonal communication. In this chapter the concept of landscape is depicted as a synthetic whole, as the interface where nature and culture come together. For the sake of structuring communication about landscape issues Jacobs' tripartite theory of landscape is introduced as an analytical tool. Matterscape, powerscape and mindscape represent three landscape phenomena, each with its own reality and validity claim: the truth of the physical reality, the justness of social reality and the truthfulness of the inner reality.

My next step is to search for possible correspondence between my interpretation of the design process, based on Aristotle's intellectual virtues, and this concept of landscape in order to develop a conceptual framework for the intellectual and communicative process of landscape design.

Facts and values, objective and subjective realities

As we have seen above, in the design process 'the skill of the artisan meets the logic of the scientist and the practical wisdom of the leader'. *Epistemic* knowledge about landscape mainly deals with the objective facts of matterscape. Practical wisdom or *phronesis* regarding landscape understands about deciding how to act in a certain situation, taking into account the different values people place on the landscape. In praxis, power is at work. The designer's productive skills (*techne*) of creative imagination and reflective judgement enable an integrative process

in the mind, integrating *episteme* and *phronesis*, from which a solution gradually emerges that best fits the particular situation. This is the process that Schön describes as 'a conversation with the situation'.

As long as the design process is observed as an individual intellectual process this conversation is just intrapersonal. The designer decides what information to use and what is the best fit in the given situation. Mindscape, powerscape and matterscape merge. Usually, designers have a client who finally judges the design; the power to decide is formally with the client and conversations between designer and client take the form of an argumentation and learning process. But what if the design process is observed in its contemporary, postmodern societal context, in which landscape is a public domain and there is no central master who has the power to judge; when the *knowledge* about facts and values of the landscape and the *power* to decide what is 'the best fit' is distributed among many people? Then landscape design becomes a process of *co-design*. The phenomenon of powerscape in co-design is much more complex than in individual or centrally directed design processes.

Phronesis is the intellectual virtue most relevant to political deliberation. However, Aristotle's *phronesis* did not include explicit considerations of power. What Flyvbjerg does well (Flyvbjerg, 2001) is to develop the classical conception of *phronesis* in a way that includes considerations of power, thus expanding the classical concept from one of values to one of values *and* power (see also §1.3). This contemporary interpretation has proved to be a valuable addition to the conceptual framework in this thesis.

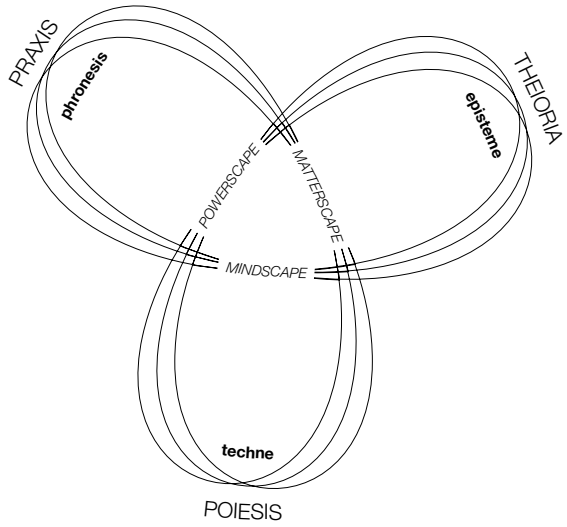


Figure 3-1 Co-design as integrative conversation on mindscape, powerscape and matterscape

Challenges in contemporary landscape planning and design as co-design

Professional activities concerning the transformation of people's environment have long been united within the broad scope of architecture. The number of sub-disciplines within and related to architecture has increased since the first signs of specialisation, which is an important process for reaching more profound insights into a certain field of interest. Such has been the case with (spatial) planning. From about the 1960s spatial planning moved away from the practice-oriented world of architects and engineers towards a multidisciplinary (social science) field, relying very much on theoretical understanding.[4] Despite the fact that 'planning *as* science' was not successful (see also Chapter 4), systematic reflection on planning processes has delivered important empirical knowledge, especially on processes of decision making and collaborative planning – or in Jacobs' terminology, the phenomenon of 'powerscape'.

These insights are indispensable in contemporary large-scale landscape design practice, which I have indicated as a co-design practice because both knowledge and power are distributed among many actors. The *practice* of co-design would very much profit from a reintegration of the *research domains* of planning and design. After all, on a fundamental level the characteristics of co-design apply equally to planning and design: creative imagination and reflective judgement are at the heart of designing, as they are of planning. If co-design for landscape is understood as the collaborative creative and reflective process in which the various components of a 'landscape architectural *techne*' – the scientific, technological, artistic and social or political orientations – reintegrate in the meeting of minds, the current divide in design and planning might turn out to be only a temporary phenomenon.

It is my aim to contribute towards a practice of co-design for landscape that includes landscape planning. The focus of my quest is the process of intellectual and communicative design collaboration under conditions of distributed knowledge and power.

4 For example, Faludi 's concept of 'consequentialism', explained as 'the insistence that we should only accept proposals, the consequences of which are stated as fully and explicitly as possible,' which according to Faludi fulfilled 'the same role as does the falsification rule for empirical propositions: it separates statements about decisions which do lend themselves to being rationally assessed from others' (Faludi 1986: 82–83).

4 Dutch Landscape Planning and Design in the 20th Century

4.1 Introduction

During the 20th century the work of professional landscape architects has expanded rapidly in scope and scale. Large-scale landscape architecture has considerable overlaps and strong relationships with landscape planning and town and country planning. And as Vroom says, 'Both the history of the discipline and its relations with neighbouring and older disciplines are complicated' (Vroom, 2006: 9).

I studied the development of Dutch landscape architecture in the 20th century to gain better understanding of its history and relationship with other disciplines. Since my focus is on large-scale landscape architecture, and because the activities of regional landscape design have usually been embedded in a context of governmental policy planning, the historical development of physical policy planning (in Dutch referred to as *ruimtelijke ordening* – spatial planning or spatial ordering) is of major importance. However, it is not the aim of this retrospective to provide an extensive overview of Dutch 20th century physical or landscape planning history. Other works are available for this purpose, and they have been important sources for this study (e.g. by Faludi, van der Valk, de Ruijter, van der Cammen and de Klerk, van Schendelen).

The main purpose of this chapter is to sketch a context in which the characteristics of the actual practice of Dutch regional landscape architecture can be understood and explained in the light of the conceptual framework. This framework describes designing as 'forethought in making' and as the intellectual and communicative process in which practical wisdom (*phronesis*) and scientific insights (*episteme*) are integrated through creative imagination and reflective judgement (*techne*) to form proposals for change. In this view, the practice of regional landscape planning and design is part of the broad field of the architectural *techne*, which has to integrate the practical wisdom of politics with the theoretical insights of science.

Structure of the text

This chapter presents an overview of the development of the disciplines of physical planning and design as a broader context for large-scale landscape architec-

ture. The focus is on the Dutch situation, unless a broader view is necessary for a good understanding, and specifically on two aspects. The first has to do with the material object of the research, which is the Dutch landscape and landscape transformation. This requires insight into the *context* of the planning task, in matters of scale and time, and the relation between operational and strategic planning and design. The second aspect has to do with the formal object of my research: the development of the professional field, particularly the relationship between landscape planning and design practitioners, policy makers and researchers.

The structure of the text is primarily chronological, first giving a general impression of the period under discussion, followed by more information on the situation in the Netherlands. The planning context is then examined. The final paragraphs on each period deal with the development of Dutch landscape architecture. A discussion of the relationships between the different planning and design disciplines is followed in the last section by a general reflection in the light of the conceptual framework for landscape design. Appendix I contains an overview of characteristics per period.

Timeframe

The retrospective covers the 20th century, a period in which the consequences of the Industrial Revolution became manifest for physical planning and design. Modernism, expressed through a technocratic rationality, can be considered the mature stage. During the final decades of the century Information and Communication Technology (ICT) exerted a growing influence on society, and consequently on landscape planning and design. At first this led to a counter-reaction, what I refer to as the anti-modernist period. This did not result in a new and satisfying paradigm, but rather precipitated a crisis in the professional field, which in turn stimulated a period of experiments that are now gradually crystallising into new practices. The keywords are interdisciplinary and transdisciplinary collaboration, or co-design when we look at large-scale landscape architecture. The retrospective ends around the turn of the 20th century.

Industrial Revolution prompts professional changes 4.2

General character of the period

In the 19th century the substantial economic and social transformations in Western countries, especially in the industrialising regions, were the driving forces behind professional changes in physical planning and design. The Industrial Revolution

drastically altered the building process, making it more complex. As in other sectors, this caused a process of professionalism as well as a division of labour. The architectural profession was split up into designing and engineering and a division emerged between builders and designers. Whereas architects used to be involved in both design and construction, they now focused mainly on the design phase, preparing drawings to be handed over to others in the construction phase. This shift from the architect as 'master builder'[1] to the architect as designer, whose end product is the drawing rather than the built artefact, was characterised by Jones as a shift to 'design-by-drawing'. The central role of drawing in the design process, compared with the vernacular building process, enabled designers to make more fundamental changes and innovations and encouraged experimentation and creative imagination (Jones, 1980; Lawson, 2006).

The rapid growth of cities caused huge problems in public health. Malfunction of water supply, waste disposal and sewerage were a prime cause of epidemics. For example, Britain was plagued by cholera in 1832, 1848 and 1866. The need for hygienic management of urban areas was a prime motive for government interference in urban development and much effort was spent on building up a body of knowledge and an administrative infrastructure to support these new government tasks. Gradually a system of housing, health and community and labour regulations was devised as a framework for urban management.

The increasing intervention in and regulation of community affairs was a political phenomenon that should be seen as part of a developing democracy. It involved not only the massive housing task, but even aspects like the ordering of working hours, the conditions of work, water supply, sewerage, fuel and light, education, health and welfare. It was in this context that 'planning', as a widely applicable term to urban government, became an important feature of the 19th century. Meanwhile, new international movements relating to design and architecture were exerting increasing influence. The need to bring more coherence and unity in the 19th century chaos was a fertile seedbed for the emerging urban planning and design. In general, the turn of the century was marked by great intellectual activity in the arts, science and the humanities and by an eagerness to strive for new things (Cherry, 1974; Hall, 1975; de Ruijter, 1987).

As regions gradually changed from rural to urban societies, public health was not the only issue at stake in the early planning efforts. Industrial urbanisation provoked concern about the qualities of spatial development and was considered the root of the deterioration of the landscape and the values of country life. An extensive international public debate on the importance of nature in relation to urban development and growing interest in the management of social and spatial

1 Greek: *archi-tekton*

relations created a case for planning, eventually leading to land use zoning and building regulations (Hall, 1975; Healey, 1997; van Schendelen, 1997).

The Netherlands

In the Netherlands, the consequences of industrialisation for the environment – the changing relationship between urban and rural areas caused by rapid urbanisation – occurred rather late compared with other north-west European countries. The final decades of the 19th century were an introduction to a new phase of social development and increasing governmental interference. As in other industrialising regions, the main issues were public health and hygiene, and housing. Because of the late industrial development in the Netherlands, transportation systems were already better developed, which is why the construction and design of infrastructure was a more central planning topic than in Britain (Hall, 1975; de Ruijter, 1987).

Although various legal regulations regarding urbanisation and building activities were introduced during the 19th century, this period is marked by the Dutch Housing Act (*Woningwet*) of 1901 (van der Valk, 1989). It obliged municipalities of more than 10,000 people, or the population of which had increased by more than one-fifth within the last five years, to make an extension plan. It was no coincidence that the Housing Act was approved by the government at the same time as the Public Health Act (*Gezondheidswet*) (van Schendelen, 1997). The period that followed saw the appearance of a large-scale government planning approach for urbanising regions that would direct societal processes based on rational and scientific thought and action (Bosma, 1993).

Planning context: scale and time

With the increased pace of physical change and the larger scale of transformations, physical planners and designers gradually broadened their scope from short-term, local building projects with a primarily operational purpose towards a more strategic perspective on long-term developments on a larger scale. In the Netherlands the 1901 Housing Act only had an impact at the local, urban level. As we will see, Dutch planning later unfolded from the local level to the provincial and national levels, and broadened its limited urban (housing) perspective to a more integrated rural-urban perspective. The administrative structure of physical planning was built up step by step, becoming the present multitier and much faceted system (Faludi and van der Valk, 1994).

Around the turn of the 19th century the perception and interpretation of the term ‘region’ changed. It originally had strong geographical connotations linked to the surface of the earth (Dutch: *streek)*. With the 20th century this static and

internally-oriented concept of the region was gradually replaced by a process-oriented, functional interpretation, in which the region is a dynamic entity oriented towards external relations, and with changing boundaries. In the dynamic region, urbanisation was a major driving force and the principal cause of the disappearance of the traditional countryside.[2]

The introduction of the region as a dynamic, functional concept led to plans that exceeded the local scale. The first experiments with regional planning, mainly in the form of spatial-economic guidance, were in the mining regions, such as Doncaster in England, the Ruhr in Germany and South Limburg in the Netherlands. The first Dutch attempt was in 1912, by the architect Jan Stuyt. This plan was not successful because of the lack of cooperation between municipalities. In 1926 a second attempt was made by the architect J.Th.J. Cuypers in an advisory report on housing, sewerage and (not surprising after the first debacle) administrative organisation. It amounted to little more than scaling up the work on local levels and joining local plans together. The autonomy of municipalities made a more integrative approach impossible (Bosma, 1993).

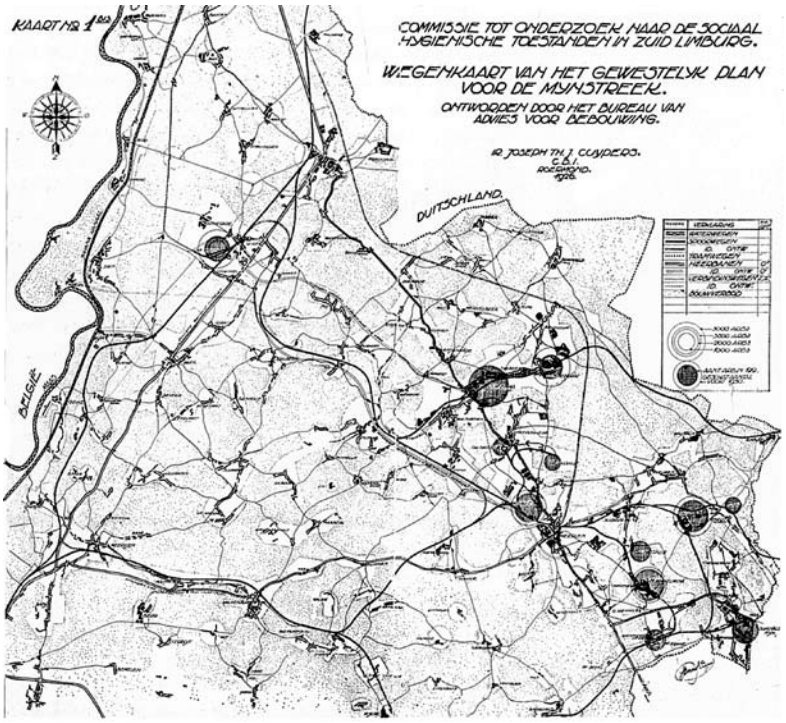


Figure 4-1 Intermunicipal Plan for mining area in South Limburg (infrastructure), J.Th. J Cuijpers, 1926

2 For a good discussion on the changing interpretation of the 'region' see Bosma (1993: 17–25). In Dutch the 'static' region is called *streek* by Bosma, whereas the dynamic region is called *regio*.

Professional development of spatial planning and design

The early practice of urban planning and design (*stedebouw)* was a shared domain of mainly architects and civil engineers. The architects entered the domain of urban planning and design through their traditional involvement in (small-scale) architecture. The civil engineers came into the domain from a technical background in construction, infrastructure and hydraulic engineering.

In the Netherlands specialised education in urban planning and design, and in landscape architecture, only came in after the Second World War (see next section). Most architects received professional training under the supervision of experienced architects, possibly combined with education at the Academy of Architecture or architectural drawing courses. From 1901 the Technische Hogeschool Delft (now TU Delft) offered courses in architecture as a specialisation within civil engineering. Despite repeated requests, the government did not institute specialised education in *stedebouw* after the German example of *Städtebau*. As the municipal practice of urban development required new specialists, gradually separate courses were organised in legal, aesthetic or technical aspects of urban planning and design (de Ruijter, 1983).

Engineers and architects worked together in the developing professional field, but there were disputes about whether a technological approach was better than an architectural approach or not. In the late 19th century the acute shortage of housing for the fast growing urban population swung the balance towards a functional and economic construction method, in which the engineers dominated the architects. For example, the legal expert Valckenier Kips, who was influential in Dutch urban planning in the late 19th and early 20th century, advocated a design process for the urban expansions in which the civil engineer would first make an overall design for the layout of new districts and infrastructure, then hand the sketches over to the architect. The task of architects was the representation of beauty, the facades and the built and green ornaments such as fountains, statues, trees and public gardens. The technical and aesthetic principles that Valckenier Kips propagated were inspired by the German approach and formed the basis for many Dutch urban expansion plans early in the 20th century (Bosma, 1993).

However, as can be expected, there was a counter movement. Around the turn of the 20th century the division into engineers and architects was increasingly felt to be a problem in both social and aesthetic terms. In reaction to the dominance of ‘solutions’ to technical, hygienic and infrastructural problems in urban planning and design, architects emphasised the cultural aspects of urban design. The Viennese architect Camillo Sitte became well known for his call to base urban planning on aesthetic principles.[3] From these ideas emerged a new architectural approach

3 In 1889 he wrote an influential paper ‘Der Städtebau nach seinen künstlerischen Grundsätzen’.

to both design of the physical urban environment as well as of the civil society (de Ruijter, 1987).

In the Netherlands, Berlage was an exponent of this thinking, though he later distanced himself from Sitte's romantic idealisation of historical cities and deliberately chose new and functional forms. He described the 19th century as 'the age of ugliness'. Berlage opposed decorative architecture, the idea of dividing form and function, claiming that architecture was able to reconcile object and subject, feeling and reason, and therefore mediates between the diverging specialisations of technology and the arts. Berlage can be considered as a turning point in thinking about urban design and planning. He advocated a total vision for urban development in which government actively protected public interests. The passing of the Housing Act (1901) reaffirmed his conviction (Boelens, 1990; van Schendelen, 1997). Architects like Berlage did not dispute the role of engineers, who delivered the necessary facts and figures about underlying trends and technical information, but they claimed the role of synthesising this information into form. As most people coming into urban planning were architects, they slowly took over the dominant role from the civil engineers (Faludi and van der Valk, 1994)

Landscape architecture only later appears as a separate discipline, with its own Dutch flavour, as will be explained below. Of course, there was a tradition in the design of parks, private gardens and 'green ornaments' as a separate horticultural branch or as form of specialisation in architecture. The profession of garden ar-

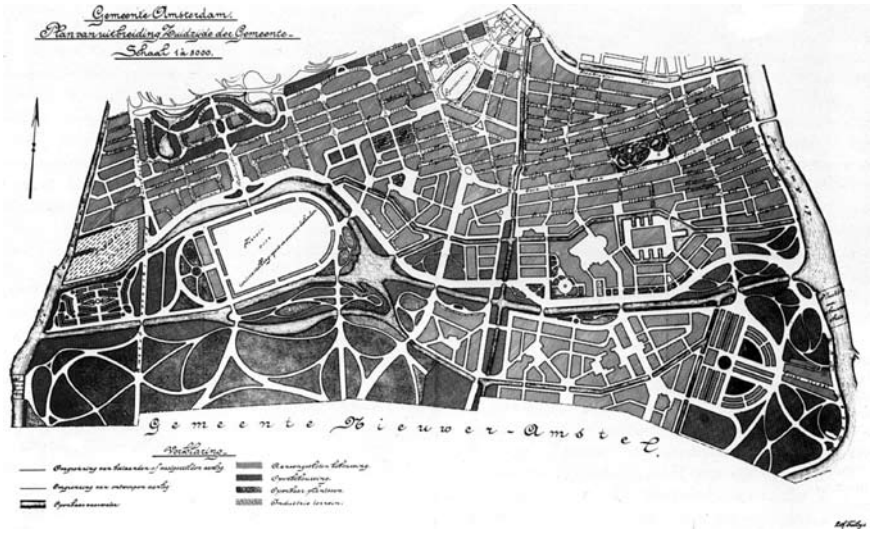


Figure 4-2 Plan 'Amsterdam-Zuid', H.P. Berlage, 1904

chitects developed over time from mainly autodidact craftsmen in the 17th century to an established professional domain. In the Netherlands this development was marked by the founding of the Association of Garden Architects (BNT) in 1922 (Vroom, 2006). The great transformations in the rural areas, like the agricultural reclamation works and the famous Dutch polders, were totally dominated by engineers. At that time, planning and design of urban and rural areas were separate domains.

Conclusion

The late 19th century and early decades of the 20th century was a period of alternating dominance of functional, technology-based approaches, aesthetic approaches and more balanced approaches in which 'reason and feeling' were integrated in a process of architectural design, as promoted by Berlage. In the Netherlands both architect-planners and civil engineers were aware of the complementary nature of the contributions made by both professions in urban planning tasks. The question of who should take the lead role gradually shifted towards the architects.

Modernism 4.3

General character of the period

The basic ideas of the Modern Movement developed in the first three decades

Figure 4-3 Plan 'Amsterdam-Zuid', H.P. Berlage, 1927

of the 20th century. Application of modernist ideas, however, was strongest in the decades following the Second World War. This section deals with a period from around 1920 to the mid 1960s.

Modernism is the principal design style in response to the onset of industrialisation. Well known representatives are Walter Gropius and Le Corbusier, who used the process of industrialisation itself as a metaphor. For Le Corbusier a house was 'a machine for living' and the factory was the metaphor of metaphors. The Congrès Internationaux d'Architecture Modern (CIAM), founded in Switzerland in 1928, was an influential association of these and many more avant-garde architects. The 'Functional City' was one of their central concepts. The 1959 CIAM, held in Otterlo, the Netherlands, was the last in a series of eleven meetings that advanced both modernism and internationalism in architecture and city planning.[4]

The tenets of the modernist philosophy were mass production and standardisation and the proper (i.e. functional) use of modern materials: glass, steel and concrete. Modern architects sought, through the manipulation of the physical form, to improve and re-educate man. The overall goal was to bring all people the standard of life that only the wealthy could afford in the previous century. The 'good design' debate often evolved around issues of how the form of objects could enhance the quality of life (Lang, 1987; Mitchell, 1993; Margolin and Buchanan, 1995). Kleefmann (1984) describes the modern phase as the 'functional phase', in which both separate functions as well as the integration of functions need to be optimised. Illustrative of these are modernist dicta like 'form follows function' (Sullivan) and 'form and function are one' (Frank Lloyd Wright). This emphasis on a functional approach causes an erosion of the aspect of the meaning of places and a neglect of attention to meaning and context in design.

As faith in technology increased during the 20th century, so did the importance of scientific thinking in architecture and spatial planning. The model of the scientific method, being more open to critical evaluation than the individualistic design process, came into fashion. The 'first generation' process models generally mapped out a staged model of survey, analysis (ordering and structuring of the problem), synthesis (generation of solutions), appraisal (critical evaluation of solutions against objectives), leading to decisions. The basic idea behind the rational model was that design and planning were problem solving activities and that the problems could be objectively formulated. The Design Methods Movement, first developed in Britain during the early 1960s, played an important role in the theoretical debate on these procedural issues (Bazjanac, 1974; Bayazit, 2004; Lawson, 2006).

4 See for a detailed history of the organisation: Mumford (2000) *The CIAM Discourse on Urbanism, 1928–1960*.

The Netherlands

In the Netherlands 1918 is a memorable year because it was when the Dutch Institute for Housing and Physical Planning (often just called 'the Institute') was founded. The Institute aimed to promote housing in the spirit of the Housing Act and good planning in general. The founding director, Dirk Hudig, established a professional network of people from different disciplines such as architecture, engineering, the law and geography. The close connections between academics and high level administrators gave this planning elite considerable influence over the further development of Dutch spatial planning.

The two decades before the Second World War can be considered as the unfolding phase of the institutionalised Dutch planning system. An important event was a conference of the International Garden Cities and Town Planning Association held in Amsterdam in 1924. The Institute played a leading role in putting *regional planning* on the agenda. In the past decades it had become obvious that systematic urbanisation, and balancing urban and rural development, could not do without a regional or even national perspective. Invited by Hudig, Raymond Unwin, a British architect and member of the British Town Planning Institute, inspired the planning society with overseas regional planning practice. It familiarised Dutch planners with the survey-before-plan approach, as first practised by Geddes[5] and later propagated by Abercrombie, a British (landscape) architect-planner[6].

Figure 4-4 Board of the International Garden Cities and Town Planning Association (1924)

5 The British biologist Patrick Geddes (1854–1932) was an influential scientist who contributed much to regional planning. He can be considered the founder of the later much practised method of *survey* of the region, followed by *analysis* of the survey, followed only then by the actual *plan* (Hall, 1975).

6 It should be noted that in Britain the terms 'landscape architecture' and 'town planning' were then almost interchangeable (Cherry, 1974: 56)

An important follower in the Netherlands was J.M. de Casseres, who in 1929 coined the Dutch word *planologie*, meaning planning science in the tradition of the social sciences (de Ruijter, 1987; Faludi and van der Valk, 1994; Bosma, 2003). In the 1930s de Casseres was a leading planning practitioner in the province of Noord- Brabant.

In 1931, by amendment of the Housing Act, regional planning became a joint responsibility of municipalities. They formed regional groupings, each to draw up its own intermunicipal structure plan (*streekplan*). Not being very satisfying, this

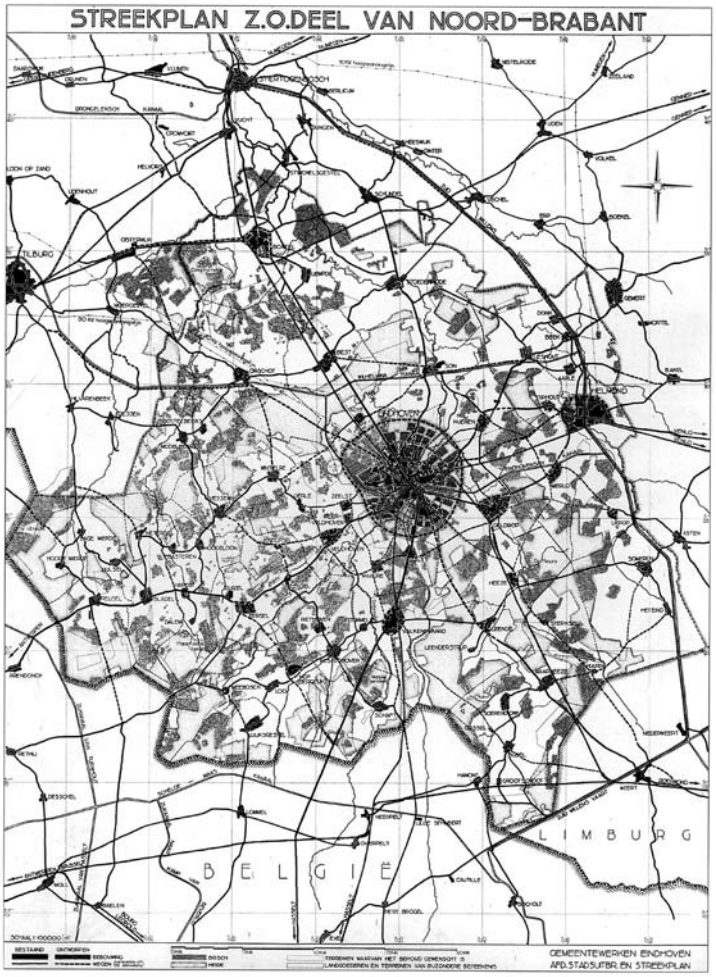


Figure 4-5 ' Streekplan Noord-Brabant', (south east part), J.M. de Casseres, ca 1931

was later replaced by a provincial structure plan, also called a *streekplan*. In 1938, a State Commission, called the 'Frederiks Commission' after its chairman, was appointed to prepare a new Housing Act. It recommended regional planning powers for the provinces and a National Plan for matters of national concern, which led to the creation of the Government Service for the National Plan (*Rijksdienst voor het Nationale Plan*).[7]

The post-war period was dominated by reconstruction efforts, which was more restoration than change. Town and country planning was mainly a matter for professionals and was not much of a political issue. This restoration period was extended following the major sea flood in 1953 that killed over 1800 people in the south-west of the Netherlands, resulting in the famous Delta Plan of 1958.

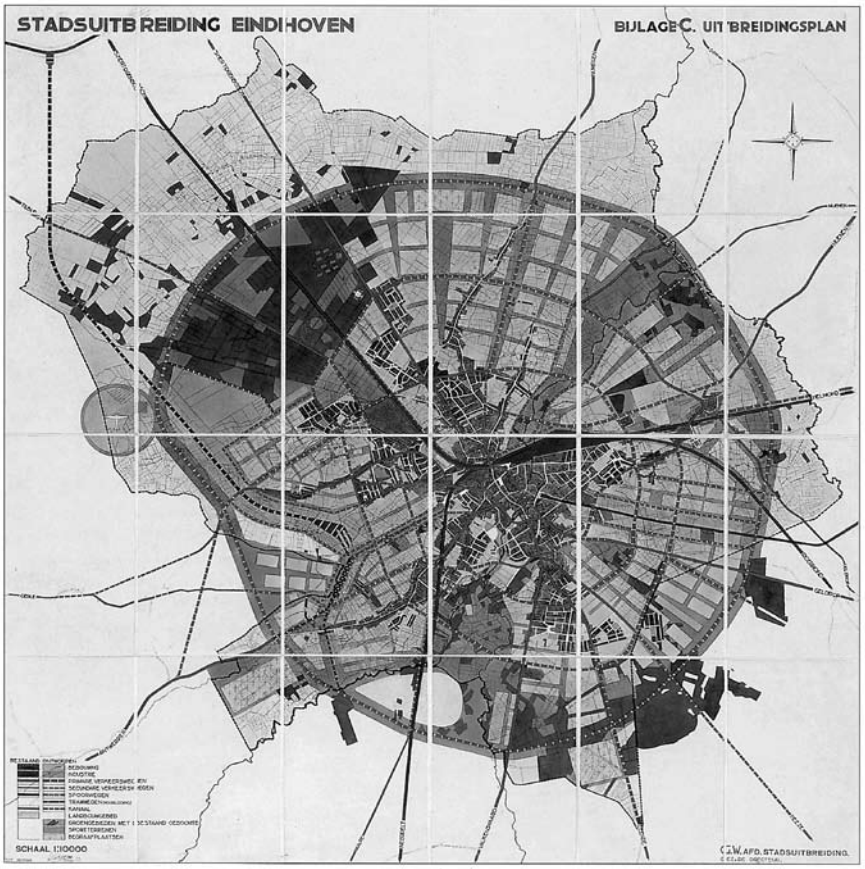


Figure 4-6 Extension Plan Eindhoven, J.M. de Casseres, 1930

7 Faludi and van der Valk (1994, chapter 4) give an extensive impression of this period.

Also in 1958 the Working Committee for the Western Netherlands (*Werkcommissie Westen des Lands*) reported on principles of national spatial organisation and planning principles requiring active government involvement. A revised Housing Act and a completely new Spatial Planning Act (*Wet op de ruimtelijke ordening*) saw the light in 1962 and came into force in 1965. Concurrently a national spatial planning policy document (*Eerste nota ruimtelijke ordening*) was adopted by Parliament.

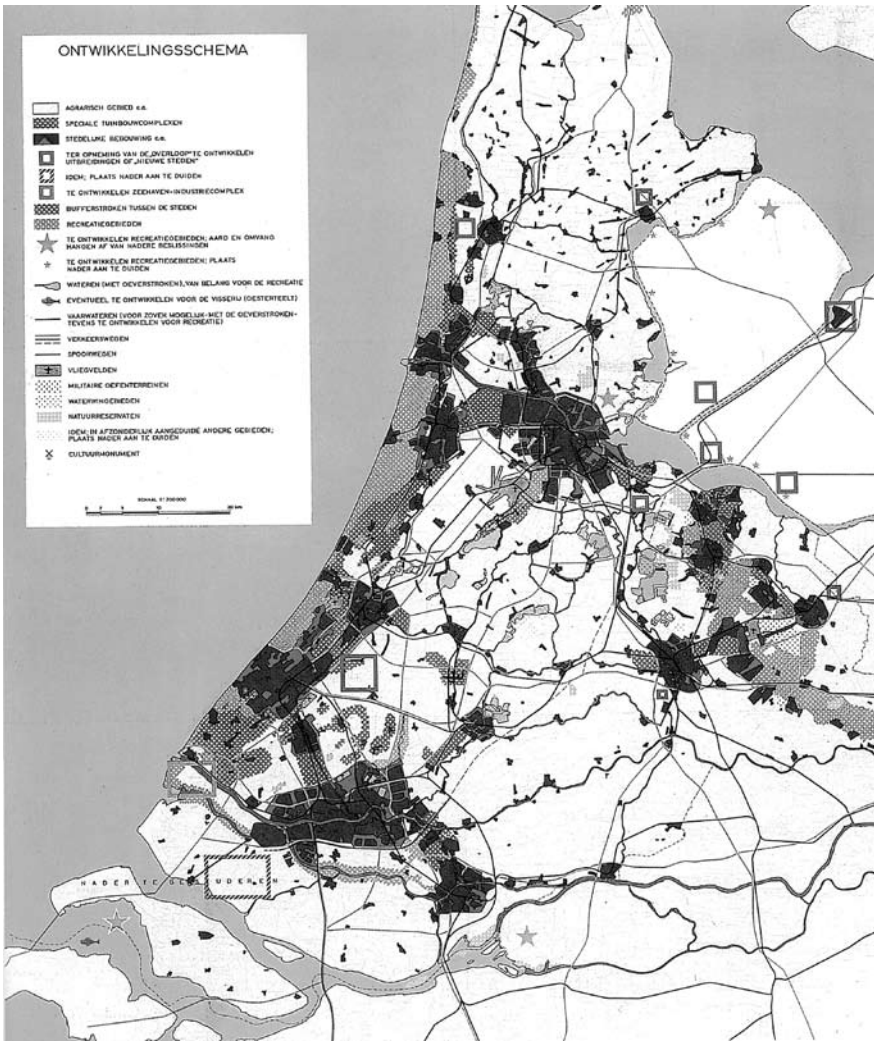


Figure 4-7 Plan for the western Netherlands, Werkcommissie westen des lands, 1958

The second policy document (*Tweede nota ruimtelijke ordening*) (1966) was the first comprehensive government policy statement concerning the physical structure of the Netherlands. It was an attempt to draw up a blueprint for an optimal future situation (Kleefmann, 1984).

Figure 4-8 'Tweede Nota Ruimtelijke Ordening', Rijksplanologische Dienst, 1966

Planning context: scale and time

The survey-before-plan approach that came into fashion in the 1920s and 1930s influenced the way Dutch planners observed the region. Surveys took in whole regions, and towards the end of the 1930s, besides housing and infrastructure planning also embraced other land uses. Planning became more comprehensive and this was reflected in the planning regulations at the different scales. While the scope of systematic urbanisation extended to the regional level, there was also a considerable migration to the Western Netherlands. This made a national perspective necessary.

The dominant prewar spatial concepts were focused mainly on regulating and channelling urban growth. Strategic plans were seen as defensive zoning plans, based on surveys. New substantive concepts and approaches surfaced in the 1950s. No longer were the principles of (local) city planning expanded to the regional scale, but the characteristics of the different scales were recognised and discussed. A more integrated approach encompassing urban and rural areas slowly developed, recognising the needs of the urban population for countryside recreation. The city-region concept has long been in use. In the *Eerste nota* the Randstad is shown as a circle of cities, centred around a green heart and structured by green zones. The *Tweede nota* goes one step further, presenting a national urban structure consisting of the Randstad and the cities in Noord-Brabant, around a 'central open space'.

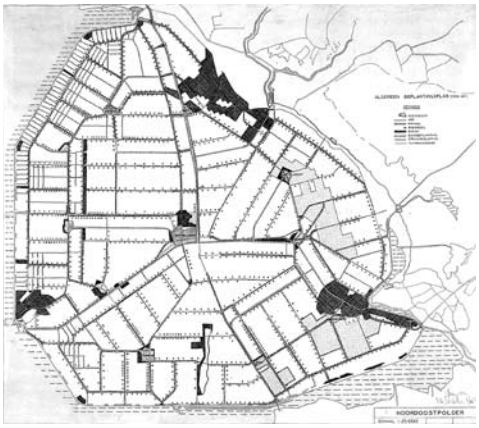


Figure 4-9 (left) Landscape Plan for Wieringermeer, Directie Wieringermeer, 1944

Figure 4-10 (right) Landscape Plan for Noord-Oostpolder, Directie Wieringermeer, 1947

'Modern' Dutch landscape architecture

The foundations for what would become 'Dutch landscape architecture' were established in the 1920s and 1930s. During these decades three conflicting but strongly linked spatial issues dominated regional planning: urbanisation, including infrastructure, food production and (as a defensive reaction) nature conservation. Urbanisation was primarily the domain of architect-planners (*stedebouw)* and civil engineers, whereas food production had a strong link with land development and agricultural engineering. At that time land was still being reclaimed and brought into cultivation on a large scale, and just like urbanisation this caused awareness (at least among the planning elite) of the natural and cultural value of the landscape. This was the domain – where rural and urban interests and the bodies of knowledge that supported them came together – in which landscape architecture came onto the scene. I discuss the development of landscape architecture as a separate discipline below, with specific reference to the unique practice of regional landscape architecture in the Netherlands.[8]

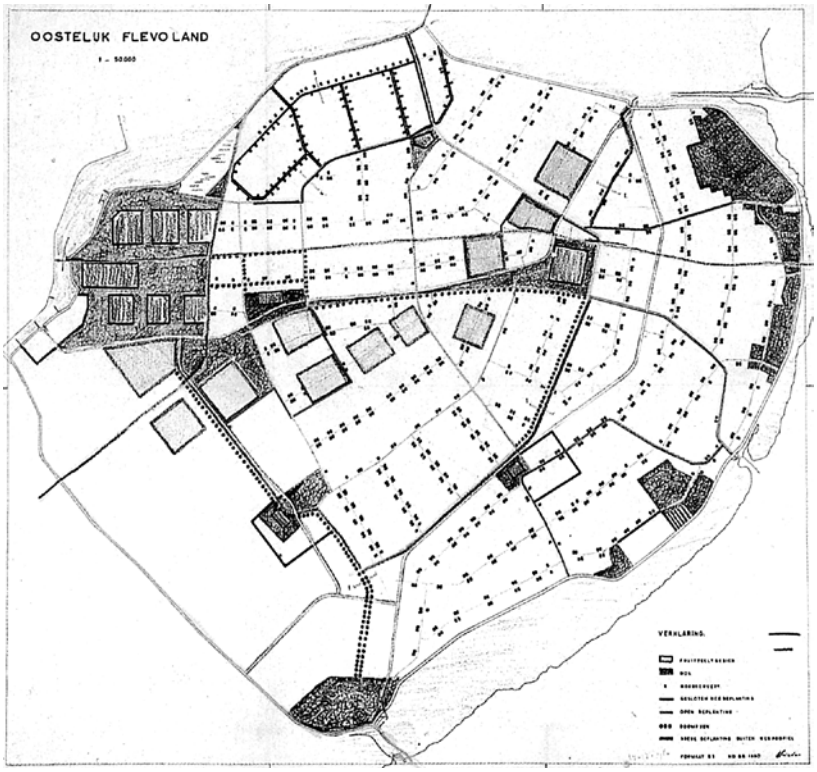


Figure 4-11 Landscape Plan for Oostelijk Flevoland, Staatsbosbeheer, 1960

8 For a well illustrated and detailed overview of the development of this branch of Dutch landscape architecture, see de Visser (1997) *Het landschap van de landinrichting. Een halve eeuw Landschapsbouw.* See also van der Valk (1982) *Planologie en natuurbescherming in historisch perspectief*.

Dirk Hudig advocated spatial planning on a regional scale to enable correlation with a strategy for nature conservation and to balance urban-rural relations. In 1928 he was chairman of a Committee for the Zuiderzee polders. The Committee's report has had a major influence on thinking about landscape planning and design in general. Until then, the making and planning of the polders, land consolidation and agricultural reclamation was work for engineers. Hudig and others stressed the contribution to be made by the architect-planner in integrating different aspects. Through the integration of interests, effectively encapsulated in the structure of the landscape, the beauty of the design would manifest itself. In their view, the power of the landscape lay not in the details, but in the larger concept and unity of this 'summary of interests' (Hudig, 1928). What Berlage advocated earlier concerning the town plan, stressing the need for a synthetic vision on spatial development, Hudig now extended to landscape planning and design. The report on the Zuiderzee polders can be seen as crucial in the development of landscape architecture as a discipline with a role to play in regional planning,

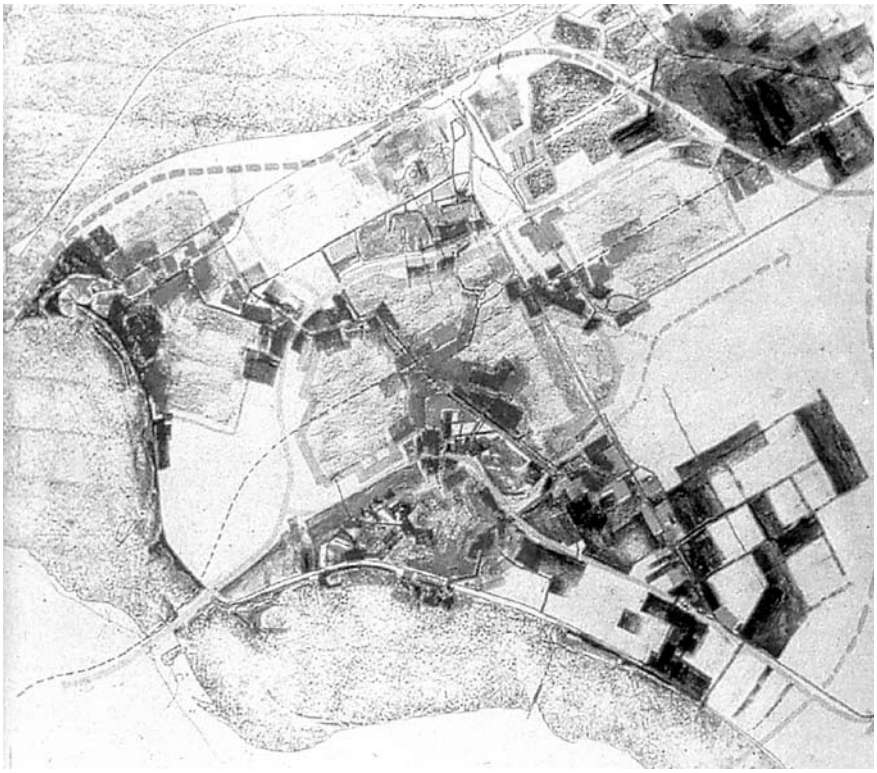


Figure 4-12 Design study for Zuidelijk Flevoland/ Almere, Rijksdienst IJsselmeerpolders, ca 1975

not just as a decorative art or limited to the scale of parks and gardens. Around that time another committee, chaired by Th. K van Lohuizen, an engineer, wrote a report on 'Natural beauty and agricultural reclamation' (Van Lohuizen, 1926). Van Lohuizen suggested that for every agricultural reclamation project a 'landscape plan' should be drawn up. This would enable architect-planners to have a say in the technical design procedure and draw attention to the aesthetic aspects of the existing landscape. Figures 9-12 show the development in landscape architecture in four 20th century Dutch polders.

Another name to be mentioned here is H. Cleyndert (1880–1958), who was a member of the executive board of the Dutch Society for the Conservation of Nature (*Vereniging tot Behoud van Natuurmonumenten*). Whereas Hudig and Van Lohuizen extrapolated the principles of town planning to the rural areas, it was Cleyndert who argued for a new specialisation: landscape architecture. In an advice on 'Parks and Nature in the Netherlands' he explains: 'Landscape architecture is primarily a fine art, which aims to create and preserve beauty in the efficient adaptation of land to human service, whether in the functional planning of cities or preservation of the natural scenery of the country' (Cleyndert, 1925). Taking the United States as an example for the planning of cities and landscapes, he introduced the idea that parks and nature conservation areas were necessary as recreational zones for urban citizens. The city and its surrounding green landscape, 'the rural city', were approached as a whole. At the 1924 Amsterdam Congress mentioned above, he had already suggested that a National Plan should be drawn up to balance urban growth and nature conservation. Hudig, Cleyndert and Van Lohuizen approached the landscape mainly from an urban perspective. Their aim was to protect the rural landscape and wildlife habitat (which were more or less synonymous then) against urbanisation and thus provide a healthy environment for the growing urban population. In this period, their ideas for a preservation policy became intermingled with the more development-oriented view of J.T.P. Bijhouwer.

Bijhouwer, lector and later, in 1947, the first professor in landscape architecture at Wageningen Agricultural University, gave evidence of his visionary opinion in an article in 1934 titled 'Preservation or creation?' (Bijhouwer, 1934). He did not reject the protective approach, but convincingly added an offensive strategy based on the premise of a need for natural space. As this could not be met through the protection of existing nature areas alone, he suggested that new natural and scenic beauty should be created. He can be considered the founder of an offensive landscape approach that is now broadly accepted in policy documents and professional opinions.

It was Cleyndert who picked up Bijhouwers ideas and made the case for the complementary roles of conservation and creation. In a sweeping lecture in 1939 he sketched the (government) agenda for landscape management. His main points were, first, that government has to take responsibility for the quality of the landscape. Second, he stressed the necessity of both nature conservation as well as constructive action for landscape development. His third point was that art and science had to be linked in landscape design; the treatment of the man-made landscape is neither a purely aesthetic issue nor a purely technical or scientific issue. His fourth statement was that there was a need for a new expertise, the landscape architect who could combine design expertise with a thorough and practical knowledge of the material landscape. The contribution of the landscape architect should not be restricted to the aesthetic aspects of the plan, but should be an integral part of the planning process (de Visser, 1997). These statements and Cleyndert's rich contacts in 'The Hague' appeared to be fertile ground for the development of Dutch landscape architecture as an increasingly influential discipline in regional planning.

In 1945 academic education for landscape architecture was made possible in Wageningen and in Delft. At the Agricultural University in Wageningen landscape architecture was both a logical extension of the garden architecture that was traditionally taught there and a 'new' discipline in the tradition of the agricultural

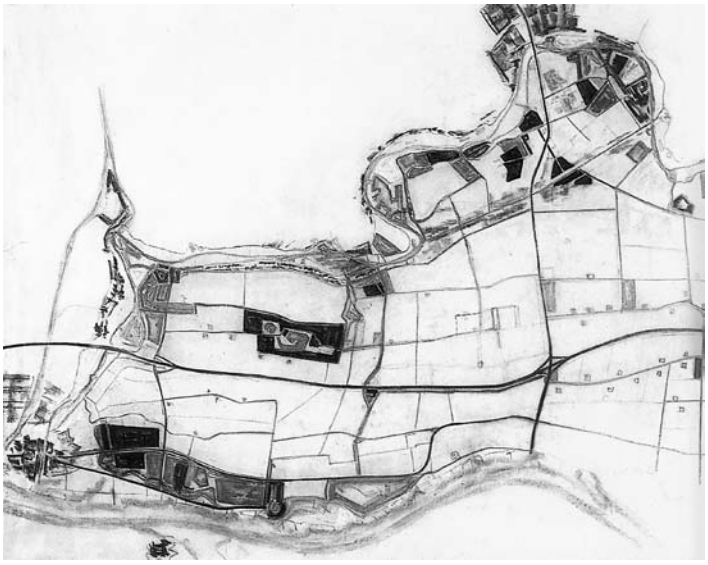


Figure 4-13 Design study for land consolidation project Tielerwaard-west, Staatsbosbeheer, ca 1960

sciences. This combination has given landscape architecture at Wageningen a special flavour. In 1947 J.T.P. Bijhouwer was appointed the first full professor. At the TU Delft, landscape architecture was set up as a specialisation of architecture and was oriented towards urban design and planning (Andela, 1982; de Ruijter, 1983; de Visser, 1997).

The 1950s and 1960s were a pioneering phase for landscape architects. As landscape planning and design were considered a government responsibility through the persistent efforts of people like Cleyndert and Hudig, government became an important employer in addition to private firms. Landscape architects mingled with the professional world of (urban) planning and design, for example at the National Spatial Planning Agency (*Rijksplanologische Dienst*), at provincial planning departments or in the larger cities. Another important employer was the National Forest Service (*Staatsbosbeheer*), which was responsible for landscaping advice in a landscape plan accompanying land reclamation and development plans (see figure 4-13). The 1954 Land Consolidation Act (*Ruilverkavelingswet*) provided the 'Landscape Plan' with a legal basis, giving landscape architects a greater say in the so far largely technical working culture of land reclamation and rural land development.[9]

In the late 1950s, as the economy grew the recreational needs of the urban population became increasingly evident, the unilateral focus of rural land development plans on improving agricultural conditions came under increasing criticism. The Queen's annual speech from the throne in 1961 contained the announcement of a halt to agricultural reclamation, and in 1965 the non-agricultural interests of the countryside were officially recognised in the Spatial Planning Act (*Wet op de ruimtelijke ordening*).

Looking back on this episode in the professional development of Dutch landscape architecture, parallels can be drawn with urban design. The relationship between (landscape) designers and agricultural and civil engineers seemed not only to complement each other, but were also very tense. As Vroom says about the landscape architects: 'Initially their contribution was limited to roadside planting and shelterbelts – in other words, to embellish the works of others' (Vroom, 2006: 14) See also figure 4-14. The landscape architect's task was called *landschapsverzorging*, which can be translated as 'landscape embellishment', and this came after the engineer's. This situation was later disputed, not surprisingly supported by urban designers, who had experienced the same treatment. The question was, who should take the lead in landscape planning, and whether there was more than a 'decorative function' of design comparable to the situation in urban planning at the beginning of the century. In fact, what happened in urban planning and design happened a few decades later in landscape planning and design.[10]

9 A series of videos showing 18 interviews with this 'first generation of Dutch landscape architects' gives a strong impression of this period. It is composed by M. Steenhuis and F. Hooymeijer, 2003; interviews with e.g. Roel Benthem, Nico de Jonge, Ellen Brandes, Frans Maas, Ben Taken, Meto Vroom

10 In an interview with Broekman, Kleefmann has also stated that planning for the rural areas seemed to be always one step behind urban planning (R.A.J.M. Broekman, *Wat is planologie?* MSc thesis WU, 2005)

The great contribution of this period to the intellectual tradition of landscape architecture is the recognition that the beauty of the landscape is not in the parts, but in the whole, as Hudig had stated. It became clear that landscape design was more than beautification, and that its power is in the cohesion of aspects. Credit can also be given to Bijhouwer, who linked preservation and creation as a pair. The fact that support for landscape architecture came from people with a primarily urban perspective shows how this period sowed the seeds of recognition that the urban and rural landscape are parts of the same system. Solutions for one aspect, the urban or the rural, cannot be proposed without taking the complete system into consideration.

Professional development of spatial planning and design

In the period under consideration in this section, from about the 1920s to the 1960s, the practice of planning and design on a regional scale and as a governmental task expanded enormously. It also became institutionalised through legal regulation and the establishment of professional bodies and educational facilities. For example, the professional body for urban designers , the *Bond voor Nederlandse Stedebouwkundigen (BNS)*, was founded in 1935 and the International Federation of Landscape Architects in 1948. The question of how to organise academic education for this domain in the Netherlands kept the professions divided for a long time,[11] while the issue of training and educating this emerging practice kept a number of committees and councils busy.

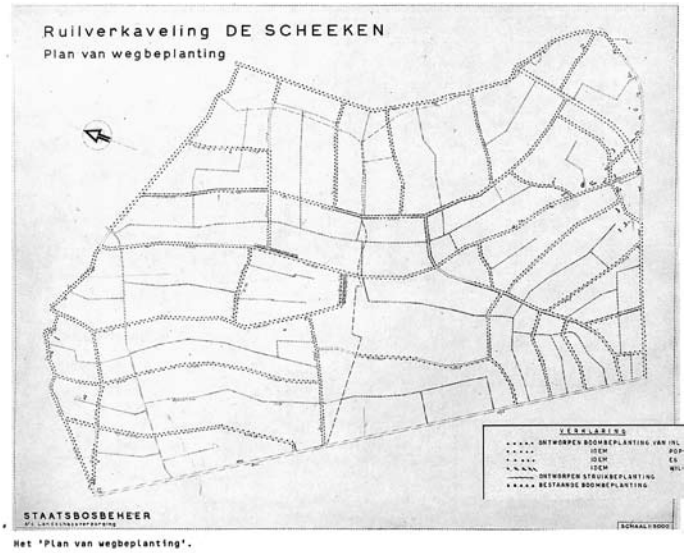


Figure 4-14 Plan for road side planting as part of land consolidation project De Scheeken, R.J. Benthem, 1944

Het 'Plan van wegbeplanting'.

11 See for a comprehensive report on this issue: de Ruijter, P. (1983) *Stedebouw onderwijs 1900–1945. Over de voorgeschiedenis van het onderwijs in stedebouwkunde, landschapsarchitectuur en planologie*.

Since 1926 postacademic courses in *stedebouw* (which then included landscape architecture) had been organised by ir. M.J. Granpré Molière, a professor at Delft, in cooperation with a special NIVS Council (*Stedebouwkundige Raad van het Nederlandsch Instituut voor Volkshuisvesting en Stedebouw*). In the interwar period considerable attention was given to landscape and nature conservation in these courses as well as in the practice of regional planning (see also van der Valk, 1982). In the first decades of the 20th century relations between architects and park and garden architects were troubled, with each profession claiming the other was incompetent. When in the 1920s interest focused on the region, including cities and the landscape, both professions felt the need to broaden their scope. In 1927 an advisory commission concluded that architecture in Delft and garden architecture in Wageningen should both be expanded to better match the demands in the field. Granpré Molière, a member of the commission, did not agree with the other members and eventually the advice was not accepted, largely due to Granpré Molière's influence. Competition between the universities in Delft and Wageningen hindered the introduction of new curricula. However, a new commission in 1931 recommended launching garden and landscape architecture as an independent study in Wageningen and linking the Delft course in architecture with complementary courses in garden and landscape to create a new subdiscipline, *stedebouw* (urban design). The essential difference with the previous advice was that the Delft and Wageningen courses were now clearly stated to be different from each other, and that a new discipline in Wageningen did not affect the established position of architects in Delft.

Until the 1930s architects claimed a leading position in spatial planning mainly on the strength of their ability to 'synthesise' all relevant aspects into an architectural concept. Regional planning was still primarily defined as an art and was therefore synthetic and needed a vision. This was the property of the individual designer. Of course, research should provide the necessary foundations, but it was up to the designer how to use it. This belief is illustrated in quite an arrogant quote by Grandpré Molière, who assumed that the architect had direct access to truth: 'For his work he has all necessary knowledge; his technique is flawless, his patience endless, and his spontaneity never lets him down.'[12] However, by adopting the 'survey-before-plan' approach the influence of research became more pronounced. In the early 1930s the first geographers (social and economical) were admitted into the Institute and onto advisory councils. Insights into social factors were considered important contributions to the regional surveys which the engineers could not provide. These surveyors were educated mainly at the universities

12 Cited in Faludi and van der Valk, 1994: 47

of Amsterdam, Utrecht and Rotterdam (de Ruijter, 1983). Especially after the Second World War, geographers gradually took over the survey tasks from engineers, who had so many other opportunities in the postwar period.

Eventually the prevailing opinion was that planning and design on the wider scales, from local to national plans, required a broad range of skills and knowledge; broader than individual architects could offer. In 1942, in an advice to the government the director of the Government Service for the National Plan, dr. Ir. F. Bakker Schut, identified three aspects that should be integrated into the planning task: the survey of space, which requires a research approach, the ordering of space, which to him has a technical nature, and the composition of space, which was considered the aesthetic role of the architect.[13] He advised starting three different courses: surveyor, (technical) planner and (landscape) architect. Although his advice was not followed, it illustrates the continuous struggle that was waged with the growing complexity of the planning task. It was clear that the various kinds of knowledge should be integrated in planning practice, but how the various specialisations would be divided over the existing universities remained a difficult issue, in which competition and rivalry seemed to be more common than cooperation.

During the war several reports were produced on the organisation of education in spatial planning and design. The need for well educated professionals in the postwar period finally accelerated decision making. In 1947 Jan Bijhouwer became full professor of garden and landscape architecture in Wageningen. In Delft

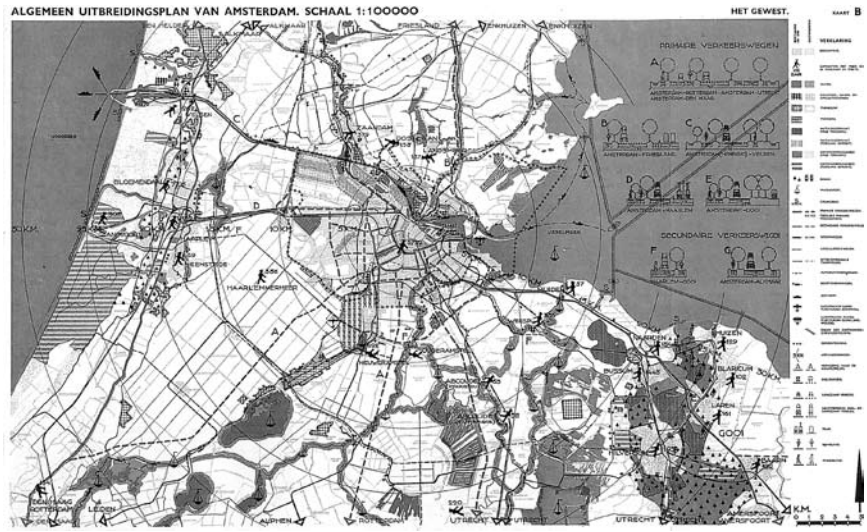


Figure 4-15 General Extension Plan Amsterdam, map B, Van Eesteren and Van Lohuizen, 1934

13 Probably due to the German occupation, the German terms *raumforschung, raumordnung and raumgestaltung* are also used

in 1947 a full professor of *stedebouw* was appointed (Froger). But, significantly, two part-time chairs were also established, occupied by the engineer Van Lohuizen (*stedebouw* and research) and the architect Cornelis van Eesteren (*stedebouw* and design). This duo had been working together intensively on the 1934 General Extension Plan of Amsterdam and argued for integrating research and design, but in a strictly objective manner. Research had to deliver the building blocks on which the design was based. The engineer Van Lohuizen considered urban planning primarily to be 'an art like governing, but every broadening of knowledge and deepening of insight will make them both less fallible in their application' (cited in van der Valk, 1990: 15). The cooperation between the researcher Van Lohuizen and the architect Van Eesteren is still considered an inspiring example for urban planners and designers. Some even say that the symbiosis has assumed almost mythical proportions in the professional literature (van der Valk, 1990: 82). When Van Lohuizen and Van Eesteren were appointed to TU Delft they exerted a considerable influence on the next generation of urban designers. Van Lohuizen stressed the societal aspect of the urban design task. To him knowledge generation was both a matter of (scientifically sound) inductive reasoning as well as intuitive understanding (*verstehen*). They both promoted teamwork between all relevant disciplines. Their attitude has been a great influence on the development of urban design as a discipline guided much more by society than architecture. Van Eesteren distanced himself from the prevailing architectural model of the master-designer. As he wrote in 1957:

> To my mind, he [the architect, jmj] should be one participant much like the others, albeit one with a feeling for, and knowledge of, design. If he turns out to be able to make a special contribution, then his particular value and importance will be evident. It is more important...to stimulate the imagination of the members of the team. That is what we must depend on, and not the architect as a specialist commanding much respect and power. What I describe here has been advocated by me throughout my life. For its sake, I have sought anonymity. (Quoted in Faludi, 1996: 105–106)

The first chairs in *planologie* (planning science in the tradition of the social sciences) were established in Amsterdam and Nijmegen only in 1962.

It was probably the massive restoration task after the Second World War that kept the planning professionals from theorising too much. Researchers held on to the ideal of objectivity and methods in which concepts and plans followed naturally from analysis. The fact that this was twisting reality was not criticised or questioned at the time (Bosma, 1993). Even though research and design influenced each other simultaneously in practice and many plans were in fact completed

before the report of survey was finished, the model could not be shaken. Neither did the recognition that design and planning has obvious normative aspects penetrate Dutch planning practice; when facing problems like translating knowledge to action, the answer was always more research. The eruption of the intellectual crisis in planning had to wait until the 1960s and 1970s (Faludi and van der Valk, 1994: 85–87).

Conclusion

Characteristic of the modernist period is the increasing influence of scientific thinking in planning and design. It was generally accepted that the architect-planner, although still dominant in spatial planning, needed assistance in gathering relevant information because of the increased complexity of planning tasks. Although the planning process was said to be rational, in practice survey or research and plan making were entwined. As the survey-before-plan approach became fashionable, and not only technical but also social aspects were taken in consideration, there was a shift in the 'research assistance' from practice oriented civil or agricultural engineers to social-science-oriented geographers.

The scale of planning and design broke out from the local level of the city, right up to the national level, and issues of landscape and nature conservation received considerable attention. There followed both rapprochement and rivalry between architects/urban designers and garden and landscape architects. After the Second World War new chairs were established in Delft and Wageningen to meet the growing need for well educated professionals.

The involvement of government in spatial planning and design grew with the need to balance competing interests, for example between urbanisation forces and the values of the countryside, or to coordinate spatial development between various scales. The legislative framework and institutional structure expanded as a result.

4.4 Anti-modernism

General character of the period

The period which is indicated here as 'anti-modernism', runs from about the mid 1960s to the mid 1980s. It is a period of great societal change in which established positions, for example of the church, government and science, were questioned. Though others label this period as 'postmodern'[14] I follow Kleefman's (1984) description of the anti-modern phase because the manifestations of this period are

14 For example, Meeus (1984)

so much a reaction *against* the previous, modernist period.[15] New balances had not yet been found during this reactive attitude.

Within the Design Methods Movement it became clear that the rational models that separated analysis from synthesis were a failure and new cyclical models arose in response. The former exponents of the rational models, Alexander and Jones (Alexander, 1964; Jones, 1970), now saw that the design process was in the first place a process of interaction between the sources of knowledge and experience and the decision maker. In landscape architecture Lawrence Halprin challenged the model of the rational linear process, emphasising instead the creative dimension, the cyclic structure and the collaborative nature of landscape design (Swaffield, 2002: 33). A turning point in this respect is Rittel's theory about the 'wicked nature of design problems' leading to the view that the design process is essentially a process of argumentation in which facts and values are integrated (Alexander and Rittel both had a background in mathematics). Rittel's theory is broadly accepted in the field of design and planning theory and policy analysis. In these views, the design process is primarily considered to be a (social) learning process (Bazjanac, 1974; Hisschemöller and Hoppe, 1995; Dorst, 1997; Faludi, 2004). The consequences of this view will be elaborated further in Chapter 6.

Meanwhile, *design practice* also opposed modernism. The universal and unitary philosophy of the modernists was replaced by more ambiguous and pluralistic visions. However, the weakness of what is often called 'postmodern architecture' is that it only changed the *form* of architecture, developing a new set of aesthetic mannerisms rather than a fundamental shift in thinking. Underlying assumptions or working methods were not questioned. Architecture was still seen as formal art object, and the relationship with clients and users did not really change (Lang, 1987; Mitchell, 1993).

In the late 1960s the limitations of pure rationality became evident and the notion of rationality (so central in the modernist approaches) was reinterpreted. The recognition of a 'multiple rationality' was connected to the rising debate on 'facts and values'. Etzioni stated in 1967: 'The rationalistic assumption that values and facts, means and ends, can be clearly distinguished seems inapplicable....We face an open system of variables, a world in which all consequences cannot be surveyed' (Faludi, 1973b). The place of scientific knowledge and method in spatial planning, so long taken for granted, took a knock. An influential study by Friend and Jessop in the 1960s on the process of policy making and planning in local government in England showed that the logic of practical decision making did not correspond with scientific logic. The study laid a firm foundation for the Strategic Choice Approach, developed from the premise that 'uncertainty is part of the hu-

15 This was of course also the case in various societal developments, think about the student revolts in Paris or Amsterdam

man condition'. Remarkably, John Friend, who was an operational researcher and mathematician by training, started out seeking to apply 'hard' approaches (cf. Alexander and Rittel). His approach has been 'soft' ever since, in the sense of adapted to real-life problems in practice (Faludi, 2004; Friend and Hickling, 2005).

Gradually the planning context broadened from governmental and scientific participants to a wider public, and procedures for citizen participation were introduced. In the 'traditional' town planning approaches, content and physical form had been central. But as decision making on strategic spatial issues became so complicated, new approaches appeared which had a more procedural emphasis. In retrospect, Salet and Faludi (2000) consider this as maturation of spatial planning theory. The basis for this procedural emphasis can already be found in the 1950s. Planning scientists at that time criticised architect-planners ('seers') for just producing blueprints instead of preparing alternatives to support policy choices. The limited scope of spatial planning and design also came in for disapproval. By framing problems as just spatial problems with a spatial solution, large areas of necessary societal changes were left out of sight (Hall, 1975).

The Netherlands

In the Netherlands[16] the decision centred approach of spatial planning is mirrored in the process of preparing the third national spatial planning policy document (*Derde nota*). This was in fact not one document, but a series of reports from 1973 onwards. The first was the Orientation Report, which gave a systematic description of goals, objectives and targets. These were to be elaborated in the Urbanisation Report and the Rural Areas Report. And this was not all: Structure Schemes for various sectors like Housing, Traffic and Transport, Outdoor Recreation, Nature and Landscape Conservation followed, and Structure Sketches integrating the physical consequences of the schemes. Various committees were installed to advise the government about the organisational aspects of this complex process[17]. Although the aim was to reduce complexity, in reality the effect was the opposite. The processes and organisational structures themselves became the core issue instead of the substantive output (Boelens, 1990).

The *Derde nota* also generated experience with public participation: policy *proposals* were published in Part 2A, followed by 2B, a compilation of *representations* by the public, 2C giving the *comments* by The Advisory Counsel for Spatial Planning (*Raad voor de Ruimtelijke Ordening*), and 2D presenting the final *Government Decision*. Finally, a part 2E was added, containing a *reply* from the Government to Parliament after the parliamentary debate. This was just Part 2 on Urbanisation; the same process was followed for the Rural Areas. All this resulted in thousands

16 For an extensive description see Faludi and van der Valk, 1994, part 4.

17 For example, the De Wolff Committee addressing the problem of coordination between departments and distinguishing between sector and facet planning, and 'Working Process for Planning the Netherlands' (WERON, Werkproces Ruimtelijke Ordening Nederland) which presented a matrix organisation with numerous working group

of pages between 1973 and 1985. It is not surprising that the then planning director, Quené, said about this period: 'we have all of the ingredients, but we don't any longer know which cake to bake'.[18]

The Spatial Planning Act, which came into force in 1965, had formalised a compromise on the provincial plan, making it a comprehensive, statutory document, but one that was *indicative* rather than legally binding. In the 1960s and 1970s the provincial spatial planning departments claimed a key policy-making role, putting the regional structure plans in the centre of vertical and horizontal coordination. Provincial structure planning became an important source of innovation and by the 1980s the provinces had all gained experience with new approaches. But there were complaints. The plans, prepared with much attention to scientific methods, were criticised by both academics and practitioners. The former questioned the underlying planning principles, the latter were upset because plans were not followed up (see also Wissink, 2000). This would eventually lead to further experiments and new methods, as described in section 4.5.

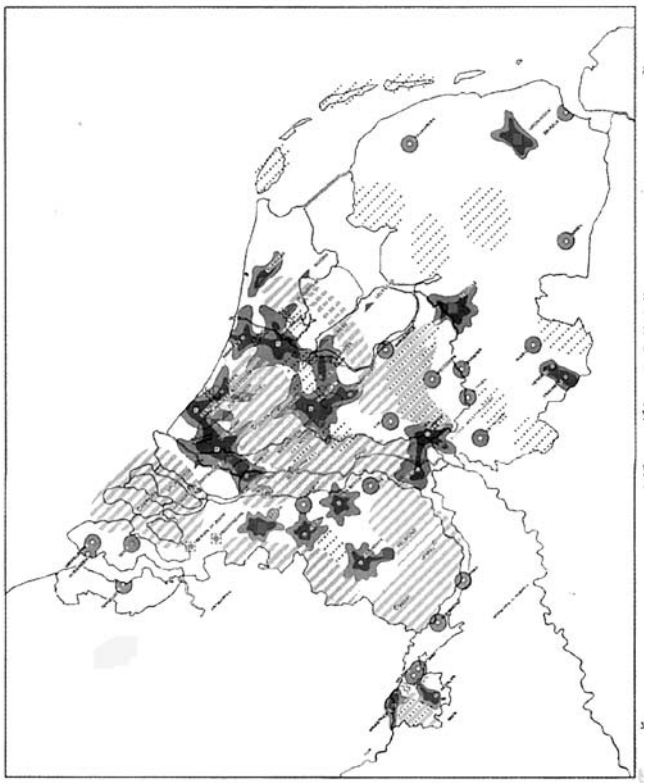


Figure 4-16 'Verstedelijkingsnota, Derde Nota Ruimtelijke Ordening', Rijksplanologische Dienst, 1973-1985

18 Quoted after Witsen (1991: 65) Five decades, five directors: The National Physical Planning Agency 1941–1991 – A personal view

The revised 1985 Spatial Planning Act changed some rules for the provincial plan. It added rules about monitoring, introduced more flexible procedures for elaborating policy for a topic or region to make planning more dynamic, and introduced the idea of Key Planning Decisions, raising a selection of policy statements to a special status. However, it did not substantially change provincial planning practice.

Planning context: scale and time

The period of the *Derde nota* is in many respects an exercise in comprehensiveness, also in matters of scale and time. For the first time, the various planning scales and their administrative authorities were seen as complementary entities. Concerning urbanisation, the city-regions or agglomerations, especially in the western part of the country, were the prime scale of attention.

The main issue in the Rural Areas Report was the relationship between agriculture and nature conservation. The provinces played a major role in these is-

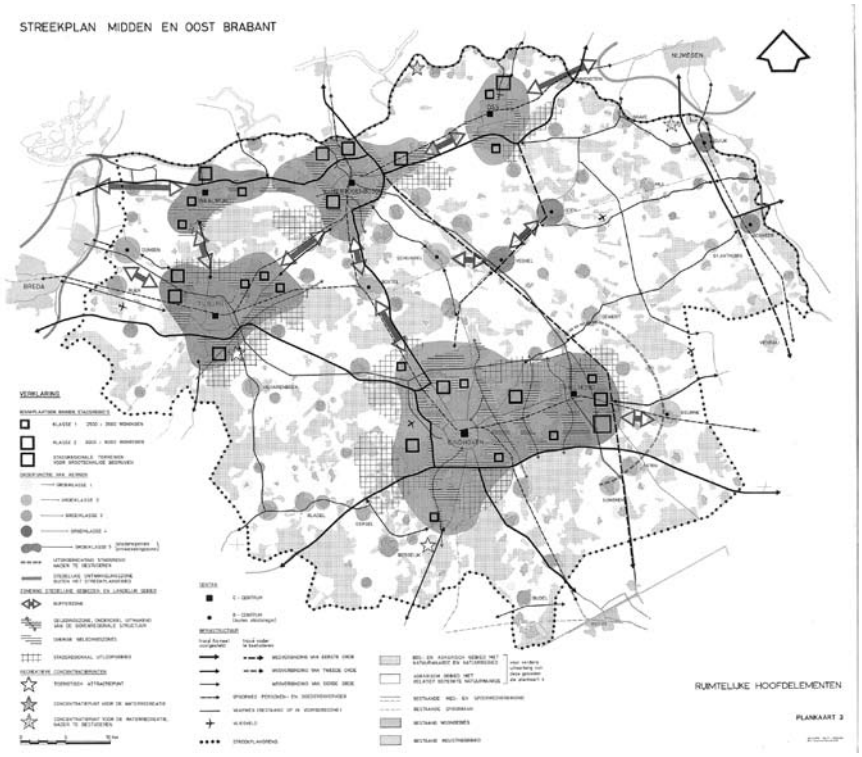


Figure 4-17 'Streekplan Noord-Brabant' (central and eastern part), 1978

sues. The overall attitude towards the rural areas in planning documents was still a defensive one, the main instrument being functional zoning. The impact on operational planning was rather limited, aggravated by the fact that the Ministry of Agriculture and Fisheries felt primarily responsible for the rural areas and was not keen on sharing this with other departments.

One of the building blocks of the Rural Areas Report, the *Visie Landschapsbouw*[19] (a policy document on landscape design and landscape planning, 1977) considered three levels of planning and implementation: the macro level of provincial structure plans, the meso level of local zoning plans and the micro level of the formal design of separate landscape elements (Visser, 1997). Since the 1960s landscape architects had contributed to regional plans by making a landscape structure plan (*landschapsstructuurplan*). For landscape design this document confirmed a shift from the small scale of landscape elements and local plans towards the regional level of landscape design, and from an operational scope towards a more strategic scope. The added value of these landscape structure

Figure 4-18 Landscape Structure Plan Noord-Drenthe, Staatsbosbeheer, ca 1985

19 The Dutch word *landschapsbouw* was introduced in the Netherlands in 1963 and is used in a way that is analogous and complementary to *stedebouw*, in which the German *Städtebau* will be recognised. It is translated here as 'landscape design', analogous to 'urban design'. It should be mentioned, though, that in the Dutch context it has special connotations of a development-oriented (not conservative/preservationist) approach to (often strategic, regional) landscape design, rooted in the operational tradition of land development as conducted by the National Forest Service. The concept of *landschapsbouw*, as the successor to *landschapsverzorging* (see 4.3) marks the transition from a focus on beautification towards an integrative design profession.

plans to the (defensive) provincial planning documents was a more developmental approach instead of the usual weighing up of functional interests and designating the outcome in zoning plans. It seems that these informal plans have had considerable influence on the preparation of provincial policy documents and rural land development plans (*landinrichtingsplannen*) by facilitating professional discussions on the landscape (Sijmons, 1993; Hendrikx, 1998).

Landscape architecture in the Netherlands

There was a growing demand for a better scientific foundation for the land development processes. European Conservation Year 1970 gave a boost to critical reflections upon the traditional dominance of agricultural interests in the rural areas. Landscape studies became multidisciplinary, involving technical, social science and humanities disciplines, generating new methodological approaches for landscape analysis and landscape studies. In this period a special research department for landscape design (*landschapsbouw)* was established at the National Research Institute for Forestry 'De Dorschkamp' in Wageningen. The aim of the landscape architects was to operate like landscape researchers and develop scientific methods that were objective and repeatable. It was a typical modernist attitude. The 'advies Landschapsbouw Groesbeek' (1986, see figure 4-19) is an example of this period.

As we have seen in the case of the *Derde nota*, in order to handle complexity it was common practice to split up the substantive aspects of 'space' or 'landscape' into different sectors. Since 1975 the rural land development plans had to be accompanied by four advisory reports on the agricultural structure, nature and landscape conservation, outdoor recreation – and landscape design (*advies landschapsbouw*). Landscape architects considered this last one to be the integrative study, whereas other researchers interpreted it as a form of 'green aesthetics'. Again, much time was spent in professional battles and debates questioning the integrative and synthetic nature of landscape design.

It was in this climate that the *Visie Landschapsbouw* was formulated. This study presented a theoretical background for landscape development. The central statement was that landscape is a cohesive unity, reflecting both the natural genesis and the human occupation, and so cannot be considered separately from natural or human influences. A list of working principles completed the vision, elaborating mainly on this unity of physical and functional aspects. Overall, these principles were through and through modernist as far as the rational and objective nature of knowledge is concerned. An attempt was even made to explain visual quality in objective terms. An essential difference with the modern *urban* design principles

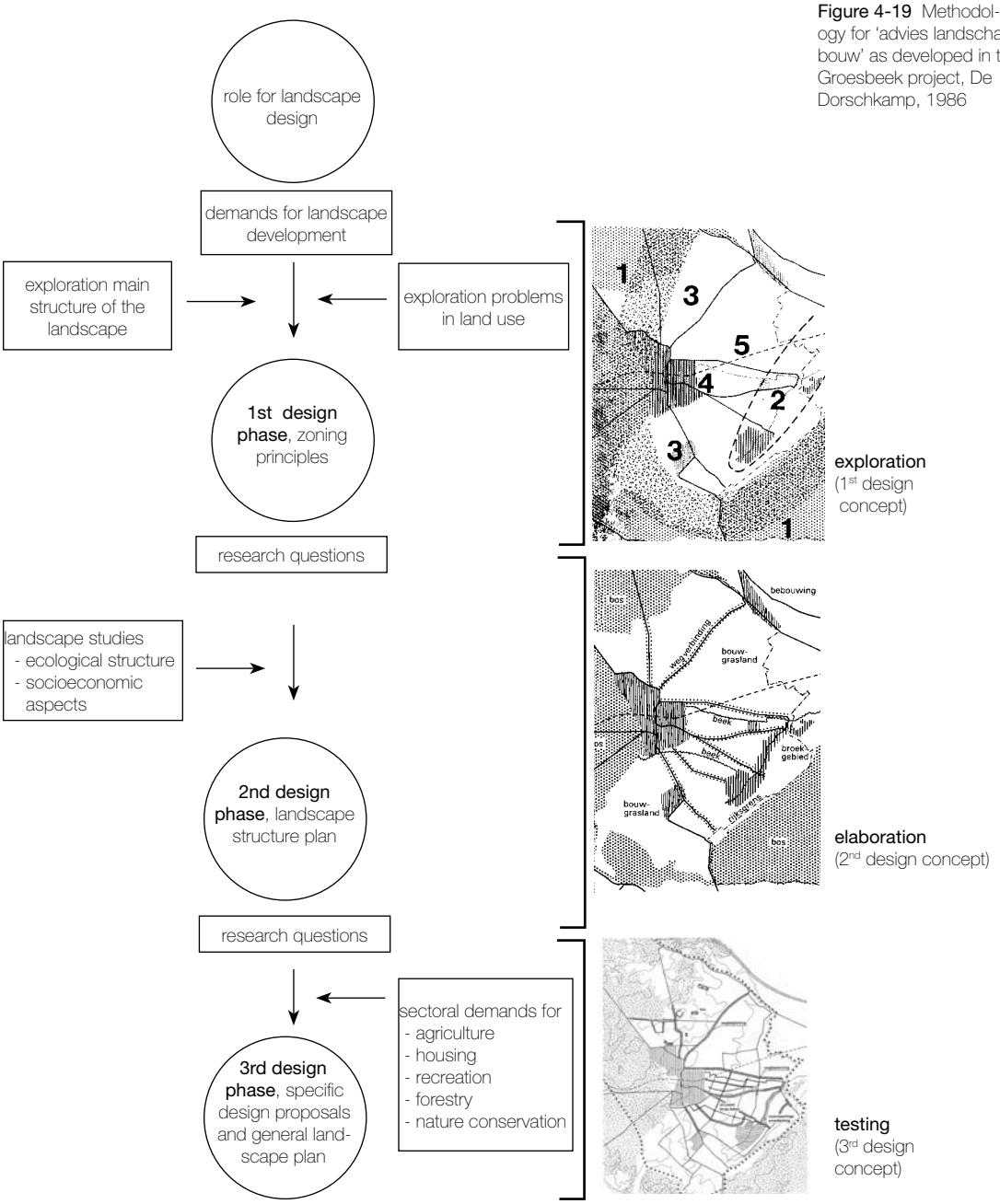


Figure 4-19 Methodology for 'advies landschapsbouw' as developed in the Groesbeek project, De Dorschkamp, 1986

though, is that the special features of the actual landscape, the *genius loci,* should determine the possibilities for further development. The modernist's practice of treating all places in the same way, as a tabula rasa, was definitely not followed by landscape architects. In this one can detect the legacy of Bijhouwer, founder of what might be called the Wageningen School of landscape architecture, whose philosophy could be summed up as the 'meaning' of a landscape lies in its *identity*. This whole of abiotic, biotic and anthropogenic features gives an area its special character and possibilities. In turn these can then be clustered and described under various landscape types to direct the functional and visual design.[20]

The clear choice for an integrative landscape design in the *Visie Landschapsbouw* did not end the ongoing debates with other disciplines. An integrative and iterative approach was not compatible with the prevailing opinion on dividing the planning process into substantive parts as well as procedurally separate steps. In formal, statutory planning procedures the 'sectored' landscape interpretation remained dominant. The landscape structure plan was in fact an escape formula to develop a method for strategic regional landscape design. By being non-statutory, it could function as a kind of – literally – extraordinary landscape design laboratory to develop new integrative concepts. However, top civil servants in the relevant government departments disqualified these plans as 'pseudo-planning science'.[21]

Although the working methods of this 'regional landscape architecture' could be typified as modernist and rather technocratic, the anti-modernist movement did have an impact on landscape architectural practice, but it was more or less restricted to the local scale and operational design. Community or participatory landscape design could be considered a special 'type' of practice that existed alongside the modernist, science-oriented approach and the traditional art-and-craft based approach that was still common, especially for gardens and park lay out.[22]

Professional development of spatial planning and design

The practice of spatial planning and design was no longer a two party issue between advisor and client or between government and 'the anonymous public'; it had become a multiactor issue that required a rethink of the respective roles of professionals, sponsors and users in providing information and making decisions. The superiority of scientific knowledge and the professional's authority was not as obvious as it used to be. Discussions about the professionals' role (e.g. as entrepreneur, innovator, advocate, bureaucrat or mediator) became part of the theoretical debate (Faludi, 1973a).

20 Some say that in this period landscape architecture was too focused on (historical) analyses, hindering the emergence of new and truly creative proposals (Sijmons, interviewed in Egmond, 2002; Vrijlandt, 2000).

21 Source: personal communication with L. van Nieuwenhuijze.

22 See Meeus (1984). His thesis gives an overview of the 'state of the art' in Dutch landscape architecture in the 1980s. He distinguished three mutually exclusive approaches within the profession of landscape architecture, which have replaced each other over time. Each type adheres to its own theory. Meeus calls them the traditional, the modern and the postmodern approach

The modernist architect-planner approach came under heavy criticism in the late 1960s and 1970s, in part for the arrogance of those who promoted it, but also for the lack of any social scientific understanding of the dynamics of change. At this stage 'planning as decision making' (policy-focused) and 'planning as plan making' (design-focused) were growing apart. The first group moved away from the practice-oriented world of architects and engineers, with their focus on the physical environment, towards a more comprehensive, multidisciplinary (notably social sciences) orientation, relying on theoretical understanding. By the 1980s this had taken the form of policy analysis, focused on social, economic and environmental change (Faludi, 1973a; Lang, 1987; Mitchell, 1993; Healey, 1997).

In the 1960s and 1970s government planning endeavour expanded further, and so did planning education in the Netherlands. As mentioned in section 4.3, there were various routes to a planning qualification. Traditionally, plan making was taught at the technical (Delft) and agricultural (Wageningen) academic institutions, following the design and engineering traditions. In addition to this, universities now offered programmes in *planologie*, the social science that supports spatial planning, or 'planning science', akin to the theoretical and methodological basis of urban and regional studies. These two streams kept the planning discipline divided (Faludi and van der Valk, 1994). With its many upcoming subdisciplines and new approaches, this period was marked by interdisciplinary struggles. For example, landscape architects were hardly 'allowed' to include aspects of ecology or cultural history into their work by the respective disciplinary 'stakeholders'. These disputes about competence also illustrate the general discussion about the 'landscape': whether it should be approached merely as the visual and aesthetic aspect of the earth's surface, or as an integrative whole. The latter was the principle held by landscape architects, in line with what Bijhouwer and Cleyndert had already stated in the late 1940s. The tendency in national policy to split up the physical environment into all possible segments and interests pushed the issue into the limelight again.

Another watershed in professional domains was between urban and rural issues. The integrated approach promoted by Hudig and Cleyndert had not come about. In the countryside, the nature preservationists only defended their own patch; they were no longer the guardians of the landscape as a cohesive unity. Urban planners and designers retreated to the city, busy with urban restoration. The city was considered very much as a closed system (Windt and Feddes, 1998).

Conclusion

In the anti-modern period the planning and design disciplines struggled with the complexity of environmental issues. The systems approach, which aimed to connect all parts of the environmental system, might have been successful for analysis, but not for synthesis. The procedural emphasis in spatial planning, in which both process and content were split up into separate decision units, largely hampered creative synthesis towards integrative proposals. Disciplines were competing with each other and cohesion was a long way off. No wonder that many consider the outcome of this period to be the crisis in Dutch planning.

4.5 Handling the crisis

General character of the period

In the final decades of the 20th century the implementation of plans became a serious issue and practitioners asked how planning could be made more effective. Two different strategies were proposed. The first did not question the underlying principles of a rational-analytic approach and a centralistic style of policy planning. Effectiveness was perceived as an implementation problem and the proposed solutions were of the 'doing things better than before' type, such as setting clearer goals and formulating precise targets, feasibility studies, better instruments to direct implementation, or just more money. This strategy was a reassertion of instrumental rationality, generating a whole body of techniques and evaluation criteria.

The second strategy perceived effectiveness more fundamentally as a planning problem, stressing that a unicentric and goal-rational perspective does not work in a multiactor context. This strategy was founded on the view that planning is a social process through which ways of thinking, valuing and acting are actively constructed by participants. Knowledge and value do not have objective existence, but are constituted through social interactive processes. Communicative rationality, as Habermas[23] called it, replaces instrumental rationality. This theory is at the basis of interactive and communicative approaches to planning in the 1980s and 1990s and can be considered as a follow up to the participative approach or 'equity planning' from the 1960s and 1970s. Interactive planning now serves a more democratic form of decision making and not just the emancipation or empowerment of certain groups in society, as was the case with equity planning (Simonis, 1983; Boelens, 1990; Healey, 1997; van der Cammen and de Klerk, 2003)

Linked to the implementation issue and these two strategies were the develop-

23 For an extensive elaboration on Habermas' communicative rationality and its implications for planning, see Boelens, 1990

ing insights around the distinction between operational planning and strategic planning. Whereas the norm for operational planning could be *conformance*, for strategic planning *performance* was more important. In the conformance view, the plan is a blueprint that should be implemented as it has been drawn up and decided upon. It fits a technocratic planning perspective. The strategic planning approach departs from the view that the environment is not only formed by plans, recognising the cumulative impact of the many decisions and actions by individuals. A plan *performs* when it acts as a *frame of reference* for those decisions. This view fits a sociocratic planning perspective (van der Valk, 1989; Faludi and van der Valk, 1994).

Three more trends can be mentioned that had an impact on planning practice at the end of the 20th century. The economic recession in the 1980s gave rise to a more market-driven planning style, also referred to as the 'entrepreneurial style'. As a welcome turn after the sound and systematic, but not too effective planning practice of the 1970s, doers took over from thinkers under the motto 'let's find out what works'. Public-private partnerships, city management and city branding were the new mantras. One effect was a revitalisation of the contribution to be made by designers. Architectural and urban design was used to seduce investors with attractive images. Essentially, this entrepreneurial style fits an instrumental, goal-rational approach, although many would speak about 'the communicative power of design'. It is not the kind of communication, though, that will improve understanding and democratic decision making as it does in Habermas' communicative rationality (see Boelens, 1990: 45–50).

A second trend that influenced planning was the renewed attention to sustainability in the late 1980s. The Brundtland Report *Our Common Future* (WCED, 1987) defined 'sustainable development' in a way that leaned heavily towards integrative approaches for different environmental aspects like water management, physical planning and nature development. It also gave an impulse to transnational cooperation and policy making on environmental themes. In the 1990s the consequences of climate change attracted growing attention, driving forward the search for integrative concepts for sustainability.

The third trend was the focus on regional issues in relation to integrative approaches, for which the region was considered the appropriate scale. In Europe studies at this scale received strong support from EU funding. In the 1990s in particular, regional institutions or regional public-private networks were set up to feed 'regional planning guidance'. In Great Britain, for example, this led to Regional Assemblies and Regional Development Agencies at the turn of the century (Shaw and Kidd, 2001).

Towards the end of the millennium there was a tangible sense that society had really said goodbye to the industrial age and entered a new era: the information age expressed in the network society. Manuel Castells' trilogy *The Information Age* is probably the most extensive publication describing the implications of technological change on society (Castells, 1996, 1997, 1998). He demonstrates that as a historical trend, dominant functions and processes in the information age are increasingly organised around networks. As space is an expression of society, Castells identifies the new logic underlying the emerging spatial forms and processes as 'network logic'. This logic is the organising principle behind the flows of functions and processes, like flows of capital, information, interaction, images, sounds and symbols. Flows are the expression of the processes that are dominating economic, political and symbolic life. His concept of the 'space of flows' is relevant for spatial planning because 'the material support of the dominant processes in our societies will be the ensemble of elements supporting such flows, and making materially possible their articulation in simultaneous time.…The space of flows is the material organization of time-sharing social practices that work through flows' (Castells, 1996). The planning process itself, in which flows of information and power are essential materials, is also becoming increasingly structured according to networking principles. This is significant for the organisation of the planning process. In an information network the order of activities is not necessarily sequential because information is interactively accessible on demand. 'The space of flows…dissolves time by disordering the sequence of events and making them simultaneous, thus installing society in eternal ephemerality' (ibid.: 467). So the network logic also generates a new temporal concept: a nonsequential or compressed, instant time which Castells calls 'timeless time'.

The above does not imply that the 'space of places' and sequential time or clock time – as he calls the common interpretation of space and time – is no longer relevant. People do still live in places, their experience is related to places and their life is very much organised around clock time. However it seems that we have to take account of two spatial/temporal logics that are based on essentially different principles. And what is more, the weight of influence is shifting towards the space of flows.

The Netherlands

The general feeling in the Dutch spatial planning world in the mid 1980s was less than enthusiastic. Being overly concerned with procedures, planning identity had become blurred. Kleefmann (1984) observes an imbalance in planning between content, procedures and meaning. Faludi and van der Valk (1994) summarise the

three major comments on the planning system as follows: 1) the complexity of planning had got out of hand, 2) planning had lost its political appeal, and 3) the low profile of planning: ideas were diluted during negotiations.

The crisis within government, until then the key planning authority, was the realisation that the environment is shaped not only by the government, but also by private actors. In 1983 the Scientific Council for Government Policy (*Wetenschappelijke Raad voor het Regeringsbeleid*, WRR) had published their study 'Planning as Enterprise' (*Planning als onderneming)*, which made it clear that government cannot consider itself capable of directing society as an independent object. Government planners are part of the reality they wish to direct. They quote Archimedes who is claimed to have said: 'Offer me a constant position to stand on and I will move the world' (den Hoed et al., 1983). This 'archimedic' position obviously needs to be outside the object, which is not the case, so the only way out for government is to cooperate with other societal actors. This study had great influence on new alternative models to replace the government-centrist models that had been popular so far (van Marwijk, 1990; Hidding, 1997).

Faludi and van der Valk (1994: 178) give designers the credit for starting the ball rolling again while planning was in crisis. Designers were doing well in providing impressive and hopeful visions that could (economically) revitalise cities and regions. A private foundation, NNAO (1984–1989), launched an exhibition featuring scenarios for the Netherlands in 2050, 'The Netherlands Now as Design, the rules of growth'. Taking policy-oriented explorations of the future as a starting point, they made four designs for the Netherlands in 2050. In the course of the design exercise, a method was developed to make political options comparable. The foundation obtained the support of government departments, universities and private research organisations and engaged the cream of the planning and design profession. A three year design programme followed, with more than 200 professionals participating, meeting every three months to discuss designs and progress (Frieling, 2002).

This initiative was innovative for a number of reasons. It was a *private* initiative, but born out of *public* concerns about future development and for the perceived bankruptcy of planning and politics. The foundation managed to include government departments as well as many professionals from private companies and research institutions, they raised money and involved the public. In short, they formed new links between the existing professional networks and sought the involvement of non-professionals. What is more, they made clear that planning was a political activity and that facts and values should not only be integrated into the design process, but also made explicit. They showed that design had a special role to play in *studying* the future, in addition to its established operational orientation.

This initiative could not fail to have an influence in The Hague, the centre of national politics. The preparation of the fourth national spatial planning policy document (*Vierde nota ruimtelijke ordening*, 1988) was completely different from the previous one. Instead of a systematic research approach, a visionary new discussion document, using a lot of visual imagery, was produced: the Memorandum. It broke with the past by involving stakeholders, including groups outside the traditional one, at an early stage of the planning process. The Memorandum was a new agenda and the planners' call for political attention. However, a revolution did not occur, or as Faludi and van der Valk state, 'the elites were not ousted' (Faludi and van der Valk, 1994).

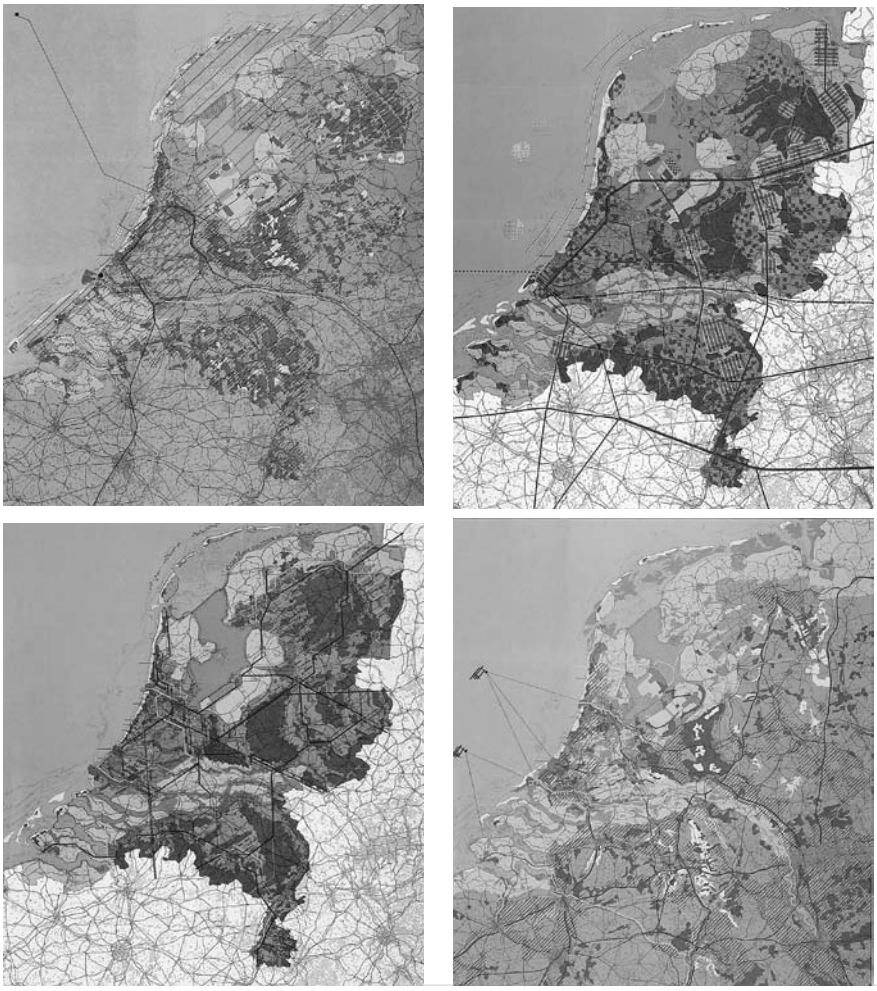


Figure 4-20 Four scenarios: the Netherlands in 2050, NNAO, 1987

Political change led to the production of a supplement to the *Vierde nota,* the *Vierde nota extra,* or *Vinex.* More interesting than the report itself was the cascade of follow-ups that saw the light. On the regional level they were called 'Further Elaborations', illustrating the new approach in which national policy concentrates on the main outline, leaving space for area-specific details and further exploration with relevant actors. At the smaller scale, key projects and demonstration plans for the 'everyday living environment' were selected. In most of these follow-ups, a 'diagonal planning approach', as it was called, was followed. This had two important goals: first, to replace the traditional formal vertical and horizontal coordination

Figure 4-21 'Vierde Nota', Rijksplanologische Dienst, 1988

by a more informal network approach, and second, to connect strategic planning more directly with the operational levels. It was a period of experimenting with new working methods and new forms of 'extra-statutory' planning documents, such as voluntary agreements or 'covenants'.

Obvious changes also took place at the provincial level. The 'unsettling' part was that many provincial planning departments were reorganised and had to shed staff because of the economic recession. Research departments were hardest hit. The good part was that the time was ripe for new substantive concepts, especially for the rural areas. Just like the *Vierde nota*, provincial strategic plans became more selective, less prescriptive and more qualitative. Many provinces, which previously had several *streekplannen* (regional plans) covering their territory, now joined them together into one (less detailed) provincial plan. The new legal possibility of making 'elaboration plans' (*uitwerkingsplannen*) offered an opportunity to pay selective attention to specific areas or topics. For example in Noord-Brabant the 1992 *streekplan* covered the entire province (the previous 'edition' was still divided into two plans), and elaboration plans were drawn up for the four largest city-regions.

In the 1990s the integration of spatial planning with planning for sustainable development, environmental issues and the water system was a new key issue on the agenda. In some provinces this led to a further integration into one 'environ-

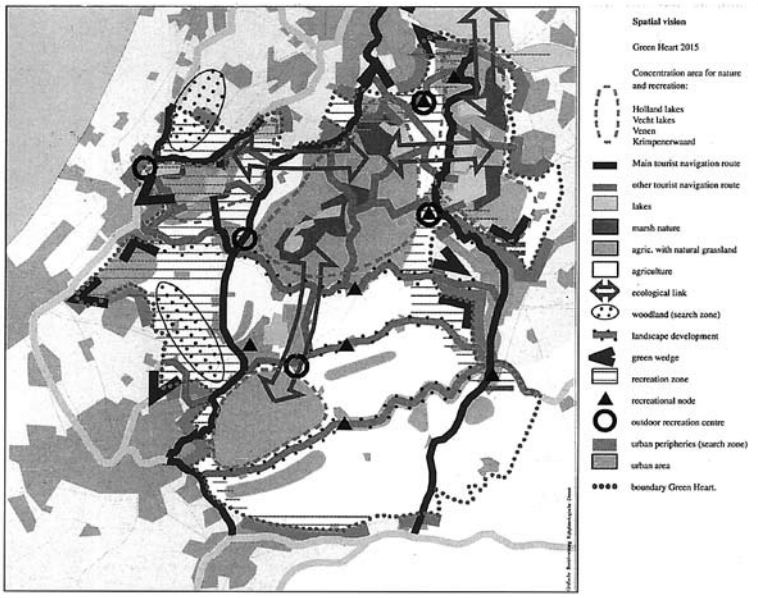


Figure 4-22 Further Elaboration Green Heart, Stuurgroep Groene Hart, 1992

mental plan', in other provinces a coordinating 'umbrella-plan' was drawn up (see also Wissink, 2000).

Although some now say there was too much emphasis on substantive issues and plan making at the expense of day-by-day decision making (Faludi and van der Valk, 1994), this was a refreshing and necessary phase that has delivered some innovative concepts, probably because of the relative distance from day-to-day decisions. For the rural areas the water-systems approach, the offensive approach to nature development, resulting in a National Ecological Network, and at least an opening up in the discussion about the spatial ordering of agricultural development, were substantive gains in this period.

The more fundamental background to these changes can be found in the fact that two of the cornerstones of Dutch spatial policy, social housing and agriculture, now faced a new situation regarding government regulation. Until then social housing and agriculture were considered natural allies against suburbanisation and sprawl. This situation of 'mutual interests' had evaporated now that private actors had taken a much more leading role in the housing market. As far as agriculture was concerned, it became clear that in a global market food production was no longer a valid argument for maintaining open space in the Netherlands (WRR, 1998). This presented the challenge of finding new allies, as uncontrolled sprawl was (and still is) considered the enemy of open space and landscape quality in general. The latter was also increasingly seen as an important factor in business location. New principles for structuring space and enhancing spatial quality

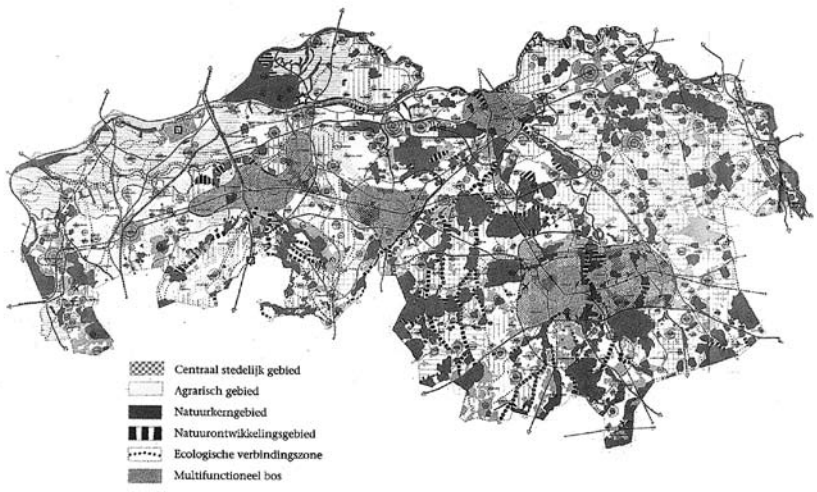


Figure 4-23 'Streekplan Noord-Brabant', 1992

were found in infrastructure and the water system because of obvious concerns regarding these topics. Increasing congestion in the transport system hindered economic growth and climate change would cause serious problems for water management in the Dutch delta landscape. An interesting aspect of this development is that infrastructure and water, by nature, link the urban and rural spatial systems. As 'fluid' entities, they gradually 'dissolve' the solid barriers in spatial policy between town and country.

Not surprisingly, this also influenced the relations between government departments. Responsibilities were not clearly defined any more. Much closer cooperation, or at least harmonisation of policy documents, by the various departments dealing with the physical environment became necessary. In 1996 a quite remarkable policy document was published by the Ministry of Agriculture, Nature Management and Fisheries: the 'Vision on Urban Landscapes' (*Visie Stadslandschappen).* Although this was not a formal policy document, it made an impact on the further development of substantive concepts in the professional community.

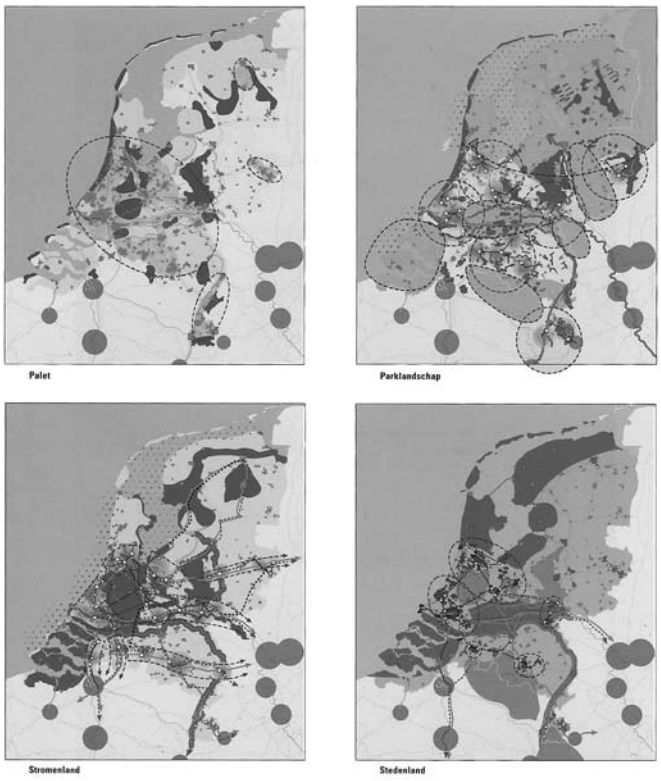


Figure 4-24 Scenarios Netherlands 2030, preparation 'Vijfde Nota', 1997-1998

The above changes of perspective were central to the next episode in spatial planning policy. In the mid 1990s on the national level a new round of preparations began for the fifth national spatial planning policy. In a rather structured process of regional consultations, thematic scenario studies and, for the first time, internet surveys, the agenda was formulated and preferences of different stakeholders became clear. The central topics were about urbanisation and infrastructure related to the changes in the use of rural areas and in water management. In 1997 four 'national scenarios' for 2030 were drawn up, more or less reflecting the current political mainstreams. They were called City Land (compact residential and business development and a clear distinction between town and country), Flow Country (homes and workplaces concentrated along water and transport flows), Park Landscape (mixture of town and country) and Palette (freedom to choose where to settle or to live, for both companies and individuals) (Ministry of Housing, Spatial Planning and the Environment, 1998). Public and political debate on these scenarios, though, generally confirmed the different political views on spatial development. Although the working method of this 'Netherlands 2030' process resembled the innovative approach by the NNAO Foundation in the 1980s, it did not have the same appeal and effect.

A general picture of the period from the mid 1980s until about the turn of the century is that many new approaches emerged which in many cases did not really replace the old methods and concepts, but were added to the existing repertoire. The planning community in general grew more and more convinced of the obsolescence of the comprehensive planning system and the 20th century urban-rural concepts. Although incremental administrative changes were made in planning practice, a fundamental change did not occur.[24] Politicians wanted to simplify the planning system, but often only succeeded in making it more complex. The number of policy documents concerning the environment (space, landscape, environment, water management, etc.) in a specific region could easily amount to twenty. Experiments designed to develop a more integrated approach usually just added new 'integral visions' on top of the existing statutory plans instead of replacing the separate documents. In other words, getting rid of existing certainties in the planning system proves to be more difficult than inventing new routines.

Planning context: scale and time

By the 1980s strategic planning at regional and national levels had adopted a prominent position in the Dutch planning system. As the scale and temporal horizon expanded, the distance between strategic planning and design and project planning or operational design also increased. The late 1980s were a period of

24 A new Spatial Planning Act has been in preparation since the late 1990s and has come into force in 2008.

change within provincial planning. Boelens (1990) describes how a different approach to generating ideas and plans was pursued, using all kinds of visual tools, short explorative design cycles and drawing up alternative scenarios to discuss possible futures with politicians and stakeholders.[25] An essential change was that design was now also considered to be a knowledge-generating activity. Designing had become a tool for strategic planning and not simply to produce the (operational) plan itself.

The shift from operational design to strategic design and 'research by design' has been noticed and discussed by some scholars. Taverne (1987) regarded architecture and urban planning not merely as a technical matter to bring about new creations, but also as a special way of acquiring knowledge. He characterised architecture as a discipline capable of exploring the planning task and discovering unknown possibilities. Kleefmann bridged the gap between planning and design by arguing for the use of design activities not only to find the right means, but also to search for the goals. Just like Taverne, he stressed the explorative function of design. 'Serious imagination and creative invention' was especially necessary when gradual change or incremental improvement was not satisfying, but where really new concepts were needed. Design would contribute to argument and reflection (Kleefmann, 1984). Finally, de Jong developed a theoretical model for what he called 'research by design' (*ontwerpend onderzoek*). In this model he explained the different contributions by scientific research, designing and policy activities in thinking about the future, all three being part of the planning process (de Jong, 1992).

This 'strategic design approach', was explored at different scales. Illustrative for this period is the establishment of the 'Eo Wijers Foundation' in 1985, which promoted regional planning as a field of design by organising design competitions every three years.[26] Several provinces organised their own design laboratories, as Boelens (1990) noticed. And the *Vinex* came up with a series of regional interprovincial projects as an answer to the lack of cohesion between the three tiers of government (local, provincial and national) and the division into sectors of government policy. The so-called 'diagonal approach' across scales and segments, and from strategic to operational goals, gave rise to a new chapter in the cooperation between planners and designers from different disciplinary and organisational backgrounds. These experiments were the start of a new focus on 'area-based policy', taking the characteristics of a region as the starting point and trying to connect strategic and operational planning, broadening the scope from just spatial aspects to include water management planning and environmental issues, and gradually moving from a hierarchical to a network perspective.

25 From my own experience in the province of Noord-Brabant I can fully confirm this change.
26 See also Chapter 9 clarifying the impact of this foundation in this period in Dutch planning history.

A general problem that teams working on these projects were confronted with was that the formal planning procedures were organised *hierarchically in scale and sequential in time* (top down, from national to provincial to local decision making). It seemed rather strange to follow sequential procedures when the plans were developed collaboratively, and thus simultaneously. These were signs that the formal planning system, still based on the needs and characteristics of the industrial society, was not suited to the emerging characteristics of the network society. To put it in Castells' vocabulary, the planning system that organises the *space of places* fails to adequately organise the *space of flows*.

The enlargement of scale and timespan involved not just a different scale on the map (from e.g. 1:1,000 to 1:100,000) or a different planning horizon (from a couple of years to a couple of decades). The leap into uncertainty, beyond the horizon of the nearby 'probable' future and towards the exploration of 'possible futures', created a new field of endeavour in design. 'Research by design' as a form of strategic design considers designing as a tool, the prime output being new knowledge, new insights and possibilities, and not direct guidance of operations in the field. Instead of precise illustrations and representations, visual material consisted of conceptual representations on selective issues or nodes where decisive developments can be illustrated.

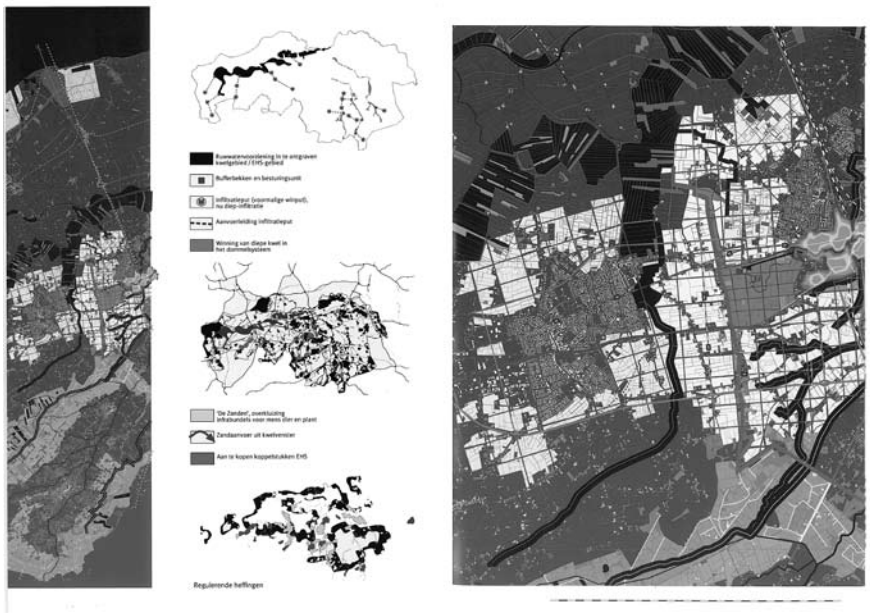


Figure 4-25 Research-by-design approach for 'Brabant 2050', H+N+S, 2000

To conclude, we see a process of gradual acceptance of uncertainty and ambiguity in the planning context and a shift from government-centred planning to governance approaches. 'Change is the only constant' has in fact always been the *raison d'être* for planning. Acknowledging that change is highly unpredictable and that the days of unicentric steering are gone calls for different approaches than had been practised so far. Thanks to successes in practice (see also Chapter 9) the added value of regional design in strategic planning was widely recognised. What was often not clear was how this could be interwoven in formal planning procedures and connected to day-to-day decision making. And despite the successful examples of regional design, there was also enough experience with rather unsatisfactory processes, as perceived by the designers themselves and by planners or policy makers.

Dutch landscape architecture

In this period landscape architecture adopted a firm position in the domain of regional planning and design. The integrative and synthetic nature of landscape architecture was now generally accepted as a better asset to planning than an approach restricted to 'green aesthetics'. In response to social trends new inte-

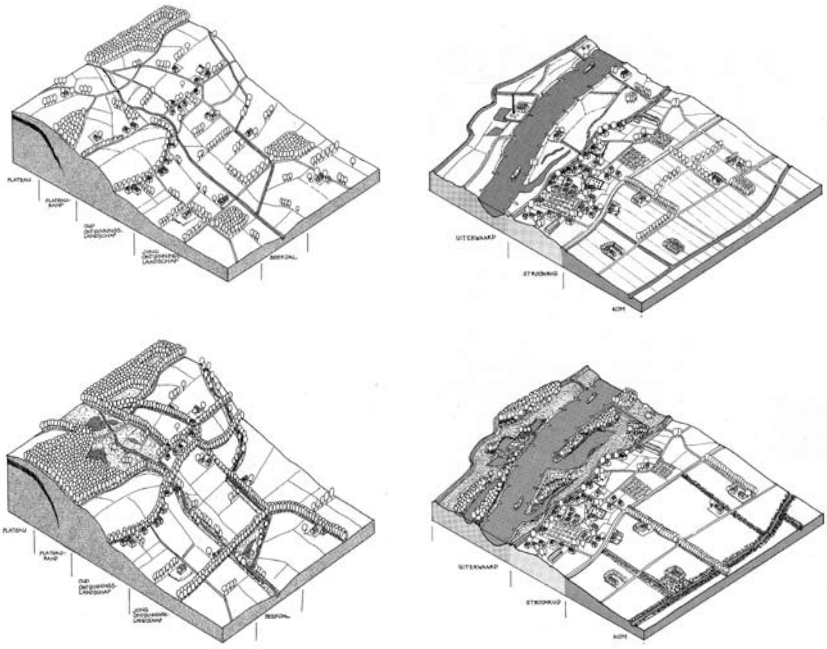


figure 4-26 Elaboration 'casco approach' in sandy soil landscape (left) and riverine landscape (right)

grative concepts were needed that connected the urban and rural areas into one system and gave new hope for sustainable development. Landscape architects seemed to fill a niche. Their general understanding of ecology, soils and hydrology, as well as the skills to cooperate with specialists on these topics, gave them a head start on most urban designers working at the regional scale. Landscape as an integrative framework for future developments appeared to be an appealing way to open up future development to discussion. And as landscape is dynamic by nature and a nested system, an important feature of planning practice is the ability to work at different spatial and temporal scales.

But it was not just expert knowledge or skills that determined the rise of landscape architecture in Dutch regional planning. From my observations, I conclude that the specific organisational structure of the landscape architects in the Landscape Development division of the National Forest Service[27], and the network they maintained, contributed to the increasing influence of the professional domain. Since the mid 1970s this department had appointed provincial landscape architects for hands-on planning and design on topical issues. A central unit in Utrecht supported them by preparing reflective studies and special projects. The designers from the provinces and the central unit, and often also from the landscape research institute *De Dorschkamp* and Wageningen University, met for a day each month to discuss their work. These 'Big Group Meetings' stimulated the exchange between the daily practice, the research perspectives and provincial and national policy matters in an atmosphere that nourished a vital 'body of knowledge'. This network of design practitioners, policy makers and researchers has left a strong mark on the practice of regional (landscape) planning and design. It laid the foundations for successful concepts like the 'casco approach', a planning concept that has influenced national and provincial planning policy since the late 1980s.[28] The casco approach has been developed in the policy for the National Ecological Network, which is one of the leading planning concepts of today, not only in the Netherlands but also in EU policy.

In the late 1980s and 1990s a series of reorganisations in government departments led to a separation of the successful combination of practical design experience, reflective study and policy making. Some of the resulting diaspora of landscape architects that were part of the 'Big Group' started their own business, mostly very successfully, while others obtained new positions in provincial or national public authorities. It seems that the powerful network that had its roots in the 'Big Group' still exists more or less in the separate segments of the professional world, and that they still have a remarkable influence on regional and national planning practice.[29]

27 *Staatsbosbeheer, Directie Bos- en Landschapsbouw, afdeling Landschapsontwikkeling*
28 For a summary of the casco concept see Sijmons, 1991
29 The core of the 'Big Group' was also behind Plan Ooievaar (see Chapter 9) and started the bureau for landscape architecture H+N+S, which has a leading position in the Netherlands for regional design (see also de Jonge, 2001)

In the 97–99 yearbook for Landscape Architecture and Town Planning, Luiten and Sijmons (who had been members of this network) noticed an impressive yield and variation in regional plans (Luiten and Sijmons, 2000). At the same time they raise questions about the relevance, effectiveness and development of the proposals presented. They are positive as far as the intensity and actuality of the design research is concerned and about the effect on public debates, but critical when it comes to the influence on managerial and administrative decision making and on the actual spatial layout of the Netherlands. On integral, area-based plans they take the view that

> 'the regional, all-compassing and multisectoral line of approach (is), when it boils down to the implementation and maintenance, just as ineffective as good old fashioned blueprint planning…Such encompassing plans seem above all to fulfil a romantic nostalgia – which also exists in the managerial sphere – towards enlightenment management in a chaotic world which must be dealt with in an organized manner'.

What Luiten and Sijmons state here is a lack of awareness among designers of the changing nature of their efforts, that is, the change from operational to strategic design. The 'blueprint' routine is the domain of operational design, whereas strategic design aims to explore the essential 'design nodes', which not only requires different methods and representations, but also different forms of cooperation with other professional, market and civil society groups. To Luiten and Sijmons, research by design is one of the promising means by which landscape architecture can contribute to the normative, manipulable side of the future in discussions about spatial development. It is a way to discover potentially desirable new (spatial) aims, and for this the regional scale appears to be particularly appropriate. In the ideal case, this process should precede the formal planning procedure. However, as the authors say, 'this is also a source of contention. Often the research results are already seen as a 'real' plan.' Luiten and Sijmons conclude that it is necessary to critically re-examine the specific 'talents' of regional design: 'it is high time for product renewal. The marketplace is shifting. The regional design will have to be further differentiated and making the most of its talents if it should cause its meaning to be expanded upon.'

Professional development of spatial planning and design

In the 1970s a controversy arose between two 'schools' in the Dutch planning science community: an approach focused on procedural aspects of decision making and an approach mainly focused on substantive issues. In the mid 1980s these different views converged towards a new consensus. The new common focus of attention was the connection between government and society, social interaction

being a binding similarity in both approaches (van Marwijk, 1990; Faludi and van der Valk, 1994). Although differences in emphasis remained, this increased unity and coherence within the spatial planning domain boosted the self confidence of the profession. 'Planologists' had achieved a degree of professionalisation and could be more relaxed about architect-planners' claims of predominance (Faludi and van der Valk, 1994).

Nevertheless, relations between these so-called 'planologists' and architect-planners remained rather strained. In the 1980s the designers claimed a leading position in planning, criticising the growing input of social science in planning and blaming these socio-planners for the crisis in planning. Helped by the economic recession, designers got the ear of politicians, who were in need of *grand projets* and city branding images. This was just one source of their success. The more fundamental reason may have been designers' ability to present new substantive concepts and creative visions that can break through established controversies like agriculture *versus* nature conservation, urban *versus* rural development, or more fundamentally, economy *versus* ecology. By breaking open fixed arguments and questioning the laziness of current solutions, like they did in the 'Netherlands Now as Design' project, they put spatial planning back on the political agenda. The planning community became more aware of the importance of 'conceptual planning' as a mode of operation that can support changing attitudes and routines (Zonneveld, 1991). Planologists recognised this creative ability and according to Faludi and van der Valk they 'now have a healthy respect for design'. They proceed with caution, though: 'Whether designers will respond in kind remains to be seen' (Faludi and van der Valk, 1994). An interesting move in this regard is the merging in 1998 of the Association of Dutch Urban Planners (BNP) and the Association of Dutch Urban Designers (BNS) to form the BNSP and enhance the value of both groups. As their website states 'Urban Design and Urban Planning have become inseparable'.[30]

As it was in Van Lohuizen en Van Eesteren's time, the attitude of designers to spatial planning depends on the type of designer. In regional design, Sijmons (2002) detects a division in the design disciplines between the technical, the shaping and the political or administrative components, all of which develop their own language and rationality. Behind these different approaches seems to be a fundamental inconvenience with the position of design and designers in the current context of governmental planning. A pressing challenge is delivering integrative concepts to repair the fragmentation in knowledge and government policy. However, government capacity to realise such visions is very limited. The Restructuring case (Chapter 5) is an illustration of the difficult position of a design approach

30 www. bnsp.nl

in governmental spatial planning. A new relationship between policy making and design is needed, as well as restoration of the three components mentioned by Sijmons to make regional design more effective for regional planning.

Around the turn of the century, new forms of cooperation occasionally surfaced. Labelled as 'development planning' various working parties are emerging around specific themes and regions, consisting of stakeholders, government bodies and a broad spectrum of experts, scientists and planners, designers or consultants of different kinds. These transdisciplinary networks deal with non-routine challenges and have clear innovative ambitions. A German example is the IBA Emscherpark process in the Ruhr Region; Dutch examples are the 'Blue City' in East Groningen and the 'Regional Dialogue' in North Limburg (Ibert, 2003; Dammers et al., 2004). This approach creates new connections between theory and practice, between urban and rural knowledge domains, and between the broad spectrum of spatial and landscape researchers and all kinds of planning and design professionals.

Landscape architects seem to have a solid position is these networks, not primarily to make operational designs or administrative plans, but to support the collaborative process of 'creative imagination and reflective practice' which is the core of design and planning. This means cooperating in interdisciplinary and transdisciplinary processes, generating new concepts for the long term and making this tangible through proposals for the short term (see also Prominski, 2004). This is the kind of contribution to 'co-design' that is my special interest in this thesis.

Conclusion

Rational scientific planning approaches have clearly been abandoned since the mid 1980s. Spatial planning became much more political and in search of new integrative concepts. In this climate a new strategic design approach emerged whose strength lay in articulating integrative normative visions as 'possible fu-

figure 4-27 Masterplan Emscher Landschaftspark 2010, Regionalverband Ruhr, 2005

tures', thus supporting political deliberation. This new role was especially successful in non-formal, laboratory-like planning circumstances. The development since the 1970s of a strong network of policy makers and landscape architects working in regional practices, sharing their experience on a regular basis with researchers, has left a strong mark on the practice of regional planning and design for the rural areas. This network laid the foundations for successful planning concepts like the National Ecological Network.

Although the added value of regional design in strategic planning was widely recognised, its position within formal administrative planning procedures remained awkward in planning practice. This was partly due to a lack of awareness among designers themselves about the changing nature of their efforts – the shift from just operational to strategic design.

Around the turn of the century some interesting initiatives emerged involving collaborative work on both long-term visions and short-term implementation strategies. In these practical networks the domains of political values and scientific facts meet each other in the ambition to create sustainable visions for future development. It seems that a landscape-design approach has much to offer in these networks.

Reflection 4.6

In Chapter 2 a conceptual framework was constructed for design as the intellectual and communicative process in which practical wisdom (*phronesis*) and scientific insights (*episteme*) are integrated through creative imagination and reflective judgement (*techne*) to form proposals for change. The intention of this chapter was to discover the value of the conceptual framework as a durable 'unifying concept' for the *technai* involved in spatial planning and design. In this concluding section the main lines of the retrospective will be positioned against the backcloth of the conceptual framework.

Constant characteristics

A stable phenomenon in 20th century planning and design practice is the continuous search for balancing 'phronetic' value rationality and 'epistemic' objective rationality. This is reflected in the tension between architects, engineers and researchers cooperating in practice and within the architectural discipline between more artistic, technical and political orientations. In each period we see action-reaction type changes; perceived imbalances followed by a counter-reaction. Differ-

ent orientations or specialisations are both competitive and complementary. What appeared to be stable characteristics were in fact the difficulties in cooperation arising from different professional cultures, but also the need to cooperate and to integrate the specific strengths of each domain into the planning process.

Most periods show examples of well balanced practices in which an equilibrium was found between the input of scientific knowledge (*episteme*) and practical wisdom about the dominant values of society (*phronesis*), integrated in planning or design concepts (*techne*). In the early 20th century the work of the architect Berlage can be mentioned. In the modernist period the collaboration between the architect-planner Van Eesteren and the engineer/researcher Van Lohuizen was influential. We skip the anti-modernist period, as this was a counter-reaction in itself. In the following period the private initiative 'Netherlands Now as Design' (NNAO) is an exemplar of a newly found balance. Teams of architect-planners, researchers and policy makers articulated possible futures based on different political value systems. This 'strategic design approach' gave a strong and necessary impulse to Dutch planning practice. Regional landscape planning and design was fostered by the network of design practitioners, policy makers and researchers who met each other on a regular base in the 'Big Group' meetings organised by the division for Landscape Development of the National Forest Service. In this network the foundations were laid for successful concepts like the 'casco approach', a planning concept that has had a major influence on provincial, national and international planning policy since the late 1980s. Around the turn of the century transdisciplinary planning and design networks emerged around regional and thematic non-routine planning issues. A major aim of this 'development planning' is to link long-term visions with an implementation strategy.

From this overview it can be concluded that the conceptual model offers an explanatory framework for the competitive as well as the complementary orientations and components of *episteme* and *phronesis* in the *techne* of planning and design practice.

A second finding is that (regional) planning and design, as an integrative intellectual and communicative process, is increasingly a matter of teamwork or collaborative networks. As well as an intrapersonal 'conversation with the situation', design is also an interpersonal and distinctly transdisciplinary conversation.

Developmental line

The historical development of planning and design practice can be interpreted against the background of the unity of the three intellectual virtues *techne, episteme* and *phronesis*. The integrative nature of planning and design (*techne)* is es-

sential. However, during the 20th century the connections with the domains of *episteme* and *phronesis* became more pronounced.

In the beginning of the century the domain of (urban) planning and design was shared by architect-planners and engineers, which positioned practice along the *techne–episteme* line. Modernism further stressed the importance of a scientific approach. The principle of survey before plan was typical for the rational linear process models borrowed from science. The same goes for the first generation design models that departed from a linear analysis–synthesis–evaluation scheme. The Design Methods Movement tried to apply scientific principles in design like objectivity and universality. Design *as* research however turned out to be not very successful. In the 1970s the early supporters Christopher Alexander and John Chris Jones fully admitted that they were wrong. Rittel's theory about the 'wicked nature of design problems' was a turning point in procedural design theory and led to the view that the design process is essentially different from science. It is practice based and fundamentally a process of argumentation in which facts and values are integrated. This brings the planning and design practice back to principles of *techne*.

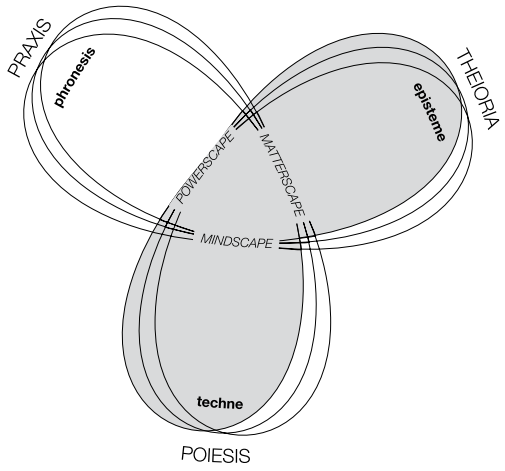


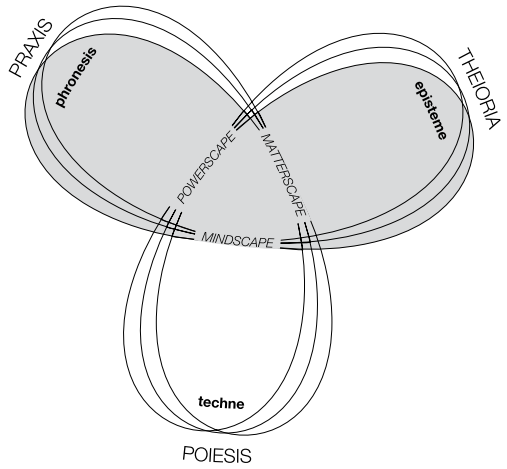
figure 4-28 Modernism: exploration along techne-episteme line

In the 1970s 'planning science' (*planologie*) became an established academic discipline. Political values play an important role in planning, which at that time was very much concerned with the process of decision making. In terms of Jacobs' tripartite landscape theory (see section 3.3) planning science dealt very much with

the social reality of *powerscape*. 'Planning scientists' (*planologen*) saw it as their role to support the (political) decision making process by providing information that could meet scientific standards. Whereas technology can be positioned along the line *episteme–techne,* planning science at that time had its focus in the area of *episteme–phronesis*, and thus at a distance from *techne*.

Planning scientists acquired considerable influence in Dutch public planning. The 12 years it took to make the *Derde nota* (1973–1985) mirrors the dominance of analytic rationality (*episteme*) in this approach. Witsen's quote that 'all ingredients were known, but nobody knew which cake to bake' shows that the balance between analysis and synthesis had been lost. The essentials in the planning and design *techne*, creative imagination and reflective judgement, were neglected.

figure 4-29 Anti-modernism: exploration along episteme-phronesis line



Again, this led to a rebalancing movement, instigated in 1984 by architect-planners in the Foundation 'The Netherlands Now as Design'. Building upon scientific foundations of policy-oriented explorations of the future, four possible scenarios for the Netherlands were designed by multidisciplinary teams. The initiative not only influenced national spatial policy, but also placed design activities in a new perspective: designing as a knowledge generating activity, fostering value-rational public deliberation on future spatial development. This time 'knowledge' was not limited to objective facts as in the modernist tradition; designing was not just a matter of finding the right means, but also of searching for goals, an explorative function rather than an instrumental one. The event 'The Netherlands Now as Design' can be seen as an early exemplar for a new design orientation that has

developed since the 1980s, one that stresses the importance of explicitly including the *techne–phronesis* line into the planning process. The explorative function of design turns out to be especially helpful in the context of strategic spatial planning, as in the practice of regional landscape planning.

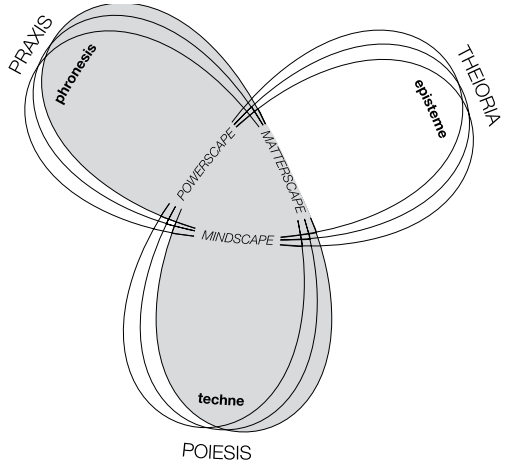


figure 4-30 Late 20th century: exploration along techne-phronesis line

As the object of spatial planning and design had changed from small-scale, mainly urban issues to cohesive regions in which both urban and rural aspects were to be taken in consideration, landscape turned out to be a valuable integrative concept. As landscape is dynamic by nature and can be observed as a nested system, an important feature of the practice of landscape architecture is the ability to work at different spatial and temporal scales. This characteristic appeared to be very suitable for the explorative function of strategic spatial planning.

Strategic planning and design involves both aspects of *phronesis and episteme*, and is a process of creative imagination and reflective judgement. However, the outcome is (knowledge about) strategic concepts (e.g the 'casco concept' or 'water systems approach') and not operational plans. A major issue that kept bothering planning practice was connecting strategic design to operational design and the implementation of plans. This is also the central concern of the 'development planning' movement that seems to be the Dutch planning mantra at the beginning of the 21st century.

In the light of the conceptual framework, the distinction between strategic and operational design can be understood from Aristotle's notion of the *technai* that do not deal with stable materials in a straightforward process of fabrication, but that

intervene in a field of forces that are unpredictable, like military strategy. Strategic design acts as a catalyst, not a determinant. This kind of *techne* has a close relationship with the opportune (*kairos).* Dunne marks it as a quite different conceptual paradigm, one which bears strong resemblance to *phronesis,* whereas the 'official' concept of *techne* is often interpreted as an '*epistemic techne'* (see section 2.3).

Although both kinds of *techne* are discerned as different 'paradigms', a clear demarcation is not made, neither by Aristotle nor by Dunne. The character of the task at hand determines the balance between the more strategic or 'phronetic' and the instrumental or 'epistemic' approach in *techne*. In general, a strategic mode is dominant in cases of high uncertainty and complexity. It is, however, through *experience* that professionals know when to apply general rules or when to bend the rules, when to follow epistemic or phronetic principles (see section 2.3 and further examination in Chapter 6).

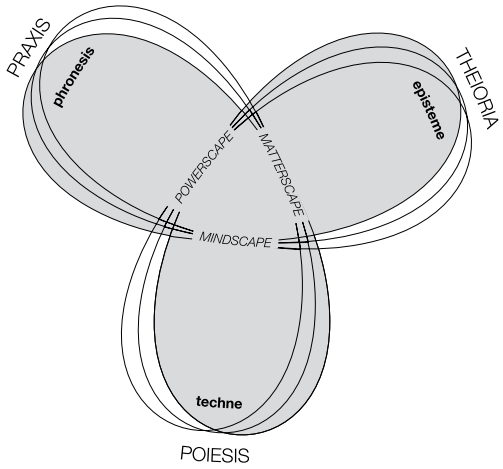


figure 4-31 21st century: balancing phronetic and epistemic approach in planning and design

From this we could conclude that the planning and design process should offer the flexibility and appropriate conditions for finding the right balance between a 'phronetic' and an 'epistemic' approach, which is in the experience of the *technites*, the planning and design professionals. This issue will be dealt with in the following chapters.

Conclusion

From this reflection on Dutch spatial planning and design practice in the 20th century, in the light of the conceptual model of design as 'forethought in making', I draw the following conclusions:

- The conceptual model offers an explanatory framework for competitive as well as complementary orientations and components in planning and design practice.
- In the course of the 20th century the balance between *techne, phronesis* and *episteme* has shifted from an instrumental *techne-episteme* orientation (technocratic), via a phase of non-*techne* in which planning science explored the *episteme-phronesis* orientation, towards a strategic *techne-phronesis* orientation.
- In the intellectual development of the planning and design profession two different, but complementary design paradigms are recognised: the strategic *phronetic techne* and the instrumental *epistemic techne*. Scientific endeavour in both technology and planning science have supported this development.
- Any planning or design task requires the strategic as well as the instrumental mode; judging what is appropriate when, is a matter of professional experience. In general, high uncertainty and complexity go with a bigger share of the strategic mode.
- Taking the landscape as the object of planning and design enables exploration of all relevant spatial and temporal scales. This fits very well into a strategic approach to planning and design in addition to an operational approach.
- (Landscape) design has always integrated the landscape phenomena of matterscape and mindscape. Since about the 1970s planning science has added an explicit concern with powerscape.
- The *techne* of landscape planning and design as the intellectual and communicative process in which many types of knowledge are integrated, is increasingly a matter of teamwork or collaborative networks. Besides design as an intrapersonal 'conversation with the situation', it is also an interpersonal, distinctly transdisciplinary conversation. This is referred to as 'co-design'.
- The professional community of Dutch landscape architecture in the 20th century has developed a repertoire of methods for strategic, regional landscape design. This has not been a deliberate, planned development, but rather a reflective response to societal demands and changes. Productively relating this strategic design approach to administrative planning procedures is not yet common practice.

Part II Landscape Planning and Design in the Network Society

The central questions in Part I were about design as an 'intellectual virtue', compared with related virtues in scientific and political domains, and about the characteristics of a landscape design approach in planning. Key concepts have been identified and linked in a conceptual framework. Chapter 4 contained an overview of Dutch planning and design history in the 20th century against the backcloth of the conceptual framework. This offers a better understanding of the interdependencies and tensions between professionals active in the domains of architecture, landscape architecture, engineering, science and policy making. The retrospective also makes clear that societal changes have great impact on planning and design practice.

Part II studies in more detail the changes and challenges in regional landscape planning and design over recent decades. This period is described as the emergence of the 'network society'. It was a period when the hierarchical and sequential principles that characterise the planning system of the industrial period increasingly clashed with the fluid and simultaneous principles of the network society.

One of the motives behind this research was the observation that over the last ten years or so various authoritative institutions in the Netherlands have highlighted the need for a design approach or stronger design contributions in planning processes, especially at larger scales, as in regional planning. In Chapter 4 it was concluded that despite acknowledgement of the added value of regional design in strategic planning, incorporating it into formal administrative planning procedures remained difficult in planning practice.

The coming chapters explore the characteristics and difficulties of a landscape design approach in the actual context of the network society. This takes the form of a case study (Chapter 5) and further theoretical elaboration of the conceptual framework (Chapters 6 and 7). The case study concerns the Restructuring of the Sandy Soil Areas (*Reconstructie van de zandgebieden*). In this policy process a special National Restructuring Design Studio (*Ontwerpatelier Reconstructie Zandgebieden*) and various regional design teams were established to support the administrative planning process. Despite this explicit and well considered political choice, the results of this design impetus are generally considered to be disappointing.

The theoretical elaboration of the conceptual framework concentrates on the question of how the key elements of design – creative imagination and reflective judgement – can be analysed, and how this works out in the context of a pluralist, democratic society. Contemporary theory from planning and design science is combined with the conceptual framework. Comparison of this outcome with the description and findings of the case study provides an explanation for the difficulties planners and designers encountered in the Restructuring case. It also indicates some directions in which to pursue a more prescriptive search for a design approach in landscape planning, which is the aim of Part III.

5 The Restructuring Case

5.1 Introduction to the Restructuring Case

To explore professional regional landscape design in a political context we examine one of the major Dutch spatial planning initiatives of the last ten years: 'Restructuring of the Sandy Soil Areas' (*Reconstructie van de zandgebieden*), or simply the 'Restructuring case'. An important reason for this choice was the explicit combination of an administrative planning process for landscape regions and an additional 'design impetus' by designating the Restructuring case as a 'Major Design Project' (*Groot Ontwerp Project*) under national architecture policy. The case study deals with the period 2001–2005, during which the regional plans were drawn up and designers in the regions and in the National Restructuring Design Studio (*Ontwerpatelier Reconstructie Zandgebieden*) contributed to the various planning processes.

The study included:

- an analysis of formal and informal documents, such as the text of the Restructuring Act (*Reconstructiewet*), policy documents, professional journals, enquiries, brochures and websites;
- personal information from interviews, group meetings and attendance at professional conferences on the theme;
- facilitation of workshops with policy planners and designers to collect additional information on how policy planners and designers interpret their roles.

The Restructuring policy process is an example of regional planning for which a design approach was promoted not only informally, but also confirmed as a national ambition by various government departments in the Third Policy Document on Architecture (*Derde Architectuurnota*). Despite this deliberate choice for a design approach, many of those involved (e.g. designers, policy makers, politicians, scientists) are critical about the process and the outcomes: both the design contributions as well as the restructuring plans resulting from the formal planning procedure.

The case study investigates the following core questions:

- What has been done in the Restructuring process to meet the objectives of the Major Design Project 'Restructuring of the Sandy Soil Areas'? These objectives are: 1) to make better use of the capacity of the design disciplines for integration and research; 2) to pay more attention to the larger scale and contribute to the preliminary phases of structuring planning problems and defining the planning brief; 3) to encourage public interest, involvement and debate on architectural issues.
- How are these activities and their results assessed by the various participants in the process?
- What are perceived to be the main causes of the disappointing results?

Apart from these evaluative questions, a more fundamental question was also raised: how do professionals who participated in the planning process define a 'design approach', compared to the general 'policy planning approach'. Information on this issue was collected in workshops with policy planners and designers.

General impression of the Restructuring planning process 5.2

The environmental problems in the sandy soil areas in the South and East Netherlands (in the provinces of Overijssel, Gelderland, Utrecht, North Brabant and Limburg) are huge. These areas cover over one million hectares in total, which is about one third of the country. Intensification of agriculture, especially due to concentration of livestock farming, has caused an erosion of public goods in the countryside. The balance between economic, ecological and sociocultural qualities has been severely disturbed. Although the problems were already recognised

figure 5-1 Landscape of the sandy soil areas

in the 1980s, the outbreak of swine fever in 1997 required a clear shift in policy.

Environmental and spatial planning in the sandy areas in the Netherlands became a priority at the beginning of this century and will continue to be a major planning challenge for the next decade. In 2002 a new law on the restructuring of the areas of concentrated livestock farming was adopted by Parliament: the Restructuring Act (*Reconstructiewet concentratiegebieden*). The general aim of the rural restructuring is to improve the spatial structure in twelve affected areas, not only for agricultural reasons (partly to reduce veterinary risks) and to improve nature conservation, forestry and landscape, recreation, water management, environmental protection and infrastructure, but also to improve housing, living and working conditions and the economic structure

Implementation of the Restructuring Act is the responsibility of the provincial authorities. Twelve regional Restructuring Committees were installed to direct the planning process at the local level and to advise the provincial executive. The Act prescribes the composition of these committees: they must include representatives from municipal councils and water boards and from bodies representing the interests of agriculture, nature and landscape, recreation and environment.

Central government stipulated strict conditions for achieving the goals of the restructuring areas. It was prescribed that plans must include a zoning scheme for the spatial reallocation of agricultural development. The Restructuring Act specifies that the zoning should comprise agricultural development zones (intensive

Figure 5-2 Restructuring regions

farming), mixed-use zones and extensification zones. The deadline for implementation of the plans is 2015.

Although the Act only came into force in 2002, the provinces had already taken initial steps in 2000 by setting up special planning units and drawing up terms of reference. By 2003 most regional committees had presented their draft plans. These were discussed and negotiated with many organisations and the general public in all affected areas. In 2005 the regional plans for all the Restructuring Areas (*Reconstructiegebieden*) were ratified by the provincial and national authorities and the implementation phase began.

The following data will give an idea of the impact of the rural restructuring policy. The budget that the Dutch Government spent on the 1997 swine fever outbreak was 1,300 million euros; 12 million pigs were killed on 1,700 farms. As a result of the restructuring process about 6,000 farmers will stop farming over the next ten years (at the beginning of this century there were about 40,000). This will have a significant effect on the quality of life in rural communities. Agricultural investments are geared to scaling-up production through the transfer of over 400 intensive livestock farms to designated agricultural development areas. The total implementation budget for the plans (2004) was over 7,000 million euros, mainly for nature conservation, agricultural and water management measures (Raad Landelijk Gebied, 2003; van Wezel et al., 2004).

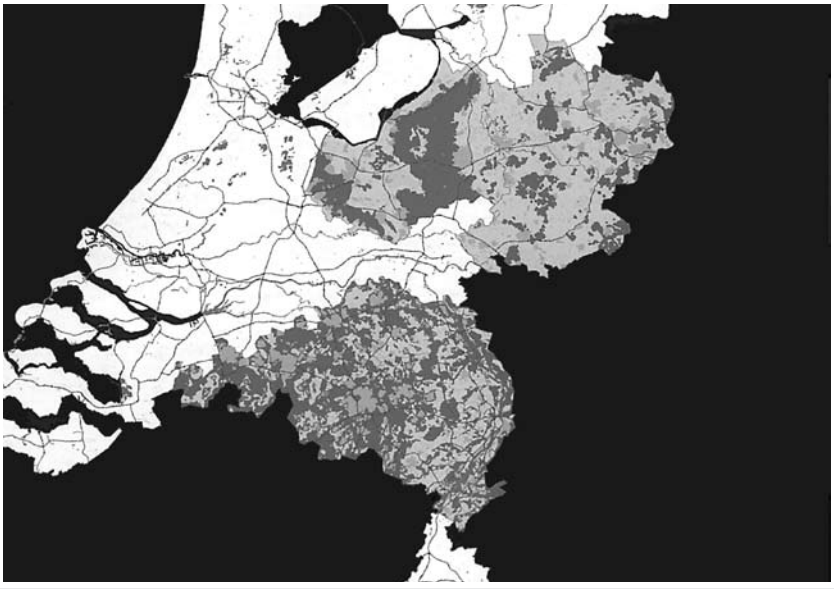


Figure 5-3 Zoning in restructuring plans

Appraisal of the results of the policy process for restructuring the sandy soil areas

This section gives a general impression of the appraisal of results by professionals involved in the planning process: politicians, policy makers, consultants and researchers. It is followed by a discussion of the results of the Major Design Project in the light of this general context.

Though the restructuring plans were only ratified in 2005, they have been discussed in various councils, conferences and professional journals since 2003. As early as 2003 the Council for the Rural Area (*Raad voor het Landelijk Gebied*) concluded that the short-term focus of the Restructuring process did not meet the need for fundamental change in the Dutch countryside (Raad Landelijk Gebied, 2003). A formal evaluation began in 2005 and was completed in 2007 (Boonstra et al., 2007).

The major points of criticism in the debate included the following:

– There is considerable doubt whether the plans will instigate the necessary process of renewal in the countryside. Even the responsible minister for countryside policies (Veerman) criticised the zoning maps: they look fragmented, disconnected and not robust enough because of the many compromises that have been made (van Dam et al., 2005)
– Long-term goals for the environment, liveability and sustainable agricultural development seem neglected in favour of a short-term focus. Even the goal of reducing veterinary risks – the primary reason for the whole process – is not being met (van Wezel et al., 2004). In the final evaluation of the process, improvements on environmental issues are not expected (Boonstra et al., 2007).
– The intended integrative or comprehensive character of the plans has been the subject of much debate (Ministerie van LNV, 2005a, 2005b). The final evaluation concludes that the integral zoning does not meet expectations and the strategy for solving environmental problems via spatial policies has failed. The attention given to themes like spatial quality, cultural history and the relation with urbanisation issues has also been judged to be disappointing (Boonstra et al., 2007: 88–89).
– Implementation of plans is a worrisome issue. There is a huge gap between the abstract plans and reality.[1] One researcher concludes: 'This extensive process actually gets bogged down in financial uncertainty, a decentralised approach and the many parties involved, but also because of the distance between planning and reality. The first results are in the nature of generic spatial schemes, with hardly any room for experimentation or unexpected developments. It is a form of modernist destination planning for conflict reduction and risk spread-

1 Abstract talk about functional zoning, etc. is often mentioned by participants in the restructuring process. In an introductory activity at a design studio in 2004 (facilitated by the author) people were asked which of the two keywords 'abstract space' and 'concrete environment' best describe the planning process so far. Nobody felt that the concrete environment had been a central issue; all they had been talking about (and they said they did a lot of talking) was about abstract ideas and formal and distant policy terms. When the group was asked to change position to the keyword they would like the process to represent, the moved en masse to 'concrete

ing by zoning, clustering and reparation' (Janssen, 2003: 25; translation by JMJ).

– Little attention was given to involving people living in the countryside, and virtually none in the adjoining urban areas (Ministerie van LNV, 2005b). As a member of a restructuring committee in 2004 said, 'so far we have only dealt with paper, not with people' (Baarlo workshop). A civil servant ('forget about the interactive thing') admits that a bottom-up approach, though officially promoted, was not possible because the goals were already formulated by central government (Boonstra and Neven, 2005). The final evaluation is a little more cautious; the process is described as a mix of a top-down and bottom-up approach, though the latter was merely a form of 'green poldering', involving only the usual parties such as the provincial and municipal authorities, water boards and representatives of agricultural, nature conservation and environmental interests. Parties representing sociocultural interests were hardly heard (Boonstra et al., 2007).
– Public deliberation was dominated by technical issues like environmental zoning, hydrology and reallocation of farms. Socioeconomic and sociocultural issues have received little attention. The restructuring plans are described as 'technocratic' and hindering implementation (Dam et al., 2005)

To summarise this general impression, there is considerable dissatisfaction about the content of the plans and doubts about the feasibility of implementing them. Nevertheless, for both public parties and civil society organisations the Restructuring has been an important learning process in finding new forms of cooperation and instruments for integrative regional policies. In the final evaluation, administrative renewal seems to score better than substantive renewal of spatial and environmental policy (Boonstra et al., 2007).

5.3 General impression of the Restructuring as a Major Design Project

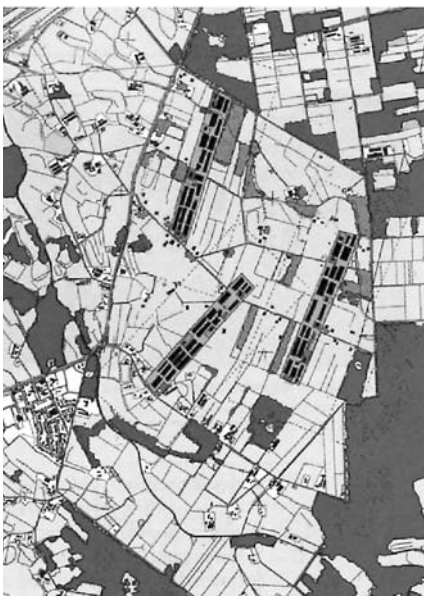
The Third Policy Document on Architecture, with the title 'Designing the Netherlands' (*Ontwerpen aan Nederland*, Ministeries van OCW, VROM, V&W, LNV, 2000), articulates the desire to make better use of the integrative and exploratory power of the design disciplines in improving spatial quality. Important aims of this policy document were to give more attention to larger scales and the preliminary phases of structuring planning problems and exploring the planning brief. Another goal of

environment'. They felt that landscape design could be very helpful in actually bringing about this shift (Workshop Baarlo, 8 September 2004).

the document was to stimulate public interest, involvement and debate on architectural issues. To explore the ambitions of the Policy Document in practice, ten Major Design Projects were proposed as pilot projects.

One of the pilot projects is the 'Restructuring of the Sandy Soil Areas' policy process. The 'Designing the Netherlands' policy document speaks of the danger of a narrow focus on sectoral problems, citing the ambition 'to resist fragmentation and bring coherence on the right level of integration' (Ministeries OCW, VROM, V&W, LNV, 2000: 100). The objective, therefore, was to produce explorative design studies at different scales to make the design tasks more concrete and develop area-specific solutions to support regional identity. An example of such study is 'Bentelo' (see figure 5-4 and 5-5). A research-by-design approach is followed to explore the concept of clustering intensive livestock farming, adding new structures to the fragmented landscape (Feddes, 2003).

Responsibility for this Major Design Project was taken on by the Ministry of Agriculture, Nature and Food Quality. One of the tools for conducting the design exercise was the 'National Restructuring Design Studio' (*Ontwerpatelier Reconstructie Zandgebieden*), run by and located at the Government Service for Land and Water Management (*Dienst Landelijk Gebied*, DLG) in the period 2001–2004. The task of the Design Studio was to bridge the gap between the aims stated in 'Designing the Netherlands' and the specific design tasks in the restructuring



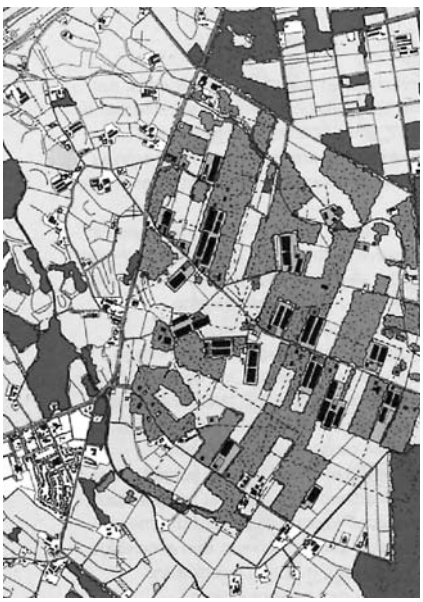


Figure 5-4 Research by design for Bentelo; model 'pig-line'

Figure 5-5 Research by design for Bentelo; model 'pig-wood'

plans. Its mission was to show how the quality of the sandy areas can be improved through design and to support regional design studies, making it a national as well as a regional task. Activities included both regional and thematic workshops, debates and various communicative tools like a website and brochures. Besides the Design Studio, an additional budget was available for the provincial councils to spend on activities like design workshops or hiring (more) landscape architects. The activities organised by the five provinces for the design impetus varied considerably, as did the results. Figures 5-3 and 5-6 to 5-8 give an impression of the design contributions. Figure 5-9 shows a formal Restructuring Plan, in which the sketch vision can be recognised.

For four years the restructuring process attracted the attention of designers, especially landscape architects. In most cases their contributions were add-ons to the administrative planning process directed by the provinces. Designers were not included in most provincial planning teams on a regular basis. As most of the design studies and design workshops were organised and attended by designers, the results were in general not discussed properly with the participants in the main planning process. In some cases, however, designers actively sought cooperation with policy planners and stakeholders in the region. These were the meetings where designers, planners and stakeholders could share their ideas and approaches.

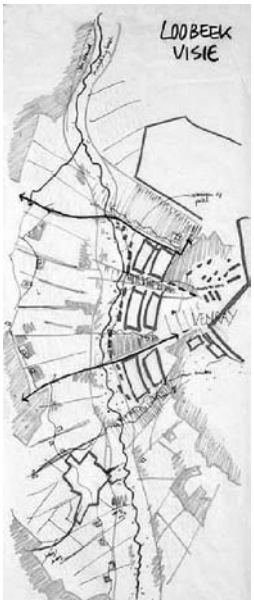


Figure 5-6 (left): Sketch plan, Province of Limburg Design Studio

Figure 5-7 Spatial quality plan, Hezingen Mander Tubbergen, Province of Overijssel

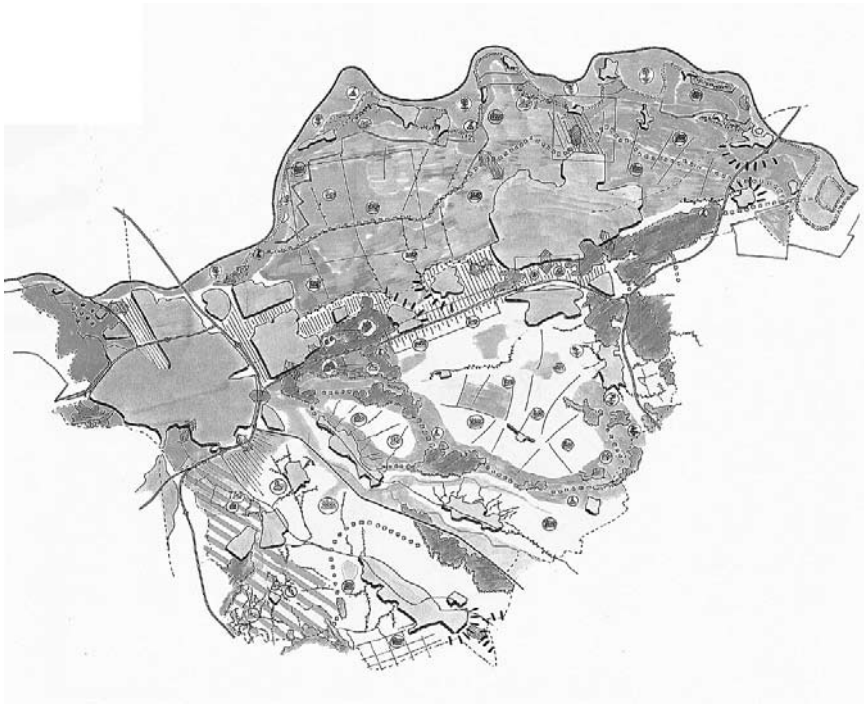


Figure 5-8 Vision Maas & Meierij, Province of Noord-Brabant

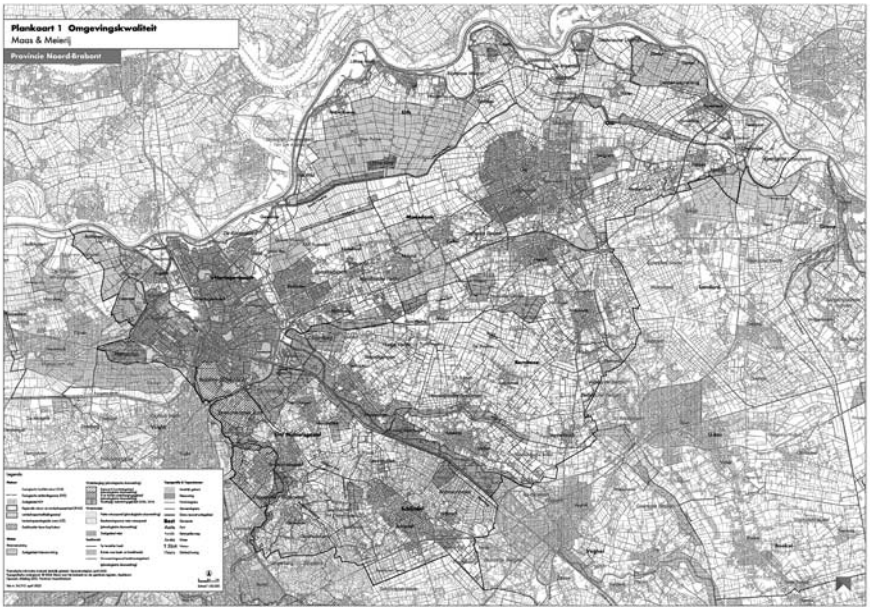


Figure 5-9 Restructuring Plan Maas & Meierij ratified in 2005

Assessing the various design activities against the main goals of the Major Design Project, the following can be concluded:

- Most design efforts were focused on the objective 'to make better use of the capacity of the design disciplines for integration and research'. A whole range of design workshops and design studies were organised, mostly in parallel with (additional to) the formal planning procedures. In 2002 a series of thematic workshops was organised (on agricultural landscape, water & landscape and mixed use landscape), whereas in 2003 the activities were focused on the regions and specific projects. In some provinces the design studios supported the integration of sectoral studies into comprehensive visions. In 2004 an integrated overview of all 12 regional plans was produced to inform discussion of the results at the national level (Figure 5.1).
- The objective 'to pay more attention to the larger scale and contribute to the preliminary phases of structuring planning problems and exploring the planning brief has turned out to be problematic. From the start the ambition of the National Design Studio certainly was to redefine regional issues from an integrative landscape perspective and search for new concepts for transformation. However, the legal framework of the formal planning process did not allow explorations beyond the given task of agricultural 'zoning'. This shifted attention towards local demonstration projects.
- The objective 'to encourage public interest, involvement and debate on architectural issues' has hardly been in the spotlight. The design impetus was a separate track in which mainly landscape designers were involved. Public presentations of the results of the design studies were not encouraged by the provincial project managers, as it could disturb the delicate negotiations in the formal procedure.

The above conclusions will be looked at more closely in the following sections, and explained form a theoretical point of view in the next two chapters.

Appraisal of results of the Restructuring as a Major Design Project

The rather negative judgement of the substantive results of the policy process also applies to the Major Design Project. From the start there was an inconvenient relationship between the Major Design Project and the formal planning process. Although only at its halfway point, a manager at the DLG already concluded that the project was a failure: the top designer chosen to lead the Design Studio resigned the post and the budget was cut because its added value could not be demonstrated (interview de Haas). The next design chief later stated that the Studio did

not succeed in achieving its ambition of putting design into action as a 'lever' in the complex planning process: 'The question is on what scale one can contribute to the process to really be effective. On the national level there was no call for such contributions. But in the meantime everybody lost their grip' (Witsen, 2003, translation JMJ). Designers have contributed only marginally to the restructuring plans. The professional journals grumble that landscape architecture and regional design have hardly influenced the planning process.

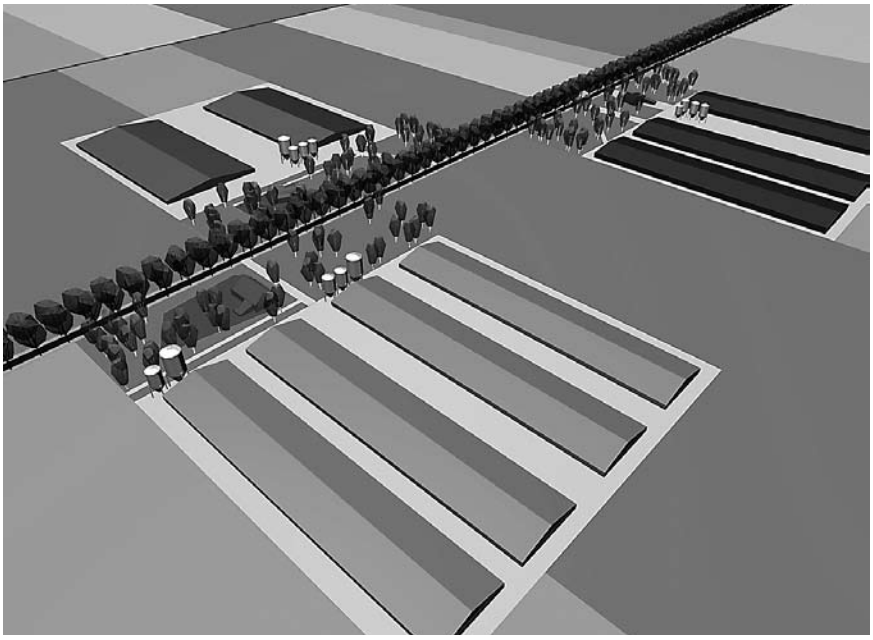


figure 5-10 Local demonstration plan for an agricultural development zone. Visual quality plan Elsendorp, by Veenenbos & Bosch landscape architects, 2001.

Taking this marginal role into account, it is not surprising that the opinions on the design quality of the restructuring plans are not very complementary either. At the conference that officially closed the Major Design Project, all the provincial executives involved made a statement in which they said '…we realise that despite all efforts, the design quality is still limited'. This was confirmed by five experts who had been asked to review the plans (van Dam et al., 2005). The only conclusion seems to be that despite the ambitious goals, the Major Design Project could not essentially influence the formal planning process and the resulting plans. Nevertheless, hopeful voices have also been raised. It is acknowledged that the Design Project has put 'landscape quality' on the agenda and this will have consequences for the implementation phase. Local demonstration plans (see figure 5-10) have been good examples to show the importance of designers' contributions. Designers will be involved at the local scale and new instruments will be developed to review projects for design quality.

Nevertheless, the primary goals of the Major Design Project – using design expertise on the *regional level, in the phase of problem structuring and exploring the planning brief,* and as a *public issue* – have not come any closer. The benefits of this process for the *operational* phases of landscape planning and design cannot mask the losses in the area of *strategic* issues. Considering the efforts and public money spent on the Major Design Project, the underlying causes deserve to be examined more closely.

figure 5-11 Design workshop organised by National Design Studio

Underlying causes of the disappointing results

The negative judgement at the end came as no surprise. After the first year of the Major Design Project the National Design Studio commissioned an interim evaluation to investigate the obstacles to a design approach in the Restructuring operation. Through a series of interviews it was concluded that most provincial executives and policy planners were not convinced of the need for and added value of contributions from designers (Balduc, 2002). This is confirmed by designers who worked for the Design Studio. They felt that the design approach was forced upon the provinces by the national architecture policy, but did not appeal to non-designers[2]

From the meetings and articles we can distil two main reasons for the difficult relationship between the design track and the policy track:

1| The interpretation of the policy task in the Restructuring Act to be executed by the provinces did not match the aims as formulated in the Major Design Project.

2| The difference in approach between designers and 'non-designers' (mostly policy planners) and the inability of both to cooperate productively. Stereotypes and prejudices were not unimportant in this.

These are discussed in the next two sections.

5.4 Interpretation of the policy issue versus the design issue

Ambivalence in the assignment

The legal basis for the task of Restructuring the Sandy Soil Areas is set out in the Restructuring Act. Although the reason behind the Act was to reduce the veterinary risks in the livestock sector, the aim was also to improve the general environmental quality of the countryside, encompassing not just agriculture, but also nature, forestry and landscape, recreation, water, environment and infrastructure, as well as housing, living and working conditions and the economic structure of the countryside. The Third Policy Document on Architecture, in which Restructuring was announced as a Major Design Project, emphasises this integrative aspect of the task. The ambition is to ensure coherence at the appropriate scale and prevent a narrow, sectoral perspective in the planning process.

Although both documents aim at a broader task than solving veterinary problems, and label this as 'improving spatial quality', in this case central government has proved to be ambiguous in defining its terms of reference (Balduc, 2002; Witsen, 2003; van Dam et al., 2005). The provinces have not succeeded in translating this ill-defined task into a clearly-defined assignment to their regional teams.

2 Meeting Wageningen, 13/11/03

The Restructuring Act prescribes that the restructuring plans should include zones for agricultural development (intensive farming), mixed-use zones and extensification zones. The provincial politicians and their civil servants considered this zoning principle to be the main planning task. The project areas were limited to the countryside; urban areas or actors were beyond the policy scope of Restructuring. The Major Design Project stressed that the design approach should contribute to problem structuring and develop area-specific solutions to support and improve regional identity. ' Research by design' at various scales was proposed as the appropriate method not only to establish a better understanding of basic processes and patterns in land use, but also to develop alternative spatial transformation concepts for the regional level and elaborations on the local level.

An important difference between the policy approach and the design approach can thus be stated as follows:

– The *policy approach* takes (agricultural) zoning as a point of departure for the principle solution as a means to balance and negotiate existing (functional) interests.
– The *design approach* explores a broader range of principle solutions (design concepts) related to a renewed study of the planning and design issue; this might even go beyond the bounds of the Restructuring Act to inspire the negotiation process with new insights as a basis for more fundamental (long-term) solutions.

Many misunderstandings in the process can be resolved into these two competing approaches to the planning and design task. For example, at a symposium organised by the National Design Studio a member of a regional restructuring committee expressed his worries about the design approach. Are the designers responding to the zoning task as it is formulated in the Restructuring Act? And is this explorative design approach not too time-consuming? The discussion on this theme led those present at the meeting to conclude that the Restructuring Act will mainly result in 'repair and renovation', whereas 'innovation' is necessary to contribute to the long-term goals. They considered design activities important for inspiring such innovation processes, but the restructuring process did not provide the necessary conditions to do so (Kokshoorn et al., 2002) .

In the interim evaluation in 2002, Balduc also reports that policy makers' primary focus is on balancing sectoral interests in order to make the zoning plan. The designers, on the other hand, consider the problems in the sandy soil areas to be 'a result of societal change processes, implying that an innovative design and a different approach (often abstract and philosophical) will be necessary' (Balduc, 2002: 8). This explorative attitude tends to irritate many participants in the formal

policy process. Procedures are very tight and 'vague processes' do not answer the challenges facing the process managers of these projects. These managers often have no affinity or experience with a design approach (Witsen, 2003). Even if they see added value in designers' contributions, they complain that the procedures and budgets do not allow for it. 'No time, nasty, no interest' was the verdict in a professional journal on the issue (van Duinhoven, 2003).

Interpretation of the design task

The demand for zoning and the time constraints imposed by the Restructuring Act were conditions that did not support the research-by-design strategy, as required and promoted in the Major Design Project. Besides, another argument often put forward to discourage such approach was that it was 'too early for designers to be involved'. Many politicians and policy makers considered design to be a shaping activity, which could only be done after the zoning plan had been drawn up and attention shifted to implementation plans. Designers complained that they often had the feeling that their work was regarded as a finishing touch, as a beautification of the zoning plans (Balduc, 2002; Anonymous, 2003). These voices suggest that the majority of the planning professionals regarded the design task in the Restructuring process as an operational task, not a strategic issue. Design was only about form and aesthetics, not a richer interpretation of landscape quality.

The designers found it difficult to make clear what their contribution could be in the different phases of the planning process. The National Design Studio observed 'that the designer himself has difficulty in finding his role in the complex and extensive playing field of the Restructuring process.' (Anonymous, 2003: 28; translation JMJ).The designers are aware of the importance of an adequately organised process in which the conditions for a design approach are favourable. But neither the National Design Studio, nor the commissioning authorities or project managers seemed to be able to clarify what those conditions should be and what could be expected from a design approach under the given circumstances.

It seems remarkable that the initial aim of the 'Designing the Netherlands' policy – to use design and research by design in the strategic planning phases – has rather quietly been exchanged for a call to make use of designers' capacities in the implementation phase. This could be interpreted as resignation and acceptance by the designers, but politicians and project managers appear to be unfamiliar with or deny the added value of design in strategic planning. An illustrative quote of a provincial executive is that in building projects 'the design also comes in after the land allocation plan is ratified' (van Dam et al., 2005: 13). In this view, the scope of design is narrowed down to operational design and to a matter of architectural shape.

Summary and reflection

Both the Restructuring Act and the Third Policy Document on Architecture aim to establish a structural improvement of spatial and landscape quality in the sandy soil areas. However, they differ fundamentally on how to do this. Put simply, the Restructuring Act prescribes agricultural zoning as a principle solution, to be established through negotiation processes with stakeholders from the various rural interest parties. Once this zoning plan is accepted, local implementation plans can be drawn up with the help of designers. The Major Design Project, as defined in the architecture policy, considers regional design and the preceding research-by-design approach as a means to better understand the issues and problems in the rural area. Design can be helpful in redefining and structuring the problem, and from there new perspectives can be explored that will offer more fundamental and integrative answers for the long term. Some conditions in the Restructuring Act, like the zoning principle and the given time schedule, seem to be inconsistent with this ambition.

Under these circumstances it is not surprising that the outcomes of the Major Design Project were considered dissatisfying. What is astonishing though, is that it has come so far. These fundamentally different views could even have been detected in 2001. There have indeed been some early warnings. In the run-up to the formal Restructuring planning procedure at least two advisory commissions had warned about the tension that would arise between the formal and legally prescribed procedure and the ambition of creative transformation towards sustainability.

In 2001 Telos, the Brabant Centre for Sustainability, stated that the ambition of Restructuring was not clear: was it about transformation or just about spatial (allocative) planning? While the Restructuring Act demanded a spatial planning procedure to be followed, Telos judged the spatial planning language to be too limited to instigate an integral transformation process. Socioeconomic and sociocultural concerns should be much more central. They concluded that a closed process that focuses on decision making and negotiation instead of learning is inappropriate for the strategic ambition of profoundly changing practices (Beckers and Haarman, 2001). This advice was a warning that the procedural conditions for creative transformation were not being met.

This last aspect was also highlighted in an advice on the Third Policy Document on Architecture by the Council of Housing, Spatial Planning and the Environment (VROM Council). The Council recommended that an ‘indicative planning procedure’ (*indicatieve planning procedure*) should be applied. The development of new insights would then be separated from legally binding procedures. In such

an indicative procedure the relation between research, public debate, policy making and design should be optimised in order to profit from the innovative power of regional design (VROM-raad, 2001: 5).

Despite these 'early warnings', the Restructuring process remained on its original track. However, the later criticism of the results, as well as the impossibility of combining an explorative design approach with the conditions laid down in the Restructuring Act, vindicate the position taken by the advisory commissions mentioned above.

5.5 Approaches of designers and policy planners

The second main reason for the disappointing results of the Restructuring process identified in section 5.3 was the experienced difference in approach between designers and 'non-designers' (mostly policy planners) and the inability of both to cooperate productively. Relevant questions are how designers and policy planners characterise a design approach as opposed to a policy planning approach. What are the similarities and differences? Where can we identify a need for cooperation and what can cause tension? And can we discover 'different logics' in the policy planners' and the designers' approaches?

Many documents and meetings on the Restructuring process give the impression that designers and policy planners experience difficulties in working together in a productive way. This impression was investigated in workshops and additional interviews with professionals working in the field of regional planning and design who were involved in the Restructuring process. Published interviews were also used.

From the collected material a picture emerges of two different worlds, each with a specific language and logic. Designers complain that their approach is so poorly understood. They state that most policy planners, politicians or process managers do not identify with a design approach and find it difficult to recognise its added value. As a result, they declare, designers lack the right conditions in the planning process to make a design approach work. In a self evaluation, designers also remark that they have difficulty explaining the characteristic features of a design approach, which is confirmed by policy planners (Anonymous, 2003). This inability to articulate their own disciplinary basics serves to maintain the isolated position of designers.

The overall message from both designers and policy planners is that the way designers work essentially differs from what is standard in policy and politics. However, productive cooperation requires that the different activities and competencies can complement each other in working towards shared goals and that the working process allows different approaches. In a series of workshops held

to explore this, designers and policy planners were asked what they believe is the essence of spatial design and spatial policy planning respectively. In separate groups they were asked:

– what aims and results they strive for (WHY questions);
– what activities and competences characterise their work (WHAT questions);
– what the nature of the working process is (HOW questions).

Apart from reflecting on the nature of their own profession, they were asked to name *stereotypes* about the other domain. The results of this exercise are discussed below and summarised in tables.

Aims and results

There are both differences and similarities between what policy planners and designers want to achieve. For policy planners, serving a democratic society comes first; society has developed rules and procedures to enable us to do justice to the interests and needs of citizens. Designers seem much more driven by substantive goals. Their activities are inspired by the passion 'to make things better' and the necessity for changes demanded by society, for example towards good, sustainable landscapes. Regarding aims and results, both groups share substantive goals like sustainability and liveability and start from the same principles of a democratic society. The difference is in the focus: the prime concern for policy planners is the process, for designers it is the content.

	Policy planners	Designers
WHY (aims & results)	- Democratic legitimacy and justice - Execution of public goals (incl. sustainability, spatial quality)	- Spatial quality (as demanded by society, incl. sustainability, liveability) - Change, renewal

The stereotypes named by the two professional groups illustrate where the added value for cooperation lies because they show what can cause tension if both aspects of the democratic process and the substantive ambition for change are not well balanced:

	Policy planners state that designers…	Designers state that policy planners…
Stereotypes	'…are innovative, inspiring, creative' '…are anarchistic, individualistic and self-willed' '…consider themselves victims of existing rules'	'…highly value opinions in society' '…find the process more important than the content' '…are caught in existing rules'

Activities and competences

Policy planners are primarily engaged in describing the political vision, aims and solutions as well as the procedure, timetable and instruments for implementation. Problems are often described in terms of conflicting land use interests. Policy planners display a 'helpful attitude' in the planning process: they collect and systemise information that comes up in the planning process, rather than develop new visions themselves. Their work also includes the rationalisation of choices towards the politically desired future situation.

Designers are focused on the development and imagination of future visions, on 'the making of something that does not yet exist'. It is about the desired future as 'thought experiments' as well as the execution and implementation of plans. An important competence in this is ordering and reordering existing information. Connecting different elements, aspects and scales into a consistent whole or unity is considered a major qualitative characteristic of a plan.

The complementary skills of policy planners and designers in a combined procedural and substantive focus has been mentioned above. Policy planners frame and streamline the information that is emerging in the process and work systematically from goals towards solutions; designers concentrate on creating such visions and plans. Designers seem to be more comprehensive in their approach. Whereas policy planners focus on the functional components relevant to balancing various interests, designers concentrate on integrative images in which form and function merge. Or, as one of the participants in a meeting said: 'Planners talk about the programme, designers about the place where it all comes together'. Many policy planners mention 'integration' as an important value of a design approach and of the landscape as an integrative framework. They acknowledge that designers were sometimes invited to support the planning process when this threatened to become too complex and when they were in need of an overall, integrative concept.

Tension is clearly felt when the broad and comprehensive approach of designers does not fit into the fixed procedures for which the policy planners feel responsible. For example, if the design proposals do not provide a straight answer to the defined policy problems, designers are likely to question these problem definitions because for them the problems and solutions evolve in parallel during the design process.

	Policy planners	Designers
WHAT (activities, competencies)	- Give direction, formulate goals and frameworks - Describe problems and solutions - Programme activities and instruments to achieve the goals	- Develop and visualise visions for the future - Order information, create coherence and connections between components - Shape and create

The stereotypes illustrate necessary complementary contributions as well as tensions.

	Policy planners state that designers…	Designers state that policy planners…
Stereotypes	'…do everything, integral' '…bring coherence between functionality and beauty' '…are so visionary that they lose sight of reality' '…want to ignore conditions like regulations, time, money'	'…work systematically' '…are consistent in their policies' '…start from the problem as given' '…lack spatial vision' '…focus too much on control and regulation'

Character of the working process

The differences in the way policy planners and designers organise or experience their working process is related to the above-mentioned goals, activities and competences. Planners characterise their approaches as orderly, systematic and accountable, in which communication between society and decision makers (politicians) is central. This is an interactive process of attuning, balancing, adjusting and finally making choices. They strive for consensus and broad support, but the process is actually full of difficulty and conflict.

Designers describe their approach as a creative process in which, somehow detached from existing structures and biases, a broad palette of ideas is made up, visualised and studied. In doing so, they study the physical as well as the 'mental' space for change and renewal. This means that they also work interactively with stakeholders, but with a different motivation. To explore the mental space for change it is important to listen very well, but it may also be necessary to be confrontational and provocative. Generally speaking, in the design process there is no linear logic from goal to solution or from a large to small scale. It is an iterative and seemingly chaotic process in which new information and insights are integrated into the sketches and plan proposals. This enables designers to deal with uncer-

tainties and new developments or information in the planning context.

Listening to the policy planners and designers, one could say that the policy planners are (re)formulating and structuring available information in the linear timeframe of the planning process to enable structured decision making. In the meantime, designers are occupied with (re)ordering physical and mental space. These approaches can be complementary if the process and the timetable allow creative explorations as well as convergence to solutions that enjoy the support of the stakeholders involved. Decisions can then be taken 'just in time'. However, the tension between policy planners and designers seems to arise mainly from different opinions and expectations of this process. Whereas planners use a linear metaphor of 'a road from goals to means, from problem to solution', designers acknowledge the chaotic ('iterative') nature of their thinking, which in fact can be an 'endless' process. They keep moving between now and the future, between different scales, between problems and solutions, the abstract and the concrete. They have difficulty in fitting this mental process into the linear process of decision making and the fixed 'problem–solution space'.

Another clear area of tension is in the policy planners' ambition to avoid uncertainty and reach consensus and the designers' 'provocative' approach in confronting stakeholders with possibilities that might look unfeasible, even totally unreasonable, but are meant to test and maybe influence their thinking.

	Policy planners	Designers
HOW (character of the process)	- From goals to means, from problem to solution - Difficult and full of tension - Together with society and decision makers - Weighing interests - Looking for public support	- Iterative - Integrative - Creative search - Visual, imaginative - Interactive: listening to stakeholders, raising awareness and being provocative

With regard to the nature of the working process, the stereotypes give a clear illustration of the tensions experienced by planners and designers.

	Policy planners state that designers…	Designers state that policy planners…
Stereotypes	'…do not work rationally' '…work without obligations, not to the point' '…produce vague sketches, head in the clouds' '…behave in an authoritarian manner, do not listen'	'…are monodimensional technocrats' '…fear that design proposals could be perceived a threat' '…do not think in various scales' '…cannot handle uncertainty'

Summary and reflection

Spatial policy planners and (landscape) designers were critical about the effectiveness of their mutual collaboration in the planning process for the Restructuring of the Sandy Soil Areas. Collaboration in regional planning processes, in a complex societal context, was not business as usual. The role and added value of designers was not self-evident and many designers had difficulty in explaining their contribution to the process and the necessary conditions in the process. On both sides there was a lack of knowledge and insight about the characteristics of approaches in policy planning and design. As a consequence, stereotypes tended to be taken as reality.

The tensions seemed to arise for two main reasons.

1| The rational, linear (formal) planning procedure from problem to solution and from goals to means conflicted with the iterative design process, which is in the nature of a learning process involving trial and error. In the planning procedure the problem–solution space was delineated, whereas in the design processes the problem–solution space was explored (and often expanded) by investigating various themes and scales to find the best fit in the given situation.

2| The way in which interaction and communication in the process was approached. Policy planners would limit and control conflicting situations as much as possible in order to reach a consensus through negotiation. In contrast, the designers would not avoid confrontation if this could lead to new insights. To them, provocative proposals were a means of enlarging the 'mental space' for solutions.

Despite this negative valuation, both groups acknowledged that cooperation is necessary and can be fruitful. Designers subscribed to the value of a democratic decision making process; policy planners recognised the added value of design when it comes to creative, imaginative and integrative power.

The circumstances of the formal Restructuring planning process and the additional Major Design Project have, in a way, exaggerated and expanded the differences between policy planning and designing. The discussions in the workshops revealed that these differences were not unique to the Restructuring case, but have been experienced more generally.

In the next chapter the findings in the Restructuring case are explained and interpreted against the backcloth of the conceptual framework, which is further elaborated with insights from contemporary design and planning theory. The aim is to unravel the seemingly chaotic design process and to discover and define conditions that are favourable for a productive design approach in the 21st century pluralistic network society.

6 Understanding the Design Process

Some characteristics of the design process have been briefly elucidated in Chapter 2. It was concluded that the way designers approach a problem has a different logic than an epistemic logic. The process of creative imagination and reflective judgement is not orderly and rule based, but very much resembles a process of trial and error. It is a process of analysis through synthesis rather than analysis preceding synthesis. The three different intellectual activities of analysis, synthesis and evaluation – with a basis in respectively epistemic, 'technic' and phronetic modes of reasoning – take place alternately or even simultaneously. Another related and important characteristic is that in design problems the problem definition and solution are inseparable. The design process can be seen as a kind of 'negotiation between problem and solution' in a cohesive problem–solution space.

This chapter takes a closer look at the design process and developments in design theory. Horst Rittel's theory of *wicked problems* will be summarised as this forms the basis for approaching design as reflective practice. Even if the design process is not rule based, it is not a random succession of activities. Empirical research on design activities in the last few decades supports a better understanding of the characteristics of the design process. This is developed and applied to large-scale landscape planning and design, and linked to the conceptual framework developed in Part I.

The discussion is accompanied by reflections on the Restructuring case to illustrate the implications of my exposition for regional landscape planning and design practice.

6.1 Design issues: a special class of problems

The nature of planning and design issues

The types of problems in regional landscape planning and design, or design in general, have often been denoted as 'ill-structured', 'unstructured', 'complex' or 'wicked'. At first sight these terms might seem more or less synonymous, indicating that we are dealing with difficult issues. When we take a closer look, however, these words represent different ways of approaching planning and design problems, and even different paradigms.

The terms 'ill-structured' and 'unstructured' denote the *lack of structure*. They stress the difficulty of solving these problems along rational, analytical lines. They suggest an epistemic background and imply that a problem should first be structured and then solved. A basic assumption is that problems *can* definitely be solved. The principle is that we deal with 'solvable' problems, for which modes of technical reasoning are applicable. Cause and effect can be predicted or can be analysed by empirical experiments following the rules of the natural sciences. This kind of reasoning stems from the goal-directed, rational approach that has dominated planning and design theory for most of the 20th century. It corresponds with the traditional interpretation of *techne,* the *epistemic techne*.

The terms 'complex' and 'wicked' describe the nature of issues or tasks that are so complicated that they form a *continuous* challenge. There is no definite solution, but merely a process of change that we try to stimulate and move in the most desirable direction by trial and error in an iterative process of searching and learning. In complex (from the Latin word *complexus,* meaning embraced*,* entwined) problem situations we deal with a system in which the parts interact in a complicated and essentially unpredictable way. The relation between parts of the system is such that isolated solution of problems or subproblems is likely to cause new problems, or at least will not tackle the root of the problem (if this is at all possible).

This type of task or problem tends to involve social issues. We cannot therefore objectively think of the 'problem' as if it is outside ourselves. We ourselves are part of the problem situation: as soon as we have some thoughts on the issue, the 'problem' itself has changed. Besides, in a pluralistic society there will be different values and attitudes that affect the valuation of the problem situation. A fixed 'problem definition' in these cases is more likely to frustrate useful progress than contribute productively to the learning capacity of the people involved. This approach corresponds to the 'additional' interpretation of *techne* (after Dunne, see Chapter 2), the *phronetic techne*.

Two design paradigms

As design theory of (landscape) architecture draws on both the natural sciences and the social sciences, it gives rise to two different ways of approaching planning and design problems, as mentioned above, and consequently different design process models. Two essentially different models can be distinguished (Dorst, 1997).

The first model, which has its roots in the 'natural science tradition' characterised by technical rationality, presupposes an objective reality external to the researcher/designer. The design process can therefore be seen as a *rational search process*. The design methods should be standardised and preferably be inde-

pendent of the designer. Herbert Simon, who introduced the term 'ill-structured problems' (Simon, 1967, 1981), is probably the most influential theorist of the Rational Problem Solving paradigm, which usually goes together with a positivistic view of science (Dorst, 1997; Bruijn et al., 1998).

Although Simon can be considered the founding father of this paradigm, he realised that this way of reasoning was only applicable to a certain type of issue:

> Going to the moon was a simple task indeed, compared with some other we have set for ourselves, such as creating a humane society or a peaceful world. Going to the moon was a complex matter on only one dimension: it challenged our technological capabilities.…The success of planning on a societal scale may call for modesty and restraint in setting the design objectives and drastic simplification of the real-world situation in representing it for purposes of the design process. (Simon, 1967, 1981: 162).

In the second model, which stems from the 'social science tradition', reality is a social construct and the researcher/designer takes part in constructing this reality. In this view designing is a Reflective Practice. The design process is a *reflective conversation* with the situation, with oneself and with many different people involved in the design process. The design process depends on the design task, which is essentially unique, and the skills of the designer, who knows (mainly by experience) 'what to do when'. Design is seen as an artistic and deeply human process. Besides the constructivist stance that is now widely accepted in the social sciences, this 'model' of the nature of design is also closely related to the humanities.

The Reflective Practice model was introduced by Donald Schön, mainly as a reaction to the dominant paradigm of technical rationality. To him this paradigm was not adequate for design practice: 'Although Simon proposes to fill the gap between natural sciences and design practice with a science of design, his science can only be applied in well-formed problems already extracted from situations of practice' (Schön, 1983). In a later work, Schön again contrasted the idea of a Reflective Practice with the Rational Problem Solving approach. He mentioned three problematic dichotomies in positivist epistemology: the separation of *means from ends*, the separation of *research from practice*, and the separation of *knowing from doing*. As Schön says, in the design process as a reflective conversation 'these dichotomies do not hold. For him [the 'reflective practitioner' – JMJ] practice is research like. Means and ends are framed interdependently in the problem setting. And his enquiry is a transaction with the situation in which knowing and doing are inseparable' (Schön, 1987).

From my description of design as 'creative imagination and reflective judgement', and landscape as the interface where nature and culture come together, it

is obvious that for landscape design I primarily follow the Reflective Practice approach. Landscape architecture, or architecture in general, is not a technical but primarily a social issue. The nature of the design object implies a design process in which the interpretation of the design task and the development of possible design solutions are a continuous process of interaction with society. An objective, rational problem-solving attitude does not do justice to this characteristic (see also Ekkers et al., 1990). Rittel's 'wicked problem' approach has laid the foundation for this paradigm of Reflective Practice.

Rittel's wicked problem approach 6.2

The category of design problems that require a reflective approach are also labelled *wicked problems*. The German designer and mathematician Horst Rittel coined this term in the 1960s. The wicked problem approach was first presented by Rittel at a special conference on design theory in 1974, held in New York (Bazjanac, 1974; Rittel and Webber, 1984). According to Buchanan (1992) this approach to design proved to be one of the central themes to which participants often returned when seeking a connection between their design applications. Since then it has been referred to often, not only in the design literature, but also in the planning and management literature (Lang, 1987; Margolin and Buchanan, 1995; Hisschemöller and Hoppe, 1995; Liedtka, 2000; Ibert, 2003; Prominski, 2004). The 'wicked problem approach' now seems to be a unifying concept in design thinking (Prominski, 2004).

Rittel argued that most of the problems addressed by designers[1] are wicked problems. He described these problems as 'a class of social system problems which are ill-formulated, where the information is confusing, where there are many clients and decision makers with conflicting values, and where the ramifications in the whole system are thoroughly confusing.'

Rittel raised the question of whether a planning or design problem can be perceived as determinate, with definite conditions. The wicked problem approach suggests that there is a *fundamental indeterminacy* in most design problems. He made clear that this is different from 'un(der)determined', implying that a problem can eventually be determined by following the right analytical path. Indeterminacy confronts us with the persistent condition of working with uncertainty, of a situation in which a preferred path only gradually emerges. With his statements he distanced himself from the rational problem solving approach that was then the accepted frame of reference.[2]

1 Rittel speaks about design problems and designers but evidently also implicitly includes planning problems and planners

2 The concept of uncertainty is broadly accepted nowadays and most recent planning theories take this as a given (see e.g. Salet and Faludi, 2000; Friend and Hickling, 2005). At that time it was a really new view.

Properties of wicked problems

Rittel initially defined ten properties[3] of wicked problems, which I will group here around four mutually related themes.

1| In design problems the problem definition and solution are inseparable in content and time.

Design problems have no definitive formulation. Once formulated, additional questions can be asked and more information can be requested. Formulation of the problem corresponds to the formulation of the solution and vice versa: the information needed to understand the problem is determined by one's idea of the solution. Rittel observed that whenever a problem is formulated or reformulated, there must already be a solution in mind.[4] Thus, in the design process we go through alternating sequences of generating variety and reducing variety, searching for possibilities and evaluating. There is continuous feedback with the problem environment. It is a cyclical process, guided by argumentation and deliberation, either with people involved in the design process, or (at least) in the designer's head. The cycles are not linear, but they form *networks* which are basically infinite. There is no rule on when the design process is complete, except for running out of resources. The design process can be stopped by the (inter)subjective decision that the solution is 'good enough' or 'satisficing'.

2| Design problems are '*social* systems problems'.

The recognition that we are dealing with social problems (not merely technical problems) has a huge impact on the design process. It turns the problem into an *interpretation of the problem situation* rather than something that can be objectively defined. For every wicked problem there is always more than one possible explanation. The selection of an explanation, Rittel says, depends on the *Weltanschauung* (world view) subscribed to by those involved. The explanation also determines the solution, which means that solutions can never be false or correct; they can be judged good or bad. In the process of argumentation and deliberation people may gain new insights about the issue, expand their perspectives, modify challenged positions and learn more about other people's convictions and attitudes.

3| Design problems are *systems* problems.

Every wicked problem is a symptom of another, 'higher level' problem. They are part of a system. At what level the problem is tackled is a matter of judgement. No solution has a definitive test; if any test is 'successfully' passed it is still possible that the solution will fail in some other respect.

3 Rittel gradually added more properties to his list. For reviews of his work and references to original papers see Buchanan (1992), Bazjanac (1974) and Lang (1987).

4 This idea was also expressed by Herbert Simon, who wrote: 'We pose a problem by giving the state description of the solution.' However, unlike Rittel, Simon assumed that this solution state could be reached by rational analysis: 'The task is to discover a sequence of processes that will produce the goal state from an initial state' (Simon, 1967, 1981: 251)

4| Every design problem is unique.
No solution or strategy leading to a solution can be copied for other problems. Design is fundamentally concerned with the particular. On a general level, ideas or working hypotheses might be formulated, but when working on the particular design subject the uniqueness of every situation requires a new process of argumentation, deliberation and learning about the peculiarities.

The idea of 'problems' that cannot be solved properly, or approaches that do not assume just rational reasoning, were not compatible with the scientific ambitions and conventions of the post-war society. In the 1960s and 1970s Rittel's theory can be seen as a turning point in procedural design theory, which until then was dominated by the idea that analysis could and should be separated from, and precede, synthesis. An implicit assumption behind the early process models was that designers have comprehensive knowledge and think rationally. A basic problem in this approach is that it avoids dealing with the realities of human capabilities or difficult-to-understand variables, such as the symbolic meaning of the environment (Lang, 1987). Rittel clearly recognised these social components and how they affect the design process.

Interpreting the Restructuring case: limited and fixed problem–solution space

The Restructuring case is a good illustration of the inseparability of problem definition and solution and the consequences of an approach in which problem definition and solution become disconnected. The initial main problem focus was on livestock farming, both regarding veterinary and environmental aspects. The general solution, prescribed in the Restructuring Act, was spatial zoning in three zones defined by types of agricultural land use: agricultural development zones (intensive farming), mixed-use zones and extensification zones.

The zoning principle mirrors the primary focus of the statutory powers for relocating agricultural functions. However, in the subsequent negotiations on the execution of the Restructuring Act the goals were gradually broadened from solving the urgent veterinary problems to embrace a collection of rather general ambitions covering all possible issues concerning the 'quality of the countryside'. The zoning principle, the principal solution, was not questioned, though. With this firmly settled, the problem definition was also 'fixed', or at least strongly focused. Despite the broad and general goals of sustainable development, improving the living environment and an integrative approach, the 'problem–solution space' in Restructuring was therefore rather limited. According to various evaluations and assess-

ments, it has proved to be too limited to tackle the broadened aims for improving landscape quality, including social cultural and social economic dimensions.

The accompanying Major Design Project was meant to promote an approach 'beyond sectoral fragmentation', delivering innovative concepts for regional development. This would include a 'problem seeking phase', allowing for an iterative process of research by design and accepting unpredictable outcomes. Within the legally fixed and limited 'problem–solution space' this has proved to be an impracticable task.

The complexity of systems problems and the uniqueness of design problems can also be shown quite well in the Restructuring case. Veterinary problems and local environmental problems are symptoms of another, 'higher level' problem. The choice was made to tackle these problems on a regional scale. However, the regions were limited to the rural areas, whereas livestock farming in the Dutch sandy soil areas is very much a problem of an urbanised spatial system. Furthermore, the zoning principle was prescribed as a *rule*, not as a 'working hypothesis'. The process did not allow reconsideration of decisions made previously; an iterative and reflective approach was not included. The recommendation of the VROM Council, suggesting that an 'indicative planning procedure' should be applied instead of legally binding procedures, is in line with this observation (VROM-raad, 2001: 5).

6.3 Characteristics of the design process

'By common account design is a mystery,' Kevin Lynch and Gary Hack observe. If it is a mystery, they continue, it is the mystery there is in all human thought. Otherwise the account is mistaken. Design is not restricted to genius, but is to be learned by experience. Designs are developed by gaining understanding of situations and possibilities, by constantly reframing the problem, by repeatedly searching for solutions. 'Design is a process of envisioning and weighing possibilities, mindful of past experience' (Lynch and Hack, 1984: 127).

How can the design process be demystified if the answer is that the process depends on 'experience', and if a rule-based method or prescriptive process map cannot be provided? Can procedural design theory be developed if the outcome of empirical research is that no sequence of operations will guarantee a (good) result, and that managing the design process – knowing what to do when – is one of the most important skills a designer must develop (Jones, 1980; Lawson, 2004; Lawson, 2006)? Design activity might be better understood by clarifying:

– the main components, representing a group of skills, that seem to be necessary in every design process;

– patterns in human learning, as an explanation of seeming intuitive (often interpreted as non-rational) design steps (this will be discussed in section 6.4).

The main components in the activity of designing are summarised below. The point of departure is design as reflective practice; the terminology is mainly based on Brian Lawson's comprehensive overview of the design process (Lawson, 2006).

Moving and representing

Generating ideas or design propositions, and making these explicit through drawings, words or schemes, might be the most obvious characteristic of design activity. 'Creative imagination' is an important ability. Design moves are developed in the mind and made visual or audible to enable a 'conversation with the situation', as Schön (1983) has put it. Representation is primarily a tool for learning. By representing a new situation, the consequences of certain choices become clear in an integrative way. Sketching not only supports a cycle of reinterpretation in the designer's thinking process; it also enables reinterpretation by other members in a team. By discussing and interpreting sketches, a group can open up new directions for further enquiry (Lugt, 2001: 49).

The design drawing is usually not an end product in itself and drawing the final plan only takes a small part in the whole process. Drawing accompanies thinking, and is an instrument for reflection as well as inspiration; or as Simon said: 'Designing is a kind of mental window shopping. Purchases do not have to be made to get pleasure from it' (Simon, 1967, 1981: 188).

Designing as a process is focused on solutions. This feature was studied by Lawson in an experiment in the 1970s, which is still well known among design theorists. Two groups of students, final year students of architecture and postgraduate science students, were given a similar problem to solve. Coloured blocks had to be arranged in a certain way, representing a simplified design situation with hidden rules about relationships between colours and blocks. This 'simple design problem' had about 6000 possible answers. The two groups adopted consistently different strategies. The scientists focused their attention on understanding the underlying rules by systematically gathering information about what combinations could be possible. The architects started with the required colour combinations and from there tried to solve the puzzle; if they failed, they tried another block combination. The essential difference was that the scientists were more problem focused, analysing the situation from the rules, the architects were solution focused, starting with building a possible desired result and learning from this outcome in order to try a better solution.

To find out about the origin of these different cognitive styles, the experiment was repeated with school leavers (before going to university) and first year architecture students. Neither group showed any consistent strategy, and both groups were much less good at solving the problem than the more experienced students. The conclusion that can be drawn is that there is no inherent cognitive style in solving such problems, but that training and experience largely guides the way people think and act. In realistic design tasks, the number of solutions is infinite, and 'rules' are largely to be discovered and valued in the design process itself.[5] Other experiments and interviews with designers confirm that designers use this strategy of 'analysis through synthesis', learning about the problem through attempts to create solutions rather than separate study of the problem (Lawson, 2006: 43–46).

Negotiating between problem and solution

Thinking up and representing design moves takes place in a cohesive problem–solution space. Problem and solution are inseparable and can be seen as two aspects of the formulation of the *design situation* rather than separate entities. Often design and planning problems are initially formulated in terms of the solution expected (Lawson, 2006: 202). By discussing solutions one also learns about the problem and vice versa. Creative moves, which add new perspectives on the issue at stake, provide new insights into the problem and the valuation of certain dimensions of the problem. A creative design move functions as a window through which we look at the problem situation from a fresh angle. A problem that has been framed in a certain way can be reframed by considering a new solution. Planning processes that lack such creative impulses and instead keep reasoning in terms of the initial problem definition are very likely to address 'the wrong problem'. Or, as Teisman (2000: 237) puts it: 'Problems are assumed to be intertwined into a complex problem flow, which redefines itself ad infinitum. Solutions then should be designed to address future problems, in contrast to planning processes which aim to solve the problems of the past.'

Moving between interpretations of the problem and possible solutions is not a smooth process. Because we deal with complex, system problems, optimising one aspect will affect other aspects. For example, optimising a plan for livestock development will affect the social arrangements of family farms. As these aspects cannot be valued using a single measure, choices have to be made about priorities, which are not made by determinate judgements, but by normative preferences. These choices are reflective by nature, but other elements in the valuation can be reasoned rationally. Every move has to be evaluated using a combination

5 Compare Rittel's property of the design problem that 'there is no stopping rule for the design process, except for running out of resources'. The design process can be stopped by the (inter)subjective decision that the solution is 'good enough'.

of both normative (subjective) and objective criteria. That is why the metaphor of *negotiation* between problem and solution view is appropriate.

In negotiation there is a willingness to reach an agreement that is acceptable to all parties. In the design process one tries to find a solution that is acceptable for all aspects that have been found to be relevant in the search, and above all that is attractive as a whole. Regarding this feature of the design process it is interesting to turn to the social science literature on negotiation processes in which a distinction is made between *distributive* and *integrative* negotiations. A negotiation process is characterised as 'distributive' when one party's gain is the other party's loss. The 'planning task' is interpreted as splitting the pie, but the pie itself remains the same. Fixed positions and poor communication about underlying values lead to a bargaining process that results in a *reactive compromise.* This might be acceptable, but it is usually not attractive. In terms of a design process, this is what happens if the initial problem definition is not opened up through the creative attacks of unexpected design moves. The negotiation process is 'integrative' when parties are open about their motivations and ambitions and are willing to understand the other participants. A process of social learning can occur in which the problem is reframed and new and useful solutions, beyond the known alternatives, can emerge. The planning task now is not to split the existing pie, but to make a new one, maybe nicer, maybe bigger. In this case one speaks of a *creative compromise* (Pruitt and Carnevale, 1993; Woerkum et al., 1999; Aarts and Maarleveld, 1999).

In a design process the 'negotiation between problem and solution' certainly is an integrative type of negotiation in which new facts and values are integrated and refined. In this mental process one almost forgets about the initial problem definition as it is reformulated through the successive judgements. A good design result, therefore, will not be understood as a (creative) compromise, but as a *creative transformation.*

Identification and articulation of conflicts

'The usual political way of overcoming conflict is compromise, the creative way is transformation' (design theorist Chris Jones, cited in Mitchell, 1993: 46). This quote not only reflects the difference between distributive and integrative negotiation, but also points to another important feature in design issues: the existence of conflicts.

In the problem situation conflicts are often caused by competing wishes or requirements. Design problems often seem paradoxical. The challenge in designing is to find solutions that reconcile the various demands in the form of feasible

and desirable proposals for the future. Conflicts are usually formulated in the 'language' of the initial problem frame. The process of reframing the problem–solution space by reflecting upon a series of alternative design moves helps to get a clear view of the nature of conflicting demands and underlying values. Identification and articulation of conflicts in the design task, offering a shared and reinvented vocabulary, is an important step in the design conversation. At this stage one can explore parallel lines of thought, generating and evaluating alternatives, but suspending judgement. Design activity is similar to research, searching for patterns in the evaluations and formulating leading principles that can guide the next steps.

Empirical design research by Nigel Cross shows that expert designers are very skilful at 'framing and reframing' a problem situation in such a way that fundamental principles or a guiding concept is developed that seems to dissolve or remove the conflict. They show a particular way of smoothly transforming the problem needs into solution possibilities through a resolution of what might otherwise look like a conflict (Cross, 2003; Lawson, 2004). Design situations usually call for approaching a problem in a novel way, being inventive on a fundamental level, exploring the context of the problem, or the 'problem behind the problem' (Dorst, 2003b: 42). To paraphrase Einstein, complex problems cannot be solved within the same context they have emerged. Solving or transcending the paradox in planning and design situations through an explorative design approach is a major skill to be developed. In large-scale landscape architecture this activity can be likened to a main course on the design menu.[6] The outcome of such research-like design processes (research by design) are design concepts that are meant to inspire and guide subsequent interventions.

The concept as a bridge between problem view and solution view

The exploration of the problem–solution space is not a random process. To narrow down the range of possible solutions efficiently, designers develop an early idea of the design task (Lawson calls this the 'primary generator') that functions like a hypothesis in research. This idea is tested in the design situation and guides the search for new information and inspires new design moves. At some point a central concept is formulated that reconciles the main conflicting demands in the design task and carries the promise of attractive solutions. This is a key stage in the design process, certainly in complex (large-scale) design tasks.

A design concept is an abstract representation of reality that acts both as a window to the problem situation as well as a window to solution possibilities. It is an empirical interpretation and understanding of what 'is' as well as a normative idea (conception) of what can 'become'. A design concept functions as a bridge

6 In 2001 I reviewed the work of H+N+S Landscape Architects, being invited to write an article at the occasion of this bureau winning a prestigious design award. As reflected in the title of the article, 'Masters of the Paradox', I found that a constant in their successful work was the search for design concepts that reconciled major conflicts, like reconciling ecological and economic development, or transforming sites of great historical value in a way that fundamentally strengthened these values, while at the same time adapting the site to contemporary demands. See de Jonge (2001).

between the problem view and the solution view and is the outcome of a search process that alternately takes a solution-driven and a problem-driven perspective. This again illustrates the inseparability of problem and solution in design tasks.

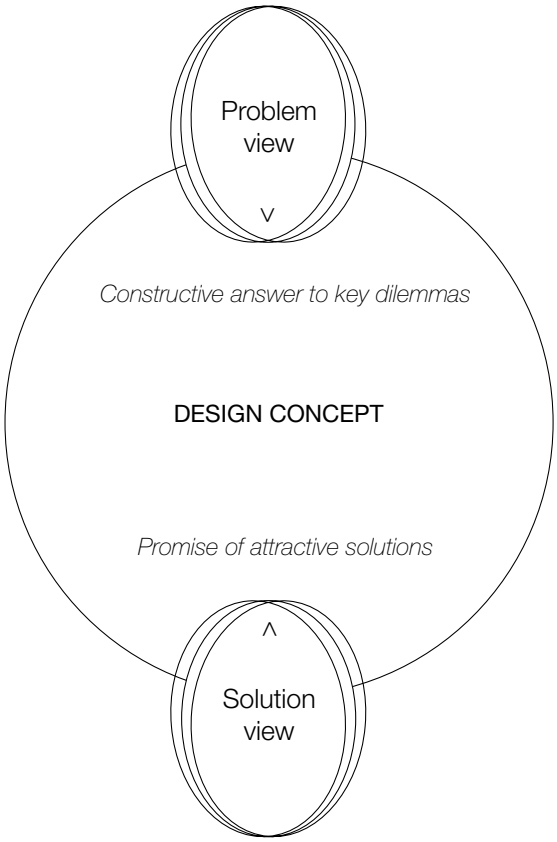


figure 6-1 Design concept as bridge between problem view and solution view

As the concept contains judgements concerning the key design dilemmas, its recognition and acceptance by stakeholders that can take decisive positions in implementation is of great importance (see also Van Aken, 2001).

Design concepts are usually expressed in a combination of verbal and visual language. The language of images, diagrams and maps visualises the relations between the main elements and aspects of a desired future in an abstract way. The difficulty with verbal expressions is that ideas often cannot yet be captured in existing language. Metaphors can then be a helpful instrument. Metaphors are not just cognitive expressions, but also capture context that is difficult to externalise.

'Because so many of the concepts that are important to us are either abstract or not clearly delineated in our experience (the emotions, ideas, time, etc.), we need to get a grasp on them by means of other concepts that we understand in clearer terms' (Lakeoff and Johnson, 1983: 115). Two examples of influential 'verbalised concepts' are the 'Green Heart' of the Dutch 'Randstad'. As Lawson illustrates with some convincing examples, sometimes words are more adequate than graphical images (Lawson, 2006: 272). Verbal description might allow people to interpret shades of meaning that the graphics do not.

Reflection in action, reflection on action

The process of framing and reframing, identifying and articulating conflicts and developing a central concept is the core of large-scale landscape design. But this can only be established through rich empirical knowledge of the problem situation and practical experience with what might work in reality. Design research has shown that primary generators and central concepts are very much inspired by a set of guiding principles that an experienced designer has developed by learning from previous experience, by knowing what has been used before and appeared to be helpful.

The sequence of formulating, moving and evaluating is what Donald Schön in his well known work *The Reflective Practitioner* describes as 'reflection-in-action' (Schön, 1983). It takes place in the interaction of creative imagination and the reflective judgements made upon them. Schön considers uncertainty, complexity and value conflicts or ambiguity as continuous companions of the design process. This leads to a chain of questioning and reasoning in design thinking, characterised by 'what if' questions and 'if this, then that' reasoning. It is a continuous conversation with the problem situation and potential solutions, oscillating between parts and the whole, between decisions made and possibilities to be envisaged. Schön illustrates this 'reflective practice' in a vivid description of the conversation between an architecture student and her professor. Sketching a new possibility, they discuss the consequences of this choice and this reflection leads to a new possibility, thus forming a network of thinking lines. The conversation is guided mainly by tacit knowledge, by experience that is hard to explain in the same way that how to ride a bike or play the violin is difficult to explain.

Another type of reflection seems to be just as relevant for attaining experience: reflection *on* action. This is the type of reflection practitioners perform on a meta-level: what is the development of professional experience; what is necessary to become an 'expert'? It is the ability to recognise situations and patterns, to make use of analogy and metaphor by comparing the actual design issue with previous

practical experience, to know what approach might be useful in the particular situation. Highly relevant research on this issue has been done by Hubert and Stuart Dreyfus, who have developed a model for human learning that explains the linkage between knowledge and the context of human activities, describing how practitioners learn to approach problem situations that are *basically unstructured*. As these are the conditions planners and designers deal with, their theory will be briefly introduced in section 6.4.

Designers' activities in the Restructuring case

In this section the observations about designers' activities in the Restructuring case will be briefly compared with the main themes from recent design research discussed above. In the Restructuring case it was observed that the way designers work essentially differs from the way policy makers and politicians work. The investigation of designers' and policy planners' activities in the Restructuring case has confirmed that they indeed have different styles. The main differences were summarised as follows:

1 | The rational, linear (formal) planning procedure from problem to solution, from goals to means versus the iterative design process, which is in the nature of a learning process involving trial and error. In the planning procedure the problem–solution space was delineated, whereas in the design processes the problem–solution space was explored (and often expanded), investigating various scales to find the best fit in the given situation.

2 | The way in which interaction and communication in the process was approached. Policy planners would limit and control conflicting situations as much as possible in order to reach a consensus through negotiation. In contrast, the designers would not avoid confrontation if this could lead to new insights. To them, provocative proposals were a means of enlarging the 'mental space' for solutions.

From the document analysis made for the case study, the impression arose that designers had difficulty explaining what a design approach involves and what conditions are needed to benefit from it. In the workshops that supported my research on the Restructuring case, designers reflected on their activities. There is a remarkable resemblance between these reflections and the descriptions in the previous paragraph, which represent state-of-the-art design research. The designers in the workshops mentioned their 'iterative, integrative and creative search, developing visions that are visual and imaginative'. This resembles the activities 'moving and representing' and the search for an integrative concept. Their

attempts to identify and articulate the fundamental conflicts in the design task by 'raising awareness and confronting' was not appreciated: the consensus-focused process was not to be endangered by design moves that go beyond the primary planning task of drawing up a zoning plan. In the formal planning procedure the zoning principle was accepted as the central concept. The process did not allow any fundamental reframing of the problem–solution space to develop new concepts. The negotiation process was largely a distributive one, leading to a 'reactive compromise' rather than an integrative one that the designers aspired to, working towards 'creative transformation'.

6.4 Patterns in human learning

Common stereotypes about designers, which also came up in the workshops on the Restructuring case, is that designers do not work rationally but intuitively, and that they tend to ignore or be averse to existing rules. Especially in a bureaucratic environment, this is considered an obstacle to cooperation. In this section I try to explain the background to the seemingly intuitive behaviour of designers (as well as other practitioners dealing with complex problems) and the role of rules in developing professional expertise. For this I turn to the Dreyfus model of human learning, which was an important source and inspiration for both the work on social inquiry supporting planning practice by Flyvbjerg and the design research by Lawson and Dorst on the nature of design problems and how this affects design methodology (Flyvbjerg, 2001; Dorst, 2003a; Lawson, 2004; Dorst, 2005).

The Dreyfus model for human learning

The brothers Hubert and Stuart Dreyfus have long been involved in research on artificial intelligence. Feeling uneasy with the dominant rational approach and, in their view, unreasonable expectations of artificial intelligence based on information processing, they combined their mathematical and philosophical knowledge to develop a model of human learning (Dreyfus and Dreyfus, 1986). In various studies the Dreyfus brothers have mapped out successive levels of expertise that represent the way practitioners approach problem situations that are basically unstructured.[7]

The main argument is that a beginner perceives a problem *as if* it can be solved by applying given rules. In terms of judgement, one looks for determinant judgement to evaluate a solution. Soon the strict application of the rules becomes a barrier for learning and the novice moves forward to the level of an 'advanced begin-

7 Their basic work is *Mind over Machine* (1986). In this they describe five levels of expertise: novice, advanced beginner, competent performer, proficient performer, expert. In later works and lectures this is sometimes expanded with two further levels: master and visionary (see Dorst (2005), quoting lectures given in 2002 by Hubert Dreyfus). As Dorst says, linking the insights of the Dreyfus model to other disciplinary domains is still a work in progress. Nevertheless, the basic idea of successive levels of expertise when dealing with wicked problems is accepted here as point of departure. It explains the inadequateness of purely rule-based or epistemic reasoning in practice and the importance of intuition. It also explains that intuition is a result of building up practical experience.

ner'. In next stages of learning and gaining experience (competent and proficient performer) the practitioner gradually learns how to respond to exceptions, when to ignore the rules, how to go beyond analytical rationality and rely on experiential knowledge. The process takes on a trial and error character and there is a clear need for learning and reflection, which was absent in the beginner. At this stage there is personal involvement and emotional attachment, a feeling of responsibility for good results. This is an important phase in professional development, making a qualitative jump *beyond analytical rationality*. This is necessary to handle uncertainty that comes with unstructured problems. In terms of judgement, solutions are then evaluated in a reflective mode.

Finally, the *expert* responds to a situation intuitively and performs appropriate action seemingly without the need for conscious mental effort. Intuition in this context is the ability to draw directly on one's experience and recognise similarities between these experiences and new situations. These can also be called implicit guiding principles or references and precedents that one has collected in a professional career. As mentioned earlier, these implicit principles inspire and direct the primary generators or design concepts that designers propose in the search for solutions. Proposals might seem accidental, but they are based on the empirical knowledge collected in previous work.

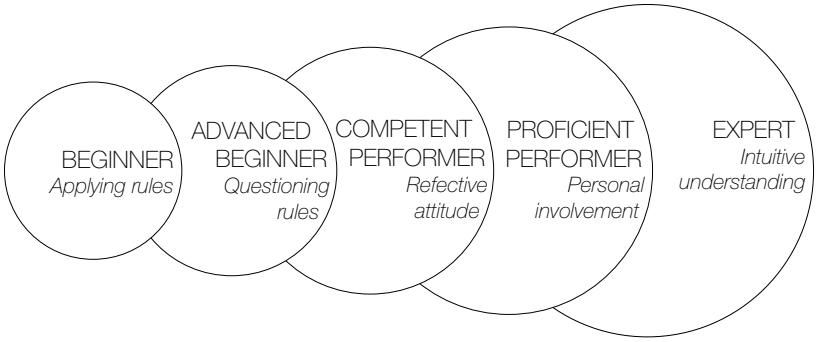


figure 6-2 Levels of expertise in professional practice (after Dreyfus and Dreyfus, 1986; Dorst, 2005)

An expert therefore has skills or *tacit knowledge* that cannot easily be verbalised. It is a kind of intuitive understanding that comes primarily from practical experience; it is *embodied* knowledge. Expert knowledge as defined here is applied in the context of the particular and is therefore related to the concept of *phronesis* as far as human action and deliberation is concerned as well as *techne* as far as producing man-made things or strategic intervention is concerned.

Experiential knowledge as a prerequisite for Reflective Practice

The Dreyfus model may explain why the 'jump beyond analytical rationality' that is part of proficient and expert performance is a necessary ingredient when dealing with human affairs, assuming people are not machines. Following the Dreyfus model, Dorst concludes that the way designers perceive a design problem ('rationally' or 'reflectively') depends on their level of experience. Whereas the rule-following behaviour of beginners *must* be described within a Rational Problem Solving paradigm, the behaviour of more experienced designers can be described using both paradigms (Dorst, 2005). Experts can make a well considered choice on whether to work within the paradigm of Reflective Practice or that of Rational Problem Solving.

Flyvbjerg argues that an alternative concept of social science should be based on context, judgement and practical knowledge. For Flyvbjerg the 'tacit skills argument' of the Dreyfus model even serves as a rigorous argument for the impossibility of (epistemic) social science theory. The core of this argument is that human activity cannot be reduced to a set of rules, and without rules there can be no theory (Flyvbjerg, 2001: 46–47).

It is interesting to see that the Dreyfus model of human learning opens up new perspectives for the domain of social research related to *phronesis* and the domain of design research related to *techne.* Even so, is it noticeable that both Flyvbjerg and Dorst do not conclude that a choice should be made between either rationality or intuition. Rationality and intuition are complementary.

> The model makes clear that what we could call the 'rational fallacy' does not lie in the rationalists' emphasis on analysis and rationality as important phenomena. These are important, also according to the Dreyfus model. Rather, the rational fallacy consists of raising analysis and rationality into the most important mode of operation for human activity, and allowing these to dominate our view of human activity: so much so that other equally important modes of human understanding and behaviour are made invisible. (Flyvbjerg, 2001:23)

Complex situations require transcending the rational perspective and explicitly *integrating* properties that are characteristic of expert performance. Such properties include aspects like reflective judgement, social context, trial and error, bodily sensation and intuition (Flyvbjerg, 2001). The ability to integrate all this is not a mystical gift, but, as Lawson says, skills that are to be enhanced 'through hard work and experience' (Lawson, 2004: 119).

Two design paradigms: two sides of one coin 6.5

The Aristotelian concept of *techne* was discussed in Chapter 2. Based on Dunne's study on *techne* and *phronesis*, it was concluded that the 'official' interpretation of *techne*, that tends to resemble epistemic reasoning, should be accompanied by another interpretation, the *phronetic techne*. Dunne considers this to be a different paradigm, one that deals with uncertainty and with intervening in an unpredictable interplay of forces, and is closely related to the opportune. Whereas the *epistemic techne* assumes relatively stable, structured circumstances and has an instrumental focus, the *phronetic techne* takes complexity and continuous change into account.

In this chapter I have discussed two different paradigms in design theory: the Rational Problem Solving approach and the Reflective Practice approach. Although these 20th century design paradigms do not specifically refer to Aristotle's 'dual' concept of *techne,* there is a remarkable resemblance. It seems that the *epistemic techne* has been the model for the Rational Problem Solving approach and the *phronetic techne* has inspired Schön's Reflective Practice.

Kuhn coined the notion of a 'paradigm' in *The Structure of Scientific Revolutions*, defining it as a 'model from which springs a particular coherent tradition of scientific research' (Kuhn, 1962, 1969, 2003). Although the concept has been criticised and adapted since, the notion of a paradigm as the 'deeply rooted (often implicit) accepted ways of working of a research community' (Dorst, 2003a: 27) has become widely accepted. As paradigms are research models, they are primarily descriptive. Design models can be used to describe, analyse and explain design activities.[8] As Dorst found, the way designers perceive and handle a design problem ('rationally' or 'reflectively') depends on their level of experience (Dorst, 2005). As experts can switch from a reflective to a rational mode and vice versa, depending on the actual situation, these paradigms are not accurate as prescriptive models.

The same conclusion was drawn about the two interpretations of Aristotle's *techne*. Although Dunne has identified them as different 'paradigms', a clear demarcation is not made, neither by Aristotle, nor by Dunne. In practice, the balance between the more strategic (or phronetic) and the instrumental (or epistemic) approach in *techne* depends on the character of the task at hand. Also, Dunne states it is *through experience* that professionals know when to apply general rules or when to bend the rules, when to follow epistemic or phronetic principles. This confirms the importance of practical experience in dealing with wicked problems and the implications of the Dreyfus model for human learning.

8 This is what Dorst has done in his thesis 'Describing Design. A comparison of paradigms' (1997)

A novice necessarily treats a wicked problem 'as if' it is properly structured and can be solved by applying general rules. It appears, however, that an expert can choose to perceive a problem as unstructured and search for a relevant, contextual set of rules and criteria through trial and error, which is in fact analysis through synthesis. Intuition and rationality take turns, although rules and criteria may be applied rather implicitly.

The expression of a central concept often seems to be a kind of turning point in the design process. The concept is the outcome of a search process that alternately takes a solution-driven and a problem-driven perspective and reconciles the main conflicting demands in the design task. It arranges the most relevant aspects in the problem–solution space in such a way that it does justice to the empirical knowledge about the existing situation and the normative choices for the future. Likewise, a concept gives hope and holds promise for attractive solutions. It can be considered the stage in the design process before the dominance of value rationality and a strategic mode of thinking is replaced by the dominance of instrumental rationality and an operational mode of thinking.

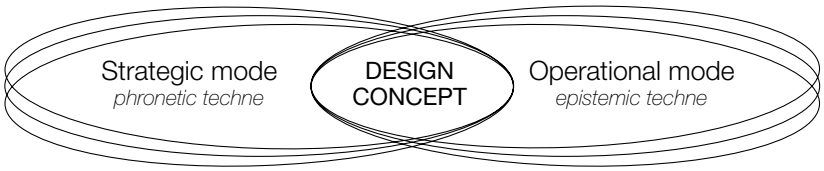


figure 6-3 Design concept as a turning point in design process

The physicist David Bohm makes a distinction between solvable problems (e.g. of a technical nature) and problems that contain (implicit) contradictory assumptions and value conflicts, which he calls paradoxical. Problems of the first kind require rational thinking. A paradox however needs deliberation and dialogue.

> …as long as a paradox is treated as a problem, it can never be dissolved. On the contrary, the 'problem' can do nothing but grow and proliferate in ever-increasing confusion. For it is an essential feature of thought that once the mind accepts a problem, then it is appropriate for the brain to keep on working until it finds a solution. This feature is indeed necessary for proper rational thinking [i.e. for a 'solvable problem' – JMJ]. On the other hand, if the mind treats a paradox as if it were a real problem, then since the paradox has no 'solution', the mind is caught in the paradox for ever.…It is important to see the difference between a problem and a paradox, and to respond to each of these in a way that is appropriate to it.' (Bohm, 1996: 63–64)

If our mind accepts a *design concept* as a reframed interpretation of the (paradoxical) problem situation, the brain is capable of working on the problem in a rational mode. So if there is a point where the balance tips from a *phronetic techne* to an *epistemic techne*, it is probably when we mentally accept a concept.

It can be concluded from this chapter that in theory we can distinguish between two different descriptive paradigms that can be helpful in describing and analysing design processes. For prescriptive practice, however, these two models appear to be two sides of the same coin. What binds them together is the human capacity to learn. The more experienced the practitioner, the more he or she can rely on the internalised, embodied knowledge that is called intuition and that integrates rationality.

In the practice of regional landscape planning and design, we deal with complex social issues. Ambiguity and indeterminacy are a given. The intellectual virtue of *techne*, combining creative imagination and reflective judgement, enables practitioners to handle these wicked problems. It requires a stage of identifying implicit assumptions and possibly conflicting demands and reframing the problem–solution space into an acceptable and promising design concept. Such acceptance is an individual choice. Landscape as public space, however, needs shared choices. This issue is the challenge of the next chapter.

7 Dealing with Wicked Problems in Public Policy

7.1 A theoretical view on structuring policy problems

Rittel's wicked problem approach has not only influenced design theory, but also policy analysis and planning theory. Procedural design theory deals mainly with questions of 'how designers think and what designers do and know'. The three landscape phenomena of matterscape, mindscape and powerscape have been discussed in Chapter 3. The first two, representing the objective and subjective dimension in landscape design, have received considerable attention in the last chapter. Planning theory throws more light on the powerscape dimension of landscape, which is of special relevance for regional landscape planning and design. Powerscape deals with landscape as a public issue, requiring intersubjective judgement, public deliberation and decision making and, in the network society, an eye for matters of distributed power and knowledge. An approach to landscape planning and design as co-design should take powerscape into consideration.

What consequences can Rittel's theory of wicked problems have for the co-design process, both for 'plan making' and 'decision making'? For this purpose I turn to contributions by Hisschemöller and Hoppe dealing with the structuring of policy problems (Hisschemöller and Hoppe, 1995). The basis for their theory originates from Rittel's wicked problem approach, or the recognition that there is a fundamental indeterminacy in most planning and design problems. The basic idea is that problems cannot be objectively defined, but their definition always contains (inter)subjectivity; policy problems are sociopolitical constructs. The same goes for possible solutions as the definition of problem and solution are closely linked. The planning process gradually leads to the structuring of (certain parts of) the problem by learning and negotiating about the value and knowledge dimension of the issue.

Four types of problems and accompanying strategies

Hisschemöller and Hoppe discern four types of problems in the policy process: structured, unstructured and two types of moderately structured problems. These problem types are mapped out in two dimensions. One dimension refers to the certainty, or lack of certainty, concerning the kinds of *knowledge* about the problematic situation and how to convert this situation into a more desirable one. For

this we need knowledge about means. The other dimension refers to the degree of consensus on relevant *values*. The figure below shows the four different types of problem.

Table 7-1 Problem structure and policy strategy (after Hisschemöller and Hoppe, 1995)

Certainty about relevant knowledge	Consensus on relevant norms and values: No	Consensus on relevant norms and values: Yes
No	UNSTRUCTURED PROBLEM *(learning strategy)*	MODERATELY STRUCTURED PROBLEM (consensus on ENDS) *(negotiation strategy)*
Yes	MODERATELY STRUCTURED PROBLEM (certainty about MEANS) *(accommodation strategy)*	STRUCTURED PROBLEM *(rule strategy)*

A problem is called *unstructured* when there is neither consensus on relevant values nor certainty on what kind of knowledge is relevant regarding possible means, but there is still a widespread sense of discomfort with the status quo. This is how wicked problems usually reveal themselves. Hisschemöller and Hoppe observe that government policy makers *prefer to define problems as structured.* Furthermore, they suggest that when there is too much complexity or social conflict about the issue, policy makers will minimise trouble by identifying the situation as moderately structured. Information that will complicate the policy problem is ignored. This screening of information may not even be deliberate, but it can result in the risk of tackling the 'wrong problem'.

Tackling each kind of problem requires a different strategy. In the strategy for *structured* problems, the goals are already strictly defined. The policy process concentrates on obtaining these goals as effectively as possible: the *rule*-strategy that goes with the archetype of technocracy.

The policy strategy linked to the *moderately structured problem (consensus on ends*) is *negotiation*. There is conflict about the means to reach the policy goal most effectively and efficiently. These processes are characterised by the involvement of many actors, mainly established interest groups. The process might appear very open, but this is misleading as the parties to the negotiation are bound by consensus about the policy goals, which prescribes what topics and interests

are at stake. Since the goals are defined in this situation, negotiation is more likely to be distributive rather than integrative. The negotiation process is not geared to reframing the problem situation and developing creative and transformative solutions. Therefore, this (distributive) negotiation strategy tends to result in policies that differ only incrementally from the original situation.

In the *moderately structured problems (certainty about means)* the dispute is about discordant values. Negotiation turns out to be an inadequate strategy since values are hardly negotiable. The conflict is mitigated by incorporating the values most relevant to the conflicting parties in a compromise position. The policy strategy linked to this problem type is *accommodation*.[1] Accommodation does not resolve the conflict, but freezes it. Parties agree on a compromise that reflects the status quo.

As has been said before, policy makers tend to avoid interpreting problems as unstructured. The consequence of this escape from reality is that the status quo will by and large be maintained, or only gradually changed. What can also happen is that by oversimplifying an unstructured problem, policy controversies may become intractable because elements of the problem situation relevant to other actors are overlooked or denied.[2]

The learning strategy

For coping with controversies that come with *unstructured problems*, Hisschemöller and Hoppe mention the *learning strategy*, which is as unstructured as the problem itself. The strategy concentrates on 'problem structuring and reasoned problem choice'. Public participation in the learning strategy is not primarily motivated by calculations of self-interest, as in negotiation. Rather, participants present information on the issue at stake and become aware of the multiple aspects of the problem. Socially rational interaction enables participants to *reframe* their conception of the problem situation, bringing new visions and opportunities for solving the problem within reach.

The conditions required for this kind of problem structuring to be successful are that segments of the official policy elite are willing to interact with those who have *alternative* views of the problem. Actors with the authority and the power to take decisions should participate. It is also important that the process addresses concrete cases and 'real-life' experiences of those involved. This is not a matter of course, because the favourite mechanism for obscuring contradictory views is to define or redefine the issue in the abstract and, if possible in technical rather than political terms.

1 In a later paper in Dutch by the same authors this is referred to as 'pacification', because accommodation takes the form of pacifying political conflicts (Hisschemöller and Hoppe, 1998)

2 The assumption that unstructured problems are often simplified is shared by Vanstiphout , who says that the context of spatial policy is characterised by an intimidating complexity and uncertainty. Nevertheless, the classic planning departments are not equipped to deal with such issues. They operate within limited dimensions and targets that do not represent the 'real world' and base their policy on linear trend extrapolations, which do not

According to this theory, successful application of *learning* as a policy strategy requires that no decision should be taken before problem structuring has produced *new insights* into the problem and its potential solutions. Problem structuring does not necessarily lead to consensus, but lays a foundation for a reasoned choice of a (new) problem frame. The learning process comes about by generating alternatives and using the information gathered to choose from them. There will be a moment when almost all actors involved have come to reframe their original position and the interaction process will have produced some really new ideas. By making a *decision* (literally 'cut off", from the Latin *decidere*) in the form of a 'reasoned problem choice', parts of the problem issue are separated from the remaining wicked problem situation. These parts can be treated as structured or moderately structured.

Problem structuring and policy strategy in the Restructuring case

The challenges of regional planning and design in the sandy soil areas in all respects resemble the characteristics of wicked, unstructured problems. However, due to the urgency of veterinary and environmental (nitrate) problems, government has approached the Restructuring problem *as if it where a moderately structured problem*. As prescribed in the Restructuring Act (section 7a), the participants in the restructuring committees were representatives of established interest groups and different segments of government. By taking part in the committees they had restricted themselves to the narrowed 'problem–solution space' as defined by the Restructuring Act, particularly regarding the zoning principle as a central solution concept. The dominant policy strategies were accommodation and negotiation processes to determine the size and allocation of various land use sectors, such as agriculture, nature conservation, forestry, water management and the accompanying budgets for project implementation. In line with Hisschemöller and Hoppe's descriptive model, the negotiated results are mainly 'reactive compromises' that only incrementally differ from the starting position in current policy documents. In general, the process was not suited to creative transformations.

Regarding the formal policy process, the case study confirms the observation by Hoppe and Hisschemöller that government tends to avoid interpreting problems as unstructured. However, unlike the Restructuring Act, the Major Design Project approached the problem essentially as unstructured. The 'Designing the Netherlands' architecture policy document mentioned *exploration of the problem* through 'research by design' as the appropriate method to bring coherence and combat fragmented policies. Designers in the Restructuring process embarked on an iterative journey of reformulating problems and proposing new solutions in

resemble reality either. His message is that the cultural domain (including architecture) is much better equipped to deal with complexity because it welcomes controversy instead of avoiding it (Vanstiphout, 2000: 23)

order to find 'the right level of integration' and bring coherence to the landscape system. They could not accept the 'problem as given' and the related zoning principle as a general solution.[3] It was precisely this attitude that often caused irritation among non-designers, as was noticed in the case study.

The ambiguous instructions contained in different national policy documents caused considerable tension in the collaboration between designers and non-designers. The dominance of the formal planning procedures and the limited problem–solution space has certainly curtailed the transformative potential of the input from the Major Design Project. As was mentioned in section 5.4, the VROM Council therefore recommended that an 'indicative planning procedure' should be applied to optimise the relation between research, public debate, policy making and design, and to profit from the innovative power of regional design (VROM-raad, 2001: 5).

Despite such 'early warnings' the Restructuring process remained on the originally intended track. The rather negative valuation of the results of the planning process by many people involved indicates that the Restructuring process risks becoming a planning disaster in the long run because it has addressed 'the wrong problem'. The calls for necessary fundamental changes in policy for intensive livestock farming have recently become more urgent. According to Hisschemöller and Hoppe this requires a planning process that is organised as a (social) learning process,[4] otherwise problems might escalate to a point at which they can no longer be resolved.

Both during the planning process and after the plans were adopted many criticised the abstract character of the whole process. Discussions were dominated by technical issues and abstract concepts rather than involving real-life experience and concrete situations. Paper seemed more important than people. In this respect the Restructuring case also confirms Hisschemöller and Hoppe's observations that the favourite mechanism in policy planning is to define or redefine the issue in the abstract and, if possible, in technical rather than political terms.

The outcomes of the Restructuring process show a considerable gap between the generic spatial schemes and reality. The responsible politicians are eager to progress to the phase of implementation of the policy plans, but planning practitioners are worried about the chances of successful performance. A stronger role for designers is proposed in the 'implementation phase' of the Restructuring process. If the project briefs allow designers to explore, and if necessary stretch, the boundaries of the negotiated strategic framework, it can open up new opportunities. This is inherent in the characteristic of planning and design problems as systems problems. When the approach on a certain level (e.g. the regional level) is

3 Regarding this aspect, an interesting property of wicked problems is Rittel's last property: 'The wicked problem solver has no right to be wrong – they are fully responsible for their actions'

4 Boonstra (2004) concludes that a learning strategy is of major importance in the domain of Dutch rural policy planning; however, the actual institutional organisation is not well equipped to do so (p. 269).

not satisfactory, a planner/designer can choose a level that offers better opportunities, which may open up new prospects for local projects, as long as designers are not again confronted with rigid regulations. However, issues which need to be tackled on at least a regional scale, like the relationship between urbanisation and agricultural development or a sustainable water system, are beyond reach for the time being. It is not unthinkable, however, that the cumulative experience with implementation projects will raise new questions and solutions for regional development.[5]

Collaborative approaches in planning and design 7.2

The literature on collaborative approaches[6] to planning is abundant (see e.g. Healey, 1997; Teisman, 1997; Bruijn et al., 1998; Forester, 1999; Leeuwis, 1999; Innes and Booher, 2000; Leeuwis, 2000; Salet and Faludi, 2000; Teisman, 2000; Teisman, 2001; Groot, 2002; Leeuwis and Pyburn, 2002; Innes, 2004; Friend and Hickling, 2005). This section outlines a general division into categories that show correspondence with the 'problem type categories' as defined by Hisschemöller and Hoppe and the accompanying strategies.

Motives for a collaborative approach

The effects of different approaches related to planning intentions have been discussed in the recent planning literature. In general, three main motives have been brought forward to underpin a collaborative approach (Leeuwis, 2000; Edelenbos, 2001; Caalders, 2002; Groot, 2002; Enserink and Monnikhof, 2003).

The first motive deals with the legitimacy of (public) planning, enhancing the involvement of specific groups in democracy as a system. It is based on (normative) democratic principles and emancipation. The aim is to involve groups that usually have little influence in policy making (e.g. 'the man in the street', or more specifically, young or disabled people).

The second motive has to do with policy efficiency and effectiveness, defined as conformance to goals that were set in advance. This is still the most common motive (Edelenbos, 2001). Many politicians, policy makers and their consultants turn to participative methods in the hope of accelerating plan adoption and implementation. The idea is that by involving key parties early in the planning process, support for possibly controversial policy proposals will grow. Unlike the first motive, groups that already have an established position in the arenas of policy deliberation will be asked to participate. The parties that are invited to the plan-

5 An interesting example here is the outcome of a regional design competition for one of the Restructuring regions: the Beerze Reusel area. The winning entry of the 7th Eo Wijers contest in 2007, *De Beerze op Waterbasis* by Grontmij, indeed did not exactly comply with the negotiated restructuring plan. In spite of this, the regional jury (including politicians) decided to select this plan for implementation.

6 Also called interactive, participatory, communicative, transdisciplinary or cooperative approaches. Various schools have their own terminology to indicate that it is 'not just a top-down, single actor approach' but multiactor and multilayered.

ning process – the usual policy elite and representatives of the established interest groups – tend to adopt an adversarial approach and simply defend their own interests. Typical of this type of interaction is a reactive approach in which problem definition and possible solutions are framed beforehand. In the end, the result in most cases is a plan that does not transcend sectoral compromises.

The third motive for a collaborative approach is to improve the quality and novelty of proposals. Improvement and enrichment of the content of plans is essential. In pursuit of this aim, participants are invited because of the diversity of knowledge, visions and values that they can offer and not for the interests that they represent. 'Knowledge' is interpreted in a broad sense: not just disciplinary knowledge and competences but also experiential knowledge, including social knowledge.[7] Participants develop a vision on both the problem situation and the agenda of the process, as well as new perspectives and proposals.

Caalders (2002) has summarised the various characteristics as follows:

Table 7-2 Three models for interactive development (after Caalders, 2002)

Main motive	Legitimacy	Efficiency, effectiveness	Quality, innovation
Issue at stake	Emancipation, democracy	Public support	Improvement in content
Criteria for participation	Who has a right? Who should decide?	Who has power or influence?	Who has knowledge or skills?
Actors generally involved	Marginal groups	Established interest groups	Carriers of (diverse) knowledge

Actual planning and design practice

The three different models are presented here as separate models, but we can also consider them as three successive 'generations' of collaborative practice. Every new generation is a reaction to the previous one, but incorporates earlier experiences and underlying values. The first model was a reaction against the technocratic, hierarchical planning practice that was dominated by professionals. When in the 1970s public participation was legally enshrined as a right in most planning procedures in the Netherlands, attention shifted to the efficiency of this process. To prevent situations in which large numbers of individual citizens react to plans, the main stakeholders were involved earlier in the process so that they were more or less committed to the outcomes. As Edelenbos (2001) has observed, this 'second generation' model is still dominant in planning practice.[8] However, obtaining public support is a rather classic motive that is no longer sufficient. Not only has the distinctness of social groups organised around shared interests decreased,

7 When radical changes are considered necessary, it is useful not to restrict the participants to local (regional) stakeholders. To quote Hillebrand et al. (2003): 'In order to achieve visions that are sufficiently creative and innovative it is important that, in addition to people who are active in the local region, people from outside, having formal, scientific knowledge are involved as well….A transition arena involves many actors: companies, knowledge institutes, government bodies, citizens and intermediaries. They are the actors who will jointly go looking for transitions in an interactive and cyclic learning process.'

people also expect to see substantive results from their contributions in the plan itself and on the ground when the plan is implemented.

The inadequacy of the 'public support' approach becomes apparent in just those aspects that it aims to improve: efficiency and effectiveness. The process often gets stuck in competitive interest bargaining, leading to compromises that lack innovative quality. The attitude is defensive and reactive and the process usually does not support 'creative transformation'. For those planners, and certainly designers, who have a critical attitude towards a collaborative approach, this empirical fact is often used as an argument in favour of an elitist planning style. They fear that a collaborative approach will not lead to necessary fundamental innovations (see also Leeuwis, 1999). Efforts to establish consensus regardless of substantive quality may indeed result in agreements that reflect the lowest common denominator (Hillier, 2003). However, the relevant question here is not whether or not a collaborative approach will foster innovation; the network society simply demands a multiactor and multilevel approach. The relevant question is *how* we can shape conditions in collaborative planning and design that will bring forth good quality solutions for future generations.

The third model does indeed focus on such good quality solutions. It might be considered a 'third generation of collaborative practice', containing the basic ingredients for the stage after the dominant support- and consensus-focused approach. This does not mean that the aims behind the other models no longer apply. The next generation will focus on substantive quality and innovation, without abandoning the goals of legitimacy, effectiveness and efficiency. Support will be gained through substantive and not just procedural involvement. Regarding this, Enserink and Monnikhof (2003) state that enhancing the quality of policy proposals through participation seems to be instrumental as well as critical for achieving the other two goals: legitimacy and efficiency/effectiveness.

Collaborative approaches in the Restructuring case

Regarding the collaborative approach, the Restructuring process in general can be classified as a 'second generation approach', focusing on efficiency and public support. This is revealed by a number of features of the process. The Restructuring Act prescribed which stakeholders should be represented in the restructuring committees, most of them representatives of established interest groups. The focus of the policy process was on conflict reduction rather than on improving the policy plans by exploring alternative visions. Policy makers stated that they feared that explorative and confronting visions of designers could negatively influence the consensus-oriented negotiations. To prevent deliberations about values, dis-

8 In 2003 I executed a quick scan on collaborative approaches as presented in ten project proposals for regional planning and design in the Netherlands. It showed that in most cases the way in which interaction was to be organised seemed not to have been well thought out. Even when innovative quality was an explicit goal, the proposed list of participants was often restricted to the 'usual suspects', namely the main stakeholder groups. In five out of ten proposals the communication process with the 'planning environment' was organised separately from the substantive planning or design process, which was the domain of professionals. This indicates an emphasis on a transfer of information rather than a dialogue that might enable reframing of the

cussions were often restricted to technical issues. The tight time schedule required an efficient negotiating strategy within the given problem–solution space. It was admitted afterwards that a 'bottom-up approach' was not a realistic option. The Major Design Project was not really geared towards a collaborative approach either.[9] It followed its own separate track and stayed mainly within the professional realm of landscape architects and, occasionally, related disciplines.

Clearly, the ideas of the 'third generation' of collaborative planning have not taken root in either the formal Restructuring planning process or in the additional Major Design Project.

7.3 Connecting design and planning theory

Hisschemöller and Hoppe state that planning practice shows a strong preference for interpreting a planning problem as structured or moderately structured. Parties who can approve of the defined problem–solution space are invited to take part in the process. The process aims at consensus, either by negotiating over means or accommodating conflicting claims. The results are mainly compromises that reflect existing patterns. This approach is characterised by Caalders as the 'public support' model. Edelenbos has pointed out that this model is still dominant in practice, although it is no longer satisfactory.

The third model in Caalders' overview seems to fit the 'learning strategy' proposed by Hisschemöller and Hoppe. Participants with alternative views are not excluded, but are considered necessary to make an input to new perspectives on both problems and solutions. The principle aim is not to reach a consensus, but to redefine the problem–solution space. To do so it is important to reflect on concrete cases and personal experiences instead of negotiating over abstract concepts. The emergence of new insights into the 'problem-solution space' is a condition for taking decisions. Specific elements from the problem situation are thus 'cut off' (*decidere)*. These agreed problem choices form a new policy agenda.

Likewise, the learning strategy in policy planning fits the metaphor for the design process as a 'negotiation between problem view and solution view'. Participation by people with alternative views can generate and support articulation of conflicting demands and values.

What design theory adds to Hisschemöller and Hoppe's learning strategy is the explicit attention to the creative process of developing and reflecting upon design solutions as a learning tool. Using images as an instrument for communication supports a conversation that addresses concrete situations rather than

issues and the emergence of new insights. This quick scan confirmed Edelenbos's conclusion that the 'second generation' of collaborative planning has not yet been overtaken by a new generation (de Jonge, 2004a).

9 There were some exceptions, for example the collaboration with the six districts in the province of Limburg

producing abstract policy language. Designers can communicate confrontational solutions to support conflict articulation as well as develop concepts that can reconcile them. Whereas Hisschemöller and Hoppe speak about a 'reasoned problem choice', this will not occur in isolation from the development of new ideas about possible solutions. Ideas about solutions not only support and inspire, but also mirror the way participants reframe the problem situation. The new problem and solution view are captured in the emergence of a central concept. Therefore, in co-design practice it seems better to have choices made on a central concept than on a 'problem definition'. This is an essential addition to planning approaches that stem from a social science background, like Strategic Choice Approach.

Regarding the decision-making process, it is important to recall Rittel's property of planning/design problems as *systems* problems that are concerned with the *particular*. The level at which problems should be tackled is a matter of judgement. Working hypotheses (concepts) might be formulated on a general level, but the uniqueness of every situation requires new processes of argumentation, deliberation and learning. This requires a kind of 'tentative decision making' (e.g. *indicative* plan documents) on concepts, which permits reasoned revisions or exceptions resulting from true reflective practice. After all, a concept bears the *promise* of attractive solutions, but not a *guarantee.*

In section 6.5 I discussed the importance of a concept as a bridge between a reflective and a rational mode, or in Aristotle's terminology a *phronetic techne* and an *epistemic techne*. In co-design the formulation, and certainly the acceptance, of such a concept or leading principle is a collective process (Faludi, 1996). If certain participants accept a central concept as a reframed interpretation of the problem situation, they can continue working on the problem in a more rational mode. *Phronetic techne* works in an uncertain environment, in which the art of grasping opportunities (*kairos)* should be understood. This requires *phronesis*, or wise practical judgement acquired through experience. If the promises in a central concept are recognised by 'powerful' participants (in terms of political influence, public support, knowledge, money, etc.), processes can move stepwise towards an instrumental mode, containing decisions on feasible plans.

Starting from a 'learning perspective', therefore, does not mean that other strategies like negotiation, accommodation or even 'ruling' have become irrelevant. As issues become more specific and defined, more concrete interests will be at stake. When working up a concept into operational plans, attention must be given to gaining broader public support and taking existing interests seriously. Even if a plan delivers overall benefits for society, there will always be parties or individuals who lose out. This has to be dealt with carefully.

Towards prescription?

Integrating the insights about wicked problems from planning and design theory into the contours of an integrative model for 'Reflective Co-design Practice', we obtain a process with the following main features:

- The process actively seeks to obtain qualitatively good solutions instead of compromises that reflect existing patterns.
- Participants must have a reflective, learning attitude and represent a wide range of expertise, knowledge and interests.
- Conflict is used constructively as a source of creative transformation.
- Reflecting on real-life situations and concrete cases is crucial.
- The problem-solution space is explored alternately from a solution perspective and a problem perspective, gradually integrating new facts (*epistemic dimension)* and values (*phronetic dimension)*. The core design activity is using 'creative imagination and reflective judgement' to move towards a central concept.
- Concepts aim to reconcile what are considered to be the key dilemmas and bear the promise of feasible solutions; they represent a reasoned and selective choice of issues and scale within the landscape system.
- 'Tentative decision making' on concepts, on the basis of wise practical judgement, or *phronesis*, allows for reasoned revisions or exceptions in subsequent stages of refinement. A distinction is made between a conceptual or strategic mode, in which *phronetic techne* is dominant, and an instrumental or operational mode, in which *epistemic techne* dominates.

If this summary can be considered to be the outline of a model for 'Reflective Co-design Practice', it is primarily a descriptive model. A prescriptive model for reflective practice is a contradiction in terms. It is possible to reflect on planning processes and discover theoretically different types and strategies, as Hisschemöller and Hoppe have done, but it is impossible to prescribe the route or the successive steps of a process, for example an iterative process for moving from a learning strategy towards a rule strategy. It is rather like the score of a football match, which can be discussed and explained in retrospect, but cannot be predicted, let alone prescribed.

> The challenges of deliberation in the design professions are, most simply, the challenges of learning what to do. That, not so simply, means learning about what we should want in a specific case as well as learning about how to get it, learning about appropriate ends as well as effective means. Such learning then embraces not only facts and functions, data and capacities, but what is important or valuable in a case, what is to be honoured or protected, encouraged or developed. (Forester, 1999: 61).

The Dreyfus model for human learning points out that in dealing with complexity, gaining experience is the only way to succeed, as in football. Descriptive models can be helpful in preparing, analysing and reflecting upon actual planning and design situations. They reveal certain conditions that generally should be met and can support the learning process. In the Restructuring case the use of such models could have prevented at least some frustration among designers and planners.

One implication of the impossibility of prescribing the course of a design process by rules is that facilitating co-design requires practical knowledge of planning and design[10]. Generic process managers who rely on procedural rules lack the substantive involvement and proficiency to judge when the time is ripe for making a next move, and in what direction. This complaint could be heard in the Restructuring case.

10 See also Duchhart (2007)

PART III Dialogue on Landscape

8 Landscape Planning as Design Dialogue

8.1 Introduction

In large-scale landscape architecture the conceptual or strategic mode of *phronetic techne* will usually dominate over the instrumental or operational mode of *epistemic techne*. A value-rational search into key dilemmas, through a research-like design process, and the formulation of central concepts that can resolve conflicting demands are considered to be key activities in design-driven planning. Mainstream planning and design practice, however, is very much preoccupied with efficiency and instrumental rationality. Regarding this feature of modern society, Flyvbjerg cites Richard Livingstone: 'if you want a description of our age, here is one: the civilisation of means without ends' (Flyvbjerg, 2001: 53). In the domain of landscape architecture this instrumental focus encounters serious problems. Cultural landscapes are not constructed all at once by one central actor, but are continuously transformed as the result of many simultaneous human interventions interacting with each other and with the physical landscape. A 'landscape approach' to landscape architecture should therefore be different from an architectural approach. It requires 'an approach leading to a grown, cultivated, and open-ended form in contrast to the constructed, structured, and manufactured form of an architectural approach' (Koh and Beck, in prep.).

By putting *phronetic techne* at the forefront, we need to search for a mode of conversation that allows participants to creatively explore the problem–solution space and integrate elements of *phronesis* and *episteme*. We need a mode of conversation that supports learning above ruling, creative transformation above reactive compromise, personal involvement above administrative bureaucracy, and strategically seizing opportunities above instrumentally executing blue prints. For such conversation the principles of dialogue seem especially valid.

8.2 Dialogos

Dialogue is not 'just a conversation'. In everyday usage the term is mostly applied in situations where people or parties have conflicting interests and are nevertheless in need of mutual cooperation. In the context of this thesis it is used as a

metaphor for the ongoing process of human interaction concerning the development and management of the landscape as a public domain. I will formulate my explanation of the concept of dialogue using contemporary interpretations of the Greek liberal art of dialectics.[1]

Dialectics is the art of performing a dialogue. Dialogue, from the Greek *dialogos,* could be literally translated 'through words'. It is *through words*, thus making explicit, what we want to share (Bohm, 1996). But *logos* has a richer connotation than just 'words'. The first meaning is indeed word, reason or explanation. This comes closest to the common interpretation of 'logic', which is often considered objective and analytical. It is the logic of *episteme*. The second meaning, however, is more comprehensive: *logos* can also mean a vision, an inclusive story, a normative concept or idea that is based on a complex of considerations and reflections. This brings in an element of personal involvement. Yet one step further is the third meaning of logos: the set of tacit principles that underlie visions, like the norms or standards that mostly remain unspoken but always seem to be present. Dialectics requires skills in searching for all three meanings of the *logos* (Kessels et al., 2002). These last two meanings correspond with *phronesis.*

In dialogue listening is just as important as speaking. One should try to hear, without distortion, what others have to say; *dialegein* originally meant 'to welcome the difference' (Dunne, 1993). Listening, and understanding the 'webs of significance' people weave to give meaning to the landscapes they live in, is of great importance in landscape design. J.D. Hunt, professor of the History and Theory of Landscape, says that 'in as vital an activity as landscape architecture which is the art of making places where people will live, landscape architects cannot ignore a whole range of experiences, perspectives, knowledge and discourses about which they will have at best only a fragmented awareness and for which they must rely upon a wider radar'. This wider radar, according to Hunt, means that landscape architects must widen the scope of their interests beyond the immediate professional craft, especially when it comes to interpretative analysis in search of meanings, or what he refers to as 'webs of significance' (Hunt, 2004).

The third meaning of *logos* reveals the tacit dimension in communication. Tacit means that which is unspoken, which cannot be easily described. Thought, meaning, intuition, performance of skills (like designing or making music) is basically tacit. Bohm attributes great importance to the tacit dimension of communication when it comes to change processes: thought emerges from the tacit ground and any fundamental change in thought will come from the tacit ground (Bohm, 1996). Bohm represents a dialogue as a stream of meaning, flowing among and through people in a group. It enables a flow of meaning in the whole group, out of which

1 The main sources are the physicist David Bohm, who started dialogue groups in the 1970s in the USA, and his student William Isaacs, who later worked on the MIT Dialogue Project together with Peter Senge. On a more personal front I am inspired by the 'practical philosophers' Jos Kessels and Eric Boers, founders of *Het Nieuwe Trivium* (the New Trivium), who spread the contemporary significance of the three Greek liberal arts (the *Trivium*: dialectic, grammar and rhetoric) in courses and writings (Kessels et al., 2002).

comes some new understanding. Isaacs labels dialogue as 'the art of thinking together' (Isaacs, 1999). Both representations take the tacit dimension of communication as a point of departure for meaningful conversation. This is also referred to as 'participatory thought', as opposed to 'literal thought'. Literal thought is a reflection of reality as it is; it intends to be unambiguous and objective, as in epistemic reasoning. Western society has given supreme value to literal thought, especially in science. Language, however, is essentially connotative rather than denotative. Language is context dependent; it can mean different things at different times and meaning arises in the course of conversation. This is becoming increasingly recognised, also within academic groups (Fell and Russell, 2000).

8.3 Characteristics of design dialogue

Design dialogue as a multilingual conversation

Given the significance of the tacit dimension in dialogue, modes of communication are not restricted to rational, verbal language. Using images, metaphor, stories and sharing concrete experience can be of major importance in sharing tacit layers of thought. The designer's toolbox seems to be well equipped for this task.

An obvious characteristic of design activity is that thoughts are articulated and clarified by drawings and sketches. Design moves are the visual representations of the complex mental process of creative imagination and reflective judgement. When the work of designers is discussed the synthetic images that designers produce usually attract the most attention. The use of graphical language is also what distinguishes designers from many other professions.

Graphical language is not the only medium used in designing.[2] In the process of designing, drawings are used as a conversation tool, reflecting the transformation between what is then regarded as the problem situation and possible solutions. If only the successive drawings (design moves) were looked at, it would seem as if designers make leaps from one idea to another. However, as Cross shows by also recording the *talking* in design groups, the conjuncture between drawing and talking appears to be very important (Cross, 1996). Verbal metaphors or analogies, evocative words that give direction and yet are not too prescriptive, are valuable companions or sometimes even substitutes for graphics. The strength of graphical images can also be a weakness if an image is too pronounced. Sometimes verbal language is more appropriate, giving more freedom to participants to interpret and add their own connotations to a verbal motto (Lawson, 2006: 272). In the explorative stage of a co-design process it appears that verbal idea generation

2 A relevant anecdote on this subject by the architect and engineer Santiago Calatrava concerns the great painter Raphael. If Raphael had lost both his arms, Calatrava says, he might not have been able to paint, but he could still have been a great architect. 'The working instrument of the architect is not the hand, but the order, or transmitting a vision of something' (in Lawson, 2006: 256).

delivers a larger and more varied number of ideas, whereas graphical techniques are especially suitable when a more refined collection of novel ideas are desired (Lugt, 2001).

Words and sketches connect the languages of *phronesis* and *techne*. Narratives, as 'stories of the particular', are very common in design conversations. Some researchers from a linguistic background even conclude that the base mode of design conversation is narrative (Medway and Andrews, 1992), probably because communicating matters of practical wisdom can hardly be done in analytical terms. Narrative is the form of thinking people use to make sense of their world and can therefore capture *phronesis* (Flyvbjerg, 2001; Halverson, 2004). Narrative reasoning is like presenting an integrative, contextual image in words. What narrative is for *praxis*, drawing is for *poiesis*.

Both drawing and talking make the design process work. By studying both it becomes clear that the design process has the character of an argumentative and learning process. It is not a sequence of creative leaps as the drawings might suggest. Talking enables transitions between ideas, which makes designing a process of bridging rather than jumping. Combining words and pictures offer a very powerful 'language of design' (Lawson, 2004).

Yet another language is important in the design conversation: the objective language of *episteme*. Design moves will be tested against the facts and figures that stem from research. Analytical data and empirical facts are confronted by a synthetic whole. The problem here is that any design has many variables that cannot be measured on the same scale.[3] Optimising one aspect, e.g. accessibility, can be negative for another aspect, like biodiversity. Where scientists often expect a determinative judgement on a single aspect, in design practice a reflective judgement will be necessary to evaluate the whole. Optimising models, or 'decision support systems', are developed to try to place different criteria on a common scale. Although this might seem objective, the actual value judgement is now hidden in the expert model. As these models are generally not open to interdisciplinary or public deliberation, they are often experienced as limiting public deliberation instead of supporting it. However, in complex planning tasks expert data and models are essential in the integrative design process to inform about various relative effects. The overall judgement, though, will remain a reflective one, evaluating the whole in the context of the particular situation (see also de Haas, 1998; de Haas, 2006).

To recap, in design dialogue at least three 'languages' are spoken: an imaginative, graphical language, a verbal language and a language of facts and figures. Each one has its own rationality and all three feed creative imagination and reflec-

3 See also section 6.2. Design problems are typically systems problems; optimising one part of the system will affect other parts

tive judgement. The language of design is not just graphical, but rather a multilingual conversation in which drawings are the integrative medium representing the progress of thought. In co-design this represents the progress of collective thought.

Conflict articulation and resolution in the problem–solution space

Dialogue is about asking questions, listening, suspending judgement and participative thinking. However, dialogue is more than a polite conversation. Dealing with values in the domain of *phronesis* introduces power and conflict as usual companions in the design process. The search for and articulation of fundamental conflicts in the problem situation is an essential step to track down guiding principles that resolve the conflicting values and objectives that are hidden in the problem.

Articulation of conflict often brings in an element of rhetoric into the design dialogue. The intended effect of rhetoric is to persuade or convince others of certain ideas or choices. A debate or discussion is the kind of conversation that goes with rhetoric. In discussion (from Latin: to break things up) analytical skills are important. Issues are broken down into different parts and data are gathered to get answers for well defined (often partial) problems. A debate involves airing different points of view, underpinned by arguments. A skilful discussion or debate can help to clarify essential conflicts in the problem as perceived by the participants. Allowing friction and conflicts into conversations will often be a necessary part of design dialogue to actually experience different opinions (Isaacs, 1999; Kessels et al., 2002). Graphical design language can support this experience by showing the consequences of a certain view.

A debating mode tends to force people into either/or thinking, as preparation for taking a decision. The decomposition of problems often leads to partial decisions about issues that are already known and effectively discussed. If a design process focuses too much on an early consensus or the fundamental conflicts are actually denied, for example by limiting the planning task to only a part of the problem, it is unlikely that a new and useful perspective will emerge (see the Restructuring case).

A crucial aspect of design dialogue is suspending final judgements and reconsidering the problem in a larger context, exploring underlying assumptions and opening up new options instead of going for closure. As has been noted in Chapter 6, expert designers seem to be very skilful at ‘framing and reframing’ a problem situation to develop concepts that can resolve the conflict. This implies that conflicts should not only be ‘tolerated’ in the dialogue, but that they must be actively traced and articulated. The generation of alternative sketches, optimis-

ing certain aspects or elaborating different concepts, can support the process of reflective judgement as well as the development of new insights into the issue at stake. In this process it should be clear to all participants that sketches are tools for joint learning and not representations of preferred solutions.

In design dialogue the problem–solution space is first expanded, including all relevant notions that participants bring into the conversation. At a certain point, a process of narrowing and focusing will take place. By iteratively generating concepts and systematically evaluating them, new insights can be obtained into possible solutions as well as 'practical values', including both implicit and explicit knowledge. Quoting an architect planner, Forester also stresses the iterative and explorative character of design dialogue without recipes or technical fixes; it is a slow process: 'This is not a hocus-pocus situation, it's a process.…I mean it is not a miracle making thing. It's a process of trying to understand the needs, the opportunities, and trying to understand the red lines of each discipline, what's a taboo, what cannot be done, what they will not accept' (Forester, 1999: 73).

In design dialogue the evaluative mode is as important as the creative mode. Practitioners with a social science background can be very supportive in such processes. Flyvbjerg (2001) stresses the importance of a dialogical attitude for 'phronetic research'. The goal of phronetic research is not primarily to generate general verified knowledge, but to produce input to the ongoing social dialogue and praxis in society. Successful phronetic research includes, and is included in, a polyphony of voices in which no-one can claim final authority. In this context Flyvbjerg gives an interesting alternative translation of *dialogos*. To him the dialogue is '*between* reason', because 'in contrast to the analytical and instrumental rationality which lie at the cores of both *episteme* and *techne*,[4] the practical rationality of *phronesis* is based on a socially conditioned, intersubjective 'between reason' (Flyvbjerg, 2001: 139–140).

Dialogue is not about making something *common*; to do so one could stick to a polite conversation. Design dialogue can result in *making* something *in* common, creating something new together. It is a difficult process in which friction between contrasting values and abandonment of familiar rules and perceptions are considered necessary components to enable the generation of transformative ideas that have a solid foundation for implementation (Bohm, 1996; Isaacs, 1999; Kessels et al., 2002).

Free space

An essential feature for dialogue is that it takes place in 'free space'. This free space allows people to learn not just instrumentally (how to achieve a certain goal,

4 Flyvbjerg interprets *techne* in the traditional, epistemic way.

how to perform a certain task, given a set of assumptions), but substantially, on a more profound level, *behind* the known assumptions. The Greek word for such a free space is *scholè,* literally meaning 'free from obligations', for example the obligation to work for a living. The school was a place to think freely and free from personal interests, to learn together about society, about values and principles. Significantly, the Roman equivalent of the Greek *scholè* is the word *otium*, in which we find the basis of *negotium*, meaning business or being busy. The opposite of free space is a place for negotiation, a place full of interests, which cannot be set aside and which reduce the potential to learn freely. This linguistic exploration shows the essence of 'free space' as a condition for substantial learning in classical philosophy.

The *existence* of obligations is not denied in dialogue; people who are engaged in a dialogue naturally do have interests[5] and obligations. 'Free space' in dialogue, however, means that participants are not stuck to them and that they can (temporarily) take a free position vis-à-vis these interests. Essential in dialogue is respect for other parties, a willingness to listen and engage with the other actors so that the learning becomes 'embodied' (Flyvbjerg, 2002: 363).

Dialogue goes with substantial rationality, which in philosophical terms is a way of reflecting on actual situations from the perspective of principles, of the 'story underneath'. The 'performance' of dialogue cannot be measured in terms of achieved objectives (as is the case with instrumental rationality) or consensus, but is a matter of contextual, personal judgement (Kessels et al., 2002). Dialogue is therefore not primarily a context for taking decisions, but might serve as a preparation for decision making in various contexts outside the actual dialogical space.

The significance of the open-ended character of dialogue is often badly understood. Since the Enlightenment value rationality has lost ground in favour of instrumental rationality in both science and politics. Instrumental rationality is basically convergent, geared towards making choices and conformance, leading to rules and instructions. This is functional in a task in which reasoned decisions on well defined problems are required. However, it is dysfunctional if it has not been effectively preceded by divergent thinking, by freely exploring the problem–solution space from which new problem frames arise.

Kairos-time and chronos-time

An important characteristic of dialogue, as in *phronetic techne,* is recognising opportunity. If any participant feels that the time is there for taking a decision, he or she will use their new insights in situations that require instrumental decisions. This is the case if participants 'discover' that a certain concept *bears in it the*

5 *Inter esse* (Lat.) means 'being amongst'; interests are intrinsically tied up with people being together.

promise of including both their problems and acceptable solutions, even if these solutions are not yet clear or feasible. Concepts are also the vehicles for forming coalitions as they are developed through an integrative process of conflicting values and various kinds of implicit and explicit knowledge. Often the 'discovery' of a shared concept generates a certain enthusiasm and energy that fuels implementation processes. The *concept* will then function as the *conception* of a new, focused joint action towards operational tasks.

However, dialogue does not guarantee the emergence of shared concepts, and certainly not its successful implementation, within a determined timeframe. The right moment cannot be predicted. 'Time' in our everyday usage is chronological time or clock time. It represents exact quantifications of time, expressed in successive readings of a clock. *Chronos* is a spatial representation of time, or 'the number of motion with respect to the before and the after' (Aristotle in *Physics*, IV, 11, 219b). It is the notion of time that goes with instrumental rationality and efficiency and the notion of time that is central in present-day management and policy planning.

The other side of *techne*, with its strong connection to *phronesis*, deals with a different notion of time: *kairos.* In Greek mythology Kairos was the youngest son of Zeus and God of 'the favourable moment'. *Kairos*-time during the classical Greek period was thought of as critical time or opportunity. What is 'the right time' to do something (for example harvesting) is a matter of wise judgement, which is *kairos* time and not *chronos* time. Aristotle makes a general distinction that *chronos* is 'dating time' and *kairos* is the time that gives value, which relates to respectively instrumental and value rationality (Ramo, 1999). Contemporary authors stress the importance of *kairos*-time in creativity and transformation (see Csikszentmihalyi, 1999; Cornelis, 1999).

It can be concluded that the double–faced concept of *techne*, the *epistemic techne* and the *phronetic techne*, requires not only a combined mode of value rationality and instrumental rationality. It also leads to a richer notion of time in which we need to introduce *kairos*-time in addition to *chronos*-time. In landscape design dialogue, which gives priority to substantial learning, *kairos*-time cannot be missed.

Design dialogue as a breeding ground for implementation

In the introduction to this section, design dialogue was proposed as a metaphor for the ongoing process of human interaction on the development and management of landscape as a public domain. In doing so, the strategic mode of *phronetic techne* is deliberately put at the forefront. In complex landscape planning and

design problems, with a great deal of uncertainty, the balance between *phronetic techne* and *epistemic techne* will tip towards the phronetic side. However, a forefront implies the presence of a background, which in this case is the operational mode of *epistemic techne*.

In the preceding chapters the dual interpretation of *techne*, as well as the design paradigms of Reflective Practice and Rational Problem Solving, and *kairos*-time and *chronos*-time, have been presented as complementary modes, as two sides of one coin, as existing simultaneously. They represent a *mental state* and it is a matter of human choice what 'regime' we let prevail. As landscape planning, and design dialogue as presented here, is a collective endeavour, this needs to be discussed and requires *collective choice*. It is confusing and not productive if participants in a co-design process feel the need to cooperate, but have not deliberately chosen for an open mode of dialogue or for an instrumental mode with the aim of reaching closure. This is what happened in the Restructuring case and what happens very often in planning and design practice.[6]

An important lesson for practice is the notion that strategic and operational planning and design cannot be brought within the same 'regime'. Practitioners often do not seem to be aware that the two modes, as 'collective mental states', require different conditions, and they appear to be generally ruled by an instrumental mode that fits operational planning and design. Putting design dialogue at the forefront and, through serious involvement of participants, relying on the emergence of attractive concepts 'when the time is ripe' (*kairos)* creates a breeding ground for implementation. The instrumental mode will shift from the background to the forefront as a natural consequence, since concepts offer opportunities that entrepreneurial 'networkers' will grasp. Promising concepts for successful implementation cannot simply be called up. However, design dialogue can offer conditions that will increase the likelihood of generating results that go beyond known compromises and will make such efforts much more satisfying.

8.4 Summary

In Chapter 7 theory about the design process as a distinctive mental activity was combined with social science theory about collaborative planning. This led to the contours of an integrative (descriptive) model for what could be named 'Reflective Co-design Practice'. Whereas in actual planning practice the dominant mode of reasoning is instrumental, it is concluded that the dominant perspective in regional landscape planning and design should be a strategic, value-rational exploration

6 A personal example of such a confusing process was 'Landstad Deventer', described in de Jonge 2004b.

of key dilemmas through an explorative, research-like design process. Unlike negotiation processes that focus on achieving a consensus, this requires a mode of conversation that allows participants to creatively explore the problem–solution space and, by integrating elements of *phronesis* and *episteme*, bring forth new insights about both the problem situation and possible solutions. These insights can be made explicit in the formulation of design concepts. For such a strategic design conversation, the principles of *dialogue* have been investigated and adapted to provide a description of design dialogue. The main elements of this description are summarised below.

Ambition to go beyond compromise
A design dialogue is an adequate mode of conversation if the ambition is to go beyond compromises that reflect existing patterns and aspire to new and feasible qualitative solutions to perceived problems.

Conditions for learning and creativity
An essential condition for dialogue is the existence of 'free space' in which there are no obligations attached to interests, cognitive frameworks or time. One participates with an open state of mind; interests or domain-specific frameworks ('paradigms') are not absent, but temporarily set aside to allow learning about other perspectives. The free space of dialogue is not governed by *chronos*-time ('clock time', adequate for instrumental thinking), but by *kairos*-time, permitting slow or 'timeless' thinking as a companion to substantial learning and creativity.

Participants: experts with diverse knowledge and skills
Participants show a reflective, learning attitude and represent diverse (explicit and tacit) knowledge and interests that are thought to be relevant for the issue at stake. As practical wisdom or *phronesis* is an important source, experience counts. What is needed is a level of expertise (see section 6.4) in which the expert can go beyond analytical rationality, express personal involvement and feel responsible for good results. The expert can then respond to situations intuitively, drawing directly on experience and recognising similarities between these experiences and new situations.

To conduct dialogue as a multilingual conversation, the participants should represent a broad diversity of skills and backgrounds. Three basic 'languages' are imaginative, graphical language, verbal, narrative language and the language of facts and figures, each with its own rationality. All three feed creative imagination and reflective judgement. In design dialogue, drawings and metaphors are important integrative media, representing the progress of collective thought.

Creating new insights through a design approach

The course of the conversation resembles the search process in designing: the problem–solution space is explored by alternatively adopting a solution and problem perspective. Regarding the problem perspective it is important to reflect upon real-life situations and concrete cases and to search for key dilemmas. By articulating and utilising conflicting demands constructively, they can be a source of creative transformation. The process of 'creative imagination and reflective judgement' is iterative, making design moves that represent various aspects, scales and levels of detail. At a certain point, a central concept or a set of concepts is created that are recognised by (at least some) participants as promising for further elaboration or action. However, dialogue is basically infinite since it deals with systems problems.

Seizing opportunities

Dialogue is basically open-ended and not a context for taking formal decisions. As participants are involved and feel responsible, dialogue generally serves as a preparation for decision making in various contexts outside the actual dialogical space. The participants of design dialogue are therefore important communicative bridges between the fluid dialogical space and organisations or entities that have executive power and ambition. They need an open eye for seizing opportunities when the time is ripe, when a concept will be recognised as promising, when the favourable moment (*kairos*) has come.

Decision making in the connected entities (e.g. government bodies, NGOs, private enterprises or combinations (coalitions)) is a kind of 'tentative decision making' on the concept. In other words, they decide to make an effort to take the concept one step further. This makes design dialogue a breeding ground for implementation, but not a guarantee for implementation. Some concepts will prove to be a dead end. For others it might take many iterations to frame a project in such a way that consensus can be reached among stakeholders and implementation becomes feasible.

9 Planning and Designing the Rhine-Meuse Floodplain

To explore the metaphor of 'design dialogue' in praxis, I have studied the development of 'transformative concepts' in Dutch regional planning and important shifts in spatial concepts for the Dutch Rhine-Meuse floodplain.[1] As it takes time to realise substantial change on a regional scale, the research covered a period of 35 years (1970–2005). Around 1986 a 'conceptual shift' can be discerned. This chapter describes a sequence of events around this conceptual shift and the specific circumstances and conditions that influenced the emergence of new concepts which have transformed the Dutch riverine landscape as we can experience it today.

The research methods consisted of:

- a literature and document study;
- an email questionnaire of people who were directly involved in policy planning, design or research activities at the time to provide a basic timeline with key people and events;
- in-depth interviews (selection based on the results of the email questionnaire);
- an inventory of relevant policy documents from the period 1960–2006 (van Noordt, 2006);
- an expert meeting with professionals who were or still are involved in planning, design and research in the central floodplain area to check the results of the analysis and to generate focus in the concluding chapter.

The analysis intends to indicate what conditions have been conducive to the emergence of powerful concepts and how 'designerly ways of thinking and acting' have contributed to this remarkable episode in Dutch planning.

Section 9.2 compares the features of 'design dialogue' as explained in Chapter 8 with the description of this episode in Dutch planning. It illustrates that the metaphor of design dialogue represents a collection of guiding principles rather than a recipe or prescription.

The last section takes up the issue of power with regard to spatial concepts. Power is at work in the development of concepts and in their acceptance and effects. 'Concepts do not just name and frame, they also claim reality. They do not just represent space and spatial relations; they posit priorities and interests' (Zon-

1 The results of this research project are described in 'Doorbraken in het Rivierengebied' (de Jonge and van der Windt, 2007). This chapter is largely based on this project, which was conducted in 2005 and 2006.

neveld, 2007: 194). In regional planning many processes come together within official planning authorities, NGOs, private parties or individual entrepreneurs. In the analysis special attention is given to professional networks that played a key role in this case and to the 'power' they exercised, for example in the development of spatial concepts, communication of ideas and the drafting and implementation of detailed plans.

9.1 Transformative design concepts for the Rhine-Meuse flood-plain

In Chapter 4 the 1980s were depicted as rather uninspiring as far as spatial planning was concerned. Planning had lost its political appeal and government realised that it was no longer the key planning authority. The network society was emerging, but had no name yet. While national spatial planners were picking themselves up after the lengthy and laborious project of the third national spatial planning policy document (*Derde nota ruimtelijke ordening*), private initiatives saw the light. The Netherlands Now As Design Foundation (*Stichting Nederland Nu Als Ontwerp*) produced political scenarios and stimulated public debate, and in 1985 the Eo Wijers Foundation launched its first competition for regional design. The subject of this competition was the Rhine-Meuse floodplain that occupies the central belt of the Netherlands. The idea was that the entries could help the National Spatial Planning Agency (RPD) in the preparation of the fourth national spatial planning policy document (*Vierde nota ruimtelijke ordening*), which was published in 1988. The initiators could not have dreamed then that this indeed largely turned out the be the case. The winning design, the 'Stork Plan' (*Plan Ooievaar*), has since had a major influence on spatial planning policies and landscape planning and design practice.

Eo Wijers Foundation

The Eo Wijers Foundation was a private initiative by a group of Dutch planners at the RPD. They wished to promote regional planning as a field of design. Launched in 1985, the Foundation organises regional design competitions, as distinct from the more abstract regional planning, every three years. The foundation is named after the Dutch architect-planner Leonard Wijers (1924–1982), professor at Delft University and director of the RPD from 1963 until his death in 1982. Wijers had explored a planning style in which he identified design issues and their aesthetic implications on a large scale, for instance in the planning for the Dutch Zuiderzee

polders. He literally wanted to give form on the national scale by creating potential situations that would inspire designers on the local scale. By connecting potential situations with the actual landscape, and translating this into a recognisable form, people would feel a kind of orderly pattern. He thought it essential to use design to bring order to chaotic spatial developments. He considered the Randstad and its Green Heart to be such a pattern (Rijksplanologische Dienst, 1985).

The regional planning task in the first Eo Wijers design competition (1985/86) was to develop a landscape strategy for the Dutch Rhine-Meuse floodplain in the central belt of the country. Of the 34 entries the 'Stork Plan' (*Plan Ooievaar*) was awarded the first prize. The name was chosen by the design team[2] as a reference to some essentials of the plan.

Essentials of the Stork Plan

A major debate at that time was the relationship between agriculture and natural/landscape values. The ecological and historic geographical values of the agricultural landscape had decreased severely due to the modernisation of farming practice. The dominant policy was based on the idea of compromise: in regions with high 'landscape values' (often interpreted as biodiversity and cultural history) farmers could be financially compensated for their contribution to nature conservation and landscape management. In other areas agricultural uses could develop within certain limits imposed in the interests of protecting and managing the major landscape features and green structures. The leading idea was to combine agricultural and valuable natural/landscape features where possible and to separate them where necessary.

The authors of the Stork Plan had a different vision: in the long term the strategy of compromise would not be sustainable. Agriculture follows economic rules of expansion and continuous change; it is a 'high dynamic land use' and needs

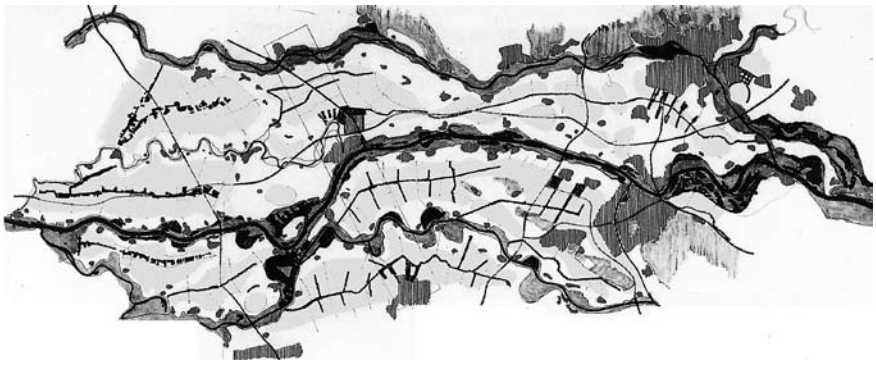


figure 9-1 Stork Plan, winner Eo Wijers design competition (1985/86)

2 The team consisted of D. de Bruin (river expert), D. Hamhuis, L. van Nieuwenhuijze, W. Overmars, D. Sijmons (all landscape architects/planners at that time working at the Landscape Development division of the National Forest Service (*Staatsbosbeheer*)) and F. Vera (biologist).

flexibility. In contrast, natural habitats, water management and historic landscapes require stability, they are (the result of) relatively 'low dynamic land uses'. The Stork strategy was to facilitate a 'two-speed landscape' in which robust, stable areas and dynamic areas could coexist and develop at their own speed. This was later called the 'casco principle'.

A basic strategy in the Stork Plan was not to compromise, but to optimise the conditions for ecological processes as well as agricultural development. The plan proposes a new main structure for the area as a *regional design concept*:

– The river forelands (the area between the main river dikes and the river), until then still used as grazing land, would become a dynamic nature reserve, especially along the river Waal (being the largest and most dynamic). See figure 9-2.
– The conditions for agricultural uses would be improved in the reclaimed backswamp areas, the lower-lying 'basins' in the rest of the floodplain. See figure 9-3.

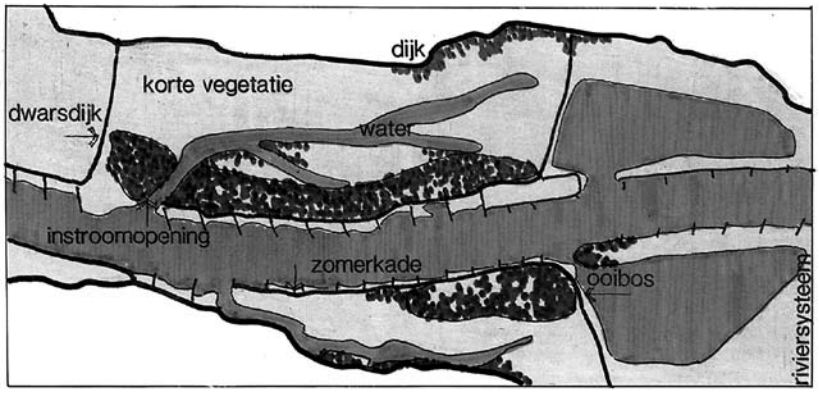


figure 9-2 Dynamic nature reserve in river forelands

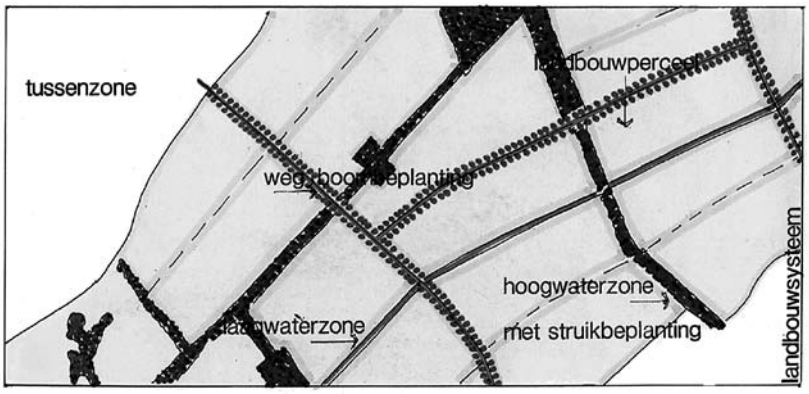


figure 9-3 Agricultural land use in 'basins'

– The alluvial ridges or natural levees would keep their mixed use character with villages, horticulture and fruit growing.

Concerning ecological processes, the plan proposes a series of measures in the river forelands to reassess the ecological aspects of the river system as a whole. Four basic components of the system are identified: riparian swamp forest (*ooibos*), open water, marshes and grass vegetation. The influence of the river would be increased by excluding existing agricultural land use from the river forelands and by levelling the summer dikes, which would cause the river to flood more often and over a larger area, creating good conditions for the development of natural riparian woodland. Extraction of clay would be put into service for creating deep and shallow open water as well as marshy sites. Combined with groundwater seepage flowing under the dikes, this creates many interesting conditions as potential habitats for riverine ecosystems. These measures could bring back the Black Stork into the Netherlands after 300 years of absence. Two 'hotspots' for ecological development were selected for further elaboration: the Gelderse Poort area (where the river Rhine splits into the Waal and the Nederrijn) and the Fort Sint Andries area where the Waal and the Meuse flow very closely to each other. These sites should function as ecological stepping stones in the river system.

At the opposite pole of the system, the conditions would be created for agriculture to develop unrestricted. A clear agricultural (dairy farming) landscape was designed in the basins, restructuring land ownership and the arrangement of parcels, infrastructure and drainage systems to suit the requirements of high-tech, large-scale farming. A dual water system, consisting of a high-level subsystem and a low-level subsystem that is independent of the river, would allow farmers to drain and irrigate when necessary.

Key dilemma and basic concept

An important design methodological aspect that the Stork team applied is the principle of varying the context, level of abstraction and scale. The team, initially only landscape architects working at the National Forest Service, had rich ex-

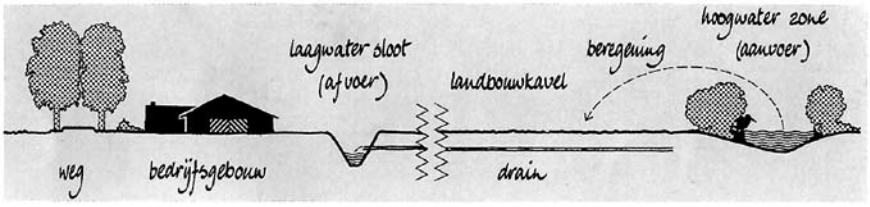


figure 9-4 Principle of dual water system

perience with the conflicting character of agricultural and landscape-ecological development processes, not only in the river area, but also in the sandy soil areas. In the Landscape Development division of the National Forest Service they had set up a research programme in cooperation with the Department of Landscape Architecture at Wageningen University in 1985. In this programme the impacts on the landscape structure and ecology of three land consolidation plans in different sandy soil regions in the Netherlands were analysed. This critical examination of the dominant style of rural land development planning confirmed their hypothesis that these plans lacked the flexibility needed to adapt to fast changing (economic) driving forces and that the measures to improve ecological or landscape quality were poor (Kerkstra and Vrijlandt, 1988). This was considered the key dilemma in planning policy for the rural areas in general. Based on their practical experience and these research results, they formulated a rather abstract general principle: the 'protoconcept' of the *two-speed landscape*. This was to be tested in different contexts (landscape types).

As the concept of the two-speed landscape was not politically sanctioned, the landscape architects in the National Forest Service (part of the agriculture ministry) were not allowed to explore their ideas further in practice. So the Eo Wijers competition, as a 'free laboratory', presented a good opportunity to test and specify the concept in the river landscape. By varying context, level of abstraction and scale, the landscape architects were able to acquire knowledge about the value of the design concept. The concept also enabled them to focus on the essential issues instead of giving equal attention to the whole area, which is not very efficient in regional planning. In the Rhine-Meuse floodplain the functioning of the river systems in terms of ecology and morphology/hydrology and aspects like water transport, safety and outdoor recreation were new fields to explore. The interdisciplinary cooperation with a river expert (de Bruin) and a biologist (Vera) certainly contributed to the quality of the plan. These contributors were representatives of professional groups that had also been working on new dynamic, process- and system-oriented concepts in the domain of water management[3] and landscape ecology. De Bruin and Vera, for example, convinced the landscape architects to focus on the river Waal instead of the river Nederrijn with respect to dynamic natural processes. Connecting the professional domains of landscape, river management and ecology proved to be very successful.

Experience-based approach

The jury of this first Eo Wijers competition described the prize winning Stork Plan as 'opening up new horizons while being realistic at the same time'. The plan was

3 At that time the concept of 'integral water management' was just at the point of being accepted as a leading principle for national policy.

based on broad practical experience in different contexts. Historical references and foreign examples (e.g. the Loire system near Amboise) were included in the design studies. A very important part of the study was the real-life reference case of spontaneous natural regeneration in the Oostvaardersplassen in the Flevopolder north-east of Amsterdam, which was 'discovered' by Frans Vera and other biologists in the mid 1980s.

Not only was the plan itself founded on empirical knowledge, but the proposed strategy for implementation was characterised as 'learning by doing'. Plan Ooievaar proposed a series of demonstration projects for dynamic nature reserves,

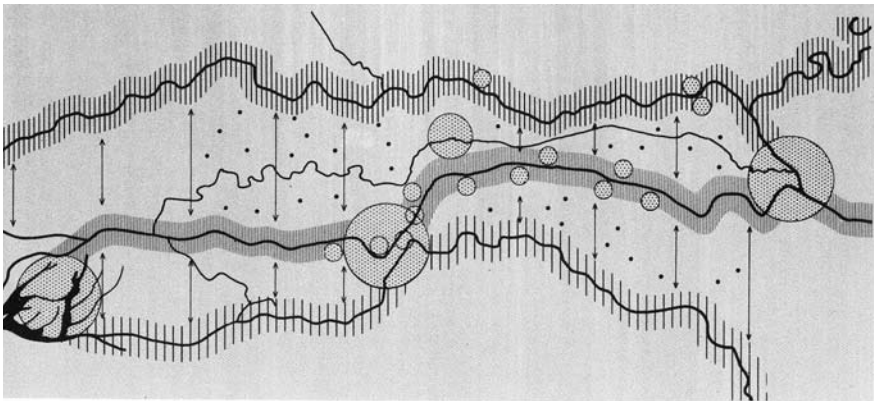


figure 9-5 Map of pilot projects

figure 9-6 Blaauwe Kamer

located at strategic ecological hot spots and stepping stones (see figures 9-5 to 9-8.). Preparations for the first experiments had started by the late 1980s, even before the main principles had been adopted into the formal planning procedures. Some non-governmental organisations (including WWF and the provincial foundations for landscape preservation) were very eager to participate in the experiments. They perceived the Stork Plan as a challenge and an opportunity to change their policy from a defensive to a more offensive and developmental strategy. And it was no wonder that the clay mining industry was an 'early adopter' and positive about cooperation as they were part of the win-win strategy of clay extraction and natural habitat development. The experiments not only generated broader public acceptance of the central ideas in the plan, but also delivered new knowledge on many technical aspects that were still uncertain in the previous phase. For example, the possibility of developing 'active side channels', which at first did not

figure 9-7 Gelderse Poort

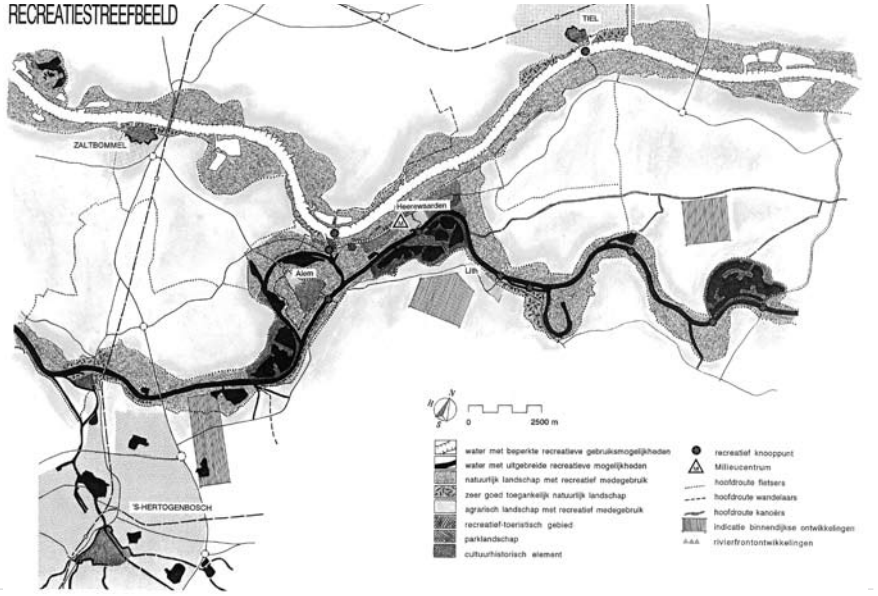


figure 9-8 Design by H+N+S Landschapsarchitecten for Fort Sint Andries

seem to be technically feasible. These new insights have enriched the concept and made it more realistic and more specific for various circumstances.

The plan has been very successful with regard to the approach to the river forelands, but not to all elements of the plan. In particular, the proposed agricultural strategy for the basin areas has been more or less forgotten. In these areas the conflicts were not as obvious as in the forelands and there was no clear sense of urgency to experiment with a dual water system. This element apparently did not convince stakeholders or policy makers and it lacked concrete practical references. One of the authors explains that the plan represents 'no more and no less than a lot of ideas, suggestions and general principles which have to be translated into everyday reality one by one.' To him, a regional plan is a flexible source of ideas that can be a guide for further design, conceptual development and action. It will only be effective in a democratic society if the ideas are publicly discussed and their value can be demonstrated (W. Overmars in de Bruin et al., 1987).

9.2 Contribution of the Stork Plan to government planning and implementation

The Stork Plan was the result of a private initiative. Although at the time the *casco concept* was very much disputed within the agriculture ministry, the Stork Plan exerted a remarkable influence on national and regional spatial planning in the following decades. A new strategic planning concept in the fourth national spatial planning policy document was the National Ecological Network. The concept of the 'two-speed landscape', or casco concept, lies at the heart of this new policy. Inspired by the casco concept, some provinces also adopted the new principles to be elaborated in their provincial spatial plans, even before the national policy had been formally adopted.

How can the successful breakthrough of this new planning concept be explained? There were three main reasons:

1 | There seemed to be a vacuum for good (substantive) planning principles after the period in the 1970s when considerable attention was given to the procedural aspects of spatial planning (see Chapter 4).

2 | The plan received extensive publicity and managed to find champions or ambassadors in the minister for transport, public works and water management (Mrs Neelie Kroes) and some influential heads of NGOs like WWF. The story goes that one of the authors happened to accompany Mrs Kroes on a mission abroad and got the opportunity to personally promote the Stork Plan. After some time this message was gratefully used in a strategic communicative action by the

Ministry of Transport, Public Works and Water Management. This lucky chance got the ball rolling.

3 | The plan indeed applied a number of good principles that were recognised in practice by researchers, policy makers, entrepreneurs and the public. This especially concerns the principles for the river forelands, to be developed as a robust ecological system that can easily 'absorb' other functions like outdoor recreation and clay extraction. New coalitions were formed between parties that were previously regarded as enemies: the extraction industry and some nature conservation organisations like WWF and the provincial landscape organisations.

Many projects have since been executed in the river forelands, mainly for nature development combined with recreational accessibility and facilities. One of the authors of the Stork Plan started a research and design consultancy that has carried out many 'Stork-like' projects throughout the Netherlands and abroad.[4] The first projects were organised as pilot projects in anticipation of new spatial policy. Later on they were set up on a regular basis to implement government programmes.

In the 1980s the general concept of the 'two-speed landscape' remained an open concept and was tested and reflected upon in concrete cases. This methodic principle changed when the concept was adopted in strategic national and provincial plans, and became even more fixed when in the 1990s the National Ecological Network became a formal, instrumental policy concept. Implementation programmes and the accompanying budgets required more precise rules and spatially defined areas. Instead of a general principle for integrative landscape planning, the casco principle was narrowed down to a technocratic instrument for developing specified ecosystems. This has turned out to be a source of conflict. After all, the uniqueness of every situation manifests itself at the project level, calling for 'reflective practice', knowing when and how to bend the rules on the basis of practical wisdom. The technocratic approach that was followed was never the intention of the authors of the Stork Plan.

Design dialogue in the Stork episode 9.3

The Stork episode illustrates several characteristics of design dialogue. This case illustrates that design dialogue serves as a metaphor for a certain mode of conversation. A comparison is made between observations about the Stork episode and the main characteristics of the metaphor of design dialogue as was summarised in section 8.4.

4 Bureau Stroming. Later the Ark Foundation was added, focusing on public communication and education on sustainable development in river landscapes.

Ambition to go beyond compromise

Two initiatives have shown a clear ambition to generate new concepts for the Rhine-Meuse floodplain. First, the Eo Wijers Foundation, which welcomed innovative regional designs to inspire national planning policy. Their motive was the absence of good ideas in the conventional planning institutions. This invitation successfully matched the ambition of the winning Stork team, which was convinced that the prevailing strategy of compromise was not sustainable and did not generate vital and attractive landscapes.

Conditions for learning and creativity

Landscape architects at the National Forest Service had organised systematic reflection on their practice in the Big Group Meetings (see section 4.5) and in a cooperative research programme with Wageningen University. The basic ideas for the concept of the 'two-speed landscape' had already been born. The regime within the agriculture ministry, however, prevented further exploration of the casco concept in everyday practice. The Eo Wijers competition was an opportunity to create 'free space' to elaborate the protoconcept for the Rhine-Meuse floodplain. A design competition is an occasion par excellence to exploit the benefits of free thought; there is no obligation to participate, only personal drive. Although the competition has a deadline (*chronos*-time) one can decide whether or not to send in an entry. The freedom to use such an opportunity represents *kairos*-time.

Figure 9-9
Starting dynamic nature development in river forelands of the Rhine, at 'Blauwe Kamer' (1992)

Participants: experts with diverse knowledge and skills
The members of the Stork team were 'experts' (as defined in the Dreyfus model, see section 6.4) in the professional domains of landscape, river management and ecology and were able to integrate their theoretical and experiential knowledge into a promising concept. The fact that there was no agricultural expert in the design team might partly explain why the agricultural strategy for the basin area did not take root. Drawings and metaphors were important communicative tools in the conception of the plan as well as in the external communication. The 'multilingual skills' of the Stork team contributed to the recognition of the quality of the concept among practitioners as well as researchers and politicians.

Creating new insights through a design approach
The 'casco concept' was the result of a systematic reflection on the dynamic forces that rapidly transformed the agricultural landscape and on the practice of drawing up landscape plans that accompanied land use development plans. In this practice the key dilemma of the 'two-speed landscape' was articulated. A research programme regarding the landscape of the sandy soil areas underpinned the problem perspective; the solution perspective, however, did not fit the dominant policy discourse and could therefore not be applied in regular practice. In the laboratory situation of the Eo Wijers competition the elaboration for the Rhine-Meuse floodplain turned out to be a lucky hit. The conflicting demands between agriculture, clay extraction, river management and nature were obvious and the solution strategy of the Stork Plan appealed to a new audience, which adopted the new insights.

Seizing opportunities
The professionals that were involved in the development of the Stork concept had no political power to take formal decisions, but they had a personal drive to disseminate and propagate their insights. They had a good intuition for 'grasping the *kairos*' and used their personal and professional networks to spread their ideas. In doing so they functioned as communicative bridges between the dialogical space, in which insights were created and sharpened, and executive power. Through these bridges the concept became a breeding ground for implementation. The Stork Plan, as a regional plan, was considered a flexible source of ideas, every one of which had to prove its value in practice. This illustrates the open-ended character of design dialogue and how this works out in regional landscape design.

9.3 Powerful concepts

Design dialogue offers necessary conditions for the development of new and useful concepts. It offers free space to support learning and creativity, temporarily standing back from existing interests, at least mentally. However, in the creation of concepts, and certainly in their acceptance and effects, power is at work, for example in the availability and exploitation of knowledge, in institutional control over instruments and money, and in the rhetorical power of communication or just 'personal charisma'. Power is not located in a certain place, or possessed by certain actors, it is 'in' the planning process and in the relationships between participants (see Flyvbjerg, 2001: 131). It takes courage to engage in design dialogue, as new concepts tend to disturb established power balances. Power is no longer concentrated in (governmental or scientific) institutions or business organisations, but is diffused in networks. 'The sites of these powers are people's minds' (Castells, 1997: 359).

For the analysis of results and explanation of the effects of the Stork Plan I have used a theoretical framework developed by Zonneveld (Zonneveld, 1991, 2007). Spatial planning concepts express in a condensed and synthesised form, through words and images, how people look at the intended spatial organisation of an area (Zonneveld, 2007: 194). Concepts reflect the interpretations of the problem situation and choices that are made regarding key dilemmas. Power is reflected in different dimensions that concepts can fulfil. Zonneveld identifies five dimensions:

1 | the *cognitive* dimension deals with the assumptions about the planning issue, which are interpretations of the actual situation based on different sorts of knowledge, both personal, tacit knowledge as well as explicit, scientific knowledge.

2 | The *intentional* dimension arises from normative intentions to change the existing situation into a better one. Intensions are made explicit in a concept.

3| The *communicative* dimension is the important capability for expressing implicit thought and meaning. But communication is more than making implicit ideas explicit: in communication understanding and new meaning can emerge. In urban and landscape planning and design this dimension has two expressions: the verbal language of texts and the graphical language of images and maps. Metaphorical language is important.

4 | The *institutional* dimension relates to competences and the roles of stakeholders. Although government plays an important role in the effectuation of landscape concepts, many non-governmental actors are involved, with their

own interests, instruments and competences.

5 | Finally, in the *action* dimension concepts guide implementation by indicating how interventions can take place, for example with policy instruments or through cooperation. This dimension is strongly related to the institutional dimension.

Power at work in planning and designing the Rhine-Meuse floodplain

Analysis of the manifestation of the five dimensions of concepts presents the bigger picture of the societal and organisational context in which landscape planning and design takes place. It may provide an explanation for the developmental course of the Stork concept in the interplay of forces in the field of landscape development.

Cognitive dimension: powerful ideas

The Stork episode shows that developing good concepts is not a short-term, hasty affair. It takes time to understand and articulate key dilemmas by thoroughly observing and analysing practice. The casco concept and the Stork Plan originated from a professional network of landscape planning and design practitioners who were involved in multidisciplinary research and approached practice as a form of 'design by research' and 'research by design'. The authors of the Stork Plan were able to integrate concepts from different domains (landscape, water management, landscape ecology) at a higher conceptual level.

Devising new principles in interaction with analytical activities on a regional level was a slow process of building up an experiential 'body of knowledge' which took years, not months or weeks. It was supported by cooperation between research institutes, universities and 'reflective practitioners'. This was the basis for the Stork concept, which appeared to be a 'powerful idea', described by the jury as 'opening up new horizons and realistic at the same time'.

Intentional dimension: powerful mobilising actors

The Stork concept had a strong normative message which did not follow the dominant discourse of compromise between economically driven activities, like agriculture and the extraction industry, and ecological values. Many speak of 'lucky, fortuitous circumstances' that enabled the Stork Plan to come to the attention of powerful players who championed the cause. Others state that there was a vacuum for good ideas, both among the general public and in the political domain. Whatever the case, there were 'windows of opportunity' in which the promise inherent in the Stork concept was recognised by powerful actors who were able to mobilise political and public support. This power was necessary to gradually replace the dominant planning discourse on the rural area.

Communicative dimension: the power of rhetoric
Winning a design competition alone is not enough for attracting widespread interest among influential politicians, non-governmental organisations and practitioners. The active dissemination of ideas was driven by members of the Stork team, some of whom are very imaginative narrators and familiar with the power of rhetoric. The 'return of the Black Stork' as a symbol of the ecological potential of the concept appealed to the imagination. The metaphor of the 'two-speed landscape' captured the essence of the concept in words. Important convincing elements of the story were the visual examples of actual or historical references taken from comparable river landscapes and wetlands and translating this to the possible future of the Rhine-Meuse floodplain in the Netherlands. Field trips to reference projects, and later to pilot projects, were also part of the active dissemination strategy.

Institutional dimension: the power of multiple involvement in strategic networks
There is a natural tension between existing routines in institutions and the need for change. Within the existing national planning institutions, especially the government departments for agriculture and nature where most members of the Stork team were employed, freedom to explore new concepts was limited. The Eo Wijers competition was a chance to temporarily escape the institutional regimes. However, the awarding of the first prize to the Stork Plan did not alter the attitude of the civil servants towards the casco concept. This only changed slowly, step by step. An important initiative that supported this change was taken by one of the initiators of the Eo Wijers Foundation, who had an influential position in the National Spatial Planning Agency. A high level management council with representatives from all the departments concerning the physical environment was instigated. In the preparation phase of the fourth national spatial planning policy document this provided a considerable stimulus to the integration of sector policy (water management, spatial planning, environmental issues, agriculture, landscape and nature conservation).

The key professionals who supported the Stork concept and who were involved in national and regional planning formed a rather small and well connected network across various government departments, provincial authorities, water boards, research institutes and nature conservation NGOs. Many key players were operating in different networks (e.g. policy, politics, research, societies) at the same time, thus bridging domains and organisational structures. Such 'multiple involvement' strengthens strategic alliances between institutional powers and has proven to be an important success factor in the acceptance of the Stork concept.

Action dimension: the power of practical experience and evidence

An important foundation for a concept inspiring action lies in the cognitive dimension: if the analysis of the problem is based on broad empirical knowledge, the concept can be a natural bridge to practical experiments. In the action dimension the 'power of practical experience and evidence' becomes manifest. The experimental approach in the Rhine-Meuse floodplain has been a source of new practical knowledge as well as a way of convincing critics by demonstrating early results. An important contribution to the experiments was made by Bureau Stroming, a private consultancy with an entrepreneurial drive founded in 1989 by one of the authors of the Stork plan. Where possible they operate 'beyond bureaucracy', creating broad public support and forming smart coalitions, for example with the clay mining industry and farmers, looking for local ambassadors as well as connecting with large partners such as the WWF. In 1992 they developed the 'Living Rivers' strategy with WWF, which guided a series of new projects.

In the 1990s the National Ecological Network became a formal policy concept and nature development projects for the river forelands became part of the regular implementation programmes. This is considered to be the next phase in the planning history of the concept, which is not considered here.[5]

Partial success

As mentioned before, the successes were mainly limited to the ecological development of the river forelands, the proposed agricultural development strategy in the basin area being largely ignored. This can also be observed in the analysis of the 'powers at work'. The concept did not trigger agricultural innovators or ambassadors. Although the casco concept was about the 'two-speed landscape', the focus on knowledge integration, networks and coalitions was limited to the slow speed (ecological) framework. The fact that the Stork was the icon of the plan might indicate that for the authors the priority and urgency may, after all, have been on the active development of the slow-speed ecological framework and not on agricultural development.

Reflection 9.4

Landscape planning and design as phronetic techne

The developmental course of the Stork Plan clearly shows that the biography of new design concepts that eventually cause an important transformation of the landscape is not an orderly, linear and controllable process. To represent land-

5 The research report by de Jonge and van der Windt (2007) also describes this next period to 2005.

scape planning as a hierarchical process in which an idea is developed at the national level and influences lower levels is far beyond reality. Ideas basically sprouted from practical observations and real-life experience. Concepts were developed by comparing different contexts, like landscape types and different scales. At the regional level of the Rhine-Meuse floodplain, the concepts were able to operate across all scales, from local projects to national policy concepts like the National Ecological Network.

What the Stork episode also demonstrates is that government has not been the key actor in the transformation of the Rhine-Meuse floodplain. The design competition organised by the private Eo Wijers Foundation, the early support of non-governmental organisations and the cooperation with the clay mining industry illustrate the growing importance of public- private networks in regional planning. Large-scale landscape planning and design in the network society mainly concerns strategic interventions in an uncertain environment. It is therefore primarily a *phronetic techne*.

Design dialogue and powerscape

In *phronetic techne* a mode of conversation is needed that allows participants to creatively explore the problem–solution space. The principles of design dialogue enable such conversation. The case study shows the importance of dialogical space for learning and creativity. The professionals involved created their own free space where institutional frameworks restricted them too much. Dialogical space is not 'real'; it is a choice for a certain mental state. It is characteristic for expert performance to be able to shift from a strategic to an instrumental perspective and vice versa, knowing when to follow rules and when to bend them.

The analysis of the various forms in which powerscape is reflected in the Stork concept confirms the way both Flyvbjerg and Castells describe the existence of power. Power is diffused in networks, it is 'in' the process, or more precisely, people's minds are the sites of power (Castells, 1997: 359). The five dimensions of concepts that are discussed (cognitive, intentional, communicative, institutional and action) all have specific elements of power that are represented by people who take a role regarding these dimensions. All dimensions are related in a process 'from idea to reality'. To successfully create and implement design concepts, all the dimensions need attention. People who show 'multiple involvement' in various networks are considered key players in transformation processes.

'Bodies' of (tacit) knowledge

The Stork case describes a process of conceptual change concerning landscape

development on a regional and even national level. It took about fifteen years from the first ideas to the systematic implementation of parts of the Stork concept. The process can be characterised as a practical, experience-based approach, integrating theoretical insights from various academic domains. It is an exemplar of interdisciplinary and transdisciplinary work.

Expertise is obtained on a personal level, but as was shown in the case study, also on a metalevel. The concept of the two-speed landscape originated from a group of 'reflective practitioners' who shared their empirical knowledge. At that time a similar body of knowledge emerged in the domain of water management around the concept of 'integral water management'. Connections between networks of academics, empirical researchers and practitioners, and opportunities to meet regularly, played a major role in fostering the development of new integrative concepts.

Regarding *phronetic techne*, the metaphor of a 'body of knowledge' seems especially appropriate because it deals with embodied (tacit) knowledge that is shared through personal interaction. It must be nourished continuously, adding and digesting new knowledge to keep the body in a vital condition. Such a vital body of knowledge enables a flexible, state-of-the art response to emerging issues. More recently such learning networks are often called 'communities of practice' (Wenger et al., 2002) or 'transition arenas' (Rotmans, 2003; Rotmans, 2005). Facilitating and cultivating such bodies of knowledge, without immediate instrumental targets, can be regarded as an expression of a knowledge-oriented and innovation-oriented culture.

Conclusion

The success of the Stork Plan can be explained by the consistent application of a reflective design attitude and upholding the principles of design dialogue, despite the instrumental context in which most professionals were employed, and by effectively conducting and connecting various dimensions of 'power' present in the professional networks.

10 Landscape Architecture Between Politics and Science

10.1 Introduction

Recalling what motivated me to start my doctoral research, the calls by authoritative Dutch institutions for a design approach in large-scale planning issues (see text box 1, Chapter 1) come to mind. Although I agreed with their pronouncements (how could I deny the value of my own discipline), I felt uneasy about not being able to clearly explain the what, why and how of a design approach. Having discovered that it was not going to be easy to get ready-made answers, I formulated my research objective as follows:

> To contribute to a theoretical basis for co-design in large-scale landscape architecture that might form an integrative perspective for the practice of landscape planning and design in the context of science and politics.

This last chapter summarises what I have found to be characteristic for a landscape design approach in general and why it might be recognised as a valuable approach to today's large-scale spatial planning issues. Drawing on a study of design and planning theory and reflection on case studies, I have formed a descriptive and explanatory theory for the process of co-design.

As landscape architecture is both theory and practice, the findings have both theoretical and practical impact. For theoretical purposes, the description can be used as a tool to analyse planning and design processes in order to better understand the mechanisms behind successes and failures in planning. The description might also serve as a starting point for further research because many aspects require further elaboration. Some topics for further research will be indicated.

Given the elementary nature of the research problem, and based on existing research on collaborative planning and design, it was assumed that it would be necessary to go beyond instrumental improvement of design methods. A wider context should be taken into account, including policy planning, scientific research and the standard routines in design practice that are taken for granted. This assumption has turned out to be correct. The impact of the findings, therefore, might not be restricted to architecture and landscape architecture, but apply to a broader

sphere of action stemming from public concern about the environment. In section 10.4 I suggest some implications for planning practice and research practice.

A landscape design approach to spatial planning 10.2

Characteristics of a design approach

Design is a distinctive intellectual activity. Going back to Aristotle, it was found that designing as a personal skill is distinct from, but also closely related to, scientific scholarship and practical wisdom. Whereas science produces universal knowledge and practical wisdom instructs us on how to act ethically in everyday life, designing is geared to creating, making or performing something. As 'forethought in making' it is a practical capability that has its strength in synthesis and contexts of the particular. Basic components for designing are creative imagination and reflective judgement. A design process consists of numerous design moves, each of which is a combination of creative, generative thought and discretion. In this process integration takes place between universal knowledge from theoretical domains and various kinds of practical, contextual knowledge. The design process can be considered a multilingual dialogue in which, metaphorically speaking, the skill of the artisan meets the logic of the scientist and the practical wisdom of the leader. This characteristic explains why the domains of science and politics are natural companions for design disciplines that are engaged in social issues like landscape and spatial planning.

Forethought in making, through creative imagination and reflective judgement, applies to both design and planning. Creative imagination and reflective judgement have a reciprocal relationship and cannot, practically, be separated. A characteristic of the planning and design process is the iterative nature in which divergent, creative thinking is connected to convergent, reflective thought to explore the problem–solution space. Drawings and sketches are not first and foremost the outcome of a design process, but serve as a tool to articulate and clarify the progress of thought. The imaginative quality also enhances interpersonal communication about the interpretation of problems and possible concepts or design proposals. The synthetic nature of designing supports a learning process in which a broad variety of knowledge gradually becomes integrated into unique, contextual proposals for change.

In this thesis design and planning theory have been brought together in an integrative perspective in which the principles of individual intellectual design activities are translated into principles for collaborative learning and decision making. This design approach to spatial planning is called 'co-design'.

Characteristics of a landscape design approach

Landscape is a complex system consisting of all kinds of interacting and mostly interdependent elements and entities that form an environment that we perceive as an integrated whole. Which scales or issues are central in a planning or design task is a matter of professional judgement, to be found out in explorative stages of the design process, which cuts across various scales and relevant topics.

Landscape is both a source and an outcome of social action. It is an interface where objective and subjective or intersubjective knowledge meets. The landscape is the embodiment of a complex field of forces in which knowledge and power are distributed between many actors. All this makes the concept of landscape a dynamic and unpredictable process rather than a stable state. Under such circumstances the planning and design task is primarily a strategic one. Strategic design is mainly geared towards changing mental, not physical realities. Exploring future possibilities and articulating them in strategic concepts is a means of communication in the complex of social forces. Concepts that are recognised as promising frameworks for action might then lead to physical change in the landscape. A landscape design approach to spatial planning, therefore, encompasses processes and systems and combines the design skills of creative imagination and reflective judgement with communicative skills. Co-design seems to apply very much to large-scale landscape architecture.

Disciplinary development in 20th century landscape architecture

This thesis shows the 'maturation' of Dutch landscape architecture in the 20th century in a retrospective on the development of Dutch spatial planning and design. Landscape architecture has developed from a practice-oriented arts and craft discipline, working on the operational design of parks and gardens, into a planning and design discipline covering all relevant scales in urban and rural areas. Like urban planning and design it was acknowledged as an academic discipline in the Netherlands around the late 1940s. At that time modernist thinking very much stressed the importance of a scientific approach to planning and design. The principle of 'survey before plan' and the first generation design models based on a linear analysis–synthesis–evaluation scheme were typical attempts to approach planning and design *as* science. This proved to be unsuccessful. In the Netherlands, from about the second half of the 20th century the academic domains of architecture (including urban design and landscape architecture) and planning science (*planologie*) went their separate ways. Interest in design methods and design research in architecture and landscape architecture grew, but in general designers remained close to their practical roots. Practical methods for explorative design

studies for large-scale landscape planning were developed in close professional relationships between practitioners and researchers. These methods were put into practice in rural land development projects.

In the 1980s a new approach emerged where design, science and policy planning meet. It was broadly accepted now that planning was not an objective scientific affair, and that general knowledge based on the past was only of limited use in planning the future. Studies were set up in which the challenges and consequences of certain assumptions or political values were articulated in alternative (normative) scenarios at the regional and even national scale. This approach became known as 'research by design' (*ontwerpend onderzoek*), in which the intellectual activity of design was considered a knowledge generating act and a useful tool to support political deliberation about desired future developments. Being familiar with the large scale and both urban and countryside issues, landscape architects were actively involved in such projects.

Looking back, the professional community of Dutch landscape architecture in the 20th century has developed a repertoire of methods for strategic, regional landscape planning and design as a reflective response to social demands and changes. At first the focus was on developing scientific methods; in the next phase a normative dimension came to the foreground. Since about the turn of the century the call for balanced approaches in which sound scientific knowledge and context-specific facts and values are integrated into explorative studies has been increasing. Transdisciplinary networks have arisen in which various kinds of academic and non-academic knowledge is brought together. The creative and integrative power of landscape architects is often regarded as a valuable contribution to these networks.

An interesting resemblance can be observed between the learning stages of an individual design practitioner and the disciplinary development of landscape planning and design in landscape architecture sketched out above. According to the Dreyfus model for human learning, beginners tend to look for general rules to rationally solve a problem; they approach design as if it were science. As proficiency increases they learn when to bend the rules and how to include practical, context-dependent and value-focused knowledge. Experts follow a reflective approach in which context-dependent rules are developed in the explorative stages of the design process and expressed in a design concept.

Designing is a basic human capability in which practical experience and reflection are the main learning mechanisms. For landscape architects (as for all planners and designers), learning how to deal with the inherent uncertainty of planning and design issues is the core of the developmental path from beginner to mature

expert. It seems that this developmental path, via a rational approach using general rules towards a reflective approach that develops context-dependent rules, applies to the individual as well as to the metalevel of a professional community.

10.3 From practice to theory

Studying design and planning theory

In a *descriptive* model of designing, a distinction can be made between a strategic and an instrumental design mode, which are fundamentally different. A strategic mode is explorative, open-ended, looking for opportunities and acknowledging uncertainty. An instrumental mode works towards a solution by rationally accepting certain rules or assumptions. Uncertainty in this case is not banished, but is mentally 'under control'. In the design process a design concept usually functions as a tool to articulate these rules or assumptions.

Aristotle realised the necessity of approaching problems in stable situations differently from those in unstable situations: the former requires an instrumental mode and the latter a strategic mode or approach. He even associated the two modes with a different notion of time. The instrumental mode goes with clock time or dating time (*chronos*), whereas the strategic mode goes with 'time that gives value or opportunity' (*kairos*). In the 1970s the mathematician and design theorist Rittel argued that 'unstable situations' are the rule and not the exception in design tasks: design problems are 'wicked' by definition, so designing is a process of learning and argumentation to find a solution that best fits the particular situation. Based on this 'wicked problem approach' I studied two parallel theoretical lines to explore the characteristics of, and relationship between, a strategic and an instrumental mode in planning and design. One line is procedural *design theory* on the design process as an individual learning process. The other line follows *planning theory* on the structuring of policy problems and how this affects learning and decision making in collaborative planning processes.

Design theory

In design theory the two approaches – instrumental and strategic – are represented by two design paradigms: the Rational Problem Solving approach and the Reflective Practice approach. Design research further shows that the way practitioners perceive and handle a design problem ('rationally' or 'reflectively') depends on their level of experience. Experts can switch from a strategic to an instrumental mode and vice versa depending on the actual situation, while beginners tend to

approach a problem as if it can be solved along rational lines.

In this thesis the term ‘design concept’ is used to mean the outcome of a strategic search process that alternately takes a solution-driven and a problem-driven perspective and reconciles the main conflicting demands in the design task. Dilemmas are a source of creativity for generating design concepts. Articulation of key dilemmas or conflicts in the design issue is an important part of design activity. A useful concept arranges the most relevant aspects in the problem–solution space in such a way that it does justice to empirical knowledge about the existing situation and normative choices for the future. It gives hope and promise for attractive solutions. A design concept both frames or reframes the problem and contains contextual logic for further elaboration. The expression and ‘mental acceptance’ of a central concept can generally be recognised as a kind of turning point in the design process. It can be considered the stage in the design process after which the dominance of value rationality and a strategic mode of thinking is replaced by the dominance of instrumental rationality and an operational mode of thinking.

Whereas a strategic and instrumental mode can be distinguished in theory, and described in retrospect, in practice they appear to be two sides of the same coin. They represent a mental state (a working mode) of a designer and, in co-design, of participants in the design process. Procedural knowledge on ‘what to do when’ is learned through experience and is largely tacit, personal knowledge. Reflective practice cannot be caught in a *prescriptive* model, such as rational cause-effect reasoning.

Planning theory

Taking Rittel’s wicked problem approach as a starting point, planning theory distinguishes between unstructured, moderately structured and structured problems, depending on the degree to which there is certainty about values and knowledge (i.e. information on possible solutions) regarding the problem. The more certain values and information are, the more structured the policy problem will be. Consistent with design theory, planning theory also connects a learning strategy to unstructured problems. This will generate new interpretations of the problem frame and can lead to a reasoned problem choice. Moderately structured and structured problems go with a rational and instrumental approach, indicated as negotiation, accommodation or ruling.

Empirical research shows that policy makers and politicians prefer to approach a problem as more or less structured, following an instrumental path, even if this is not appropriate. For unstructured problems, when both values and knowledge are blurred, denying the complexity of the issue can lead to situations in which

problems become intractable. Research on collaborative planning approaches is in line with the above findings. The currently preferred (though not very effective) communication strategies correspond with an instrumental strategy aimed at gaining public support for negotiated compromises. Strategies that aim to generate new insight into a collaborative learning process through the involvement of diverse knowledge carriers, and deliberately involving conflicting demands, are not yet common.

Planning as co-design

Planning science, based on empirical research, recognises the importance of acknowledging uncertainty in planning issues and stresses the need to redefine problem frames in a collaborative learning process. What design theory adds to this is an answer to the question of how this collaborative learning process leads to new problem frames. As the problem–solution space is a coherent unity, a reasoned problem choice will not be formulated in isolation from ideas about possible solutions. A design approach is necessary to articulate values and dilemmas and generate concepts which capture both the new problem frame and a solution perspective. As a consequence, in planning as co-design choices will not be made on an isolated 'problem definition' but on a central concept. This serves as an indicative, intentional framework for further action. As elaboration of a concept will generate new insights, the process will allow for reasoned revisions or exceptions as the result of reflective practice.

In co-design, as in individual design, a strategic mode and an instrumental mode are not linear, but parallel realities. Which mode prevails is a matter of choice. The acceptance of a certain problem frame or concept is not a predictable and rational step, but is based on reflective judgement. The descriptive model of a strategic and an instrumental mode cannot therefore be transferred into a prescriptive model. Like clock time and opportunity time, *chronos* and *kairos*, both modes are parallel realities. One can switch between the two depending on personal judgement about the progress one sees in the process. Individual designers and planners learn through practical experience to effectively incorporate an instrumental mode into a strategic approach. This is the core of reflective practice. In co-design this reflective, learning ability needs to be developed at an interpersonal level. This is the major challenge for landscape planning and design in the network society.

Case studies

The theoretical framework for planning as co-design served as both a descriptive and an explanatory model for the case studies. The Restructuring of the Sandy

Soil Areas programme clearly illuminates the ambivalence and discrepancy between an 'explorative design approach' and the usual instrumental mode of governmental policy planning. With the Restructuring Act in one hand and the Third Policy Document on Architecture in the other hand, the Dutch government had given the provinces a task that was *fundamentally incompatible*. The Restructuring Act approached the planning problem as moderately structured and prescribed a negotiated zoning compromise within a strictly framed procedure. In contrast, the Major Design Project for the Restructuring regions approached the problem as basically unstructured and required an explorative and integrative method that transcends sectoral solutions (which are the cornerstone of the zoning principle!).

From the perspective of the theoretical framework, the administrative process can be described as an instrumental or Rational Problem Solving approach, whereas the Major Design Project can be described as a strategic or Reflective Practice approach. The legal framework and procedural regulations did not allow for a *learning strategy* in which new perspectives on the problem-solution space could emerge. Consequently, new design concepts that hold the promise of solutions on an adequate level of integration (e.g. relating urban and rural spatial systems) have not emerged.

The Restructuring case can be considered an example of a rather unsuccessful planning process, despite the considerable administrative and planning endeavour. In contrast, the second case study, on the Rhine-Meuse floodplain in the central belt of the Netherlands, seems to have been successful 'by accident'. I studied the development of 'transformative concepts' in Dutch regional planning for this area over a period of 35 years (1970–2005). The analysis focuses on a remarkable episode around 1986, when the Stork Plan won a regional design competition. This plan turned out to be so successful that it had a major influence on spatial policy and caused a significant transformation of the Dutch landscape. A central idea in the plan was the 'two-speed landscape' or 'casco concept', which was the forerunner of the planning concept for the National Ecological Network.

Explanations for the success of the 'Stork concept' were found in the wider professional and social context and not just in the event of the design competition itself. A range of 'unplanned' opportunities and fortuitous circumstances seem to have supported the gradual development and implementation of parts of the Stork concept. A common feature in these circumstances is the absence of an immediate operational focus. Members of the professional networks that were influential in the conceptual shift had deliberately distanced themselves from existing instrumental goals. This learning attitude, characteristic of reflective practice, applied not only to individual behaviour, but was also organised on a metalevel in sys-

tematic reflection on practical issues in peer groups and in collaboration between applied researchers, policy makers and design practitioners. This attitude created a vital body of knowledge that enabled a flexible, state-of-the-art response to emerging issues.

10.4 From theory to practice

Landscape planning and design in today's pluralistic democratic society takes place in networks in which knowledge and power are distributed among many people. With respect to landscape architecture, the changing nature of planning and design activities in this emerging network society can be compared to changes in the architectural professions as a consequence of the Industrial Revolution. Then it was a shift from 'constructing or building the artefact' to 'drawing the artefact' (what Jones refers to as 'design by drawing') in order to support the division of the production process into a series of separate activities. This changed designers' work as well as their relationships with other disciplines.

The network society stresses another dimension of architectural skill: the use of strategic or concept design to co-create concepts which enable (networks of) social actors to recognise opportunities and possibilities in the instrumental or operational mode of everyday decision making. Strategic design does not replace 'design by drawing' or the role of the architect in constructing and building; it implies yet another shift in focus within the architectural disciplines, and certainly in landscape architecture involved in regional planning. This shift requires different skills, a different attitude towards collaboration with other disciplines and social actors. It requires co-design methods that enable participants to contribute optimally from a disciplinary perspective as well as from a collaborative, transdisciplinary perspective, and a new repertoire regarding planning and design techniques, such as the representation of concepts and the use of information and communication technology. It also requires insight into multiple power dimensions related to design concepts, how people or established institutions are affected by new concepts and can contribute to or thwart change. 'Phronetic research', as proposed by Flyvbjerg, could be a useful companion in co-design to support meaningful concepts and opportunities for implementation.

The transition towards the network society has opened up a large area for experimentation in practice and further research in landscape planning and design. As mentioned before, prescriptive theory and reflective practice do not go together. Especially in times of change, lessons from the past are no guarantee for

future success. They can, however, help to direct experiments by suggesting what conditions might favour success. They can also help us to avoid making routine mistakes by revealing what *not* to do.

Towards a shift of perspective in planning practice: getting rid of the instrumental bias

Changes in the practice of landscape planning and design are related to the overall major transition due to the rise of the network society. An important observation in this thesis is that instrumental methods are generally assumed to be the dominant planning style and that the paradigm of 'makeability' and control over space and time are still influential. Illustrative is the fact that the translation of *techne* in Western languages has an instrumental connotation in 'technical' or 'technocratic'. As has been shown, the classical concept of *techne* also includes value-focused and unstable or unpredictable issues in which practical wisdom plays a major role. Another sign of our instrumental bias is that the perception of 'time' that goes with planning and design practice is clock time or dating time (*chronos)*. Planning in general is concerned with ordering activities in a linear way, in 'chronological' order. By restricting planning to only this instrumental concept of time and evaluating planning processes on their ability to deliver an output that was determined from the start, the planning community neglects a rich pool of opportunities and denies the fundamental indeterminacy of planning problems. Dutch planning practice would benefit from a shift in perspective from a dominant instrumental approach towards a reflective approach in which the 'wickedness' of planning issues is acknowledged.

A number of experiments in regional planning and design have been conducted over the past twenty years or so. The rationale behind these experiments seems to be the (gradual) acceptance of uncertainty and ambiguity in the planning context. Although the modernist idea that we can acquire complete knowledge about systems in order to control them may have been officially abandoned, as an ideal it still dominates planning practice.

The case studies in this thesis underpin the conclusion that a dominant instrumental approach to landscape planning and design falls short. The Restructuring process was labelled as 'strategic planning', but the procedure and planning conditions in fact fit into an instrumental approach. Most regional plans are called 'strategic plans', which seems to stand for an extended planning horizon and a less detailed legend compared with operational plans. The dominant thinking mode, however, is linear and determined: from abstract to concrete, from larger to smaller scales, from long-term exploration to short-term action plan. Strategic

planning is approached instrumentally, as an exercise in the service of operational plans. The shortcomings of this approach have become increasingly apparent.

The other case, the Stork Plan, shows a completely different approach. The plan had no formal status, like many previous design studies or landscape structure plans that were contemptuously looked upon as 'pseudo planning science' by planning formalists. However, some really transformative ideas in practice, like the changeover from a defensive nature preservation concept to an offensive nature development concept, are the legacy of a primarily strategic planning and design approach, executed by dedicated professional networks that were partly 'beyond control' of the formal planning institutions. The success of the plan was not due to a top-down order or instruction, but to the recognition of its transformational quality and the opportunities for mutual benefits to many social actors.

The network logic of the Information Age poses a fundamental challenge to linear reasoning in planning. Linearity in space and time as a point of departure for regional planning is questionable. What happens far away can easily affect the environment here. Shifting between scales can help us to find crucial design nodes and develop promising concepts. Castells' concept of the 'space of flows' and 'timeless time' implies that people, organisations or networks are playing simultaneous games on the boards of strategic concepts and operational plans. When the 'time is ripe' a design concept, which is a mental construct, might be materialised into physical form.

Approaching strategic planning as an extension of instrumental planning and expecting it to meet the same standards, such as consensus, feasibility and efficiency, and expecting it to take place under the same conditions denies the fundamentally different, although complementary, nature of a strategic and an instrumental mode in planning and design.

Landscape planning as design dialogue

To apply strategic planning and design in practice, conditions should be nurtured that fit the principles of design dialogue, which is a transdisciplinary, open-ended conversation on landscape strategies from which we can only trust, not guarantee, that good opportunities will emerge. This interpretation of *landscape planning as design dialogue* challenges the professional and organisational routines in spatial planning practice as they have been developed during the 20th century. In strategic planning and design as defined in this thesis, the professional's task is not to help government agencies to reach a consensus with selected civil society organisations on a certain issue within a given timeframe, as in the Restructuring case. This is considered an instrumental approach. In the strategic approach of design dialogue the professional's task is to broadly explore a planning issue, tak-

ing an independent position and involving diverse experts and interests. Design dialogue offers a mode of conversation that, unlike consensus-based negotiation processes, allows participants to creatively explore the problem–solution space and, by integrating elements of practical wisdom and scientific knowledge, bring forth new insights for formulating design concepts.

The following characteristics of design dialogue are considered favourable conditions to generate meaningful concepts and visions as a breeding ground for implementation:

- ambition that goes beyond compromise;
- the involvement of experts, including 'professional amateurs', with a range of expertise, skills and practical wisdom, performing a 'multilingual' conversation using imaginative, graphical language, verbal, narrative language and the language of facts and figures, all with their own rationality;
- the creation of new insights through a design approach: the iterative process of 'creative imagination and reflective judgement', making design moves that integrate a wide range of expertise and interests and represent various levels of scale and detail;
- dialogue takes place in a 'free space', implying a state of mind and atmosphere without obligations in terms of interests, cognitive frameworks and time, as a condition for learning and creativity;
- participants have an open mind, allowing them to seize opportunities outside the 'dialogical space' as key players who can connect conceptual ideas to implementation power.

Professional planning and design expertise are important in such processes. General 'process managers' lack the specific know-how to recognise the right time to make a move, to integrate new knowledge, or to take a break. Experienced designers and planners have built up a stock of principles and references that speed up the design process and that increase the chances of promising concepts arising. Similarly, in co-design practice a 'body of knowledge' needs to be built up in transdisciplinary networks, from which adequate responses can be expected to emerging issues. The output is primarily personal, embodied knowledge among the people involved, which can form a breeding ground for further decision making and action.

It is open to discussion whether government should play a central role in strategic planning as defined in this thesis. Initiatives for facilitating design dialogue can be positioned anywhere, as long as the participants have the relevant exper-

tise, knowledge and interests for the issue at stake. In fact, the examples given in Chapter 4, like the Netherlands Now as Design Foundation and the Eo Wijers Foundation, are private initiatives. As design dialogue is not a context for negotiation or decision making, independent organisations might be appropriate environments because they are less preoccupied with moving a process in a certain direction.

Researching practitioners

The professional community of Dutch landscape architecture in the 20th century has developed a repertoire of methods for strategic, regional landscape design. This has hardly been a deliberate, planned development, but rather a reflective response to social demands and changes. Notwithstanding the successful contribution of landscape architects in major planning processes, they themselves state that they have difficulty in finding their role in complex planning processes like the Restructuring of the Sandy Soil Areas. In view of this, a first message to the academic domains of both landscape architecture and spatial planning is that practice would benefit very much from close cooperation between design and planning research in the shared framework of landscape planning and design as an inseparable unity of creative imagination and reflective judgement.

But academic research alone will not change practice. As described in this thesis, an important success factor for the 'maturation' of regional landscape architecture in the Netherlands seems to be the personal relationships between professionals in everyday practice, research institutions and universities. The development of methods for any reflective practice takes place with and within practice. Experiments and systematic reflection within such practical knowledge networks can intensify and speed up the development of good methods. This is how teaching hospitals, for example, organise their research and development. Development of methods for regional landscape planning and design requires a knowledge system that rewards practical knowledge and provides conditions for reflection.

Dutch landscape planning and design currently lacks such a knowledge infrastructure. The worlds of planning and design practitioners and scholars only meet accidentally. Both building up practical experience in planning and design and thorough reflection on practice are time consuming and require concentrated effort. Policy agencies, universities and research institutes are increasingly assessed on their short-term instrumental output. Reflecting on practice to support collaborative learning, without predictable, instrumental outcome, is not encouraged. In general, the reward systems of both practice and research environments do not

favour a ‘mixed breed’ of researching practitioners. It probably requires unorthodox, ‘extracurricular’ activities to realise a programme that supports systematic cross-fertilisation between the cultures of practice and research. After all, it is in the interest of both practice and academia to upgrade the individual knowledge and skills of reflective practitioners in landscape planning and design to the meta-level of a reflective discipline.

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Appendix 1: Landscape planning and design in retrospective - Overview per period

period	Illustrative (Dutch) landmarks	Keywords planning & design; practice & theory
Industrial revolution; Ca 1850-1920	1901: Dutch Housing Act	From rural to urban society; increased pace and complexity of spatial transformations; division of labour, also in design process : 'design by drawing'; need for spatial planning;
Modernism; Ca 1920-1965	1918: Foundation of Dutch Institute for Housing and Spatial Planning 1924: International Garden Cities and Town Planning Association in Amsterdam 1931: Amendment Housing Act 1938: State Commission 'Frederiks' 1959: last CIAM in Otterlo 1962: revised Housing Act and Spatial Planning Act; 1965: first national spatial planning policy document 1966: second national spatial planning policy document	The functional city; Scientific approach: objective, 'rational'; 'Survey before plan; planning and design process as staged model: analysis, synthesis, decisions; Post war restoration efforts
Anti-modernism; Ca 1965-1985	1970: 'the year of nature preservation' 1973-1985: Third national spatial planning policy document in three main parts (Orientation Report, Urbanisation Report, Rural Areas Report) and many interim documents, structure schemes and sketches. 1985: revised Spatial Planning Act	Planning as decision-making, 'maturation of planning theory'; citizen participation; distinction between (scientific) facts and (political) values; Theoretical contributions for planning and design methods; from linear to cyclical models; Rational approach remains dominant in planning practice; Crisis in planning
Handling the crisis Ca 1985-2000	1984-1989: Foundation 'Netherlands now as Design' (NNAO) 1985: Eo Wijers Foundation for regional design; 1988: Fourth national spatial planning document; 1990: VINEX 1996: start preparations for Fifth national spatial planning document ('Nota Ruimte' in 2005) 1996: Vision on 'Urban Landscapes' (Visie Stadslandschappen) by Ministry of Agriculture, Nature, Fisheries.	Implementation becomes serious issue; Spatial planning as 'enterprise', strategic project approach; call for visionary and imaginative plans, conceptual approach; Sustainability focus: integrate water, environment, spatial planning; 'Interactive planning' and 'communicative rationality' illustrate interdependency between government and stakeholders; Housing and agriculture no longer the natural allies against urban sprawl. New concepts based on water and infrastructure ('fluid entities') dissolve barriers between urban and rural system.

Planning Context: Scale & time	Professional development spatial planning and design	Landscape architecture
Planning focus on local, urban projects. First experiments with 'regional planning' in mining areas, operational focus. From 'static' to 'dynamic' region.	Engineers and architects. Alternating dominance of technical and aesthetic approaches;	Rural and urban areas were separate professional domains. Garden and park design as specialisation of architecture. Engineers were dominant in the rural areas (land reclamation).
Regional surveys; Inter-municipal structure plans, operational focus; First proposals for provincial and national planning by 'Frederiks Commission'; migration to Western Netherlands makes national view necessary; City-region concept integrates urban and rural land use	Architecture considered as key-discipline in urban planning and design; researchers (first mainly engineers, later also geographers) deliver necessary information. 'Scientifically based designs'; seemingly peaceful coexistence of architect-planners, engineers and surveyors/ researchers. Recognition of different aspects to be integrated in planning practice: research, technology, composition.	1926: Van Lohuizen advises a 'landscape plan' to be drawn up for every land cultivation project; 1928: Report on Zuiderzee polders first link between architecture and engineering in large scale rural projects. 1939: Cleyndert advocates landscape architectural skills in regional planning. 1947: Bijhouwer first full professor Wageningen University. Legal basis for 'Landscape Plan' accompanying land development plans (Land Consolidation Act, 1954)
Various complementary planning scales; Strategic regional planning mainly defensive without operational power; functional zoning, rigid separation urban and rural areas; Non statutory 'Landscape Structure Plan' is first sign of a more developmental approach towards 'rural' regional planning.	Dominance of architect-planners no longer accepted. Division of planning discipline in social science approach and design approach. Superiority of scientific knowledge and obvious professional authority questioned. Interdisciplinary disputes about competence. Systems approach paradoxically leads to des-integration and lack of coherence.	Multi-disciplinary landscape studies following scientific rules; Research department for landscape design established at the National Research Institute for Forestry; Formulation of theoretical framework for landscape design (landschapsbouw); Professional debates about landscape as visual/ aesthetic aspect or as integrative whole. Participative approach restricted to small scale (operational) design
Focus on area specific policies, regional scale as central scale for integrating environmental aspects; experiments with 'diagonal planning' as the upbeat for network guidance. Gradual acceptance regarding uncertainty and ambiguity in the planning context. Emergence of 'strategic design' as knowledge generating activity ('research by design'); connection with operational planning / design remains unclear. Appearance of 'regional networks' and 'network regions'; content defines the delimitation of the region rather than administrative borders.	Designers retake firm position in planning; 'planologists' come to a new consensus; Gradual merge of landscape and urban planning and design. Practice challenges planning professionals to inter- and transdisciplinarity: search for new collaborative approaches between social and technical sciences, architectural disciplines, planning practitioners and stakeholders. .	Landscape architects have considerable impact on new integrative concepts for urban-rural issues, sustainability concepts (water, nature). Network of landscape architects around Division Landscape Development of National Forest Service building up strong body of knowledge for regional design. E.g. the formulation of casco-approach; Landscape as integrative framework appealing for regional planning issues. However 'regional design' is in search of its own talents.

Appendix 2: Sources Reconstructuring Case

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Workshops, meetings, interviews

06/06/2003: interview W. de Haas, manager DLG

13/11/2003: Wageningen/ Alterra, Meeting with landscape architects WUR and Designers DLG Atelier Zandgebieden

08/09/2004: Baarlo, workshop 'Design, planning and landscape development' (Stakeholders and professionals Reconstruction Limburg)

24/11/2004: Baarn, 2 workshops on 'Design and Policy making in Reconstruction' (planning and design professionals)

23/08/2005: workshop: Den Bosch, on 'Design and Policy Making' (planners/ designers Province North Brabant)

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Summary

Landscape Architecture between Politics and Science

An integrative perspective on landscape planning and design in the network society

Introduction

Landscape architecture in the 20th century has developed from a practice-oriented discipline for designing parks and gardens into a broad professional field covering all scales and both urban and rural areas. It also gained an established position as a scientific discipline. In tackling today's complex planning and design issues, landscape architects necessarily cooperate with other experts, researchers, politicians, users and clients. In a co-design approach it is important to be able to clarify one's own disciplinary base. This thesis aims to provide a theoretical framework for co-design in large-scale landscape architecture as an integrative perspective for the practice of landscape planning and design in the context of politics and science.

Part I

Part I explores the research problem. The leading question was: *What characterises a design approach and, more specifically, what characterises a landscape design approach?*

Chapter 2 approaches design as an intellectual activity and professional skill. Design is defined as 'forethought in making'. As 'making' is an integrative and synthetic activity, so is the mental activity of forethought that precedes it. Aristotle describes the field in which integration takes place in terms of the three intellectual virtues of *techne, episteme and phronesis*, which correspond with the basic human capacities of *making*, *thinking and acting.* Aristotle explains that making (*poiesis)* is different from, but closely related to, thinking and learning, which underpin the theoretical sciences (*theioria)* and the moral virtues of judging and valuing that underpin action (*praxis)*. This triad is explained in Table 1.

Human capacity	Thinking (*Theioria)*	Making *(Poiesis)*	Acting *(Praxis)*
Intellectual virtue	Scientific scholarship *(Episteme)*	Skillfulness, craftsmanship *(Techne)*	Practical wisdom, prudence *(Phronesis)*
Rationality	Theoretical, analytical	Practical, productive	Practical, value focused
Type of knowledge	Person- and context-independent, universal	Personal, context-dependent	Personal, context-dependent
Relevant professional domain	Science	Arts, crafts, professional practice	Ethics and politics

Table 2-1 Three intellectual virtues and human capacities

Techne is the main kind of knowledge for planning and design. A closer study uncovered a concept richer than the widely accepted concept of *techne*. The usual interpretation of *techne* is very close to theory and the universal. This instrumental approach is relevant under circumstances that are more or less predictable. Complementary to this '*epistemic techne'* is a '*phronetic techne'*, which is relevant in cases of uncertainty when desired outcomes must be brought about in a shifting interplay of forces through strategy and a talent for improvisation. This strategic approach is the kind of design task common faced in regional landscape planning and design. Characteristic of this kind of *techne* is a close relationship with the opportune (*kairos)* and chance. Whereas an instrumental approach goes with linear time or clock time (*chronos)*, a strategic approach goes with a different concept of time, *kairos*-time*,* which is the 'time of the right moment'. We cannot draw a clear demarcation between the two modes of *techne.* The balance between the 'phronetic' and the 'epistemic' approach depends on the character of the task at hand. The more stable and predictable an object of *techne* is, the less variety one finds in particular cases and the more one can rely on general rules. In contexts of greater uncertainty, instability and uncontrollability, general rules are only of limited use and one needs to rely primarily on personal experience to judge the particular situation.

Creative imagination and reflective judgement can be considered the heart of any design process and they have a reciprocal relationship. Creativity implies a reflective judgement on appreciation, fitness and usefulness. Judgement of particular situations requires imagination to link the particular to the universal. The design process involves integrating different kinds of knowledge from the domains of *techne* and *phronesis* (mainly tacit, embodied knowledge) and *episteme* (ex-

plicit or codified knowledge). After all, a design has to perform in a practical way; it cannot deny general epistemic principles and, above all, it needs approval and support in *praxis.* In general, the further a design process progresses, the more we can test the design proposal against explicit criteria; we gradually shift from a *phronetic* to an *epistemic techne*. Designing can be considered as an integrative, intrapersonal and interpersonal conversation in which the intellectual virtues *techne, episteme and phronesis* meet. Designing presupposes tuning in to both the practice of acting 'wisely' in the public domain and of thinking analytically and objectively in the theoretical domain, or, in everyday language: in the design process the skill of the artisan meets the logic of the scientist and the practical wisdom of the leader.

Chapter 3 further defines the concept of landscape as the interface where nature and culture, and object and subject, meet. Three dimensions of the landscape concept are identified: matterscape, powerscape and mindscape. Each represents a different mode of reality and reflects a different validity claim. This is summarised below.

Table 2 Matterscape, powerscape and mindscape (after Jacobs, 2006)

Landscape phenomenon	Matterscape	Powerscape	Mindscape
Mode of reality	Physical reality	Social reality	Inner reality
Corresponding with…	Objective state of affairs	Inter-subjective norms	Conscious mind of the subject
Validity claim	'True'	'Just'	'Truthful'

Epistemic knowledge about landscape deals mainly with the objective facts of matterscape. Practical wisdom, or *phronesis*, about the landscape deals with powerscape and deciding how to act in a certain situation, taking into account the different values people place on the landscape. The designer's productive skills (*techne*) of creative imagination and reflective judgement enable an integrative process in the mind, integrating *episteme* and *phronesis*, from which a solution gradually emerges that best fits the particular situation. Landscape as public domain, in which knowledge and power are distributed between many actors, demands a co-design approach. In this situation the phenomenon of powerscape is much more complex than in individual or centrally directed design processes. The integrative conversation, in which different intellectual virtues and corresponding landscape phenomena meet, is considered to be a major challenge for landscape planning and design in the network society.

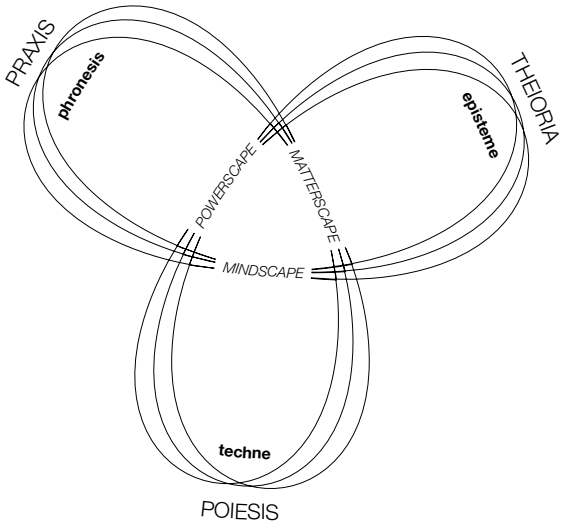

Figure 1 Co-design as integrative conversation

Chapter 4 provides an overview of the practice of landscape planning and design in the Netherlands in the 20th century. In the concluding paragraph the usability of the conceptual framework is tested by asking: *How can history, the actual situation and the challenges of the profession of landscape architecture be understood and explained in the light of the conceptual framework?*

From the beginning of the 20th century, architecture broadened its scope to embrace urban planning and design and regional surveys were used to provide a scientific foundation to spatial plans. In the Netherlands, the need for landscape architects was recognised in the decades before the Second World War, particularly to supplement the work of architects and engineers working on the new *Zuiderzeepolders*, infrastructure projects and large-scale land development plans. In 1947 the first full professor in landscape architecture, professor Bijhouwer, was appointed in Wageningen. Modernism stressed a scientific approach to planning and design. In terms of our conceptual model, the focus was on the *techne-episteme* orientation.

During the 1970s architects lost their leading position in spatial planning. In the antimodernist period spatial planning increasingly became a matter of public and political debate. Planning science (*planologie*) developed as a new discipline providing scientific information to support the political decision-making process. In

this period planning science explored the *episteme-phronesis* orientation, distancing itself from *techne* and the integrative nature of the design disciplines. Planning *as* science was not very successful and many consider this period to be a time of crisis in spatial planning. Landscape architecture gained in importance, partly due to public interest in environmental issues. Being very much involved in practical work, landscape architecture was hardly affected by the crisis in planning. It was a period of disciplinary maturation. As can be expected from the conceptual framework and the integrative nature of designing, interdisciplinary debate on competences and the demarcation of disciplinary boundaries were part of this stage.

From the mid 1980s a new balance gradually emerged. Rational scientific planning approaches were abandoned and spatial planning became much more political as it looked for new integrative concepts. In this climate a new strategic design approach emerged whose strength lay in articulating integrative normative visions as 'possible futures', thus supporting political deliberation. With the strategic approach, also called 'research by design', designers and planners explored the *techne-phronesis* orientation. Two private initiatives played an important role in this development. The NNAO Foundation organised a collaborative process in which designers, planners and researchers elaborated four politically divergent scenarios for the Netherlands in 2050 and the Eo Wijers Foundations organised its first competition for regional design. Given their relatively small numbers, landscape architects had a significant influence on both initiatives. Since the 1970s the development of a strong network of landscape architects and policy makers working on the regional scale, sharing their experience on a regular basis with researchers, has left a strong mark on the practice of regional planning and design.

Around the turn of the century interesting initiatives emerged involving co-design on both long-term visions and short-term implementation strategies. These practical networks are where the domains of politics and science meet in a shared ambition to create visions for sustainable development. Landscape architects seem to have a solid position in these networks. In terms of the conceptual framework, a strategic *phronetic techne* and an instrumental *epistemic techne* are applied simultaneously, depending on what is judged to be appropriate in the actual situation.

In retrospect, 20th century Dutch landscape architects explored the relationships with the scientific and the political domains and developed a repertoire of methods that seems to hold promise for collaborative, transdisciplinary networks

working on regional planning issues. However, despite the growing awareness and acknowledgement of the added value of regional design in strategic planning, incorporating this into formal administrative planning procedures has remained difficult in planning practice. This observation is further discussed in Part II.

Part II

Part II explores the characteristics, challenges and demands of a landscape design approach in the network society. A case study of a complex regional planning process, the Restructuring of the Sandy Soil Areas programme, illustrates current routines in Dutch spatial planning. The case study shows the ambivalence and discrepancy between the usual instrumental mode of governmental spatial policy planning and a 'Major Design Project', a largely exploratory exercise which ran in parallel with the administrative planning procedure. This process ran from about 2000 to 2005 and is considered by both professionals and politicians to have been rather unsuccessful. There is considerable dissatisfaction about the content of the Restructuring plans and doubts about the feasibility of implementing them.

Spatial policy planners and landscape designers were critical about the effectiveness of their collaboration in the planning process for the Restructuring of the Sandy Soil Areas. The role and added value of designers in regional planning was not self-evident and many designers had difficulty in explaining their contribution to the process and the precise nature of their remit. On both sides there was insufficient knowledge of and insight into the policy planning and design approaches. As a consequence, stereotypes tended to be taken as true. The tensions seemed to arise for two main reasons:

1 | The rational, linear (formal) planning procedure from problem to solution and from goals to means conflicted with the iterative design process, which is in the nature of a learning process involving trial and error. In the planning procedure the problem–solution space was delineated, whereas in the design processes the problem–solution space was explored (and often expanded) by investigating various themes and scales to find the best fit in the given situation.

2 | The way in which interaction and communication in the process was approached. Policy planners would limit and control conflicting situations as much as possible in order to reach a consensus through negotiation. In contrast, the designers would not avoid confrontation if this could lead to new insights. To them, provocative proposals were a means of enlarging the 'mental space' for solutions.

To understand and analyse the Restructuring case, the conceptual framework was elaborated by applying contemporary design and planning theory, taking Rittel's *wicked problem* approach as a point of departure. Chapter 6 goes into procedural design research to find an explanation for the observed ambivalence in the Restructuring case. One is found in the existence of two descriptive paradigms in the domain of planning and design: Rational Problem Solving and Reflective Practice. This distinction matches the dual interpretation of Aristotle's *techne*: *epistemic techne* for stable situations and more or less structured problems, and *phronetic techne* when dealing with uncertainty and largely unstructured problems. The two modes of *techne* can be distinguished in theory, as a descriptive framework, but in practice they are as two sides of the same coin. Research on human learning shows that whereas beginners tend to approach a problem rationally, expert professionals have learned by experience when to apply a reflective or rational mode. Complex situations require a problem-solving approach that transcends the rational perspective and explicitly integrates properties characteristic of expert performance, such as reflective judgement.

On wicked problems, planning theory (Chapter 7) highlights the structuring of policy problems to support decision making. Whereas structured problems can be solved by a rational rule strategy and moderately structured problems can be approached by a negotiation strategy, for unstructured problems a reflective learning strategy is appropriate. Empirical research, however, shows that in a political environment the complexity of problems is often denied and a learning strategy is not popular. Research on collaborative planning and participative approaches confirm these findings. Methods for involving stakeholders in planning processes usually do not support a learning process geared to finding the best solutions, but rather seek to find a negotiated compromise that is just acceptable to most parties.

In the Restructuring case the administrative planning process approached the planning problem as moderately structured and the solution was to be found in a negotiated agricultural zoning compromise. The problem definition was restricted to veterinary and environmental issues. The deeper cause of the problem – which to a large degree has sociocultural origins, such as the position of agriculture in an urbanised, network society – was beyond scope of the Restructuring process. Stakeholders participating in the Restructuring Committees were representatives of established interest groups and discussions tended to be of technical nature and did not go into such values.

In the additional Major Design Project, the problem was approached as basically unstructured, which required an exploratory and integrative process that goes beyond existing sectoral zoning solutions. However, explorative and confrontational design proposals were not appreciated in the process because they could have put the negotiation processes at risk. The legal framework and the restrictions imposed by the Restructuring Act were fundamentally incompatible with the conditions of a strategic design approach. Consequently, new design concepts that could offer solutions on more promising levels of integration did not emerge.

Combining design theory and planning theory shows that co-design, as an argumentative and learning process, is very appropriate in situations that require perspectives that go beyond compromise. In the design process, values, dilemmas and conflicts are articulated not only by analysing the problem, but also by creatively imagining design solutions. Because the problem–solution space is approached as a coherent unity, participants gain insight into problem perceptions as well as new future possibilities. The formulation and acceptance of a design concept is then a point of consolidation in the process. A design concept is defined as an abstract representation of reality that provides a window to the problem situation and possible solutions. Landscape design concepts aim to reconcile key dilemmas and hold the promise of attractive and feasible solutions. They represent a reasoned and selective choice of issues and scales within the landscape system. In planning as co-design, choices are not made on an isolated 'problem definition' but on a central design concept, which serves as an indicative, intentional framework for further action. Because elaboration of a design concept will again generate new insights, the process must allow for reasoned revisions or exceptions as the result of reflective practice.

Individual designers and planners learn through practical experience to effectively incorporate an instrumental mode into a strategic approach. This is the core of reflective practice. In co-design this reflective, learning ability needs to be developed at an interpersonal level. This is the major challenge for landscape planning and design in the network society.

Part III

The Restructuring case and other empirical research shows the dominance of an instrumental planning approach in spatial planning. Particularly in regional land-

scape planning and design, the dominant perspective needs to be a strategic, value rational search into key dilemmas through an explorative, research-by-design approach. The characteristics of reflective co-design practice can be described by the principles of 'design dialogue'. Design dialogue offers a mode of conversation that, unlike consensus-focused negotiation processes, allows participants to creatively explore the problem–solution space and, by integrating elements of *phronesis* and *episteme*, brings forth new insights into the issue and possible solutions. These insights can be made explicit in the formulation of design concepts.

Chapter 8 describes the main characteristics of design dialogue. Design dialogue is a multilingual conversation in which at least three languages are spoken: the verbal language of narrative and metaphor that goes with *phronesis*, facts and figures to express *episteme* and an imaginative graphical language of *techne*. In the language of design dialogue, drawings are an important, although not exclusive, integrative medium, representing the progress of collective thought that is realised by iterative design moves of creative imagination and reflective judgement. Other important characteristics of design dialogue are the existence of ' free space' as a condition for learning and creativity and the participation of experts with diverse knowledge and skills. Such dialogue needs to go beyond a polite conversation: dilemmas or conflicts should be articulated and used as creative resource for transformation. Dialogue is basically open-ended and serves as a preparation for decision making, but is not a context for decision making itself. The prevailing notion of time for dialogue is *kairos*, the time of the favourable moment. In design dialogue, appealing design concepts can emerge and be approved of 'when the time is ripe'. That can be the point for participants to switch from a learning, strategic mode to an operational, instrumental mode. Recognising these opportunities is part of reflective practice and part of expert performance.

To explore the metaphor of design dialogue in practice, another case study was carried out. The results are described in Chapter 9. The case study explored the emergence of 'transformative planning and design concepts' in Dutch regional planning for the Rhine Meuse floodplain between 1970–2005. The analysis focuses on a remarkable episode around 1986, when The Stork Plan (*Plan Ooievaar*) won a design competition for regional design. This plan has had a major influence on Dutch spatial policy and has resulted in a significant transformation of the riverine landscape in the central belt of the Netherlands. Among the explanations for this success is the absence of an immediate operational focus, by deliberately standing back from existing instrumental goals, as a recurrent feature of the process. In

the professional networks that were influential in this conceptual shift, dialogical spaces were created in which planning and design were approached strategically. A learning attitude, characteristic of reflective practice, was organised on a meta-level through systematic reflections on practical issues in peer groups and in collaboration between applied researchers, policy makers and design practitioners.

A second aspect in the study was the analysis of *powerscape* in the professional networks that were involved in the Stork concept. Five dimensions of planning or design concepts (cognitive, intentional, communicative, institutional and action) all have specific elements of power that are represented by people who play an active part in these dimensions. For successful creation and implementation of design concepts, all the dimensions need attention. People who show 'multiple involvement' in various networks are considered to be key players in transformation processes. The professionals involved in the Stork concept have effectively given attention to all five dimensions of power.

Chapter 10 summarises what is found to be characteristic of a design approach in general and why it might be recognised as a valuable approach in today's large-scale spatial planning issues. Some implications for professional and research practice are also suggested. For planning and design practice, one implication is that the network society demands a new dimension to architectural skills, certainly in landscape architecture involved in regional planning: strategic or concept design as the ability to co-create concepts, which enable (networks of) social actors to recognise opportunities and possibilities in the instrumental or operational mode of everyday decision making. This shift requires different skills, a different attitude towards collaboration with other disciplines and social actors, co-design methods that enable participants to contribute optimally from a disciplinary perspective as well as from a collaborative, transdisciplinary perspective, and a new repertoire of planning and design techniques. It also requires insight into multiple power dimensions related to design concepts.

Another implication is that spatial planning needs a shift in perspective from a dominant instrumental approach towards a reflective approach in which the 'wickedness' of planning issues is acknowledged.

Planning in general is concerned with ordering activities in a linear way, in 'chronological' order. However, the network logic of the information age poses a fundamental challenge to a linear line of thought in planning, with regard to both space and time. Clever shifting between *kairos*-time and *chronos*-time and

between different scales can help in developing promising concepts and finding crucial design nodes. The instrumental bias in planning should be abandoned. Approaching strategic planning as an extension of instrumental planning, expecting it to meet the same standards, such as consensus, feasibility and efficiency, and expecting it to take place under the same conditions, denies the fundamentally different but complementary nature of a strategic and an instrumental mode in planning and design.

Regarding planning and design research, the necessary connectedness between research and planning and design practice is highlighted. Systematic cross-fertilisation between the cultures of professional practice and research to create a mixed breed of 'researching practitioners' is in the interest of both practice and academia. This will help to upgrade the knowledge and skills of individual reflective practitioners in landscape planning and design to the metalevel of a reflective discipline.

Curriculum Vitae

Jannemarie de Jonge was born in Nuenen, the Netherlands, on 4 April 1961. In 1979 she obtained her 'gymnasium' secondary school diploma. After spending a year abroad doing volunteer work she studied landscape architecture at Wageningen University, graduating in January 1987 with a major in landscape architecture, a minor in nature conservation and a minor in communication studies.

From 1987 to 1989 she worked as a landscape architect at the municipality of Ede on a range of design and planning issues in the extensive rural area and the town centre and on an urban development plan. She then moved to the Noord-Brabant provincial authority. After a year of coordinating design, planning and research for the rural areas, she was appointed general project manager for the main provincial spatial plan (*streekplan)*. It was an exciting period in which established ideas about agriculture and nature conservation, and about the relationship between town and country, were coming under increasing scrutiny. New concepts like the regional water system as a basis for spatial planning, a provincial ecological network, an agricultural main structure and city regions that included the countryside were introduced. The *streekplan* was eventually adopted by the Provincial Council in 1992 after an intense political battle and public debate. This experience has had a major influence on the way Jannemarie approached planning in later projects. Having directly experienced the major shortcomings of a technocratic attitude in translating new planning concepts into action on the ground, she turned her attention to the organisation of the planning and design process. The process of public deliberation was increasingly recognised to be an indispensable input to the explorative stages of political agenda setting and research by design, instead of consultation after the main planning concepts had been formulated by the 'experts'.

In 1996 Jannemarie switched from a policy environment to a research environment. At the Staring Centre, later Alterra (part of Wageningen University and Research Centre), she managed a research programme on rural–urban relationships, worked on strengthening the 'research-by-design' approach as a valuable contribution to the traditional research methods, and was one of the driving forces behind some experimental transdisciplinary 'research and development projects'.

In 2003 her latent ambition to study the why and how of a design approach to planning more thoroughly was activated by an interim appointment at the University of Wageningen, where she was given responsibility for the Master's lecture course in Design Theory in Landscape Architecture. That was when she started her PhD research as an external doctoral candidate. In the same period she set

up a business unit for ‘interactive research’ with some colleagues at Wageningen University and Research Centre, hosted at Alterra. This group became known as the Wageningen Interactive Network Group (WING). In 2006 it was decided to continue Wing as a private business. Together with three colleagues Jannemarie is owner and member of the board of Wing BV, carrying out a broad range of projects on a communicative and often design-driven approach to spatial development.

Over the years, Jannemarie has taken part in a number of professional juries, committees and advisory boards, including the scientific committee of the Netherlands Institute for Spatial Research. To keep in touch with the academic environment she has a position as guest lecturer at the chairs of both landscape architecture and land use planning at Wageningen University.

Stellingen

1. **Creatieve verbeelding en reflectieve beoordeling vormen de kern van zowel ontwerpen als van planning (dit proefschrift).**

2. **Waar bij operationeel ontwerpen en plannen kloktijd telt, vraagt een strategische planning- en ontwerpbenadering om een tijdsbegrip waarin opportuniteit centraal staat (dit proefschrift).**

3. **Een prescriptief model voor reflectieve praktijken is een contradictio in terminis.**

4. **Culturele planologie is een pleonasme.**

5. **Macht bevindt zich in de netwerkmaatschappij in de hoofden van mensen (gebaseerd op Manuel Castells).**

6. **Een schoolorkest draagt bij aan efficiënt onderwijs aangezien leerlingen tegelijkertijd cognitieve, motorische, sociale en expressieve vaardigheden trainen.**

7. **Denken gaat niet sneller als je haast hebt.**

Jannemarie de Jonge

Landscape Architecture between Politics and Science
An integrative perspective on landscape planning and design in the network society

Wageningen, 9 januari 2009

Propositions

1. **Creative imagination and reflective judgement are at the heart of both design and planning (this thesis).**

2. **Whereas operational planning and design are governed by clock time, strategic planning and design require a concept of time in which opportunity is central (this thesis).**

3. **A prescriptive model for reflective practice is a contradiction in terms.**

4. **The Dutch concept of 'cultural spatial planning' (culturele planologie) is a pleonasm.**

5. **In the network society the sites of power are people's minds (based on Manuel Castells).**

6. **School orchestras facilitate efficient learning because they combine training in cognitive, motor, social and expressive skills.**

7. **Thinking does not speed up when you are in a hurry.**

Jannemarie de Jonge

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