DESIGN IN A CULTURE OF MOBILITY
Towards a new space typology in landscape architecture

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• Abstract:
All design in landscape architecture takes place in a time/space continuum. Here we focus on one of the key issues; the design of ‘infralandscapes’. In the 20th century, the culture of mobility was introduced at a mass scale. It represents the idea of generic landscapes and being ‘footloose’. Place in the traditional way seems to be lost. A major challenge for designers in the future is the search for contemporary qualities in these type of landscapes. Design in a culture of mobility is based on the different speeds and the experience of that speeds; the design of acceleration and deceleration. This approach is theoretically worked out in three distinct space typologies for landscape architecture; place, space and space of flows.

• Keywords:
infrastructure, landscape architecture, theory of landscape architecture, space typology, landscape design, space/time, global/local

0. Introduction
Space/time in a culture of mobility
Mobility is part of our everyday culture for almost everybody. If you don’t move anymore, you grow old. Being mobile is a major asset both on the individual level and at the level of a country as a whole in western society. Even though we seem to spend an equal time on traveling, commuting or whatever, compared to the last century, we are moving at much faster speeds so we are making larger distances. Our world has become much smaller or what Harvey (1996) describes as ‘time-space compression’. In this paper we pay attention to one of the key issues of contemporary design in landscape architecture where the relation between space and
time is for a great deal determining the object: the
design of infralandscapes. ‘Infralandscapes’ are
defined as: landscapes that are directly or indirectly
affected by the influence of infrastructure in the
broad sense.

1. Space and time in landscape
architecture

1.1 Space
Form in landscape architecture is defined by the
relation between mass and space. In landscape ar-
chitecture, space is the core issue of the object of
landscape architecture, contrary to architecture
where the design of mass is the key issue. Space in
landscape architecture is designed by horizontal
organisation of mass and space. For the greater part
we experience the landscape by moving through
space; static perception of the landscape is rare.
Because of this dynamic perception of the land-
cape, the sequence of experiences defines the per-
ception. This is where time comes in; space and
time are always linked in landscape perception.

1.2 Time
You cannot see time; we can only perceive time
through space. So perception of time in the land-
scape is always indirectly. Time is a broad and uni-
versal concept that is very difficult to describe. Not
only is time invisible, it is also difficult to define in
words. Time is generally experienced either as a
sequence of events or as duration; a number of time
units. In landscape architecture we make a distinc-
tion between different types of time. First of all
time as experienced in natural cycles and systems;
the change of seasons, rhythmic changes during
day, but also in successional changes. In these
cases time is based on change that occurs autono-
msous, without the influence of men. Secondly we
experience time as movement in space; we experi-
ence the landscape as a space - time continuum.
The landscape is seen as a sequential experience,
like a movie. Thirdly we experience time from a
cultural point of view; change in vision depending
on different cultural attitudes. Motloch (2001) re-
fers in this context to the difference between East-
ern and Western cultures. The last ones being goal-
oriented and thinking in linear timespans. Eastern
cultures are much more experience oriented and
see time in cyclical context. These attitudes make
for a different experience of landscapes.
In this paper we focus on the second aspect; the
design of mobility or the physical component what
we call ‘Infralandscapes’. In general, perception of
space in landscape architecture is mostly dynamic.
We perceive the landscape by moving through
space. The speed of movement is for a great deal
determining how we experience the landscape. If
you walk or pass by car through the landscape, you
have quite a different experience of the same land-
scape. Jackson (1994) comes to the conclusion that
most people only experience the (American) land-
scape by car. He sees the landscape of motorways
as an autonomous typology. This viewpoint is iden-
tical to our concept of ‘infralandscapes’, where we
emphasise the design approach, Jackson focuses
more on the perception and cultural aspects of the
motorway landscape. Another difference is that we
see ‘infralandscape’ broader; also shopping malls,
bicycle tracks, and small roads belong that land-
scape.

1.3 The relation between space and
time
Time is expressed in different ways in space and
vice versa. In landscape architecture there is no
space without time. We could distinguish three dis-

tinct types of relations between space and time in
landscape architecture.
• Vertical relations; landscape development over
time
The coherence between the landscape we see and
what is in the underground is researched in land-
scape analysis. A simple example as inspiration for
design, is the making use of the basic topography;
the Mont-Saint-Michel is built on an existing rock
and is emphasising this in its architecture. If you
use the metaphor of the ‘layered landscape or pal-
impsest’, the vertical organisation can be read as
expression of linear time or the historical develop-
ment of the site.
• Horizontal relations; the relation between mass
and space
Coherence between different types of landuse like
dwelling, agriculture, industry, recreation and in-
frastucture. The horizontal relation or proximity
expresses the time you need to get there. Horizon-
tal relations can be seen as transitions and can be
experienced as sequential; the speed of movement
contributes to the type of experience. The sequen-
tial experience is researched extensively by Cullen
(1968), both in his projects (Gosling, 1996) and in
his own book ‘Townscape’ (1968). He speaks of
‘serial vision’.
• Relations based on cyclical time
The changing of seasons, the cycle of days, years and ages in general represent the experience of cyclical time. Because human life is also subject to cyclical time, this is a very fundamental aspect of the way we look at time, the landscape and the future. All plans for gardens and parks that make use of plantation, in some or another way make use of this feature of cyclical time at different time scales like day and night, seasons, growing of trees over a number or years. Both the vertical and horizontal relations are an expression of linear time. All three different types of time can be distinguished but not separated. The take place at the same time and at the same location.

2. Infralandscapes; the design of acceleration and deceleration
2.1 The emergence of infralandscapes
Attention for planning, design and construction of infrastructure is not new; Alberti, Vitruvius were among the first to write about the design of roads, roadside plantations and the problems that are associated with that. For the Romans military reasons were an important factor for the construction of such a road system. Holland being part of the Delta of the rivers Rhine, Maas and Scheldt, is located in a very particular situation (Lambert, 1985; Boekhorst et al., 1996; Ven, 2004) with regard to infrastructure; in the western part waterways — either natural of artificial — are dominant. Until the 17th century the Western part of Holland was almost exclusively accessible by water. An extensive system of canals, rivers and other waterways formed the main connection between the cities, both for people and goods.

In the beginning of the 20th century, planning and design of infralandscapes got a formal start with the establishment of a special working group at the Dutch Forestry Service. This group had the task to advise the Minister of Public Works on plantations along major roads and waterways. With the explosive development of the motorways in Holland, starting before W.W. II, the making of landscape plans became a prime task for this group. Young landscape architects started to make landscape plans for virtually all major new motorways in the country (Harsema et al., 1991). Special for Holland is also the attention for the landscape of waterways; the landscape plan for the Amsterdam-Rijnkanaal by Bram Elffers is an interesting example.

The culture of mobility became an important player in the daily lives of most people. In the past decade infrastructure has become a mainstream subject in landscape architecture in Holland (Harsema et al., 2000). In the last part of the 20th century it became clear that the growing importance for the economy of transportation and infrastructure was for a great deal directing economic development. Landscapes of infrastructure increased in actual size but also in importance for the economy and society in general (Bach & Hoeven, 2000). The autonomy of these landscapes became so apparent that a new spatial typology could be justified. ‘Infralandscapes’ become a new typology (Toorn, 1996, 2001). Infralandscapes are landscapes of which the spatial development is directly or indirectly influenced by infrastructure. An important factor that influences the design approach is speed of movement.

2.2 Design of infralandscapes
What are the key issues to be dealt with in the design of infralandscapes? Design of infralandscapes takes quite a different approach to landscape architectural design like gardens and parks. The dominance of process works out twofold; like all landscape architectural projects, dealing with the dynamics of the landscape and the natural system is basic. On top of that the aspect of movement is characteristic for all infralandscapes; movement at different speeds includes quite different experiences and consequently also demands for a different design approach. This means the core issue for design of infralandscapes is: design for acceleration and deceleration

• Movement and speed

Movement and speed in relation to traffic safety is a major factor determining the design and the design approach. The design of a motorway is different from that of a bicycle route, not only because of size and scale but mainly due to difference in (design)speed. So design speed is not only determining safety and eventually form but also the experience of the landscape is quite different depending on the speed of movement. By foot you experience the landscape quite differently than by train. Jackson (1994) is referring to this in great detail and opens new perspectives on the vision of mobility and speed in the context of landscape design. Schwarzer (2004) works this out further with a special focus on the experience of the landscape from different modes of transport. Also the design of shopping malls, pedestrian zones in cities, airports is for a great deal based on the speed of movement.
• Access and accessibility
Another aspect of designing infralandscapes you always have to deal with is access and accessibility. The perception of the daily environment is for a great deal dependent on physical access. The major part of both the urban and rural landscape is private. Infrastructure opens up the landscape, so this aspect of accessibility in infralandscapes also means a specific experience of the landscape; think for instance of front and back sides of the landscape. Entrances and approaches are also part of this aspect.
Roads, waterways, railways are in most cases public space that is only accessible for special groups of people under certain conditions. The motorway is only accessible for people in cars and not for anybody else.
For railways and waterways it works out in a similar way; both have a limited and specific access and so is the experience of the landscape.
• Relation between local and global
A third issue that is important with the design of infralandscapes is its relation to the local conditions of the landscape at different scales. Especially large-scale infrastructure is almost by nature directed by forces of globalisation and internationalisation. Infralandscapes can be considered as spaces of flow and do have a strong non-place character; having no relation to local conditions. Presently the layout of motorways, railways and the location of mainports is determining for a great deal the planning of an area on the regional scale, global is dominant over local. It is one of the major challenges for designers to develop new approaches for the design of these type of landscapes; the search for a contemporary esthetic of landscapes of mobility that are so much part of our everyday life and culture.

2.3 Design approach
Design speed as a basis for the design approach Attention for deceleration is a necessary complement of this approach of design. Design on the basis of speed and movement includes both high and low speeds. The office of DS explicitly includes deceleration in its design approach and portfolio (Tellinga & Mulder, 1996; Nolan, 1999). In their research of the ‘Hortus Conclusus’ (the enclosed garden), Aben & Wit (2000) develop the idea to use the old typology of the Hortus Conclues in a contemporary form as a complement to the landscapes of speed and movement. They work out an example in Rotterdam to exemplify this. In this way contrast not only exists in the classical sense (old and new, water and land etc.) but also in the sense of contrast in atmosphere (busy and quiet). Making use of access and accessibility in a contemporary way has been worked out by the office of MVRDV in a plan for a business park along the motorway in which they explicitly make use of accessibility by emphasising the linearity as a visual reference (Ibelings, 2000). The development of new forms of landscapes for a culture of mobility offers new challenges. This includes also the development of new qualities, new meanings for these types of environments; foot loose, non-places whatever their names. They form very much part of our contemporary environment and culture (Boekhorst, 1998).

3. A new space typology as a basis for a theory of landscape architecture
Space, space conception and consequently the design of space is fundamental for all design disciplines.
The concept of space is also crucial for the development of a theory of landscape architecture as a design discipline. One of the ways of doing so is the development of space typologies. It is important to keep in mind that any concept of space is in the end always a mental construct that can help to gain insight into and coming to grips with the landscape as an object of planning and design (Reh, 1993).

(Space) typologies have also to do with historical development of design solutions of similar types of design problems.

3.1 Garden, park and landscape as 'classic' space typologies in landscape architecture
One of the more general space typologies in landscape architecture is the distinction between garden, park and landscape. In the development of space typologies over time Vroom (1992) makes the distinction between garden, park and landscape. He uses this typology mainly to distinguish on the basis of scale. Looking back at the historical development of the profession you could roughly take this sequence as a basis for historical development. Most introductions to the history of landscape architecture come basically to this same typology. Even Mosser & Teyssot (1990) who limit themselves to ‘garden design’ come in the end on ‘parkways, park systems in urban environments
and monumentalisation of the landscape’. At the same time Vroom (1992) makes clear that sometimes you can find overlaps between the three typologies; so the distinction is a very general and basic one.

### GARDEN
In most cases gardens are private spaces where the relation between building and garden is the most important. The internal structure is mostly based on that relation and thus determines the form. Individual use is dominant. The garden being an element which can be clearly distinguished from its environment, although it does always has relations with that environment. In most cases it can be overseen in one view; it is relatively small in size.

### PARK
Parks can be both public and private spaces. In case of a public park it is mostly used by groups and individuals. The structure of the park is mostly determining the form; relations with the context are important for that structure. Its contours (external form) are clear but sometimes indirectly visible. Parks are mostly larger in size than gardens but no larger than some kilometers.

### LANDSCAPE
The landscape is always a combination of public and private space. At this scale not only physical space is larger but also the time-scale implies a greater period of time than with parks or gardens; mostly more than 10 years. The contour is not clear and/or invisible; the borders are mostly determined by administrative, political or legal measures. The structure can be clear but is not necessarily so. External and internal relations are determining the form and function of the landscape.

#### 3.2 A closer look at garden and park
Steenbergen & Reh (2003) worked out this development further in their seminal work ‘Architecture and landscape’. With regard to the development of the concept of space this research makes a distinction between the rational, the formal and the picturesque as a basis for the design in the respective periods. So design principles vary according to social, technical and political developments at large.
During the Renaissance the idea evolved that an ideal proportional system, a rational scheme of dimensions and proportions, could be derived in which the relationship between humankind and nature could be enhanced. In the Renaissance villa both the surrounding landscape and the positioning of the garden were determined by this architectonic design matrix. The interaction of the design matrix on the topography was established within the garden layout. The design of the 15th and 16th-century Italian villa demonstrates the architectonic unification of the villa, the city, the landscape and nature, in which the medieval concept of preserving separate realms was transcended. This integrazione scenica came about by framing the scenic and urban panoramas.

In the French formal garden the design matrix was perspectively manipulated in order to create a three-dimensional landscape theatre along the garden’s central axis. These design rules were imposed on the natural morphology; the topography of the agricultural landscape remained outside this formal system. In 17th-century French design the magic of three-dimensional space prevailed. Every aspect of the three-dimensional Grand Ensemble of house and garden was brought under one absolute system of design principles. The horizon was artificially brought within the garden boundary as in a stage set.

The early 18th-century English landscape gardens were, without exception, based on rational and formal systems, which later on were often retained in the form of a ‘hidden order’. The development of the subsequent landscape garden, however, witnessed a steady, yet progressive, move away from the geometric layout. The formal ordering of the matrix was transformed into a linking of rational and formal compositional fragments which were held together by the contours of the natural morphology. In the 18th-century English landscape design the link with antiquity was restored and at the same time reconsidered. The agricultural landscape outside the garden was incorporated as an Arcadian landscape within the plan’s horizon.

3.3 The 20th century: place, space and non-place
In the 20th century the landscape itself became object of planning and design; before it was mainly a matter of elements and structures in the landscape. For the first time in history the landscape as the everyday environment became object of planning and design in landscape architecture. In Holland before WW II the first projects appeared where landscape architects were asked to participate at the level of the landscape itself and not on gardens or parks.

In design of gardens and parks you always work with natural materials in a natural system but in the landscape the process as such is so dominant that it is the core of each (landscape)architectural intervention. So all design in landscape architecture at the level of the landscape has primarily to do with manipulating processes or flows, be it natural processes, processes that are related to occupation and land use and finally the (landscape)architectural interventions. This not only means a different approach to design in dealing mainly with processes but also a different space typology because time is more important than space as such. Castells (1997) coined the term ‘space of flows as a new space typology. This also made for quite a change in approach of the design process; putting more emphasis on the aspect of time. Jackson (1994) goes into...
great detail in describing this change in the American context.
These recent developments have also led to a new concept of space in landscape architecture; ‘non-place’ or the ‘space of flows’. It is clear that this new space typology also needs a reconsidering of aesthetic values; the search for a new aesthetic that makes use and expresses different speeds and movement.

1. **Place**
Sites, situations with special qualities that are related to that specific site or situation. Norberg-Schulz refers to this type in great detail; the genius loci.
Design implies choosing sites or making them fit and materializing elements in that site.

2. **Place in space**
Space itself is quite different in character from place. In most cases space does not exist as such but is complemented by places. Space does not have well defined boundaries; openness and large scale measures are characteristic. So in most cases the two types appear together.
Design has to do with organizing space in time.

3. **Non-place / space of flows**
The present day landscapes refer very much to a conglomerate of these three space typologies. Non-place sounds a bit negative but it is the type of space you find almost anywhere in the modern environment. Basic is its non-relation to local conditions. It is directed by the forces of globalisation that are generic and non specific.
Design deals with organizing time and development in space.

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