

## CHAPTER 5

### MULTIFUNCTIONAL LANDSCAPES

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## 05.01 INTRODUCTION

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Multifunctionality is extremely important in terms of a stadium landscape and ensuring that it does not become a white elephant, for achieving a resilient landscape as well as allowing for humans to express themselves. Multifunctionality will be discussed in greater detail and case studies that have successfully achieved multifunctionality will be looked at. A quick analysis of the current Loftus Versfeld stadium will be done in terms of the multifunctionality principles identified and the proposed response thereof.

*"The urbanite is self-assured and well-informed, finds his freedom and chooses his own sub-cultures. The city is his domain, exciting and seductive. He has proved himself capable of finding his way around the new urban landscape and making places his own." Adriaan Geuze*

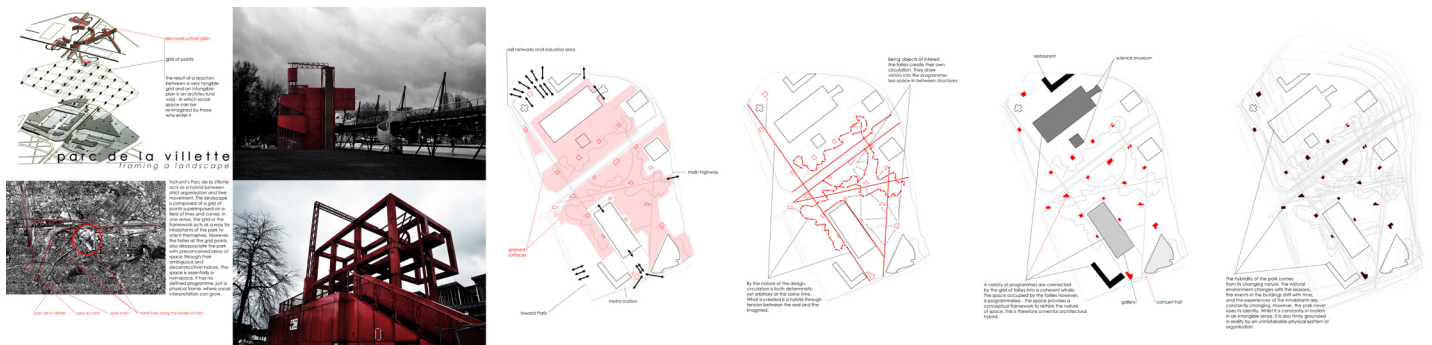


Figure 05.01: Parc de la Villette, Paris, France (by OMA)

## 05.02 MULTIFUNCTIONAL LANDSCAPES IN THE CITY

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Landscapes have been dramatically altered through time with various land use practices and through that, limited opportunities for humans and wildlife. The need for multifunctional landscapes that create livelihood opportunities, food security, maintenance of ecological functions, fulfill cultural needs like aesthetics and recreation. This was recognised by O'Farrel & Anderson (2010).

A multifunctional landscape is defined as a landscape that considers the needs of the user and owner while providing beneficial functions to ecological and cultural dimensions and production (Otte et al. 2007; Lovell et al. 2010 in Lovell & Taylor, 2013).

In a document called "The Accessible City" (Akashi et al, 2014), key factors were presented for an accessible city. Some of the factors that were mentioned are: a universal, socially inclusive transportation network design, relying not only on automobiles, and making places for people at key locations in public spaces. An accessible city is for example public spaces with a high quality built environment where people can interact regardless of what their age, race, gender, occupation or what their economic status are.

An example of this is *Parc de la Villette*, designed by the office of Bernard Tschumi that was built in Paris, France. The main objective of *Parc de la Villette* was that the park had to be able to anticipate and accommodate different changes in demands and programs.

The designers used four strategic layers and superimposed them onto each other namely; "east-west strips" (synthetic and natural surfaces),

"confetti grid" (large and small services points and kiosks), "circulation paths" and "large objects" - like the rounded and linear forests (Wall in Corner, 1999:237). They described their multi-layered approach as "landscape of social elements" where the juxtaposition, uses and adjacency of alternating programs over time would show the quality of the project (see figure 05.01).

Instead of creating a fixed, single-used design, the city was offered a framework for flexible and multiple uses as desires changed within the city. "The strips and grids across surfaces, the point services and the large structures were designed to be both responsive and adaptive" (Wall in Corner, 1999:237).

In the 1990's, according to Wall (in Corner, 1999:234), an emphasis moved towards manipulation and design of large urban surfaces, instead of the design of enclosed objects. Landscape here refers to a "functioning matrix of connective tissue" that will not only organise objects and spaces, but that will also organise dynamic processes that go through them. Landscape then becomes an active surface, where conditions are structured in order to create new interactions and relationships between things that it supports. Wall (in Corner, 1999:234) describes the urban surface as not only spaces between buildings and landscape, not only to green, natural or recreational spaces, but instead as the city's "ground-plane" or "field" that accommodates the infrastructure, neighbourhoods, open spaces and natural habitats. "The urban surface is dynamic and responsive; like a catalytic emulsion, the surface literally unfolds events in time" (Wall in Corner, 1999:234)

Wall (in Corner, 1999:234) compares the urban surface with an agricultural field where different geometries, functions, distributive arrangements and appearance are assumed as changes in circumstances and demand. A primary design strategy should extend its continuity of the urban surface and should be able to increase its capacity of accommodating different activities in time, also those activities that cannot be determined in time. At the same time a range of services needs to be provided (Wall in Corner, 1999:234). Geuze (Wall in Corner, 1999:236) further argues that if we design for unpredictable features, the urban consumer is able to create and find what is of meaning to them in that specific environment (Wall in Corner, 1999:236).

Of course we cannot completely design without function, however, we can design for multifunctionality. Wall (in Corner, 1999:242) concludes that landscape should therefore allow people to claim space or be able to invent space for themselves. Cities should not only be made attractive through design, however, design should make them more fluid, more adaptive and allow them to accommodate unforeseen circumstances and changing demands – *in other words, be resilient*. Ecology addresses how parts are interrelated as well as dynamic systems, which makes the use of ecological design principles specifically significant.

The Yokohama Terminal in Japan, designed by Foreign Office Architects, offers a continuous, yet differentiated surface which could accommodate the complex programme. The space was declared a public space by



Figure 05.02: Yokohama Terminal (<http://www.lucybullivant.net/images/publ/13yokohama.jpg>)

the designers. The architects named it the “no return pier” with the ambition to structure the pier as a fluid, uninterrupted and multi-directional space, rather than a gateway to flows of fixed orientation. The circulation operates as a continuous looped diagram, directly rejecting any notion of linearity and directionality. Paths meander vertically and horizontally before arriving at any destination. The terminal is a good example of how space - also public and private - has been created by the manipulation of surface and has

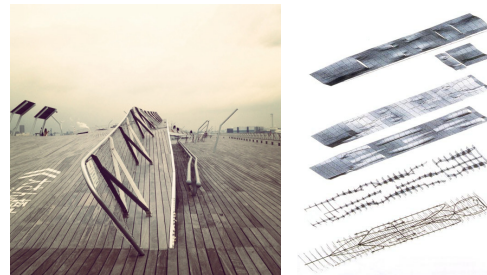


Figure 05.03: Yokohama Terminal layering of surface as well as a photograph of the a manipulated surface and handrail



Figure 05.03: Yokohama Terminal simple diagrams that reveals the essence of the project of surface and multifunctionality (Author, 2015)

provided multiple functions (Arcspace, 2015).

The South East Coastal Park, designed by Farshid Moussavi Architecture, is designed as a series of ramps for circulation throughout the park, interconnected by sloped surfaces to bridge the 11m drop. The resultant topography of the park presents an alternative to the traditional dichotomy between the rational geometries of French landscapes and the organic, picturesque qualities of English landscapes. It is at once complex and rational: generated by precise constraints rather than through mimicking nature (Farshid Moussavi Architects, 2015). The form of the park was influenced by the material used - the modular informed the sizes and much of the shape. The material as modular offers opportunity for various activities to occur and does not force the user to a specific activity.



Figure 05.04: Surface manipulated and formed to address ecological design

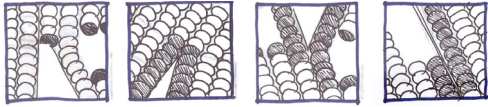


Figure 05.05: South East Coastal Park - material modular informing the surface.

An example of a multifunctional landscape where ecology as well as robustness and social aspects were addressed is the Euroborg Football Stadium in Groningen, The Netherlands. The landscape was designed for two opposite purposes. Over weekends the landscape enables large crowds of thousands of football fans to effectively and orderly exit and enter the stadium in a small timeframe. This robust landscape offers leisure and a pleasant atmosphere with a variety of shops, organisations and companies that occupy the surroundings on a normal weekday.

An open, easily accessible (permeable) terrain with simple interventions in spatial structure which makes use of the environmental leads, emphasises the quality of the area and the environment and makes it a responsive design. The stadium is situated on an artificial mound called a 'wierde': to make use of the height difference, a large sit-stairway offers a view across the city's Winschoterdiep canal. People can

enjoy the sunset until deep into the evening during the summer (MDL Landscape Architects - Official Website).

## 05.03 MULTIFUNCTIONALITY PRINCIPLES IDENTIFIED

Five principles were identified that provide multifunctional space:

1. Responsive
2. Robustness
3. Considering edges
4. Considering ecological design
5. Inclusiveness

### 1. Responsive:

The term responsive is explained by Bentley et al. (1985:9) as the built environment which provides its users with a *democratic* setting, enhancing opportunities by maximising the degree choice available to the users.

Responsiveness can be achieved by creating permeable spaces, in other words, various opportunities are available for people to move through spaces. Creating legible spaces allow for more choice in the landscape - if the space is not legible, people will not know how to react or use spaces. Visual appropriateness contributes to responsiveness. To achieve this, it is important to consider the urban scale



Figure 05.06: Euroborg stadium landscape (MDL Landscape Architects - Official Website. Accessed: 27 May 2015, URL: <http://www.md-l.nl/en/projects/portfolio/euroborg-stadium-environment/>)



as well as the use of plants, trees, colour, material, etc. to make it look more attractive. By considering all the principles discussed below, the landscape will become responsive.

## 2. Robustness

A robust place offers the users more choice than places which are limited to a single or fixed use (*multifunctional landscape*). People act as the most important supports for different activities - it is where people experience each other. Most of the robustness is removed in these public spaces when the space is divided into compartments where different activities occur (Bentley et al., 1985:56).

The first principle for a robust design is to design spaces in the public realm with activities that can co-exist without impeding each other, in other words, it can also be seen as flexible or adaptive space. This affects the way we look at pedestrian and vehicular activity (Bentley et al., 1985:60). In order to create a robust place, the edges of the space is the most important, since most activity takes place in these areas (Bentley et al., 1985:59). Within the edges, watching people actually becomes one of the most common activities.

## 3. Considering edges

An edge offers a view of the activities going on as well as a sense of refuge - the greater the edge area, the greater the opportunities (Bentley et al., 1985:60). Dee (2001:115) explains that edges are important physical components of the landscape and act also as spatial concepts in design. Edges are places of transition that should enclose and separate various spaces. Edges allows for integration and a rich, complex and subtle design of spatial transitions. The fabric of architecture and landscape should also be knit together with edges.

An edge can be defined as a linear interface between spaces, a permeable vertical plane, a transitional zone, a boundary or horizon (Dee, 2001:116). Edges also provide the potential for social activity in public places, support diverse human uses as well as cultural and experiential meanings (Dee,

2001:117). In order to help create a multifunctional and robust landscape, edges must be considered.

## 4. Ecological multifunctionality

Ecological multifunctionality can be seen as part of the Green Infrastructure approach. Green infrastructure has recently become the vehicle to provide ecological services as well as advantages towards sustainability and improved quality of life (Selman, 2009:45). Functions are enhanced and multiplied once the natural environment is planned and integrated as a whole - where habitats, a network of green spaces and places providing other benefits exceed the sum of the individual parts (Landscape Institute, 2009 in Selman, 2009:45).

## 5. Inclusiveness

Designing for inclusiveness allows any one of any age or gender, with or without any disabilities, to use an economic or social space as independantly as possible (Imrie & Hall, 2001:4).

Inclusiveness on Loftus Versfeld, as a stadium landscape specifically, is to design a landscape that will accommodate large crowds during event days as well as a single everyday user wanting to use the park for recreational purposes. The following case study demonstrates how the principles of responsiveness and robustness was integrated in a stadium landscape design and how edges and ecological design was considered.



## 05.04 CONCLUSION

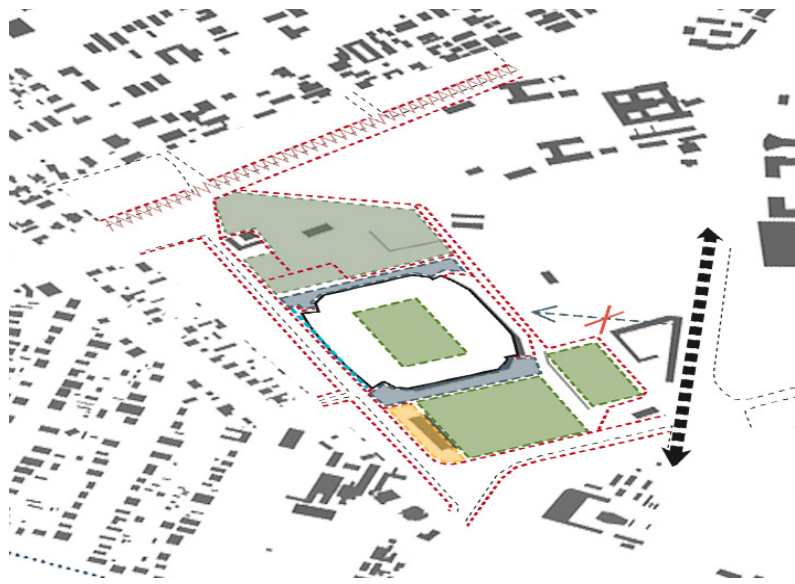


Figure 05.07: Analysis of site in terms of multifunctionality (Author, 2015)

Loftus Versfeld stadium and surrounds are completely fenced off. Various fences enclose various spaces on the property. The landscape is not integrated into the urban fabric and becomes a large open space with no value to the public or the urban environment. No other activities than that of a game day occur on the grounds - except for team rugby practices every day on the field.

The site has no current ecological value - it is derelict and there is a loss of biodiversity. Only on event days, larger groups of people are accommodated and on an everyday-base, the public cannot use the space.

In response to this analysis, the first step would be to take down the fence and make the property accessible to the public - inclusive to the people within the surrounding area.

The second step will be to address robustness, by creating a multifunctional surface.

Thirdly, the edges need to be treated in a different way and should respond to the existing and future predicted urban environment.

Ecological design needs to be considered to enhance social and ecological well-being.

