



MASTERS PROGRAMME IN URBAN MANAGEMENT AND DEVELOPMENT

October 2008 – September 2009

**The Use and Meaning of Residential Open Space in
Multi-Culture residential Area:
Case Study of Afrikaanderplein, Afrikaanderwijk, Rotterdam**

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UMD 5 – Housing and Land
Rotterdam, September 2009

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CHAPTER 1

Introduction

1.1. Background

Residential area represents households as the smallest organization unit within urban area which consists of a set of physical environments that provides opportunities for its residents to meet their needs and desires (Smith et. al, 1997). Public Open Space (POS) in a given residential area is one of the indispensable elements of a residential area itself. It accommodates social function of the inhabitants which involve direct and active participation. In order to fulfil the functions, it should be well utilized. There are cases where POS in some residential areas are quite well utilized and some are not in other areas. It is paradoxical to see such space remain unused or used not in expected way it should be used because of several possible reasons: architectural insignificant, lack of activity generators, wrong location, ‘unacceptable’ space by surrounding inhabitants which come from different background with different norms and values etc. (Vastu-Shilpa Foundation, 1988).

To see what went wrong with problems regarding public open spaces, many researches tried to explore (residential) open space through many different ways, starting from assessing the quality of physical environment to identify the meaning of the open space, from single-culture perspective to multi-culture perspectives by cross-cultural observation. In terms of meaning of a residential open space, many researches emphasize that the physical volume of the space itself obtains its meaning from a variety of functions while the way people make use of space is influenced by perception. Thus, even the most physical aspects of space derive their meaning by how it is perceived by people at large (Vastu-Shilpa Foundation, 1988).

Public Open Space (POS) is a widely studied area; many researches explain POS from different mainstream of knowledge: architecture and urban design, urban planning, urban sociology, urban geography, urban economics, environment etc. From all of these disciplines, a categorization regarding approaches to understand the POS from these different mainstream are made; utilitarian approach, social approach, and perceptual approach (Vastu-Shilpa Foundation, 1988). However, a conclusion can be drawn so as to help explaining the meaning of POS. Since open space occurs in continuum of hierarchy of scale and private-public nature, then, it is necessary to define space at well-defined levels so as to obtain focused, detailed, meaningful research. Although most of them explain the differentiation, process, meaning and use of space and place in the context of spatial planning in urban area and at urban level, it is still possible to use the methods to analyze the use and meaning of POS at residential level.

To understand the use and meaning of a residential open space, perhaps it is necessary to understand the relationship or relatedness between physical space and social life of targeted or existing user groups. The relationship or relatedness between the physical space and the social life can be explored by looking at its spatial characteristic and its utilization pattern. The spatial characteristic can be analyzed by understanding how a space is defined, structured and ordered; one of ways to understand this is by looking at its physical design, while utilization pattern can be understood by looking at behaviour setting system derived from activity pattern and behaviour setting which are largely

influenced by socio-cultural values (Rapoport, 1977). Furthermore, from the relationship or relatedness between physical space and social life, it can be seen whether space is merely a constantly transforming product of social processes or it may have an impact on social processes as well which can be used as an instrument to influence the social processes (Vervloesem, 2008).

This research attempts to capture all the above mentioned issues through identification of spatial characteristic and utilization pattern of a given POS in a residential area by user groups which come from different cultural background. The research itself will be conducted in *Afrikaanderplein*, a POS in residential area of *Afrikaanderwijk*, southern part of Rotterdam. The case of *Afrikaanderplein* is very interesting to explore since it represents an issue which has been a major concern in Rotterdam: revitalization of residential area through revitalization of public (open) space to create attractive residential city as indispensable conditions for a strong(er) city¹. *Afrikaanderwijk* itself is a pre-war residential area which was initially built in around 1895 for Dutch working class people who mostly worked in old port of Rotterdam. After the bombardment of 1940 start from 1970's, the composition of population has changed from majority of Dutch into majority of ethnic immigrants, such as Turkish, Moroccans, Surinamese, and Antilleans (Soeters, 1990; Oosterwijk, 1990). It is one of 19th century residential area with high concentration of ethnic immigrants in Rotterdam (Blauw, 1991). During 2002-2005, major revitalization of *Afrikaanderplein* was done as a means to revitalize *Afrikaanderwijk* in order to create a new image of *Afrikaanderwijk* as an attractive, multi-culture residential area.

The 'juxtaposition process' between spatial characteristic and utilization pattern of *Afrikaanderplein* will be done in order to find out the relatedness between each other. Some influential factors which may contribute to higher use of *Afrikaanderplein* will be derived from the analysis. The findings of this research are expected to be a useful basis for further revitalization of *Afrikaanderplein* in particular and other POS in general.

1.2. Research Objectives

The broad objective of the research is to find out the use and meaning of *Afrikaanderplein* by looking at the relationship or relatedness between physical space and social life through identification and 'juxtaposition processes' of its spatial character and its utilization pattern. This also includes identification the influential factors which may contribute to higher use of *Afrikaanderplein*.

The specific-objectives are:

1. To identify the approach of provision and management of POS in Rotterdam in general and in *Afrikaanderplein* in particular;
2. To identify the characteristics and roles of *Afrikaanderplein*;
3. To identify the spatial characteristic of *Afrikaanderplein* by looking at its physical design;
4. To identify the utilization pattern of *Afrikaanderplein* by looking at existing activity pattern and behaviour setting of user groups
5. To identify meanings entitled to *Afrikaanderplein* by existing user groups

¹ Rotterdam Urban Vision-The Spatial Development Strategy 2030

1.3. Research Questions

The main research question is: “Which are influential factors that contribute to higher and more appropriate use of *Afrikaanderplein*? ”

Specifically, this research intends to find answers to the following questions:

1. What are the approaches adopted for provision and management of POS in Rotterdam in general and in *Afrikaanderplein* in particular?
2. What are the characteristics and roles of *Afrikaanderplein*?
3. Which are the spatial characteristics of *Afrikaanderplein*?
4. Which are the utilization patterns of *Afrikaanderplein*?
5. What are the meanings given to *Afrikaanderplein* by existing user groups?

1.4. Structure of Report

The research has three broad sections. The first section comprises chapter 2 which consists of review on available literature regarding space, place, and POS and its analysis. The second section comprises research design and methodology which is presented in chapter 3. The last section includes data collection, analysis, and the conclusion which are presented in chapter 4, 5 and 6.

CHAPTER 2

Theoretical Framework: Defining and Understanding Public Open Space (POS)

Public Open Space (POS) has been playing important roles in human history. Its history can be traced throughout the centuries. History provides many examples, start from the ancient Greeks' *Agora*, the medieval era's *Common* as a communal space for local villagers where clear distinction between religious and civic urban space were defined, to POS in 20th century (Pozo, 1979).

To understand the meaning of POS, a holistic approach can be done considering the following aspects: definition and concept, roles, characteristics, planning approach, and meanings and use of POS in a given area (which in this research, refers to residential area). The literature focusing on planning, urban sociology, and urban design and architecture will be combined so as to form the basis of theoretical framework. For this section, only theories from several contributors which are relevant to the topic are used and reviewed.

1. Planning and urban sociology, including the issues of planning and culture, gender, age. This literature will be used to explain the socio-spatial process of a city (or particular place of a city);
2. Architecture and urban design, which will be used to explain spatial characteristics of POS in general. It consists of:

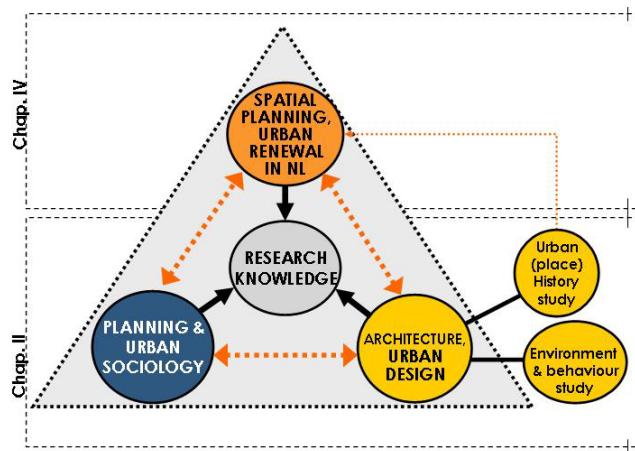


Figure 2.1. Elements of theoretical framework
Source: developed by researcher from various literature reviews

- a) Environment-behaviour study. It focuses on relationship between people and their surroundings within an interdisciplinary field of psychology and sociology. It examines how people perceive, use and interact with the built environment. This will be presented in chapter II;
- b) Urban history study. It focuses on places which are inhabited by ordinary people, the how and why they inhabit these places. It presents a critical assessment of design in past and the shaping forces of built environment. This will be presented directly within the context of Rotterdam.

2.1. Understanding Space, Place, and Space and Environment

Like human activities, POS has become more specialized and more complex, ranging from characteristic, types, to roles and purposes. To explain the definition and concept of POS, it is best to look at the definition, concept and differentiation between space and place as well as space and environment.

2.1.1. Definition and Concept of Space, Place, and Space and Environment

2.1.1.1. Definition and Concept of Space

Everyday, people carry on their activities within a space. Ordinarily, space is most of the time considered as container for activities and physical environment is considered as neutral space¹. To explain psychological aspects of space, Glenn Robert Lym (1955) differentiated space into several categories based on duration, quality and interaction between life and physical environment, which are:

1. **Neutral space.** In neutral space, life and its physical environment are separated;
2. **Acute space.** In acute space, boundaries between life and spatial context dissolve. It has finite duration, invisible, and has framed quality. It is only experienced by its beholder. It can not necessarily be seen by others looking at the same physical environment. The way people look at this space is also influenced by certain factors, such as culture²;
3. **Chronic space.** In chronic space, life issues are also infused into spatial context. Although invisible, it does not have explicit, finite duration as acute space has and does not have framed quality, it feels normal. People may slip back and forth between chronic and neutral spaces without being aware of any shift in quality of space experience. Therefore, it can be said that chronic space is the ordinary space in ordinary moment, and to keep it alive the spatial orders is needed.

Furthermore, Lym (1980) argues that despite those differentiation, people can not be detached from their spatial environments; the daily live is merged with space, by looking at it from own culture or foreign culture. Both acute and chronic spaces are manifestation of human intelligence which provides ways of identifying, reflecting on, and acting on important issues in life. They also form a basis for thinking about the course of life spatially and how physical environment must be built. As society, people are engaged in social groups and social situations shaped by subliminal rules³. To understand the rules, people learn to experience space socially. Thus, they are trained to associate particular social nuances or activities with particular (impressions) of space. In acute and chronic spaces experience, these social situations operate upon level of importance that let them see events in a spatial way. Impressions of space that are shaped by dynamic of social situations enable them to feel, to react and to record critical portions of their lives. The spatial orders which are formed from chronic space experience reach across time and distance, and it enable people to preserve and improve the quality and content of those experiences by evaluating the implication of spatial order to chronic space experience (Lym, 1980).

¹ Gropius (1955) in *Scope of Total Architecture*, pp. 113. He explains neutral space in remarks on housing.

² Lym (1980) in *A Psychology of Building: How We Shape and Experience Our Structured Space*, pp. 6. The example regarding culture as influential factor in understanding space is given by architectural historian Vincent Scully, through a comparative study on fundamental differences between Indian Pueblo and Western architecture. In western culture (which is derived from Greek culture), human and nature are separated yet balanced. In contrary, Indian Pueblo considers that there is no separation between life and its spatial context. Mircea Eliade also explains this by differentiating profane-sacred space; most western people live by and large in neutral space, where can also be said that they live most of the time in profane space.

³ Thomas, W. I. (1961) in Lym (1980). Several other meanings of social situation are explained by different authors, i.e. “interaction” or “encounters” by Erving Goffman (1959), or “gathering” by Goffman (1963) in Lym (1980).

Madanipour (2001) argues that space finds multiple meanings through social process of development, exchange and use, both at city level and neighbourhood level. Thus, a broader and more dynamic perspective to understand the meaning of space is needed. Although space may be considered as an abstract notion, there are many channels that link people to place, such as functionality (instrumental link), identity, and locality⁴. By understanding these links, it may give chance in understanding the meaning of a particular place and its role. Furthermore, he argues that, as one of the most important dimensions of social world, space finds different interpretation and meanings. Concepts of space are used in many different disciplinary conversations, are used interchangeably and are used to mean different things at times. Spatial behaviour of people, which is defined by and defines the space around them, is an integral part of social existence. As different groups entitle different meanings to space, it becomes multi-layered space which reflects the way places are socially constructed. Thus, meanings of space and place are socially constructed through social processes. The diverse set of meanings also reflects multiplicity of agencies which are engaged in development, exchange and use of places. As these agencies have diverse role and interest, place may have multiple and conflicting meanings at a time. Understanding space is essential in understanding people who make it and use it. It is an indispensable means for understanding people's pattern of thought and behaviour, which has causal impact on the study of place making (Madanipour, 2001).

2.1.1.2. Definition and Concept of Place

Some people may be confused with differentiation between space and place. The difference between space and place is explained by Madanipour (2001). Space is open and is seen as an abstract expanse, while place is particular part of that expanse which is endowed with meaning by people. Place; therefore, is space with meanings derived from social practices of particular society, which is embedded in social process. Place has multidimensional significance which is emphasized from variety of perspectives and variety of reasons.

Cullen (1976) explains in his three-points of townscape design, that place is a matter of human reaction to the position of his/her body in the environment; he emphasizes the differences of being 'here' and 'there'. The differences become apparent when a perceiving person is inside or outside a place, entering or leaving it. At the level of consciousness, there is a range of experiences, stemming from the major impacts of exposure and enclosure. The human body has instincts to relate itself to the environment continuously, and this called sense of position (Cullen, 1976, in Bal, 2008).

2.1.1.3. Relationship between Space and Environment

Several authors explain space and its environment in ecological system frameworks with components varying from one author to another. Ittelson (1960) describes the components of environment as: 1). **Perceptual**, the ways how individual experience the world is seen as a principal mechanism which links people and environment; 2). **Expressive**, the effect of shapes, colours, textures, smells, sounds, and symbolic meanings on people; 3). **Aesthetic value of culture**; 4). **Adaptive**, the extent to which

⁴ Madanipour, Healey and Hull (2001), pp. 9.

the environment encourage/discourage activities; 5). **Integrative**, the kinds of social groupings facilitated/inhibited by the environment; 6). **Instrumental**, the facilities provided in the environment; and 7). The general **interrelationship** of all the components (Ittelson, 1960, in Rapoport, 1977).

Lawton (1970) describes the components of environment as follow: 1). **the individual**; 2). **the physical environment**, including natural and man-made environment which facilitate/limit behaviour; 3). **the personal environment**, consist of individuals as source of behaviour control, family, friends, authority, peer-group, etc.; 4). **the supra-personal environment**, refers to the environmental characteristics as a result of inhabitants' modal personal characteristics, due to grouping by age, class, ethnic origin, lifestyle etc.; 5). **the social environment**, which consists of social norms & institutions (Lawton, 1970, in Rapoport, 1977).

Rapoport (1977) makes a distinction between Ittelson's and Lawton's concepts of space and environment by explaining the multiplicity of environment which encompass social, cultural, and physical environment. He explains space in context of its relationship with environment. While an environment is seen as a series of relationship among elements and people which has structure and pattern, a space is mostly experienced as a three-dimensional extension which is the basis of built environment. It consists of intervals, relationship, and distances. Spatial organization, thus, is a more fundamental aspect of built environment than physical element itself. He, then, defines built environment as organization of several dimensions:

1. **Space.** Organization of space depends on different rules for different purposes. It reflects the needs, values, and desires of specific groups or individuals and represents congruence between social and physical space, without denying the importance of shape, proportions, and sensory quality of spaces and their enclosing elements and their symbolic meanings. Thus, space organization has organization of meaning and has communicative and symbolic properties;
2. **Meaning.** Organization of meaning is expressed through material, form, detail, colour, icon, etc. Meaning may overlap with space coordination or may represent separate symbolic system (Venturi et. al, 1972, in Rapoport, 1977). It is used as a mean of asserting of asserting social identity and become indicators of social position by different setting (Duncan, 1973, in Rapoport, 1977). Physical elements express varying meanings, influences and importance; they also have effects on behaviour which changed accordingly (Rouse, 1969; Rapoport, 1975 (a) in Rapoport, 1977). The organization of meaning is also considered as non-verbal communication of both between people and between people and environment;
3. **Time.** The organization of time can be seen in large scale cognitive structure: linear, cyclic, future vs. past orientation, and time value. Another way to see time organization is by looking at the tempo and rhythms of human activities and their congruence/incongruence with each other. Therefore, instead of separated by space, people may be separated by time; people occupying the same space may never meet if they have different rhythms. In this terms, space is relative to time, but both of these interact and influence each other;
4. **Communication.** The organization of communication comprises subject, object, the location, and means of communication are important in which built environment and social organization are linked. Built environment and its organization can be seen as a way of controlling interaction.

All of these aspects are influential to each other; organization of space comprises organizations of meanings, time, and communication. He emphasizes that if space organization is relative to time, then, the meaning expressed or communicated between people or between people-environment may be interpreted differently within different time (Rapoport, 1977).

2.1.2. Psychology of Space and Place

Canter (1977) argues that place is a result of an interrelationship between three dimensions: action (represented by activities and behaviour), physical attributes, and conception. The differences in concept of place for individuals are derived from differences in their interaction with environment. The interaction between individuals and environment refers to how they are likely to respond and relate to the available space and how they use the space. Some of this interaction is related to basic human behavioural characteristics (such as territoriality and interpersonal distance) and distribution of people.

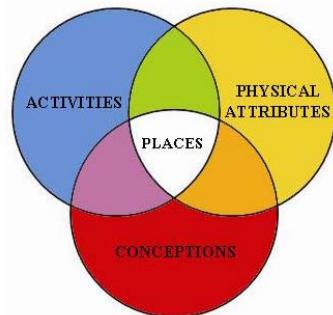


Figure 2.2. The nature of places
Source: Canter (1977)

Shaftoe (2008) explain interaction of individuals and environment as degree to which design of space can influence behaviour of users and how they can adapt to their surroundings. The interaction itself can be analyzed so as to find out the meaning of that particular environment according to individual's perception. To analyze this interaction, he emphasizes the needs for different type of observation and communication.

2.1.2.1. Personal Space and Distance of Human Interaction

Trieb (1974) defines personal space as a mechanism for achieving a desirable space between one person and another, according to relationship which is appropriate as established by cultural norms and intimacy, particularly to determine the proper distances in open space. Personal space is viewed differently between "contact culture" i.e. Arab and Mediterranean countries and "non-contact culture" i.e. in North America and Western Europe. Hall (1969) who studied personal space among different cultures classifies distance for human interaction among middle-class people in USA as follows:

Zone		Feet	Meter	Function
Public distance	far phase	Over 25	7.6	Distance around important public figure
	close phase	12-25	3.7-7.6	A person may take evasive/defensive action if threatened. People must speak a bit loud and select words & grammar which are easy to hear
Social distance	far phase	7-12	2-3.7	Business and social discourse are more formal than at the close phase, distance for insulating or screening unwanted people
	close phase	4-7	1.2-2.1	Distance for impersonal business
Personal distance	far phase	2.5-4	0.7-1.2	Physical dominance, as the expression of "keeping someone at arm's length"
	close phase	1.5-2.5	0.5-0.7	Distance of wife-husband in public
Intimate distance	far phase	0.5-1.5	0.15-0.5	Uneasy for stranger, in public is improper
	close phase	0-0.5	0-0.15	Love making, wrestling, comforting

Table 2.1. Distance in personal space
Source: Hall (1969)

Shaftoe (2008) argues that interpersonal distance will be determined by the activities people are engaged in, in public (open) space. A good public space should be able to accommodate varying degree of interpersonal distance, according to appropriateness as established by cultural norms applied in such area, so that people feel comfortable within both their private and public distance.

2.1.2.2. Territoriality Behaviour

Shaftoe (2008) argues that territoriality is most of the time considered as a basic human trait to mark and claim territory. This is potentially problematic in public space since it is public in nature; it belongs to everyone and no one. A good POS should also be able to accommodate various and intriguing occupation of space, allows people to observe diversity without being involved directly in it. The proper (personal) distance in open space as mentioned above is also likely related to territoriality of people in urban space as suggested by Oscar Newman (1972) in the so-called defensible space. Besides focuses on security issue, territoriality allows people to have their part in public space, which leads to attachment to place; each space is owned and cared for by a responsible party. Furthermore, Altman (1980) adds the idea of appropriation of space which explains territorial behaviour as a form of act to control space. It has three components: occupancy, defence, and attachment to place. He argues that provision of defensible space increases the appropriation of space if there is suitable condition for occupancy and to create attachment to the place.

2.2. Introduction to a Good Public Open Space (POS)

2.2.1. Definition, Concept, and Classification of Public Open Space (POS)

There are many definitions of POS from different perspectives and classifications based on different aspects: design, physical characteristic, activities, hierarchy, size, catchments, surface area, accessibility etc. It is important to distinguish urban open space and public open space. Open space is one of components within public space, but it is often interpreted as public space (Kimaryo, 2003, in Bal, 2008). While urban open space is often described as all planned/unplanned space within a city which is available for use, POS is defined in many different terms.

First, basic concept of *ownership, usability, and public-private domain* may be used to define public open space (Bal, 2008). Borja (2004) defines public open space by using a judicial definition of formal separation of private property/domain and public property/domain, with infrastructure, equipment, and service which are intended for collective or social urban uses (Borja, 2004, in Bal, 2008). Cullinan (2008) defines POS as a publicly-owned land which is open to and may be used by all citizens with applicable rules. It includes parks, playgrounds, and larger natural systems i.e. forest and river corridor (Cullinan, 2008, in Bal, 2008).

Some classifications of POS are:

1. Based on **physical characteristic**, POS can be differentiated natural space and man-made space. Natural space refers to places which are managed and run so as to preserve their natural state or functioning of ecological system (Cullinan, 2008, in Bal, 2008), while man-made space refers to landscape altered by human action by

giving it a form so as to accommodate activities; man-made space may be built and non built area, i.e. parks, public gardens, playground, civic spaces, cemeteries, grasslands, and allotments (Bal, 2008). POS can also be differentiated as hard space and soft space. Hard space refers to open space with surface area covered by hard materials (pavement, stone, asphalt) and bounded by clear physical boundary, while soft space refers to open space dominated by natural features (Trancik, 1991, in Bal, 2008).

2. Based on **hierarchy (size and degree of formality, activities and degree of involvement)**, Smith et. al (1997) categorize open space into primary areas (city level or community centre level, may consist of town square, corridors, predominant pedestrian connections, sport facilities & playground, and grave yards), secondary and tertiary areas (residential level, including small and frequent spaces), and semi public and private areas (i.e. transition zone between secondary/tertiary spaces and porch setback and house yards). Rapoport (1977) differentiates POS into public, semi-public, semi-private and private. Relationship between different hierarchies of space is as important as the space itself; continuity between space organizations at different hierarchy may constitute an essential characteristic of place. The hierarchy of public-private nature and hierarchy of scale or level of a POS affect its nature of activity, degree of involvement of people in activity, and degree of formality.

He explains furthermore (as described in figure 2.3.), that:

- a) The larger the size of POS, the higher degree of formality. At the same time, the more public a POS is, the engaged activity is more passive (e.g. city park);
- b) The smaller the size of POS, the lower degree of formality. At the same time, the more private a POS is, the engaged activity is more active (e.g. courtyard).

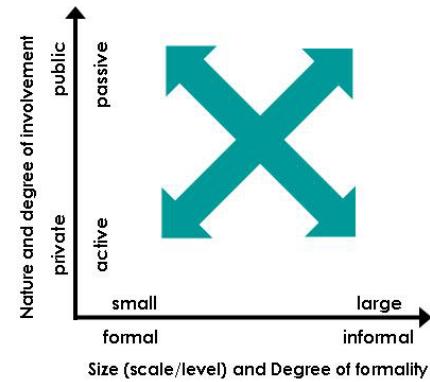


Figure 2.3. Hierarchy of space
Source: Derived from Rapoport (1977), Bal (2008)

3. Based on **characteristic of social activities and catchments**, POS may be classified into street park, neighbourhood park for neighbourhood association level, neighbourhood park for community association level, neighbourhood park for village level, neighbourhood park for sub-district level, and city park (Centre for Study on Natural resources and Environment, Institute of Ecology Studies, Padjajaran University, 2003, in Bal, 2008).
4. Based on **engaged activities**, POS may be differentiated into active space, passive space, and active-passive space (Suharto, 1999, in Bal 2008). Active space is designed, built and facilitated to encourage users' activities. Passive space is designed and built only for accentuation or other non-user activity purposes (i.e. median, collector, etc.). Active-passive space is combination of these spaces; space is designed and built for accentuation but allows limited number of engaged activities.
5. Based on **accessibility** (service distance and associated activities), Gedikli and Ozbilen (2004) classifies POS particularly urban green space into home-oriented green space, home cluster/sub-neighbourhood green space, neighbourhood green space (park, playground), community green space, and city level green space (Gedikli and Ozbilen, 2004 in Bal, 2008).

6. Based on **enclosure and purposes**, Shaftoe (2008) differentiates POS into enclosed and/or covered space, pocket park and green space, boulevard and linear park, reclaimed street, and linked space. Bonsignore (2003) differentiates POS into plazas, private yards, mini parks, community garden, storm water pond/wetland buffer, private campuses or mixed use business parks, institutional ground and religious places, neighbourhood parks/playgrounds, sport fields and golf courses, community/county parks, private or public conservancy land (Bonsignore, 2003, in Bal, 2008).

2.2.2. Characteristic of a Good Public Open Space (POS)

There have been scientific inquiries which explain what constitutes “*a good public open space*”. Several authors in urban design domain (Lynch, 1960, 1981; Alexander, 1977; Appleyard, 1981; and Whyte, 1988) emphasize the quality of public open space in creating a liveable city (Poerbo, 2001). In terms of design perspectives, many researchers tried to explain “*a good public open space*” from several approaches: design, economical and environmental, i.e. through principles of sustainability and liveability (Bal, 2008).

Shaftoe (2008) explains a good open space in term of conviviality and convivial space. Conviviality refers to sociability to both a place and situation; convivial space is defined as place where people can be sociable and festive and also the situation in that particular POS is encouraging sociability. Tibbalds (1992) in Shaftoe (2008) suggests that such place should comprise a vibrant, lively mixed-use environment and is visually stimulating and attractive to users. Almost similar, Billingham and Cole (2002) in Shaftoe (2008) emphasize enjoy-ability–safety, human scale with variety of use, environmental friendliness, memorability and identification, distinction, appropriateness and accessibility. Shaftoe (2008) then categorized broadly the common elements of such convivial space into physical (design and practical issue), geographical (location), managerial, sensual (the way a space directly affects senses), and psychological (the way a space affects mind and spirit).

Project for Public Space (PPS) suggests that there are four main characteristics of good POS, which are access and linkage, comfort and image, uses and activities, and sociability. Each of these main characteristics consists of some requirements (see figure 2.4.).



Figure 2.4. Main characteristic of POS
Source: *Project for Public Space* (PPS)

Shortridge (1997) defines critical elements of good public (open) space, which are:

1. Character; marked by clearly defined boundaries, unique attributes which give them focus, a sense of arrival and enclosure, appropriate scale, physical elements, and repeating patterns;

2. Ownership; urban space must belong to a neighbourhood, district, civic group, or other caretaking entity that is proud and is responsible for the place. This means that sense of belonging should be developed and nurtured. Those entities with ownership should allow democratic accessibility, ensure safety and security, and provide maintenance of high quality and cost effective components within a specific boundary;
3. Authenticity; urban setting needs features which make it unique which can be derived from local sources—local history, local materials, local climate and local culture. Features i.e. historic artefacts, landmarks, artwork, and information and educational markers bring out its distinct characteristic;
4. Accommodation to local activities by acknowledging physical comfort and convenience. This can be achieved through physical fixtures (seating, shelter, restroom, drinking fountains, etc.) to accommodate people, pets, even encourage local market activity to revitalize the surrounding environment;
5. Nature to nurture the psychological and physical well-being. This include utilization of colourful planting, green canopy, edge of water and texture of stones and plants to create visual and tactile complexity;
6. Accommodation to social and private life through flexibility and comfort ability for playing, interacting, and other stress-relieving activity in a positive manner. Provision of children plays arena, events, and certain entertainments also enrich the educational, restorative and pleasurable experiences.

2.2.3. Crucial Factors on Acceptance and Maximum Use of Public Open Space

Crucial factors for maximum use of POS by its targeted user groups are:

2.2.3.1. Location, Climate and Distance and Physical Accessibility

Different authors agree that location and climate is the fundamental factor of creating a good open space while distance and accessibility play important roles in utilization of POS by its target groups.

Shaftoe (2008) argues that geographical factors may override design and other considerations in the use of POS. Similarly, Whyte (1988) in Shaftoe (2008), points out that location is an important factor not only in real estate, but also for POS. For a space to be function very well, it should be central to the constituency it is to serve, physically and visually accessible. In terms of climate, although it can not be manipulated, microclimate in surrounding environment can be manipulated by design approach, depend on the location (geographical) factor. In terms of distance, there are some studies that show the relationship between physical activity and distance of physical environments. Pikora et. al (2003) explains that destination (access to desired location and amenities) within neighbourhood context may impact on variation of physical activity. Giles-Corti and Donovan (2002) in Witten et. al (2008) proves that the use of POS is more sensitive to distance factor. Higher rate of physical activity have been associated with better access to leisure facilities, including open green space⁵.

Urban public space gives the possibilities to move from everywhere to everywhere else. Regarding physical accessibility of a particular public (open) space, some concept such as

⁵ Baumann and Smith, 1999; ellaway et. al, 2005; Sallis et.al, 1997, in Witten et. al (2001)

spatial integration and street accessibility are used and there are some approaches used to measure this; one of them is by ‘Space Syntax’ method. Hillier and Hanson (1984) explains that space syntax method is used to map how urban space are used by people. The most common concepts of space used in space syntax are convex space and axial line. A convex space is defined as a space which is mostly used for occupation, e.g. in building and small urban areas while axial lines represent spaces for movement which in urban studies is represented by environment’s street grids. In space syntax, the way and how built form and function are related to depend on configurative relationship of the street axes. The configurative relationship of street axes can also be used to analyze spatial integration of a public space. Spatial integration of a street axe is analyzed from the total number of direction changes to all other; the fewer the changes of direction, the more spatially integrated it is. The spatial integration of a particular street can also be calculated by degree of accessibility of a street to other streets, shown by number of connections to other street. The higher degree of accessibility a street has, the more spatially integrated it is. Research of various built environment shows that commercial activities are mostly take place in the most globally integrated streets (Hillier, 1996; Hillier et. al, 1993; and van Nes, 2002), while dwellings are mostly located in segregated areas (Hillier, 1996; Hillier and Hanson, 1984).

2.2.3.2. Quality

Many different authors explain the concept of quality of POS in many ways and they agree that physical and social quality of POS may leads to sustainability of POS itself.

Viennot (1979) agrees that physical environment is linked to social environment; a connection between people behaviour and nature of places in which they live exists. By using the term collectively-used-space in describing POS, he believes that the quality of such place depends on both physical identity and social identity. The connection between physical and social aspect may determine the realm of action/reaction of both individual and groups. The degree of attraction will vary depends on whether architectural background “fits” the type of population. Furthermore, several criteria were added to assess both identities. In terms of physical identity, the criteria used for assessment are scale, articulation (interrelation of spaces and arrangement of sequences), texture, materials and colours of fabric, intrinsic-plastic harmony of solid-void combination, and layout. In terms of social identity, the assessment criteria are type of activities, flow of information which entitles character to a space, landmark and individual and collective orientation, symbolic meaning, appropriation of space in terms of ownership and neutrality to accommodate different groups.

Hester (1975) use the concept of “social suitability” of neighbourhood space to explain the relationship between quality and physical form, and generates a checklist of user’s needs to be used in neighbourhood design. The major components are desired activities, appropriate activity settings, relationship built through interaction with natural environment, aesthetic appeal, safety, convenience, physical comfort, psychological comfort, symbolic ownership, and cost. Furthermore, Hester (1975) emphasizes the compatibility between activity and its accommodating space and agree that physical quality of a space within neighbourhood context should be supportive to physical and psychological well-being (Hester, 1975, in Smith et. al, 1997).

Smith et. al (1997) use the term of community quality and derived several criteria in explaining the relationship between quality and physical form particularly in residential context by using a list of quality and social needs principles. It consists of liveability, character, connection, mobility, personal freedom, and diversity. Among those, connection and character of physical form are the two most important factors. As for the POS itself, it becomes the 5th important design criteria within a residential area.



Figure 2.5. Quality and social needs principles of physical form
Source: Smith et. al (1997)

2.2.3.3. Activity

Many authors also agree that existence of activities also play parts in creating a good open space. Some authors define by type of activities that can be accommodated by the POS and some define by type activities that occur because of the existence of POS itself. The general conclusion of these different interpretations is that existence of activity leads to further liveability of POS.

Shaftoe (2008) emphasizes the importance of activities by using the term 'animation' and example of the '24 Hour City' and 'people attract people' concept. By creating various activities, not only visitor will be attracted, but to some degree it will also increase security particularly because of presence of other people. The importance of mixed-use in urban area is also emphasized by Jacobs (1961). Besides discourages segregation which was the result of orthodox planning practices, mixed-use aims to achieve more balanced, varied use of public space and add degree of security around the public space.

Gehl (1979) points out direct relationship between quality of public urban space and occurred activities, he suggests that quality of urban space and activities are in causal and influential relationship. He categorizes activities into two mainstreams: **(1). Necessary activities**; activities which occur regardless the quality of physical environment and **(2). Free-choice or optional activities**; these activities will occur or develop only when the overall quality of environment are attractive to people to engage in all kinds of activities without any compulsory motivation, i.e. social and recreational activities. He emphasizes that as the quality of outdoor area is good, optional activity will occur with increasing frequency, which in the end lead to increasing frequency of social activity. By using pedestrian context, he emphasizes two quality criteria which should be met so as to allow activities to be fully developed. The first one is the four fundamental criteria, i.e. protection against traffic, protection against crime and violence, protection against unpleasant elements in terms of climate, and protection against unpleasant sense experiences (i.e. smell, dust, and pollution). The second is the constructive criteria i.e. specific design to accommodate specific activities.

Rapoport (1969) breaks-down four components of activities into: **(1). Activity proper**, i.e. walking, drinking, eating; **(2). Specific way-activity**, i.e. shopping in bazaar, walking in the street, sitting on the floor; **(3). Additional, adjacent or associated activity** which

occur because of other existing activities i.e. gossiping, accompanying, courting while strolling, etc.; and (4). **Symbolic activity** which establish social identity i.e. cooking as ritual, shopping as remarkable consumption. Furthermore, Rapoport (1977) argues those four types of activities differs in relative importance, amount of time spent in each activities, people involved, etc. Activity proper and specific-way activity are mostly manifest or noticeable while associated activity and symbolic activity are mostly hidden, and they should be observed carefully. The variability of specific-way, associated and symbolic activities lead to specific form of settings which influence built environment and differential success of various designs. But, acceptability and choice (including habitat selection) mostly related to associated and symbolic activities, which are also the most variable and most likely to be represented in images. The variability increases as activities moves towards symbolic aspect. More people would agree on what they see rather than how to use it, and fewer people would agree on its symbolic aspect. Thus, he concludes that value and symbolic aspects are likely to be more important in terms of environmental choices.

2.2.3.4. Shape, Size and Degree of Enclosure

1. Shape

In terms of shape, Cullen (1976) stresses the three-points of townscape design: serial vision, place, and content. Different composition of fabric of cities i.e. color, texture, scale, style which show character, personality and uniqueness bring advantages to non-conformity which is less boring compared to conformity. Marcus and Francis (1998) in Shaftoe (2008) also agree that repetition and bland facades to certain extent do not stimulate the eye. If Cullen (1976) explains that serial vision is attained from attached-previous memory as people move into the next environment, then different composition of fabric will stimulate the eye and create different visual experiences (Cullen, 1976, in Poerbo, 2001).

2. Size and Degree of enclosure

Aside from its proportion and detail design, degree of enclosure plays important role. Enclosure refers to arrangement of space and its borders and relationship between height of surrounding borders and width of space. Ashihara (1970) emphasize the importance of boundaries so as to create a sense of enclosure within a space through 'Law of Enclosure'. He mentions that clearly defined boundary creates an enclosed territory and differentiation between external and internal space, and one way to measure degree of enclosure is through ratio of street width (D) to building height (H) in townscape composition (D/H ratio). There are key dimension in which people would feel intimidated, enclosed, or 'lost in space'. For actual building purposes, D/H ratios of about 1 up to 3 are the most feasible although.

Furthermore, Ashihara (1983) explains that the 'Law of Enclosure' is also related to positive or negative quality of an urban space. Positive space (P) is defined as clearly demarcated space and the negative space (N) refers to undefined emptiness outside the space. The creation P-N space depends on how we look at the border and the sense of space that is created by the border.

Ratio	The Spatial Quality of Open Space
$D/H < 1$	Intimate space until eventually cramped
$D/H = 1$	Balance, space feels normal
$1 < D/H < 2$	The space opens up but still feel normal
$2 < D/H$	Space gradually become expansive, lost in space

Table 2.2. The ratio of width-height of open space

Source: Ashihara (1970)

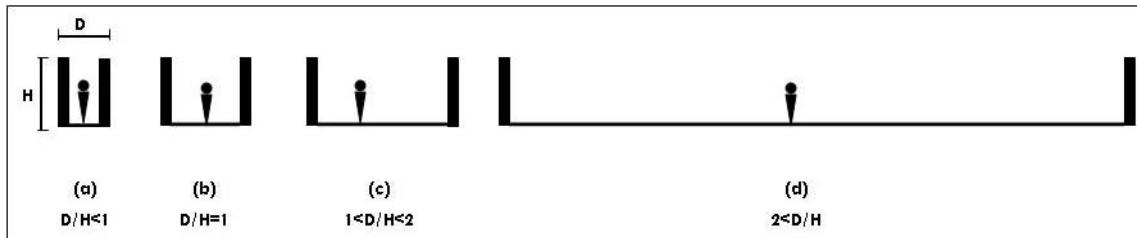


Figure 2.6. Simple description of the ratio of width-height of open space

Source: Derived from Ashihara (1970)

Almost similarly, Hörmann and Trieb, (1977) found out that most often used ratio of height/width for optimal condition of spatial quality for open space is 1:3 and 1:6. However, these proportions are not independent to location factor and its condition. Climate, tradition and behaviour of people determine the most optimum and acceptable ratio for open space. In some culture, the narrow-tall proportion is necessary so as to create shades, like in the case of Mediterranean countries (Hörmann and Trieb, 1977, in Poerbo, 2001).

Ratio	The Spatial Quality of Open Space
1 : 1	The border will be seen only half of its height, very narrow
1 : 2	The entire height of border can be seen, enclosed space, open space is felt as narrow
1 : 3	The entire border only a part of the view, the rest is part of the sky, not fully enclosed
1 : 6	Relationship border-sky is reversed, open space is felt very wide, lost in space

Table 2.3. The ratio of height-width of open space

Source: Hörmann and Trieb (1977)

3. Degree of Safety and Security

There are several literatures which explain degree of safety and security in POS from different perspectives: (1) Active approaches (safety and security through design arrangement and management which require active involvement of people); and (2) Passive approach (safety and security through design arrangement and management which do not require active involvement of people).

Shaftoe (2008) argues that people's tendencies to make use of POS or avoid it will likely be influenced by the degree of security where people feel safe. Gehl (2003) in Shaftoe (2008) also mentioned that the disintegration of living public space and gradual transformation of the street areas into an area that is of no real interest to anyone is an important factor contributing to vandalism and crime in the streets. CABE (2004a) in Shaftoe (2008) also claims that derelict and run down parks and streets are less being used because people do not feel safe. Shaftoe (2008) then suggests that there are ways to create degree of security, i.e. by design (exclusive/inclusive, open design, physical barrier), by legal action (deployment of personnel, electronic surveillance, legal banning),

management (revitalization, creating attractive economic activities, creating greater/lesser degree of exclusiveness/ inclusiveness), accommodating deviance and unpredictability, integration of less-able users and informal control. Creating degree of security also affects degree of privacy while people have different degree of tolerance.

Jacobs (1961) and Gehl (2003) also emphasize that the safest places are ones which are well-populated, both with users and passers-by who observe informally the existing public spaces. All of these are both intended to prevent or limit potential criminal to enter and to keep users feel secure/safe. To feel secure and safe is important for users, and to be safe, there are cases where greater/lesser degree of exclusiveness/inclusiveness) has created segregation and mono-culturally dominated (Shaftoe, 2008). It also brings impact to closure, fortification and exclusion (CABE, 2004a; ODPM 2002, in Shaftoe, 2008).

Box 2.1. Inclusive Public Open Space – Public Open Space and Specific User Groups

As stated by Shaftoe (2008), inclusive or exclusive built environment to certain extent may be used as a means of promoting urban security and integration. CABE (2005) in Shaftoe (2008) also comes in favour of inclusive urban design to promote safer public spaces. The way streets and public spaces are designed can directly contribute to their sociable and law-abiding use by the citizen (Billingham and Cole, 2002; CABE 2004a and b; Gehl, 2003, in Shaftoe, 2008). Inclusive public space also plays important roles in terms of health, well-being, and nature of civilization.

To specific groups, POS, particularly those located within residential areas, are very important for several reasons. Timms (1976) in Herbert and Johnston (1976) explains that residential locale acts as a main arena for first face-to-face contacts. Only minority of population leave the neighbourhood for work while a large proportion—children and youths, elders, the infirm and the caretakers i.e. housewife—spend the predominance of their time within a small geographical radius of their dwelling. Particularly for children, most of their behaviours are set within neighbourhood context. Within residential context, POS is important for children's development (Moore, 1986, in Shaftoe, 2008). Shaftoe (2008) adds the importance in terms of mental and physical health, particularly for social learning of children. He also emphasizes three approaches: integration into townscape (short or local distance, lively scene, children facilities), mixed use (fixtures for both parents and children i.e. seating) and lose material (natural elements, soft surfaces) to assure safety and public security and to give experience of adventure and creativity.

In case of utilization of POS by teenagers, Shaftoe (2008) mentions that most often, this group is considered as an “unwanted” regarding the possibilities of creating problem even only by gathering. Waiton (2001) then argues that the process of youth socializing within a group is important in development stage as a transition from family-centred to independent adulthood (Waiton, 2001, in Shaftoe, 2008). Shaftoe (2008) suggests that healthy socialization process of teenagers can be ensured by provision of appropriate space and place where they can gather and ‘hang out’ in a positive manner. Instead of banning them, there are needs to design facilities and locations where children and youth can socialize in reasonable safety without taking away the amusement. Moreover, it is important to minimize danger that is possible to occur (Percy-Smith and Matthews, 2001 in Shaftoe, 2008). This can be achieved by allowing access particularly to adult to act as informal social controller; it means that the park should be able to be used for both groups—youth and adult. White (1998) also emphasizes the importance of involving youth

in the process of planning, design and management of POS. The slight differences in ages sometimes matter that provision of visible, adaptable facilities and dedicated location within appropriate distance which discourage conflict over space is really important (White, 1998, in Shaftoe, 2008). Some of the proposed solution to address the needs and interests of teenagers are youth shelter and sports systems, adventure playground, and skateboarding, stunt bike and rollerblading spaces.

However, an attempt should be made to identify variability of standards and characteristics between cross-cultural samples. This takes time, but it will provide clues regarding factors that may affect activity pattern and behaviour setting of user groups, which in the end lead to evaluation of roles and functions of given POS. Shaftoe (2008) argues that the way urban realms are designed has indirect influences on how everyone will behave in it. It seems more likely that design and physical layout have a softer type of influence that will interact with other factor: location, management, activities, and culture. The most important thing, decision on how the design and physical layout of POS will be arranged and for what purposes depend on what kind of society and what quality of desired-urban life desired (Shaftoe, 2008).

2.2.4. Role and Function of Public Open Space

There are many researches which explain and emphasize the importance of POS from many different perspectives and at many different levels. Nankervis (1998) in OSISDC (2004), states that parks and POS have long played an important role in urban development. The tradition of providing POS within urban environment can be traced back to industrial revolution itself, when parks and green ways were recognized as critical elements in development of London⁶. In most provision of POS within urban areas in the 19th and 20th centuries, it was considered as essential factors regarding health condition of many residents of inner city areas where overcrowded, pollution, and lack of sanitation were common. Now, POS has become indispensable part of urban way of life which provides leisure, recreation and public health for residents⁷.

Madanipour (2001) explains space in the context of city by assessing social and spatial planning processes that bring multiplicity of perspectives and interests. He argues that a good place has several significances: cultural, social, and environmental. Increasing interest in quality of place has been taken place for decades particularly in part of policy makers and urban designer. Several reasons behind the increasing interest – which described its important roles – are:

1. Increased despatialization of activities. A city consists of random network of varying directions and distances, where places were differentiated based on uniformity of activities (single use-zoning). People were attached to their place as form of spatial manifestations and face-to-face contact played important roles in social relationship. Development of communication technology enables changes by allowing intense exchange of information, good, service without close contacts. This, therefore, affect the shape of social relationship and spatial manifestation. Moreover, Whyte (1988)

⁶ Nankervis, M. 1998, *Our Urban Parks: Suitable Pieces of Real Estate?*, Journal of Australian Studies, pp. 162 in OSISDC Sustainable Urban Design-Public Open Space Documents, 2004.

⁷ Banjeree, T. 2001, *the Future of Public Space: beyond Invented Streets and Reinvented Places*, Journal of American Planning Association, Volume 67 (1), pp.10, in OSISDC Sustainable Urban Design-Public Open Space Documents, 2004.

claims that the increases in private travel and electronic communication have encouraged a greater need for face-to-face contact. Thus, place is expected to work as medium of accommodating the degree of functional dispersion in city and society;

2. As a major constituent of the sense of identity, place plays considerable roles in sense of well-being of people through 'rootedness' in place. It contributes to both preservation of sense of identity which historically rooted in that particular place and/or construction of new social identity towards multiplicity and variety of amenities, which become attention of new form of urbanism. Quality of places is closely related to the sense of group and individual identity (Zukin, 1995 in Madanipour, 2001), therefore, cultural significance is entitled to place;
3. Place has been seen as one of the vehicles to combat segregation and fragmentation. During 19th and 20th centuries, development of cities has coincided with socio-spatial segregation, where different social and ethnic groups are separated, amongst other are revealed by neighbourhood. Spatial manifestation of segregation and fragmentation requires attention to spatial dynamics, and place would be one of the strategies by integrating activities and groups. In this sense, place gains social significance;
4. The concern of environmental sustainability. To deal with environmental degradation, much attention is now being paid to the way new environments are being developed and managed, including public open space. Place plays considerable roles in sense of well-being of people apart from belong to specific group, thus, place gains environmental significance.

Cranz (1982) in Bal (2008) argues that POS can be used as a tool to revitalize neighbourhood economically by stimulating surrounding business environment and emphasizes role of POS from political perspective by enable infuse certain values regarding political life, good citizenship, social consciousness, and sentiments of democracy to targeted youth, poor, and ethnic group. Furthermore, Francis (1992) explains that political role of POS enables social exchange, formation and continuation of social groups, and enable and exchange of information. POS is considered as mirror of social values, customs, and culture, which reflects interaction between physical, social, economic and political activities; it symbolize larger society or culture of its society, and meanings are given by people through different activities and roles (Francis, 1992, in Bal, 2008).

Shaftoe (2008) explains several reasons of importance of POS, particularly convivial POS. Without good POS, people are likely to drawn into an increasingly privatized and polarized society with all its concomitant problems. Those reasons are health and well-being through social contacts to maintain psychological balance, social learning and opportunities to encounter different norms, behaviours and cultures, conflict resolution, tolerance and solidarity, economic benefit through economic activities and increase in property value, and democracy. CABE and DETR (2001) in Bal (2008) also emphasize that successful POS bestow both direct benefit (i.e. economic) and indirect benefit (i.e. social, environmental) to local community particularly and to society in general. In favour with this statement, Nicol and Blake (2000) in Bal (2008) stated that POS has recreational, psychological, and ecological benefits.

Furthermore, Carr et. al (1992) in Shaftoe (2008) explain that convivial POS are more than just area in where people can have a good time. POS is the heart of democratic living where people can encounter differences and learn to understand and tolerate other people with different culture, norms and values (Worpole and Greenhalgh, 1996, in

Shaftoe, 2008). Sennet (1986) also mentions that people grow by the processes of 'encountering the unknown', and the best place for that purpose is public spaces. In this term, it is a general acceptance that people know how to behave in such POS (Sennet, 1986, in Shaftoe, 2008).

The social, environmental, and economic roles of POS from sustainability perspectives are explained by The Council of Europe (Bal, 2008). Social role refers to benefits of physical and mental health, encourage social interaction and place for education opportunities by contact with nature, opportunities for exercise, and involvement in social, cultural, and community activities. The environmental role refers to reduction of pollution, reduction in negative climate effects, habitat and biodiversity gains, and management of water. The economic role refers to attraction of investment, business retention and creation of employment opportunity, support for tourism, and increase in value and marketability of residential and commercial property.

Project for Public Space (PPS) emphasizes social, cultural, and economic benefits of place. In terms of economic dimension, POS plays important role in building and supporting local economy. In terms of social and cultural dimension, it plays important roles in defining and nurturing identity of community, fostering meaningful contact, creating improved accessibility, and promoting sense of comfort.

Borja (2002) emphasizes the urban role of POS as place for social life which contains relationship between built environment, people, and activities. At urban level, POS gives continuity to diverse urban territories and to provide an image of identity and monumentality. Socio-cultural dimension of POS is defined by relationship and identification, contacts and encourages, and communitarian expression. In some cases, creation of POS is a result of urban dynamics and behaviour. As POS has been widely utilized as place of exercise of citizenship, POS has developed political perspective. In this perspective, civics and tolerance in POS are comprised in the right to the city while respect to other's rights is a duty (Borja, 2002, in Bal, 2008).

2.3. Common Approaches to Understand the Meaning of Public Open Space

As stated before, Mandanipour (2001) argues that space has multi-layered meanings; thus, this concept is also applied for POS. Meaning of POS perceived differently by different person, and perception of a person to a given space may depend on several factors, such as norms and values. The process of understanding POS presents great complexities both in terms of meaning and determinant. He suggests that the multi-layered meanings of space can be understood through three approaches, which are:

1. **Empiricism approach;** looking at space as one of the artefacts within a city. This is done by understanding its physical pattern, its relationship with time (history), its relationship with nature, relationship with human activities and the way it is being used. The weakness of this approach is that it focuses more on to the environment than study on the people and the process of space creation itself. It also fails to address social issues;
2. **Rationalism approach;** concentrates on people and its relationship, looking at how space can be socially and spatially stratified from social, economy and political point of views. This approach is being criticized because it focus more on the people than the (built) environment itself;

3. **Combination** between empiricism and rationalism approach; it takes into account the way empiricism and rationalism approach identify the meaning of space.

The most extensive meaning that can be entitled to residential open space probably would be **the un-built volume of space within a given built fabric** (Vastu-Shilpa Foundation, 1988). The physical volume of the space itself obtains its meaning from a variety of functions while the way people make use of space is influenced by perception. Thus, even the most physical aspects of space derive their meaning by how it is perceived by people at large. Through its research on residential open spaces, it is argued that there are three approaches which can be used to assess the meaning of POS particularly at residential level by differentiating its use for three major functions which are:

1. **Utilitarian function** represents the most tangible and measurable dimensions and focus more on physical organization of space. Very often, many urban designers attempt to fulfil this function more rigorously. Although international (architectural) ergonomic measurements and standards are being used in design practice, it is also the fact that in many countries, cultural tradition defines the needs, measurement and standards, and give meanings to space;
2. **Social function**, which requires direct and active participation of its user. The fulfilment of this function is related to both physical organization of space and the social context of the particular given area;
3. **Perceptual function** represents the most intangible dimension and is complex to understand. They include aspects i.e. aesthetic satisfaction, distinct identity of area, etc. This function is affected by both physical organization and social context.

To support Canter's idea on analyzing interaction between individuals or user (particularly their behaviour) and physical (built) environment so as to find the meaning of particular physical (built) environment to users, it is also important to look at what influential factors which affect behaviour of users. The literature reviewed hereunder attempt to explain such interaction between user and physical (built) environment while at the same time focus on influential factors which affect behaviour of users.

2.3.1. Potential Environment and Effective Environment (Gans, 1972)

Gans (1972) use the concept of potential and effective environment to explain relationship between physical environment and human behaviour. The built environment is relevant to behaviour in so far as this environment affects the social system and culture of the people involved or as it is taken up into their social system. He explains that social system and cultural norms define and evaluate the built environment so as to relevant to people's lives and structure the way people will use and react to the built environment. Thus, built environment which is designed based on tangible and measurable standards represents potential environment, while social system and culture of users become an effective environment; in other words: such effective environment is a result of both social system or cultural preference and physical design. He suggests that there are three important qualifications to the primacy of effective over potential environment, which are:

1. Condition of potential environment that will affect all aspects of the effective environment;
2. Hidden aspects of potential environment which can not be perceived or accepted by people, thus, can be part of effective environment;

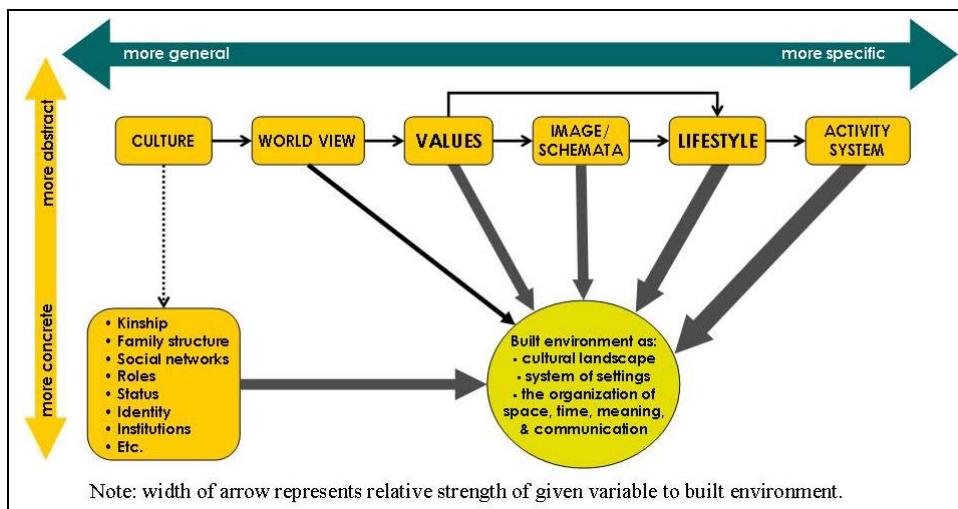
- The availability of potential environment by its presence may result in some change in the social system, thus, the potential environment is taken into effective environment by virtue of its availability.

2.3.2. Human Aspect of Built Environment (Rapoport, 1977)

Rapoport (1977) put forth the concept of “*behaviour setting system*” where it combines the concept of activity pattern and behaviour setting which are largely determined by socio-cultural characteristics. An understanding of these aspects will also provide more relevant basis for design of POS in residential areas.

2.3.2.1. Relationship between Culture and Built Environment

Rapoport (1977, 1993) argues that culture is a theoretical construct; it can not be seen but its manifestations, effects, or products are visible. As the most important influence on built area, culture is constructed by different levels or hierarchies of component (see figure 2.7.).



One way to understand culture and its relationship with built environment is by observing the smallest component—activities. In his opinion, different types of activity are derived from variability of the more general components (culture, world view, values, image, and lifestyle). Furthermore, he emphasizes that different types of activities lead to different setting of built environment (Rapoport, 1969c). He argues that the mismatches between activities and provision of space within built environment may be caused by different cultural values and norms. Besides activity, he also suggests that lifestyle may be one of the main variables which influence built environments. It enables clustering of people based on various characteristics within specific time. Thus, places in city which belong to different groups have meanings; they symbolize and indicate status and social identity of those particular groups, not only functioning as a place for manifestation of activities.

Regarding function of particular built environment, it may be differentiated into concrete function (e.g. to accommodate activities that are varied by culture) and hidden or symbolic function (e.g. indicates status and value of an area). The hidden function of a built environment may be valid although that built environment fails to fulfil its concrete function (Gold, 1972; Carson, 1972; in Rapoport, 1977). Different types of activities, in

the end, also lead to hierarchy or levels of meaning, ranging from concrete object through use object, value object to symbolic object (Gibson, 1950, 1968; Rapoport and Hawkes, 1970; Rapoport, 1970c, in Rapoport, 1977).

2.3.2.2. Perception, Cognition, and Evaluation to Built Environment

Besides understanding activities in order to understand the relationship between people and built environment, Rapoport (1977) also suggests it is important to understand three other dimension of human behaviour: perception, cognition, and evaluation, which come in continuum process. Besides differences in cultural values and norms, he also argues that the mismatches between activities and provision of space may also be caused by different perception and cognitive style of potential users.

In terms of perception, he argues that people do not directly perceive the world. There are at least two sets of filters between the real world and perceived world which affect perception of people: (1) cultural image, which comes from surrounding culture; (2) personal image, which comes within oneself. Thus, the same real world can be perceived differently by two persons who come from different cultures and have different personalities. These filters and resulting different perceived world are strongly related to image; it is a way of embodying values and beliefs. Thus, an understanding on image may be important for an understanding of man-environment interaction (see figure 2.8.). Image also enables both designer and user to develop system of choice during design process. Design, then, is seen as a process of choice among several available alternatives, process of selecting or eliminating criteria which represent preferences, whereas elimination of preferences is enable by cultural (values and norms) constraints, physical constraints, function, knowledge (e.g. economic, technology) etc. As there are differences in above mentioned factors between designers and users, the definition of and meaning of space and the incongruence between designer's and users' criteria may exist.

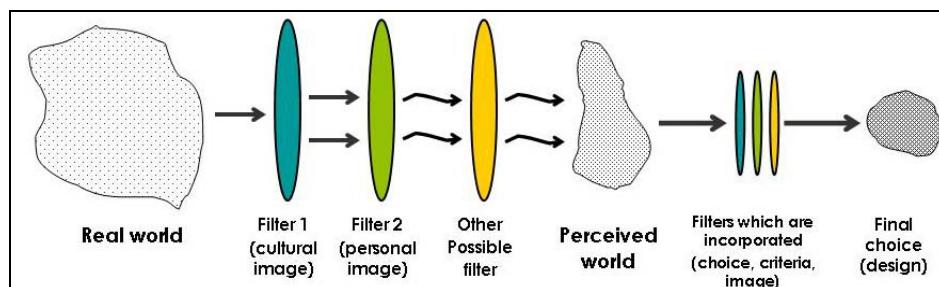


Figure 2.8.
Process of filtering
'real world' into
'perceived world'

Source:
Rapoport (1977)

In terms of cognition, cognitive style enables people to recognise their surroundings by categorizing them into categories with attached meaning and expected behaviour and then match these against image and expectation in general. Brüner (1968) in Rapoport (1977) explains that higher cognitive process affects perception through mental set, available categories, and coding. This higher cognitive process may be achieved accordingly to life cycle phase. Aside from cultural values and norms, cognition helps explain the variability of urban form, whether it is merely a response to 'basic needs' (Rapoport, 1969a) or more than a response to 'basic needs' (e.g. for symbolic purposes etc). Perception and cognition, thus, allows evaluation process to build environment which consist of identification and giving meaning to a built environment.

2.4. Planning Approach of Public Open Space

Despite improvements in areas of urban development during the last couple decades, there are facts that urban planner or designer still produces soulless urban fabric merely for functional reasons based on functional requirements, but is socially unsustainable and potential to generate future problems. Many POS are also examples of this condition, which is referred as *SLOAP–Space Left over After Planning*, complimentary with their weaknesses particularly in terms of physical design (Shaftoe, 2008). If Shaftoe (2008) argues that such convivial space seem to have grown organically through an accumulation of adaptations and additions, Rudofsky (1964) and Alexander (1977, 1979) through their critiques to formal architecture and planning suggest that better off ‘growing’ such places and spaces rather than trying to create them. The post-1974 culture of master-planning the urban area is less likely to accommodate the fine grain, local nuance and adaptability which are the basis of convivial space (Rudofsky, 1964; Alexander, 1977, 1979; in Shaftoe, 2008).

Debates regarding approach in planning activity of POS have been more and more intense in recent decades. Planners, architects, local politicians, and academicians from different background—urban sociology, design, economics, environment, etc.—have their own perspectives on what way planning for POS should be done and what should be put more into accounts. Madanipour, Healey and Hull (2001) explain some debates arousing planning of space and place such as:

1. Many concerns were given to traditional planning process, when planner tends to focus on physical transformation of urban environment without considering its political, economic and socio-cultural significance. Governance institutions are tied to old conception of process and of space and place;
2. Many also argue that space is not the central concern of several areas of planning, thus, it should be extended into spatial planning agenda;
3. Space is commodity of market and there is not much that spatial planning can do about it; if property markets have strong role in determining what use of space and place, then there is little for planner to do. To answer this, planning is considered as a tool to envision possible future, to regulate market, and to decommodefy space. This role of planning then allows the development of many functions and living experiences. It is not only the exchange value which determine the land use, but also title use value, symbolic value, or experiential value;
4. Emphasis on space may comes from disciplinary bias, where those who focus on spatial arts and science stress the centrality of space but some others focus on different area study.

Several authors emphasize that planners/designers and users may have different value system due to different culture. Different value system, thus, affect the way people understand problems and the solution proposed (Coing, 1966; Fried, 1963, 1973; Pahl, 1971; in Rapoport, 1977). Deetz (1968) in Rapoport (1977) mentioned that (built) environment and human behaviour are in reciprocity relationship; environment is the result of a series of choices among various alternatives which is sorted through system of choices. System of choices affects many aspects: human behaviour, ways of interaction, ways of structuring space etc. Rapoport (1977) argues that various kinds of developed criteria are important, particularly in the case of city as there is a great separation of designers and users while the scale of space and time is large. To enable hub between

urban spaces, designers need to know the relative importance of elements to various group, and this has been done by involvement of users or open-ended design.

According to Gans (1972), most of planning activity concerns the manipulation of man-made environment; planner rarely sees social aspects of this man-made environment. A planner manipulates material objects, the planning itself is physical. But, the forms and contents as to where physical environment is being realized are as much the product of cultural values and social decisions. Then, it is more important to decide whose culture will be reflected in planning scheme. A planner may make decisions which reflect his/her personal and/or professional preferences which may be based on culture and values of his/her own or of potential users. If there is conflict between these culture and values, the plan may not be adopted. Or, if it is adopted, it may result in minimum utilization of the planning product or it may be altered informally by the potential users. Thus, the most important focus is not the product itself, but the function and meanings which are given by users or people who are exposed to it.

To answer the challenge of conflict between planner/designer-users, Johnson (1988) suggests that it is best done in collaborative process between designers and users. Johnson started from the concerns of how the built public environment can become a manifestation of collective desires, values, and attitudes of users, both in terms of function and aesthetic. The collaborative process may work if designers understand users' socio-cultural point of view and commensurate tastes, needs, and biases, and vice versa; if users understand what designers have to offer. Johnson used two approaches, which are:

1. **Educational approach**, methods are used to help user to understand design in order to enrich dialogue between designer and users for more creative solution to emerge. This approach starts with assumption that participation in planning process can be more effective if users understand design principles, aside from their socio-cultural values;
2. **Anthropological approach** refers to process where designers try to understand the users and their socio-cultural background, to translate it and to accommodate these values into their design and planning process.

As the concept of POS develops with time, higher productivity and better organization capability are important for such a trend (Pozo, 1979). If Madanipour (2001) explains that space has multi-layered meanings and there are at least three approaches (perspectives) to assess it, then there is a need to go beyond one-single perspective and try to elaborate new, dynamic, multi-view perspective into multidimensional part of social reality. Then, we can find more meaningful insight into the life of place and find ways to respond to its challenge through dynamic perspective of planning process.

2.5. Analysis of Literature Review and Theoretical Framework

The overview of theoretical literature review shows that in order to understand POS in a given (residential) area, it is important to understand several dimensions which construct the POS itself, which are:

1. Global or universal definition and concept of space, place, and relationship between space and environment as a fundamental basis;
2. Policy context which comprises planning approach, provision/implementation, and management. It is important to look at the policy context as an instrument to translate

the universal understanding of space, place and environment with respect to local context (e.g. at varying administrative levels);

3. The spatial characteristic of POS which may occur as a result of translation from universal concept of space and place into reality and the utilization pattern which may act in two ways: affect the spatial characteristic or occur as a product affected by spatial characteristic of POS. Both of spatial characteristic and utilization pattern may be in reciprocity relationship and are strongly connected to local context.

Based on the explanation above, a conceptual framework in understanding POS in a given (residential) area can be developed as follow in figure 2.9.

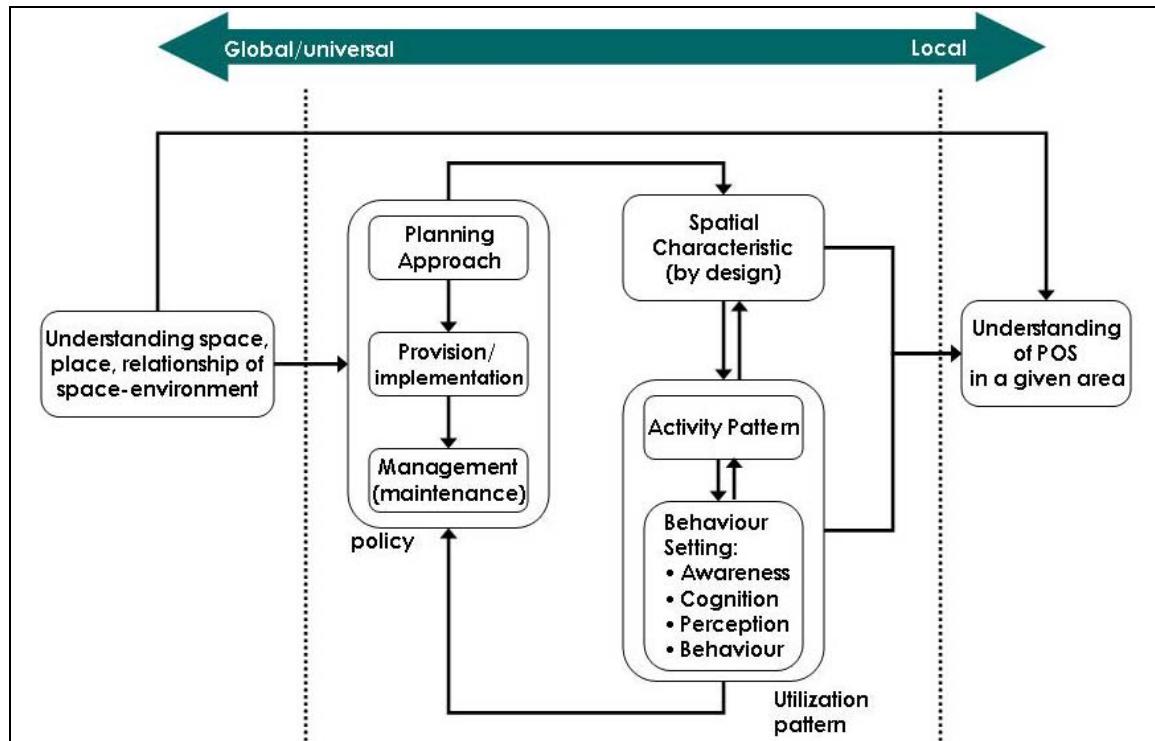


Figure 2.9. Conceptual framework of understanding POS in a given area

Also according to literature review, there are some factors which influence the spatial characteristic and performance of POS, and there are also some factors which influence the utilization pattern within a POS. Some of these influential factors will be used in analyzing spatial characteristic and utilization pattern in relation with research questions (see appendix-A).

CHAPTER 3

Research Design and Methodology

This chapter is divided into two main parts; first section explains research design and second section explains methodology which consists of strategy and instrument used for the research. Later, a table of variables, indicators, and research methodology (strategy, unit analysis, and sources) as combination of main points derived from literature review in chapter 2 and chapter 3 will be presented at the end of this chapter.

3.1. Research Design

The research has three broad sections which are done in two main stages: the literature review process—to form theoretical framework—and the operationalization. The first section comprises chapter 2 which consists of review on available literature regarding POS and its analysis. The second section comprises research design and methodology which is presented in chapter 3. The last section includes data collection, analysis, and the conclusion which are presented in chapter 4 and 5. Figure 3.1. represents schematic diagram of the research:

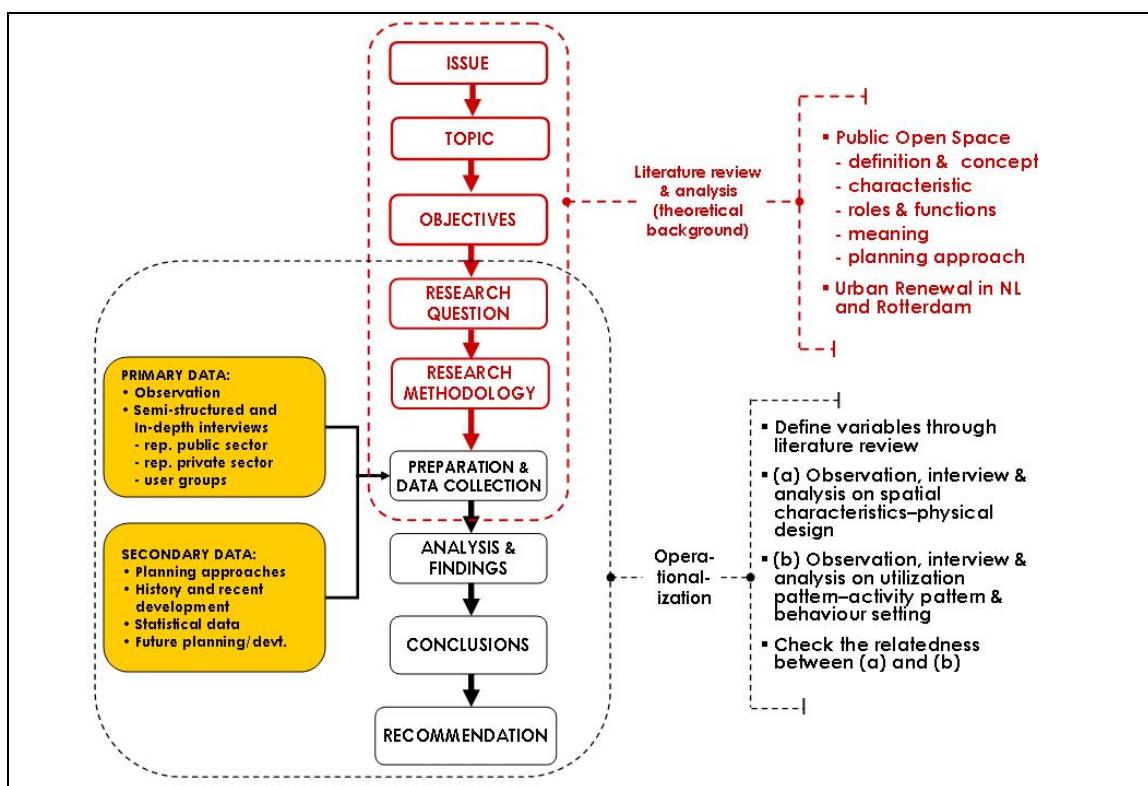


Figure 3.1. Schematic diagram of research
Source: developed by researcher

3.2. Research Methodology (Strategy and Instrument)

The research is an exploratory and qualitative study. The instruments that would be used are semi-structured and in-depth interviews, archival analysis, and case study.

3.2.1. Data Collection and Resources

3.2.1.1. Primary Data

Primary data covers the issue of *Afrikaanderwijk* and *Afrikaanderplein* in particular and POS in Rotterdam in general, will be acquired during fieldwork by:

1. Observation on factual condition of the area; this includes the spatial characteristics of the area and the square and the activity patterns occur in the square. In observation, the researcher will use maps, video camera, and digital camera.
 - a) Observation on spatial characteristics will be done by tract walking around the neighbourhood several times and make documentation in forms of maps and pictures of existing urban (area) structure. Analysis of the observation will be done by using several software which helps to explain the condition of existing spatial character in relation with main points derived from previous literature review, e.g. space syntax software (to analyze degree of physical integration, connectivity, and visibility of such area or square) and urban structure analysis.
 - b) Observation on utilization pattern will be done also by tract walking around the square in different timing so as to get objective description about the use of square by any group, which group that use the park dominantly, for what purpose and what activities occur during time frame.
 - **During open-market day** (Wednesday/Saturday) or **day with generating activity (d-1)**;
 - **During workday or weekday (d-2)**;
 - **During weekend without open market or without generating activity (d-3)**;
 - **During non-weekend holiday (d-4)**, this was done during The Queen's Day (*Koninginen Dag*) and during summer holiday.

Within each scheduled day for observation, there are time 3 frames so as to ease the observation and categorization of activities, which are morning (08.00-10.00), noon (10.00-14.00), and afternoon (14.00-18.00). Analysis of the observation will be put into table of activity pattern which contains information on space division, time frame, activities, and associated user groups (see below figure 3.2.)

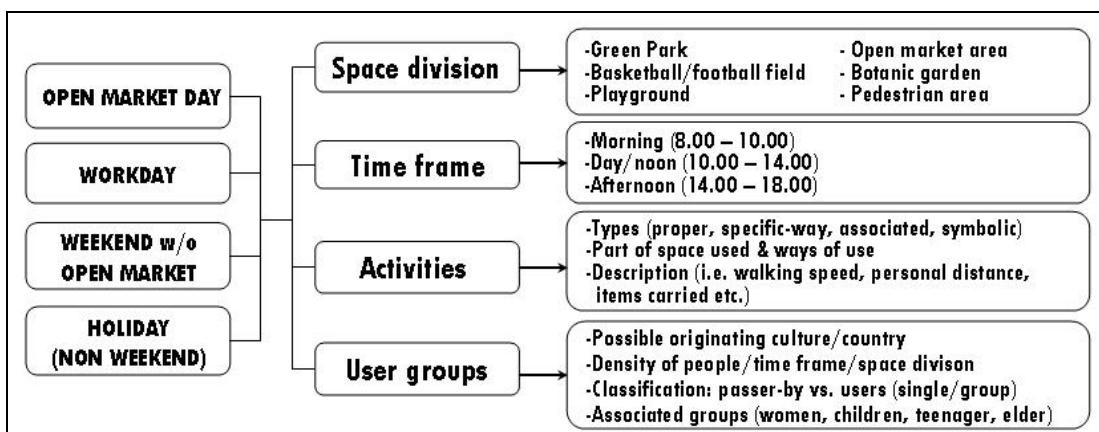
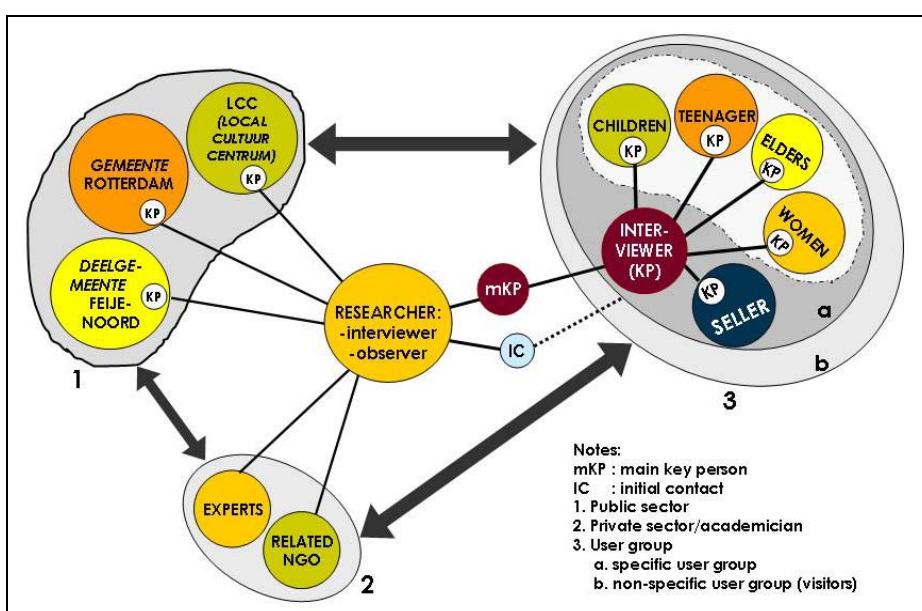


Figure 3.2. Differentiation on observation days for utilization pattern
Source: developed by researcher

2. Proposed semi-structured and in-depth interview with several actors in formal institutions and user groups related to the thesis topic. During the stage of acquiring primary data by in-depth interview, the activities will be documented in forms of notes, video and/or sound recording. Selection of respondents will be done through different channels; selection of officer in formal institution will be done through names appear in secondary data or recommendation while selection of user groups will be done by snowball sampling. Prior to selection of specific (local) user group, initial interview will be done with officer in LCC as initial key person and some local residents who are able to speak English. The targeted groups are as shown in table 3.1 and the relationship between groups is represented in figure 3.3. as follows:

NO	Targeted Institutions/ User Groups	Proposed Topic for Interviews	Proposed Respondent
1.	Public Sector		
	Municipality Rotterdam (dS+V)	Planning approach, implementation, future development	1
	Sub-municipality Feijenoord	Planning approach, implementation, future development	1
	Local Cultuur Centrum (LCC)	Present condition of people, area, square	1
2.	Academician&private sector		
	Expert in urban living & POS	Planning approach, implementation, future development	1
	Related NGO, i.e. Freehouse	<ul style="list-style-type: none"> - Planning approach, implementation, future development - Present condition of people, area, square 	1
3.	User groups		
	Specific (local) user groups		
	- Elders	- Present condition of people, area, square	3
	- Women	- Activities done in the square	3
	- Teenager and children	- Perception about the square	3
	- Seller in open market		3
	Non-specific user groups		
	- Visitors	<ul style="list-style-type: none"> - Present condition of people, area, square - Activities done in the square - Perception about the square 	5

Table 3.1. Proposed Targeted Institutions and User Groups for Interviews



3.2.1.2. Secondary Data

Archival analysis will be applied to existing secondary data which covers the issue of planning approaches for POS in Rotterdam in general and information regarding *Afrikaanderwijk* and *Afrikaanderplein* in particular. These secondary data may come in forms of research articles, journals, policy frameworks, design documents, maps, video, photographs etc. Those will be acquired through various sources: Rotterdam Municipal Archives (*Gemeente Archief Rotterdam*), IHS lecture materials and library, Erasmus University library, central library of Rotterdam, online journal and articles, internet websites, and museums. The complete overview of research questions, variables, and research methodology can be seen in appendix A.

3.2.2. Validity and Reliability

The objectivity of research is neutral, not suggestive but focusing on key findings. The reliability and validity of the research can be maintained through secondary data. In terms of questionnaires for semi-structured and in-depth interview, the assessment criteria, variable and indicators will be derived from literature review, thus, it is expected that validity and reliability can also be achieved. Reliability of the research would be established through triangulation between theory from literature review, planning and design approach of providers (government, consultant) and result from observation and interviews.

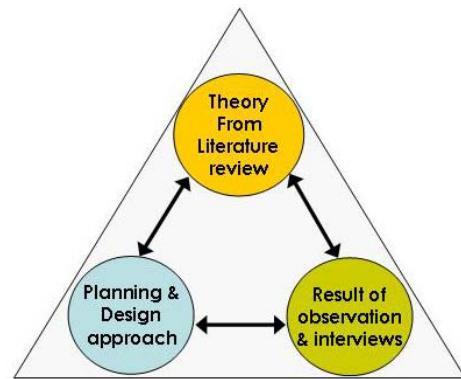


Figure 3.4. Triangulation of research
Source: diagram developed by researcher

3.2.3. Limitation of Research

Limitation of the research would be:

1. Limited financial support;
2. Time, which for the fieldwork is only for one month during July 2009; and
3. Inability to communicate in Dutch language which may impose problem during interview and interpretation of interview results, and also during interpretation of secondary documents written in Dutch language.

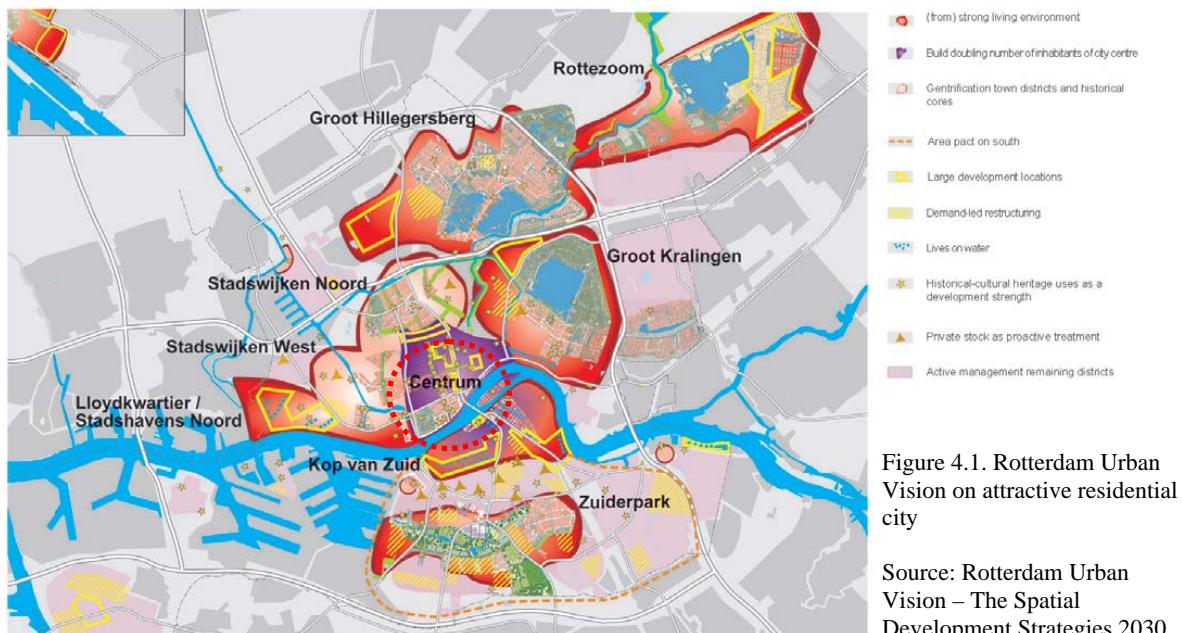
CHAPTER 4

Introduction to Research Area

This chapter provides the motives for selection of research area and introduction to research area which will be divided into two main sections. The first section will explain *Afrikaanderwijk*; short history and current development of *Afrikaanderwijk* with relevance to development programmes of Rotterdam South in general and also present condition of the area observed from different dimensions. The second section will explain short history and current development of *Afrikaanderplein* and the approaches in provision and management of POS in Rotterdam in general and *Afrikaanderplein* in particular.

4.1. Selection of Research Area

Since 1970s, The Dutch Government has released the urban renewal program in order to deal with deprived neighbourhoods and its arising social problems. To continue with, the Dutch Government then released The Urban Renewal Memorandum (1997) which focused on housing policies; it targets mixed-income and mixed tenure areas with the aim of reducing, or preventing spatial segregation¹ and emphasize on concentrated, high density and high quality standard in existing urban area to offer space for a wealth of functions and a livelier city centre. The shortage of space in Rotterdam is subject to change for more reasons than the construction of dwellings alone, thus, the (re)development of new housing stocks has been done in city centre, along the riverbanks and at easily accessible locations along the ring road. To support this, constant improvement on existing infrastructure particularly roads and mass transit lines is needed (KEI website; Shah, 2008).



¹ KEI Website; Van Kempen & Priemus (1999); Veldboer et al. (2002)

Also in relevance with The Urban Renewal Memorandum, The Municipality Rotterdam releases Rotterdam Urban Vision-The Spatial Development Strategy 2030 which aims at strong economy based on development of knowledge and service economy and attractive residential city as indispensable conditions for a strong(er) city. The realization of the mission will be development within the existing urban area which offers maximum benefits by make use of existing facilities and will lead to the efficient use of the scarce space and the outskirt will be spared. To create such attractive and high quality residential environments, a great deal of attention is given to public spaces and indispensable public facilities (e.g. education, child care, medical, social, sport and games etc.). Top priorities will be given to weaker districts by restructuring and tackling the existing housing stock issue. Based on an effective assessment, thirteen development areas have been chosen for realization of these objectives through VIP (Very Important Projects), and one of the development areas is Kop van Zuid residential environments which consist of *Afrikaanderwijk*, Rijn-Maashaven, and Parkstad², as shown in figure 4.1. Strategically located near city centre, *Afrikaanderwijk* has been one of the targets of creating such a strong housing environment based on demand-driven restructuring.

Afrikaanderwijk itself is a pre-war residential area which was initially built in around 1895 for Dutch working class people who mostly worked in old port of Rotterdam. After the bombardment of 1940 start from 1970's, the composition of population has changed from majority of Dutch into majority of ethnic immigrants, such as Turkish, Moroccans, Surinamese, and Antilleans (Soeters, 1990; Oosterwijk, 1990). It is one of 19th century residential area with high concentration of ethnic immigrants in Rotterdam (Blauw, 1991). *Afrikaanderwijk* also represents neighbourhood with such characteristics: pre-war residential area which has been in very deprived conditions, shown by degrading quality of old housing stock and public (open) space with associated social problems e.g. high composition of low-income households, criminality, relatively low employment rate etc. During 2002-2005, major revitalization of *Afrikaanderplein* was done as a means to revitalize *Afrikaanderwijk* in order to create a new image of *Afrikaanderwijk*³ as an attractive, multi-culture residential area.

Thus, to resume, the selection of case of *Afrikaanderwijk* and *Afrikaanderplein* is based on several motivations; it represents an issue which has been a major concern in Rotterdam: revitalization of residential area through revitalization of public (open) space. The neighbourhood has such long history and now it is one of multi-culture residential area, not to mention that it gets a lot of attentions and huge investment has been put from local government through VIP program.

4.2. A Brief Overview on *Afrikaanderwijk*

4.2.1. Short History of *Afrikaanderwijk*⁴

The early history of *Afrikaanderwijk* is most of the time considered as the beginning of almost the entire area of Rotterdam South. Before 1895, the area was considered as rural area (presumably farmland). Located in Rotterdam South, *Afrikaanderwijk* was built in

² Rotterdam Urban Vision-The Spatial Development Strategy 2030

³ http://www.eukn.org/netherlands/themes/Urban_Policy/Urban_environment/Urban_renewal/revitalisation-afrikaanderplein_1067.html.

⁴ Combined source Soeters (1989); Oosterwijk (1990); <http://www.wonen.rotterdam.nl>; <http://www.feijenoord.rotterdam.nl>
Thesis - The Use and Meaning of Public Open Space in Multi-culture Residential Area – Case Study of Afrikaanderplein, 32
Afrikaanderwijk, Rotterdam

the beginning of 20th century (around 1895-1905) under architect De Jongh as a housing area for workers who worked in the construction of *Maas Haven*. The people who previously lived there came from areas of Groningen, Brabant, South Holland, Zeeland Islands, and some from Belgium. During that time, the *Afrikaanderwijk* was recognized as a place for people from lower social strata, which majority of the population was Dutch working class. Since late 1960's, *Afrikaanderwijk* had grown into one of the first districts in Rotterdam where many of its residents are of immigrant countries origin, mostly from Mediterranean Sea countries. Initially, these people consist of "guest worker" who worked in port or industry and after they settled in they brought their families. In addition, tens of thousand of rich people from Suriname and Antilles also came to The Netherlands, and most of them lived in Rotterdam. They lived mostly in old neighbourhood due to cheaper price of old housing stock, while many of original residence moved to newer neighbourhoods or to suburb areas e.g. Capelle an den IJssel. This was worsened by the condition that there were landlords who rented out their housings to immigrant worker while at the same time there were many Dutch working class people who often waited for years for housing. Furthermore, old housing stocks of 80 or 90 years old were neglected by the original owners yet they were not adapted to the requirements of modern times and the rent was still high. In less than eight year period, there was a large exodus from *Afrikaanderwijk*; the population decreased from 16,000 to 4,000 people. Up to early 1970's, the area was considered as one of deprived neighbourhoods in Rotterdam (Soeters, 1989; Oosterwijk, 1990).

Besides housing, the employment sector was also a problem; the increasing number of lower-paid migrant workers lessened the job opportunities for local Dutch workers. In August 1972, there was a (racial) riot as a result of unrest and dissatisfaction of poor living condition. To answer the challenges of deprived neighbourhoods in Rotterdam and their associated social problems, the urban renewal program was done since 1974 which *Afrikaanderwijk* was one of the targeted neighbourhoods.

4.2.2. Current Development of *Afrikaanderwijk* in Relevance with Several Development Programmes of Rotterdam South

To support the urban vision particularly for development of Rotterdam South, a joint additional investment programme called The Rotterdam South Pact (*Pact op Zuid*) was arranged by Municipality Rotterdam, Sub-Municipalities (Feijenoord, Charlois, and IJselmonde), and housing cooperations (Vestia, Com Wonen, Woonbron, and Wonstad Rotterdam). The Rotterdam South Pact will focus primarily on the regeneration districts with target group of residents in each targeted districts and entrepreneurs in Rotterdam South. The approaches will be different; for example, one district may require the extra tackling of social issues, while another may need an extra impetus (e.g. in public space, activities, etc.). There are some involved organizations: municipal executives, housing corporations, sub-municipalities, school governors, residents' associations, business associations, care and welfare institutions, District Water Boards and the European Union. The Pact supports the great importance of an additional strategy for development of Rotterdam South and indicates which investments by the various parties are necessary. The Pact builds based on existing initiatives and the programmes are adjusted and geared from one to another. Basically, it focuses on enhance the social, economic and physical qualities of Rotterdam South through the keystones of thriving neighbourhoods, attractive districts, and strong Rotterdam South. The key task of the Pact is to reduce completely the selective migration by 2015 in order to maintain residents from middle-high income

groups and to increase residents' satisfaction with living conditions. It also aims at a greater number of sustainable dwellings and their increasing values, increase in business investment, higher employment level, and lower vocational training drop out⁵.

As mentioned before and as shown in the picture above, *Afrikaanderwijk* is included in VIP scenario which is also a focus regeneration district in Rotterdam South Pact. Some part of the neighbourhood is included in large development location based on demand-led restructuring and is planned to have increased density. In *Afrikaanderwijk*, the focus is given to physical development (housing stock and infrastructures) and to development of local art and culture through the project "Market of the Future". The current development in *Afrikaanderwijk* is arranged and supervised by different institutions e.g. Municipality Rotterdam, Sub-municipality Feijenoord, The Rotterdam Development Cooperation, Vestia Housing Corporation, Merchant Association, Free House, and *Afrikaanderwijk* Residents' Association.

4.2.3. Spatial Characteristic and Socio-Economic Conditions of *Afrikaanderwijk*

4.2.3.1. Connectivity, Accessibility and Existing Urban Structure

Afrikaanderwijk is located in south part of Rotterdam, particularly in south bank of Maas River 3.3 km from city centre. It covers an area of 6.44 km² which 1.45 km² of the area consists of water. *Afrikaanderwijk* itself is now a district under new administrative of Sub-municipality Feijenoord which was formed in 1977 and now consists of eight districts: Noordereiland, Kop van Zuid, Feijenoord, *Afrikaanderwijk*, Katendrecht, Hillesluis, Bloemhof, and Vreewijk. As shown in figure 4.2., it is strategically located in centre of Sub-municipality Feijenoord's administrative area. In the north and northeast, it is bordered by other districts of Parkstad and Kop van Zuid; in the northwest it is bordered by Katendrecht districts, Rijnhaven, and Maashaven; and in the south it is bordered by Hillesluis and Bloemhof districts.

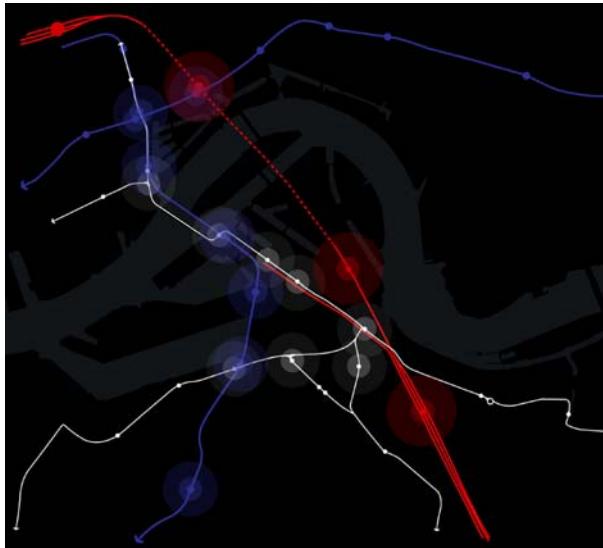


Figure 4.2. Administrative area of Sub-municipality Feijenoord
Source:

http://www.wonen.rotterdam.nl/Rotterdam/Interne t/Overig/Wonen/Fotoos_en_plaatjes/deelgemeente n/kaarten/Feijenoorddef.jpg

Afrikaanderwijk is bounded by three major transportation lines: (1) the *Laan op Zuid* (primary street) and railway yard in the northeast; (2) *Putselaan* (primary street) in the south which functioned as main tramline to *Zuid-Holland* until 1970s; and (3) *Maashaven O.Z* (primary street) and metro Line in the west. It is highly accessible from city centre; there are at least seven transit points of public transportation and it can be reached by metro, tramline, and bus. Within the neighbourhood, it is connected by at least 22 secondary streets, which names were taken from South Africa and the name of its leaders during the second Boer War in 1899-1902.

⁵ <http://www.pactopzuid.info>



Metro goes only on north-south axis (through Erasmus Bridge and Maashaven O.Z) while tram and bus go along north-south (through Erasmus Bridge and Laan Op Zuid) and east-west axis (through Putselaan). The connection of metro line, tram line and bus make the area more connected to the rest of the northwest, south and west.

Figure 4.3. Connection of public transportation
Source: Shah (2008), modified

Legend:

- Red train connection
- Blue metro connection
- White tram connection

4.2.3.2. Housing and Land Use

As densely built area, *Afrikaanderwijk* is occupied by a variety of buildings and land uses, mainly consist of :

- Mixed use buildings (commercial use & housing, public service use & housing e.g. *Het Klooster*)
- Housing, e.g. African Inn, which is the most common type of use
- Public buildings, e.g. Feijenoord sub-municipality building, schools, *Kocatepe* Mosque, sport facility (swimming pool), garden houses, train house, and historical building for restaurant (*Het Gemaal*)
- Green area; park (*Afrikaanderplein*), pocket parks, and green buffer zone (Brede Hilledijk)



Figure 4.4. Land use map of *Afrikaanderwijk*
Source: personal documentation (2009)

Legend:

- Orange mixed use functions
- Purple public function

Based on data 2008, there were at least 3,677 units of houses. From the total amount, 10% are privately owned and 90% were rent house, mostly provided by Municipality or housing corporation (84%). GBA also differentiate building based on period development (age of building). Based on data of 2008, 51% of houses were built between year before 1906 to 1944, 2% of houses were built in 1960-1969, and 46% of houses were built after 1980. Between 1945-1959 and 1970-1979 there were no new development, probably because the development were focused in city centre after bombing of May 1944 and the latter was probably because of economic crisis. Some association for public services (e.g. secondary school, playground, and bird rescue centre) hold a ground lease agreement to claim their part in *Afrikaanderplein*⁶. Majority of the buildings are high density type. Buildings which were built prior to 1969 were mostly three-storey buildings with concrete and brick construction and have pre-war architectural style (exposed brick surface, gable roof, ornamented).

⁶ Vervloesem (2008)

Conversely, buildings which were built after 1980 were mostly more than three-storey with concrete and brick construction and have more modern architectural style (more alternative materials were used e.g. thick laminate wood for exterior wall, flat roof, less ornamented).



Figure 4.5.
Building typology in *Afrikaanderwijk*
Source: personal documentation (2009)

4.2.3.3. Demographic Background and Socio-Economic Condition of Population

In 2009, total population of *Afrikaanderwijk* is 9.112 inhabitants—2.1% less than in 2008. The population consists of 79% non-western immigrant, 6% western immigrant, and 5% native. Among the 79% of non-western immigrant, majority of this population composed of 34% Turkish, 14% Moroccans, 13% Surinamese, and 5% Antilleans. The composition of population based on gender consists of 50.3% female and 49.7% male. From the total population, 21.4% can be grouped into children (age between 0-14 years old), 8.3% grouped into teenager (14-19 years old), 61.5% grouped into adult (20-64 years old), and 9.6% grouped into elder (more than 65 years old)⁷.

In terms of socio-economic condition, in 2006, majority of the households were grouped into low-income household (62%), the rest were middle-income household (31%) and 7% were high-income household. The average income per capita of *Afrikaanderwijk* was the lowest among other districts under Feijenoord sub-municipality. In 2008, the unemployment rate is 20%. The social index of *Afrikaanderwijk* is 4.7, which showed relatively low level of personal skills (control, language, income, education), environment (accommodation and facilities), participation (education and work), and social bonding in social activities of the citizen.

Low level of personal skills also most of the time correlated to unemployment issue. In 2007, the safety index of *Afrikaanderwijk* is 5.7 which shows relatively high level of social safety problem which was in status of attention. In *Afrikaanderwijk*, the common social problems were drugs, youth noise, vandalism, and robbery (in street or in house). Although it has low safety and social index, the neighbourhood satisfaction level was quite high (which is 76 out of 100). Districts under Feijenoord sub-municipality have been known for their large number of teenagers and people under 20 years old (27% higher than percentage of people under 20 years old in Rotterdam). The social and physical environment which is sometimes considered unfair to some group (age, ethnicity) also contributes to a number of social problems, e.g. vandalism and robbery done by teenager.

Blauw (1991) in Huttman et al. (1991) explains that although there is high concentration of ethnic immigrants in the older 19th century residential districts, they are not equally segregated; Turkish and Moroccans are more segregated than Surinamese and Antillians⁸.

⁷ GBA/*Gemeentelijke Basis Administratie*, available at <http://rotterdam.buurtmonitor.nl/>

⁸ Blauw refers to Mik's extensive study regarding ethnic minority segregation in Rotterdam in 1987, according to 1984 figures.

Blauw (1991) explains, the relatively high concentration of Turkish and Moroccans in this old residential neighbourhood (measured by building ages) is understandable; it is a consequence of family reunifications (guest workers bring their families to The Netherlands), moreover, Turkish and Moroccans mostly offers help to their relatives or friends in looking for housing in the same neighbourhood or give the needed information on behalf of family members from the same village or town⁹. Conversely, the Surinamese-Antilleans are more likely to be dispersed throughout outer city due to Dutch Government's policy (1975-1979) which reserve 5% of units in each new housing projects or rent-subsidized dwellings mainly for Surinamese and Antilleans, and they do not offer each other help in looking for housing to the degree that Turkish and Moroccans do (Blauw, 1991).

4.3. Brief Overview on *Afrikaanderplein*

4.3.1. Brief History and Recent Development of *Afrikaanderplein*¹⁰

The history of *Afrikaanderplein* can be traced back with the history of *Afrikaanderwijk* itself. *Afrikaanderplein* was dedicated as a park which serves both the neighbourhood and district level. The planning phase began in 1895 under architect de Jongh, and the construction of *Afrikaanderwijk* started around 1903. Prior to 1914, *Afrikaanderplein* was a very wide and mono-functional open area. Then, started from 1914, there were initiatives to make *Afrikaanderplein* into multi-function open area by subdividing the square into several functions to accommodate the increased interest of local residents which comprise football field, botanic garden, small pool, and playground which came later on during 1950's under association namely SVA, and the bird rescue centre which namely *Vogelklas Karel Schot*. As *Afrikaanderwijk* evolved, *Afrikaanderplein* also went through evolution process from mono-functional square into a square with multi-functional square in a dynamic process (see figure 4.6).

Since then, *Afrikaanderplein* has been the 'icon' of *Afrikaanderwijk*: it had been the home for Feijenoord and for Spartan football clubs; it has been the place where children spent their time in playground and in the pool during summer, and it has been the economic heart of *Afrikaanderwijk* since 1960 as the weekly market from Maashaven was relocated to *Afrikaanderplein* due to construction of Caland metro line.

Prior to 1990, *Afrikaanderplein* had gone through several times of refurbishment as attempt to revitalize the square due to decreasing physical quality. The refurbishment was done in 1930, 1947, 1970, and in 1985. As the economic heart of *Afrikaanderwijk*, it was then again under refurbishment in 2005. The reasons behind the redevelopment process in 2005 will be given in next section of Approaches in Provision and Management of POS in Rotterdam and Redevelopment of *Afrikaanderplein* as an attempt to answer the research question mentioned before.

⁹ Mik (1987) in Blauw (1991) notes that majority of Turkish helped each other with higher degree compared to Surinamese.

¹⁰ Combined sources: Vervloesem (2008), De Does (2000, 2005); Pact op Zuid-Reisgids 2008; Pleinen, Woonkamer van de Buurt-Succesfactoren voor Levendige Pleinen; Hart van Zuid, Hart Sociaal-Social Culturelle Spin-off van het Hart van Zuid; Effectief Beheer van de Openbare Ruimte- Ontwerp, Zeggenschap en Organisatie; Het Levende Plein-Een Pleidooi voor het Introduceren van Een Rotterdamse Pleinaanpak; WWI actieprogramma's 2008 -2009; <http://www.stedplan.nl>; <http://www.svafrikaanderplein.nl/geschiedenis.htm>; <http://ptmafrikaanderwijk06.web-log.nl>.

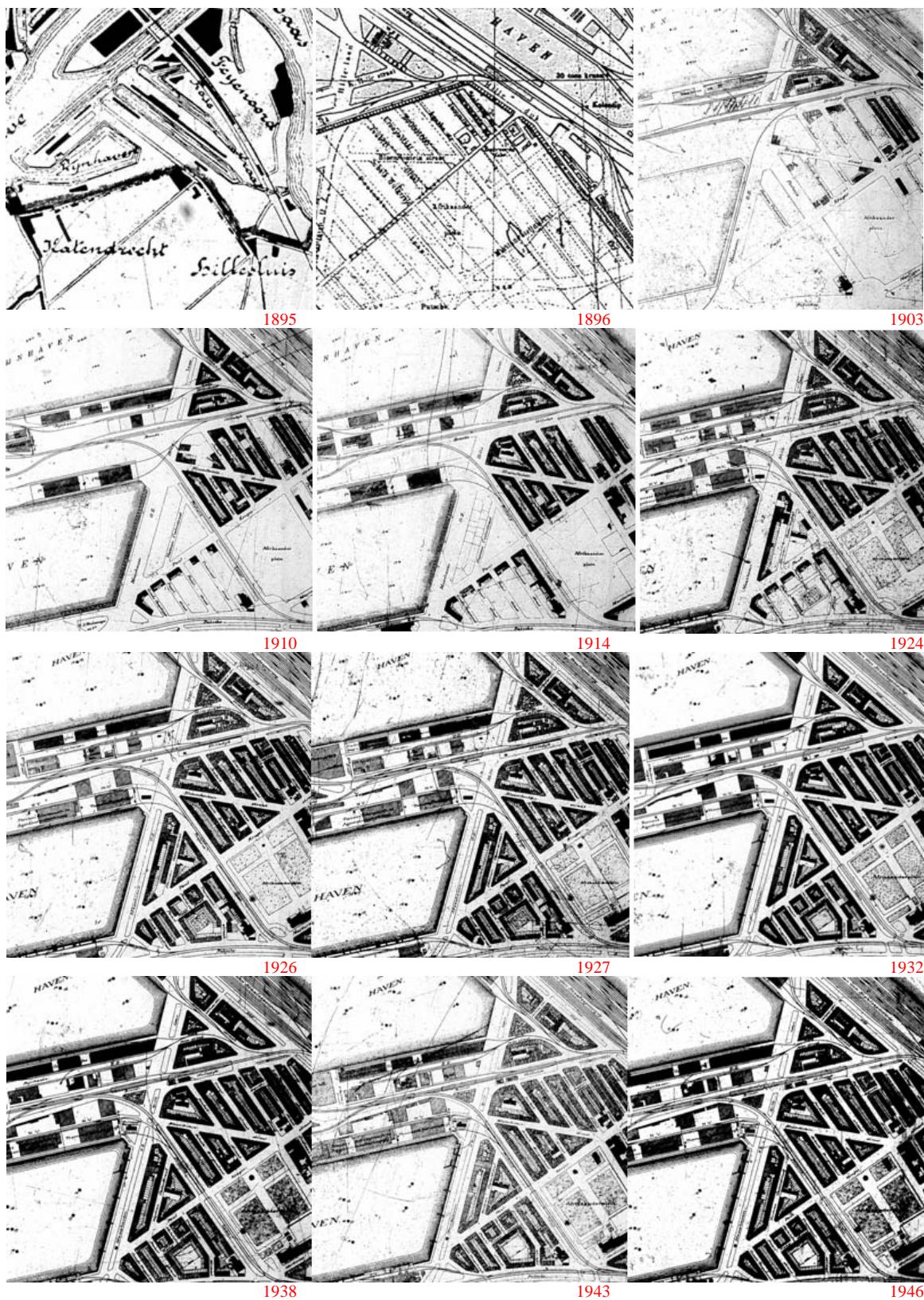


Figure 4.6. Development of Afrikaanderplein
Source: Rotterdam Municipal Archives (*GemeenteArchief Rotterdam*)

4.3.2. Approaches in Provision and Management of POS in Rotterdam and Redevelopment of *Afrikaanderplein*

This part will be divided into three main sections which are policy approaches in provision and management of POS in The Netherlands in general (provided by VROM) and in Rotterdam in particular (provided by Social Platform Rotterdam or SPR), redevelopment of *Afrikaanderplein*, and redevelopment of *Afrikaandermarkt*.

4.3.2.1. General Approach in Provision and Management of POS in the Netherlands and in Rotterdam

The recent general approach in provision and management of POS in The Netherlands is basically provided by Ministry of Housing, Spatial Planning and Environment (VROM) through project of *InnovatieProgramma Stedelijke Vernieuwing* (IPSV) or Innovative Programme on Urban Renewal. POS management is important to ensure utility and sustainability of the public space itself. It is also has much influence on the value of adjacent property. The three most important dimensions regarding effective management of POS are good design and materials, control and involvement of residents, and organizational structure for management (VROM, 2003).

1. Design and materials

Design of POS plays important roles in the future management. A good designated POS should have a clear configuration and supportive to the extent of use. It should also be fully functional, should be able to accommodate different activities by different target groups which enable intensive use so as to increase social security and surveillance. The use of specific materials is possible to ensure intensive use.

2. Control and involvement of residents

The early involvement of local residents and other users in organization and management of POS is very important; this creates basis for management and may contributes to optimization of future use. The involvement of local residents and users may come in forms of joint program by demand from residents, users and administrators. The involvement of residents and other stakeholders particularly in planning activities is important to obtain support, to minimize further complaints, and to promote social cohesion between residents. Control and involvement of residence is also important to ensure social security. To ensure social security, there are three ways of improving social control which contributes to social security. Firstly, a direct way: it is important to analyze the root of the social problem exists in the given area; the approaches should be given in the first place to deal with the root of the problems. Secondly, the indirect way: the establishment of well-functioning and intensively used POS is important to increase social control and safety. Thirdly, also an indirect way: well-functioning public buildings or public facilities located or adjacent to POS. Blauw (as in interview on September, 1st 2009) adds, that in this case, space is used as a social instrument to affect behaviour of residents.

3. Organizational structure for management

In terms of organizational structure for management, in principle, the municipality is responsible for managing the public (open) space and the responsibility of residents is limited. Participation of residents in management activities (particularly maintenance) is an important tool for future management of POS. Participation of residents and

other stakeholders may come in forms of foundation with joint responsibility between stakeholders or in public-private partnership. Since management has much influence to the value of surrounding properties, more attention should be given to the form of management itself. Management of POS allows for an optimal coordination of activities. For optimal management, a specific management should be prepared and be clearly differentiated between technical management and social management. Technical management focuses on maintenance of the square while social management focuses on monitoring. In some way, it was initially done by setting up rules which are approved by *Pleinregisseur* (square manager), City Supervision Department and police. Law on management of a particular public (open) space is possible to make which application can be made through public-private partnership. If expenses are burdened to users and property owners around the particular POS, then quality of management should be higher.

In case of Rotterdam itself, the general approach in provision and management of POS can be inferred from Social Platform Rotterdam (SPR). The focal points of provision of POS from SPR perspective are lively POS which is characterized by movement, entertainment, and activities. One of the approaches used to achieve this is by community organization, to link different groups and organizations to synergize strength, to come with something that no one at the beginning of the process thought possible and to achieve concrete result.

Regarding recent policy in provision and management of POS, Blauw (as in interview on September, 1st 2009) mentioned that there is one latent function missed in the policy which is how to gain input from different culture and incorporate this into design and implementation. Recent policy is more to practical dimensions (e.g. specify needs based on biological needs of life cycle phase or easiness on maintenance) than try to bring people from different culture to be able to use the space together, not to mention that the problem exists now is people live by themselves, they care less to each other and they do not feel that they have their part in the space since they are less involved (or even not being involved) in creating such POS. This may be caused by less social cohesion; the more diverse culture, the less social cohesion since people tend not know each other. In the end, the less social cohesion leads to less social control. Furthermore, he argues that the main problem regarding POS in The Netherlands is not in domain of design, but more to behaviour of users. The problem should not be solved only by design, but also by other means if it is considered necessary; know what stakeholders can do to assist, make specific regulations on how people should behave in POS (i.e. control in POS), selection of people (as applied in exclusive POS), or in extreme case legal banning. Thus, it is important to have different angle in designing such approach on provision and management of POS (Blauw, 2009).

4.3.2.2. Redevelopment Process of Afrikaanderplein¹¹

During redevelopment process in 2005, the main goal was to create more safe and attractive neighbourhood in general and to create a beautiful, clean, safe and functional

¹¹ Combined sources of http://www.eukn.org/netherlands/themes/Urban_Policy/Urban_environment/Urban_renewal/revitalisation_afrikaanderplein_1067.html; <http://www.stedplan.nl/webpage.php?module=onderwerpen&onderwerpen=view&id=100>; [http://www.antennenrotterdam.nl/?fdsearchmin\[date\]=2008-12-01&page=10](http://www.antennenrotterdam.nl/?fdsearchmin[date]=2008-12-01&page=10); <http://www.colijn.nl/projecten/afrikaanderplein03.html>; interview with Onnie Tjaia of dS+V (2009)

open space in particular¹². The goal was in line with Rotterdam Urban Vision 2030 which one of the aims is creating an attractive residential city as indispensable conditions for a strong(er) city (see sub-chapter 4.1.).

Based on interview on August 27th 2009 with Mr. Onnie Tjia, a representative of dS+V (Housing and Urban Development Service) who was involved in the redevelopment of Afrikaanderplein, the (design) plan regarding redevelopment of *Afrikaanderplein* had been made in 1995, but it was not accepted by majority of residents although there had been a communication process between involved parties. Moreover, the plan itself focused more on open market area but less to other parts of the square. Then, it was decided that another design should be made, and it was done by OKRA Landscape Architect in cooperation with dS+V. The design process start in 1999, marked by intense communication for almost 3 years with several local related organizations as representatives of residents and interested parties (the list of involved organizations can be seen in annex). Then, after the design was approved in 2002, the construction start in summer 2003 and it was finished in 2005. The budget of 8.41 million euro (2.27 million euro from EU funding) was used for design and construction process which included renovation of park and botanic gardens, improvement of sport and recreational facilities, provision of more diversified services and better facilities for markets so as to increase the opportunity for individual function.

Some of the reasons behind the redevelopment of *Afrikaanderplein* were:

- *Afrikaanderplein* used to be the most significant large sized green area in this densely built residential area, but the size of the green area within *Afrikaanderplein* slowly but sure was reduced by extensions of other functions which were done by related managing organization (e.g. by bird rescue centre which claimed more green area to put bird cages). The limited green structure and environmental problem in the neighbourhood created urgency to redevelop the *Afrikaanderplein*:
- Design and maintenance problems: poor maintenance (e.g. stinky pond) and unorganized fragmentation of square caused by extensions led to closed structure and inaccessibility in many parts of the square. Closed structure also brought impacts to existence of “shadow area” and low visibility which finally led to unsafe and insecure feeling for those who want to use the park. Moreover, it caused lack relationship with surrounding environment;
- Social and environmental problem regarding the use of POS which needed to be tackled: pollution, vandalism, low level of safety particularly during night.

The key point in redevelopment of *Afrikaanderplein* is to create an attractive POS for all kind of people (user groups) with different background. The strategies used for redevelopment of *Afrikaanderplein* can be differentiated three main dimensions as:

a) **Design Plan;** the main focus of design plan were:

- High accessibility and visibility. This was achieved by clearly demarcated but open border (loose trees, fence and gate, opening hours) to provide sight lines into the square and free flow of circulation around periphery and across the park by providing pedestrian path;
- Open layout design for flexibility to introduce various range of activities, combination of uses for free and fixed functions which are complimentary and

¹² http://www.eukn.org/netherlands/themes/Urban_Policy/Urban_environment/Urban_renewal/revitalisation-afrikaanderplein_1067.html.

reinforce to each other, to create a lively park which is able to accommodate diverse activities and intensive use from different user groups. The basic idea of the park is a free central area surrounded by a framework of specific functions, thus, fixed functions (playground, botanic garden, area for open market) were placed at the edges while free functions in the central area;

- The quality of the square and its equipments which are given high attention, e.g. planting, new building and equipments for playground, botanic garden, and bird rescue centre;
- Strong image of the neighbourhood by employing new and existing functions; e.g. preserve larger portions of green park with different types and colour of plants with different arrangement (rows and stand-alone in center area), water area between mosque and park, lighting system in water area for open air performance;
- Enable future linkage with other urban (green) structure, particularly in northeast (Parkstad) and west (Katendrecht) area.

b) Planning Process and Management

The planning process started with an extensive series of interviews with local residents and organizations involved in the square. The results of the interviews formed the basis for a brief. Apart from these, based on conditions in the Housing and Urban Development Service and Department of Public Works, a technical program of requirements was established. Then, spatial constraints and potentials of the square were analyzed. Later on, a workshop with local residents, interest groups, designers, administrators and officials of the municipality was set up. The results of the workshop were ultimately developed into a master plan for the redevelopment of the square¹³.

Onnie Tjia (in interview on August 27th 2009) explains furthermore, that during planning process, intensive communication with various neighbourhood organizations was done so as to encourage active involvement of local residents through the organizations, to increase knowledge, to improve attitudes and behaviour of residents, and to promote social cohesion between residents from different culture background. The working group included representatives of all the neighbourhood organizations, municipal services and the designers of OKRA; they are working in various thematic working groups (e.g. SVA for design of playground, *Vogelklas Karel Schot* for design of bird rescue centre, etc.).

Main discussion and knowledge shared during this participatory planning process were regarding requirements or “wishes” of each party (e.g. more m² area for each function, more diverse plants etc.), design criteria which had to be matched with available budget and details for operation and maintenance of the square after completion. Also during planning process and development, a lot of “wishes” could not be accommodated due to conflicting wishes, limited square metres or budget allocation, thus, compromises should be done. Also in many cases, there were a lot of “unknown wishes” from several people who were not outspoken in expressing their ideas. Overall, the decision regarding design preference had been approved by other parties at the end (Tjia, 2009). The other processes which were also not easy but important were to get approval for safety, security, and environmental impact assessments. As for the design itself, it received several awards: Exemplary project in

¹³ <http://www.stedplan.nl/webpage.php?mid=157&projecten=view&id=108>

2000 by the Dutch housing ministry (VROM) and the foundation for experimental Housing (SEV) and first prize winner of the National Dutch Outdoor Space Architecture Award (OAP) of 2005-2006¹⁴.

c) **Promotion of Social Security and Social Safety**, for *Afrikaanderplein*, specific management plan was prepared; the distinction was made in technical management and social management. Technical management focus on maintenance of the square done by Sub-municipality and *Pleinregisseur* (square director), while social management focus on monitoring and rules which are approved by *Pleinregisseur*, City Supervision Department and local police (e.g. for opening hours), supervision in sports and games facilities, dispatch of local police, and by increasing the existence of public buildings around the park (such as mosque, library, or buildings with mixed use functions) which require constant presence of people which in the end lead to increased social control and improved relationship between the square and the neighbourhood¹⁵.

4.3.2.3. Redevelopment of *Afrikaandermarkt*

Talking about *Afrikaanderplein* also means talking about *Afrikaandermarkt* which is held every Wednesday and Saturday. It is now considered as one of the biggest market in The Netherlands (2nd biggest in Rotterdam) which has about 300 market stalls¹⁶. Vervloesem (2008) argues that it has advantages on its marginal, off-centre location, e.g. free parking space around the neighbourhood, more and cheaper storage space for vendors, cheaper price for items sale there compared to open market in city centre.

Furthermore, Vervloesem (2008) explains that the policy regarding market trade in Rotterdam lies on large-scale, concentrated market so as to attract more visitors at once, but some urban planners tend to argue that smaller and less concentrated market throughout the neighbourhoods will be better so as to enable distribution of inconvenience and benefits. The recent rise of urban renewal—which aims at economic revitalization—finally gave ways to redefinition of city as a new destination for leisure and reconceptualization of market as an event, particularly the establishment of “themed market”. *Afrikaanderplein* itself then labelled as a “multicultural market: a place to meet and eat”. Like any other open market in The Netherlands, there are unwritten social hierarchy to be a vendor in open market: (1) start up, (2) *meeloper* or follower—which stands for market vendor without fixed place, and (3) market vendor with fixed place. These social hierarchy shows that ‘seniority’ is applied in the open market. *Afrikaandermarkt* and other open market are supervised by *marktmeester* (market superintendent) who is also responsible for distributing empty places to *meeloper*. Moreover, if analyzed from social hierarchy, there is different degree of “publicness” of space which depends on different degree of spatial rights of the market vendor in the open market (Vervloesem, 2008).

Like any other open market, the stalls in *Afrikaandermarkt* are arranged in specific arrangement, divided into lines for food consumption items and lines for *kramerij* or other consumption items (e.g. clothes and accessories, fabrics, cosmetics, electronic and

¹⁴ <http://europaconcorsi.com/projects/81518-Rotterdam-Afrikaanderplein>

¹⁵ <http://www.stedplan.nl/webpage.php?mid=15?&projecten=view&id=108>

¹⁶ Hollandse Markten Team, “Afrikaandermarkt op het Afrikaanderplein”, <http://www.hollandsemarkten.nl/markten> in Vervloesem (2008)

computer equipments, shoes & sandals, furniture and dining equipment, bedding equipment etc.). Majority of the vendors and the visitors are immigrant descent; majority of vendors who are immigrant descent (mostly Turkish and Moroccans) sell food-consumption products instead of *kramerij* product. According to Vervloesem (2008), this is a consequence of searching for stable sales for the vendor to be established in the open market by reason that people need food on daily basis compared to *kramerij* product.

As for *Afrikaandermarkt* itself, Jeanne van Heeswijk from Freehouse¹⁷ explains that new project for future development of *Afrikaandermarkt* is now on the run. It aims at modernizing the market by local branding and taking advantages on existing multiculturalism through exchange of ideas and experiences of entrepreneurs, young people, artist, and designers, so as to make the market and the square an attractive place within the community of *Afrikaanderwijk* in particular and to community outside *Afrikaanderwijk* in general. The project is supported by several other stakeholders e.g. OBR (Rotterdam Development Cooperation), Feijenoord Sub-municipality, Vestia, *Pleinregisseur* of *Afrikaanderplein*, BOA (residence association), and organization of market vendors (as in interview on July 29th 2009).

4.3.3. Characteristics and Roles of *Afrikaanderplein*

With total coverage of 5.4 ha and coverage of permeable area of 22,042.8 m² (40.82% of total coverage) and impermeable area of 31,958 m² (59.18% of total coverage), *Afrikaanderplein* can be grouped into city park¹⁸. Based on physical characteristic (Cullinan, 2008), it is a man made environment—combination of both hard space and soft space, massive in size, and it accommodates at least 15,000 visitors in busy Saturday¹⁹. It is located in the centre of *Afrikaanderwijk* and is accessible to residents from other surrounding neighbourhoods. During working days (without open market), most of the visitors are more likely come from within *Afrikaanderwijk* itself, but during open market days, there are more visitors from surrounding and other neighbourhoods. In this term, based on service distance (Gedikli and Ozbilin, 2004), it functions mainly as neighbourhood green space (for park, playground) which catchments of population are not only from neighbourhood level, but also at city level.

Based on engaged activities (Suharto, 1999), it can be both an active-passive space in nature; its active nature is shown by ability to accommodate different types of activities (interactive functions) while its passive nature is shown by visual and conservation functions. Based on enclosure and purposes (Shaftoe, 2008), it is an enclosed yet open space, it can be classified as a multi purpose square since it is able to accommodate many different activities, ranging from formal activities (e.g. organized cultural events) to informal activities (personal activities). Based on hierarchy (Rapoport, 1977), it is highly public and accessible physically and socially; it is very open but also controlled at the same time particularly to ensure social safety and security.

If analyzed based on critical elements of great public (open) space defined by Shortridge (1997), *Afrikaanderplein* literally fulfil these elements as a good public (open) space.

¹⁷ Freehouse is a non-profit organization which initiates future development of *Afrikaandermarkt*

¹⁸ Based on classification—characteristic of social activities and catchment—done by Center for Study on Natural Resources and Environment Institute of Ecology Studies, Padjajaran University, Indonesia (2003); city park has size of 100,000-140,000 m² and has serving capacity of at least 480,000 in the city.

¹⁹Hollandse Markten Team, “*Afrikaandermarkt op het Afrikaanderplein*”, <http://www.hollandsemarkten.nl/markten> in Vervloesem (2008)

First of all, it has **character** (marked by clearly defined boundaries, unique attributes which give them focus, a sense of arrival and enclosure particularly in spaces with fixed functions, relatively appropriate scale, and physical elements). Secondly, in terms of **ownership**, it creates sense of belonging to local residents, particularly user groups of elders, women, and children. Third, it also has **authenticity**; the strength came from the rooted history and potentials of multiculturalism dimension exist in the area, which are explored through *Afrikaandermarkt*. Fourth, it provides **accommodation** to local activities while at the same time acknowledge physical comfort (by urban furniture) and psychological well-being through provision of green park and botanic garden. It also accommodates social and private life through flexibility and comfort ability for playing, interacting, and other stress-relieving activity in a positive manner. It even encourages local market activity to revitalize the surrounding environment.

Blauw (as in the interview of September, 1st 2009) mentioned, POS in a neighbourhood is supposed to be as a ‘big living room’ of the neighbourhood itself—each user group has their own corner within this living room (small spaces within a big space), thus, flexibility of POS itself does matter. If POS is expected to be used by user groups, then, it is important to specify the targeted user groups, e.g. by life cycle phase (age) or by culture. Each user group (either based on life cycle phase or by culture) has its own (specific) needs. It is relatively easier to compromise and to arrange needs based on life cycle phase compared to cultural differences. If it comes to cultural dimension, it is important to know the culture; it is also important to have input not only from one specific culture; the more diverse cultural differences, is it likely the less social cohesion, which in the end lead to less social control, not to mention that ‘intra-cultural bond’ within specific ethnic groups also plays important role most of the time.

Based on the characteristics mentioned above, the roles of *Afrikaanderplein* comprise the socio-cultural, environmental, economical, and political dimension. In terms of socio-cultural dimension, it provides opportunity for social learning and interaction (between people and between people-nature), fosters frequent and meaningful contact, allows exchange of cultural values and norms and encourages participation through social events which may reduce ethnic and class barrier. It promotes sense of freedom and nurture the identity of the neighbourhood. It also accommodates physical and mental health by enabling leisure, recreation, informal education and exercise. For environmental purposes, it acts as a milieu to preserve biodiversity; as the most significant green (open) space in the neighbourhood it accommodates personal and public health by interaction with nature. In economic dimension, it supports local economy by open market; it attracts investment and provides employment by empowering local business and tourism based on multi-cultural environment as stated in “the Market of Tomorrow, a Place to Meet and Eat”. The flexibility to accommodate activity and variation in physical character also stimulates creativity and draw diverse population (greater ethnic and cultural pluralism). In terms of political roles, it accommodates practice of good citizenship by compliance to social norms and creation of social consciousness. Based on the characteristic and roles mentioned above, then, *Afrikaanderplein* can be said as a convivial space where people can be sociable and festive.

CHAPTER 5

Analysis and Findings on *Afrikaanderwijk* and *Afrikaanderplein*

This chapter consists of two main sections: first section provides analysis and findings on spatial characteristics and socio-economic condition of *Afrikaanderwijk* while second section provides analysis and findings of *Afrikaanderplein* which covers spatial characteristic, utilization pattern, and the ‘juxtaposition processes’ as attempts to identify meanings given to *Afrikaanderplein* by existing user groups.

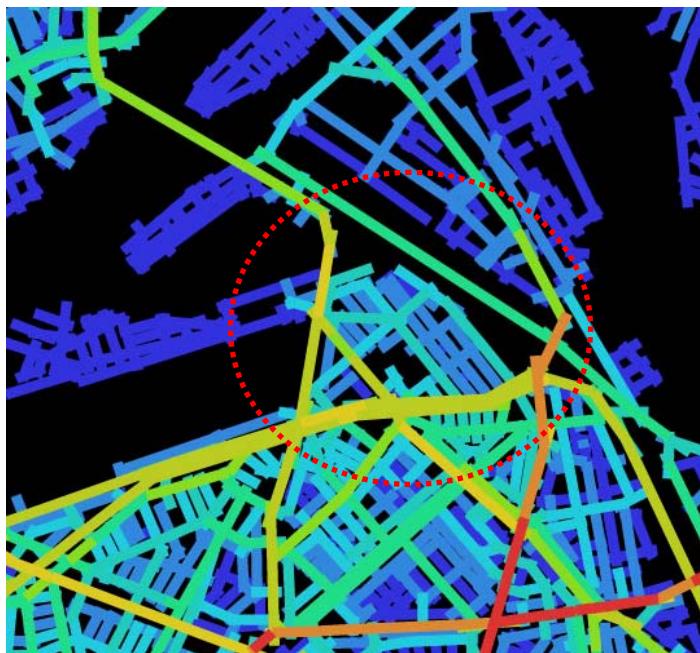
5.1. Analysis and Findings on Spatial Characteristics and Socio-Economic Condition of *Afrikaanderwijk*

5.1.1. Connectivity and Accessibility in Relation with Spatial Integration

To analyze the spatial integration of *Afrikaanderwijk* to the surrounding area, space syntax model is used by calculating global integration which is shown by number of changes of direction needs to move from one street to all other street. The spatial integration of a particular street can also be calculated by degree of accessibility of a street to other streets, roughly shown by number of connections to other street. The higher degree of accessibility a street has, the more spatially integrated it is.



From the map above, it can be seen that there are several points in Maashaven O.Z and Putselaan which connect to several secondary roads within *Afrikaanderwijk* and accessible for both vehicle and pedestrian. (Maashaven O.Z. has at least 6 connections and Putselaan has at least 11 connections). On the contrary, there are only two points in Laan op Zuid which connect to secondary roads within *Afrikaanderwijk*, where one point is accessible for vehicle and pedestrian and one is for pedestrian/bicycle access only. As these connections open up for vehicles and pedestrian movement from everywhere to everywhere else, thus, *Afrikaanderwijk* is highly accessible from Maashaven O.Z and Putselaan, but relatively low accessible from Laan Op Zuid since there are less connections. In other words, degree of accessibility of Maashaven O.Z. and Putselaan are higher than Laan Op Zuid's; Maashaven O.Z. and Putselaan are more spatially integrated to other street than Laan Op Zuid.



Also from space syntax analysis model of *Afrikaanderwijk* area, it can be seen that the streets which has the highest global integration level (marked by yellow colour) are Maashaven O.Z. and Putselaan. In the neighbourhood, the most important secondary streets with high level of local integration (marked by yellow-green colour) are Pretorialaan, then Paul Krugerstraat, Brede Hilledijk, Bloemfonteinstraat, and Johannes Brandstraat.

Figure 5.2. Space syntax analysis on spatial integration of *Afrikaanderwijk*
Source: Van Nes (2008), Nikki Shah (2008), modified

Observed from the pattern, the area is highly ordered in grid pattern and the streets are connected to each other, then, all the secondary roads are distributed and publicly accessible. By looking at the global integration level and degree of accessibility of primary streets around *Afrikaanderwijk*, thus, it can be said also that *Afrikaanderwijk* is more integrated spatially to west (Katendrecht) and south area (Bloemhof, Hillesluis) instead of to northeast area (Parkstad and Kop Van Zuid). Also in relation with the space syntax analysis, most of the commercial and public service activities are placed in the street with high level of global integration, e.g. along Pretorialaan, Paul Krugerstraat, Bloemfonteinstraat, and Johannes Brandstraat. It can also be concluded that almost no buildings located in segregated area since all the secondary streets are connected to each other (either those which have high integration level or lower integration level).

5.1.2. Existing City (Area) Structure in Relation with Spatial Integration

The existing urban structure is analyzed by using RGBG (Red-Green-Blue-Grey) models to visualize the pattern of places, functions, and landmarks which indicate hierarchical flows (Shah, 2008). The red colour shows the existing urban structure of built environment (main development axis, buildings, landmarks), green colour shows green

structure, blue colour shows existing water environment, grey colour shows transportation pattern and network. The result of RGBG analysis shows that:

1. Red (existing urban structure of built environment); *Afrikaanderwijk* has densely built environment which appears to be in a highly ordered pattern—mostly grid pattern;
2. Green (green structure); comes in form of green buffer zones or green dyke (Brede Hilledijk), district park (*Afrikaanderplein*), pocket parks (e.g. backyards or small parks in the centre of building block) and median boulevard (Laan Op Zuid);
3. Blue (water environment); the existing urban voids nearby are Maashaven (Blue)—a part of old harbour—in west;
4. Grey (transportation pattern and network); the prominent axis of north-south line to the area appears to be the Cool Single-Erasmus Bridge-Laan op Zuid, then, followed by Cool Single-Erasmus Bridge-Maashaven O.Z.

The existing urban voids nearby are Maashaven in west and railway yards in east. Within the area, there are relatively small parts of urban void, e.g. the green structure, wide pedestrian area, or small playgrounds in between buildings.

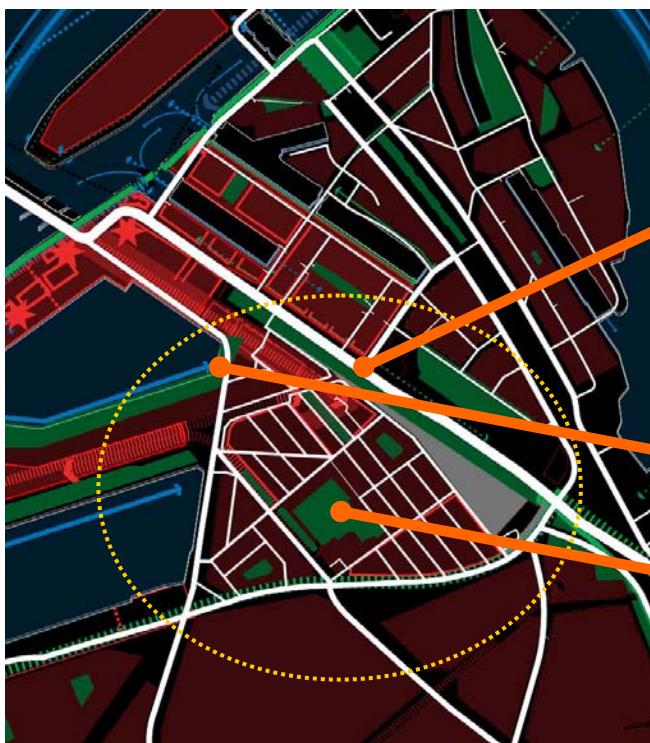


Figure 5.3. RGBG analysis of *Afrikaanderwijk*
Source: Nikki Shah (2008), modified



Figure 5.4. Urban structure-urban voids
Source: Personal documentation (2009)

Analyzed from the city (area) structure, *Afrikaanderwijk* is more integrated to northwest and south part, shown by minimum urban void and more structures (building, roads) in between *Afrikaanderwijk* and northwest and south area. Although Maashaven can be considered as a large urban void, it does not act as a barrier between *Afrikaanderwijk* and Katendrecht since there is relatively large part of *Afrikaanderwijk* which is connected to Katendrecht; northwest part of *Afrikaanderwijk* is relatively open to this void. On the other hand, it is not well integrated to northeast-east part, shown by relatively large urban voids although there are also urban structures (buldings, roads). The Brede Hilledijk and railway yards act as physical barrier which separate *Afrikaanderwijk* and the northeast-east area.

5.1.3. Demographic Background and Socio-Economic Condition of Ethnic Migrant Origin in Relation with Behaviour (Perception and Cognition) and Activities

As mentioned before, majority of population in *Afrikaanderwijk* consists of ethnic migrant origin (almost 85% in 2009)¹. Cor Dijkgraaf (as in interview on August, 11th 2009) explains, in many cases, these families may come not from urban area in their origin country (probably from small town, semi rural or rural area), thus, sometimes they have difficulties in adapting to both urban culture and culture of the host country-which is Dutch culture². Somehow, this creates confusion to several groups (particularly teenager or children who are born in the origin country but raised in host country or born in host country but raised in their origin country's way of life) on “where do I belong?” and it affects their behaviour setting: mostly perception, cognition, and behaviour. But, it seems that the problem disappear after some generation because of cultural assimilation processes which are attained mainly through second language attainment (Dutch language) and intermarriage between people with different ethnicities, which are often used as indicators of social integration³.

The cultural assimilation process is also applied for activities done by ethnic migrant origin in the host country. By giving example of Turkish ethnic migrant origin, Dijkgraaf (2009) mentions that for some old generation of Turkish migrant, they still do the same activities which are closely related to their culture, e.g. the men go to Turkish café and smoking water pipe or the women talk in small group and sit in an enclosed area. He also argues for people who come from Dutch's colonies such as Surinamese, Antilleans and for the new generation of other ethnic migrant origins (e.g. Turkish and Moroccans) particularly for children and teenager, the activities are more or less similar with (Dutch) people from host country. In relation with economic condition of households, to some extent it affects the preference on how people would use their (leisure) time, for example people with higher economic status probably will have more preference spending their time on other place than in POS, particularly *Afrikaanderplein*. Furthermore, he also explains that low level of social bonding between ethnic cultures is also probably caused by low level of personal skill (control, language) and the “territoriality” or “intra-cultural bond” feelings which is very strong among certain ethnic group and particularly among teenagers e.g. among Turkish or Moroccans teenagers compared to the other ethnic groups.

5.2. Analysis and Findings of *Afrikaanderplein*

5.2.1. Spatial Characteristic of *Afrikaanderplein* after Redevelopment

This part will be divided into three parts which analyze geographical factor and layout, physical quality, degree of safety and security, and signalling.

¹ GBA/*Gemeentelijke Basis Administratie*, available at <http://rotterdam.buurtonmonitor.nl/>

² Many of the people who were interviewed (people whose parents came during 1970's-1980's or they came by themselves since 1970's) came from small town in their country origin. Dijkgraaf (2009) describe this problem to adapt to both urban and host country culture as a “double problem” which is a common problem exists among migrant families in The Netherlands.

³ Waters and Jiménez (2005) explain that there are at least four measurable aspects of assimilation which are socioeconomic status, spatial concentration, language attainment, and intermarriage. Socioeconomic status is used to find out if immigrants eventually catch up to *native-born* people in terms of *human capital* characteristics while intermarriage are considered to be an indication of *social integration* because it reveals intimate and profound relations between people of different groups, intermarriage reduces the ability of families to pass on to their children a consistent ethnic *culture* and thus is an agent of assimilation (the latter is also emphasized by Pagnini and Morgan (1990) in case of U.S. immigrants.

5.2.1.1. Geographical Factor and Layout

1. Location and Distance

Afrikaanderplein is a large open space with coverage around 5.4 ha (including dedicated pedestrian area) or about 8% from total area of *Afrikaanderplein*. It is located right in the central of *Afrikaanderwijk*; bordered by Pretoriaan, Paul Krugerstraat, Johannes Brandstraat, and Martinus Steijnstraat. It can be reached by vehicle and by walking distance from each metro, tram, and bus stops. It has 5 gates (2 main gates to Pretoriaan, 1 main gate to Paul Krugerstraat, and 2 small gates to Johannes Brandstraat) and accessible from at least 3 directions—Pretoriaan, Paul Krugerstraat, and Johannes Brandstraat—which two of them are the most important secondary streets with highest integration and highest traffic. It is accessible by average walking distance 500-600 m from the outside boundaries of *Afrikaanderwijk*. In broader terms of accessibility, it depends on physical and democratic (social) accessibility. Physical accessibility depends on the design elements (e.g. boundary) and the proximity to other public space, while social accessibility mentioned in this part depends on management (control) of access.

2. Size, Shape, and Space Arrangement

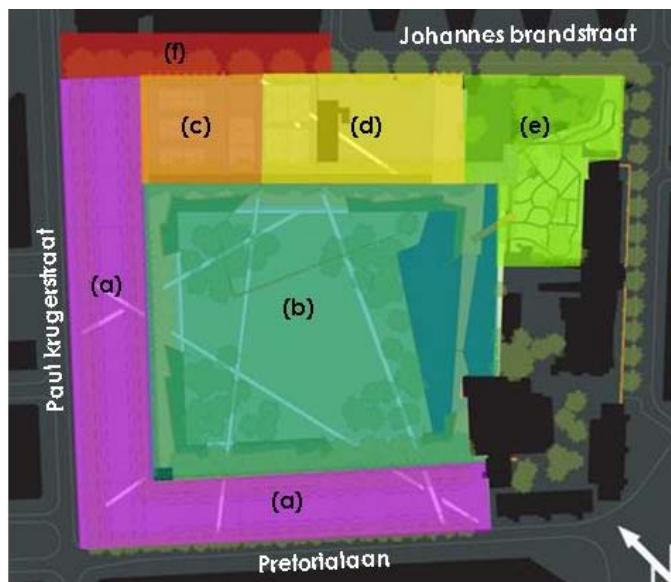


Figure 5.5. Division of spaces and functions of *Afrikaanderplein*
Source: <http://europaconcorsi.com/projects81518-Rotterdam-Afrikaanderpleinimages>, modified.

It is massive in size and the square basically has rectangular shape (about 250 m x 200 m, excluding the dedicated pedestrian area). It is divided into smaller spaces (mainly into five parts within the square itself and one additional area next to it) with different levels which are placed next to each other (see figure 5.4.). Besides aiming at different user groups (based on existing function and biological needs of life cycle phase), the division of such a massive space into smaller spaces was also meant to create more degree of enclosure and human scale to targeted user groups. By doing so, more sense of place and feeling of safety are created.

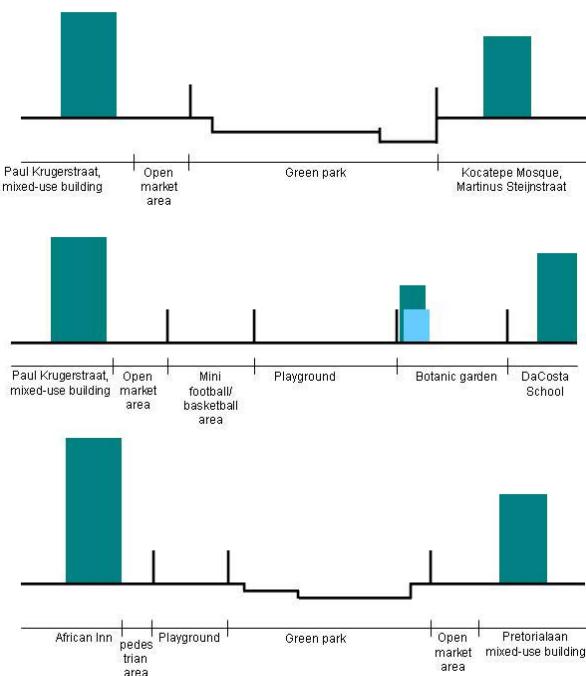
The space division are:

- a) Open market area (12,123 m² or 22.45% of total area *Afrikaanderplein*)
- b) Green park (22,042.8 m² or 40.82% of total area *Afrikaanderplein*)
- c) Mini football/basketball field (2,408.4 m² or 4.46% of total area *Afrikaanderplein*)
- d) Playground (3,499.2 m² or 6.48% of total area *Afrikaanderplein*)
- e) Botanic garden (11,448 m² 21.2% of total area *Afrikaanderplein*)
- f) Pedestrian area. (2,478.6 m² or 4.59% of total area *Afrikaanderplein*)

3. Scale, Degree of Enclosure, and Hierarchy

Based on Ashihara's (1970) theory on degree of enclosure, *Afrikaanderplein* has well-defined boundary which reinforced sense of enclosure, each of these spaces can be seen as positive spaces in nature. Each of these spaces has relatively high degree of enclosure particularly playground, botanic garden, mini football/basketball area, pedestrian area, and open market area (which is shown by smallest ratio of width/height or D/H between 2 to 3 from two different section), while green park which has lower degree of enclosure, which is shown by ratio of width/height or D/H more than 3 although there has been levelling (see figure 5.6.).

Figure 5.6.
Section of *Afrikaanderplein* with respect to enclosure
Source: personal documentation (2009)



Also based on Hörmann and Trieb theory, (1977) the spatial quality of playground, botanic garden, mini football/basketball area, pedestrian area, and open market area are very optimal, shown by ratio of height/width of 1:2 to 1:3, but the spatial quality of green park is less optimal, shown by ratio of height/width of more than 1:3. People will feel that they are fully enclosed but not intimidated in playground, botanic garden, mini football/basketball area, pedestrian area, and open market area; a little bit enclosed in the corner of green park, but a little bit "lost in space" in the middle of green park. The argument given to the lesser degree of enclosure in the green park is that, the green park was meant to give open and free feelings to users through flexibility and comfort ability for playing, interacting, and other stress-relieving activity in a positive manner. The comparison of analysis result based on theory from Ashihara and Hörmann and Trieb theory can be seen in table 5.1.

NO	SPACE DIVISION	D/H RATIO (Ashihara)	H/W RATIO (Hörmann-Trieb)	REMARKS
1.	Open market area	2-3	1:2 to 1:3	Enclosed, normal, high spatial quality
2.	Green park	>3	> 1:3	Open up, 'lost in space'
3.	Mini football/basketball area	2-3	1:2 to 1:3	Enclosed, normal, high spatial quality
4.	Playground	2-3	1:2 to 1:3	Enclosed, normal, high spatial quality
5.	Botanic garden	2-3	1:2 to 1:3	Enclosed, normal, high spatial quality
6.	Pedestrian area	2	1:2 to 1:3	Enclosed, normal, high spatial quality

Table 5.1. Comparison of degree of enclosure and spatial quality of *Afrikaanderplein*

Note: smallest numbers given are based on rough measurement during observation and calculation by using map's distance

Analyzed from the size (scale/level) of each space with respect to degree of formality and from nature of space and degree of involvement, each space in *Afrikaanderplein* has different degree of formality, publicness, and involvement in activities. Based on

analysis, the hierarchy of the square can be ordered as follows (from the most-public to semi-public): green park, open market area, pedestrian area, mini football/basketball area, playground, and botanic garden (see figure 5.7.)

Also from analysis, it is found that the size of a space in *Afrikaanderplein* is not necessarily a determinant factor in determining degree of private-public nature although it affects degree of formality and involvement in activities. This may be related to physical design and management which ensure certain level of private-public nature of a space aside from size of that particular space. For example, the size of pedestrian area is relatively smaller compared to botanic garden or to playground, but it is more public since it is open in terms of design and always accessible every time, while botanic garden or playground are not always accessible every time (due to opening hours).

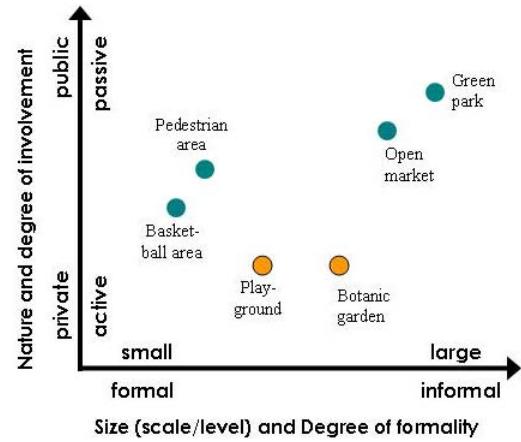


Figure 5.7.
Diagram of publicness of *Afrikaanderplein*
Source: personal documentation (2009)

4. Signalling

In terms of signalling, there are minimum signs which allow people to easily find *Afrikaanderplein*. The existing signs about *Afrikaanderplein* located only around the square, e.g. in front of playground. In many cases, people (particularly from outside *Afrikaanderwijk*) find difficulties in finding the square for the very first time (particularly if they come from south part (direction of Putselaan) or northeast part (direction of Laan Op Zuid). This situation is also mentioned by gardener of botanic garden, Mr. Dijkman (56 years old). He mentioned that sometimes he helps people who ask about where the *Afrikaanderplein* is. He also argues that it is reasonable since there are minimum signs and the square is enclosed by buildings, particularly from direction of Putselaan-Laan Op Zuid. Although there is minimum signs, *Afrikaanderplein* is easy to find from intersection of Maashaven-Pretorialaan or Pretorialaan-Putselaan because it is visible, particularly during open market days when many people go there.

5.2.1.2. Physical Quality

The analysis on physical quality of *Afrikaanderplein* will be divided into six spaces as mentioned above; each will consists of description of materials (type, texture, and colour), surface, fixtures or equipment, and physical accessibility.

1. Open market area

It is a hardcaped/hard surface area, covered by grey paving blocks, and equipped with regularly-arranged trees and tree-curb. Basically, it has only one level elevation but at some points, it has the same elevation with the street and is equipped with ramp. It is raised from street so as to differentiate area to street level and to ensure safety of pedestrian. It faces directly to two-most-important secondary streets with high pedestrian and vehicle traffic: Pretorialaan and Paul Krugerstraat. It is also very open,

thus, it is highly accessible by all group of people, particularly people with disability.



Figure 5.8.
Physical
condition
of
open market
area
Source:
personal
documentation
(2009)

2. Green park

It is divided into three parts with different level of elevation to indirectly create several spaces without using any physical barrier. This is done so as to create more enclosure in each space but at the same time to ensure the openness and flexibility of the whole spaces. The green park is highly accessible by all group of people particularly people with disability since it has ramps and wide gates.

- a) Hardscape/hard surface area: located in periphery, flat surfaces covered by grey and light grey concrete tiles (fabricated) and some hand made decorated tiles). It acts as transition between open market area/mini football/basketball area and green space. It is equipped with 3 metres high fences in outer boundaries, low-walled border which can be used also as a place to sit, plants (trees) particularly in part next to playground, statue (in small gate near botanic garden), garbage bins, stairs, and ramps. The use of high fences with specific opening hours for park is common in the so-called problematic neighbourhood in The Netherlands⁴. It is intended for safety and security reasons within the park, e.g. to ensure that no homeless sleep in the park, no vandalism, or no people misuse the park at night;
- b) Softscape/green area: located in centre, flat surface and it has relatively dry soil which is covered by grass and equipped with plants (trees, flowers, bushes) particularly in every corner and along the periphery hardscape area, benches (single without table and double with table) and garbage bins. This area is also divided into 2 different level of elevation. There is also pedestrian pathway covered by concrete surface with latex-painted in red colour across the park for people to go walking through;
- c) The water surface area: located near botanical garden, directly face the Kocatepe Mosque. It is equipped with bridge to enable people to pass through from Pretorialaan to Johannes Brandstraat. It has also a concrete plate under water which can be used as a base to construct a temporary stage for performances and equipped with water resistance lighting system.



Figure 5.9. Physical condition of green park
Source: personal documentation (2009)

⁴ Vervloesem (2008)

3. Mini football/basketball field

It is a flat, hardscape/hard surface area (the same height with open market area and pedestrian area), covered by grey concrete, has paint marks for sport purposes, and divided into two small parts: mini football field (which faces directly to pedestrian area and *Plein 3*) and mini basketball field (in between mini football field and green park). These two areas are separated with open high fence (no gate); it can be used in the night time and highly accessible for all user groups. It is also equipped with garbage bins.



Figure 5.10.

Physical condition of mini football/basketball field

Source: personal documentation (2009)

4. Playground

Relatively flat surfaced, it is divided into 4 small spaces with the same level of elevation. It is also fenced for safety and security reasons, and boundary between spaces comes in form of 1 metres high fence and/or bushes. It is accessible to all groups but there is only 1 main gate so as to maintain control people who come in and out of the playground.

- a) Playground area-1; located right in front of playground's main gate. It is equipped with playing fixtures (bright coloured in red, yellow, blue, and white) and benches for parents to sit while they are watching the children. The base under the fixtures is covered with synthetic rubber mat (soft texture) so as to ensure safety of the children if they fall down. In small part, the ground is covered by sand
- b) Mini football field; located next to playground area-1 (right side). It is covered in synthetic grass (soft texture), has 1 metre high fence and equipped with goal bar
- c) Playground area-2; located next to playground area-1 (left side), opposite the mini football field and faces directly to terrace of SVA building where people can sit and watch children playing. It is also equipped with playing fixtures (bright coloured in red, yellow, blue, and white) and benches for parents to sit while they are watching the children. The base under the fixtures is also covered with synthetic rubber mat (soft texture) so as to ensure children's safety if they fall down
- d) SVA building (playgroup building); located in the left side of playground's main gate. It functions as a classroom for playgroup, divided into 3 rooms/parts: main terrace, classroom, and mini shop. It is equipped with benches, tables and chairs, cupboards, stationery for writing/drawing/making creative arts for children, and garbage bins.



Figure 5.11. Physical condition of playground

Source: personal documentation (2009)

5. Botanic garden

It is located next to playground in the corner of *Afrikaanderplein*. It is a place where several plants are preserved and the base for a non-profit organization of bird rescue service namely *Vogelklas Karel Schot*. It is also fenced for safety and security reason and has medium-to-low accessibility since there is only one main entrance through bridge on the water surface area in the green park (but it is accessible for people with disability). It is open everyday in specific time, from morning to afternoon. The soil surface is covered by humus and there is a pathway which surface covered by gravel stones. The botanic garden and bird rescue services area are separated by low fence. The plants are arranged in small groups, divided by pathways. There are 3 buildings: two for bird rescue base camps and one for base camp of the gardener. The buildings are made from wood with simple construction (frame structure and gable roof). The garden is also equipped by bench.



Figure 5.12. Physical condition of botanic garden
Source: personal documentation (2009)

6. Pedestrian area

It is located in between the mini football/basketball area and *Plein 3*. It is a flat, hardscape/hard surface area covered with grey paving blocks and grey concrete tiles in some parts. It acts as “terrace” for building which ground floor is used for public functions (e.g. *Plein 3*, the kindergarten, and *LCC-Het Klooster*). It is equipped with 1 metre high fence in front of kindergarten (as mini playground), benches, regularly arranged plant (trees) and tree-curb, garbage bins, stairs, and ramps. It is basically can be differentiate into 2 main areas: area for pedestrian traffic and terrace for mentioned above public functions. It is very open and highly accessible; it has high pedestrian traffic from *Johannes Brandstraat* to *Paul Krugerstraat*.



Figure 5.13. Physical condition of pedestrian area
Source: personal documentation (2009)

Based on the above mentioned analysis, it can be concluded that the quality of physical design of *Afrikaanderplein* has met the requirement for design standard of a good POS. Overall quality (particularly in the playground) is high; all spaces are well-equipped with standard urban furniture (e.g. gates, garbage bins, benches, plantings, and lighting) in accordance to each function (space), the design elements make possible minimum effort of maintenance regarding huge investment which had been put in the redevelopment process. The design of *Afrikaanderplein* itself allows high physical accessibility to the

user groups during specific opening hours and ensures high safety and security to user groups during day time. If analyzed from functions and provided urban furniture and equipment, the spaces are provided based on existing functions and biological needs of life cycle phase; almost all specific user groups (women, elders, children, and adult) have their part in the square, aside from which ethnic culture they are originating from. But, based on the observation, it is seen that teenagers do not have their part in the square, it is shown by no particular space which suits their needs. The use and different composition of colour, texture, scale, and style of each design element which show character, personality and uniqueness bring advantages to non-conformity which is less boring compared to conformity; it stimulates the eye by creating serial visions and create different visual experiences as a person moves from one point to another.

5.2.1.3. Safety and Security

To explain furthermore about degree of security and safety of *Afrikaanderplein*, first of all it is important to look at level of visibility of the square. For this purpose, the space syntax software is used in analyzing level of visibility within the square, and furthermore, the analysis on “open wall-blind wall” of various functions around the square is also provided to support the analysis by giving possible reasons for visibility (e.g. view direction).

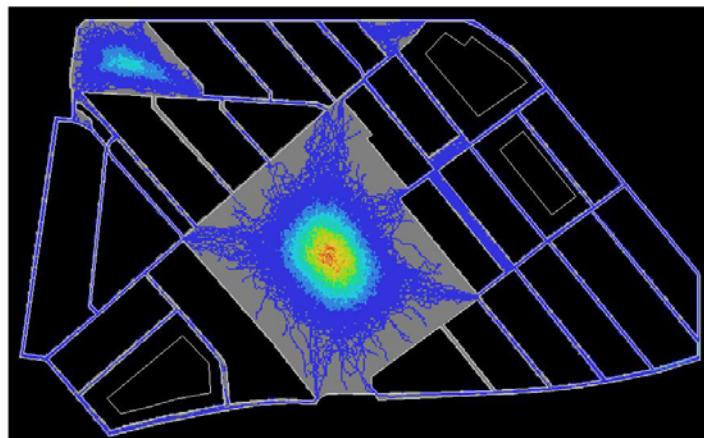
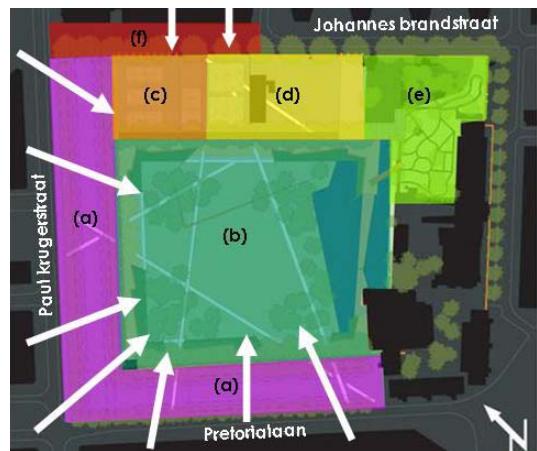


Figure 5.14. Space syntax analysis on visibility of *Afrikaanderplein*
Source: personal documentation (2009)
Legend: Blue: lower visibility point
Red-yellow : highest visibility point

As mentioned before, that *Afrikaanderplein* is bordered by at least 2 main secondary streets—Paul Krugerstraat in north and Pretorialaan in west border with high level of local integration, high vehicle and pedestrian traffic, and almost all of ground floors of buildings which face directly to those particular streets are used for commercial functions. These buildings has more “open-wall” which enable the users inside to look at the park, which in the end lead to increased visibility from outside of the square, thus, also increased degree of security.

In northeast, it is bordered by extended pedestrian area of Johannes Brandstraat with also high pedestrian traffic and the only public functions in ground floor of building which acts as “open wall” and face directly to the pedestrian area is *Het Klooster*. In the east and southeast, there are less “open wall” although there is a public building which face to green park (see figure 5.14.)

Figure 5.15. View from and to *Afrikaanderplein*
Source: personal documentation (2009)



Based on space syntax analysis model on visibility and analysis of “open wall-blind wall” functions, the level of visibility can be explained as follow (from the highest to lowest):

1. Open market area has the highest level of visibility since it is very open and it faces two most important secondary streets with busy commercial activities: Paul Krugerstraat and Pretorialaan. It is also visible from the corner of Bloemfonteinstraat, green park, and pedestrian area. Thus, it is highly secure;
2. The green park has lower visibility compared to open market area. It is relatively open from outside but very open inside although it is equipped with translucent fence. It has direct view from Paul Krugerstraat, Pretorialaan, and pedestrian area (except from Johannes Brandstraat since the view was blocked by playground and botanic garden and from Martinus Steijnstraat since there is Kocatepe Mosque in between). Moreover, the design enables people to pass through the green park (enables them to be “public watchers”) so that visibility can be obtained from both outside and inside green park. Since it is highly visible, not to mention that it has specific opening hours (the opening hours are longer in summer), the park is highly secure;
3. Pedestrian area has lower level of visibility than green park but higher than mini football/basketball area, playground and botanic garden since it is very open and has direct view from Paul Krugerstraat, Bloemfonteinstraat, Johannes Brandstraat, and mini football/basketball area. It is still highly secure, not to mention that the presence of user groups and passers-by as public watchers increase the visibility and security level;
4. The mini football/basketball area has lower level of visibility than green park but higher than playground and botanic garden since it is still open although it is also equipped with translucent fence and has direct view from Paul Krugerstraat, green park, and pedestrian area. It is still highly secure, not to mention that the presence of user groups and passers-by in pedestrian area as public watchers increase the visibility and security level;
5. Playground has lower visibility level than the above-mentioned space but higher than botanic garden since it is enclosed by fence and plants (bushes inside playground and along the fence, and trees in the borderline between playground and green park). Although it is lowly visible from outside, it is highly visible inside. The argument made for this condition is to ensure safety of children and to keep people stay inside the playground as “public watchers” for them and it also has specific opening hours and the gate is monitored by officers of SVA (playground association of *Afrikaanderplein*). Thus, the playground is highly secure inside;
6. Botanic garden has the lowest visibility level compared the other spaces since it is fully enclosed by plants (trees, bushes) along the fence. The argument made for this condition is to protect some plants inside the garden, particularly those which need less sunlight and to create sense of peace and tranquillity. Although it has relatively low visibility from outside, it is highly secure and safe inside during day since it is monitored by the gardener every morning, day, and afternoon before the closing hour.

The above explanation can be simplified into model of hierarchy of degree of visibility and security of *Afrikaanderplein* as seen in figure 5.15.

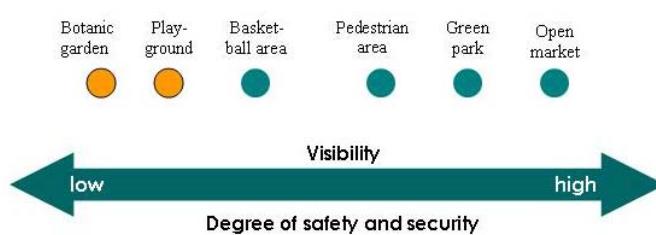


Figure 5.16.

Hierarchy of visibility in relation with degree of safety and security
Source: personal documentation (2009)

Overall, *Afrikaanderplein* is relatively safe and secure because the design and management employs both active and passive approaches, at least to ensure high level of visibility from outside and inside the square. The active approach includes the arrangement of spaces outside and within the square which allows high pedestrian traffic of people to pass by (which in turn indirectly enable them to act as informal public watchers), specific opening hours, and dispatch of police officer regularly (particularly during night). The passive approach includes more “open wall” of public function in surrounding building which face directly to the square.

5.2.2. Utilization Pattern (Activity Pattern and Behaviour Setting of User Groups) of *Afrikaanderplein*

This part will explains the utilization pattern of *Afrikaanderplein*, analyzed through activity pattern exist in *Afrikaanderplein* while at the same time explains the behaviour setting of each user group. The explanation on activity pattern and behaviour setting will not only be given based on categorization of observation day and space division, but it also reveals the specific time frame of occurring activity, types and description of occurring activity, and classification of associated user group⁵.

1. Open market area

- a) During open market days (Wednesday and Saturday) or day with generating activity (d-1)

The activities occur in open market area are **activity proper** (e.g. walking), **specific way activity** (e.g. preparing market stall, selling & shopping in open market, smoking, sitting, looking around, cleaning up garbage, eating and drinking), and **additional/adjacent/associated activity** (e.g. gossiping, talking, shouting, laughing). During open market days (Wednesday and Saturday), the activities occur early in the morning (around 7-8 a.m.). During open market days (Wednesday and Saturday), almost all user groups exist in the area. The common users exist are women, children, elder, and adult who come in forms of passers-by or users in single, small groups (e.g. family or friends from 2-6 people), and rarely big groups. The presence of non-specific users (users who come from outside *Afrikaanderwijk*) is also more than during non-open market days. The number of people in the area during these days is uncountable. The presence of teenager in the open market area is also less than any other groups. The personal distance between people ranges from social distance-far phase for buyers and sellers in open market and social distance or personal distance-close phase for families and friends. Majority of seller and visitors are of ethnic migrant origin. The visitors are not only from *Afrikaanderwijk* and surrounding neighbourhood, but also from other part of Rotterdam.

- b) During weekdays and weekend without generating activity (d-2 and d-3) and holiday (d-4)

The activities occur in open market area are **activity proper** (e.g. walking), **specific way-activity** (e.g. installing market stall, smoking, sitting, cleaning up garbage,

⁵ Complete result of observation is available in appendix D

eating and drinking), and **additional/adjacent/associated activity** (e.g. talking, shouting). During these days, the common users exist are mostly passers-by (ranging from women, children, elder, and adult) and workers who installed stall frames (only in Tuesday and Friday). The presence of teenager is also less than other groups during these days. The personal distance between people ranges from social distance-far phase for workers and social distance-close phase for families and friends. During days without generating activity, the area is seen merely as a place where people can walk through, while during days with generating activity, the area is also seen as a meeting place for friends or families.



Figure 5.17. Utilization pattern in open market area during d-1, d-2, d-3, and d-4

Source: personal documentation (2009)

2. Green park

- a) During open market days (Wednesday and Saturday) or day with generating activity (d-1)

The activities occur in the park during these days are **activity proper** (e.g. walking), **specific way-activity** (e.g. light sport, sitting, smoking, sleeping/sunbathing, feeding birds & ducks, reading), **additional/adjacent/associated activity** (e.g. talking, shouting, laughing), and **symbolic activity** (e.g. picnic after shopping in open market). During open market days (Wednesday and Saturday), the activities occur early in the morning (around 7-8 a.m.), the peak time of activities done in the park is around noon (10 a.m.-3 p.m.). During open market days (Wednesday and Saturday), almost all user groups exist in the park. The common users exist are women, children, elder, and adult who come in forms of passers-by or users in single, small groups (e.g. family or friends), and sometimes big groups. The presence of non-specific users (users who come from outside *Afrikaanderwijk*) is more than during non-open market days. The presence of teenager in the park is also less than any other groups. The personal distance between people ranges from social distance-close phase to personal distance-close phase for families and friends. Majority users are of ethnic migrant origin; they are not only from *Afrikaanderwijk* and surrounding neighbourhood, but also from other part of Rotterdam. Most of user groups usually gather around urban furniture (benches, trees) on grassy area or just sit on stairs.

- b) During weekdays and weekend without generating activity (d-2 and d-3) and holiday (d-4)

The activities occur in the park during these days are **activity proper** (e.g. walking), **specific way-activity** (e.g. light sport, sitting, smoking, sleeping/sunbathing, feeding birds & ducks, reading), **additional/adjacent/associated activity** (e.g. talking, shouting, laughing). During these days, the common users exist are mostly passers-by and users in single and small group (particularly women, children, elder, and adult),

and the number of non-specific users from outside the neighbourhood is less. The presence of teenager is also less than other groups during these days. The personal distance between people ranges from social distance-far phase and social distance-close phase for families and friends. Majority users are also of ethnic migrant origin.



Figure 5.18. Utilization pattern in green park during d-1, d-2, d-3, and d-4
Source: personal documentation (2009)

3. Mini Football/basketball area

- a) During open market days (d-1), weekdays and weekend without open market (d-2 and d-3)

The activities occur in the area are **activity proper** (e.g. walking), **specific way-activities** (e.g. playing football, watching children), and **additional/adjacent/associated activity** (e.g. talking, shouting, laughing). The peak time for activity to occur is during school time break, during lunch time, and after school; there are many children from surrounding school make use the mini football and basketball field. Most of them are around 6-12 years old and are of ethnic migrant origin. Thus, children are the most dominant user group. Also during these days, the common users exist are both passers-by and specific user, particularly women and elder which come in form of small groups and rarely big group. The presence of teenager is less than these three groups. The personal distance between people ranges between social distance-close phase between friends or teacher-children and personal distance-close phase especially for families (parents-children). Majority of passers-by and users are of ethnic migrant origin.

- b) During holiday of Queen's Day, April 30th 2009 (d-4)

The activities occur in the area were **activity proper** (e.g. walking), **specific way-activities** (e.g. selling & shopping in open market, smoking, sitting, looking around, cleaning up garbage, eating and drinking), and **additional/adjacent/associated activity** (e.g. talking, shouting, laughing). During this holiday, there was a mini open market where people can sell and buy second hand things. The peak time for activities was around noon (10 a.m. to 3 p.m.)

During this day, almost all user groups exist in the area. The common users exist were women, children, elder, and adult who come in forms of passers-by and users in single and small groups. The presence of teenager was also less than any other groups. The personal distance between people ranges from social distance-far phase for buyers and sellers to social distance/personal distance-close phase for families and friends. Majority of seller and visitors are of ethnic migrant origin. The visitors were mostly from *Afrikaanderwijk* and surrounding neighbourhood.



Figure 5.19. Utilization pattern in mini football/basketball area during d-1, d-2, d-3, and d-4
Source: personal documentation (2009)

4. Playground

The activity pattern in playground is almost similar regardless differentiation of observation days. The activities occur in the playground are **activity proper** (e.g. walking), **specific way-activities** (e.g. playing in playground, sitting, smoking, playing cards, watching children playing, eating, drinking, slow walking, running), and **additional/adjacent/associated activity** (e.g. gossiping, talking, shouting, laughing, feeding smaller children). The peak time for activities to occur with high number of users is around school break time and in the afternoon after school time (around 2-3 p.m.). During school holiday and during afternoon (around 4-5 p.m.), the number of users decreased; this may be because of many families go for holiday and availability of more-private playground in several places which allow children playing safely near their houses and ease parents to watch them.

There are more users than passers-by; most of the users are in small groups (e.g. family or friends from 2-5 people) rather than big groups. The most dominant users exist in the playground are women, adult, elder, and children; they are mostly from within *Afrikaanderwijk* and each of them have their own space within the playground. Children between 4-7 years old usually occupy the space with playing furniture, children between 7-12 years old usually occupy the mini football field, while women, adult, and elder usually occupy the terrace and some part of playground. There is less presence of teenager in playground, only some girl teenagers who accompany their younger siblings playing in playground. Most of the users are also of ethnic migrant origin. The personal distance ranges from social distance-close phase between friends to intimate distance-close phase especially for parents-children.



Figure 5.20. Utilization pattern in playground during d-1, d-2, d-3, and d-4
Source: personal documentation (2009)

5. Botanic garden

The activity pattern in botanic garden is almost similar regardless differentiation of observation days. The activities occur in botanic garden are **activity proper** (e.g. walking), **specific way-activities** (e.g. open/close the gate, checking the garden, picking up trash, check dried seed, reading), and **additional/adjacent/associated activity** (e.g. talking, laughing). The activities mentioned above are routine in nature and there is almost no peak time in term of number of visitor during observation time,

but only when there was visit of field worker of Green Department of Municipality Rotterdam. The most dominant users come in forms of single user or small groups, e.g. the gardener and the fieldworker. The personal distance exist between friends/colleagues is social distance-close phase.



Figure 5.21. Utilization pattern in botanic garden during d-1, d-2, d-3, and d-4
Source: personal documentation (2009)

6. Pedestrian area

- a) During open market days (Wednesday and Saturday) or day with generating activity (d-1)

The activities occur are **activity proper** (e.g. walking), **specific way-activities** (e.g. playing, sitting, standing leaning on the fence, eating, drinking), **additional/adjacent/associated activity** (e.g. gossiping, talking, shouting, laughing) and **symbolic activity** (e.g. picnic after shopping in open market). During open market days (Wednesday and Saturday), the activities occur early in the morning (around 7-8 a.m.). The peak time in terms of number of users and activities is during noon and afternoon time, particularly during school break time and after school (from 10 a.m. to 5 p.m.). There are both passers-by and users, most of users come in forms of single user, small groups (family or friends of 2-7 people/group), and sometimes big group. The most dominant users are women, elder, adult, and children. Only in this area, there is high intensity of teenager's gathering, mostly boy teenagers who gather in front of *Plein 3*. Most of users are of ethnic migrant origin. The personal distance observed in this area ranges from social distance-close phase to personal distance-close phase between friends and families.

- b) During weekdays and weekend without generating activity (d-2 and d-3) and holiday (d-4)

The activities occur are **activity proper** (e.g. walking), **specific way-activities** (e.g. playing, sitting, standing leaning on the fence, eating, drinking), and **additional/adjacent/associated activity** (e.g. gossiping, talking, shouting, laughing). The peak time in terms of number of users and activities is during weekdays in noon and afternoon time, particularly during school break time and after school (from 10 a.m. to 5 p.m.). There are both passers-by and users, most of users come in forms of single user, small groups (family or friends of 2-7 people/group), and sometimes big group. The most dominant users are women, elder, adult, and children. Only in this area, there is high intensity of teenager's gathering, mostly boy teenagers who gather in front of *Plein 3*; more boy-teenagers gather during weekend and holiday. Most of users are of ethnic migrant origin. The personal distance observed in this area ranges from social distance-close phase to personal distance-close phase between friends and families.



Figure 5.22. Utilization pattern in pedestrian area during d-1, d-2, d-3, and d-4
Source: personal documentation (2009)

From the analysis on utilization pattern, several findings can be drawn as follows:

1. Activity pattern

a) Number of users and culture background

In terms of number of users (shown by density of people/timeframe/space division), it can be seen that during open market days and days with generating activity (d-1), the number of passers-by and users (single, small groups, big groups) is more than any other days (d-2, d-3, and d-4). Almost all specific user groups (women, elders, children, adult, and some girl-teenagers) have their part in the square, aside from ethnic culture they are originating from. But, based on the observation, it is seen that boy-teenagers do not have their part in the square, it is shown by no particular space which suits their interest (because there is no particular function for teenager which suit their needs) and minimum presence in almost any space except in pedestrian area (shown by minimum occurring density of teenager per specific time frame). Most of the users are of ethnic migrant origin.

The peak time in some spaces depend on availability of generating activities (e.g. open market or social gathering event); those spaces are open market area, green park, and pedestrian area. Conversely, there are spaces which peak time do not depend on availability of generating activities, but merely to existence of public functions around the spaces, e.g. playground and mini football/basketball area (peak time depends on school time). In the playground and mini football/basketball area, the peak time is relatively regular in nature due to routine (generating) activities. There is one space which almost has no regular peak time: botanic garden. The peak time in this space only happens if there are visits by students/children from local school or by field worker of Green Department.

Thus, if ranked from the least affected space to most affected space in terms of peak time due to routine (generating) activities, the order will be botanic garden, playground, mini football/ basketball area, pedestrian, green park, and open market area (see figure 5.28.)

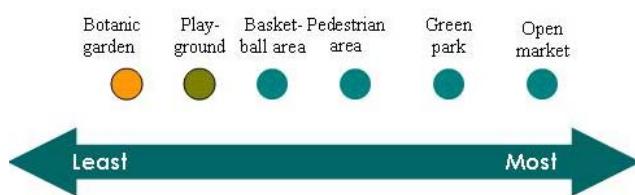


Figure 5.23.
Least and most affected space by generating activity
Source: personal documentation (2009)

Besides outdoor generating activities, the availability of public functions which is better-equipped or more private in nature around the square or within the neighbourhood also affects preference of people on where they want to spend time. Somehow, this creates competition between spaces. Thus, in the end it also affects

number of users in the square. For example, some children choose to play in more-private playground because it is safer to play near their houses during afternoon or holiday and parents can watch them from the house, or elders prefer to gather in *Het Klooster* (LCC) instead of green park or playground terrace although the weather is good since there are more facilities: toilets, benches and tables, and cafeteria. Weather also plays important role which affects number of users. During sunny days more people spend time in outdoor area including *Afrikaanderplein*, conversely during rainy days less people spend time in outdoor area.

b) Types of activities

Besides differences in number of users, existence of generating activity (open market, social event) affect the way users use and perceive space in *Afrikaanderplein* and encourage occurrence of new activity which does not exist during days without generating activity. The way users use and perceive space is different during open market days and during non-open market days. The **activity proper, specific-way activity** and **additional/adjacent/associated activity** occur every day, but during open market days (days with generating activity or d-1), there is one category of activities—**symbolic activities**—which occur significantly in green park and in pedestrian area and does not occur during any other days (weekdays or weekend without open market and during holiday or d-2, d-3, and d-4). This symbolic activity comes in form of (family) picnic after shopping in the open market. During observation time, almost all the activities occur in the square are merely based on functionality (based on functions provided in the square). The activity proper, specific way-activity, and adjacent/associated activity are latent in nature; it can be observed easily and fully seen as response to functions. But the occurred symbolic activity is more difficult to interpret, and perhaps it is related to cultural dimension, but intensive observation should be done furthermore.

NO	OBSERVATION DAYS	TYPES OF ACTIVITY (RAPOPORT)				TYPES OF ACTIVITY (GEHL)	
		AP	SWA	ASA	SYM	NA	OA
1.	Workdays or days without generating activity (d-2)						
	- Tuesday July 7 th 2009	○	○	○	-	○	○
	- Tuesday, July 14 th 2009	○	○	○	-	○	○
	- Friday, July 18 th 2009	○	○	○	-	○	○
2.	Open market days or days with generating activity (d-1)						
	- Saturday, July 4 th 2009	○	○	○	○	○	○
	- Wednesday, July 8 th 2009	○	○	○	○	○	○
3.	Weekend w/o generating activity (d-3)						
	- Sunday, August 2 nd 2009	○	○	○	-	○	○
4.	Non-weekend holiday (d-4)						
	- Thursday, April 30 th 2009	○	○	○	-	○	○

Notes:

AP	Activity Proper	NA	Necessary Activity
SWA	Specific-way Activity	OA	Optional/free-choice Activity
ASA	Additional/adjacent/associated Activity		
SYM	Symbolic Activity		

Table 5.2. Occurrence of activity in relation with differentiation of observation days

Table 5.2. provides brief comparison on occurrence of types of activity related to differentiation of observation days according to Rapoport 191977) and Gehl (1986). If analyzed by Gehl's (1986) differentiation of types of activities, the **necessary activity**

(e.g. activity related with walking) and **optional activity** (e.g. sitting and sightseeing in the square) occur frequently everyday, particularly during day with generating activity (d-1). As number of optional activity rise, the number of **social activity** also increase substantially, particularly in open market area, pedestrian area, green park, and playgrounds.

2. Behaviour setting

Personal distance which ranges from social distance-far phase to intimate distance-close phase shows that there are different levels of territoriality, which also means there are different ways of occupying space, different ways to observe diversity, and different levels of attachment to place. Every user group has their part (in this case, temporary occupancy) in any space within *Afrikaanderplein* but is limited by relatively high degree of publicness in almost every space (there is 'contradiction' between publicness and territorial behaviour). Based on observation, significant attachment to place probably can be found in the group of women and children (with the playgrounds) and elder (with the green park and botanic garden), which is shown by intensive use of those particular spaces by those groups. Place attachment of these particular groups is partly based on 'basic needs' reasons, e.g. children love to play in playground because it is fun to be there and elders love to be in the park to be in touch with nature. But, attachment to place is not followed by high degree of social bonding between ethnic migrant which is expected to occur within the square. Although there are many user groups from different ethnic migrant within specific time frame, each group seemed relatively monoculture; this is obviously seen in the group of women and elder (e.g. group of Turkish or Moroccan women, group of Chinese or Turkish or Moroccan elders etc.). In the case of *Afrikaanderplein*, appropriate interpersonal distance is not only determined by activities users are engaged in, but also based on perception which is established by users' (original) cultural norms, particularly for group of women, elder, and adult from specific ethnic background (particularly Turkish and Moroccan).

In accordance with conflict between degree of publicness and territorial behaviour, Blauw (as in interview on September, 1st 2009) argues that the degree of publicness of POS in a given residential area is somehow similar with degree of publicness in a Dutch housing; it can be analyzed in two different perspectives: perspectives of 'insider' or the residents and 'outsider' or non-residents. For insider, it is a public space, but for outsider it may be a semi-public space. Thus, there may be cases where the behaviour of outsider is not acceptable by the insider; either it is because the outsider behave in 'unwanted' ways or it is related to 'territoriality' dimension which applies to insider although there is no problem with behaviour of outsider; thus, territorial behaviour is seen as a space-claiming process. Thus, there is a conflict between publicness and space claiming process between insider and outsider. The conflict between publicness and space claiming process in *Afrikaanderplein* can obviously be seen in the case of teenager as mentioned before, where territoriality behaviour is not only based on 'intra-cultural bond' but also due to the needs of acquiring 'more space' according to teenager's life cycle phase.

To resume, several influential factors which affect the number of users and the way users use and perceive the space are: (1) behaviour setting of users (awareness, perception, cognition, behaviour); (2) the availability of generating activities (e.g. open market or

social event); (3) existence or availability of public functions which is better-equipped or more private in nature around the square or within the neighbourhood; and (4) weather condition. Behaviour setting is more related to the way users use and perceive space, availability of generating activities is related to both number of users and the way users use and perceive space while the latter two are likely more related to number of users than the way they use and perceive space.

The transition between factors in relation to their influences on number of users and the way they use and perceive space can be seen in figure 5.27.

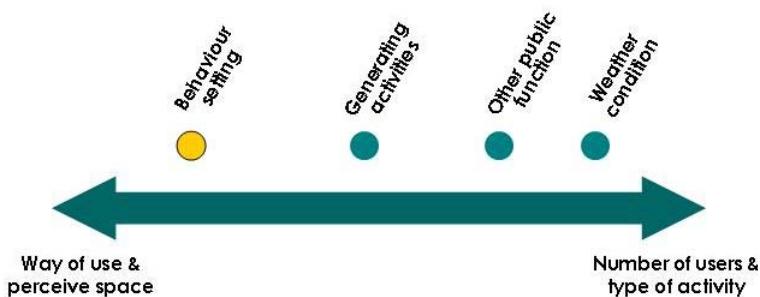


Figure 5.27. Influential factors in relation to number of users and the way of using and perceiving space
Source: personal documentation (2009)

5.3. Meanings of *Afrikaanderplein* to User Groups

This part will explain perceptions of each user groups regarding *Afrikaanderplein* and the meanings given to *Afrikaanderplein*. Blauw (as in interview on September, 1st 2009) argues that the way people use space and behave in a public space will be different within different time; it may be based on perception which is related to cultural dimension (as similarly stated by rapoport, 1977), thus, people will have different definition of space and what they can do in or with such available space. To find out the meanings of *Afrikaanderplein* to user groups and to assess whether cultural dimension affects their perception regarding *Afrikaanderplein*, series of interviews with user groups from different ethnic origin have been done.

5.3.1. A Place which Offers Opportunity for Job and Occupation

5.3.1.1. “This is my job”

“[...] after 20 years, I came back to Afrikaanderwijk, and I needed a job. I work here for two years [...], paid by Deelgemeente [Sub-municipality Feijenoord]. I take care of garden for five days a week, in weekend I am home with wife [...] that is all. [...] now I can not find a better job.” (Andries, Dutch, gardener-worker, translated version)

“[...] I owned an electronic shop long time ago, but it was closed. [...] I volunteer here for sixteen years, only for three days a week, but I come everyday because I like gardening. I do not have family [...] I spend my time here to keep me busy.” (Gerard, Dutch, gardener-volunteer)

From the interviews, Andries explains that botanic garden is simply his place of work, nothing more, and taking care of garden is his only job for now because he can not find better job. Although he does not have any passion with gardening, he still does his work in a good manner, together with two other colleagues. He sees and gives meaning to

Afrikaanderplein from economical perspective. Conversely with Gerard, although he is only a volunteer (probably to keep his social security income), he considers botanic garden not only as a working place and gardening is not only his job, but also place where he can be busy with something that he really likes, not to mention that he does not have family. In this sense, Gerard sees and gives meaning to *Afrikaanderplein* not only from economical perspective, but also social perspectives.

5.3.1.2. “New opportunity for our family to have a better life”

“[...] I help my brother with his stall on Saturday because Wednesday I have to work in other place. [...] some of our family came here to find a good job [...] some of us already become fixed seller in open market, not ‘meeloper’ again, so we can help their business, including my brother. [...] it is not a big-money job, but you have better life here [...]” (Huzair, Turkish, part-time seller)

According to Huzair who speaks on behalf of his family (his brother and his brother's wife) who have been sellers with fixed place in open market, *Afrikaanderplein* through *Afrikaandermarkt* opens opportunity to have a better life compared to if they have to be seller in Turkey. Although being a seller in open market is not a well-paid job, his brother considers that as a good start ‘to have your own business’, particularly before he has his own shop in *Afrikaanderwijk*. As for Huzair himself, he can still work in other places. They see and give meaning to *Afrikaanderplein* only from economical perspectives by taking part in generating activities.

To resume, the meaning of ‘a place which offers opportunity for job and occupation’ represent the idea that *Afrikaanderplein* enable people to have a grip in life that they can hold on to by providing space and opportunity for job and occupation for several reasons: social insecurity and unemployment, just to keep oneself busy for being with no family, and to have new better life compared to their previous life in origin country. In this sense, *Afrikaanderplein* is seen from economic and social perspectives.

5.3.2. A Place to be and a Place to Search for Togetherness and Engagement

5.3.2.1. A place to be - “This is our place”

“[...] we like to gather inside ‘Plein 3’ or in front of the door [in pedestrian street] just to talk about our plan or smoke with some friends after school or part time. There is only teenager, no parents come to yell at you not to smoke [...] but it is closed at night. [...] they have play station and sofa; it is comfortable there [...] almost all boys at our ages, sometimes few girls. [...] we rarely go to other places in Afrikaanderplein because those are boring, but sometimes we go to the park to play soccer for a while when it is not many people and it is a good day.” (Mohammed, Moroccan, high school student)

“What I like most is to play soccer with my friends in the playground [...] although the grass is not real but it is still good, like we play in a real soccer field. Every afternoon we go there. If it is full, we play in basketball field. [...]” (Auzan, Turkish, elementary school student)

For teenagers, particularly boy-teenagers at high-school age, the most attractive place in *Afrikaanderplein* is *Plein 3* since it provides facilities which suit their needs and interest; they prefer more-private area to hang out with friends although it is just to sit and relax, talk and smoke; outdoor physical activity is less interesting than gather with their own kind. For children at elementary age, it seems that outdoor area which suits their interest-outdoor physical activity and being in a group-is the most attractive part of *Afrikaanderplein*. Both of these group-children and teenager-find their own 'place' within *Afrikaanderplein*, but it seems that the 'territory' of teenager is less than 'territory' of children due to limited choice of particular place which suits their (in this sense, boy-teenagers) interest. The search for place or 'territory' is stronger in groups of (boy) teenager and children compared to any other groups. Thus, these groups see and give meaning to *Afrikaanderplein* from social perspective.

"To be there" means not only physically exist in a place, but also has feeling of owning a place or 'territory', be part of social group, and being emotionally attached to that particular place.

5.3.2.2. A Place to be - A Meeting Place

"I usually come here [terrace of SVA building in playground] every morning to see some 'usual' friends [...]." (Gerard, Dutch, member of SVA)

"[...] I come here during open market not just to shop, but also to see my old neighbours when I was still here 20 years ago. [...] not every week, but sometimes, because I work here. There we can meet and eat just like usual [...]." (Mrs. Lopez, Chilean, visitor)

"[...] I sometimes go to Afrikaandermarkt just to meet Lan [Chinese-Indonesian] and Yvonne [Surinamese], talk for a while and buy some food [...] then, we go to my house to have lunch." (Mrs. Nanik, Indonesian, housewife, translated version)

"[...] sometimes me and Yap meet in the green park, talk about our family back home in Hongkong and Singapore [...]." (Mr. Wong, Chinese, entrepreneur)

For Gerard, Mrs. Sonia, Mrs. Nanik, Mrs. Lan, Mrs. Yvonne, Mr. Wong, and Mr. Yap, *Afrikaanderplein* acts as a proper meeting place. It provides space for acknowledging each other in a relatively pleasant condition: it is free to enjoy and open. From the people they mentioned, it is obvious that some people tend to have close(d) relationship only with people from the same culture (e.g. Mr. Wong and Mr. Yap are close to each other, they are bounded by Chinese tradition), and some people tend to have open relationship with people from different culture (e.g. Mrs. Nanik and Gerard). The meaning of 'a meeting place' for them is limited to physical manifestation.

"We expect that Afrikaandermarkt and Afrikaanderplein is not merely a place for people to meet and eat [...]. We expect that Afrikaandermarkt and Afrikaanderplein become a place where creative ideas from different culture meet each other, combined into something unique [...]." (Jeanne van Heeswijk, Dutch, Freehouse)

Another concept of 'a meeting place' was introduced by Jeanne van Heeswijk. Through their project on 'Market of Tomorrow', she emphasizes the importance of *Afrikaanderplein* to provide space for *Afrikaandermarkt* as a meeting place for creative Thesis - The Use and Meaning of Public Open Space in Multi-culture Residential Area – Case Study of Afrikaanderplein, 68 Afrikaanderwijk, Rotterdam

ideas, something which is abstract and needs to be realized into physical manifestation if it needs to be acknowledged. Thus, she looks at space and at the definition of ‘a meeting place’ beyond physical manifestation.

5.3.2.3. A place to search for togetherness and engagement - To do something together

“We go here [to Plein 3] only with boys, never with our girlfriend because their parents will angry. [...] we talk so much about our problems, our life, playing cards, or just smoke. [...] with our best friends who are also Turkish or Moroccan, because it is easier to talk to them [in our own language] than talk to other boys like Dutch or Africans [...].” (Ali, Turkish, high school student)

Almost similarly with Mohammed, Ali mentioned the importance of having a group which he can do joint-activities with other member (who are also from the same ethnic origin) and a place where he belongs to. To be engaged in a group means that he is recognized and accepted; these are probably two most important things in during teenager’s age.

“[...] we sit, we talk, smoke, and drinking coffee, it is good to start your day with [...]. We can watch the children while spending time with friends [...].” (Gerard, Dutch, member of SVA)

For Gerard, being engaged to a group consists of people with the same interest under SVA is a way to achieve emotional attachment to place. Besides an obligatory to be in SVA every morning to organize and watch for playground, to meet his group-companions and have something to do together is a way of achieving togetherness and maintaining social relationships, which in the end build emotional attachment to place (in this sense, place means playground and SVA).

“[...] after shopping in Afrikaandermarkt, we have a short picnic here [in the green park], maybe two hours. [...] we eat and we talk, kids really like picnic. This is my family time because I always busy. [...]. We also have picnic if we go back to Turkey for holiday [...].” (Mr. Çeylan, Turkish, visitor)

“We first came here to see Afrikaandermarkt six years ago [...] since then we [try to] have family time together because we are busy with our own job and school. [...] sometimes we come only to see the market and buy food for picnic [...] the food does not last for long time [laughs]” (Mr. Smit, Dutch, visitor)

For Mr. Çeylan and Mr. Smit, *Afrikaanderplein* provides a space and opportunity (through *Afrikaandermarkt*) to have some quality time with their family as a way to escape from daily routine. Such event like *Afrikaandermarkt* is not only a place to shop for daily life, but also an attraction which create some sense of emotional attachment to place; *Afrikaandermarkt* itself is then considered as an ‘icon’ of *Afrikaanderplein*.

To resume, the meaning of ‘a place to be’ and ‘a place to search for togetherness and engagement’ represents the idea that *Afrikaanderplein* provides a space for people to be there, to be physically exist and to be emotionally attached while at the same time encourages social relationship by enabling people to be engaged in social groups through

joint-activity. The existence of such generating activity like *Afrikaandermarkt* also provides opportunity to escape from daily routines and to look at space beyond physical manifestation. As ‘icon’ of *Afrikaanderplein*, *Afrikaandermarkt* also encourages the creation of emotional attachment to place, not only to local residents but also to visitors from outside *Afrikaanderwijk*.

5.3.3. A Place for Your Well-Being

5.3.3.1. “Keep in touch with nature!”

[...] here [in botanic garden] you can find calmness and maybe peace, to be around nature, also in park [...]. It is beautiful to see in spring, summer, and autumn, but in winter it is a bit dull and empty, it is not good. [...] it is good to have this [garden] to teach children how to respect nature.” (Gerard, Dutch, gardener-volunteer)

[...] you can keep in touch with nature here [...]. In park people can also have contact with nature and have outdoor activities, especially for children to be not really fat [smiles].” (Andries, Dutch, gardener-worker, translated version)

“It is a little bit empty here [in the park], but it is good that you do not see too many people [...] it is different with open market, more quiet and relieving [...].” (Mr. Smit, Dutch, visitor)

“I saw the weather is nice and I think it is a good idea to work outdoor [...] it is good to be open and surrounded by nature [...].” (Maarten, Dutch, visitor)

“I practices tai-chi in the morning here [in the park], it is quiet, I can focus on my energy and surrounded by nature [...].” (Mr. Wong, Chinese, entrepreneur)

Some users perceived *Afrikaanderplein* as a space where they can keep in touch with nature, to have an open feeling, and to escape from crowdedness, and some users incorporated nature into their activities as they found out that nature has mediating function. The meaning of ‘a place for your well-being’ symbolizes the idea that *Afrikaanderplein* provides a space for mediating function to support physical and psychological well-being of users.

CHAPTER 6

Conclusion

This chapter provides overview of findings, conclusion, and recommendation which is divided into three main sections. Section one gives answer to each research questions and general conclusion. Section two looks at the practical issues and its relevance with current literature which has been mentioned in chapter 2. Then, section three presents strengths and weaknesses of the research, lessons learnt, and future opportunities.

6.1. Findings and Conclusion

This section is based on the analysis which has been done in literature review process and in case study. Followings are the findings and short conclusions for each question:

1. What are the approaches adopted for provision and management of POS in Rotterdam in general and in Afrikaanderplein in particular?

The establishment of good, well-functioning and intensively used POS as an indirect way to create attractive residential neighbourhood and to solve its associated social problems has been a focus of Dutch Government. The approaches adopted for effective provision and management of POS in The Netherlands and in Rotterdam focuses on three most important dimensions: good design and materials, control and involvement of residents (users), and organizational structure for management (VROM, 2003).

In terms of design, a good POS should be flexible and fully functional, able to accommodate different activities by different target groups which enable intensive use so as to increase social security and surveillance. In terms of control and involvement of users, early involvement is important so as to create basis for management and may contributes to optimization of future use and to increase social control which contributes to social security. In terms of structural management, it is necessary to arrange a specific management which is clearly differentiated between technical management and social management.

Recent approach for provision and management of POS (particularly in design phase) is more directed to practicality and functionality; latent function missed in the approach is how to gain input from different culture and incorporate this into design and implementation so as to bring people from different culture (who live in multi-culture residential area) to be able to use the space together. The problem regarding POS in The Netherlands is not only in domain of design, but more to behaviour of (multi-cultural background) users. If the establishment of good, well-functioning and intensively used POS is used as a social instrument to affect behaviour of residents, then, the problem should not be solved only by design, but also by other means if it is considered necessary. Some approaches which are commonly used are to identify stakeholders and to know what they can do to assist, make specific regulations on how people should behave in POS (i.e. control in POS), selection of people (as applied in exclusive POS), or in extreme case legal banning. Thus, it is important to have different angle in designing such approach on provision and management of POS.

Regarding approach for provision and management of *Afrikaanderplein*, it has fulfilled these three dimensions. The design of *Afrikaanderplein* itself is more to pragmatic and functional matters according to Dutch culture which is obviously shown from the initial development plan, and it is also the same case during the redevelopment in 2002-2005. It explores less multiculturalism dimension as it came as result of compromises between different needs and interest of existing functions held by existing organizations and needs and interest of user groups based on life cycle phase (age). The involvement of users under existing community organization is seen as a way to achieve compromises and to help users to understand design in order to enrich dialogue between designer-users, to look for more creative solution to emerge aside from their socio-cultural values. Thus, the method used during this participatory planning process is more to educational approach. In terms of structural management, specific management which consists of technical management and social management are used.

2. What are the characteristics and roles of *Afrikaanderplein*?

The main features of *Afrikaanderplein* are flexibility to introduce various ranges of activities, strong image, (physical and social) accessibility to different users, and enable future linkage with other urban (green) structure. *Afrikaanderplein* literally fulfil main elements as a good public (open) space. It has character, ownership, authenticity, and accommodation to various activities which create a vibrant, lively mixed-use environment and is visually stimulating and attractive to users.

The roles of *Afrikaanderplein* comprise the socio-cultural, environmental, economical, and political dimension. Above all, the ‘sociability’ issue (which is encompassed in socio-cultural roles) is the most important point emphasized in the establishment of *Afrikaanderplein*. This sociability issue covers promotion of social learning and interaction, fosters frequent and meaningful contact, allows exchange of cultural values and norms and encourages participation which may reduce ethnic and class barrier. Based on the characteristic and roles mentioned above, then, *Afrikaanderplein* can be said as a convivial space where people can be sociable and festive.

3. Which are the spatial characteristics of *Afrikaanderplein*?

The spatial characteristic of *Afrikaanderplein* can be seen from three dimensions: geographical factor and layout, quality of physical design, and safety and security. In terms of geographical factor and layout, it is physically and socially accessible. The division of such massive space into smaller spaces enables different user groups (based on biological needs of life cycle phase) to have their part in the square and create high degree of enclosure; it is open and flexible but fixed at the same time. Although it has different degree of publicness, in overall *Afrikaanderplein* is highly public in nature.

In terms of physical design, *Afrikaanderplein* has met the requirement for design standard of a good POS. Overall quality (particularly in the playground) is high; all spaces are well-equipped with standard urban furniture (e.g. gates, garbage bins, benches, plantings, and lighting) in accordance to each function (space). By looking at functions and urban furniture/equipment provided, most all user groups (women, elders, children, and adult) has their own space, but teenager–shown by no particular space or functions which suit the interest of teenager within the square. The design elements make possible minimum

effort of maintenance considering huge investment which had been put in the redevelopment process.

In terms of safety and security, in overall, *Afrikaanderplein* has high degree of safety and security because the design and management employs both active approach and passive approach. The combination of design elements and management within active-passive approach enable *Afrikaanderplein* to function as a good POS.

To resume, the design of *Afrikaanderplein* has met the requirements for a good POS. It is physically well-defined, structured, and ordered to meet the requirements for a good POS as stated before. Its spatial characteristics support the main critical features of a good POS: flexibility and ability to accommodate different functions and activities, physical quality, (physical and social) accessibility and inclusiveness, and high degree of security and safety within the square itself.

4. Which are the utilization patterns of *Afrikaanderplein*?

The users can be differentiated into passers-by and 'real' users who come in forms of single user, small user group, and big user group. Almost all specific user groups (women, elders, children, and adult) have their part in the square, aside from which ethnic culture they are originating from. The relatedness between physical space and social life (activities) of these groups is also high, shown by the relatively high intensity of use (frequent occurrence and high density of people) in every space within different days of observation.

During observation time, the activities occur in the square are merely based on functionality (based on functions provided in the square). According to category of activities of Rapoport (1977), the activity proper, specific way-activity, and adjacent/associated activity occur every day and are latent in nature; it can be observed easily and fully seen as response to functions. But, there is symbolic activity which occurs only during days with generating activities (open market, social event); it is more difficult to analyzed and perhaps it is related to cultural dimension, but intensive observation should be done furthermore. According to Gehl's categorization, the necessary activity and optional activity in *Afrikaanderplein* occur every day frequently. During day with generating activity, the number of optional activity rises which also substantially increase the number of social activity, particularly in open market area, pedestrian area, green park, and playgrounds.

In terms of behaviour setting, various personal distances shows that there are different levels of territoriality which also means different levels of attachment to space within *Afrikaanderplein*. Every user group has their part (in this case, temporary occupancy) but is limited by relatively high degree of publicness in almost every space. Thus, there is a conflict between publicness and space claiming process (territorial behaviour) which can obviously be seen in the case of teenager.

As mentioned before, it is seen that teenagers do not have their part in the square which is shown by relatively low intensity of use (less-frequent occurrence and low density of teenager) in every space within different days of observation, except in pedestrian area. There are two possible reasons for this: (1) each space in *Afrikaanderplein* is public in nature (very open) and has 'symbolically' claimed by other user group; (2) there is no

particular space/function which suits their needs and interest. During transitional phase from childhood to adulthood; they want to have their own “territory” which is less public and suits their interests. For teenager group, the ‘territoriality’ mentioned here can be seen not only from age transitional phase, but also from cultural dimension, where ‘intra-cultural bond’ is very strong among certain ethnic group. Both of ‘territoriality’ and ‘intra-cultural bond’ affect their behaviour in *Afrikaanderplein*.

To resume, several influential factors which affect the number of users and the way users use and perceive the space are: (1) behaviour setting of users; (2) the availability of generating activities (e.g. open market or social event); (3) existence or availability of public functions which is better-equipped or more private in nature around the square or within the neighbourhood; and (4) weather condition. Factor (1) is more related to the way users use and perceive space, factor (2) is related to both number of users and the way users use and perceive space while the latter two are likely more related to number of users than the way they use and perceive space.

5. What are the meanings given to *Afrikaanderplein* by existing user groups?

As mentioned before, the way users use space, perceive space, and behave in *Afrikaanderplein* is different within different time. These have brought impacts to different meanings given by users to *Afrikaanderplein* in accordance with relatedness between space and activity done in that particular space. Meanings of *Afrikaanderplein* are socially constructed through social processes; they can be differentiated into two: (1) meaning which is constructed through ‘collective’ social process for collective benefits; and (2) meaning which is constructed through ‘individual’ social process for individual benefit. Meaning which is constructed through ‘collective’ social process comprises ‘a place to be there and a place to search for togetherness and engagement’, while meaning which is constructed through ‘individual’ social process comprises ‘a place which offers opportunity for job and occupation’ and ‘a place for your well-being’. In the end, meaning of *Afrikaanderplein* is like a puzzle; it is constructed from smaller pieces where each piece is owned by user.

General conclusion:

Analyzed from the approach for provision and management of POS, the redevelopment process of *Afrikaanderplein* has fulfilled the three requirement of a good POS: good design and materials, control and involvement of residents (users), and organizational structure for management. The characteristics owned by and roles played by *Afrikaanderplein* allows creation of a vibrant, lively mixed-use environment and is visually stimulating and attractive to users which makes *Afrikaanderplein* a convivial space.

In the end, if analyzed from the relationship between physical space (spatial characteristic) and social life (utilization pattern) of user groups in *Afrikaanderplein*, space is the physical determinants which affect the activities occur in the square. It is not just a constantly transforming product of social process (not only seen from the change of physical form), but it also has impact on social process, collectively or individually, which in the end affect the process of giving meaning to *Afrikaanderplein*.

As an indirect instrument used to influence social process and to solve the social problem in *Afrikaanderwijk*, it is relatively succeed for some user groups: children, women, elders,

but to teenagers. Thus, the problem regarding the use of *Afrikaanderplein* exist both in domain of spatial characteristic (which is shown by no particular place for teenager as one of user group) and also in behaviour of the user groups themselves (particularly teenager).

6.2. Relevance with Literature

This research confirms the existing theories regarding POS which are rooted from domain of urban sociology, architecture, and urban design, that:

1. Spatial characteristic of a built environment affects behaviour of user to certain extent and it also applies the other way around—the environment and human behaviour are in reciprocity relationship. It is shown by interaction between user-environment, and the meaning of such built environment to particular people can be understood by understanding this interaction (e.g. as explained by Canter, 1977; Rapoport, 1977; and Shaftoe, 2008);
2. Space is subject to different interpretation and multiple meanings through social process of development, exchange, and use. Multi-layered meanings of space reflect the way places are socially constructed through social processes, and space is not only a product of social process but also affects social process (as explained by Madanipour, 2001); and
3. The perception of a built environment—including a good POS—may depends on several factors: cultural values and norms of users (Rapoport, 1977), common or specific needs and interest based on life cycle phase, and based on the stakeholders' point of views (Blauw, 2009). However, fundamental principles such as image, accessibility, flexibility, and safety and security for a good POS are universal in nature.

6.3. Limitation, Strength and Weaknesses of Research

The difficulties encountered during fieldwork were:

1. Difficulties to find the targeted users who were willing to be interviewed, particularly during summer holiday since a lot of families from specific ethnic (particularly Turkish, Moroccans, and Surinamese) went on holiday or went back to their home countries;
2. Difficulties in reaching users from specific group and/or specific ethnic (e.g. Turkish and Moroccan women or teenager who use the square frequently) due to several reasons, i.e. un-open-ness or suspiciousness to people who do not belong in the neighbourhood or family-friends circle;
3. Inability to communicate in Dutch language imposed problem in different occasions:
 - a) During interviews with targeted users; few users communicate in English, some of them speak in mixed languages (e.g. Dutch-English, Dutch-English-Malay, or Dutch-Indonesian). This affects the ability to understand and interpret the results of interview. To deal with this, the researcher decided to take respondents who can speak English or other language understood by researcher. To deal with interviews conducted in Dutch, the researcher was assisted in translating and interpreting the results. But, this also impose problems due to different interpretations between researcher and assistants;

- b) During interpretation of policy documents (this is also due to limited knowledge of local policy). To overcome this, intensive contacts with representative of local government, consultant, or other actor engaged in planning process was done even after fieldwork
- 4. Limited secondary data regarding *Afrikaanderplein* and *Afrikaanderwijk* specifically during its construction and history before 1970's in English. The available data regarding history prior to 1970's were mostly written in Dutch;
- 5. Limited time for fieldwork gave less opportunity to trust-building process between researcher-respondents which led to series of 'un-recordable' interviews, but important notes were taken; and
- 6. Security issue in *Afrikaanderwijk* impose some problem in conducting an intensive observation during afternoon time (after 6.00 p.m.).

The research encompasses a vast range of issues regarding the use and meaning of POS in multi-culture residential area from two different mainstreams: utilitarian function and social function. The research helps to bridge these mainstreams by identifying some influential factors regarding use of POS in residential area with such characteristics which contribute to its higher and more appropriate use. The use of multi-angle perspectives for the research can be used to reflect on a set of normative suggestion to promote an integrated and innovative approach in urban planning and urban design which addresses similar issue.

Taking *Afrikaanderplein* (and *Afrikaanderwijk*) is an added value to the research; it is a laboratory which contains strong social issues in terms of history, cultural diversity and its relationship with the utilization of existing built environment, including residential POS. Proximity of research area gives advantages on intensive observation and trust-building process with the some respondents while at the same time experiencing the 'changes' happen in the neighbourhood.

However, there are some weaknesses in the research; there are some issues in domain of design, sociology, culture, and contextual policy and socio-economic-cultural condition which are less explored due to limited time while they may provide more useful basis to be used to analyze the use and meaning of *Afrikaanderplein*. The extensive coverage of the research also presents complexity and difficulties in developing a conceptual framework and to come up with meaningful set of recommendation in terms of theory, design, and planning approach.

6.4. Lessons Learnt

The most important lesson learnt from the research is that a good POS can be perceived differently by different people. The perception of a good POS may depends on several factors: cultural values and norms of users, common or specific needs and interest based on life cycle phase, and based on the stakeholders' point of views (goals or priorities). However, fundamental principles such as image, accessibility, flexibility, and safety and security are universal. In case of POS in a multi-culture residential area, not only the above mentioned principles are necessary; 'sociability' is also the most important key so as to allow exchange of cultural values and norms and encourages participation which may reduce ethnic and class barrier.

The application of designed policy to produce a built environment with certain spatial characteristic to influence behaviour setting of users who come from different cultural background can not be seen as an easy process; it takes time and depends on acceptance from users. It can not be seen as a one way process either since behaviour setting of users also affects the success of that particular built environment. Regarding multi-cultural dimension, it is then important to decide which culture that will be used, in what way and to what extent it will be incorporated in the planning approach or simply just follows the pragmatic and functionalism approach. All of these will come back to two basic questions: what kind of society that is desired and what kind of quality of life which is desired by both government and society in that particular multi-culture residential area.

6.5. Future Opportunities

The research adds on the existing literatures which try to combine different mainstream and stress the issue of use and meaning of POS in multi-culture residential area within local context of Rotterdam. After such attempts to answer the research questions, several questions remain open and there are challenges and opportunities for future research and practice, such as:

1. Study on relationship between design, socio-economic condition (particularly based on gender, age, and income) and behaviour of users in using *Afrikaanderplein* from each dominant ethnic background (in this case, Turkish, Moroccans, Surinamese and Antilleans) which can be used for comparative analysis so as to get more meaningful result and recommendation;
2. Study on social processes which construct the meaning of *Afrikaanderplein* from urban sociology perspectives; and
3. Evaluation on existing policy regarding planning approach, implementation, and management of POS in such residential area so as to find out whether there is any additional specific requirements which should be put into attention.

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APPENDIX A

Table of research Questions, Variables, and Research Methodology

TABLE OF RESEARCH QUESTIONS, VARIABLES, AND RESEARCH METHODOLOGY

NO	QUESTIONS	PARA-METER	VARIABLES	RESEARCH METHODOLOGY		
				STRATEGY	UNIT OF ANALYSIS	DATA SOURCE
1	What are the approaches adopted for provision and management of POS in Rotterdam in general and in <i>Afrikaander-plein</i> in particular?	Provision and management (planning, design, construction, maintenance)	Status, purposes, catchments, capacity, distribution, location, target groups Type of institutions, roles, responsibility, resources	Archival analysis, Observation, Semi-structured and in depth interviews	Representatives of public sector, academician, private sector, and user groups, <i>Afrikaanderplein</i> ; secondary data (research articles, journals, policy frameworks, design documents, maps, video, photographs etc.)	Rotterdam Municipal Archives (<i>Gemeente Archief</i> Rotterdam), IHS lecture materials and library, Erasmus University library, central library of Rotterdam, online journal and articles, internet websites, and museums, representatives of public sector, private sector and expert/academician, and user groups
2	What are the characteristics and roles of <i>Afrikaander-plein</i> ?	Characteristics	-Character: sense of place, sense of time, authenticity (localism) -Connection: unity, symbolism, sense of belonging/ownership, interaction -Personal freedom: expression, privacy, control -Social & psychological comfort ability: utilization of natural element, flexibility -Sociability: friendly, welcoming, interactive, stewardship -Diversity: awareness, creativity, adventure			
		Socio-cultural	Comfort & image: Cleanliness, green, physical comfort (walkable, sittable)			
		Environmental	Neutralit & inclusiveness: democratic accessibility, safety, security			
		Political				
		Economic	-Access & linkage: continuity, proximity, connectivity -Diversity: variety of activities, choice, interest -Mobility: Legibility, physical accessibility -Image, aesthetic appeal -Uses & activities: vital, special, fun, active, real, indigenous, celebration, useful			
		Roles Socio-cultural	-Socialization: social learning & interaction, encourage contacts, creation of ID's, exchange of culture values & norms, combat segregation, participation -Physical & psychological health: leisure, recreation, informal education, interact with nature, exercise			
		Environmental	-Cleanliness -Ecological: reduction of pollution, habitat & biodiversity gains -Personal & public health			

		Political	<ul style="list-style-type: none"> -Practice of democracy -Practice of good citizenship by compliance to social norms, creation of social consciousness -Tolerance, solidarity, conflict resolution 			
		Economic	<ul style="list-style-type: none"> -Support local economy: attract investment, local business, tourism, employment opportunity 			
3	Which are the spatial characteristics of <i>Afrikaanderplein</i> ?	Geographical factor and layout	<ul style="list-style-type: none"> -Location, climatic factor -Scale, size, shape, enclosure, hierarchy, space arrangement/division -Physical accessibility, connectivity -Signalling 		Archival analysis, Observation, Semi-structured and in depth interviews	
		Physical quality	<ul style="list-style-type: none"> -Design standard -Fixtures/equipment -Materials: type, textures, colours -Surfaces: hardscape, softscape 			
		Safety & security	<ul style="list-style-type: none"> -Passive approach: boundary, visibility, opening hours -Active approach: deployment of personnel, 			
4	Which are the utilization patterns of <i>Afrikaanderplein</i> ?	Activity pattern	<ul style="list-style-type: none"> -Types of activity -Space used/required -Density of people -Time occurrence and time frame → frequency -Associated user groups -The way using space 		Representatives of public sector, academician, private sector, and user groups, <i>Afrikaanderplein</i> ; secondary data (research articles, journals, policy frameworks, design documents, maps, video, photographs etc.)	
		Behaviour setting	<ul style="list-style-type: none"> -Awareness -Perception -Cognition -Behaviour → territoriality and personal distance 			
5	What are the meanings given to <i>Afrikaanderplein</i> by existing user groups?		<ul style="list-style-type: none"> -Collective social process -Individual social process 		Rotterdam Municipal Archives (<i>Gemeente Archief Rotterdam</i>), IHS lecture materials and library, Erasmus University library, central library of Rotterdam, online journal and articles, internet websites, and museums, representatives of public sector, private sector and expert academician, and user groups	

APPENDIX B

Important Key Figures of Afrikaanderwijk

These important key figures are based on statistical data provided by GBA (Gemeentelijke Basis Administratie) which is available at <http://rotterdam.buurtmonitor.nl/> [accession date of 13th August 2009 at 03.33 a.m.]

Composition of Population based on Migration and Ethnicity (2009)

Total Population	9,112 inhabitants			
Migration	Native (Non-migrant)			Migrant
	1,355 inhabitants (15%)	(Western Countries)		(Non-Western Countries)
		546 inhabitants (6%)	7,211 inhabitants (79%)	
Ethnicity (4 major ethnics)	Turkish 3,119 inh. (34%)	Moroccans 1,236 inh. (14%)	Surinamese 1,175 inh. (13%)	Antillean 427 inh. (5%)

Composition of Population based on Gender and Age (2009)

Composition of population by gender and age (2007)		
Total Population	9,112 inhabitants	
Gender	Male	Female
	4,533 inh. (49.7%)	4,579 inh. (50.3%)
Age (classification)		
Children	0-14 years old	590 inh. (6.5%)
	5-9 years old	671 inh. (7.4%)
	10-14 years old	681 inh. (7.5%)
Teenager	15-19 years old	752 inh. (8.3%)
Adult	20-34 years old	2,308 inh. (24.8%)
	35-54 years old	2,470 inh. (26.5%)
	55-64 years old	928 inh. (10.2%)
Elder	65-79 years old	708 inh. (7.8%)
	80< years old	166 inh. (1.8%)

Property Ownership Type and Housing Condition (2008)

Property Ownership Type and Housing Condition (2008)				
Total Housing	3,677 units			
Ownership Type (general)	Private ownership	Rent		
	366 units (10%)	3,311 units (90%)	Gemeente/Corp	Particular rent
		3,092 units (84%)	89 units (2%)	Unknown 130 units (4%)
Development Period				
Year before 1906	415 (11%)	Year 1970-1979	0 (0%)	
Year 1906-1930	1,445 (39%)	Year 1980-1989	729 (20%)	
Year 1931-1944	41 (11%)	Year after 1990	974 (26%)	
Year 1945-1959	0 (0%)	Year Unknown	0 (0%)	
Year 1960-1969	73 (2%)			

Socio-Economic Condition (2006)

Socio-Economic Condition (2006)		Average disposable income/capita
Income	Average income/capita/household	€10,500
	Low income household (€23,200) 62%	Middle income household (€42,600) 31%
		High income household (above €42,600) 7%

Criminality and Social Problem (2006)

Criminality								
Criminality 9.4%	Nuisance alert 16.9%			Status	Attention			
Social Problem								
Theft 66%	Break-in 16%	Drugs 25%	Youth	Noise 23%	Drunk 9%			
					Harassment 6%			
Violence								
Threat 2%	Violence 5%	Robbery 5%						
Vandalism								
Building 14%	Public Infrastructure 17%							
Vehicle problem								
Collision 7%	Aggressive driving 23%	Over speed 30%	Traffic 19%	Noise 28%				

APPENDIX C

List of Interviewed Representatives and Users and Semi-Structured Questions List for Interviews

NO	INTERVIEW PARTNER	ORGANIZATION	REMARKS
Representatives of Public Sector			
	Mr. Onni Tjia	dS+V, Municipality Rotterdam	
	Mr. Marcel	Green Department, Municipality Rotterdam	
	Mr. Ton Buitendijk	Sub-Municipality Feijenoord	
	Ms. Manouk Kwakernaat	<i>Local Cultuur Centrum</i> (LCC)	
Representatives of Experts/Academician, Private Sector, and NGO			
	Mr. Cor Dijkgraaf	Urban Solution, IHS	
	Mr. Wim Blauw	Erasmus University/IHS	
	Ms. Jeanne van Heeswijk	Freehouse	
Specific User Groups			
Women			
	Mrs. Nanik Sutiani	-	
	Mrs. Yvonne	-	
	Mrs. Lan	-	
Elder			
	Gerard	-	
	Andries Dijkman	Green Department, Municipality Rotterdam	
	Gerard van den Burges	SVA	
	Mr. Wong	-	
	Mr. Yap	-	
Teenagers and children			
	Ali	-	
	Mohammed	-	
	Auzan	-	
Seller of open market			
	Huzair	-	
Non-specific user group			
	Mr. Maarten Blokland	De Trendvallei	
	Mrs. Sonia Lopez	-	
	Ceylan family	-	
	Smit family	-	

TABLE OF SEMI-STRUCTURED QUESTIONS LIST FOR INTERVIEWS

The questions are structured based on target group, and within each target group the questions will be categorized under each research question. Each target group may have several questions with the same goals but are re-phrased so as to ease respondents to give related answers (so as to avoid confusion). The questions provided below are open-ended key questions; it opens opportunities to develop more questions based on the answers given by respondents (if necessary).

A. GOVERNMENT (MUNICIPALITY ROTTERDAM [dS+V] and SUB-MUNICIPALITY FEIJENOORD)

1. Research Question 1: "What are the approaches adopted for provision/redevelopment of POS in Rotterdam in general & Afrikaanderplein in particular?"

1.a. Initial development and redevelopment of *Afrikaanderplein* (provision)

- What approaches are adopted for provision of POS in Rotterdam in general?
- In case of *Afrikaanderplein*, what approaches were adopted?
 - What were the initial purposes, focuses or the goals that the municipality wanted to achieve in providing such square?
 - For whom it was built? Who were the initial target groups?
 - When and how long the development took place?
- Which parties involved in the initial development and in the redevelopment in 2002?
- What were their roles and responsibilities?
- In what stages the government focused more? Why?
- Were the communities being involved in the development back then? If yes, in what stages and what activities?
- What were the problems occur during the development?
- How did government deal with these problems?

1.b. Management and maintenance of *Afrikaanderplein* → prior to and after population change (world war II, bombardment 1940)

- Which institutions responsible for management and maintenance of *Afrikaanderplein*? What are their roles?
- Does municipality have specific funding mechanism to finance its maintenance?
- Are the community involved in its management and maintenance?
- Are there any problems regarding cultural differences in management and maintenance?
- How does *Deelgemeente Feijenoord* deal with these problems?
- What are the strategies used to integrate and to involve these multi-cultural communities in management and maintenance of *Afrikaanderplein*?

1.c. Future development of *Afrikaanderplein*

- Does municipality has future plan in the next redevelopment of *Afrikaanderwijk* and *Afrikaanderplein*? If yes, in what way?
- Do you think that the recent policy regarding provision, management and maintenance of POS (or *Afrikaanderplein*) should be improved? If yes, then what should be improved?

2. Research Question 2: "What are the characteristics and roles of *Afrikaanderplein*?"

- What is your opinion about *Afrikaanderwijk* and *Afrikaanderplein* back then and now?
- Do you see any significant differences besides the changes of the population?
- What do you like from *Afrikaanderwijk* and *Afrikaanderplein*?

3. Research Question 3: "How is the physical design of *Afrikaanderplein*?"

- What is the big issue in *Afrikaanderwijk* and *Afrikaanderplein*, such as security and safety perhaps?
- How does *Deelgemeente Feijenoord* deal with these problems?
- Are there any complains from the community regarding quality of *Afrikaanderplein*? If yes, what were they complaining mostly about?

4. Research Question 4: "What are the activity pattern, behaviour setting and utilization pattern in *Afrikaanderplein*?"

- Do you often communicate with community in *Afrikaanderwijk* regarding their activities in *Afrikaanderplein*?
- Do you think that the community use the park very well as they desire?

B. EXPERTS/ACADEMICIAN

1. Research Question 1: "What are the approaches adopted for provision/redevelopment of POS in Rotterdam in general & *Afrikaanderplein* in particular?"

- What approaches are adopted for provision of POS in Rotterdam in general?
- In case of *Afrikaanderplein*, what approaches were adopted?
- Do you think that there were weaknesses with the policy approach?
- Do you think that the initial goals of redevelopment are achieved?
- Do you think it is necessary to improve or change the policy regarding provision, management or maintenance of POS? If yes, in which part?

2. Research Question 2: "What are the characteristics and roles of *Afrikaanderplein*?"

- What are your personal & professional opinions about *Afrikaanderplein*, its development and redevelopment?
- Do you think that the square is functioned as the way it is expected?
- What do you think should be done by both government and community to enhance the revitalization of *Afrikaanderwijk* and *Afrikaanderplein*?

3. Research Question 3: "How is the physical design of *Afrikaanderplein*?"

- What do you think about overall design of *Afrikaanderplein*?
- Multiculturalism and design preference
 - Do you think that multiculturalism plays important role in design preference in the square?
 - Do you think that communicate should be involved during design process and implementation? If yes, in what activities and what way?
 - Do you think that the communities have specific needs which are attached to their cultural background of Turkish, Moroccans, Surinamese, and Antilleans?

4. Research Question 4: "What are the activity pattern, behaviour setting and utilization pattern in *Afrikaanderplein*?"

- What do you think about the population changes in *Afrikaanderwijk* and its impact of utilization of *Afrikaanderplein*?
- Multiculturalism and utilization of square

- Do you think that multiculturalism affects the utilization of the square?
- If yes, in what way it affects the utilization?
- What are your opinions about the different behaviour setting (territoriality, interpersonal distance) and the way of utilizing a square?
- Do you think that the community use the park very well as they desire?

C. USER GROUPS

1. Research Question 3: "How is the physical design of Afrikaanderplein?"

- Do you feel safe and secure while you are in the square? What makes you feel safe & secure?
Voel je je veilig als je op het plein bent?
- Opinion on overall physical quality
 - Do you think that the square is too big for you or makes you feel insecure if you go there alone?
Vindt je het plein te groot of maakt het je onzeker als je daar alleen bent?
 - What do you think about the trees, flowers, animals in the square?
Wat vindt je van de bomen, bloemen, dieren op het plein?
 - What do you think about the bench, playground, and the gates? Do you like the colours or the shape?
Wat vindt je van de bank, speelplaats, en de hekken? Vindt je de kleuren en de vorm leuk?
- Do you feel comfortable when you are in the playground, in the green park?
Voel je je op je gemak als je op de speelplaats bent, in het groene park bent?
- Did you find difficulties in finding the square or your way back home from the square for the first time?
Vindt je het de eerste keer moeilijk om het plein te vinden of je weg naar huis?
- Do you find difficulties in going to and enter the square?
Vindt je het moeilijk om naar het plein te gaan en op het plein te komen?

2. Research Question 4: "What are the activity pattern, behaviour setting and utilization pattern in Afrikaanderplein?"

1.a. Family background

- Which country your parents/grandparents originating from?
Uit welk land komen je ouders/grootouders?
- How long your families have been staying in the Netherlands?
Hoe lang woont je familie al in Nederland?
- What is your recent occupation?
Wat is je meest recente baan?
- Have you ever going back to your country origin? If yes, for what purposes?
Ben je wel eens teruggeweest naar het land waar je oorspronkelijk vandaan komt? Zo ja, waarom?
- Do you have close relationship with other families from different culture?
Heb je een hechte band met andere families uit andere culturen?

1.b. Individual/collective activities

- What do you think about living here in the Netherlands and back there in your country origin?
Wat vindt je van het leven in Nederland en van het leven in het land waar je vandaan komt?
- Do you find any major differences or difficulties in terms of daily live, like open space or activities between here and in your country origin?
Onder vindt je grote verschillen en moeilijkheden tussen het dagelijks leven, zoals open ruimte of activiteiten hier in Nederland en het land waar je vandaan komt?
- Differences in type and doing outdoor activities
 - What indoor and outdoor activities you like to do here (in The Netherlands) and there (in your country origin)?
Welke activiteiten binnens- en buitenhuis vindt je leuk hier in Nederland en in het land waar je vandaan komt?
 - Are there any outdoor activities that you used to do in your country origin which can not be done here in The Netherlands? Why do you think so?
Zijn er activiteiten buitenhuis die je gewend was te doen in het land waar je vandaan komt, die hier in Nederland niet mogelijk zijn? Waarom denk je dat?
- Activity pattern of user group
 - Do you often go to the square?
Ga je vaak naar het plein?
 - For what purpose you go to the square?
Voor welk doel ga je naar het plein?
 - What activities you like to do most in the square?
Welke activiteiten vindt je het leukst op het plein?
 - What time you go to the square for those activities and for how long?
Hoe laat ga je naar het plein voor die activiteiten en voor hoe lang?
 - With whom you go to the square?
Met wie ga je naar het plein?
- Perception and behaviour setting on Afrikaanderplein
 - What do you think about Afrikaanderwijk and Afrikaanderplein?
Wat vindt je van de Afrikaanderwijk en het Afrikaanderplein?
 - Which part of the square that you like or do not like? Why?
Welk deel van het plein vindt je leuk en welk deel vindt je niet leuk? Waarom?
 - Do you think that the Afrikaanderplein suit or do not suit your interest outdoor activities?
Vindt je dat het Afrikaanderplein geschikt is voor jouw interesse in activiteiten buitenhuis?
 - Do you think that Afrikaanderplein should be improved so as to enable to accommodate your interest outdoor activities?
If yes, what should be improved and in what way?
Vindt je dat het Afrikaanderplein verbeterd zou moeten worden zodat het geschikt zou worden voor jouw interesse in activiteiten buitenhuis? Zo ja, wat zou er verbeterd moeten worden en op welke manier?
- Are you being involved in or are you willing to be involved in maintenance of the square? If yes, in what way?
Ben je betrokken bij of ben je bereid betrokken te worden bij het onderhoud van het plein? Zo ja, op welke manier?

APPENDIX D

Observation Result

The observation was conducted by means of tract walking around the square several times according to proposed time frame as shown in table of observation time. Notes on activity pattern (time occur & time frame, people density per space, activity types, space used and the way space is used) was taken during observation as shown in table of observation result.

TABLE OF OBSERVATION TIME

NO	OBSERVATION DAY	DATE	REMARKS
1.	Open market days or day with generating activity (d-1)	a) Saturday, July 4 th 2009 b) Wednesday, July 8 th 2009	Sunny day Sunny day + social event
2.	Workday/weekday (d-2)	a) Tuesday, July 7 th 2009 b) Tuesday, July 14 th 2009 c) Friday, July 17 th 2009	A day before open market day, raining since morning (started around 9 a.m.) A day before open market day, sunny day A day before open market day, cloudy day, drizzle in the afternoon
3.	Weekend without open market or generating activity (d-3)	Sunday, August 2 nd 2009	Raining since morning (started around 9 or 10 a.m.)
4.	Non-weekend holiday (d-4)	Thursday, April 30 th 2009	National holiday of Queen's Day, sunny day

In the table of observation result, related several remarks given are:

1. Types of activities are derived from Rapoport (1977). He categorizes activities into four major groups (see chapter 2). Personal distance is derived from the concept of Distance in Personal Space defined by Hall (1969) (see chapter 2).
2. Speed measured manually with stopwatch by calculating distance per time (in this case, using meter/minute unit [m/min]). The counting of walking speed and density of people are done at the same time. Average walking speed of human (adult) is 5.3 km/hour or almost equal to 88 m/min.
3. Other stuffs refer to things or equipment which can not be concluded into bag or shopping bag, such as baby trolley, vendor cart, bicycle, mechanic wheel-chair, with pets (e.g. dogs), sport equipment (e.g. ball) etc.
4. Density measured manually by counting people in the same area by measuring unit of people/minute [people/min]. Numbers given are obtained from selected time within each time frame (morning, day/noon, afternoon) and ranging from minimum to maximum number of people within a minute, since the researcher has to move from one part to another part of *Afrikaanderplein* within each time frame.

TABLE OF OBSERVATION RESULT

A. DATE/TIME : SATURDAY, JULY 4TH 2009 (WEEKEND + OPEN MARKET DAY, SUNNY DAY)

SPACE DIVISION	TIME + FRAME	ACTIVITY + DESCRIPTION (ACTIVITY TYPE ¹ , WALKING SPEED ² , ETC.)	IMPORTANT REMARKS	USER GROUPS + DESCRIPTION (CULTURE, DENSITY ⁴ , ETC.)
GREEN PARK	Morning (08.00-10.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking to/back from open market, walking from Pretoriaan to Paul Krugerstraat or vice versa (vv.) Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs³, slow-average speed (\pm 60-90 m/min) ▪ Specific way-activities: light sport e.g. tai-chi practice, jogging, slow-walking Tai-chi on grassy area, every Tuesday, Thursday, and Saturday @7.30-8.30 a.m. (need calm/quiet situation to focus), alone/with friends; jogging and slow-walking on grassy area/pathways/hard-scape periphery area/stairs, alone/with friends, average speed for jogging (\pm 90-150 m/min) ▪ Additional, adjacent or associated activities: gossiping, talking Talking & gossiping while practicing tai-chi/jogging/walking 	<ul style="list-style-type: none"> ▪ Mostly passers-by instead of users ▪ Grouping-users were few, only residents who did light sport, consist of 2-3 people/group ▪ Mostly come alone, only some were friends/couple ▪ Social distance: close phase between friends ▪ Personal distance: close phase especially for couples and families 	<ul style="list-style-type: none"> ▪ 13-52 people/min ▪ Mixed-culture users: <ul style="list-style-type: none"> - Chinese elders (3 people) practised tai-chi. Usually in bigger group but not many elders came because some of them already went away for holiday or back to China - Most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, Africans, Chinese, Indians) ▪ Most of them were elders and women who went to open market
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking to/back from open market, walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/ bring bag/other stuffs, slow-average speed (\pm 60-90 m/min) ▪ Specific way-activities: light sport (slow-walking, badminton, cycling), sitting, smoking, sleeping/sunbathing, feeding birds & ducks, reading <ul style="list-style-type: none"> - Badminton on grassy area while picnic, sometimes cuddling, with family & friends; slow-walking/sitting on grassy area, pathways/hardscape periphery area/stairs, alone/with friends; cycling in pathways/grassy area, average speed (\pm 60-90 m/min) - Sitting on bench/grass/stairs while eating/smoking; sleeping on grassy area under shade; reading while sitting on stairs; sunbathing while sitting on the bench/grassy area, alone/with family/friends - Feeding birds/duck in pond/grassy area with crushed breads, with families/friends ▪ Additional, adjacent or associated activities: talking, shouting, laughing Gossiping/talking/shouting/laughing while picnic/walking/ standing/sitting on grassy area/hardscape periphery area/stairs, while eating and drinking, with hand gestures, average-loud voice, with family/friends ▪ Symbolic activity: drinking & eating, family picnic after shopping in open market Drinking & eating, picnic after shopping while sitting on grassy area/hardscape periphery area/stairs, with family/friends, sometimes while smoking & sleeping. Children sometimes ran around the family 	<ul style="list-style-type: none"> ▪ More users and passers-by came during noon ▪ Grouping-user increased during lunch time, a group consists of 4-7 people, mostly doing family picnic ▪ Personal distance: close phase especially for couples and families ▪ Social distance: close phase between friends ▪ People gathered around part with benches & trees (on grassy area/bench/hardscape near main gate of Paul Krugerstraat and Pretoriaan) ▪ Some people left their trashes in place instead of throwing it into garbage bins 	<ul style="list-style-type: none"> ▪ 34-64 people/min ▪ Mixed-culture users: <ul style="list-style-type: none"> - Local residents who enjoyed family picnic: Turkish, Moroccan, Surinamese, Africans. Most of them consist of parents & children (4-5 people/family) - Non local residents who enjoyed family picnic: Turkish, Dutch family, Surinamese couple. Most of them consist of parents & children (4-5 people/family) - Most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, others) - Most of single users were non-native Dutch (Turkish, Moroccans, Surinamese, others) ▪ Most of grouping users were families and couples. Some families enjoy family picnic every week (e.g. the Dutch family) during Saturday and some occasionally (e.g. the Turkish and Moroccans families)

	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> Activity proper: walking to/back from open market, walking from Pretoralaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs, slow-average speed (\pm 60-90 m/min) Specific way-activities: light sport (slow-walking, cycling), sitting, smoking, sleeping, reading <ul style="list-style-type: none"> - Slow-walking on grassy area, pathways/hardscape periphery area/stairs, alone/with friends; cycling in pathways/grassy area, slow-average speed (\pm 60-90 m/min) - Sitting on bench/grass/stairs while eating/smoking; sleeping on grassy area under shade; reading while sitting on stairs/bench/ grassy area, alone/with family/friends Additional, adjacent or associated activities: gossiping, talking, shouting, laughing Gossiping/talking/shouting/laughing while picnic/walking/ standing/sitting on grassy area/hardscape periphery area/stairs, while eating and drinking, with hand gestures, average-loud voice, with family/friends Symbolic activity: drinking & eating, family picnic after shopping in open market Drinking & eating, picnic after shopping while sitting on grassy area/hardscape periphery area/stairs, with family/friends, sometimes while smoking & sleeping. Children sometimes ran around the family 	<ul style="list-style-type: none"> More passers-by came during afternoon while grouping-users were decreasing Personal distance: close phase especially for couples and families Social distance: close phase between friends Some people left their trashes in place instead of throwing it into garbage bins 	<ul style="list-style-type: none"> 31-59 people/min Mixed-culture users: <ul style="list-style-type: none"> - Most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, others) - Most of single users were non-native Dutch (Turkish, Moroccans, Surinamese, others) Most of grouping users were families and couples, most of them left around 2-3 p.m.
BASKETBALL and FOOTBALL FIELD	Morning (08.00-10.00)	<ul style="list-style-type: none"> Activity proper: walking to/back from open market, walking from Pretoralaan to Paul Krugerstraat or vv Walking in some part of field, alone/with family/friends, empty hands/bring bag/other stuffs; slow-average speed (\pm 60-90 m/min) Additional, adjacent or associated activities: talking, shouting, laughing Talking with friends, with hand gestures, low-average voice 	<ul style="list-style-type: none"> Mostly passers-by instead of users in the morning, alone/in group of 2-3 people Social distance: close phase between friends Personal distance: close phase especially for couples and families More users and passers-by came during noon 	<ul style="list-style-type: none"> 11-21 people/min Mixed-culture users, most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, others)
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> Specific way-activities: playing basketball, football With friends, playing in 2 different area. About 5-8 children between ages of 7-13 years old played football, 2 children played basketball Additional, adjacent or associated activities: talking, shouting, laughing Talking/shouting/laughing with friends while playing, with hand gestures, average-loud voice 	<ul style="list-style-type: none"> 14-23 people/min Mixed-culture users, most of passers-by and grouping-users were non-native Dutch (Turkish, Moroccans, Surinamese, others) Children were the dominant user groups 	
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> Specific way-activities: playing football With friends, playing in 2 different area. About 6-8 children between ages of 7-13 years old played football, 2 children played basketball 2-on-2. The children playing basketball finished earlier than those who played football Additional, adjacent or associated activities: talking, shouting, laughing Talking/shouting/laughing with friends, while playing, with hand gestures, average-loud voice 	<ul style="list-style-type: none"> 12-24 people/min Mixed-culture users, most of passers-by and grouping-users were non-native Dutch (Turkish, Moroccans, Surinamese, others) Children were the dominant user groups 	

PLAYGROUND	Morning (08.00-10.00)	<ul style="list-style-type: none"> Specific way-activities: sitting on groups, eating, drinking, smoking, playing cards, slow walking Sitting around round-table, in terrace, drinking coffee/tea, eating cookies, smoking, and playing cards; walking in slow speed (\pm 5-10 m/min) Additional, adjacent or associated activities: gossiping, talking, laughing Sometimes laughing, average voice, a lot of hand gestures 	<ul style="list-style-type: none"> Only 8-11 people Social distance: close phase between friends The playground was quiet 	<ul style="list-style-type: none"> 8-31 people/min Mixed-culture users: Dutch, Moroccans, Surinamese, Indians The people who always meet and talk in terrace every morning are local residents and some of them are member of SVA Elder and adult (mostly men) were the most dominant user group
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> Specific way-activities: playing in playground, sitting, smoking, playing cards, watching children playing, eating, drinking, slow walking, running <ul style="list-style-type: none"> Sitting around round-table, in terrace, drinking coffee/tea, eating cookies, smoking, and playing cards; walking in slow speed (\pm 5-10 m/min) Children played with playing fixtures, grouping, accompanied by parents (mothers) who were watching while sitting or also played with them. Parents/mothers brought baby trolley, baby kit, snacks, and drinking water. Children also ate snacks and drinks. Slow walking speed (\pm 10-20 m/min) Younger children (4-7 years) played with playing fixtures, older children (9-13 years old) played in mini football field Additional, adjacent or associated activities: gossiping, talking, shouting, laughing, feeding smaller children Mothers talked to each other while watching the kids, feeding smaller children, sometimes laughing, average-loud voice, minimal hand gestures while talking, sitting on bench 	<ul style="list-style-type: none"> More families with children came during noon. Playground acts as a meeting point for mothers-children Social distance: close phase between friends Intimate distance: close phase especially for parents-kids The groups in the terrace left just before lunch time, and some other people came to the terrace Some of the people who came were previously from open market, mini-stage area, or from other places (e.g. from home, nearby) After 5 p.m., the playground is slowly empty 	<ul style="list-style-type: none"> 27-52 people/min Mixed-culture users: Dutch, Turkish, Moroccans, Surinamese, others The most dominant user groups were children and parents (most of them were the mothers)
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> Specific way-activities: playing, sitting, watching children playing, eating, slow walking Children played with playing fixtures, grouping, accompanied by parents (mothers) who were watching while sitting or also playing with them. Parents/mothers brought baby trolley, baby kit, snacks, and drinking water. Children also ate snacks and drinks. Slow walking speed (\pm 10-20 m/min) Additional, adjacent or associated activities: gossiping, talking, shouting, laughing, feeding smaller children Mothers talked to each other while watching the kids, feeding smaller children, sometimes laughing, average-loud voice, minimal hand gestures while talking, sitting on bench 	<ul style="list-style-type: none"> 21-54 people/min Mixed-culture users: Dutch, Turkish, Moroccans, Surinamese, others The most dominant user groups were children and parents (most of them were the mothers) 	
OPEN MARKET AREA	Morning (08.00-10.00)	<ul style="list-style-type: none"> Activity proper: walking to/back from/around open market Walking on pedestrian path between stalls, alone/with family/friends, empty hands/bring shopping bag/other stuffs, slow speed (\pm 5-10 m/min) Specific way-activities: preparing market stall, selling & shopping in open market, smoking, sitting, looking around, cleaning up garbage, eating and drinking <ul style="list-style-type: none"> Preparing stall, picking up equipment and things out from minivan and arrange it into orders, with family/friends, sometimes with singing 	<ul style="list-style-type: none"> Sellers came around 8.00-8.45 a.m, and most of them were ready to sell between 9.00-9.30 a.m. It took minimum time of \pm 30 minutes to prepare stall Frames were installed a day before and were un-installed 	<ul style="list-style-type: none"> Uncountable density of people, many people during open market More sellers of descent immigrants than native Dutch (mostly Turkish-Moroccan sellers). Most of Dutch, Turkish, and Moroccans sellers sell food instead of <i>kramerij</i>, while most of Indians, Africans, or Surinamese sellers sell <i>kramerij</i>.

		<ul style="list-style-type: none"> - Sitting on own bench/hardscape while smoking/eating/selling, with family/friends - People sold and bought things by standing; buyers came alone/with family/friends, bargaining, seller cleaning up their garbage and put their garbage behind their stall in boxes/plastic - Average-loud voice, a lot of hand gestures, eating and drinking while walking ▪ Additional, adjacent or associated activities: gossiping, talking, shouting, laughing Gossiping/talking/shouting/laughing while working/walking/ standing/sitting on bench/hardscape, with family/friends, average-loud voice, sometimes with singing, sometimes with hand gestures 	<ul style="list-style-type: none"> directly after open market Things that are sold in the open market can be classified into two groups: <ul style="list-style-type: none"> - Non-food products (<i>kramerij</i>); e.g. clothes, fabrics, cosmetics, electronic & computer equipments (e.g. CDs, battery), shoes & sandals, furniture & dining equipment (e.g. plates), bedding equipment (e.g. bed sheet, pillows) - Food products; e.g. meats, dairy product, fruit & vegetables, bread, snacks (chocolate/candy, French fries) ▪ Portable public toilets are available during days of open market, located in side wall of African Inn building (student housing of Erasmus University) ▪ Some visitors came from outside <i>Afrikaanderwijk</i> during open market. They were people who previously live there, people who work nearby, or came just because of the open market. ▪ Social distance: close phase for families/ friends and far phase for buyers-sellers ▪ Buyers came alone/in group by 3-5 people ▪ Some of the van were parked in parking area or behind stalls which were next to main gate 	<ul style="list-style-type: none"> ▪ Majority of visitors were also immigrants decent, less Dutch. The visitors were not only from <i>Afrikaanderwijk</i> and surrounding neighbourhood, but also from other part of Rotterdam and from other nearby cities e.g. Schiedam and Breda ▪ Almost all user groups can be found there, but the groups of women and elders were more than groups of teenagers and children.
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking to/back from/around open market Walking on pedestrian path between stalls, alone/with family/friends, empty hands/bring shopping bag/other stuffs, slow speed (\pm 5-10 m/min) ▪ Specific way-activities: selling & shopping in open market, guarding market stall, smoking, sitting, looking around, cleaning up garbage <ul style="list-style-type: none"> - Guarding stall, picking up more equipment and things from minivan and arrange it into orders, with family/friends - Sitting on own bench while smoking/eating; with family/friends - People sold and bought things by standing; buyers came alone/with family/friends, bargaining, seller cleaning up their garbage and put their garbage behind their stall in boxes/plastic ▪ Additional, adjacent or associated activities: gossiping, talking, shouting, laughing Gossiping/talking/shouting/laughing while working/walking/ standing/sitting on bench/hardscape, with family/friends, average-loud voice, sometimes with singing, with hand gestures 		
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking to/back from/around open market Walking on pedestrian path between stalls, alone/with family/friends, empty hands/bring shopping bag/other stuffs, slow speed (\pm 5-10 m/min) ▪ Specific way-activities: selling & shopping in open market, finishing market stall, smoking, sitting, looking around, cleaning up garbage <ul style="list-style-type: none"> - Guarding stall, picking up more equipment and things from minivan and arrange it into orders, with family/friends - Finishing stall, picking up equipment and things to minivan, with family/friends. Some sellers finished earlier around 4 p.m. than others (usually around 5-5.30 p.m) - Sitting on own bench while smoking/eating; with family/friends - People sold and bought things by standing; buyers came alone/with family/friends, bargaining, seller cleaning up their garbage and put their garbage behind their stall in boxes/plastic. Some cleaning service officer coming and picking up garbage bags. 		

		<ul style="list-style-type: none"> Additional, adjacent or associated activities: gossiping, talking, shouting, laughing Gossiping/talking/shouting/laughing while working/walking/ standing/sitting on bench/hardscape, with family/friends, average-loud voice, sometimes with singing, with hand gestures 		
BOTANIC GARDEN	Morning (08.00-10.00)	<ul style="list-style-type: none"> Specific way-activities: opening the gate, checking the garden, picking up some plastic trash near fence, checking the dried seed, open the garden house Additional, adjacent or associated activities: talking 	<ul style="list-style-type: none"> There are 3 gardeners, work in day shift of Monday-Friday and Saturday-Sunday. 	<ul style="list-style-type: none"> 2 people/min Mono-cultural user (for today): native Dutch
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> Specific way-activities: sitting on the garden house while keeping the garden, checking the dried seed, drinking, reading/search info in books, eating, drinking Preparing coffee after opening the house, sitting on chair, sometimes open books to search for type & Latin name of plants, checking the dried seed in the storage, give labels, lunch Additional, adjacent or associated activities: talking Talking with co-worker, low-average voice, with hand gestures 	<ul style="list-style-type: none"> Their main activities are ensure cleanliness of botanic garden, taking care of plants, collect dried seeds of each plants in storage room and maintain its database in simple forms to be collected later on by workers of Green Department of <i>Gemeente</i> Rotterdam Few people come to botanic garden, sometimes only groups of students from local school for nature or biology class Very quiet in botanic garden & inside the house Social distance: close phase between friends 	<ul style="list-style-type: none"> The most dominant user group was elders. The guard of botanic garden; Andries is 56 years old and Gerard is 72 years old. Andries is worker of <i>Deelgemeente</i>, he works for 5 days (Monday-Friday). Gerard is a volunteer in a social service program, he works for 3 days a week (day off in between), but he comes to the park every day because he feels that the park is part of his life since he worked in <i>Afrikaanderwijk</i> 16 years ago. Andries and Gerard spend most of their time in botanic garden.
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> Specific way-activities: sitting on the garden house while keeping the garden, checking the dried seed, drinking, reading/search info in books, closing gate <ul style="list-style-type: none"> Sitting on chair, sometimes open books to search for type & name of plants, checking the dried seed in the storage & bucket, give labels to dried seed stored in bottles, going out to the garden to check the plants and plantation house, closing the gate after opening hour. The garden house consists of three main rooms: living room, kitchen, and storage room. No television, only radio. Most of specific activities happen in living room. Talking may be the most often activity done inside the house Additional, adjacent or associated activities: talking Talking with co-worker, low-average voice, with hand gestures. 		
PEDESTRIAN AREA	Morning (08.00-10.00)	<ul style="list-style-type: none"> Activity proper: walking to/back from open market, walking from Pretoriaan to Paul Krugerstraat or vice versa (vv.) Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs³, slow-average speed (\pm50-80 m/min) Additional, adjacent or associated activities: gossiping, talking, shouting, laughing Gossiping/talking/shouting/laughing while sitting/standing e.g. in bicycle/in corner, with family/friends, sometimes with hand gestures, average-loud voice 	<ul style="list-style-type: none"> Mostly passers-by instead of users, 2-4 people per group of passers by Social distance: close phase between friends Personal distance: close phase especially for couples and families 	<ul style="list-style-type: none"> 29-41 people/min Mixed-culture users, most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, others) Most of them were elders, women, and few children (with the families)
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> Activity proper: walking to/back from open market, walking from Pretoriaan to Paul Krugerstraat or vice versa (vv.) Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs³, sometimes hold hands, slow-average speed (\pm 50-80 m/min) Specific way-activities: sitting, smoking, eating, drinking, cycling 	<ul style="list-style-type: none"> Mostly passers-by instead of users Grouping-user increased during noon, consist of 2-3 people/group, mostly family 	<ul style="list-style-type: none"> 32-67 people/min Mixed-culture users, most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, others) Most of them were elders, women, and

		<p>Sitting on low walled-border, smoking/looking at people passing by or children playing football, while eating and drinking food bought in open market, alone/with family/friends, sometimes hold hands, people passing by with bicycle</p> <ul style="list-style-type: none"> ▪ Additional, adjacent or associated activities: gossiping, talking, shouting, laughing Gossiping/talking/shouting/laughing while sitting/standing e.g. in bicycle/in corner, with family/friends, sometimes with hand gestures, average-loud voice 	<p>and friends (women, children, teenagers)</p> <ul style="list-style-type: none"> ▪ Social distance: close phase between friends ▪ Personal distance: close phase especially for couples and families 	few children (with the families)
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking to/back from open market, walking from Pretorialaan to Paul Krugerstraat or vice versa (vv.) Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs³, sometimes hold hands, slow-average speed (\pm 50-80 m/min) ▪ Specific way-activities: sitting, smoking, eating, drinking, cycling Sitting on low walled-border, smoking/looking at people passing by or children playing football, while eating and drinking food bought in open market, alone/with family/friends, sometimes hold hands, people passing by with bicycle ▪ Additional, adjacent or associated activities: gossiping, talking, shouting, laughing Gossiping/talking/shouting/laughing while sitting/standing e.g. in bicycle/in corner, with family/friends, sometimes with hand gestures, average-loud voice 	<ul style="list-style-type: none"> ▪ Many passers-by and users in small group, consists of 2-5 people, mostly family and friends (women, children, teenagers) ▪ Social distance/personal distance: close phase between friends and families ▪ Personal distance: close phase especially for couples and families ▪ A police chased a youngster by motorcycle around 3.18 p.m., going around the place twice, almost hit some pedestrians 	<ul style="list-style-type: none"> ▪ 27-53 people/min ▪ Mixed-culture users, most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, others) ▪ Most of them were elders, women, and few children (they went with families)

1. Types of activities are derived from Rapoport (1977). He categorizes activities into four major groups (see chapter 2). Personal distance is derived from the concept of Distance in Personal Space defined by Hall (1969) (see chapter 2).
2. Speed measured manually with stopwatch by calculating distance per time (in this case, using meter/minute unit [m/min]). The counting of walking speed and density of people are done at the same time. Average walking speed of human (adult) is 5.3 km/hour or almost equal to 88 m/min.
3. Other stuffs refer to things or equipment which can not be concluded into bag or shopping bag, such as baby trolley, vendor cart, bicycle, mechanic wheel-chair, with pets (e.g. dogs), sport equipment (e.g. ball) etc.
4. Density measured manually by counting people in the same area by measuring unit of people/minute [people/min]. Numbers given are obtained from selected time within each time frame (morning, day/noon, afternoon) and ranging from minimum to maximum number of people within a minute, since the researcher has to move from one part to another part of *Afrikaanderplein* within each time frame.

B. DATE/TIME : TUESDAY, JULY 7TH 2009 (WEEKDAY/WORKDAY, A DAY BEFORE OPEN MARKET DAY, RAINING SINCE MORNING ± 9 a.m.)

SPACE DIVISION	TIME + FRAME	ACTIVITIY + DESCRIPTION (ACTIVITY TYPE ¹ , WALKING SPEED ² , ETC.)	IMPORTANT REMARKS	USER GROUPS + DESCRIPTION (CULTURE, DENSITY ⁴ , ETC.)
GREEN PARK	Morning (08.00-10.00)	<ul style="list-style-type: none"> Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs³, mostly using umbrella, slow-average speed (± 60-90 m/min) Specific way-activities: light sport e.g. jogging, slow-walking Jogging and slow-walking on grassy area/pathways/hardscape periphery area/stairs, alone/with friends, average speed for jogging (± 90-150 m/min) Additional, adjacent or associated activities: gossiping, talking Talking & gossiping while jogging/walking, average voice 	<ul style="list-style-type: none"> Mostly passers-by instead of users Grouping-users were few, only residents who did light sport, consists of 2-3 people/group, particularly only in the morning before it is raining or while it was drizzle Social distance: close phase between friends Personal distance: close phase especially for couples and families Very quiet, only few people came, probably because it was raining and workday 	<ul style="list-style-type: none"> 5-11 people/min Mixed-culture users: <ul style="list-style-type: none"> Two (2) Turkish/Moroccans girl were jogging and slow walking on hardscape area Most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, Africans, Chinese, Indians) Most of them were elders and women
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs, mostly using umbrella, slow-average speed (± 60-90 m/min) Specific way-activities: light sport e.g. jogging, slow-walking Jogging and slow-walking on grassy area/pathways/hardscape periphery area/stairs, alone/with friends, average speed for jogging (± 90-150 m/min) Additional, adjacent or associated activities: talking Talking while walking, with family/friends, average voice 		<ul style="list-style-type: none"> 13-26 people/min Mixed-culture users: <ul style="list-style-type: none"> Two (2) Turkish/Moroccans girl were jogging and slow walking on hardscape area Most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, Africans, Chinese, Indians) Most of them were elders and women with children
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs, mostly using umbrella, slow-average speed (± 60-90 m/min) Additional, adjacent or associated activities: talking Talking while walking, with family/friends, average voice 		<ul style="list-style-type: none"> 13-23 people/min Mixed-culture users, most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, Africans, Chinese, Indians) Most of them were elders and women with children
BASKETBALL and FOOTBALL FIELD	Morning (08.00-10.00)	<ul style="list-style-type: none"> Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking in some part of field, alone/with family/friends, empty hands/bring bag/other stuffs³, mostly using umbrella, slow-average speed (± 60-90 m/min) 	<ul style="list-style-type: none"> Mostly passers-by, alone/in group of 2 people, friends/families Social distance: close phase between friends 	<ul style="list-style-type: none"> 4-7 people/min Mixed-culture users, most of passers-by and grouping-users were non-native Dutch (Turkish, Moroccans, Surinamese, others) Most of them were elders and adult (men/women) with children
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> Specific way-activities: playing football, watching children <ul style="list-style-type: none"> About 6-8 children between 7-10 years old from local school, with friends, lots of shouting and running Teacher watching children, sometimes playing together with the children Additional, adjacent or associated activities: talking, shouting, laughing Talking/shouting/laughing with friends, while playing, with hand gestures, average-loud voice 	<ul style="list-style-type: none"> More users and passers-by came during noon, especially group of children from local school located right in front of basketball-football field. After 4 p.m., 	<ul style="list-style-type: none"> 7-11 people/min Mixed-culture users, most of passers-by and grouping-users were non-native Dutch (Turkish, Moroccans, Surinamese, others) Most of them were elders and women

	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> ▪ Specific way-activities: playing football, parents come to pick up children <ul style="list-style-type: none"> - About 6-8 children between 7-10 years old from local school, with friends, lots of shouting and running - Teacher watching children, sometimes playing together with the children - Parents came to pick up their children, waiting in front of the kindergarten playground, standing/sitting/leaning on the fence ▪ Additional, adjacent or associated activities: talking, shouting, laughing <p>Talking/shouting/laughing with friends (esp. among parents, parents-teacher), while playing/standing/sitting/leaning on fence, with hand gestures, average-loud voice</p> 	<p>some parents came to pick up their children home. Some of them directly went and some were staying and talking. Children and parents were dominant user groups</p> <ul style="list-style-type: none"> ▪ Social distance: close phase between friends, between teacher and children 	<ul style="list-style-type: none"> ▪ 10-17 people/min ▪ Mixed-culture users, most of passers-by and grouping-users were non-native Dutch (Turkish, Moroccans, Surinamese, others) ▪ Children were the most dominant user group just before the school time is over, but then after the school time is over, the dominant user group were elders/women with children
PLAYGROUND	Morning (08.00-10.00)	<ul style="list-style-type: none"> ▪ Specific way-activities: sitting on groups, eating, drinking, smoking, playing cards, slow walking <p>Sitting around round-table, in terrace, drinking coffee/tea, eating cookies, smoking, and playing cards; walking in slow speed (\pm 5-10 m/min)</p> ▪ Additional, adjacent or associated activities: gossiping, talking, laughing <p>Sometimes laughing, average voice, a lot of hand gestures</p> 	<ul style="list-style-type: none"> ▪ Few people, only 2-3 people, probably because of the rain ▪ Social distance: close phase between friends ▪ The playground & terrace was quiet 	<ul style="list-style-type: none"> ▪ 2-3 people/min ▪ Mixed-culture users: Dutch, Surinamese, Indians ▪ The people who always meet and talk in terrace every morning are local residents and some of them are member of SVA ▪ Elder and adult (2 men and 1 woman) were the most dominant user group
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> ▪ Specific way-activities: sitting on groups, eating, drinking, smoking, playing cards, slow walking <p>Sitting around round-table, in terrace, drinking coffee/tea, eating cookies, smoking, and playing cards; walking in slow speed (\pm 5-10 m/min)</p> ▪ Additional, adjacent or associated activities: gossiping, talking, laughing <p>Sometimes laughing, average voice, a lot of hand gestures</p> 	<ul style="list-style-type: none"> ▪ Social distance: close phase between friends ▪ Intimate distance: close phase especially for parents-kids ▪ During noon, the playground was still empty of children-parents, probably because of drizzle. ▪ During afternoon around 3.15-3.30 p.m, the rain stop, more people came, they were children from local school who spent little time before going home with parents ▪ After 4.30 p.m., the playground was slowly empty 	<ul style="list-style-type: none"> ▪ 4-8 people/min ▪ Mixed-culture users: Dutch, Surinamese, Indians ▪ The people are local residents and some of them are member of SVA ▪ Elder and adult (2 men and 1 woman) were the most dominant user group
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> ▪ Specific way-activities: playing in playground, sitting, watching children playing, eating, slow walking, running <p>Children played with playing fixtures, grouping, accompanied by parents (mothers) who were watching while sitting or also played with them. Parents/mothers brought baby trolley, baby kit, snacks, and drinking water. Children also ate snacks and drinks. Slow walking speed (\pm 10-20 m/min)</p> ▪ Additional, adjacent or associated activities: gossiping, talking, shouting, laughing, feeding smaller children <p>Mothers talked to each other while watching the kids, feeding smaller children, sometimes laughing, average-loud voice, minimal hand gestures while talking, sitting on bench</p> 	<ul style="list-style-type: none"> ▪ 2-7 people/min ▪ Mixed-culture users: Turkish, Moroccans, Surinamese, others ▪ The most dominant user groups were children and parents (mothers) 	
OPEN MARKET AREA	Morning (08.00-10.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking from Pretorialaan to Paul Krugerstraat or vv <p>Walking on pedestrian path between stalls, alone/with family/ friends, empty hands/bring shopping bag/other stuffs, slow speed (\pm 5-10 m/min)</p> 	<ul style="list-style-type: none"> ▪ Installation process: <ul style="list-style-type: none"> - Picking up hollow aluminium frames and 	<ul style="list-style-type: none"> ▪ 12-15 people/min, 6 of them were workers ▪ Mixed-culture users: Turkish, Moroccans, Surinamese, others (all workers are/non-Dutch)

		<ul style="list-style-type: none"> Specific way-activities: installing market stall, smoking, sitting, cleaning up garbage, eating and drinking Picking up equipment and frames out from minivan and arrange it into orders, installing frames, with co-workers, sometimes with smoking, eating snacks or drinking Additional, adjacent or associated activities: talking, shouting Talking/shouting while working/walking/standing, with family/ friends/co-workers, average-loud voice 	<ul style="list-style-type: none"> wooden panel from transport truck - Arranging and connecting the frames into orders - Putting the wooden panel on top of truss frame and on top of table frame - Putting the tent-roof 	<ul style="list-style-type: none"> The most dominant user groups were adult, elders and women Most of them were passers-by
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> Activity proper: walking from Pretorialaan to Paul Krugerstraat or vv Walking on pedestrian path between stalls, alone/with family/ friends, empty hands/bring shopping bag/other stuffs, slow speed (\pm 5-10 m/min) Specific way-activities: installing market stall, smoking, sitting, cleaning up garbage, eating and drinking Picking up equipment and frames out from minivan and arrange it into orders, installing frames, with co-workers, sometimes with smoking, eating snacks or drinking Additional, adjacent or associated activities: talking, shouting Talking/shouting while working/walking/standing, with family/ friends/co-workers, average-loud voice 	<ul style="list-style-type: none"> The installation begins a day before open market and re-installation is done directly after the open market is over. The installation for all stalls takes time \pm 6-7 hours (starts at 8.30 a.m. and finish around 3-4 p.m. Personal distance ranging from public distance-close phase to social distance-close phase for co-workers There are 6 workers to install frame, 5 to install and 1 as cart operator (cart is used to move frames & wooden panel). These workers work in group of 2 and 3 people with different area of working, along Pretorialaan or Paul Krugerstraat. The area will be switched based on instalment/ re-instalment activities 	<ul style="list-style-type: none"> 17-25 people/min, 6 of them were workers Mixed-culture users: Turkish, Moroccans, Surinamese, others (all of the workers are non-Dutch) The most dominant user groups were adult, elders and women Most of them were passers-by
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> Activity proper: walking from Pretorialaan to Paul Krugerstraat or vv Walking on pedestrian path between stalls, alone/with family/ friends, empty hands/bring shopping bag/other stuffs, slow speed (\pm 5-10 m/min) Specific way-activities: installing market stall, smoking, sitting, cleaning up garbage, eating and drinking Picking up equipment and frames out from minivan and arrange it into orders, installing frames, with co-workers, sometimes with smoking, eating snacks or drinking Additional, adjacent or associated activities: talking, shouting Talking/shouting while working/walking/standing, with family/ friends/co-workers, average-loud voice 	<ul style="list-style-type: none"> 22-27 people/min, 6 of them were workers Mixed-culture users: Turkish, Moroccans, Surinamese, others (all of the workers are non-Dutch) The most dominant user groups were adult and children (they were parents-children who went back from school) Most of them were passers-by 	
BOTANIC GARDEN	Morning (08.00-10.00)	<ul style="list-style-type: none"> Specific way-activities: opening the gate, checking the garden, picking up some plastic trash near fence, checking the dried seed, open the garden house Additional, adjacent or associated activities: talking Talking while sitting, with co-workers, average-low voice 	<ul style="list-style-type: none"> There are 3 gardeners, work in day shift of Monday-Friday and Saturday-Sunday. Their main activities are ensure cleanliness of botanic garden, taking care of plants, collect dried seeds 	<ul style="list-style-type: none"> 2 people/min Mono-cultural user (for today): native Dutch The most dominant user group was elders. The guard of botanic garden; Andries is 56 years old and Gerard is 72 years old.
	Day/noon (10.00-14.00)	Specific way-activities: sitting on the garden house while keeping the garden, checking the dried seed, drinking, reading/search info in books, eating, drinking		Andries is worker of <i>Deelgemeente</i> , he works for 5 days (Monday-Friday). Gerard is a volunteer in a social service program, he

		<p>Preparing coffee after opening the house, sitting on chair, sometimes open books to search for type & Latin name of plants, checking the dried seed in the storage, give labels, lunch</p> <ul style="list-style-type: none"> Additional, adjacent or associated activities: talking Talking with co-worker, low-average voice, with hand gestures 	<ul style="list-style-type: none"> of each plants in storage room and maintain its database in simple forms to be collected later on by workers of Green Department of <i>Gemeente</i> Rotterdam Few people come to botanic garden, sometimes only groups of students from local school for nature or biology class Social distance: close phase between friends 	works for 3 days a week (day off in between), but he comes to the park every day because he feels that the park is part of his life since he worked in <i>Afrikaanderwijk</i> 16 years ago. Andries and Gerard spend most of their time in botanic garden.
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> Specific way-activities: sitting on the garden house while keeping the garden, checking the dried seed, drinking, reading/search info in books, closing gate <ul style="list-style-type: none"> Sitting on chair, sometimes open books to search for type & name of plants, checking the dried seed in the storage & bucket, give labels to dried seed stored in bottles, going out to the garden to check the plants and plantation house, closing the gate after opening hour. The garden house consists of three main rooms: living room, kitchen, and storage room. No television, only radio. Most of specific activities happen in living room. Talking may be the most often activity done inside the house Additional, adjacent or associated activities: talking Talking with co-worker, low-average voice, with hand gestures 		
PEDESTRIAN AREA	Morning (08.00-10.00)	<ul style="list-style-type: none"> Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs³, average-fast speed (\pm 80-90 m/min), some people used umbrella, some even ran 	<ul style="list-style-type: none"> Mostly passers-by, 2-3 people per group of passers by Social distance: close phase between friends/families Pedestrian area was so quiet, few people probably because of the rain 	<ul style="list-style-type: none"> 8-13 people/min Mixed-culture users, most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, others) Most of them were elders, women, and few children
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs³, average-fast speed (\pm 80-90 m/min), some people used umbrella, some even ran 		<ul style="list-style-type: none"> 11-15 people/min Mixed-culture users, most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, others) Most of them were elders, women, and few children
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs; slow-average speed (\pm 50-80 m/min) Specific way-activities: playing jump ropes, parents came to pick up children, sitting, standing leaning on the fence, eating, drinking <ul style="list-style-type: none"> Some children about 5-6 years old went out of kindergarten building and played jump-rope in pedestrian area and football in basketball/football area while waiting for their parents to come. They probably join the play group in kindergarten. Parents came to pick up their children. Parents waited for school time was over while sitting on low walled-border/standing/leaning in kindergarten fence, with family (children- 	<ul style="list-style-type: none"> Many passers-by and users in group, consists of 2-11 people, mostly family and friends Social distance/personal distance: close phase between friends and families Around 2.45-3.15 p.m. the rain stop, some children went out for playing, accompanied by the teacher 	<ul style="list-style-type: none"> 13-24 people/min Mixed-culture users, most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, others) Most of them were elders, women, and few children (they went with the families). Groups of children consist of 3-12 people/group.

		<ul style="list-style-type: none"> ▪ parents)/friends, looking at people passing by or children playing, while eating and drinking snacks ▪ Additional, adjacent or associated activities: gossiping, talking, shouting, laughing Gossiping/talking/shouting/laughing while playing/walking/sitting/standing, with family/friends, parents holding hands with the children, with hand gestures, average-loud voice 	<ul style="list-style-type: none"> ▪ Around 3.15-3.30 p.m., parents came to pick up their children. Some of them stayed longer for talking, some went to playground, and some directly went home after talking. They left around 4-4.40 p.m. ▪ About 10-11 cleaning service workers came and clean the area around 1.47 p.m. 	
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1. Types of activities are derived from Rapoport (1977). He categorizes activities into four major groups (see chapter 2). Personal distance is derived from the concept of Distance in Personal Space defined by Hall (1969) (see chapter 2).
2. Speed measured manually with stopwatch by calculating distance per time (in this case, using meter/minute unit [m/min]). The counting of walking speed and density of people are done at the same time. Average walking speed of human (adult) is 5.3 km/hour or almost equal to 88 m/min.
3. Other stuffs refer to things or equipment which can not be concluded into bag or shopping bag, such as baby trolley, vendor cart, bicycle, mechanic wheel-chair, with pets (e.g. dogs), sport equipment (e.g. ball) etc.
4. Density measured manually by counting people in the same area by measuring unit of people/minute [people/min]. Numbers given are obtained from selected time within each time frame (morning, day/noon, afternoon) and ranging from minimum to maximum number of people within a minute, since the researcher has to move from one part to another part of *Afrikaanderplein* within each time frame.

C. DATE/TIME : WEDNESDAY, JULY 8TH 2009 (WEEKDAY/WORKDAY + OPEN MARKET DAY, SUNNY DAY, SOCIAL EVENT)

SPACE DIVISION	TIME + FRAME	ACTIVITIY + DESCRIPTION (ACTIVITY TYPE ¹ , WALKING SPEED ² , ETC.)	IMPORTANT REMARKS	USER GROUPS + DESCRIPTION (CULTURE, DENSITY ⁴ , ETC.)
GREEN PARK	Morning (08.00-10.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking to/back from open market, walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs³, slow-average speed (\pm60-90 m/min) ▪ Specific way-activities: light sport e.g. jogging, slow-walking Jogging and slow-walking on grassy area/pathways/hardscape periphery area/stairs, alone/with friends, average speed for jogging (\pm 90-150 m/min) ▪ Additional, adjacent or associated activities: gossiping, talking Talking & gossiping while jogging/walking 	<ul style="list-style-type: none"> ▪ Mostly passers-by instead of users ▪ Grouping-users were few, only residents who did light sport, consists of 2-3 people/group ▪ Social distance: close phase between friends ▪ Personal distance: close phase couples, families 	<ul style="list-style-type: none"> ▪ 12-25 people/min ▪ Mixed-culture users: <ul style="list-style-type: none"> - Two (2) Turkish/Moroccans girl were jogging and slow walking on hardscape area - Most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, Africans, others) ▪ Most of them were elders, women
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking to/back from open market, walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs, slow-average speed (\pm 60-90 m/min) ▪ Specific way-activities: light sport (slow-walking, mini football, cycling), sitting, smoking, sleeping/sunbathing, cleaning park & grass cutting <ul style="list-style-type: none"> - Mini football on grassy area while picnic, sometimes with cuddling, with family; slow-walking/sitting on grassy area, pathways/hardscape periphery area/stairs, alone/with friends; cycling in pathways/grassy area, average speed (\pm 60-80 m/min) - Sitting on bench/grass/stairs while eating/smoking; sleeping on grassy area under shade; reading while sitting on stairs; sunbathing while sitting on the bench/grassy area, alone/with family/friends - Maintenance Company did the cleaning and grass cutting. A man operated car-cutting machine, went thoroughly around the park and the cleaning service workers continued to clean the park after the grass cutting was done. It took time for about 1-1.5 hour to do the grass cutting and cleaning. The activity started around 11 a.m. ▪ Additional, adjacent or associated activities: gossiping, talking, shouting, laughing Gossiping/talking/shouting/laughing while picnic/walking/ standing/sitting on grassy area/hardscape periphery area/stairs, while eating and drinking, with hand gestures, average-loud voice, with family/friends ▪ Symbolic activity: drinking & eating and family picnic after shopping in open market Drinking & eating, picnic after shopping while sitting on grassy area/hardscape periphery area/stairs, with family/friends, sometimes with smoking & sleeping. Children sometimes ran around the family. Among those people who came for picnic were colleagues in the same office nearby 	<ul style="list-style-type: none"> ▪ More users and passers-by came during lunch time ▪ Grouping-user slowly increased during lunchtime, a group may consists of 4-11 people, mostly doing picnic ▪ Personal distance: close phase especially for couples and families ▪ Social distance: close phase between friends ▪ People gathered in the part of park which is equipped with benches & trees (on grassy area/bench/hardscape near main gate of Paul Krugerstraat and Pretoriaan) ▪ Some people left their trashes in place instead of throwing it into garbage bins. But some cleaning service officers came to clean the park, they are assigned by ROTEB (cleaning and manufacturing company of Rijnmond region) 	<ul style="list-style-type: none"> ▪ 16-39 people/min ▪ Mixed-culture users: <ul style="list-style-type: none"> - Local residents who enjoyed family picnic: Turkish, Moroccan, Surinamese, Africans. Most of them consist of parents & children (4-5 people/family) - Non local residents who enjoyed family picnic: Dutch, Surinamese, others. Most of them consist of parents & children (4-5 people/family) - Most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, Africans, others) - Most of single users were non-native Dutch (Turkish, Moroccans, Surinamese, Africans, others) ▪ Most of grouping users were families and couples. Families enjoy family picnic every week

		<p><i>Afrikaanderwijk</i>. During lunch time, they came to open market for buying some fruits, food and snacks, and afterwards they had little picnic before they went back for working.</p>		
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking to/back from open market, walking from Pretoriaalaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs, slow-average speed (\pm 60-90 m/min) ▪ Specific way-activities: light sport (slow-walking, cycling), sitting, smoking, sleeping <ul style="list-style-type: none"> - Slow-walking on grassy area, pathways/hardscape periphery area/stairs, alone/with friends; cycling in pathways/grassy area, slow-average speed (\pm 60-90 m/min) - Sitting on bench/grass/stairs while eating/smoking, alone/with family/friends; sleeping on grassy area under shade ▪ Additional, adjacent or associated activities: gossiping, talking, shouting, laughing Gossiping/talking/shouting/laughing while picnic/walking/ standing/sitting on grassy area/hardscape periphery area/stairs, while eating and drinking, with hand gestures, average-loud voice, with family/friends ▪ Symbolic activity: drinking & eating and family picnic after shopping in open market Drinking & eating, picnic after shopping while sitting on grassy area/hardscape periphery area/stairs, with family/friends, sometimes with smoking & sleeping, children ran around family 	<ul style="list-style-type: none"> ▪ More passers-by came during afternoon ▪ A lot of grouping-user ▪ Personal distance: close phase especially for couples and families ▪ Social distance: close phase between friends ▪ Some people left their trashes in place instead of throwing it into garbage bins 	<ul style="list-style-type: none"> ▪ 32-47 people/min ▪ Mixed-culture users: <ul style="list-style-type: none"> - Most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, others) - Most of single users were non-native Dutch (Turkish, Moroccans, Surinamese, others) - Most of grouping users were families and couples, most of them left around 2-3 p.m. There were some families enjoyed picnic or talking with friends, such as a group of Dutch men, a group of Turkish/Moroccan girls, and many other families.
BASKETBALL and FOOTBALL FIELD	Morning (08.00-10.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking to/back from open market, walking from Pretoriaalaan to Paul Krugerstraat or vv Walking in some part of field, alone/with family/friends, empty hands/bring bag/other stuffs, slow-average speed (\pm 60-90 m/min) ▪ Additional, adjacent or associated activities: talking, shouting, laughing Talking with friends, with hand gestures, low-average voice 	<ul style="list-style-type: none"> ▪ Mostly passers-by instead of users, alone/ in group of 2-5 people ▪ Social distance: close phase between friends ▪ Personal distance: close phase especially for couples and families 	<ul style="list-style-type: none"> ▪ 9-15 people/min ▪ Mixed-culture users, most of passers-by and grouping-users were non-native Dutch (Turkish, Moroccans, Surinamese, others)
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> ▪ Specific way-activities: playing basketball, football With friends, playing in 2 different area. About 7-9 children between 6-13 years old played football, 2 children played basketball 2-on-2 ▪ Additional, adjacent or associated activities: talking, shouting, laughing Talking/shouting/laughing with friends while playing, with hand gestures, average-loud voice 	<ul style="list-style-type: none"> ▪ More users and passers-by came during noon, especially a group of children ▪ In the morning-afternoon, some part of basketball court was used as parking space for logistic car and generator set for gathering event 	<ul style="list-style-type: none"> ▪ 13-22 people/min ▪ Mixed-culture users, most of passers-by and grouping-users were non-native Dutch (Turkish, Moroccans, Surinamese, others) ▪ The most dominant user groups were children
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> ▪ Specific way-activities: playing football With friends, playing in 2 different area. About 7-9 children between 6-13 years old played football, 2 children played basketball 2-on-2. The children playing basketball finished earlier than those who play football ▪ Additional, adjacent or associated activities: talking, shouting, laughing, fighting 		<ul style="list-style-type: none"> ▪ 12-18 people/min ▪ Mixed-culture users, most of passers-by and grouping-users were non-native Dutch (Turkish, Moroccans, Surinamese, others) ▪ The most dominant user groups were children

		Talking/shouting/laughing/fighting with friends, while playing, with hand gestures, average-loud voice		
PLAYGROUND	Morning (08.00-10.00)	<ul style="list-style-type: none"> Specific way-activities: sitting on groups, eating, drinking, smoking, playing cards, slow walking Sitting around round-table, in terrace, drinking coffee/tea, eating cookies, smoking, and playing cards; walking in slow speed ($\pm 5-10$ m/min) Additional, adjacent or associated activities: gossiping, talking, laughing Sometimes laughing, average voice, a lot of hand gestures 	<ul style="list-style-type: none"> Few people, only 5-8 people Social distance: close phase between friends The playground was quiet 	<ul style="list-style-type: none"> 8-21 people/min Mixed-culture users: Dutch, Moroccans, Surinamese, Indians The people who always meet and talk in terrace every morning are local residents and some of them are member of SVA Elder and adult (mostly men) were the most dominant user group
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> Specific way-activities: playing in playground, sitting, smoking, playing cards, watching children playing, eating, drinking, slow walking, running <ul style="list-style-type: none"> Sitting around round-table, in terrace, drinking coffee/tea, eating cookies, smoking, and playing cards; walking in slow speed ($\pm 5-10$ m/min) Children played with playing fixtures, grouping, accompanied by parents (mothers) who were watching while sitting or also played with them. Parents/mothers brought baby trolley, baby kit, snacks, and drinking water. Children also ate snacks and drinks. Slow walking speed ($\pm 10-20$ m/min) Younger children (4-7 years) played with playing fixtures, older children (9-13 years old) played in mini football field Additional, adjacent or associated activities: gossiping, talking, shouting, laughing, feeding smaller children Mothers talked to each other while watching the kids, feeding smaller children, sometimes laughing, average-loud voice, minimal hand gestures while talking, sitting on bench 	<ul style="list-style-type: none"> More families with children came during noon. Playground acts as a meeting point for mothers-children Social distance: close phase between friends Intimate distance: close phase especially for parents-kids There were noise in playground and terrace The groups in the terrace left just before lunch time, and some other people came to the terrace, most of them are parents 	<ul style="list-style-type: none"> 14-26 people/min Mixed-culture users: Dutch, Turkish, Moroccans, Surinamese, others The most dominant user groups were children and parents (most of them were the mothers)
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> Specific way-activities: playing, sitting, watching children playing, eating, slow walking, playing football <ul style="list-style-type: none"> Children played with playing fixtures, grouping, accompanied by parents (mothers) who were watching while sitting or also playing with them. Parents/mothers brought baby trolley, baby kit, snacks, and drinking water. Children also ate snacks and drinks. Slow walking speed ($\pm 10-20$ m/min) Younger children (4-7 years) played with playing fixtures, older children (9-13 years old) played in mini football field Additional, adjacent or associated activities: gossiping, talking, shouting, laughing, feeding smaller children Mothers talked to each other while watching the kids, feeding smaller children, sometimes laughing, average-loud voice, minimal hand gestures while talking, sitting on bench 	<ul style="list-style-type: none"> Some of the people who came were previously from open market, mini-stage area, or from other places (e.g. from home, nearby) After 5 p.m., the playground is slowly empty 	<ul style="list-style-type: none"> 18-25 people/min Mixed-culture users: Dutch, Turkish, Moroccans, Surinamese, others The most dominant user groups were children and parents (most of them were the mothers)
OPEN MARKET AREA	Morning (08.00-10.00)	<ul style="list-style-type: none"> Activity proper: walking to/back from/around open market Walking on pedestrian path between stalls, alone/with family/friends, empty hands/bring shopping bag/other stuffs, slow speed ($\pm 5-10$ m/min) 	<ul style="list-style-type: none"> Sellers came around 8.00-8.45 a.m, and most of them were ready to sell between 9.00-9.30 a.m. It took 	<ul style="list-style-type: none"> Uncountable density of people, many people during open market More sellers of descent immigrants than native Dutch (mostly Turkish-Moroccan)

		<ul style="list-style-type: none"> ▪ Specific way-activities: preparing market stall, selling & shopping in open market, smoking, sitting, looking around, cleaning up garbage, eating and drinking <ul style="list-style-type: none"> - Preparing stall, picking up equipment and things out from minivan and arrange it into orders, with family/friends, singing - Sitting on own bench/hardscape while smoking/eating/selling, with family/friends - People sold and bought things by standing; buyers came alone/with family/friends, bargaining, seller cleaning up their garbage and put their garbage behind their stall in boxes/plastic - Average-loud voice, a lot of hand gestures, eating and drinking ▪ Additional, adjacent or associated activities: gossiping, talking, shouting, laughing Gossiping/talking/shouting/laughing while working/walking/ standing/sitting on bench/hardscape, with family/friends, average-loud voice, sometimes with singing, sometimes with hand gestures 	<p>minimum time of ± 30 minutes to prepare stall</p> <ul style="list-style-type: none"> ▪ Frames were installed a day before and were un-installed directly after open market ▪ Things that are sold in the open market can be classified into two groups: <ul style="list-style-type: none"> - Non-food products (<i>kramerij</i>); e.g. clothes, fabrics, cosmetics, electronic & computer equipments (e.g. CDs, battery), shoes & sandals, furniture & dining equipment (e.g. plates), bedding equipment (e.g. bed sheet, pillows) - Food products; e.g. meats, dairy product, fruit & vegetables, bread, snacks (chocolate/candy, French fries) ▪ Portable public toilets are available during days of open market, located in side wall of African Inn building (student housing of Erasmus University) ▪ Some visitors came from outside <i>Afrikaanderwijk</i> during open market. They were people who previously live there, people who work nearby, or came just because of the open market. ▪ Social distance: close phase for families/ friends and far phase for buyers-sellers ▪ Buyers came alone/in group by 3-5 people ▪ Some of the van were parked in parking area or 	<ul style="list-style-type: none"> ▪ sellers). Most of Dutch, Turkish, and Moroccans sellers sell food instead of <i>kramerij</i>, while most of Indians, Africans, or Surinamese sellers sell <i>kramerij</i>. ▪ Majority of visitors were also immigrants decent, less Dutch. The visitors were not only from <i>Afrikaanderwijk</i> and surrounding neighbourhood, but also from other part of Rotterdam and from other nearby cities ▪ Almost all user groups can be found there, but the groups of women and elders were more than groups of teenagers and children ▪ Some people came directly from their home or after visiting the social events.
Day/noon (10.00-14.00)		<ul style="list-style-type: none"> ▪ Activity proper: walking to/back from/around open market Walking on pedestrian path between stalls, alone/with family/ friends, empty hands/bring shopping bag/other stuffs, slow speed (± 5-10 m/min) ▪ Specific way-activities: selling & shopping in open market, guarding market stall, smoking, sitting, looking around, cleaning up garbage <ul style="list-style-type: none"> - Guarding stall, picking up more equipment and things from minivan and arrange it into orders, with family/friends - Sitting on own bench while smoking/eating; with family/friends - People sold and bought things by standing; buyers came alone/with family/friends, bargaining, seller cleaning up their garbage and put their garbage behind their stall in boxes/plastic ▪ Additional, adjacent or associated activities: gossiping, talking, shouting, laughing Gossiping/talking/shouting/laughing while working/walking/ standing/sitting on bench/hardscape, with family/friends, average-loud voice, sometimes with singing, with hand gestures 		
Afternoon (14.00-18.00)		<ul style="list-style-type: none"> ▪ Activity proper: walking to/back from/around open market Walking on pedestrian path between stalls, alone/with family/ friends, empty hands/bring shopping bag/other stuffs, slow speed (± 5-10 m/min) ▪ Specific way-activities: selling & shopping in open market, finishing market stall, smoking, sitting, looking around, cleaning up garbage <ul style="list-style-type: none"> - Guarding stall, picking up more equipment and things from minivan and arrange it into orders, with family/friends - Finishing stall, picking up equipment and things to minivan, with family/friends. Some sellers finished earlier around 4 p.m. than others (usually around 5-5.30 p.m) 		

		<ul style="list-style-type: none"> - Sitting on own bench while smoking/eating; with family/friends - People sold and bought things by standing; buyers came alone/with family/friends, bargaining, seller cleaning up their garbage and put their garbage behind their stall in boxes/plastic. Some cleaning service officer coming and picking up garbage ▪ Additional, adjacent or associated activities: gossiping, talking, shouting, laughing Gossiping/talking/shouting/laughing while working/walking/ standing/sitting on bench/hardscape, with family/friends, average-loud voice, sometimes with singing, with hand gestures 	behind stalls which were next to main gate	
BOTANIC GARDEN	Morning (08.00-10.00)	<ul style="list-style-type: none"> ▪ Specific way-activities: opening the gate, checking the garden, picking up some plastic trash near fence, checking the dried seed, open the garden house ▪ Additional, adjacent or associated activities: talking 	<ul style="list-style-type: none"> ▪ There are 3 gardeners, work in day shift of Monday-Friday and Saturday-Sunday. 	<ul style="list-style-type: none"> ▪ 2 people/min ▪ Mono-cultural user: native Dutch ▪ The most dominant user group was elders
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> ▪ Specific way-activities: sitting on the garden house while keeping the garden, checking the dried seed, drinking, reading/search info in books, eating, drinking <ul style="list-style-type: none"> - Preparing coffee after opening the house, sitting on own-chair, sometimes open books to search for type & Latin name of plants, checking the dried seed in the storage, give labels, lunch - One colleague came by to handover the new flower to be planted in botanic garden. They checked the plant, tried to separate the root from attached soil and grass, and put it in the basket. They collected small part of the flower seed to be put into drying basket - Four field workers from Green Department of <i>Gemeente</i> came by to check the new plant, to check the database, and to make a new database. They discussed intensively with the guard of botanic garden in the garden house and outside the garden house ▪ Additional, adjacent or associated activities: talking, laughing Talking and laughing with co-worker, low-average voice, with hand gestures 	<ul style="list-style-type: none"> ▪ Their main activities are ensure cleanliness of botanic garden, taking care of plants, collect dried seeds of each plants in storage room and maintain its database in simple forms to be collected later on by workers of Green Department of <i>Gemeente</i> Rotterdam ▪ Few people come to botanic garden, sometimes only groups of students from local school for nature or biology class ▪ During the visit of field workers from <i>Gemeente</i>, they sat inside the garden house, then went out to check the plant and checked/added new database ▪ Social distance: close phase between friends 	<ul style="list-style-type: none"> ▪ 7 people/min (3 gardeners and 4 field workers of Green Department) ▪ Mono-cultural user: native Dutch ▪ The most dominant user group was adult and elders (men between 35-72 years old).
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> ▪ Specific way-activities: sitting on the garden house while keeping the garden, checking the dried seed, drinking, reading/search info in books, closing gate <ul style="list-style-type: none"> - Sitting on chair, sometimes open books to search for type & name of plants, checking the dried seed in the storage & bucket, give labels to dried seed stored in bottles, going out to the garden to check the plants and plantation house, closing the gate after opening hour. - The garden house consists of three main rooms: living room, kitchen, and storage room. No television, only radio. Most of specific activities happen in living room. Talking may be the most often activity done inside the house ▪ Additional, adjacent or associated activities: talking Talking with co-worker, low-average voice, with hand gestures. 		

PEDESTRIAN AREA	Morning (08.00-10.00)	<ul style="list-style-type: none"> Activity proper: walking to/back from open market, walking from Pretoralaan to Paul Krugerstraat or vv, walking around mini stages Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs, slow-average speed ($\pm 30-80$ m/min) Specific way-activities: standing while reading, sitting, smoking, eating, drinking, installing mini stages Preparing mini stages, picking up equipment and things out from minivan and arrange it into orders, with friends, sometimes with singing and shouting. There are 4 mini stages to be installed: main stage, cooking stage 1, 2, and 3. Main stage was used for performance, and the other 3 stages were used as cooking place (for light cooking and drinking). Some benches and tables were put in main central area between stages. One man checked the generator set; 4 people checked the stages and equipment. Additional, adjacent or associated activities: gossiping, talking, shouting, laughing Gossiping/talking/shouting/laughing, sitting/standing e.g. in bicycle/in corner, with family/friends, a lot of hand gestures, average-loud voice 	<ul style="list-style-type: none"> Mostly passers-by instead of users in the morning, max of 4-6 people per group Social distance: close phase between friends Personal distance: close phase especially for couples and families The vans and generator set for the event were parked behind the stage temporarily. The portable public toilets were also placed next to the mini stage (these portable toilets are available during open market day and during social events) 	<ul style="list-style-type: none"> 21-27 people/min Mixed-culture users, most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, others) Most of them were elders, women, and few children (with the families)
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> Activity proper: walking to/back from open market, walking from Pretoralaan to Paul Krugerstraat or vv, walking around mini stages Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs, slow-average speed ($\pm 30-80$ m/min) Specific way-activities: sitting, smoking, eating, drinking, cycling, dancing, singing <ul style="list-style-type: none"> Sitting on low walled-border, smoking/looking at people passing by or children playing football, eating and drinking food bought in open market, alone/with family/friends, sometimes hold hands, people passing by with bicycle The man, women, and elders sit on the bench while smoking, talking, eating, dancing around, sing along with the singer on the stage. The children made some drawings on the standing board. Most of the people who join the social event were adult, elders, and children, only few teenagers joining for guarding the stages. Most of them flocked (sitting, standing, leaning on wall/fence) around <i>Plein 3</i>, talking, smoking and watch people There were people from different culture background singing on the stage with their traditional music instruments. The MC walked around the audience and to other mini stages just to talk with people there and asked them to dance/sing along There were 2 cameramen & photographer. Walked around, dance or sing Additional, adjacent or associated activities: gossiping, talking, shouting, laughing Gossiping/talking/shouting/laughing, sitting/standing e.g. in bicycle/in corner, with family/friends, a lot of hand gestures, average-loud voice 	<ul style="list-style-type: none"> Grouping-users were increasing during noon just before lunch time, consists of 3-52 people/group, mostly family and friends (man, women, children, and children) 	<ul style="list-style-type: none"> Around 47-72 people/min Mixed-culture users, most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, others) Most of them were elders, adult, children, and some youth

	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking to/back from open market, walking from Pretoriaan to Paul Krugerstraat or vv, walking around mini stages Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs, slow-average speed (\pm 30-80 m/min) ▪ Specific way-activities: sitting, smoking, eating, drinking, cycling, dancing, singing, uninstalling the stages <ul style="list-style-type: none"> - Sitting on low walled-border, smoking/looking at people passing by or children playing football, eating and drinking food bought in open market, alone/with family/friends, sometimes hold hands, people passing by with bicycle - The man, women, and elders sit on the bench while smoking, talking, eating, dancing around, sing along with the singer on the stage. The children made some drawings on the standing board. Most of the people who join the social event were adult, elders, and children, only few teenagers joining for guarding the stages. Most of them flocked (sitting, standing, leaning on wall/fence) around <i>Plein 3</i> and talk to each other or just smoking and watch people - There were people from different culture background singing on the stage with their traditional music instruments. During afternoon, there were DJ playing more upbeat music, and during this moment more teenagers coming to the social event. The MC walked around the audience and to other mini stages just to talk with people there and asked them to dance/sing along - Uninstalling mini stages, picking up equipment and things into minivan, with friends, sometimes with singing and shouting. ▪ Additional, adjacent or associated activities: gossiping, talking, shouting, laughing Gossiping/talking/shouting/laughing, sitting/standing e.g. in bicycle/in corner, with family/friends, a lot of hand gestures, average-loud voice 	<ul style="list-style-type: none"> ▪ Passers-by max of 4-6 people per group ▪ Grouping-users were stable during noon, consists of 2-57 people/group, mostly family and friends (man, women, children, and children). The groups decreased after around 4.30 p.m. ▪ Social distance: close phase between friends ▪ Personal distance: close phase especially for couples and families ▪ The social event ended around 5.30 p.m. The men who installed the mini stages were back to uninstall the stages and move the generator set from the basketball field 	<ul style="list-style-type: none"> ▪ Around 39-70 people/min ▪ Mixed-culture users, most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, others) ▪ Most of them were elders, adult, children, and some youth
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1. Types of activities are derived from Rapoport (1977). He categorizes activities into four major groups (see chapter 2). Personal distance is derived from the concept of Distance in Personal Space defined by Hall (1969) (see chapter 2).
2. Speed measured manually with stopwatch by calculating distance per time (in this case, using meter/minute unit [m/min]). The counting of walking speed and density of people are done at the same time. Average walking speed of human (adult) is 5.3 km/hour or almost equal to 88 m/min.
3. Other stuffs refer to things or equipment which can not be concluded into bag or shopping bag, such as baby trolley, vendor cart, bicycle, mechanic wheel-chair, with pets (e.g. dogs), sport equipment (e.g. ball) etc.
4. Density measured manually by counting people in the same area by measuring unit of people/minute [people/min]. Numbers given are obtained from selected time within each time frame (morning, day/noon, afternoon) and ranging from minimum to maximum number of people within a minute, since the researcher has to move from one part to another part of *Afrikaanderplein* within each time frame.

D. DATE/TIME : TUESDAY, JULY 14TH 2009 (WEEKDAY/WORKDAY, A DAY BEFORE OPEN MARKET DAY, SUNNY DAY)

SPACE DIVISION	TIME + FRAME	ACTIVITY + DESCRIPTION (ACTIVITY TYPE ¹ , WALKING SPEED ² , ETC.)	IMPORTANT REMARKS	USER GROUPS + DESCRIPTION (CULTURE, DENSITY ⁴ , ETC.)
GREEN PARK	Morning (08.00-10.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs, slow-average speed (\pm 60-90 m/min) ▪ Specific way-activities: light sport e.g. slow-walking, gas pipe maintenance work, feeding birds/ducks <ul style="list-style-type: none"> - Slow-walking on hardscape periphery area/stairs, with friends, average speed (\pm 90-150 m/min) - There was marker/border line and equipments for gas pipe maintenance work near main gate to Pretoriaan. Some stones were already unplaced and dug. The workers unplaced more stones to make some spaces for new pipes - Feeding birds/duck in pond/grassy area with crushed breads, alone ▪ Additional, adjacent or associated activities: talking Talking & gossiping while walking, average voice 	<ul style="list-style-type: none"> ▪ Mostly passers-by instead of users ▪ Grouping-users were few in the morning, only residents who did light sport, consists of 2-3 people/group ▪ Grouping users increased during noon, consist of 3-4 people/group ▪ Social distance: close phase between friends ▪ Personal distance: close phase especially for couples and families ▪ People mostly gathered in part of park which is equipped with benches and trees, particularly near main gate of Paul Krugerstraat ▪ The gas pipe maintenance work was planned to be carried out for about 2 weeks. Today the workers just unplaced some stones and dug in the gas pipe location, but some materials were already placed, e.g. new pipes, joints, and welding equipment 	<ul style="list-style-type: none"> ▪ 12-19 people/min ▪ Mixed-culture users: <ul style="list-style-type: none"> - Two (2) Turkish/Moroccans girl were jogging and slow walking on hardscape area - Most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, Africans, Chinese, Indians, others) - There were 3 workers for gas pipe maintenance: 2 of them are native Dutch and another from Curacao ▪ Most of the people were elders and women
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs, slow-average speed (\pm 60-90 m/min) ▪ Specific way-activities: light sport e.g. slow-walking, playing kite, sitting, eating & drinking, family picnic, working with laptop, smoking, sleeping, gas pipe maintenance work <ul style="list-style-type: none"> - Slow-walking on hardscape periphery area/stairs, with friends, average speed (\pm 90-150 m/min); playing kite on grassy area with family, sitting on grassy area/bench/stairs, eating & drinking while picnic on grassy area, sitting on bench while working with laptop and smoking; sleeping under the tree - There was marker/border line and equipments for gas pipe maintenance work near main gate to Pretoriaan. Some stones were already unplaced and dug. The workers unplaced more stones to make some spaces for new pipes, place more sand near the foundation and used a stone plate to compact the sand near the foundation (stone plate was moved by using mini mobile crane) ▪ Additional, adjacent or associated activities: talking, shouting, laughing Talking while walking, with family/friends, average voice, laughing, shouting, sometimes cuddling, average voice 		<ul style="list-style-type: none"> ▪ 16-23 people/min ▪ Mixed-culture users: <ul style="list-style-type: none"> - Two (2) Turkish/Moroccans girl were jogging and slow walking on hardscape area - Most of passers-by or single-users were non-native Dutch (Turkish, Moroccans, Surinamese, Africans, Chinese, Indians, others) - There were 3 workers for gas pipe maintenance: 2 of them are native Dutch and another from Curacao ▪ Most of the people were elders, adult and women
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs, slow-average speed (\pm 60-90 m/min) 		<ul style="list-style-type: none"> ▪ 14-27 people/min ▪ Mixed-culture users: <ul style="list-style-type: none"> - Most of passers-by or single-users were non-native Dutch (Turkish, Moroccans,

		<ul style="list-style-type: none"> Specific way-activities: light sport (e.g. slow-walking, playing kite, cycling), sitting, eating & drinking, family picnic, working with laptop, smoking, sleeping, gas pipe maintenance work <ul style="list-style-type: none"> - Slow-walking on hardscape periphery area/stairs, with friends, average speed (\pm 90-150 m/min); playing kite on grassy area with family, sitting on grassy area/bench/stairs, eating & drinking while sitting or picnic on grassy area, sitting on bench while working with laptop and smoking; sleeping under the tree; cycling on grassy area/pedestrian path/hardscape periphery area, slow-average speed (\pm 60-90 m/min) - There was marker/border line and equipments for gas pipe maintenance work near main gate to Pretoriaan. The workers continued with their work of un-installing the joints Additional, adjacent or associated activities: talking, shouting, laughing Talking while walking, with family/friends, average voice, laughing, shouting, sometimes cuddling, average voice 		<ul style="list-style-type: none"> Surinamese, Africans, others) - There were 3 workers for gas pipe maintenance: 2 of them are native Dutch and another from Curacao ▪ Most of the people were elders, adult and women
BASKETBALL and FOOTBALL FIELD	Morning (08.00-10.00)	<ul style="list-style-type: none"> Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking in some part of field, alone/with family/friends, empty hands/bring bag/other stuffs, slow-average speed (\pm 60-90 m/min) Additional, adjacent or associated activities: talking Talking, with friends/family, with hand gestures, average voice 	<ul style="list-style-type: none"> Mostly passers-by, alone/in group of 2 people, friends/families More users (single or grouping) and passers-by came during noon, especially group of children. After 4 p.m., they went home or to other place. Children were dominant user groups Social distance: close phase between friends 	<ul style="list-style-type: none"> 7-10 people/min Mixed-culture users, most of passers-by or single-users were non-native Dutch (Turkish, Moroccans, Surinamese, Africans, others) Most of the people were elders, women, and children
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking in some part of field, alone/with family/friends, empty hands/bring bag/other stuffs, slow-average speed (\pm 60-90 m/min) Additional, adjacent or associated activities: talking Talking, with friends/family, with hand gestures, average voice 		<ul style="list-style-type: none"> 8-15 people/min Mixed-culture users, most of passers-by or single-users were non-native Dutch (Turkish, Moroccans, Surinamese, Africans, others) Most of the people were elders, women, and children
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> Specific way-activities: playing football, watching children, climbing fence About 3-4 children between 7-10 years old played football, with friends, lots of shouting and running. Sometimes they climbed the fence just for fun Additional, adjacent or associated activities: talking, shouting, laughing Talking/shouting/laughing with friends, while playing/standing/sitting/leaning on fence, with hand gestures, average-loud voice 		<ul style="list-style-type: none"> 7-12 people/min Mixed-culture users, most of passers-by or single-users were non-native Dutch (Turkish, Moroccans, Surinamese, Africans, others) Children were the most dominant user group
PLAYGROUND	Morning (08.00-10.00)	<ul style="list-style-type: none"> Specific way-activities: sitting on groups, eating, drinking, smoking, playing cards, slow walking Sitting around round-table, in terrace, drinking coffee/tea, eating cookies, smoking, and playing cards; walking in slow speed (\pm 5-10 m/min) Additional, adjacent or associated activities: gossiping, talking, laughing Sometimes laughing, average voice, a lot of hand gestures 	<ul style="list-style-type: none"> Few people, only 3-5 people, probably because of holiday Social distance: close phase between friends The playground was very quiet 	<ul style="list-style-type: none"> 6-11 people/min Mixed-culture users: Dutch, Surinamese, Indians The people who always meet and talk in terrace every morning are local residents, some of them are member of SVA Elders and adult were the dominant users

	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> ▪ Specific way-activities: sitting on groups, eating, drinking, smoking, playing cards, playing in playground, watching children, slow walking <ul style="list-style-type: none"> - Sitting around round-table, in terrace, drinking coffee/tea, eating cookies, smoking, and playing cards; walking in slow speed ($\pm 5-10$ m/min) - Children played with playing fixtures, grouping, accompanied by parents (mothers) who were watching while sitting or also played with them. Parents/mothers brought snacks and drinking water. Children also ate snacks and drinks. Slow walking speed ($\pm 10-20$ m/min) - Younger children (4-7 years) played with playing fixtures, about 6-8 older children (9-13 years old) played in mini football field ▪ Additional, adjacent or associated activities: gossiping, talking, laughing Sometimes laughing, average voice, a lot of hand gestures 	<ul style="list-style-type: none"> ▪ The first group in the terrace left shortly before lunch. Then few families (parents-children) came and occupied terrace. After lunch or around 2.30 p.m., more grouping-users came. The most dominant users were children and parents (mothers) ▪ Social distance: close phase between friends ▪ Intimate distance: close phase especially for parents-kids ▪ After 4.30 p.m., the playground was slowly empty 	<ul style="list-style-type: none"> ▪ 27-34 people/min ▪ Mixed-culture users: Dutch, Turkish, Moroccans, Surinamese, others ▪ The people who always meet and talk in terrace every morning are local residents, some of them are member of SVA ▪ The most dominant user groups were children and parents (most of them were the mothers)
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> ▪ Specific way-activities: playing in playground, sitting, watching children playing, eating, slow walking, running Children played with playing fixtures, grouping, accompanied by parents (mothers) who were watching while sitting or also played with them. Parents/mothers brought snacks and drinking water. Children also ate snacks and drinks. Slow walking speed ($\pm 10-20$ m/min) ▪ Additional, adjacent or associated activities: gossiping, talking, shouting, laughing, feeding smaller children Mothers talked to each other while watching the kids, feeding smaller children, sometimes laughing, average-loud voice, minimal hand gestures while talking, sitting on bench 		<ul style="list-style-type: none"> ▪ 21-28 people/min ▪ Mixed-culture users: Dutch, Turkish, Moroccans, Surinamese, others ▪ The most dominant user groups were children and parents (most of them were the mothers)
OPEN MARKET AREA	Morning (08.00-10.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path between stalls, alone/with family/ friends, empty hands/bring shopping bag/other stuffs, slow speed ($\pm 5-10$ m/min) ▪ Specific way-activities: installing market stall, smoking, sitting, cleaning up garbage, eating and drinking Picking up equipment and frames out from minivan and arrange it into orders, installing frames, with co-workers, sometimes with smoking, eating snacks or drinking ▪ Additional, adjacent or associated activities: talking, shouting Talking/shouting while working/walking/standing, with family/ friends/co-workers, average-loud voice 	<ul style="list-style-type: none"> ▪ Installation process: <ul style="list-style-type: none"> - Picking up hollow aluminium frames and wooden panel from transport truck - Arranging and connecting the frames into orders - Putting the wooden panel on top of truss frame and on top of table frame - Putting the tent-roof ▪ The installation begins a day before open market and re-installation is done directly after the open market is over. The installation for all stalls 	<ul style="list-style-type: none"> ▪ 14-19 people/min, 6 of them were workers ▪ Mixed-culture users: Turkish, Moroccans, Surinamese, others (all of the workers are non-Dutch) ▪ The most dominant user groups were adult, elders and women ▪ Most of them were passers-by
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path between stalls, alone/with family/ friends, empty hands/bring shopping bag/other stuffs, slow speed ($\pm 5-10$ m/min) ▪ Specific way-activities: installing market stall, smoking, sitting, cleaning up garbage, eating and drinking Picking up equipment and frames out from minivan and arrange it into orders, installing frames, with co-workers, sometimes with smoking, eating 		<ul style="list-style-type: none"> ▪ 12-23 people/min, 6 of them were workers ▪ Mixed-culture users: Turkish, Moroccans, Surinamese, others (all of the workers are non-Dutch) ▪ The most dominant user groups were adult, elders, women and children (with the family)

		<ul style="list-style-type: none"> Additional, adjacent or associated activities: talking, shouting Talking/shouting while working/walking/standing, with family/ friends/co-workers, average-loud voice 		<ul style="list-style-type: none"> Most of them were passers-by
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path between stalls, alone/with family/ friends, empty hands/bring shopping bag/other stuffs, slow speed (\pm 5-10 m/min) Specific way-activities: installing market stall, smoking, sitting, cleaning up garbage, eating and drinking Picking up equipment and frames out from minivan and arrange it into orders, installing frames, with co-workers, sometimes with smoking, eating snacks or drinking Additional, adjacent or associated activities: talking, shouting Talking/shouting while working/walking/standing, with family/ friends/co-workers, average-loud voice 	takes time \pm 6-7 hours (starts at 8.30 a.m. and finish around 3-4 p.m. Personal distance ranging from public distance-close phase to social distance-close phase for co-workers There are 6 workers to install frame, 5 to install and 1 as cart operator (cart is used to move frames & wooden panel). These workers work in group of 2 and 3 people with different area of working, along Pretoriaan or Paul Krugerstraat	<ul style="list-style-type: none"> 15-27 people/min, 6 of them were workers Mixed-culture users: Turkish, Moroccans, Surinamese, others (all of the workers are non-Dutch) The most dominant user groups were adult, elders, women and children (with the family) Most of them were passers-by
BOTANIC GARDEN	Morning (08.00-10.00)	<ul style="list-style-type: none"> Specific way-activities: opening the gate, checking the garden, picking up some plastic trash near fence, checking the dried seed, open the garden house Additional, adjacent or associated activities: talking 		<ul style="list-style-type: none"> 2 people/min Mono-cultural user: native Dutch The most dominant user group was elders
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> Specific way-activities: sitting on the garden house while keeping the garden, checking the dried seed, drinking, reading/search info in books, eating, drinking Preparing coffee after opening the house, sitting on chair, sometimes open books to search for type & Latin name of plants, checking the dried seed in the storage, give labels, lunch Additional, adjacent or associated activities: talking Talking with co-worker, low-average voice, with hand gestures 		
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> Specific way-activities: sitting on the garden house while keeping the garden, checking the dried seed, drinking, reading/search info in books, closing gate <ul style="list-style-type: none"> Sitting on chair, sometimes open books to search for type & name of plants, checking the dried seed in the storage & bucket, give labels to dried seed stored in bottles, going out to the garden to check the plants and plantation house, closing the gate after opening hour. Additional, adjacent or associated activities: talking Talking with co-worker, low-average voice, with hand gestures 	<ul style="list-style-type: none"> There are 3 gardeners, work in day shift of Monday-Friday and Saturday-Sunday. Their main activities are ensure cleanliness of botanic garden, taking care of plants, collect dried seeds of each plants in storage room and maintain its database for Green Department of <i>Gemeente</i> Rotterdam Few people come to botanic garden Very quiet & calm in botanic garden & inside the house Social distance: close phase between friends 	
PEDESTRIAN AREA	Morning (08.00-10.00)	<ul style="list-style-type: none"> Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs³, average-fast speed (\pm 80-90 m/min), some were even running 	<ul style="list-style-type: none"> Mostly passers-by, 2-3 people/group of passers by Many passers-by and users in group came during afternoon, consists of 2-13 	<ul style="list-style-type: none"> 13-21 people/min Mixed-culture users, most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, others) Most of them were elders, women, children

	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs³, average-fast speed (\pm 80-90 m/min), some were even running ▪ Specific way-activities: gathering in front of Plein 3, sitting, standing leaning on the fence, eating, drinking, smoking, street football, cycling Some boy-teenagers gathered in front of <i>Plein 3</i>. They sat on the low wall/border area/leaning on fence/wall while smoking. Some of them played street football or just stood on bicycle ▪ Additional, adjacent or associated activities: gossiping, talking, shouting, laughing Gossiping/talking/shouting/laughing, sitting on low wall/standing e.g. in bicycle/in corner/leaning on fence/wall, with friends, a lot of hand gestures, average-loud voice 	<p>people, mostly family and friends (parents, women, children, teenagers)</p> <ul style="list-style-type: none"> ▪ Social distance: close phase between families/friends ▪ Personal distance: close phase between families ▪ Around 3.15-3.30 p.m., parents were coming to pick up their children. Some of them stayed longer for talking, some went to playground, and some directly went home after talking. They left around 4-4.40 p.m., the pedestrian area was slowly empty 	<ul style="list-style-type: none"> ▪ 18-32 people/min ▪ Mixed-culture users, most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, others) ▪ Most of them were elders, women, few children, and boy-teenagers
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs; slow-average speed (\pm 50-80 m/min) ▪ Specific way-activities: gathering in front of Plein 3, parents came to pick up children, sitting, standing leaning on the fence, eating, drinking <ul style="list-style-type: none"> - Some boy-teenagers gathered in front of <i>Plein 3</i>. They sat on the low wall/border area/leaning on fence/wall while smoking. Some of them played street football or just stood with their bicycle. This group left before parents came to pick up children - Parents came to pick up their children. Waiting while sitting on low walled-border/standing/leaning in kindergarten fence, with family (children-parents)/friends, looking at people passing by or children playing, while eating and drinking snacks ▪ Additional, adjacent or associated activities: gossiping, talking, shouting, laughing Gossiping/talking/shouting/laughing while playing/walking/ sitting/standing, with family/friends, sometimes with hand gestures, parents holding hands with the children, average-loud voice 		<ul style="list-style-type: none"> ▪ 15-24 people/min ▪ Mixed-culture users, most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, others) ▪ Most of them were elders, women, few children, and boy-teenagers

1. Types of activities are derived from Rapoport (1977). He categorizes activities into four major groups (see chapter 2). Personal distance is derived from the concept of Distance in Personal Space defined by Hall (1969) (see chapter 2).
2. Speed measured manually with stopwatch by calculating distance per time (in this case, using meter/minute unit [m/min]). The counting of walking speed and density of people are done at the same time. Average walking speed of human (adult) is 5.3 km/hour or almost equal to 88 m/min.
3. Other stuffs refer to things or equipment which can not be concluded into bag or shopping bag, such as baby trolley, vendor cart, bicycle, mechanic wheel-chair, with pets (e.g. dogs), sport equipment (e.g. ball) etc.
4. Density measured manually by counting people in the same area by measuring unit of people/minute [people/min]. Numbers given are obtained from selected time within each time frame (morning, day/noon, afternoon) and ranging from minimum to maximum number of people within a minute, since the researcher has to move from one part to another part of *Afrikaanderplein* within each time frame.

E. DATE/TIME : FRIDAY, JULY 17TH 2009 (WEEKDAY/WORKDAY, A DAY BEFORE OPEN MARKET, CLOUDY DAY, DRIZZLE IN AFTERNOON)

SPACE DIVISION	TIME + FRAME	ACTIVITY + DESCRIPTION (ACTIVITY TYPE ¹ , WALKING SPEED ² , ETC.)	IMPORTANT REMARKS	USER GROUPS + DESCRIPTION (CULTURE, DENSITY ⁴ , ETC.)
GREEN PARK	Morning (08.00-10.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs, slow-average speed (\pm 60-90 m/min) ▪ Specific way-activities: light sport e.g. jogging, slow-walking, feeding birds <ul style="list-style-type: none"> - Jogging and slow-walking on grassy area/pathways/hardscape periphery area/stairs, alone/with friends, average speed for jogging (\pm 90-150 m/min) - Feeding birds/duck in pond/grassy area with crushed breads, with families/friends ▪ Additional, adjacent or associated activities: gossiping, talking Talking & gossiping while jogging/walking, average voice 	<ul style="list-style-type: none"> ▪ Mostly passers-by instead of grouping-user ▪ Grouping-users and single users were few, only residents who did light sport, consists of 2-3 people/group, particularly only in the morning ▪ Social distance: far or close phase between friends ▪ Personal distance: close phase especially for couples and families 	<ul style="list-style-type: none"> ▪ 10-14 people/min ▪ Mixed-culture users: <ul style="list-style-type: none"> - Two (2) Turkish/Moroccans girl were jogging and slow walking on hardscape area - Most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, Africans, Chinese, Indians, others) ▪ Most of the people were elders and women
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs, average speed (\pm 60-90 m/min) ▪ Specific way-activities: light sport e.g. jogging, slow-walking, gas pipe maintenance work <ul style="list-style-type: none"> - Jogging and slow-walking on grassy area/pathways/hardscape periphery area/stairs, alone/with friends, average speed for jogging (\pm 90-150 m/min) - There was gas piping work that had been lasted for about 1 week. Three men were working for about 2 weeks. Today was the installation of new gas pipe and the in-site welding activity. There were 2 van for equipment and 1 mobile mini crane parked in hardscape periphery area near main gate to Pretoriaan ▪ Additional, adjacent or associated activities: gossiping, talking, laughing Gossiping/talking/laughing while working/walking on grassy area/hardscape periphery area/stairs, with family/friends/co-workers, with hand gestures, average-loud voice 		<ul style="list-style-type: none"> ▪ 13-22 people/min ▪ Mixed-culture users: <ul style="list-style-type: none"> - Two (2) Turkish/Moroccans girl were jogging and slow walking on hardscape area - Most of passers-by or single-users were non-native Dutch (Turkish, Moroccans, Surinamese, Africans, Chinese, Indians, others) - There were 3 workers for gas pipe maintenance: 2 of them are native Dutch and another from Curacao ▪ Most of the people were elders, adult and women
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends; empty hands/bring bag/other stuffs, average speed (\pm 60-90 m/min) ▪ Specific way-activities: gas pipe maintenance work The workers dug some sand and fix the position of pipe joint. After they finished checking, they put back and earthen the sand near the wall foundation but they left a hole for pipe joint. The welding activities would be started by the next day. ▪ Additional, adjacent or associated activities: gossiping, talking, laughing 		<ul style="list-style-type: none"> ▪ 9-16 people/min ▪ Mixed-culture users: <ul style="list-style-type: none"> - Most of passers-by or single-users were non-native Dutch (Turkish, Moroccans, Surinamese, Africans, Chinese, Indians, others) - There were 3 workers for gas pipe maintenance: 2 of them are native Dutch and another from Curacao

		Gossiping/talking/laughing while working/walking on grassy area/hardscape periphery area/stairs, with family/friends/co-workers, with hand gestures, average-loud voice		<ul style="list-style-type: none"> ▪ Most of the people were elders, adult and women
BASKETBALL and FOOTBALL FIELD	Morning (08.00-10.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking in some part of field, alone/with family/friends, empty hands/bring bag/other stuffs, mostly using umbrella, slow-average speed (\pm 60-90 m/min) 	<ul style="list-style-type: none"> ▪ Mostly passers-by, alone/in group of 2 people, friends/families ▪ Social distance: close phase between friends 	<ul style="list-style-type: none"> ▪ 12-14 people/min ▪ Mixed-culture users, most of passers-by and grouping-users were non-native Dutch (Turkish, Moroccans, Surinamese, Africans, others) ▪ Most of them were elders and adult (men/women) with children
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> ▪ Specific way-activities: playing football With friends, lots of shouting and running. About 5-6 children between ages of 7-10 years old played football ▪ Additional, adjacent or associated activities: talking, shouting, laughing Talking/shouting/laughing with friends, while playing, with hand gestures, average-loud voice 	<ul style="list-style-type: none"> ▪ More users and passers-by came during noon, especially group of children as dominant user groups. They used this space for only about 40 minutes and then left around 2.45 p.m. 	<ul style="list-style-type: none"> ▪ 7-11 people/min ▪ Mixed-culture users, most of passers-by and grouping-users were non-native Dutch (Turkish, Moroccans, Surinamese, others) ▪ Most of them were elders and women
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking in some part of field, alone/with family/friends, empty hands/bring bag/other stuffs, mostly using umbrella, slow-average speed (\pm 60-90 m/min) ▪ Additional, adjacent or associated activities: talking, laughing Talking /laughing with friends, while walking, with hand gestures, average-loud voice 	<ul style="list-style-type: none"> ▪ After 3 p.m., passers by were the most dominant user ▪ Social distance: close phase between friends 	<ul style="list-style-type: none"> ▪ 6-9 people/min ▪ Mixed-culture users, most of passers-by and grouping-users were non-native Dutch (Turkish, Moroccans, Surinamese, others) ▪ Most of them were elders and adult (men/women) with children
PLAYGROUND	Morning (08.00-10.00)	<ul style="list-style-type: none"> ▪ Specific way-activities: sitting on groups, eating, drinking, smoking, slow walking Sitting around round-table, in terrace, drinking coffee/tea, eating cookies, smoking, slow speed (\pm 5-10 m/min) ▪ Additional, adjacent or associated activities: gossiping, talking, laughing Talking and gossiping while sitting, sometimes laughing, average voice, a lot of hand gestures 	<ul style="list-style-type: none"> ▪ Only 3-4 people. Some of the people who are usually there every morning were not there for about 3 days, probably they went on holiday ▪ Social distance: close phase between friends 	<ul style="list-style-type: none"> ▪ 5-13 people/min ▪ Mixed-culture users, most of passers-by and grouping-users were non-native Dutch (Turkish, Moroccans, Surinamese, Africans, others) ▪ The people who always meet and talk in terrace every morning are local residents, some of them are member of SVA ▪ Most of them were elders and adult (man)
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> ▪ Specific way-activities: playing, sitting, smoking, eating, drinking, slow walking Sitting around round-table, in terrace, drinking coffee/tea, eating cookies, smoking, slow speed (\pm 5-10 m/min) ▪ Additional, adjacent or associated activities: gossiping, talking, laughing Talking and gossiping while sitting, sometimes laughing, average voice, a lot of hand gestures 	<ul style="list-style-type: none"> ▪ Social distance: close phase between friends ▪ Personal distance: close phase especially for parents-children ▪ During noon and afternoon, only few children playing here, probably because the children play in the more 	<ul style="list-style-type: none"> ▪ 11-17 people/min ▪ Mixed-culture users, most of passers-by and grouping-users were non-native Dutch (Turkish, Moroccans, Surinamese, Africans, others) ▪ The people who always meet and talk in terrace every morning are local residents, some are member of SVA ▪ Most of them were elders and adult (man)

	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> Specific way-activities: playing, sitting, watching children playing, eating, slow walking Children playing with playing fixtures, grouping, accompanied by mothers who are watching while sitting. Slow walking speed (\pm 10-20 m/min) Additional, adjacent or associated activities: gossiping, talking, shouting, laughing Mothers are talking to each other while watching the kids, sitting on bench, sometimes laughing, average-loud voice, minimal hand gestures 	<p>private playground near their house instead of in <i>Afrikaanderplein</i> and due to holiday season (many families going back to their country origin)</p>	<ul style="list-style-type: none"> 13-22 people/min Mixed-culture users: Turkish, Moroccans, Surinamese, others The most dominant user groups were children and parents (mothers)
OPEN MARKET AREA	Morning (08.00-10.00)	<ul style="list-style-type: none"> Activity proper: walking from Pretorialaan to Paul Krugerstraat or vv Walking on pedestrian path between stalls, alone/with family/ friends, empty hands/bring shopping bag/other stuffs, slow speed (\pm 5-10 m/min) Specific way-activities: installing market stall, smoking, sitting, cleaning up garbage, eating and drinking Picking up equipment and frames out from minivan and arrange it into orders, installing frames, with co-workers, sometimes with smoking, eating snacks or drinking Additional, adjacent or associated activities: talking, shouting Talking/shouting while working/walking/standing, with family/ friends/co-workers, average-loud voice 	<ul style="list-style-type: none"> Installation process: <ul style="list-style-type: none"> Picking up hollow aluminium frames and wooden panel from transport truck Arranging and connecting the frames into orders Putting the wooden panel on top of truss frame and on top of table frame Putting the tent-roof The installation begins a day before open market and re-installation is done directly after the open market is over. The installation for all stalls takes time \pm 6-7 hours (starts at 8.30 a.m. and finish around 3-4 p.m.) Personal distance ranging from public distance-close phase to social distance-close phase for co-workers 	<ul style="list-style-type: none"> 15-24 people/min, 6 of them were workers Mixed-culture users: Dutch, Turkish, Moroccans, Surinamese, others (all of the workers are non-Dutch) The most dominant user groups were adult, elders and women Most of them were passers-by
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> Activity proper: walking from Pretorialaan to Paul Krugerstraat or vv Walking on pedestrian path between stalls, alone/with family/ friends, empty hands/bring shopping bag/other stuffs, slow speed (\pm 5-10 m/min) Specific way-activities: installing market stall, smoking, sitting, cleaning up garbage, eating and drinking Picking up equipment and frames out from minivan and arrange it into orders, installing frames, with co-workers, sometimes with smoking, eating snacks or drinking Additional, adjacent or associated activities: talking, shouting Talking/shouting while working/walking/standing, with family/ friends/co-workers, average-loud voice 	<ul style="list-style-type: none"> There are 6 workers to install frame, 5 to install and 1 as cart operator (cart is used to move frames & wooden panel). These workers work in group of 2 and 3 people with different area of working, along Pretorialaan or Paul Krugerstraat. 	<ul style="list-style-type: none"> 19-25 people/min, 6 of them were workers Mixed-culture users: Dutch, Turkish, Moroccans, Surinamese, others (all of the workers are non-Dutch) The most dominant user groups were adult, elders and women Most of them were passers-by
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> Activity proper: walking from Pretorialaan to Paul Krugerstraat or vv Walking on pedestrian path between stalls, alone/with family/ friends, empty hands/bring shopping bag/other stuffs, slow speed (\pm 5-10 m/min) Specific way-activities: installing market stall, smoking, sitting, cleaning up garbage, eating and drinking Picking up equipment and frames out from minivan and arrange it into orders, installing frames, with co-workers, sometimes with smoking, eating snacks or drinking Additional, adjacent or associated activities: talking, shouting Talking/shouting while working/walking/standing, with family/ friends/co-workers, average-loud voice 	<ul style="list-style-type: none"> 13-23 people/min, 6 of them were workers Mixed-culture users: Dutch, Turkish, Moroccans, Surinamese, others (all of the workers are non-Dutch) The most dominant user groups were adult, elders and women Most of them were passers-by 	

BOTANIC GARDEN	Morning (08.00-10.00)	<ul style="list-style-type: none"> ▪ Specific way-activities: opening the gate, checking the garden, picking up some plastic trash near fence, checking the dried seed, open the garden house ▪ Additional, adjacent or associated activities: talking 	<ul style="list-style-type: none"> ▪ There are 3 gardeners, work in day shift of Monday-Friday and Saturday-Sunday. ▪ Their main activities are ensure cleanliness of botanic garden, taking care of plants, collect dried seeds of each plants in storage room and maintain its database in simple forms to be collected later on by workers of Green Department of <i>Gemeente</i> Rotterdam ▪ Social distance: close phase between friends 	<ul style="list-style-type: none"> ▪ 2 people/min ▪ Mono-cultural user (for today): native Dutch ▪ The most dominant user group was elders.
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> ▪ Specific way-activities: sitting on the garden house while keeping the garden, checking the dried seed, drinking, reading/search info in books, eating, drinking Preparing coffee after opening the house, sitting on chair, sometimes open books to search for type & Latin name of plants, checking the dried seed in the storage, give labels, lunch ▪ Additional, adjacent or associated activities: talking Talking with co-worker, low-average voice, with hand gestures 		
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> ▪ Specific way-activities: sitting on the garden house while keeping the garden, checking the dried seed, drinking, reading/search info in books, closing gate <ul style="list-style-type: none"> - Sitting on chair, sometimes open books to search for type & name of plants, checking the dried seed in the storage & bucket, give labels to dried seed stored in bottles, going out to the garden to check the plants and plantation house, closing the gate after opening hour. ▪ Additional, adjacent or associated activities: talking Talking with co-worker, low-average voice, with hand gestures 		
PEDESTRIAN AREA	Morning (08.00-10.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs, slow-average speed (\pm 50-80 m/min) 	<ul style="list-style-type: none"> ▪ Mostly passers-by, 2-3 people per group ▪ Social distance: close phase between friends/families 	<ul style="list-style-type: none"> ▪ 13-21 people/min ▪ Mixed-culture users, most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, others) ▪ Mainly elders, women, and children
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs, slow-average speed (\pm 50-80 m/min) 		<ul style="list-style-type: none"> ▪ 11-23 people/min ▪ Mixed-culture users, most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, others) ▪ Mainly elders, women, and children
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs, slow-average speed (\pm 50-80 m/min) ▪ Specific way-activities: sitting, standing, leaning on the fence, playing Few teenagers (boys) sat on low walled-border; some were standing while leaning in kindergarten fence. Four children played in kindergarten playground for about 20-35 min ▪ Additional, adjacent or associated activities: gossiping, talking, shouting, laughing Gossiping/talking/shouting/laughing while walking/sitting/standing/playing, with family/friends, with hand gestures 	<ul style="list-style-type: none"> ▪ Few passers-by and user groups, 2-4 people ▪ Social distance/personal distance: close phase between friends/families ▪ Few teenagers gathered in front of <i>Plein 3</i>, probably due to holiday where many families were on holiday and the teenagers were on part-time job activities 	<ul style="list-style-type: none"> ▪ 11-17 people/min ▪ Mixed-culture users, most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, others) ▪ Mainly elders, women, and children

F. DATE/TIME : SUNDAY, AUGUST 2ND 2009 (WEEKEND, WITHOUT OPEN MARKET, RAINING SINCE MORNING)

SPACE DIVISION	TIME + FRAME	ACTIVITIY + DESCRIPTION (ACTIVITY TYPE ¹ , WALKING SPEED ² , ETC.)	IMPORTANT REMARKS	USER GROUPS + DESCRIPTION (CULTURE, DENSITY ⁴ , ETC.)
GREEN PARK	Morning (08.00-10.00)	<ul style="list-style-type: none"> Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs, slow-average speed (\pm 60-90 m/min) Specific way-activities: light sport e.g. slow-walking Slow-walking on grassy area/pathways/hardscape periphery area/stairs, alone/with friends, average speed (\pm 90-150 m/min) Additional, adjacent or associated activities: talking Talking while walking, with family/friends, average voice 	<ul style="list-style-type: none"> Mostly passers-by instead of users Grouping-users were few, only residents who did light sport, consists of 2-3 people/group, particularly only in the morning before it is raining or while it was drizzle 	<ul style="list-style-type: none"> 6-10 people/min Mixed-culture users, most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, Africans, others) Most of them were elders and women
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs, slow-average speed (\pm 60-90 m/min) Specific way-activities: light sport e.g. slow-walking, cycling Slow-walking or cycling on grassy area/pathways/hardscape periphery area/stairs, alone/with friends, average speed (\pm 90-150 m/min) Additional, adjacent or associated activities: talking Talking while walking, with family/friends, average voice 	<ul style="list-style-type: none"> Social distance: close phase between friends Personal distance: close phase especially for couples and families Very quiet, only few people came, probably because it was raining, weekend without open market, and holiday time where many of local residents went away for holiday 	<ul style="list-style-type: none"> 13-18 people/min Mixed-culture users, most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, Africans, others) Most of them were elders and women with children
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs, slow-average speed (\pm 60-90 m/min) Specific way-activities: light sport e.g. slow-walking, cycling Slow-walking or cycling on grassy area/pathways/hardscape periphery area/stairs, alone/with friends, average speed (\pm 90-150 m/min) Additional, adjacent or associated activities: talking Talking while walking, with family/friends, average voice 		<ul style="list-style-type: none"> 11-21 people/min Mixed-culture users, most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, Africans, others) Most of them were elders and women with children
BASKETBALL and FOOTBALL FIELD	Morning (08.00-10.00)	<ul style="list-style-type: none"> Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking in some part of field, alone/with family/friends, empty hands/bring bag/other stuffs, slow-average speed (\pm 60-90 m/min) 	<ul style="list-style-type: none"> Mostly passers-by, alone/in group of 2-3 people, friends/families Social distance: close phase between friends/families 	<ul style="list-style-type: none"> 6-9 people/min Mixed-culture users, most of passers-by and grouping-users were Dutch, Turkish, Moroccans, Surinamese Most of them were adult and children
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking in some part of field, alone/with family/friends, empty hands/bring bag/other stuffs³, mostly using umbrella, slow-average speed (\pm 60-90 m/min) Specific way-activities: playing football in sand playground, riding carousel, watching children, sitting on chair - Temporary sand playground and carousel was erected a day before. Several children (boys and girls) between 4-8 years old enjoyed carousel while boys around 7-9 years old played football in sand playground 	<ul style="list-style-type: none"> More users (single or group) and passers-by came during noon, especially group of children. 	<ul style="list-style-type: none"> 14-22 people/min Mixed-culture users, most of passers-by and grouping-users were non-native Dutch (Turkish, Moroccans, Surinamese, others) Most of them were adult and children

		<ul style="list-style-type: none"> - Parents accompanied and watched children, sometimes played together with the children. The operator also watched for the children while sitting on a chair ▪ Additional, adjacent or associated activities: talking, shouting, laughing Talking/shouting/laughing with friends, while playing, with hand gestures, average-loud voice 		
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking from Pretorialaan to Paul Krugerstraat or vv Walking in some part of field, alone/with family/friends, empty hands/bring bag/other stuffs³, mostly using umbrella, slow-average speed (\pm 60-90 m/min) ▪ Specific way-activities: playing football in sand playground, riding carousel, watching children, sitting on chair <ul style="list-style-type: none"> - Temporary sand playground and carousel was erected a day before. Several children (boys and girls) between 4-8 years old enjoyed carousel while boys around 7-9 years old played football in sand playground - Parents accompanied and watched children, sometimes played together with the children. The operator also watched for the children while sitting on a chair ▪ Additional, adjacent or associated activities: talking, shouting, laughing Talking/shouting/laughing with friends, while playing, with hand gestures, average-loud voice 	<ul style="list-style-type: none"> ▪ 9-23 people/min ▪ Mixed-culture users, most of passers-by and grouping-users were non-native Dutch (Turkish, Moroccans, Surinamese, others) ▪ Most of them were adult and children. But children were the most dominant user group 	
PLAYGROUND	Morning (08.00-10.00)	<ul style="list-style-type: none"> ▪ Specific way-activities: sitting on groups, eating, drinking, smoking, playing cards, slow walking Sitting around round-table, in terrace, drinking coffee/tea, eating cookies, smoking, playing cards; slow speed (\pm 5-10 m/min) ▪ Additional, adjacent or associated activities: gossiping, talking, laughing Sometimes laughing, average voice, a lot of hand gestures 	<ul style="list-style-type: none"> ▪ Few people, only 4-7 people, probably because of the rain ▪ Social distance: close phase between friends ▪ The playground & terrace was quiet 	<ul style="list-style-type: none"> ▪ 4-8 people/min ▪ Mixed-culture users: Dutch, Surinamese, Indians, others ▪ The people who always meet and talk in terrace every morning are local residents and some of them are member of SVA ▪ Elder and adult were the most dominant user
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> ▪ Specific way-activities: sitting on groups, eating, drinking, smoking, playing cards, playing in playground, sitting, watching children playing, eating, slow walking, running <ul style="list-style-type: none"> - Sitting around round-table, in terrace, drinking coffee/tea, eating cookies, smoking, and playing cards; walking in slow speed (\pm 5-10 m/min) - Children played with playing fixtures, grouping, accompanied by parents (mothers) who were watching while sitting or also played with them. Parents/mothers brought baby trolley, baby kit, snacks, and drinking water. Children ate snacks and drinks. Slow walking speed (\pm 10-20 m/min) ▪ Additional, adjacent or associated activities: gossiping, talking, laughing Sometimes laughing, average voice, a lot of hand gestures 	<ul style="list-style-type: none"> ▪ Social distance: close phase between friends ▪ Intimate distance: close phase especially for parents-kids ▪ During noon around 1 p.m., the rain stop, more parents-children came ▪ After 4.30 p.m., the playground was slowly empty 	<ul style="list-style-type: none"> ▪ 9-17 people/min ▪ Mixed-culture users: Dutch, Surinamese, Indians, others ▪ The people who always meet and talk in terrace every morning are local residents and some of them are member of SVA ▪ Elder and adult were the most dominant user group

	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> Specific way-activities: sitting on groups, eating, drinking, smoking, playing cards, playing in playground, sitting, watching children playing, eating, slow walking, running <ul style="list-style-type: none"> - Sitting around round-table, in terrace, drinking coffee/tea, eating cookies, smoking, and playing cards; walking in slow speed (\pm 5-10 m/min) - Children played with playing fixtures, grouping, accompanied by parents (mothers) who were watching while sitting or also played with them. Parents/mothers brought baby trolley, baby kit, snacks, and drinking water. Children also ate snacks and drinks. Slow walking speed (\pm 10-20 m/min) Additional, adjacent or associated activities: gossiping, talking, shouting, laughing, feeding smaller children Mothers talked to each other while watching the kids, feeding smaller children, sometimes laughing, average-loud voice, minimal hand gestures while talking, sitting on bench 		<ul style="list-style-type: none"> 13-24 people/min Mixed-culture users: Dutch, Surinamese, Indians, others The most dominant user groups were children and parents (mothers)
OPEN MARKET AREA	Morning (08.00-10.00)	<ul style="list-style-type: none"> Activity proper: walking from Pretorialaan to Paul Krugerstraat or vv Walking on pedestrian path between stalls, alone/with family/ friends, empty hands/bring shopping bag/other stuffs, slow speed (\pm 5-10 m/min) Additional, adjacent or associated activities: talking Talking while working/walking/standing, with family/friends/ co-workers, average-loud voice 	<ul style="list-style-type: none"> Personal distance close phase to social distance-close phase for family/friends Not many people walked outside today, probably because it was a little bit rainy and holiday time where many residents went away for holiday 	<ul style="list-style-type: none"> 11-24 people/min Mixed-culture users: Dutch, Turkish, Moroccans, Surinamese, others The most dominant user groups were adult, elders and women Most of them were passers-by
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> Activity proper: walking from Pretorialaan to Paul Krugerstraat or vv Walking on pedestrian path between stalls, alone/with family/ friends, empty hands/bring shopping bag/other stuffs, slow speed (\pm 5-10 m/min) Additional, adjacent or associated activities: talking Talking while working/walking/standing, with family/friends/ co-workers, average-loud voice 		<ul style="list-style-type: none"> 16-25 people/min Mixed-culture users: Dutch, Turkish, Moroccans, Surinamese, others The most dominant user groups were adult, elders and women Most of them were passers-by
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> Activity proper: walking from Pretorialaan to Paul Krugerstraat or vv Walking on pedestrian path between stalls, alone/with family/ friends, empty hands/bring shopping bag/other stuffs, slow speed (\pm 5-10 m/min) Additional, adjacent or associated activities: talking Talking while working/walking/standing, with family/friends/ co-workers, average-loud voice 		<ul style="list-style-type: none"> 14-27 people/min Mixed-culture users: Dutch, Turkish, Moroccans, Surinamese, others The most dominant user groups were adult, elders and women Most of them were passers-by
BOTANIC GARDEN	Morning (08.00-10.00)	<ul style="list-style-type: none"> Specific way-activities: opening the gate, checking the garden, picking up some plastic trash near fence, checking the dried seed, open the garden house Additional, adjacent or associated activities: talking 	<ul style="list-style-type: none"> There are 3 gardeners, work in day shift of Monday-Friday and Saturday-Sunday. Their main activities are ensure cleanliness of botanic garden, taking care of plants, collect dried seeds of each plants in storage room and maintain its 	<ul style="list-style-type: none"> 2 people/min Mono-cultural user, native Dutch The most dominant user group was elders
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> Specific way-activities: sitting on the garden house while keeping the garden, checking the dried seed, drinking, reading/search info in books, eating, drinking Preparing coffee after opening the house, sitting on chair, sometimes open books to search for type & Latin name of plants, checking the dried seed in the storage, give labels, lunch 		

		<ul style="list-style-type: none"> ▪ Additional, adjacent or associated activities: talking Talking with co-worker, low-average voice, with hand gestures 	<ul style="list-style-type: none"> ▪ database in simple forms to be collected later on by workers of Green Department of <i>Gemeente</i> Rotterdam ▪ Social distance: close phase between friends 	
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> ▪ Specific way-activities: sitting on the garden house while keeping the garden, checking the dried seed, drinking, reading/search info in books, closing gate <ul style="list-style-type: none"> - Sitting on chair, sometimes open books to search for type & name of plants, checking the dried seed in the storage & bucket, give labels to dried seed stored in bottles, going out to the garden to check the plants and plantation house, closing the gate after opening hour. ▪ Additional, adjacent or associated activities: talking Talking with co-worker, low-average voice, with hand gestures 		
PEDESTRIAN AREA	Morning (08.00-10.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs³, average-fast speed (\pm 80-90 m/min), some people used umbrella, some even ran 	<ul style="list-style-type: none"> ▪ Mostly passers-by, 2-4 people per group of passers by ▪ Social distance: close phase between friends/families ▪ Pedestrian area was so quiet, few people probably because of the rain 	<ul style="list-style-type: none"> ▪ 7-10 people/min ▪ Mixed-culture users, most were native Dutch, Turkish, Moroccans, Surinamese, others ▪ Most of them were adult, women, children
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs³, average-fast speed (\pm 80-90 m/min), some people used umbrella, some even ran ▪ Specific way-activities: sitting in low-walled border, standing leaning on the fence, eating, drinking Sitting on low walled-border, standing/leaning in kindergarten fence, with family (children-parents)/friends, looking at people passing by or children playing, eating and drinking snacks ▪ Additional, adjacent or associated activities: gossiping, talking, shouting, laughing Gossiping/talking/shouting/laughing while playing/walking/ sitting/standing, with family/friends, parents holding hands with the children, with hand gestures, average-loud voice 		<ul style="list-style-type: none"> ▪ 11-24 people/min ▪ Mixed-culture users, most of passers-by were native Dutch, Turkish, Moroccans, Surinamese, others ▪ Most of them were adult (man, women) and few children (they went with the families). Groups of children consist of 4-12 people/group
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs; slow-average speed (\pm 50-80 m/min) ▪ Specific way-activities: sitting in low-walled border, standing leaning on the fence, eating, drinking Sitting on low walled-border, standing/leaning in kindergarten fence, with family (children-parents)/friends, looking at people passing by or children playing, eating and drinking snacks ▪ Additional, adjacent or associated activities: gossiping, talking, shouting, laughing Gossiping/talking/shouting/laughing while playing/walking/ sitting/standing, with family/friends, parents holding hands with the children, with hand gestures, average-loud voice 	<ul style="list-style-type: none"> ▪ Many passers-by and users in group, consists of 2-8 people, mostly family and friends ▪ Social distance/personal distance: close phase between friends/families ▪ Around 1 p.m. the rain stop, some children with parents went out for playing in carrousel/temporary sand playground in basketball field 	<ul style="list-style-type: none"> ▪ 11-19 people/min ▪ Mixed-culture users, most of passers-by were native Dutch, Turkish, Moroccans, Surinamese, others ▪ Most of them were adult (man, women) and few children (they went with the families). Groups of children consist of 4-12 people/group

G. DATE/TIME : THURSDAY, APRIL 30TH 2009 (WEEKDAY, NATIONAL HOLIDAY OF QUEEN'S DAY, SUNNY DAY)

SPACE DIVISION	TIME + FRAME	ACTIVITIY + DESCRIPTION (ACTIVITY TYPE ¹ , WALKING SPEED ² , ETC.)	IMPORTANT REMARKS	USER GROUPS + DESCRIPTION (CULTURE, DENSITY ⁴ , ETC.)
GREEN PARK	Morning (08.00-10.00)	<ul style="list-style-type: none"> Activity proper: walking to/back from mini open market, from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs, slow-average speed (\pm 60-90 m/min) Specific way-activities: light sport e.g. jogging, slow-walking Jogging and slow-walking on grassy area/pathways/hardscape periphery area/stairs, alone/with friends, average speed for jogging (\pm 90-150 m/min) Additional, adjacent or associated activities: gossiping, talking Talking & gossiping while jogging/walking, average voice 	<ul style="list-style-type: none"> Mostly passers-by instead of users during morning. More users and passers-by came during noon Few grouping-users in the morning, only residents who did light sport, consist of 2-3 people/group. During noon, the grouping- users increased 	<ul style="list-style-type: none"> 12-19 people/min Mixed-culture users, most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, Africans, Chinese, Indians) Most of them were elders and women
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> Activity proper: walking to/back from mini open market, from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs, slow-average speed (\pm 60-90 m/min) Specific way-activities: slow-walking, sitting, smoking <ul style="list-style-type: none"> Slow-walking on grassy area/pathways/hardscape periphery area/stairs, alone/with friends, slow-average speed (\pm 60-90 m/min) Sitting on bench/grass/stairs while eating/smoking, alone/with family/friends Additional, adjacent or associated activities: gossiping, talking Gossiping/talking/shouting/laughing while walking/standing/ sitting on grassy area/hardscape periphery area/stairs, with hand gestures, average-loud voice, with family/friends 	<ul style="list-style-type: none"> Personal distance: close phase especially for couples and families Social distance: close phase between friends People gathered in the part which is equipped with benches & trees Mostly people went to mini open market which was held in basketball-football field during this holiday 	<ul style="list-style-type: none"> 21-28 people/min Mixed-culture users, most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, Africans, Chinese, Indians) Most of them were elders, women, and children (went with the families)
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> Activity proper: walking to/back from mini open market, walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs, slow-average speed (\pm 60-90 m/min) Specific way-activities: slow-walking, sitting, smoking <ul style="list-style-type: none"> Slow-walking on grassy area/pathways/hardscape periphery area/stairs, alone/with friends, slow-average speed (\pm 60-90 m/min) Sitting on bench/grass/stairs while eating/smoking, alone/with family/friends Additional, adjacent or associated activities: gossiping, talking Gossiping/talking/shouting/laughing while walking/standing/ sitting on grassy area/hardscape periphery area/stairs, with hand gestures, average-loud voice, with family/friends 		<ul style="list-style-type: none"> 24-35 people/min Mixed-culture users, most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, Africans, Chinese, Indians) Most of them were elders, women, and children (went with the families)
BASKETBALL and FOOTBALL FIELD	Morning (08.00-10.00)	<ul style="list-style-type: none"> Activity proper: walking to/back from mini open market, walking from Pretoriaan to Paul Krugerstraat or vv Walking in some part of field, alone/with family/friends, empty hands/bring bag/other stuffs, slow-average speed (\pm 60-90 m/min) 	<ul style="list-style-type: none"> Mostly passers-by and sellers who prepared their place in the morning. Social distance: close phase 	<ul style="list-style-type: none"> Uncountable density of people, many people during open market More sellers of descent immigrants than native Dutch (mostly Turkish-Moroccan

		<ul style="list-style-type: none"> ▪ Specific way-activities: preparing place to sell, selling & shopping in open market, smoking, sitting, looking around, cleaning up garbage, eating and drinking <ul style="list-style-type: none"> - Preparing place for selling, picking up equipment and things out from minivan/bicycle/cart and arrange it into orders, with family/friends, sometimes with singing. The sellers only used tablecloth/ blanket on the hardscape and put things on it instead of using stall - Sitting on bench/hardscape while smoking/eating/selling; with family/friends - People sold and bought things by standing/sitting; buyers came alone/with family/friends, bargaining, seller cleaning up their garbage ▪ Additional, adjacent or associated activities: gossiping, talking, shouting, laughing, singing Gossiping/talking/shouting/laughing while selling/buying/ walking/standing or sitting on bench/hardscape, with family/friends, average-loud voice, sometimes with singing, a lot of hand gestures 	<ul style="list-style-type: none"> ▪ between friends ▪ Personal distance: close and/or intimate phase especially for couples and families ▪ More people came during noon, especially groups of children-parents. They were not only local residents in <i>Afrikaanderwijk</i>, but also residents in other neighbourhoods. They came not only for shopping, but also to meet their relatives in the open market ▪ The things which were mostly sold were non-food products (<i>kramerij</i>), most of them were also second-hand things; e.g. clothes, fabrics, electronic, shoes & sandals, furniture and dining equipment (e.g. plates) ▪ Most of the sellers were local residents. They played loud music to make the open market livelier and to attract people. They prepared their own selling place together with other family members 	<ul style="list-style-type: none"> ▪ sellers). Most of them sold <i>kramerij</i> and 2nd hand things ▪ Majority of visitors were also immigrants decent, less Dutch. The visitors were not only from <i>Afrikaanderwijk</i> and surrounding neighbourhood ▪ Almost all user groups can be found there. Elders, adult (man, women), and children used this arena as a meeting point
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking to/back from mini open market, walking from Pretorialaan to Paul Krugerstraat or vv Walking in some part of field, alone/with family/friends, empty hands/bring bag/other stuffs, slow-average speed (\pm 60-90 m/min) ▪ Specific way-activities: selling & shopping in open market, smoking, sitting, looking around, cleaning up garbage, eating and drinking <ul style="list-style-type: none"> - Preparing place for selling, picking up equipment and things out from minivan/bicycle/cart and arrange it into orders, with family/friends, sometimes with singing. The sellers only used tablecloth/ blanket on the hardscape and put things on it instead of using stall - Sitting on bench/hardscape while smoking/eating/selling; with family/friends - People sold and bought things by standing/sitting; buyers came alone/with family/friends, bargaining, seller cleaning up their garbage ▪ Additional, adjacent or associated activities: gossiping, talking, shouting, laughing, singing Gossiping/talking/shouting/laughing while selling/buying/ walking/standing or sitting on bench/hardscape, with family/friends, average-loud voice, sometimes with singing, a lot of hand gestures 		
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> ▪ Activity proper: walking to/back from mini open market, walking from Pretorialaan to Paul Krugerstraat or vv Walking in some part of field, alone/with family/friends, empty hands/bring bag/other stuffs, slow-average speed (\pm 60-90 m/min) ▪ Specific way-activities: selling & shopping in open market, cleaning up selling place, smoking, sitting, looking around, cleaning up garbage, eating and drinking <ul style="list-style-type: none"> - Cleaning up selling place, picking up equipment and things into 		

		<p>minivan/bicycle, with family/friends. Some sellers finished earlier at around 3.30-4 p.m. than others. The place was empty from open market activity around 5 p.m.</p> <ul style="list-style-type: none"> - Sitting on bench/hardscape while smoking/eating/selling; with family/friends - People sold and bought things by standing/sitting; buyers came alone/with family/friends, bargaining, cleaning up garbage <p>▪ Additional, adjacent or associated activities: gossiping, talking, shouting, laughing, singing Gossiping/talking/shouting/laughing while selling/buying/walking/standing or sitting on bench/hardscape, with family/friends, average-loud voice, sometimes with singing, a lot of hand gestures</p>		
PLAYGROUND	Morning (08.00-10.00)	<ul style="list-style-type: none"> ▪ Specific way-activities: sitting on groups, eating, drinking, smoking, playing cards, slow walking Sitting around round-table, in terrace, drinking coffee/tea, eating cookies, smoking, and playing cards; walking in slow speed (\pm 5-10 m/min) ▪ Additional, adjacent or associated activities: gossiping, talking, laughing Sometimes laughing, average voice, a lot of hand gestures 	<ul style="list-style-type: none"> ▪ Few people, only 5-12 people ▪ Social distance: close phase between friends ▪ The playground was quiet 	<ul style="list-style-type: none"> ▪ 4-12 people/min ▪ Mixed-culture users: Dutch, Moroccans, Surinamese, Indians ▪ Elder and adult (mostly men) were the most dominant user group
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> ▪ Specific way-activities: playing in playground, sitting, smoking, playing cards, watching children playing, eating, drinking, slow walking, running <ul style="list-style-type: none"> - Sitting around round-table, in terrace, drinking coffee/tea, eating cookies, smoking, and playing cards; walking in slow speed (\pm 5-10 m/min) - Children played with playing fixtures, grouping, accompanied by parents (mothers) who were watching while sitting or also played with them. Parents/mothers brought baby trolley, baby kit, snacks, and drinking water. Children also ate snacks and drinks. Slow walking speed (\pm 10-20 m/min) - Younger children (4-7 years) played with playing fixtures, older children (9-13 years old) played in mini football field ▪ Additional, adjacent or associated activities: gossiping, talking, shouting, laughing, feeding smaller children Mothers talked to each other while watching the kids, feeding smaller children, sometimes laughing, average-loud voice, minimal hand gestures while talking, sitting on bench 	<ul style="list-style-type: none"> ▪ More families with children came during noon-afternoon. They went directly from their house or after visiting open market. Playground acts as a meeting point for parents-children ▪ Social distance: close phase between friends ▪ Personal/Intimate distance: close phase especially for parents-kids ▪ The groups in the terrace left just after lunch time, and some other people came the terrace, most of them were parents ▪ After 5 p.m., the playground was slowly empty 	<ul style="list-style-type: none"> ▪ 22-49 people/min ▪ Mixed-culture users: Dutch, Turkish, Moroccans, Surinamese, Africans, others ▪ The most dominant user groups were children and parents (most of them were the mothers)
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> ▪ Specific way-activities: playing in playground, sitting, smoking, playing cards, watching children playing, eating, drinking, slow walking, running <ul style="list-style-type: none"> - Sitting around round-table, in terrace, drinking coffee/tea, eating cookies, smoking, and playing cards; walking in slow speed (\pm 5-10 m/min) - Children played with playing fixtures, grouping, accompanied by parents (mothers) who were watching while sitting or also played with them. Parents/mothers brought baby trolley, baby kit, snacks, and drinking water. Children also ate snacks and drinks. Slow walking speed (\pm 10-20 m/min) - Younger children (4-7 years) played with playing fixtures, older children (9-13 years old) played in mini football field 		<ul style="list-style-type: none"> ▪ 26-53 people/min ▪ Mixed-culture users: Dutch, Turkish, Moroccans, Surinamese, Africans, others ▪ The most dominant user groups were children and parents (most of them were the mothers)

		<ul style="list-style-type: none"> Additional, adjacent or associated activities: gossiping, talking, shouting, laughing, feeding smaller children Mothers talked to each other while watching the kids, feeding smaller children, sometimes laughing, average-loud voice, minimal hand gestures while talking, sitting on bench 		
OPEN MARKET AREA	Morning (08.00-10.00)	<ul style="list-style-type: none"> Activity proper: walking to/back from mini open market, walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends; empty hands/bring bag/other stuffs, slow speed (\pm 5-10 m/min) Specific way-activities: smoking, sitting, standing, eating and drinking Standing/sitting on hardscape while smoking/eating/drinking, with family/friends, average-loud voice, a lot of hand gestures Additional, adjacent or associated activities: gossiping, talking, shouting, laughing Gossiping/talking/shouting/laughing while walking/standing/ sitting, with family/ friends, with family/friends, average-loud voice, sometimes with hand gestures 	<ul style="list-style-type: none"> Mostly passers-by instead of users, 2-5 people per group Social distance: close phase between friends Personal distance: close phase especially for couples and families 	<ul style="list-style-type: none"> 14-27 people/min Mixed-culture users, most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, others) Mainly elders, women, and children
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> Activity proper: walking to/back from mini open market, walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends; empty hands/bring bag/other stuffs, slow speed (\pm 5-10 m/min) Specific way-activities: smoking, sitting, standing, eating and drinking Standing/sitting on hardscape while smoking/eating/drinking, with family/friends, average-loud voice, a lot of hand gestures Additional, adjacent or associated activities: gossiping, talking, shouting, laughing Gossiping/talking/shouting/laughing while walking/standing/ sitting, with family/ friends, with family/friends, average-loud voice, sometimes with hand gestures 		<ul style="list-style-type: none"> 15-34 people/min Mixed-culture users, most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, others) Mainly elders, women, and children
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> Activity proper: walking to/back from mini open market, walking from Pretoriaan to Paul Krugerstraat or vv Walking on pedestrian path, alone/with family/friends; empty hands/bring bag/other stuffs, slow speed (\pm 5-10 m/min) Specific way-activities: smoking, sitting, standing, eating and drinking Standing/sitting on hardscape while smoking/eating/drinking, with family/friends, average-loud voice, a lot of hand gestures Additional, adjacent or associated activities: gossiping, talking, shouting, laughing Gossiping/talking/shouting/laughing while walking/standing/ sitting, with family/ friends, with family/friends, average-loud voice, sometimes with hand gestures 		<ul style="list-style-type: none"> 13-36 people/min Mixed-culture users, most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, others) Mainly elders, women, and children
BOTANIC GARDEN	Morning (08.00-10.00)	<ul style="list-style-type: none"> Specific way-activities: opening the gate, checking the garden, picking up some plastic trash near fence, checking the dried seed, open the garden house Additional, adjacent or associated activities: talking 	<ul style="list-style-type: none"> There are 3 gardeners, work in day shift of Monday-Friday and Saturday-Sunday 	<ul style="list-style-type: none"> 2 people/min Mono-cultural user native Dutch The most dominant user group was elders

	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> Specific way-activities: sitting on the garden house while keeping the garden, checking the dried seed, drinking, reading/search info in books, eating, drinking Preparing coffee after opening the house, sitting on chair, sometimes open books to search for type & Latin name of plants, checking the dried seed in the storage, give labels, lunch Additional, adjacent or associated activities: talking Talking with co-worker, low-average voice, with hand gestures 	<ul style="list-style-type: none"> Their main activities are ensure cleanliness of botanic garden, taking care of plants, collect dried seeds of each plants in storage room and maintain its database in simple forms to be collected later on by workers of Green Department of <i>Gemeente</i> Rotterdam Few people come to botanic garden Social distance: close phase between friends 	
	Afternoon (14.00-18.00)	<ul style="list-style-type: none"> Specific way-activities: sitting on the garden house while keeping the garden, checking the dried seed, drinking, reading/search info in books, closing gate <ul style="list-style-type: none"> Sitting on chair, sometimes open books to search for type & name of plants, checking the dried seed in the storage & bucket, give labels to dried seed stored in bottles, going out to the garden to check the plants and plantation house, closing the gate Additional, adjacent or associated activities: talking Talking with co-worker, low-average voice, with hand gestures 		
PEDESTRIAN AREA	Morning (08.00-10.00)	<ul style="list-style-type: none"> Activity proper: walking to/back from open market, walking from Pretoriaan to Paul Krugerstraat or vice versa (vv.) Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs, slow-average speed (\pm 50-80 m/min) Specific way-activities: selling & shopping in open market, cleaning up selling place, smoking, sitting, looking around, cleaning up garbage, eating and drinking <ul style="list-style-type: none"> Cleaning up selling place, picking up equipment and things into minivan/bicycle, with family/friends. Some sellers finished earlier at around 3.30-4 p.m. than others. The place was empty from open market activity around 5 p.m. Sitting on bench/hardscape while smoking/eating/selling; with family/friends People sold and bought things by standing/sitting; buyers came alone/with family/friends, bargaining, cleaning up garbage Additional, adjacent or associated activities: gossiping, talking, shouting, laughing Gossiping/talking/shouting/laughing while sitting/standing e.g. in bicycle/in corner, with family/friends, sometimes with hand gestures, average-loud voice 	<ul style="list-style-type: none"> Mostly passers-by instead of users in the morning, 2-3 people per group Social distance: close phase between friends Personal distance: close phase especially for couples and families Grouping-users increased during noon, consist of 2-5 people/group, mostly family and friends (women, children, teenagers) Grouping users decreased around 4 p.m. 	<ul style="list-style-type: none"> 23-31 people/min Mixed-culture users, most of passers-by were non-native Dutch (Turkish, Moroccans, Surinamese, others) Most of them were elders, women, and few children (with the families)
	Day/noon (10.00-14.00)	<ul style="list-style-type: none"> Activity proper: walking to/back from open market, walking from Pretoriaan to Paul Krugerstraat or vice versa (vv.) Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs, sometimes hold hands, slow-average speed (\pm 50-80 m/min) Specific way-activities: sitting, smoking, eating, drinking, cycling, selling & shopping in open market, cleaning up selling place, smoking, sitting, looking around, cleaning up garbage, eating and drinking <ul style="list-style-type: none"> Cleaning up selling place, picking up equipment and things into 		<ul style="list-style-type: none"> Uncountable density of people, many people during open market More sellers of descent immigrants than native Dutch (mostly Turkish-Moroccan sellers). Most of them sold <i>kramerij</i> and 2nd hand things Majority of visitors were also immigrants decent, less Dutch. The visitors were not

		<p>minivan/bicycle, with family/friends. Some sellers finished earlier at around 3.30-4 p.m. than others. The place was empty from open market activity around 5 p.m.</p> <ul style="list-style-type: none"> - Sitting on bench/hardscape while smoking/eating/selling; with family/friends - People sold and bought things by standing/sitting; buyers came alone/with family/friends, bargaining, cleaning up garbage - Sitting on low walled-border, smoking/looking at people passing by or children playing football, while eating and drinking food bought in open market, alone/with family/friends, sometimes hold hands, people passing by with bicycle <p>▪ Additional, adjacent or associated activities: gossiping, talking, shouting, laughing Gossiping/talking/shouting/laughing while sitting/standing e.g. in bicycle/in corner, with family/friends, sometimes with hand gestures, average-loud voice</p>		<ul style="list-style-type: none"> ▪ only from <i>Afrikaanderwijk</i> and surrounding neighbourhoods ▪ Almost all user groups can be found there. Elders, adult (man, women), and children used this arena as a meeting point
	Afternoon (14.00-18.00)	<p>▪ Activity proper: walking to/back from open market, walking from Pretoriaan to Paul Krugerstraat or vice versa (vv.) Walking on pedestrian path, alone/with family/friends, empty hands/bring bag/other stuffs³, sometimes hold hands, slow-average speed (\pm 50-80 m/min)</p> <p>▪ Specific way-activities: sitting, smoking, eating, drinking, cycling Sitting on low walled-border, smoking/looking at people passing by or children playing football, while eating and drinking food bought in open market, alone/with family/friends, sometimes hold hands, people passing by with bicycle</p> <p>▪ Additional, adjacent or associated activities: gossiping, talking, shouting, laughing Gossiping/talking/shouting/laughing while sitting/standing e.g. in bicycle/in corner, with family/friends, sometimes with hand gestures, average-loud voice</p>		

1. Types of activities are derived from Rapoport (1977). He categorizes activities into four major groups (see chapter 2). Personal distance is derived from the concept of Distance in Personal Space defined by Hall (1969) (see chapter 2).
2. Speed measured manually with stopwatch by calculating distance per time (in this case, using meter/minute unit [m/min]). The counting of walking speed and density of people are done at the same time. Average walking speed of human (adult) is 5.3 km/hour or almost equal to 88 m/min.
3. Other stuffs refer to things or equipment which can not be concluded into bag or shopping bag, such as baby trolley, vendor cart, bicycle, mechanic wheel-chair, with pets (e.g. dogs), sport equipment (e.g. ball) etc.
4. Density measured manually by counting people in the same area by measuring unit of people/minute [people/min]. Numbers given are obtained from selected time within each time frame (morning, day/noon, afternoon) and ranging from minimum to maximum number of people within a minute, since the researcher has to move from one part to another part of *Afrikaanderplein* within each time frame.