

Planning for sustainable communities: Place-making through layout and design approaches

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Abstract

The survival and quality of life of people are irrefutably dependent on the natural environment in which they live. In order to ensure that the basic needs of man are consistently satisfactorily met in the long-term, the development and implementation of a planning approach that encompasses the protection of the natural environment and prudent use of the available resources is essential. The composition of communities, however, is complex; the diversity in culture, gender and age of a community leads to specific needs that are unique to the community and the impact thereof on the surrounding natural environment. The planning approach for the sustainable development of a particular community must therefore be structured to gratify the specific social needs of that community.

Ingenious design approaches, strategies and policies that are used in the planning of sustainable communities and the redevelopment of existing areas, can ultimately lead to healthier, safer, greener, economically sustainable and liveable communities that are well managed. Varied use of activities and facilities such as employment centres, residential neighbourhoods, natural areas, parks, local trails, schools and public places induce a physical connection which results in creating authentic neighbourhoods with good quality of life. Sustainable communities tend to have lower transportation costs and less traffic, are more economic in terms of housing and market demands, have decreasing costs in terms of infrastructure, a reduced rate of air pollution, and have the ability to create a safer environment.

This research aims to explore and understand the international and local integrated planning and design approaches which are currently used in the planning of sustainable communities. Reviewing different international and local layout and design approaches will aid in defining the best practices in order to develop improved planning approaches for sustainable communities. In this sense, proposed planning approaches should consider the complexity of the social environment of modern society. Along with the public participation approach, which plays an essential role in determining the basic needs of the community and is seen as a fundamental building block in planning for sustainable communities, other planning approaches are also evaluated as part of this research in order to determine best practices. Recommendations are made on how these approaches can be adopted within local rural South African areas, using the Vaalharts area as case study.

Opsomming

Die oorlewing en die kwaliteit van lewe van mense is onteenseglik afhanklik van die natuurlike omgewing waarin hulle woon. Ten einde te verseker dat die basiese behoeftes van die mens konsekwent en in die langtermyn bevredigend nagekom word, is die ontwikkeling en implementering van 'n beplanningsbenadering wat die beskerming van die natuurlike omgewing en die bestuur van die beskikbare hulpbronne insluit, noodsaaklik. Die samestelling van gemeenskappe is egter kompleks; die diversiteit in kultuur, geslag en ouderdom van 'n gemeenskap lei tot spesifieke behoeftes wat eie is aan die gemeenskap en die impak daarvan op die natuurlike omgewing beïnvloed. Die beplanningsbenadering vir die volhoubare ontwikkeling van 'n bepaalde gemeenskap moet dus so gestruktureer word om die spesifieke maatskaplike behoeftes van daardie gemeenskap te bevredig.

Vernuftige ontwerpbenaderings, -strategieë en -beleide wat gebruik word in die beplanning van volhoubare gemeenskappe en die herontwikkeling van die bestaande gebiede, kan uiteindelik lei tot gesonder, veiliger, groener, ekonomies volhoubare en leefbare gemeenskappe wat goed bestuur word. Gevarieerde gebruik van aktiwiteite en fasiliteite soos indiensnemingsentrums, woonbuurte, natuurlike gebiede, parke, plaaslike paaie, skole en openbare plekke veroorsaak 'n fisiese verband wat lei tot die skep van outentieke woonbuurte met 'n goeie lewenskwaliteit vir die inwoners. Volhoubare gemeenskappe is geneig om laer vervoerkoste en minder verkeer te hê, is meer ekonomies in terme van behuising en vereistes van die mark, het dalende koste in terme van infrastruktuur, verlaagde lugbesoedeling en het die vermoë om 'n veiliger omgewing te skep.

Hierdie navorsing het ten doel om die internasionale en plaaslike geïntegreerde beplannings- en ontwerpbenaderings wat tans gebruik word in die beplanning van 'n volhoubare gemeenskappe, te verken en te verstaan. Hersiening van verskeie internasionale en plaaslike uitleg en ontwerpbenaderings sal help om die beste praktyke te definieer en verbeterde beplanningsbenaderings vir volhoubare gemeenskappe te ontwikkel. In hierdie sin moet voorgestelde beplanningsbenaderings bewus wees van die kompleksiteit van die sosiale omgewing van die moderne samelewing. Saam met die openbare deelname benadering, wat 'n belangrike rol speel in die bepaling van die basiese behoeftes van die gemeenskap en wat beskou word as 'n fundamentele boublok in die beplanning van volhoubare gemeenskappe, word ook ander beplanning benaderings as deel van hierdie navorsing geëvalueer om die beste praktyke te bepaal. Aanbevelings word gemaak oor hoe hierdie benaderings binne die plaaslike landelike Suid-Afrikaanse gebiede aangeneem kan word, met behulp van die Vaalharts-gebied as gevallestudie.

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Table of Acronyms

Table 1: Acronyms

AMCV	L'Association du Management de Centre Ville
ANC	African National Congress
ASGISA	Accelerated Shared Growth Initiative for South Africa
DETR	Department for Environment Transport and the Regions
DFA	Development Fasalitation Act
DFID	Department for International Development
DM	District Municipality
DMA	District Municipality Area
EIA	Environmental Impact Assesment
GCVOLLN	Gestion Centre Ville Ottignes-Louvain la Neuve
GIS	Geometrical Information Systems
IDP	Integrated Development Plan
ISRDS	Integrated Sustainable Rural Development Strategy
LUMS	Land Use Management Schemes
NEMA	National Environmental Management Act
NSDP	National Spatial Development Perspective
RDF	Rural Development Framework
RDP	Reconstruction and Development Programme
SDC	Sustainable Development Commission
SDF	Spatial Development Framework
SEA	Strategy Environmental Assesment
SWOT	Strenths, Weaknesses, Opportunities and Threats

UDF	Urban Development Framework
UN	United Nations
UNCED	United Nations Conference on Environment and Development
VCEC	Victorian Competition and Efficiency Commission's
WCEP	The World Commission on Environment and Developmen

Chapter 1: Introduction

1.1 Points of departure

Sustainability is essential in the process of community planning and plays an important role in the long-term success of communities. Planning for sustainable communities is primarily based on addressing the needs of the people in the community and ensuring a better quality of life. Public participation plays a critical part throughout the process of planning for sustainable communities and in this sense, a sustainable community is created through balancing the environmental, social and economic activities within the community.

Place-making, through layout and design is an integrative approach to the planning and sustainable development of communities. People are attracted to good places with high quality of life which consist of effective place-making principles that are implemented through layout and design. Good places are a focal point of economic and social activity, thus place-making, through layout and design approaches can contribute to planning and creating attractive, focal points by including various functions within one space.

1.2 Problem statement

According to Girardet (1999), a sustainable city [in this instance a community] is planned to enable all of its citizens to meet their own needs and to enhance their wellbeing without damaging the natural world or endangering the living conditions of other people, now or in the future. Planning for sustainable communities is challenging and thus it is essential to compile a framework wherein detailed practical guidelines for implementation of sustainable solutions are described.

Power (2004) states that the heart of sustainable development encompasses the simple idea of ensuring a better quality of life for everyone, now and for future generations. It implies meeting the following four objectives simultaneously:

- Social progress which recognises the needs of everyone;
- Effective protection of the environment;
- Prudent use of natural resources;
- Maintenance of high and stable levels of economic growth and employment; and considering the long-term implications of decisions. (DETR, 1999, as cited by Power, 2004)

There is a need for an integrated place-making, through layout and design approach that will contribute to the planning for sustainability communities of rural and urban areas in South Africa. Although place-making, through layout and design has proven to contribute to sustainable community planning, it is not currently a core part of planning in South Africa.

1.3 Primary research questions

The following primary research questions will be answered as part of this research:

- How can communities, in urban and rural areas, be defined as sustainable communities?
- What is the current approach to place-making internationally and locally?
- What is the current approach to layout and design internationally and locally?
- How can layout and design approaches enhance place-making and contribute to local sustainable community planning?

1.4 Aims and objectives of this study

This research aims to explore the potential and possibility of creating and understanding integrated approaches to guide the planning for sustainable communities. Sustainable community planning principles are applicable to both urban and rural areas, although different in terms of basic needs, it is evident that sustainable community development in all developing and developed countries, cities and regions should be regarded as priority.

From the urban planning context, reviewing different international and local layout and design approaches will aid in defining the best practices and improving planning approaches for sustainable communities. This will include the concept of public participation playing an essential role in determining the basic needs of the community and being a fundamental building block in the planning process.

The main objective of this research is to evaluate and analyse approaches to plan for sustainable communities, focussing on place-making, through layout and design approaches that will encourage social progress which recognises the needs of everyone; protect the environment; safeguard prudent use of natural resources; and maintain high and stable levels of economic growth and employment while considering the long term implications of decisions. International approaches will be identified and evaluated to create best practices that can be adopted and

applied to the local South African planning context in an attempt to create and plan for successful sustainable communities focussing on the Vaalharts rural area.

1.5 Method

A comprehensive theoretical research was conducted, representing the various fundamentals of this research, including:

Literature with regards to the concept of sustainable communities has been included in order to understand the role of sustainable communities and thereby highlighting the importance of planning for these sustainable communities. Therefore, the concept of sustainability and sustainable communities, along with the planning of such communities were discussed in Chapter 2. This research, however, is not focussed on sustainable indicators, but rather on recovering the balance between “The Three Spheres of Sustainability” as applicable to the place-making, through layout and design approach.

Layout and design approaches focus on urban forms, public spaces, green planning initiatives; and the complexities and differences of urban spaces. Various international layout and design models were studied in Chapter 3, in order to determine how these layout and design approaches can improve planning for sustainable communities.

Place-making approaches such as the livelihoods approach, the power of ten approach, the community participation approach, the New Urbanism approach, and the Green planning approach forms an integral part to planning for sustainable communities. Hence, these place-making approaches, along with the principles of place-making were discussed in Chapter 4.

The empirical investigation comprises of the following:

Chapter 5 forms the first part of the empirical investigation in the research. In this chapter, the international approach to place-making, through layout and design was discussed by means of a pilot study of the *Place des Wallons*, a public square in *Louvain-la-Neuve in Belgium*.

Policies and legislation frameworks guides layout and design approaches. In Chapter 6, the South African realities and challenges in this regard were analysed and policies and legislation were summarized.

In Chapter 7, qualitative and quantitative research methods were employed in order to gain the opinions and perspective of the public and experts regarding sustainability, place-making and layout and design in South Africa . The qualitative research includes an interview with Professor Sarel Cilliers, an international leader in the field Urban Ecology (the integration of environmental aspects and urban reality). The quantitative research includes a questionnaire completed by twenty participants from various backgrounds.

Local approaches to place-making, through layout and design in South Africa, were studied in Chapter 8 on the basis of a case study of the Vaalharts region.

Conclusions in terms of the theoretical and empirical research were discussed in Chapter 9, followed by recommendations in terms thereof in Chapter 10.

Relevant best-practice approaches (place-making, through layout and design) were applied to the rural Vaalharts area in order to link international approaches and successful urban planning approaches to the local rural environment.

A layout and design proposal was offered as final recommendation in Chapter 10. This layout is a proposal of an integrated approach to sustainable community development by incorporating elements of place-making and sustainable development within the layout and design approach. Considering the fact that all areas are unique and require tailor-made layout and designs, this proposal and design can be used as a point of departure for the layout and design of similar rural areas in South Africa.

1.6 Delineation of the study area

The Vaalharts rural area has been selected as the case study for this research because there are several challenges and problems found in this region, especially in terms of sustainability. The apparent resemblance of characteristics of this area is comparative to the average rural areas of South Africa.

This rural area is located within the jurisdiction of the North-West and Northern Cape provinces of South Africa. Given that the region stretches across two provinces and is thus governed by two distinct provincial authorities, complexities in determining dominant policies arise. The Vaalharts water scheme and the variety of available agricultural land serves as positive attractions for the area.

This study focuses on the Vaalharts region as a whole, but mainly consists of the data made available for the purpose of this study and is representative of the communities Taung, Valspan, Ganspan, Taung and Pampierstad, all located within the Vaalharts rural area.

The Vaalharts region in the context of South Africa is presented in Map 1: location of the case study.

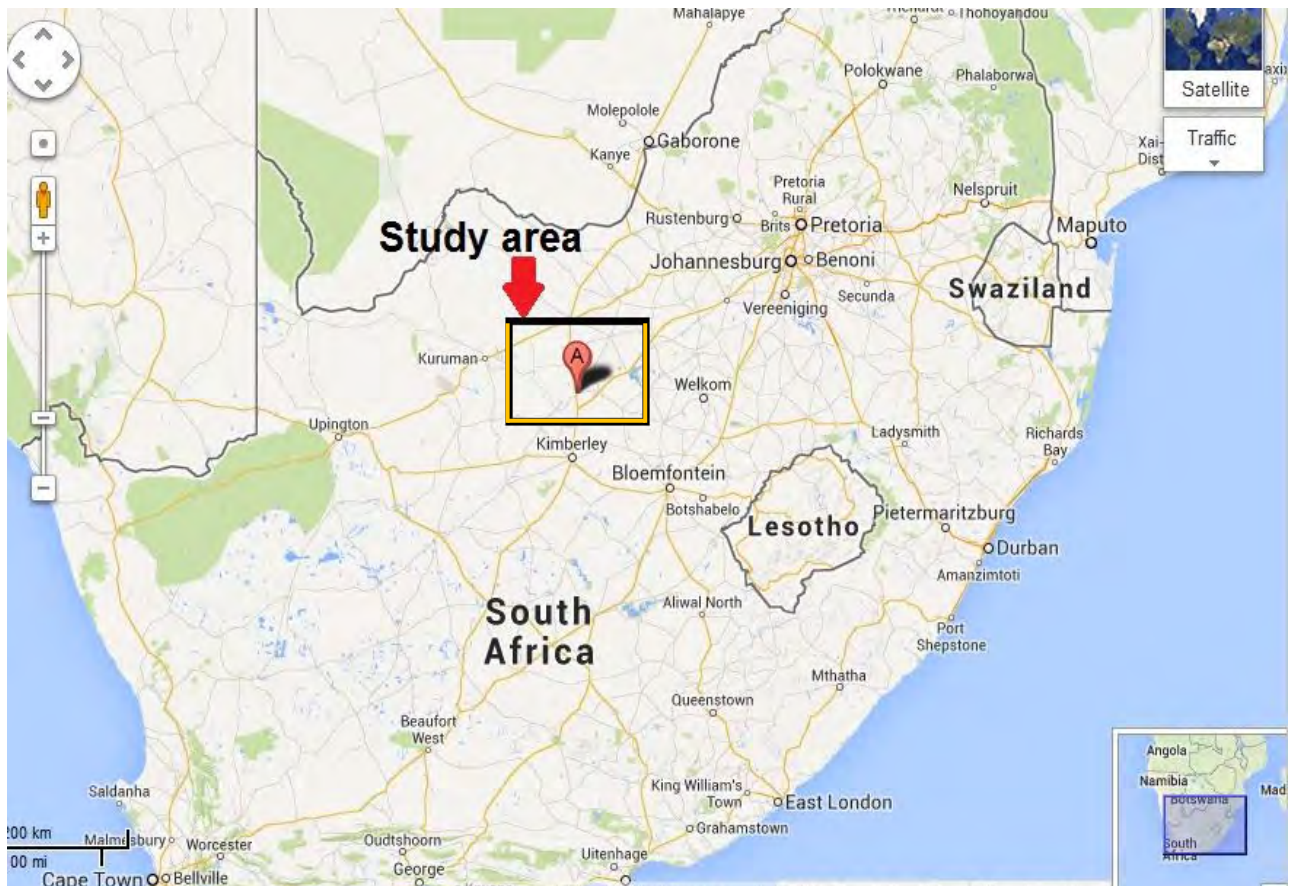


Figure 1: Location of the case study in the context of the South African map

1.7 Limitations of the research

Sustainable community planning and layout and design approaches in South Africa is a complex and unique issue. The *status quo* in South Africa, with regard to the locality, layout and design of regions, cities, towns, and, more specifically, townships where the indigenous population primarily resides, was influenced, for the most part, by political ideology. Thus adopting traditional approaches can be applied successfully in every area.

The data, findings and analyses included in this research were predominantly acquired from a Vaalharts case study, which was carried out by the company “Research Logistics”, in partnership with the North-West University over a period of seven years, ending in 2011. These should therefore be considered as a secondary source.

There are a wide range of factors that influence sustainability on various levels. This study, however, is not focused on all the factors that influence sustainability. Although some of these aspects are briefly discussed where applicable, the focus of the study is based on an urban planning perspective, more specifically place-making, through layout and design approaches and how these approaches can lead to sustainable community development.

The study does not assume to have answers on how to implement sustainability in general. Instead, the study aims only to illustrate the problems associated with planning for sustainable communities, place-making, through layout and design approaches (which merit further investigation by other specialists in their fields) and to address those of a spatial nature. There are limited case studies regarding place-making in South Africa.

1.8 Structure of the dissertation

The following is a summary of the structure and content of the dissertation:

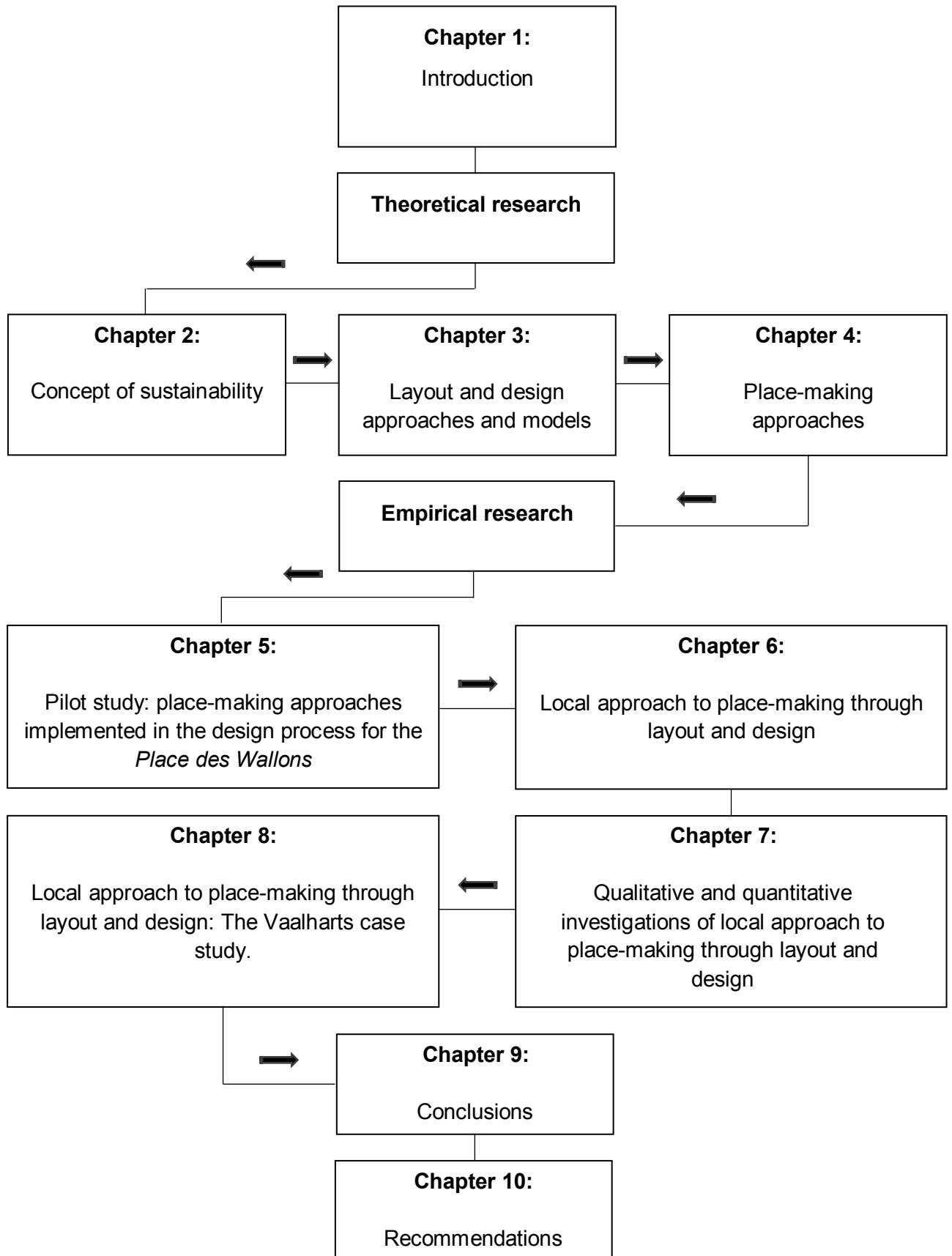


Diagram 1: Structure of research

1.9 Definitions

The following are important definitions of terminology which is highly applicable in this study:

Table 2: Glossary.

Green open spaces	“Public and private open spaces in urban areas, primarily covered by vegetation, which are directly (e.g. active or passive recreation) or indirectly (e.g. positive influence on the urban environment) available for the users” (The Green Infrastructure Research Group, 2013).
Integrated planning approach	Joint planning exercise that ensures participation of all stakeholders and affected departments. Its objective is to examine all economic, social, and environmental costs and benefits, in order to determine the most appropriate option and to plan a suitable course of action (Cities Matter, 2011).
Lively Places	A place is regarded as ‘lively’ when the focus is on the public grounds, is inclusive for all and is open for a wide range of user groups (Hobart City Council, 2011:1).
Lively Cities	Cities which focus on the public realm by being inclusive and creating invitations for a wider range of user groups. This can be achieved through a number of initiatives such as encouraging more residential development, attracting more education institutions in the city centre, as well as providing facilities and open spaces that make city living more attractive (Hobart City Council, 2011:1).
Liveability	Liveability reflects the wellbeing of a community and represents the many characteristics that make a location a place where people want to live now and in the future, such as employment and incomes, community strength, environment, amenity and place, planning, participation, and infrastructure. Economic and community strength are critical to liveability. (Cilliers <i>et al.</i> , 2012:6).
Liveliness	“... liveliness is entirely associated with people and activities and it can be assessed by measuring pedestrian flows and movements, the uptake of facilities and the existence or otherwise of ‘things to do’” (Montgomery, 2006 cited by Lamit <i>et al.</i> , 2012).
Participation	Active participation implies the community has a bigger role to play in terms of discussions with authorities, policy formalization,

	creating solutions and decision making (Cilliers <i>et al.</i> , 2011).
Place	Place is the notion that includes the dimensions of lived experience, interaction and use of a space by its inhabitants (Harrison & Dourish, 1996:67).
Place-making	Place-making is the principle of creating of a place where the structure and the uses are determined by the people inhabiting that place and are therefore essential components for building vibrant neighbourhood communities (Cowan <i>et al.</i> , 2006:23).
Rural areas	The concept of 'rural areas' refers to an area that lags behind in a variety of aspects, such as population per square mile, need and lack of education programmes and institutions, experiences and the power to control its own destiny when compared to more urban areas (Buxon, 1976:29).
Space	Space refers to the structural, geometrical qualities of a physical environment, (Harrison & Dourish, 1996:67).
Sustainability	"Sustainability is based on a simple principle: Everything that we need for our survival and wellbeing depends, either directly or indirectly, on our natural environment. Sustainability creates and maintains the conditions under which humans and nature can exist in productive harmony that permits fulfilling the social, economic and other requirements of present and future generations" (United States Environmental Protection Agency, 2013).
Sustainable communities	"A sustainable community seeks to maintain and improve the economic, environmental and social characteristics of an area so its members can continue to lead healthy, productive, enjoyable lives" (Hart, 2012 cited by United States Environmental Protection Agency 2012).
Sustainable development	"Sustainable development is development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs" (Berke, 2002).

Chapter 2: Concept of sustainable communities

The following diagram illustrates the structure of Chapter 2.

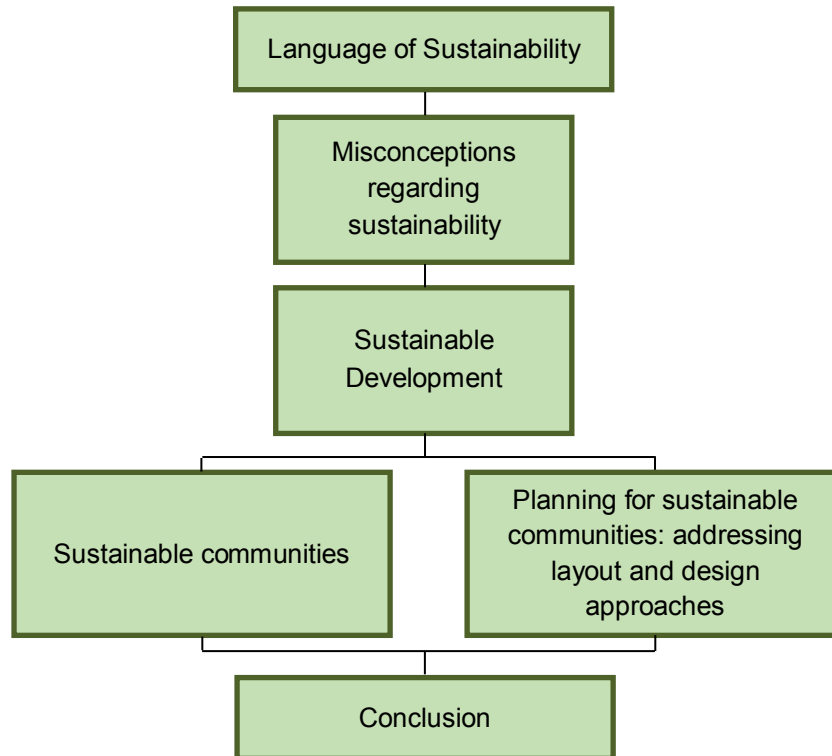


Diagram 2: Structure of Chapter 2

2.1 The language of sustainability

Einstein (as cited by Geis & Kutzmark, 2006) echoed his concern apropos the impact that past human practices have had on the resources and capacity of the environment to regenerate and sustain life, by saying: “We shall require a substantially new manner of thinking if mankind is to survive.” The necessity to find a harmonious balance between mankind’s way of living with his environment, and framing the essence of this balance in a comprehensible language, was strongly elevated in the 1950’s by Aldo Leopold (Geis & Kutzmark, 2006). George Lakoff, of the University of California at Berkeley, defines framing as being “about getting language that fits your worldview. It is not just language. The idea is primary, and the language carries those ideas, evokes those ideas” (Jaber, 2009).

The internationally accepted linguistic term “sustainability” was chosen to best evoke and convey the characteristics of a world that will be beneficial to all and best expresses the equilibrium

between man and his environment. The concept of sustainability has evolved since the United Nations (UN) Conference on The Human Environment, which was held in Stockholm in 1972 (ISCIENCES, 2012). In 1992, at the Earth Summit in Rio de Janeiro, convened by the UN World Commission on Environment and Development (UNCED), the concept and application of sustainability were further endorsed by 120 nations (Geis & Kutzmark, 2006).

A definition of sustainability is: “Sustainability is based on a simple principle: Everything that we need for our survival and wellbeing depends, either directly or indirectly, on our natural environment. Sustainability creates and maintains the conditions under which humans and nature can exist in productive harmony that permits fulfilling the social, economic and other requirements of present and future generations” (United States Environmental Protection Agency, 2013).

The worldwide importance of sustainability is increasing, but at the same time, it is found that the forces that influence sustainability change frequently. The effect of environmental traditions that have influenced sustainability in the past may now have been augmented or replaced by forces unique to this decade (Geis & Kutzmark, 2006). In a dissertation by Geis & Kutzmark (2006), forces that are exclusively typical of the twenty-first century are identified as: limited resources, urbanisation, scientific knowledge, technology, social awareness, health and safety imperatives and new economics.

2.2 Misconceptions regarding sustainability

According to Filho (2000), there are many misconceptions regarding the concept of sustainability. Filho is of the opinion that individuals and/or communities opposing sustainability or sustainable development often do not fully comprehend the all-inclusive value and significance of sustainability. These misconceptions usually have a negative impact on the community or society and affect their efforts to work towards a more sustainable future (Filho, 2000). Table 3 explains the perceptions that Filho asserts have a negative influence on society’s attitude towards sustainability:

Table 3: Misconceptions of the concept of sustainability

Misconception	Explanation
Sustainability is not a subject <i>per se</i> .	Notwithstanding sustainability being a high priority in virtually all scientific fields, many continue to view the concept as being vague, without scientific base and expensive to implement.
Sustainability is too theoretical.	Sustainability and sustainable approaches have become popular terms often considered in marginally or unrelated perspectives. The result is that many see the concept as indistinct and theoretical.
Sustainability is too broad.	People and institutions, intimidated and discouraged by the scope of the concept, believe the implementation of sustainability difficult to manage.
Sustainability is too recent a field.	Many perceive sustainability a new and experimental idea and thus prefer to hold back and not partake in the implementation process.
Sustainability is a fashion.	Poor knowledge of the significant value of sustainability leads to the unfounded criticism that sustainability merely represents a fashionable trend that only the minority can afford.

Source: Filho (2000)

To eradicate these misconceptions and reservations, Filho (2000) suggests that an aggressive informative effort which educates the community extensively on the importance and long-term advantages versus short-term economic sacrifices, simultaneously supported by practical pilot projects and initiatives that illustrate the feasibility of sustainability, will result in individual and collective resolve to pursue sustainable objectives and solutions (Filho, 2000).

2.3 Sustainable development

Berke (2002) asserts that the history of the process that was followed in the development as applicable to urban planning of towns, cities and regions has been dominated by the physical design model and the rational planning model, both distinctively representative of a top down approach. This approach permitted government and other major role players the opportunity to manipulate the planning and development process, thereby promoting subjective political and economic objectives and at times overlooking the aspirations and needs of people in specific communities. Since 1960, denunciation of the aforementioned development models mounted as the fundamental weaknesses in these models were progressively exposed by critics and displeased citizens (Berke, 2002).

The necessity to devise an alternative approach embracing a common goal that would serve the interests of all the people and at the same time protect the environment became noticeably essential (Berke, 2002).

The World Commission on Environment and Development (WCED) of the United Nations, was commissioned to conceive a philosophy that will be instrumental to reverse environmental degradation, reduce over-consumption and grind poverty. In their report, *Our Common Future*, that was published in 1987, portraying the common goal as equity to future generations, the WCED defined the hypothesis of sustainable development as follows: “Sustainable development is development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs” (Berke, 2002:8).

Following the report, the majority of the international community commendably acknowledged that this hypothesis was to be embraced in all policies and approaches that determine the harmonious balance between the three foremost values of sustainable development, which are the environment, the economy and equity (Geis & Kutzmark, 2006).

An illustration that examines the three primary values of sustainable development, is presented in Figure 2. The expanses where the circles transcend display the core characteristics of sustainable development.

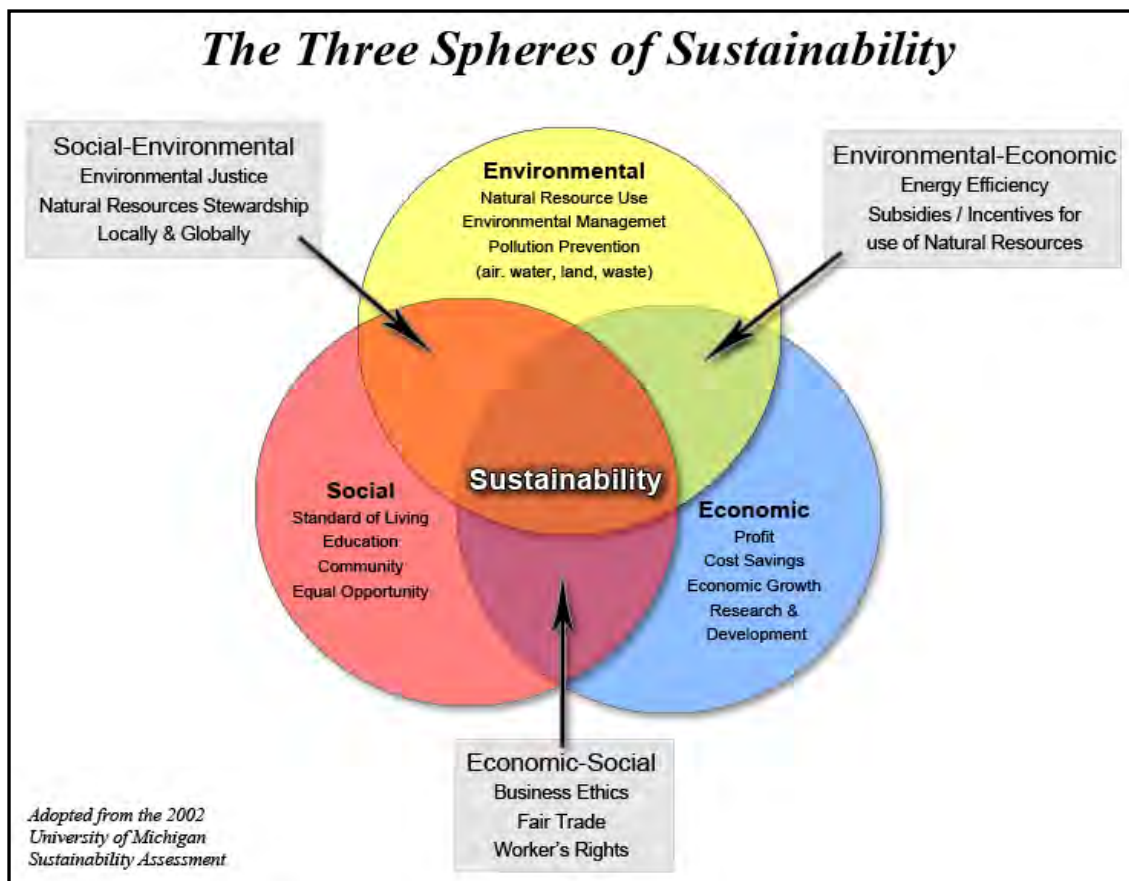


Figure 2: The Three Spheres of Sustainability
Source: Vanderbilt University Sustainability and Environmental Management Office (2013)

Grasping the aim of the WCED’s definition of sustainable development is undemanding, however, translating the concept into procedure shows a diverse interpreting methodology which is clearly evident in the seven sample definitions of sustainable development below.

Table 4 describes the definitions as provided by The World Commission on Environment and Development (WCED) to capture the essence of sustainable development on a variety of levels.

Table 4: Seven examples of sustainable development definitions

Level	Definition
International	“Sustainable development respects and defines traditional livelihoods and indigenous culture and societies. It recognizes that communities must define and develop their own solutions to environmental and development problems. It also works toward shared power and participation, at the local, national, and international levels” (Canadian University Students Organization, 1989: 3).

National	<p>“Our vision is of a life-sustaining Earth. We are committed to the achievement of a dignified, peaceful, and equitable existence. A sustainable United States will have a growing economy that provides equitable opportunities for satisfying livelihoods and a safe, healthy, high quality of life for current and future generations. Our nation will protect its environment, its natural resource base, and the functions and viability of natural systems on which all life depends” (President’s Council on Sustainable Development, 1996: i).</p>
State	<p>“Sustainable development links the environment, economy and social equity into practices that benefit present and future generations” (North Carolina Environmental Resource Program, 1997: 1).</p>
Regional	<p>Sustainable development involves “achieving positive change that enhances the ecological, economic, and social systems upon which South Florida and its communities depend. Once implemented these strategies will bolster the regional economy, promote quality communities, secure healthy South Florida ecosystems, and assure today’s progress is not achieved at tomorrow’s expense” (Governor’s Commission for a Sustainable South Florida, 1996).</p>
Local	<p>Sustainability is “long-term cultural, economic, and environmental health and vitality” (Seattle Planning Department, 1994).</p> <p>“As a community, we need to create the basis for a more sustainable way of life both locally and globally through the safeguarding and enhancing of our resources and by preventing harm to the natural environment and human health” (Santa Monica Planning Department, 1995: 1).</p> <p>Sustainable development is “the ability of [the] community to utilize its natural, human and technological resources to ensure that all members of present and future generations can attain high degrees of health and wellbeing, economic security, and a say in shaping their future while maintaining the integrity of the ecological systems on which all life and production depends” (Cambridge Planning Board, 1993: 43).</p>

Source: Cited by Berke (2002)

Deduced from the multiplicity of the above definitions, it is reasonable to argue that the people and the prevailing circumstances in a specific community, town, region, state or country will determine in what manner the definition of sustainable development should be paraphrased.

The Sustainable Development Commission (2002) (as cited by Power, 2004), an independent advisor to the United Kingdom Government on sustainable development, founded six core principles that, from their perspective, determine what sustainable development is and ought to be.

Table 5: Principles for sustainable development

Principles of sustainable development	Explanation
1. Putting sustainable development at the centre	Sustainable development must be the organising principle of all democratic societies, underpinning all other goals, policies and processes.
2. Value nature	We are and always will be part of nature, embedded in the natural world and totally dependent for our own economic and social well-being on the resources and systems that sustain life on earth.
3. Fair shares	Sustainable economic development means 'fair shares for all', ensuring that people's basic needs are properly met across the world, whilst securing constant improvements in the quality of peoples' lives through efficient, inclusive economies.
4. Polluter pays	Sustainable development requires that we make explicit the costs of pollution and inefficient resource use, and reflect those in the prices we pay for all products and services, recycling the revenues from higher prices to drive the sustainability revolution that is now so urgently needed, and compensating those whose environments have been damaged.
5. Good governance	There is no one blueprint for delivering sustainable development. It requires different strategies in different societies. But all strategies will depend on effective, participative systems of governance and institutions, engaging the interest, creativity and energy of all citizens.
6. Adopting a precautionary approach	Scientists, innovators and wealth creators have a crucial part to play in creating genuinely sustainable economic progress. But human ingenuity and technological power is now so great that we are capable of causing serious damage to the environment or to peoples' health through unsustainable development that pays insufficient regard to wider impacts.

Source: Sustainable Development Commission, 2002 (as cited by Power, 2004)

Although strategies for the sustainable development of any one community may differ due to different circumstances in the community, strategies should primarily be founded on the principles for sustainable development.

2.4 Sustainable communities

“The sustainable community is a model, an ideal set of goals to work toward. But it also is a philosophy for envisioning those goals and a practical problem-solving process for achieving them” (Geis & Kutzmark, 2006). “A sustainable community seeks to maintain and improve the economic, environmental and social characteristics of an area so its members can continue to lead healthy, productive, enjoyable lives” (Hart, 2012 cited by United States Environmental Protection Agency 2012). The real challenge of creating a sustainable community lies in the process of harmonizing the expectations and needs of the community with the values of sustainability. A sustainable community is a community that is economically, environmentally, and socially healthy and strong (Institute for Sustainable Communities, 2014).

To accomplish the process successfully, the fundamental values of sustainability have to form the nucleus of the development and planning approach. A sustainable community underwrites objectives that reflect respect for both the natural environment and human nature (Geis, & Kutzmark, 2006). A sustainable community should essentially strive to achieve the following characteristics and goals:

- Place a high value on quality of life. A sustainable community accepts that communities are first and foremost for people and that the primary objective of the planning and development process is to improve the quality of life of its residents socially, economically, psychologically, and spiritually. It implements policies to achieve quality of life and does so in a fair, open, and democratic manner.
- Respect the natural environment. A sustainable community recognises its relationship to nature and sees nature's systems and components as essential to its wellbeing. It provides access to nature through metropolitan parks, open-space zones, and urban gardens. It understands the sensitive interface between the natural and built environment, develops in a way that will support and complement – not interfere with – nature, and avoids ecological disasters.
- Infuse technology with purpose. A sustainable community uses appropriate technology, while ensuring that technology in the built environment is a means to an end, rather than an end unto itself. It emphasizes learning and understanding how existing and new technology can serve and improve communities, not vice versa. It sets clear and measurable goals for what it wants technology to achieve.
- Optimise key resources. A sustainable community takes an inventory of its human, natural, and economic resources and understands their finite quality. It ensures that forests are not

overused, people are not underemployed, and the places of the built environment are not stagnant and empty. It reduces waste and reuses resources; it creates conditions in which all these resources can be used to their fullest and best potential, without harming or diminishing them.

- Maintain scale and capacity. A sustainable community recognises the importance of scale and capacity with regard to the natural and human environment. It ensures that the environment is not overdeveloped, overbuilt, overused, or overpopulated. It recognises the signs of tension that indicate when the environment is overstressed and can adjust its demands on the environment to avoid pollution, natural disaster, and social disintegration (Geis, & Kutzmark, 2006).

“[A] sustainable community reflects the interdependence of economic, environmental, and social issues by growing and prospering without diminishing the land, water, air, natural and cultural resources on which communities depend. Housing, transportation and resource conservation are managed in ways that protect economic, ecological and scenic values” (Natural Resources Defense Council, 2012).

The Institute for Sustainable Communities (2014) views the concept of a sustainable community as a framework to guide action; the following table offers some examples from their experience:

Table 6: The concept of a sustainable community as a framework to guide action

Example:	Explanation
A Healthy Climate and Environment	<ul style="list-style-type: none"> • Protection and enhancement of local and regional ecosystems and biological diversity. • Conservation of water, land, energy, and non-renewable resources. • Utilisation of prevention strategies and appropriate technology to minimise pollution. • Use of renewable resources no faster than their rate of renewal. • Infrastructure that improves access to services and markets without damaging the environment.
Social Wellbeing	<ul style="list-style-type: none"> • Satisfaction of basic human needs for clean air and water and locally sourced nutritious, uncontaminated food. • Affordable provision of quality health prevention, care, and treatment services for all community members. • Safe and healthy housing accessible to all.

	<ul style="list-style-type: none"> • Equitable access to quality education services, formal and informal. • The basic human rights of all community members are respected and defended against injustices including exploitation and psychological and physical harm. • Protection, enhancement and appreciation of community manifestations of cultural diversity, treasures, customs, and traditions.
Economic Security	<ul style="list-style-type: none"> • Community members equitably benefit from a strong and healthy community-centred economy. • Diverse and financially viable economic base. • Reinvestment of resources in the local economy. • Maximisation of local ownership of businesses. • Meaningful employment opportunities for all citizens. • Responsive and accessible job training and education programs that enable the workforce to adjust to future needs. • Businesses that enhance community sustainability.

Source: Institute for Sustainable Communities (2014)

2.5 Planning for sustainable communities: addressing layout and design approaches.

“The kind of change required by sustainability implicates each community, each household, and each individual. Successful solutions to problems at this level of society will need to be rooted in the cultural specificity of the town or region if the people are to be supportive of and involved in such change” (UNESCO, 1997, as cited by Teaching and Learning for a Sustainable Future, 2010).

Subsequent to an eighteen month investigation, during which contributions of over seventy national, regional and local regeneration and development organisations were obtained and scrutinised, the Sustainable Development Commission (SDC) concluded that there are three (3) fundamental aims that should dominate the development or regeneration approach regarding a sustainable community. These aims are a healthy environment, a prosperous economy and the social wellbeing of the inhabitants (Power, 2004). In terms of the urban planning context, these aims also need to be addressed in the layout and design approaches. The planning and design of sustainable communities are essential. “Everyone has the right to an environment that is not harmful to their health or wellbeing; and to have the environment protected for the benefit of

present and future generations through reasonable legislative and other measures that prevent pollution and ecological degradation as well as promote conservation and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development” (United Nations, 1997).

“Inclusiveness and low-footprint design that targets public transport, pedestrianisation schemes and cycle lanes and facilities, urban gardens and food markets, energy and water efficient, low-footprint design of buildings and infrastructure, are essential elements that, in combination can be employed for successful urban design and spatial planning” (Peter & Swilling, 2012).

The table below summarises the sustainable community building blocks, which should form part of the layout and design approach, described by Williams (2000).

Table 7: Sustainable community building blocks

Sustainable community building blocks	Explanation
Parks	In urban areas, open spaces are a vital feature of sustainable development and initiatives for it can contribute to the surrounding environment and community if it is located correctly and maintained properly. These parks can provide places where people can meet and take part in various activities.
Water supply	Water is a limited resource and the quality of water, especially in urban areas, is not very high. Urbanisation adds more pressure on the municipalities to provide clean water for the people. Water conservation strategies must be supported by the public and programmes as the use of water in a sustainable manner is vital – especially in urban cities.
Sewerage	It is important that the sewerage systems are well designed and well maintained in order to ensure the optimal functionality of the systems. Equally important is the availability of well-trained maintenance personnel.
Solid Waste Management	Urbanisation increases pressure on solid waste management. The solution includes preventing the situation from getting worse rather than to follow an entire clean-up process. The four R’s are the preferred options: reduce, reuse, recycle and recover.

Energy Efficiency	Energy efficiency refers to getting more done with less to do it with. Delivering the same quality of service while requiring a lot less energy and electricity is a challenge. This can be done by making use of solar terminal energy, wind power, biomass, micro-hydro-projects and by integrating energy considerations into all planning decisions.
Air Quality	The effect of bad air quality on both the health of the people in communities and the natural environment is critical. Air quality is closely linked with climate change and ozone layer depletion. Therefore, this building block should be considered as vital in the designing and planning process of sustainable communities.
Transportation	Motor vehicles are a serious form of unsustainability and unsustainable transport systems. These systems increase congestion, longer commuting times and higher prices due to reduced work production. This problem can be solved by planning layouts and communities that are more focused on mixed land uses, low car use infrastructure, higher transit systems and more modes with opportunities for walking and cycling.
Land Use	Sustainable land use can help revitalise communities and provide substantial environmental, economic, social and cultural benefits.
Housing and Community Development	Creating liveable communities is important for increasing the life quality for community members of all ages and statuses.

Source: Williams (2000) based on *Environmental Planning for Sustainable Urban Development*.

2.6 Conclusion

The concept of sustainability is more than only a theory, fundamentally it is a long term practical solution through which the quality of life of people is prolonged, improved and protected. This outcome can however only be realized, when the basic values, principles and objectives which are intrinsic to the concept, are entrenched in a clearly defined policy which is applicable to all facets of life and that are supported by the community and individuals.

Layout and design are the spatial planning for communities and are considered as, the framework within which opportunities are created to develop sustainable communities. Creating the layout and design of sustainable communities requires visionary planning, guided by innovative initiatives and properly defined long term objectives. Although the social composition and environmental characteristics, of any one community differs from the other, there are various layout and design models that had been devised and had been implemented and could be integrated as building

blocks for the layout and design for sustainable communities. For this reason, certain existing layout and design models will be discussed in Chapter 3.

Chapter 3: Layout and design approaches and models

The following diagram illustrates the structure of Chapter 3.

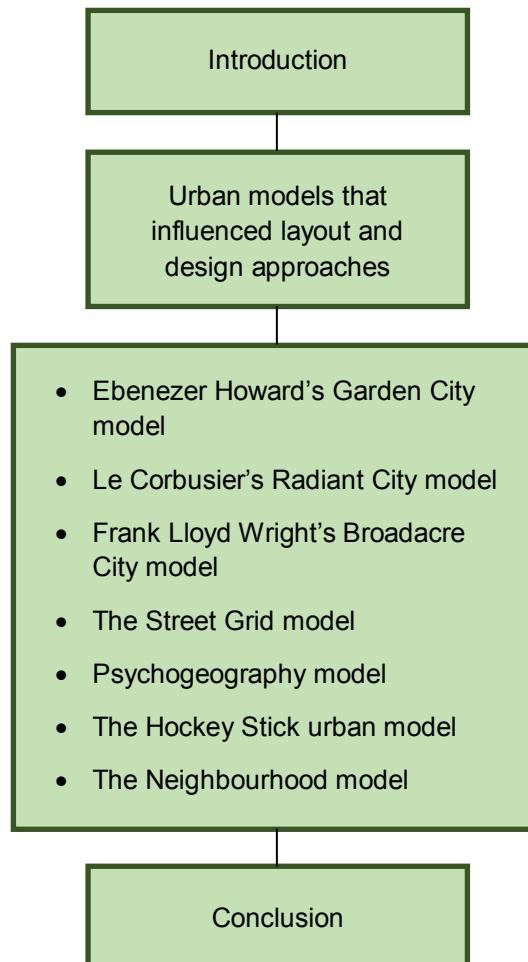


Diagram 3: Structure of Chapter 3

3.1 Introduction

In light of the emphasis placed on sustainability and sustainable development as part of urban planning approaches, various layout and design models were evaluated in this chapter, in an attempt to determine best practices and applicable models that underwrite objectives of sustainability.

Many schematic layouts and designs were structured in an attempt to design/create the ideal city form (sustainable urban form), of which only a few have had an enduring influence on modern concepts. According to Badger (2012), there are ten layout and design diagrams which have influenced urban planning since the early twentieth century. Seven of these diagrams are

Howard delineated three respective dynamic elements (three magnets), demonstrated below in Figure 4, that he believed would persuade and attract people to live in these “Garden Cities”:

- **The town element:** typically associated with economic and cultural opportunities, amusement and high wages;
- **The country element:** representative of tranquillity, natural beauty, fresh air and low rents; and
- **The town-country element:** embodies a combination of all of the aforementioned advantages (LeGates & Stout, 2013).

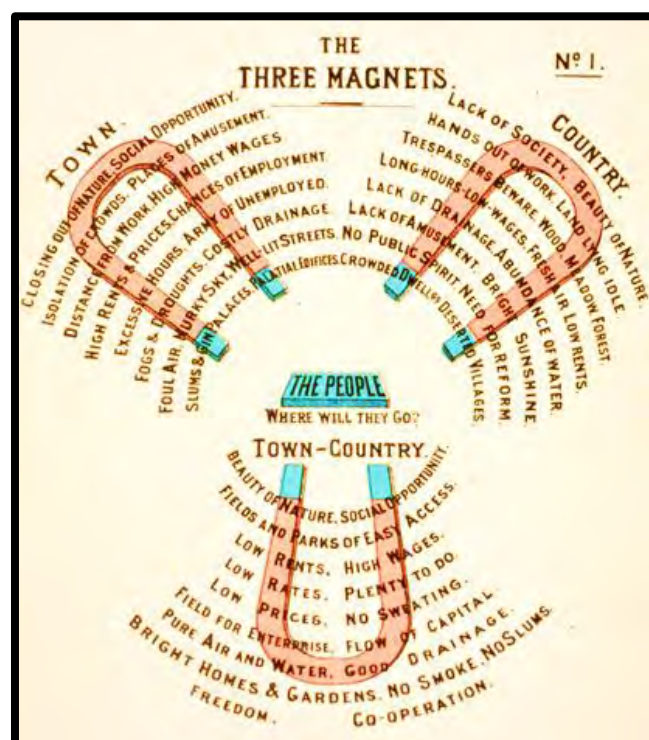


Figure 4: The Three Magnets
Source: Turner (2011)

With this model, Howard envisioned self-sufficient communities where people could simultaneously experience the benefits of city and country life. Howard was convinced that this layout and design would prevent metropolitan sprawl and industrial centralisation (Howard, 1902).

The following table recapitulates the principle concern, characteristics, advantages and disadvantages of the Garden City layout. Current examples of the layout and place-making principles are likewise displayed.

Table 8: Ebenezer Howard’s Garden City model

Ebenezer Howard’s Garden City model	
Principle concern	<ul style="list-style-type: none"> • Depopulation of rural areas.
Characteristics	<ul style="list-style-type: none"> • Self-reliant satellite towns. • Encircled by a green belt. • Low residential densities. • Separation of land uses. • Open road networks.
Advantages	<ul style="list-style-type: none"> • Combining the best elements of city and country. • The size of the garden city enriches social life.
Disadvantages	<ul style="list-style-type: none"> • Low density does not promote self-containment. • In most instances, the greenbelt separating the “Garden Cities” from the inner-city eventually disappeared due to urban infill (LeGates & Stout, 2013). • Traffic upsurges.
Current examples and applicability of the concept	<ul style="list-style-type: none"> • Letchworth in England. • Radburn (New York) in the USA.

3.2.2 *Le Corbusier’s* Radiant City model

In 1920, a French architect named Le Corbusier, contrary to Howard, proposed the “Radiant City” or the “Towers in the Park” layout and design model that endorses a high density city. At the core of Le Corbusier’s design lay the notion to find a solution for the traffic congested streets and smoke-filled slums of the modern city. Le Corbusier advocated that condensed cities would reduce the distance that people would have to travel into the city. The model suggested that the city be divided into large blocks, each block having extremely tall buildings that could accommodate a high number of people and businesses, surrounded by large parks or grasslands covering 48% to 95% of the area. The blocks were divided further into different zones reserved for either business or residential purposes. Moreover, Le Corbusier was convinced that his model would prevent urban sprawl and ensure easy access to the surrounding parks or grasslands (Badger, 2012).

Later, during the era of urban renewal, *Le Corbusier’s* design played a significant role in the design of massive public housing projects in the U.S (Badger, 2012). The figure below illustrates *Le Corbusier’s* Radiant City model.

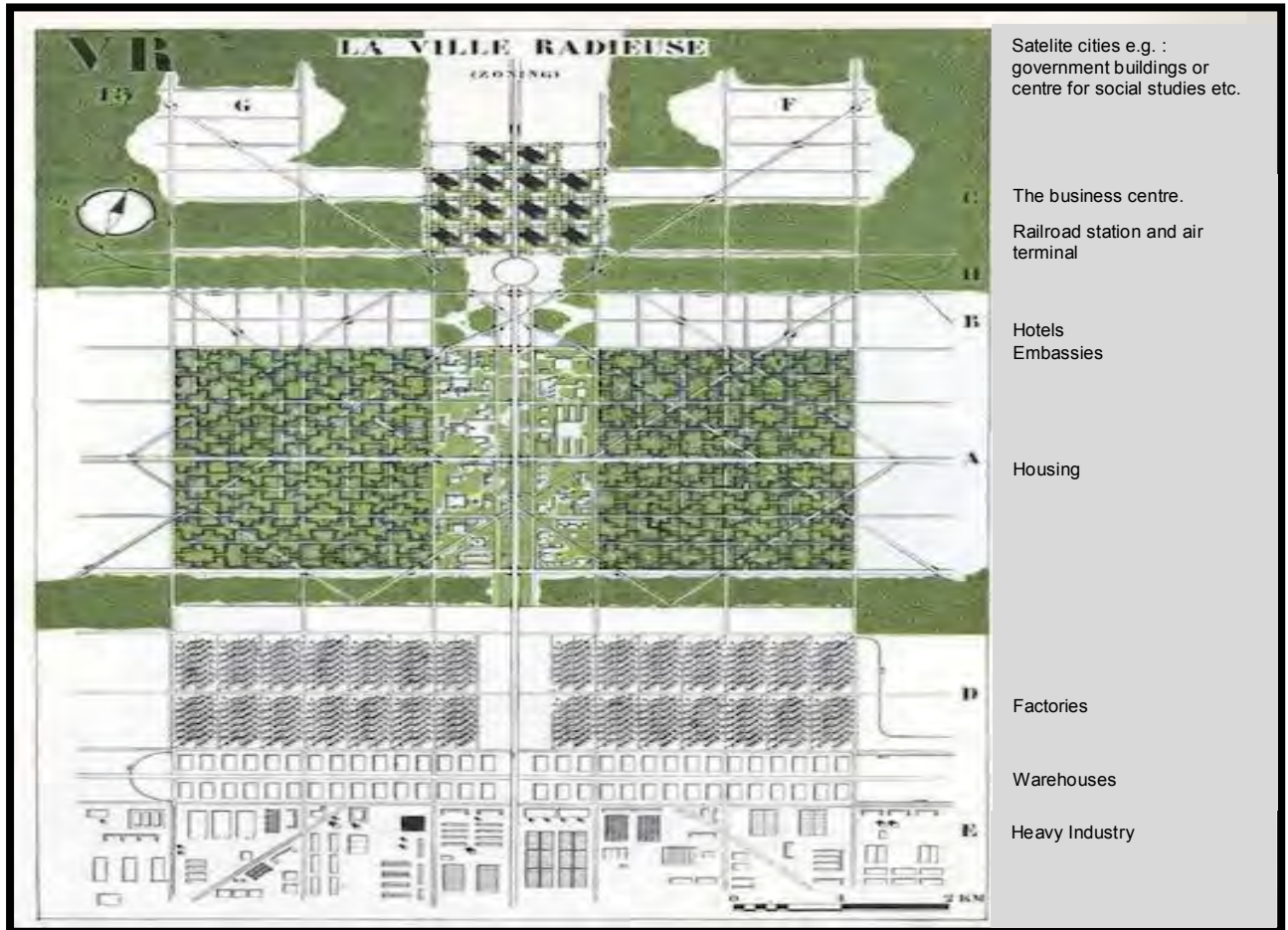


Figure 5: Le Corbusier's Radiant City model

Source: Badger, 2012, from Le Corbusier's "The Radiant City" (1933)

The figures below illustrate a typical example of the Le Corbusier's design, are of the *Pruitt-Igoe* housing project in St. Louis that was demolished just eighteen (18) years after it was built.

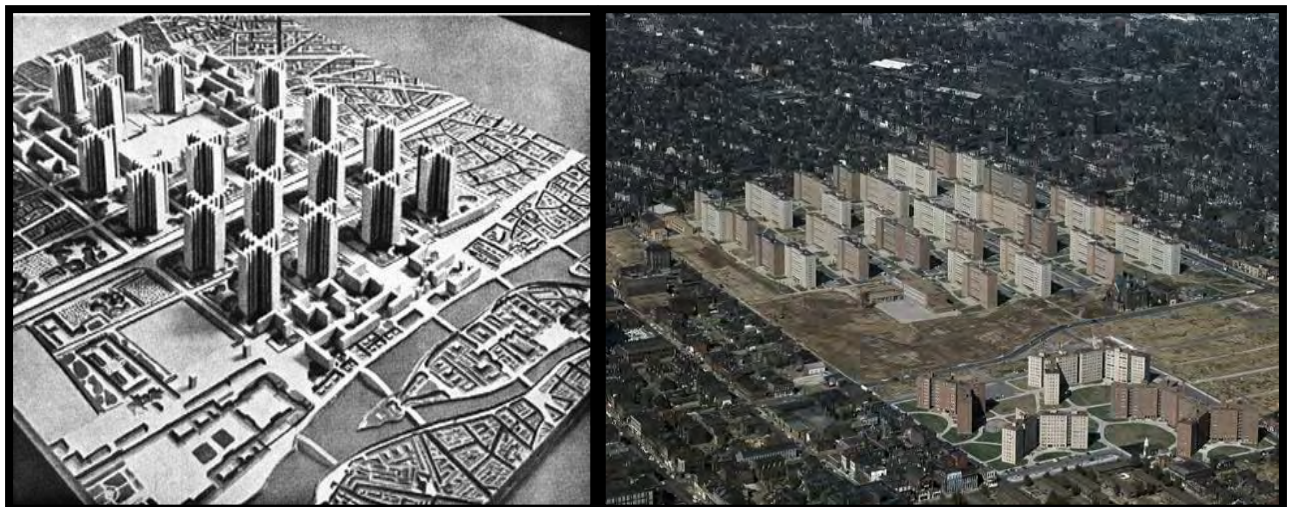


Figure 6: Pruitt-Igoe housing project

Source: Badger, 2012 United States Geological Survey

The following table summarises the principle concerns, characteristics, advantages and disadvantages of the Radiant City layout. Current examples of the layout and place-making principles are likewise displayed.

Table 9: Le Corbusier’s Radiant City model

Le Corbusier’s Radiant City model	
Principle concern	"Towers in the Park" layout and design model that endorsed a high density city.
Characteristics	Blocks that had extremely tall buildings that could accommodate a high number of people and businesses. The blocks were surrounded by large parks or grasslands.
Advantages	The blocks were divided and could be used for residential and/or business purposes. Transport would have had minimal impact on environment – lower carbon footprint. Prevent urban sprawl. Ensure easy access to the green spaces (parks or grasslands).
Disadvantages	Isolation into a separate world. Limited services available. Fragmented areas.
Current examples and applicability of the concept	Brazilian Capitol – Brazil. The first and most famous of these buildings, also known as Cité radieuse (radiant city) and, informally, as La Maison du Fada (French – Provençal, "The Nutter's House"), is located in Marseille, France, and was built between 1947 and 1952.

3.2.3 Frank Lloyd Wright’s Broadacre City model

Frank Lloyd Wright, born in 1867, was both architect and writer and explained his theory on the suburban “Broadacre City” design as follows: “The Broadacre city, where every family will have at least an acre of land, is the inevitable municipality of the future. We live now in cities of the past, slaves of the machine and of traditional building. We cannot solve our living and transportation problems by burrowing under or climbing over, and why should we? We will spread out, and in so doing will transform our human habitation sites into those allowing beauty of design and

landscaping, sanitation and fresh air, privacy and playgrounds, and a plot whereon to raise things” (dpr-barcelona, 2010).

Pimlott (2011) states that “Frank Lloyd Wright (1869-1958) revealed his approach to the problems of the American city and territory.” The Broadacre City (1935-1950s) project, presented a vision with fundamentals dispersed across a section grid. The Broadacre City was planned as a natural development starting the urban, centralised city to a decentralised, rural sprawl (Metcalf, 2010).

Badger (2012) asserts that “America’s 1785 Land Ordinance divided most of the country’s unsettled interior west of the Ohio River into a neat grid of townships six (6) square miles in size (each containing thirty-six (36) square-mile parcels of land for the kind of agrarian, land-owning society Thomas Jefferson envisioned).” Frank Lloyd Wright divided this rural grid into acres so that each family would live on their own acre. By executing this vision, Suburbia would spread over the entire country (Badger, 2012).

The vertical roads and the perfectly arranged square farms are remnants of the Land Ordinance of 1785 and are still visible today. (Badger, 2012).



Figure 7: Frank Lloyd Wright's Broadacre City model
Source: Badger, 2012, courtesy the Frank Lloyd Wright Foundation Archives

The following table recapitulates the principle concerns, characteristics, advantages and disadvantages of the Broadacre City layout. Current examples of the layout and place-making principles are likewise displayed.

Table 10: Frank Lloyd Wright’s Broadacre City model

Frank Lloyd Wright’s Broadacre City model	
Principle concern	<ul style="list-style-type: none"> • Frank Lloyd Wright worked on a utopian scheme in the early 1930’s. This scheme was called Broadacre City, which was exclusive, for it was built on the sizes of the township and section grid.
Characteristics	<ul style="list-style-type: none"> • A pattern was established that would shape further development that followed.
Advantages	<ul style="list-style-type: none"> • Villages infrequently formed because farmhouses stood in their square fields. • State and county borders were straight because of the firm layout of the acres. • A one-mile grid of arterial streets was created due to urban development that occurred in sectional increases.
Disadvantages	<ul style="list-style-type: none"> • High volume traffic. • Increased pollution. • Urban sprawl.
Current examples and applicability of the concept	<ul style="list-style-type: none"> • Phoenix, USA. • Chicago, USA. • Las Vegas, USA.

3.2.4 The Street Grid model

According to Grant (2012), “[t]he grid embodies a rational, Cartesian conception of space, but its chief virtues are its simplicity, scalability and pragmatism.”

“The Rectilinear Grid Pattern is a street system providing maximum road connections and some road hierarchy. It represents the classic grid street pattern used in many street systems laid out at the turn of the century. This pattern is the preferred pattern in the absence of natural features to

prevent its use” (County of Albemarle Department of Planning and Community Development, 2001).

Characteristics of street grids can include providing opportunities for the creation of blocks, allowing a variety of lot types within an easily managed menu of options, a hierarchy of thoroughfares that provides opportunities for architectural treatment of buildings at corners, alleys that can be loaded on both sides, providing efficiency in infrastructure. It may have park spaces interspersed at regular intervals or more randomly, straight thoroughfares that enhance the character of rolling terrain, it has an easily expandable pattern, does not work well on a steeply sloping terrain in cold climates and it must be seriously deformed to accommodate environmental features such as ravines (County of Albemarle Department of Planning and Community Development, 2001).

In 1960, the street grid was designed to support motor traffic and enable the motor vehicle drivers to easily get from one destination to another. The street designs fluctuated from each other, for some were wider than the others and served as a through street. Streets were virtuously residential and all streets shared a similar speed limit (County of Albemarle Department of Planning and Community Development, 2001) .

For many years the street grid has predominantly been the choice of planner’s because of its logical structure, and is still visible today in most cities and towns. The 1811 Commissioner's Plan for Manhattan proposed a strict and exact street grid to determine the expansion and development of the island. Extension rules and regulations were ignored as well as the irregularly shaped coastline and topography (Grant, 2012).

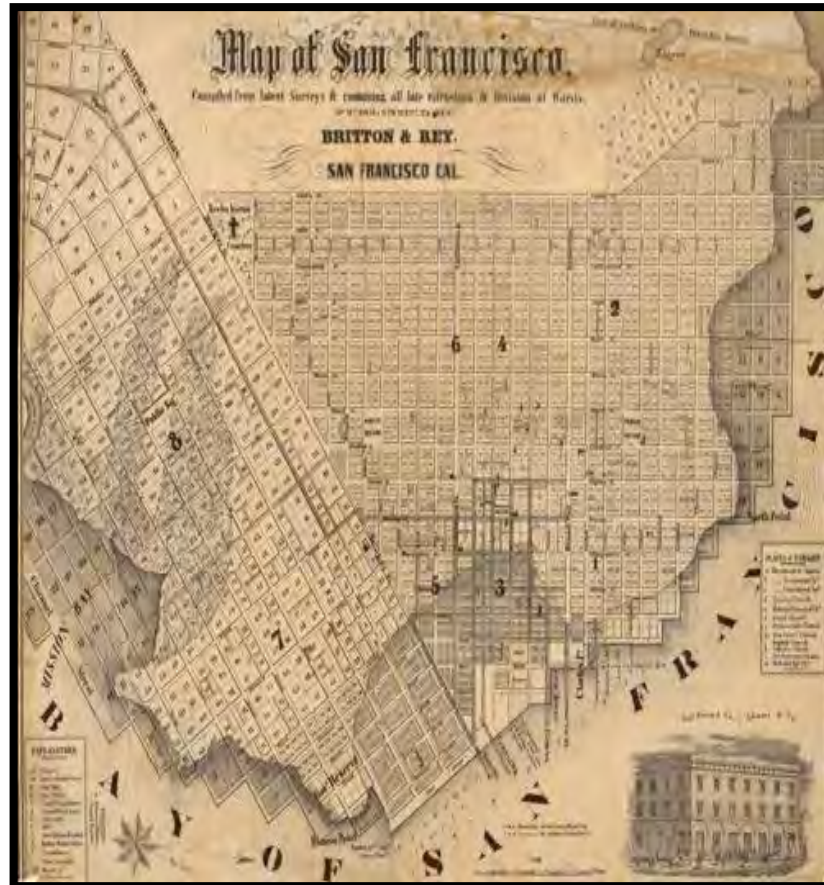


Figure 8: The Street Grid model
 Source: Badger, 2012, courtesy of the David Rumsey Map Collection

The following table describes the principle concerns, characteristics, advantages and disadvantages of the Street grid layout. Current examples of the layout and place-making principles are likewise displayed.

Table 11: The Street Grid model

The Street Grid model	
Principle concern	<ul style="list-style-type: none"> • Enable the motor vehicle drivers to comfortably get from one destination to another and supports motor traffic.
Characteristics	<ul style="list-style-type: none"> • Ordered and regulatory. • Orientation in space and to elements. • Simplicity and ease of navigation. • Speed of layout. • Adaptability to circumstance.

Advantages	<ul style="list-style-type: none">• Not difficult to survey.• Easily subdivided into regular parcels that are easy to extend.• It is modular, so new districts can be added incrementally as a city grows.
Disadvantages	<ul style="list-style-type: none">• Idealising the winding streets of the past began in the early 19th century.• By the 1950s, huge tracts of suburban cul-de-sacs were being laid out, and the virtues of the grid were forgotten.
Current examples and applicability of the concept	<ul style="list-style-type: none">• Manhattan, New York City, USA.• Potchefstroom, South Africa.• Miami , USA.

3.2.5 Psychogeography model

Guy Debord (1995), self-proclaimed leader of the "Situationist", in his essay *Introduction to a Critique of Urban Geography*, defines Psychogeography as "the study of the precise laws and specific effects of the geographical environment, consciously organized or not, on the emotions and behaviour of individuals."

"Situationist" architects and artists from the 1950s strongly advocated that the layout and design of cities should be inspired by the experienced effects that the built environment has had upon the occupants. The aforementioned is a typical characteristic of the bottom-up layout and design approach in which, through community participation, the experience and needs of the general public are captured and addressed (Debord, 1995).

The map below (1961), from MIT's Kevin Lynch, resulted from a project where individuals were asked to plot the city of Boston from memory, identifying in essence the most unforgettable parts of the city.

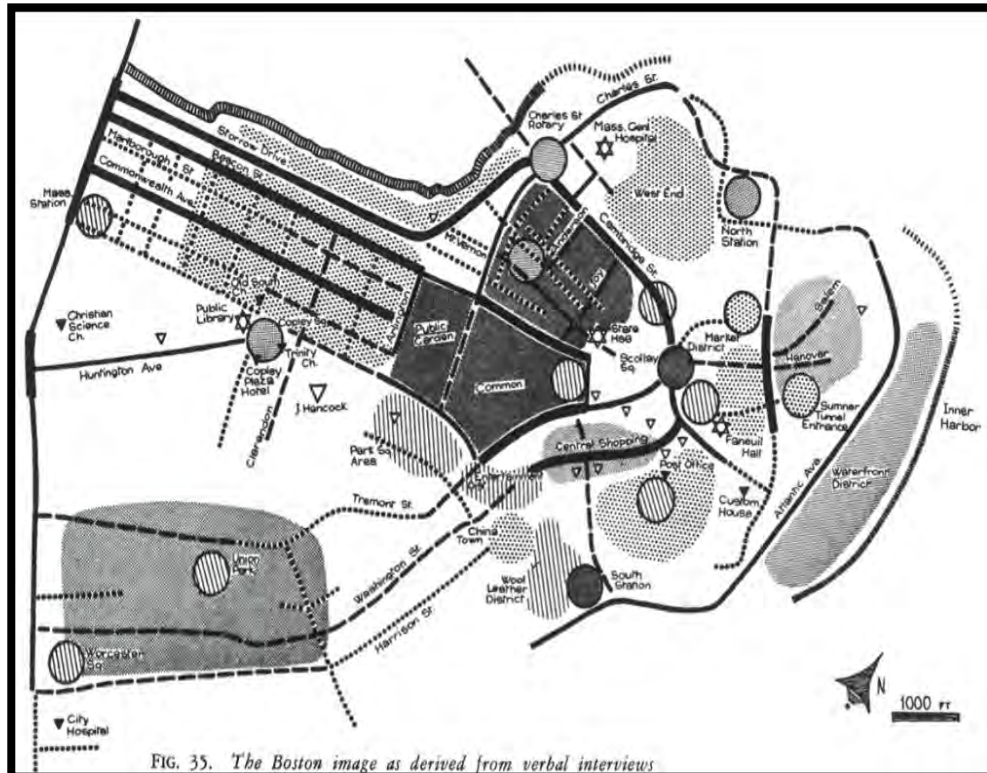


Figure 9: Psychogeography model
 Source: Badger, 2012, from Kevin Lynch, "The Image of the City" (1960)

The following table recapitulates the principle concerns, characteristics, advantages and disadvantages of the Psychogeography layout. Current examples of the layout and place-making principles are likewise displayed.

Table 12: Psychogeography model

Psychogeography model	
Principle concern	<ul style="list-style-type: none"> The psychogeography model was representative of individuals' personal experience and ascribed meaning of the city life.
Characteristics	<ul style="list-style-type: none"> People of the city were responsible to create the city by mapping their memories and experience.
Advantages	<ul style="list-style-type: none"> Public participation was the main objective. The experience of the city life was captured. The image of the city was adjusted to meet the needs and desires of the people. This way of planning encouraged a more bottom-up approach.

Disadvantages	<ul style="list-style-type: none">• Cultural diversity of communities complicates implementation.
Current examples and applicability of the concept	<ul style="list-style-type: none">• Boston, USA.

3.2.6 The Hockey Stick urban model

Where most of the above layout and designs have been the creation of planners and architects, none has impacted the underlying principles of layout and design approaches as Michael Mann's "Hockey Stick" has (Badger, 2012).

Irrespective of the opinion of some cynics, the mainstream assessment is that human settlements and lifestyles have had a direct and decisive impact on climate change. A current view of planners, architects, scientists and other role players are that the layout and design of cities with an efficient infrastructure that promotes walkability, transit access, smaller homes, fewer cars etc. will limit the carbon footprint that the location and form of development have on the climate (Grant, 2012).

This graph from climate scientist Michael Mann illustrates the sudden increase in temperatures in the Northern Hemisphere since the beginning of the Industrial Revolution (Badger, 2012).

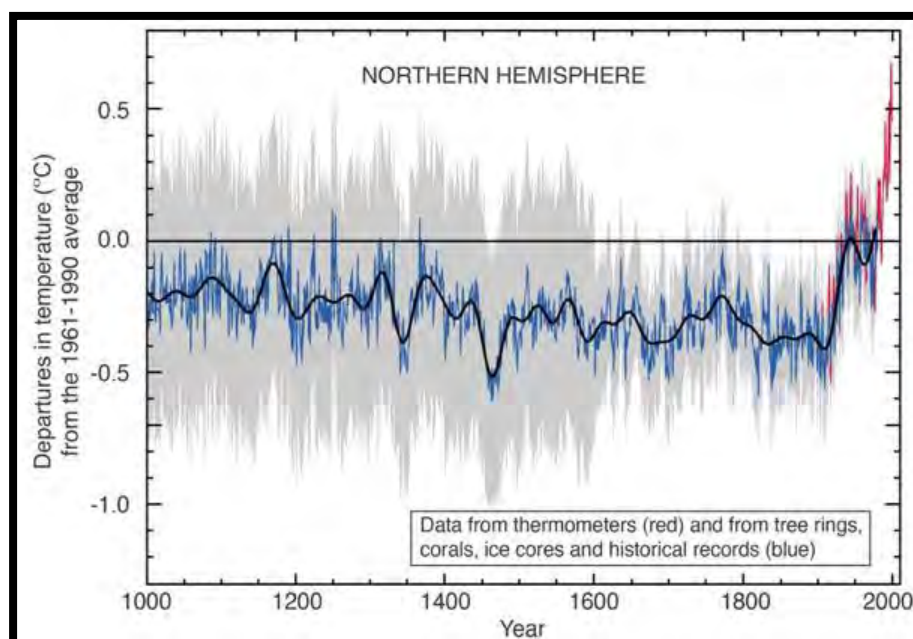


Figure 10: The Hockey Stick urban model
Source: Badger, 2012 Courtesy Michael Mann

The following table summarises the principle concerns, characteristics, advantages and disadvantages of the Hockey stick layout. Current examples of the layout and place-making principles are likewise displayed.

Table 13: The Hockey Stick urban model

The Hockey Stick urban model	
Principle concern	<ul style="list-style-type: none"> • Human settlements play a remarkable role in global climate change and have become a dominant elemental idea in planning and architecture.
Characteristics	<ul style="list-style-type: none"> • Walkability, transit access, smaller homes, fewer cars and more efficient infrastructure are examples of imperative competences in cities. These competences are necessary tools to reduce the impact on the climate (Grant, 2012).
Advantages	<ul style="list-style-type: none"> • Smaller carbon footprint= smaller impact on global climate.
Disadvantages	<ul style="list-style-type: none"> • Changing weather patterns.
Current examples and applicability of the concept	<ul style="list-style-type: none"> • California, USA.

3.2.7 The Neighbourhood model

The size of a neighbourhood has been defined during the course of planning history. The Treasure Coast regional planning Council (2004) defines the neighbourhood as “a component of a town” and defines its size based upon “a five-minute walking radius”. Figure 11, created by Clarence Perry called *Neighbourhood Unit of the 1920 New York Regional Plan*, was designed with a radius that is measured from the centre of an area. The centre contains elements such as cultural uses, for example a school. Various neighbourhoods were connected together in order to form a town, still with the starting point of designing neighbourhoods with a five-minute walking distance. The centres of neighbourhoods in the 1920s and 1940s were the schools, however, this has changed dramatically in the context of neighbourhoods today. More recently, transit hubs and longer distances were designed and implemented (Treasure Coast regional planning Council, 2004).



Figure 11: Clarence Perry's Neighbourhood unit
Source: Treasure Coast regional planning Council (2004)

Principles of the Neighbourhood model include pedestrian orientation, neighbourhood friendly streets and paths, interconnected streets and transportation networks, parks and open space neighbourhood centres, buildings and spaces of human scale and relegated parking. It also includes a mix of uses, mix of housing types, affordability with dignity, redevelopment rather than abandonment as well as site planning that respects terrain and clear edges (County of Albemarle Department of Planning and Community Development, 2001).

Figure 12 illustrates the Neighbourhood model.

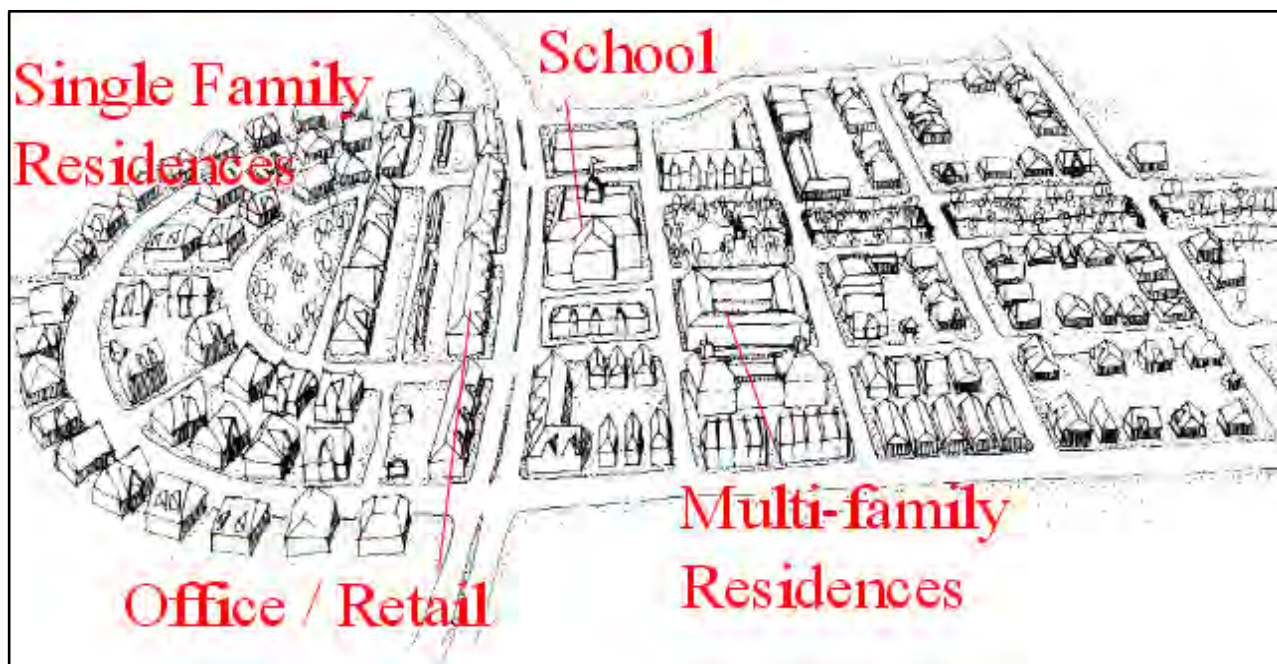


Figure 12: The Neighbourhood model

Source: County of Albemarle Department of Planning and Community Development

The following table recapitulates the principle concerns, characteristics, advantages and disadvantages of the Neighbourhood model. Current examples of the layout and place-making principles are likewise displayed.

Table 14: The Neighbourhood model

The Neighbourhood model	
Principle concern	<ul style="list-style-type: none"> • Changing the form of development.
Characteristics	<ul style="list-style-type: none"> • Market Appeal. • Functional. • Sustainable. • High Quality of Life.
Advantages	<ul style="list-style-type: none"> • Accommodates walkers, cyclists and public transportation. • Open space integral to overall design. • Buildings and spaces are human scaled. • Incorporates varying densities. • Contains a mix of uses. • Streets are interconnected.

	<ul style="list-style-type: none"> • Large parking lots are out of site. • Emphasizes the re-use of sites. • Adapts to terrain. • Distinguish clearly between developed areas and rural areas. • Focuses greatest density in neighbourhood centres.
Disadvantages	<ul style="list-style-type: none"> • Idealistic more than realistic, in terms of image.
Current examples and applicability of the concept	<ul style="list-style-type: none"> • Florida, Johannesburg, South Africa

3.3 Conclusion

There are a number conclusive circumstances, influences, and characteristics unique to a specific area and the surrounding areas that affect the final layout and design of the particular area. In Table 15, the layout and design models discussed above are evaluated in terms of “The Three Spheres of Sustainability”, namely: social, economic and environmental, as delineated in Chapter 2, paragraph 2.3, Figure 2: The Three Spheres of Sustainability, in order to determine to what extent these layout and design models endorse sustainability.

Table 15: The layout and design models evaluated in terms of the Three Spheres of Sustainability.

Layout and design models	Three Spheres of Sustainability		
	Social	Environmental	Economic
Garden city model		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Radiant City model		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Broadacre city model		<input checked="" type="checkbox"/>	
Street Grid model			<input checked="" type="checkbox"/>
Psychogeography model	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Hockey Stick urban model		<input checked="" type="checkbox"/>	
The Neighbourhood model	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Deduced from the above evaluation, barring the Neighbourhood model, it is reasonable to conclude that these layout and design models were not primarily developed to promote the sustainability of a particular area, but rather as a solution for certain circumstances during a specific time period.

From a sustainability point of view, models are reassessed in order to determine best practices that will lead to an integrated approach. Place-making can then be managed as it is an approach through which “The Three Spheres of Sustainability” explicitly integrated through a layout and design approach create a better place for people.

Chapter 4: Place-making approaches

The following diagram illustrates the structure of Chapter 4.

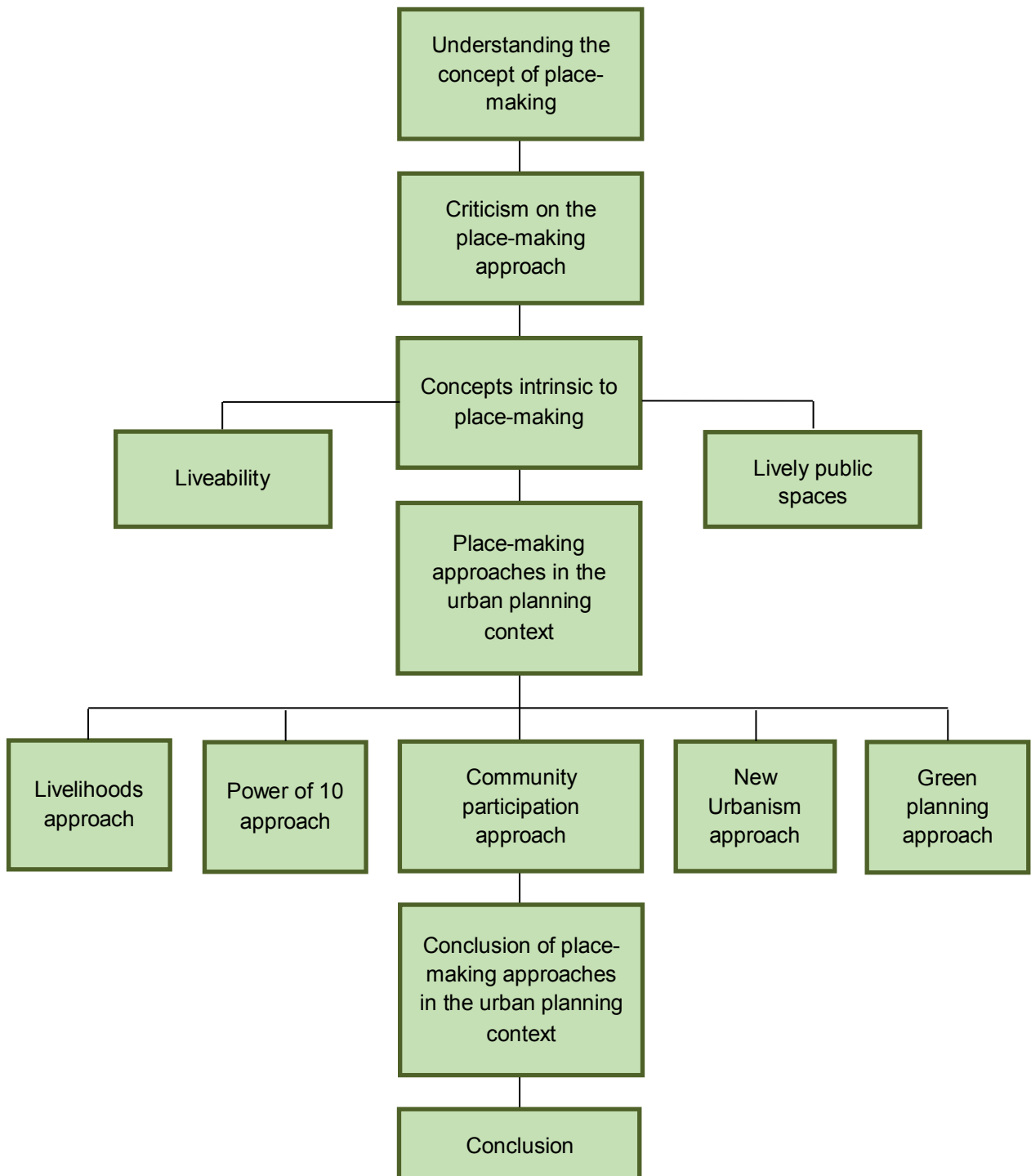


Diagram 4: Structure of Chapter 4

Place-making is discussed in this chapter as an approach to layout and design, which ensures the incorporation of sustainability objectives.

4.1 Understanding the concept of place-making

In his post-World War II speech, Winston Churchill (cited by Geis, & Kutzmark, 2006) considering the reconstruction of neighbourhoods, communities and buildings, said that "[w]e shape our buildings and then they shape us."

There are many descriptions of the concept of place-making, such as "both an overarching idea and a hands-on tool for improving a neighbourhood, city or region" (Project for Public Spaces, 2009) or, according to Placemaking Chicago (2008), "the art of creating public 'places of the soul', that uplift and help us connect to each other." It is therefore evident that the concept of place-making cannot be encapsulated by one specific definition, but should rather be understood as a wide range of community strategies and initiatives aimed at the improvement of the community's environment and their quality of life (Montgomery, 2006, as cited by Lamit *et al.*, 2012).

"An effective Placemaking process capitalizes on a local community's assets, inspiration, and potential, ultimately creating good public spaces that promote people's health, happiness, and wellbeing". Thus, place-making is a continuous process, which encapsulate peoples' ideas and through which their needs in terms of the liveability and quality of life are fulfilled by using effective planning, layout and design or redesign of their environment (Project for Public Spaces, 2009).

The Project for Public Spaces (2009) asserts that perspectives that were presented by futurists Jacobs (2011) and Whyte (1961) (as cited by Jacobs, 2011), were the inspiration which eventually gave way to place-making concepts. In her treatise, *The Death and Life of Great American Cities*, Jacobs proposes ideas which irrevocably altered planners and activists' approach regarding urban planning. Jacobs (2011) underlines five important perspectives regarding place-making, namely: ***Cities as Ecosystems***, where cities should be viewed as living beings and ecosystems wherein the dynamics of streets, buildings and functions can change in response to human use patterns and related interactions; ***Mixed Use Development***, a diversity of buildings in a city that are used at different times of the day by different genders and age groups to ensure liveliness in the city; ***Bottom-Up Community Planning*** – planning for the development of the community, is guided by the community itself and not by other external agendas; ***The Case for Higher Density***, where a high concentration of people is imperative for city life, however, the difference between overcrowding and high density lies in the critical mass of people that are needed to stimulate the

community's vitality; and **Local Economies**, in which case, a city's economy is not dependent on large corporation business, the growth of a city's economy is stimulated by more innovative small business entrepreneurs.

A rudimentary objective of the place-making approach is to discover the needs and ambitions of the local community by observing, listening and communicating with the community and subsequently drawing on this knowledge to devise and implement a strategy that effectively fulfils these needs (Placemaking Chicago, 2008). Project for Public Spaces (cited by Placemaking Chicago, 2008) formulated eleven (11) principles to direct a strategy towards efficient place-making. These principles are portrayed in Table 16.

Table 16: Key principles of place-making

Principles	Explanation
The community is the expert	The community's needs are best communicated by the community members themselves.
Creating a place and not just a design	The place-making concept should be fundamental to the layout and design approach. The layout and design are only the tools.
You can't do it alone	Identify partners who can contribute in terms of management and innovative ideas and can provide political and financial support.
They will always say, "it can't be done"	"We've never done things that way before." Identify and engage people in the community that share the same vision. Use the positives and if possible elderly people to help influence the rest of the community.
You can see a lot just by observing	Observing a space enables you to absorb and understand how that specific space is used on a daily basis.
Develop a vision	The vision and character of a space should be defined by the people that use the space effectively.
Form supports function	Existing trends and habits of a specific area should guide the place-making process
Triangulate	Identifying elements that are situated next to each other to use in a way that promotes activity.
Start with the petunias	Render small changes and implement progressively.
Money is not the issue	Combining the location and the level of activity of the public space, with the involvement and willingness of the partners and local community members can elicit resources from those involved to

	improve these spaces.
You are never finished	Management is the key, because uses of places change constantly and effective responses thereto can only be achieved through good management.

Source: based on *Eleven Principles for Creating Great Community Places (Placemaking Chicago, 2008)*

Thus, place-making as an approach is on-going and driven by the community for the community, facilitated by planners and experts, and takes form in practice through a well-managed and effective layout and design approach, which will transform the community and their environment progressively into a place with good living conditions.

4.2 Criticism on the place-making approach

There are critics who doubt the conclusive role of place-making in layout and design approaches for sustainable communities. Grant (2006) declares: "We can predict planners to continue to look for the one big theory that can explain all, predict all, and offer guidance for practice to create good communities. We can also safely predict that we are not likely to find such a model".

Critics claims that place-making does not contribute to the development of local economies in previously disadvantaged communities. They assert that place-making only accelerates the gentrification of an area and thereby succeeds in reducing the pressure exerted by the local community and the general public in this regard. If gentrification is primarily project-driven, development-driven, design-driven or artist-led, this criticism is justified and transformation will only be superficial and limit in terms of the long-term outcome. However, in most instances, this criticism is largely due to ignorance regarding the value and objectives of place-making and confusion as to whom the stakeholders and beneficiaries of the process are (Project for Public Spaces, 2013).

4.3 Concepts intrinsic to place-making

From the above definition and description of place-making, it is evident that two concepts are an inextricable part of the place-making approach, namely (1) liveability and (2) lively public spaces, which will be described accordingly.

4.3.1 Liveability

The theory of liveability maintains that a person's subjective appreciation of life primarily depends on the objective quality of life. In other words, the better the living conditions in an area or community, the more contented the people living in the area or community will be (Veenhoven & Ehrhardt, 1995). In turn, the comparison-theory advocates that people in a specific place will be contented if their living conditions are good, irrespective of the knowledge that people living in a different place may experience even better living conditions (Veenhoven & Ehrhardt, 1995). People have widespread needs; liveability is the collective arrangement to fulfil these needs. To regard a place as liveable, the collective requirements and demands have to comply with the needs and capacities of individuals. Hence, citizen-centred initiatives should be the principal angle of incidence in conceiving an approach intending to make a place more liveable (Veenhoven & Ehrhardt, 1995).

Cilliers et al. (2012) states that "liveability reflects the wellbeing of a community and comprises the many characteristics that make a location a place where people want to live now and in the future, such as: employment and incomes, community strength, environment, amenity and place, planning, participation, and infrastructure. Economic and community strength are critical to liveability."

Pacione (2005) asserts that the relation of people to their everyday environment or living space determines the living conditions in the area and that the prevailing living conditions are a measure of the liveability of the area. Pacione (2005) delineates the two fundamental measures of liveability as the cost of living and the quality of life.

Economic, social and environmental factors are used when either liveability or quality of life is measured, however, the purpose and the results are different. When the liveability of a place is measured, the objective would be to gauge the liveability characteristics as well as the quality and incidence of services and facilities of a place in terms of these factors. Conversely, when the quality of life is measured, the focus would be to gauge the liveability characteristics and the wellbeing of the inhabitants of a place in terms of these factors. As opposed to quality of life that is primarily being dictated by the subjective experience of people, the liveability of a specific area can be manipulated and influenced through devised policies and layout and design (VCEC, 2011).

Although indices of liveability and quality of life is derive from a weighted list of mostly locational characteristics that supposedly contribute to liveability, they are currently used as a benchmarking tool in the evaluation of towns and cities in terms of liveability and quality of life (VCEC, 2011).

Table 17 encapsulates fundamental liveability indices currently employed to measure liveability in a city.

Table 17: Summary of the core liveability indices

Indices	Measurement
<p>Economist Intelligence Unit</p> <p>Ranks 127 cities on <u>liveability</u> as part of the Worldwide Cost of Living Survey, based on five weighted categories (VCEC, 2011:6):</p>	<ol style="list-style-type: none"> 1. Stability (25%) – crime and conflict 2. Healthcare (20%) – availability, quality 3. Culture and environment (25%) – climate, recreation, services 4. Education (10%) – availability, quality 5. Infrastructure (20%) – transport, links, housing, utilities, services
<p>Mercer human resource survey</p> <p>The <u>quality of living</u> study has 39 factors that are grouped into 9 key categories (VCEC, 2011:6):</p>	<ol style="list-style-type: none"> 1. Political and social environment 2. Economic environment 3. Socio-cultural environment 4. Health and sanitation 5. Schools and education 6. Public services and transportation 7. Recreation, natural environment 8. Consumer goods 9. Housing
<p>Anholt city brand index</p> <p>Assesses how people <u>perceive</u> the images of cities, using a survey of nearly 20,000 consumers in 18-20 countries. Cities are evaluated in terms of:</p>	<ol style="list-style-type: none"> 1. Presence (city’s international status and standing) 2. Place (beauty, climate and other physical attributes) 3. Potential (economic and educational opportunities) 4. Pulse (urban appeal and lifestyle) 5. People (friendliness, openness, cultural diversification and safety) 6. Prerequisites (basic facilities: hotels,

<p>EU Urban Audit</p> <p>Benchmarking of <u>quality of life</u> in 58 European cities. Represents the most comprehensive attempt to assess the liveability and competitiveness of cities and regions (VCEC, 2011:7). The core issues include:</p>	<p>schools, transport, sports)</p> <ol style="list-style-type: none"> 1. Population, nationality, household structure 2. Labour market, employment, income disparities, poverty 3. Housing 4. Health 5. Crime 6. Economic activity, civic involvement 7. Education and training, level of educational qualifications 8. Air quality, noise, water, waste management 9. Land use, travel patterns, energy use 10. Climate and geography, culture, recreation
<p>Global competitiveness index</p> <p>Developed in 2004, measures national competitiveness in using a weighted average of factors that contribute to countries <u>competitiveness</u>. The factors are grouped into twelve categories (VCEC, 2011:13):</p>	<ol style="list-style-type: none"> 1. Institutions 2. Infrastructure 3. Macro economy 4. Health and primary education 5. Further education and training 6. Goods market efficiency 7. Labour market efficiency 8. Financial market sophistication 9. Technological readiness 10. Market size 11. Business sophistication 12. Innovation
<p>Creativity index</p> <p>Indicator for 'overall standing in creative economy, <u>economic potential</u>' (Florida 2002), based on four factors:</p>	<ol style="list-style-type: none"> 1. Creative share of workforce (proportion in creative occupations) 2. High tech industries 3. Innovation (measured as the number of patents per capita) 4. Diversity (measured by the number of gay people per capita)

Source: VCEC, 2011 (as cited by Cilliers et al., 2012)

Although the combination liveability measures encompassed in the different surveys varies, common factors such as access to infrastructure and services, social equity and cohesion and climatic conditions are included. Notwithstanding fact that the weighting given to each factor is subjective and therefore differs according to the survey (VCEC, 2011), it suffices to find the most common used issues of liveability.

It is important to understand that there is a definitive difference between liveability and liveliness. While liveability is defined in terms of the quality and incidence of services in a place, the liveliness of a place is measured in terms of the frequency and way in which the community takes advantage of the services and facilities available in one place; "... liveliness is entirely associated with people and activities and it can be assessed by measuring pedestrian flows and movements, the uptake of facilities and the existence or otherwise of 'things to do'" (Montgomery, 2006, as cited by Lamit *et al.*, 2012). The following section will elaborate on lively public spaces.

4.3.2 Lively public spaces

The people living in a specific place are the so-called "public", therefore, the focus throughout the process of creating lively public places should primarily be to ensure that the public grounds are accessible and open for a wide range of user groups (Hobart City Council, 2011).

The place-making approach is rooted in the principle that a successful public space is also a lively place with distinctive functions that attract a wide variety people. In these lively public spaces, the many functions and activities about community life that take place induce a feeling of ownership and connectedness that therefore influence people to stay or return to the place. Lively places can be regarded as spaces with a function (*Cilliers et al.*, 2012).

A space signifies the physical and geometrical characteristics of an environment which, when occupied by people and enhanced by lively elements, are transformed into a place (Harrison & Dourish, 1996).

Great public places have four main key attributes: access and linkages, comfort and image, uses and activities, and sociability. These are evaluated in terms of specific factors within each key attribute that are needed for the space to be regarded as a successful public place (*Cilliers et al.*, 2012).

As illustrated in Figure 13 below, an ordinary place can be transformed into a lively place by augmenting certain key attributes in intangible measurements.



Figure 13: What makes a Great Place?
 Source: *Project for public spaces (2012)*

To effectively accomplish the transformation of a space into a lively public place, the public place should be made highly attractive (Soholt, 2004) which can be done by including various initiatives such as residential development, educational institutions, open spaces and other facilities (Hobart City Council, 2011). Paul Bevan (The Economist Intelligence Unit, 2010) notes that living, working and playing are ideally much closer together than often found and that, when an area is unliveable, it may be owing to the loss of this proximity.

Cilliers *et al.* (2012) assert that norms by which places are evaluated are wide-ranging and common factors that are representative of successful public spaces are not limited to the physical dimensions of a place, as summarised in Table 18 below:

Table 18: Factors of successful public places

Factor	Description of successful public space
Identity	Historically, public spaces were the centre of communities; traditionally it helped shape the identity of entire cities by their image.
Attractions	Great public spaces have a variety of smaller "places" within it that appeal to various people. Functions create attractions.
Amenities	A public space should feature amenities that make it comfortable for people to use. A good amenity will help establish social interaction.
Flexibility	The use of a public space naturally changes during the day, week, and year. To respond to natural fluctuations, flexibility needs to be built in at the outset.
Seasonal	Successful public spaces need more than one design, which can change with the seasons. Adaptive usage.
Access	A civic destination needs to be easily accessible, include crosswalks, lights timed for pedestrians, slow moving traffic and proper signage.
Visibility	The elements within space should be visible from a distance, and the ground floor activity of buildings surrounding it should entice pedestrians to move.

Source: Adopted from Baltimore City Department of Planning (2010, as cited by Cilliers et al., 2012)

Historically, public spaces were places with streets, marketplaces, boulevards, gardens, squares, courtyards, etc., where residents spent a great deal of their time (Loudier & Dubois, 2001). Present-day traditional planning schemes that are implemented have proved to be somewhat unsuitable to new lifestyles; public places are mostly rather disfunctional and dehumanized places lacking quality and proper use, and the absence of on-site managers contributes to ineffective public spaces (Loudier & Dubois, 2001).

To create lively public spaces, efforts in the area should focus to render services and opportunities that are versatile, accessible and attractive to a wider range of user-groups and that encourage them to stay. To accomplish this, initiatives such as more residential development, more education institutions in the city centre and attractive facilities and open spaces can be developed (Hobart City Council, 2011). Initiatives such as public transport and roads, arts, entertainment and sporting, social and cultural events may be added (The Economist Intelligence Unit, 2010). To achieve versatility in an area, alternative uses of the city space should be encouraged (Hobart City Council, 2011).

The current physical structure of cities provides for public life, but further opportunities should be developed to strengthen a range of activities within one space in order to create lively city spaces with many benefits, as portrayed in Figure 14 below.

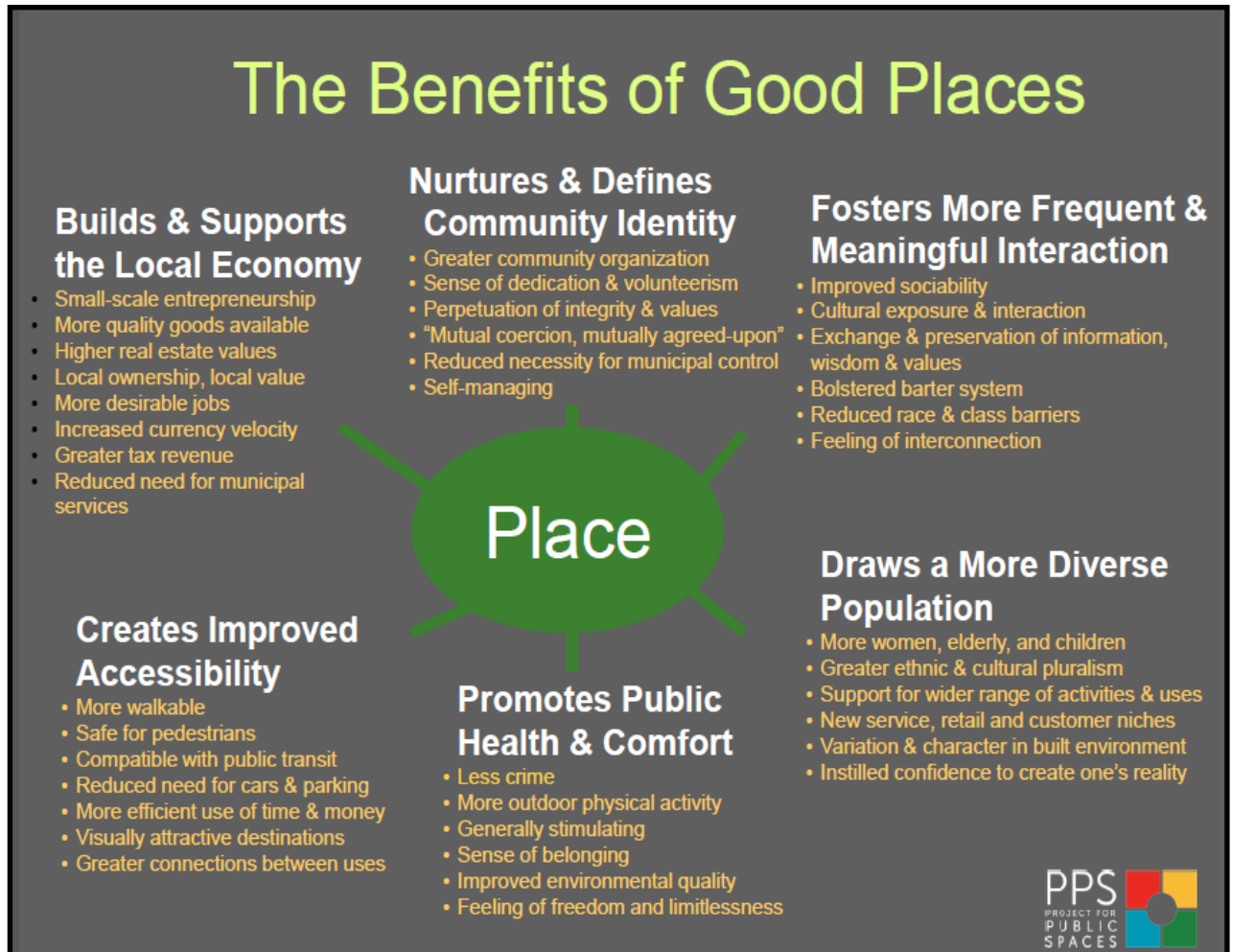


Figure 14: The Benefits of Good Places
Source: Project for Public Spaces, (2012)

Place-making is therefore a socially constructed process that shapes spaces by including different functions, aspects and even capital investment, designed to generate economic growth and promote cultural tourism in order to create a place worth living and working in (Lanham, 2007).

4.4 Place-making approaches in urban planning context

"You have to turn everything upside down to get it right side up" (Project for public spaces, 2011). The aforementioned articulates, in essence, the basic principle underlying the bottom-up approach and community-scale of planning.

Place-making was introduced in the urban planning sphere to address community-scale planning with the objective to create qualitative, liveable environments that adhere to the principles of sustainability and progress in the transformation of areas from merely being places that people occupy, so-called ordinary places, into lively places that are good places to live in (Montgomery, 2006, as cited by Lamit *et al.*, 2012).

The place-making approach can be employed, within the urban planning context, to realise liveability by planning for, and implementing various functions within one space. This can entail the transformation of areas from solely being places that people occupy, into vibrant lively places, by focusing on current public spaces that have potential, and developing these spaces according to the place-making objectives in order to create places with function in which people can socialise and interact (Cilliers *et al.*, 2012).

Five place-making approaches include: the livelihoods approach; Power of 10 approach; community participation approach; New Urbanism approach and Green planning approach. These approaches will be discussed accordingly, as these approaches enable place-making within the urban planning (and layout and design) context.

4.4.1 Livelihoods approach

Understanding the diverse needs and activities of people, ingrained in the different ways that different people live in different places, is known as the so-called livelihoods approach. Livelihood can be explained as a prevailing condition that involves capabilities, material and social assets, and activities as a means of living. For this livelihood to become sustainable, it needs to cope with and recover from stresses and shocks; maintain or enhance its capabilities and assets while focusing not to undermine the natural resource base (Scoones, 2009).

The collective term “livelihoods” is considered flexible because of its possible attachment to a number of other phrases such as “...locales (rural or urban livelihoods), occupations (farming pastoral or fishing livelihoods), social difference, (gendered, age-defined livelihoods), directions (livelihood pathways, trajectories), dynamic patterns (sustainable or silent livelihoods) and many more”. (Scoones, 2009). Therefore, it is a widely applicable term and is especially relevant when planning for rural areas. The perspectives of livelihoods have been central to rural development thinking and practice in the past decade, and the perspective is rooted in the different ways that different people live in different places (Scoones, 2009).

Within the livelihoods approach, the focus is on “diversity”. Fundamental, single-sector approaches to livelihoods and liveability, like that of the comparison theory (Veenhoven & Ehrhardt, 1995), have been challenged by this approach in order to address complex rural development problems in a more hands-on and adequate manner (Scoones, 2009). This approach is a simple and straightforward one, as it purely focuses on understanding things (needs, activities, people, etc.) from a local perspective (Scoones, 2009). In order to implement or promote the liveability theory and expand livelihoods accordingly, different aspects should be addressed, including knowledge, politics and scale and dynamics, as captured in Table 19.

Table 19: Perspectives to address

Knowledge	Livelihoods can be expanded by focusing on inclusive debates about livelihood frameworks and proposed directions of change, rather than relying on a bland listing of principles or by keeping questions of values and politics away.
Politics	Within these communities, a need for municipal and government services were identified. These needs include an explicit, theoretically based concern and knowledge of how class, gender and capitalist relations operate. They need to be given the opportunity and right to actively participate in politics and political discussions by being allowed to ask up front questions regarding gains and losses based on theories of power and the political economy.
Scale	Scale is an important element to take into consideration when expanding a community’s livelihood. Therefore, a livelihood analysis needs to be developed and implemented. This analysis will examine networks, linkages, connections, flows and chains across different scales, yet will remain in its specific place and context – i.e. rural communities.
Dynamics	The improvement of livelihoods in terms of dynamics requires local people, policymakers, outsiders, etc., to think about long-term change. This shift in mind-set can be ensured by providing future strategies and pathways for development and growth.

4.4.2 Power of 10 approach

The Power of 10 place-making approach endorses the concept that an authentic, lively city has at least 10 great public places throughout the city that attract a wide range of user-groups. In these great public places, people are offered many mixed-use opportunities to take pleasure in public life.

“And, it's not enough to have one liveable city or town in a region; you need a collection of interesting communities” (Placemaking Chicago, 2008).

A great place offers people opportunities of at least ten (10) things to do or ten (10) reasons to visit the place. For example, a place to sit, art to touch, music to hear, food to purchase, historic information to learn about, and books to read (Cilliers *et al.*, 2012). The opportunities, however, should give expression to the people's experience of the city (Placemaking Chicago, 2008). “The concept also provides people something tangible to strive for and helps them visualize what it takes to make their community great” (Project for Public Spaces, 2012).

The concept of mixed use and multiple functions in these ten (10) great places should also be dynamic enough to stimulate continuous development and inspire people to come back to the place (Placemaking Chicago, 2008), as illustrated by the Chicago study, captured in the following figure.



Figure 15: Place-making and functions
Source: Placemaking Chicago (2012)

Cowan *et al.* (2006) are of the opinion that this type of public place will create lively neighbourhoods where interaction arises between people, social gatherings are held and where people simply enjoy spending time. An example of this approach is found in the Canadian city, Toronto, where the focus is placed on combining the rich cultural heritage with creativity. These activities include the Toronto International Film Festival (the largest and arguably the most influential festival in the world); Ontario College of Art and Design; The Young Centre; Wychwood Car Barns and numerous other similar examples (Toronto, 2008).

4.4.3 Community participation approach

“When citizens are effectively engaged in the design process, designers and planners can be at their most effective in facilitating a process that synthesises local experience and wisdom with design principles and technical expertise. Designers can help people uncover their common interests and work towards practical and creative solutions that build local character and assets” (McBride, 2013).

Irrespective of the environmental attributes of an area, the community should be the primary source of information when planning and designing a specific place. Community participation can be seen as an approach to lively planning, or as an indispensable element needed to create a lively place. However, the composition and dynamics of communities, especially in the urban environment, have become increasingly complex. Cultural diversity, in particular, offers an enormous challenge to public participation; the more diverse the group, the more needs that need to be taken into consideration and therefore the more complex the participation process and input will be (Breman *et al.*, 2008).

Even though it is difficult to implement, participation remains a critical part of planning for sustainable communities and public places, and the participation of all residents along with supervision, reviews and awareness are important for effective place-making (Loudier & Dubois, 2001). This qualitative participation approach is needed to address and successfully implement a bottom-up approach, as well as to ensure the planning of functional and usable spaces that can be regarded as lively. To create this type of situation, where active participation is present, it is crucial for the community to play a bigger role in deliberations with authorities, policy formalisation and the devising of solutions (Cilliers *et al.*, 2012).

4.4.4 New Urbanism approach

The planning concept of New Urbanism has been known for some time, however, the implementation thereof only progressively increased since US Congress adopted *The Charter of New Urbanism* in 1993 that reads as follows: “We advocate the restructuring of public policy and development practices to support the following principals: Neighborhoods should be diverse in use and population. Communities should be designed for the pedestrian and transit, as well as the car. Cities and towns should be shaped by physically defined and universally accessible public spaces and community institutions. Urban spaces should be framed by architecture and landscape design that celebrate local history, climate, ecology and building practices” (Thornton, 2010).

The invention and rapid development of the automobile has had a distinct impact on development of cities and towns that was noticeable in the decentralisation from the central city. In the 1970s, while attempting to design a pedestrian based town that is sustainable, US planners and designers started converting streets into pedestrian walkways as an experiment (Craven, 2013). Craven (2013) declares: “New Urbanist town planners, developers, architects, and designers try to reduce traffic and eliminate sprawl”.

“In simplistic, layman’s terms, New Urbanism might be defined as taking the most desirable land use and architectural features of communities from the past and adapting them to the technological needs of the present” (Thornton, 2010). The basic principles of New Urbanism are explained in Table 20 below.

Table 20: Principles of New Urbanism

Principle	Explanation
Walkability	<ul style="list-style-type: none">• Most things within a 10-minute walk of home and work.• Pedestrian friendly street design (buildings close to street; porches, windows and doors; tree-lined streets; on-street parking; hidden parking lots; garages in rear lane; narrow, slow speed streets).• Pedestrian streets free of cars in special cases.
Connectivity	<ul style="list-style-type: none">• Interconnected street grid network disperses traffic and eases walking.• A hierarchy of narrow streets, boulevards, and alleys.• High quality pedestrian network and public realm make walking pleasurable.

<p>Mixed-Use & Diversity</p>	<ul style="list-style-type: none"> • A mix of shops, offices, apartments, and homes on-site. Mixed-use within neighbourhoods, within blocks, and within buildings. • Diversity of people – of ages, income levels, cultures, and races.
<p>Mixed Housing</p>	<ul style="list-style-type: none"> • A range of types, sizes and prices in closer proximity.
<p>Quality Architecture & Urban Design</p>	<ul style="list-style-type: none"> • Emphasis on beauty, aesthetics, human comfort, and creating a sense of place; special placement of civic uses and sites within community. • Human scale architecture and beautiful surroundings nourish the human spirit.
<p>Traditional Neighbour-hood Structure</p>	<ul style="list-style-type: none"> • Discernible centre and edge. • Public space at centre. • Importance of quality public realm; public open space designed as civic art. • Contains a range of uses and densities within a 10-minute walk. • Transect planning: highest densities at town centre; progressively less dense towards the edge. The Transect is an analytical system that conceptualises mutually reinforcing elements, creating a series of specific natural habitats and/or urban lifestyle settings. The Transect integrates environmental methodology for habitat assessment with zoning methodology for community design. The professional boundary between the natural and manmade disappears, enabling environmentalists to assess the design of the human habitat and the urbanists to support the viability of nature. This urban-to-rural transect hierarchy has appropriate building and street types for each area along the continuum.
<p>Increased Density</p>	<ul style="list-style-type: none"> • More buildings, residences, shops, and services closer together for ease of walking, to enable a more efficient use of services and resources, and to create a more convenient, enjoyable place to live. • New Urbanism design principles are applied to the full range of densities from small towns to large cities.
<p>Green Transportation</p>	<ul style="list-style-type: none"> • A network of high-quality trains connecting cities, towns, and neighbourhoods together. • Pedestrian-friendly design that encourages a greater use of bicycles, rollerblades, scooters, and walking as daily transportation.

Sustainability	<ul style="list-style-type: none">• Minimal environmental impact of development and its operations.• Eco-friendly technologies, respect for ecology and value of natural systems.• Energy efficiency.• Less use of finite fuels.• More local production.• More walking, less driving.
Quality of Life	<ul style="list-style-type: none">• Taken together, these add up to high quality of life well worth living, and create places that enrich, uplift and inspire the human spirit.

Source: Michigan Land Use Institute (2006)

Thus, New Urbanism is an urban planning approach which provides for the implementation of place-making principles through which the urban environment is transformed into an integrated, compact, walkable, mixed-use, vibrant and sustainable community where people experience high quality of life.

4.4.5 Green planning approach

The widely accepted definition of urban green spaces is that they are “public and private open spaces in urban areas, primarily covered by vegetation, which are directly (e.g. active or passive recreation) or indirectly (e.g. positive influence on the urban environment) available for the users” (Haq, 2011).

Unplanned development and urbanisation patterns, especially in cities, have had a negative influence on green spaces that consequently resulted in a significant decrease in the environmental benefits of green spaces (Gomes & Moretto, 2011). “If green spaces are so important for human wellbeing, how is it possible to increase these areas and maximise the positive aspects for humans, while at the same time decrease the negative aspects of cities for the environment?” (Schilling, 2010).

Urban green spaces play a key role in the sustainable development of cities and likewise contribute decisively to the liveability of the built-up environment. Urban green spaces have a direct link to place-making and add quality to a place. The character of a community or city is often identified and labelled by the quality of its green spaces. Well designed, efficiently managed and maintained green spaces enhance living and working conditions, has social and visual value and, equally importantly, attract people and investment into an area (Baycan-Levent & Nijkamp, 2004).

Development of green spaces is an integrated approach to sustainable environments and plays an important role in terms of social, economic, cultural and environmental aspects of sustainable development (Haq, 2011). A strategy for green spaces has to effectively and concurrently address a variety of (ecological) environmental, social, economic and sustainable development issues (Kasperidus *et al.*, 2006).

Green planning approaches of countries, cities and communities may be at variance, however, the central focus should underwrite the place-making concept and conclusively achieve transformation of a space into a lively public place. Therefore, a Green planning approach should include objectives such as: to safeguard the future of green spaces; to enhance the quality of urban areas; to render urban areas more attractive and thereby attract more resources; and to enhance the wellbeing of the user-group (Kasperidus *et al.*, 2006).

Benefits derived from an effective Green planning approach can be categorised according to three main groups, including: environmental benefits, economic and aesthetic benefits and social and psychological benefits (Haq, 2011). These are discussed briefly in the table below.

Table 21: Environmental Benefits of Urban Green Spaces

	Environmental Benefits
Ecological Benefits	<ul style="list-style-type: none"> Urban green spaces supply cities with ecosystem services ranging from maintenance of biodiversity to the regulation of urban climate. Compared to rural areas, differences in solar input, rainfall pattern and temperature are usual in urban areas. Solar radiation, air temperature, wind speed and relative humidity vary significantly due to the built environment in cities. The urban heat island effect is caused by the large areas of heat absorbing surfaces, in combination with high energy use in cities. Urban heat island effect can increase urban temperatures by 5°C. Therefore, adequate forest plantation, vegetation around urban dwellers' homes and authorities' management of water bodies can help to mitigate the situation.
Pollution Control	<ul style="list-style-type: none"> Pollution in cities is due to pollutants which include chemicals, particulate matter and biological materials, which occur in the form of solid particles, liquid droplets or gases. Air and noise pollution is common phenomenon in urban areas. The presence of many motor vehicles in urban areas produces noise and air pollutants such as carbon dioxide and carbon monoxide. Emissions from factories, such as sulphur dioxide and

	<p>nitrogen oxides, are very toxic to both human beings and the environment.</p> <p>The most affected by such detrimental contaminants are children, the elderly and people with respiratory problems. Urban greening can reduce air pollutants directly, as dust and smoke particles are trapped by vegetation.</p> <p>Research has shown that, on average, 85% of air pollution in a park can be filtered. Noise pollution from traffic and other sources can be stressful and creates health problems for people in urban areas. The overall costs of noise have been estimated to be in the range of 0.2% - 2% of European Union gross domestic product. Urban green spaces in overcrowded cities can largely reduce the levels of noise, depending on their quantity, quality and the distance from the source of the noise pollution.</p> <p>Contemporary studies on urban green spaces consider the complex urban eco-system and the conservation of the urban green spaces to maintain a natural ecological network for environmental sustainability in cities. For the cities in a fast urbanising and growing economy, countries like China should consider the dynamic form of urban expansion to manage effective urban green spaces which will contribute to reduce the overall CO₂ by maintaining or even increasing the ability of CO₂ absorption via natural eco-systems.</p>
<p>Biodiversity and Nature Conservation</p>	<ul style="list-style-type: none"> • Green spaces function as protection centres for the reproduction of species and conservation of plants, soil and water quality. Urban green spaces provide the linkage of the urban and rural areas. They provide visual relief, seasonal change and a link with the natural world. <p>A functional network of green spaces is important for the maintenance of ecological aspects of a sustainable urban landscape, with greenways and use of plant species adapted to the local condition with low maintenance cost, self-sufficiency and sustainability</p>

Source: Haq (2011)

Table 22: Economic and Aesthetic Benefits of Urban Green Spaces

	Economic and Aesthetic Benefits
Energy Savings	<ul style="list-style-type: none"> Using vegetation to reduce the energy costs of cooling buildings has increasingly been recognised as a cost effective reason for increasing green space and tree planting in temperate climate cities. Plants improve air circulation, provide shade and they evapotranspire. This provides a cooling effect and helps lower air temperatures. A park of 1.2 km by 1.0 km can produce an air temperature between the park and the surrounding city that is detectable up to 4 km away. A study in Chicago has shown that increasing tree cover in the city by 10% may reduce the total energy for heating and cooling by 5% to 10%.
Property Value	<ul style="list-style-type: none"> Areas of the city with enough greenery are aesthetically pleasing and attractive to both residents and investors. The beautification of Singapore and Kuala Lumpur, Malaysia, was one of the factors that attracted significant foreign investments that assisted rapid economic growth. Still, indicators are very strong that green spaces and landscaping increase property values and financial returns for land developers of between 5% and 15%, depending on the type of project.

Source: Haq, (2011)

Table 23: Social and Psychological Benefits of Urban Green Spaces

	Social and Psychological Benefits
Recreation and Wellbeing	<ul style="list-style-type: none"> People satisfy most of their recreational needs within the locality where they live. Findings by Nicol and Blake (2000) show that over 80% of the UK's population live in urban areas, and thus green spaces within urban areas provide a sustainable proportion of the total outdoor leisure opportunities. <p>A study conducted in Helsinki, Finland, indicated that nearly all (97%) city residents participate in some outdoor recreation during the year. Half of the residents make outdoor visits on a daily basis, or every second day.</p> <p>Urban green spaces serve as a near resource for relaxation and provide emotional warmth. In Mexico City, the centrally located Chapultepec Park draws up to three million visitors, who enjoy a wide variety of activities, weekly.</p>

Human Health	<ul style="list-style-type: none">• The level of stress in people who were exposed to natural environments decreased rapidly compared to people who were exposed to urban environments, whose stress levels remained high. In the same review, hospital patients whose rooms were facing a park had a 10% faster recovery rate and needed 50% less strong pain relieving medication compared to patients whose rooms were facing a building wall. <p>This is a clear indication that urban green spaces can increase the physical and psychological wellbeing of urban citizens. In other research conducted in Swedish cities, people who spent more time outdoors in urban green spaces were less affected by stress.</p> <p>Certainly, improvements in air quality due to vegetation have a positive impact on physical health, with such obvious benefits as a decrease in respiratory illnesses. The connection between people and nature is important for everyday enjoyment, work productivity and general mental health.</p>
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Source: Haq, (2011)

It is thus evident that, depending on the dominant conditions of a place, development of green spaces may present many challenges. Nevertheless, through careful planning and site-responsive design, urban green spaces can make a meaningful contribution to sustainable development at regional, district and local levels. The planning of layout and design approaches for urban green spaces should strive to meet the needs of the community, optimise opportunities in the community to grow towards sustainability, and furthermore contribute to the specific character and image of a place and the community. Uncomplicated access to green spaces will benefit these efforts and stimulate physical activity.

4.4.6 Conclusion of place-making approaches in urban planning context

The main objective of the place-making concept is the improvement of the community's environment and their quality of life (Montgomery, 2006, as cited by Lamit *et al.*, 2012).

In order to evaluate the contribution of the five place-making approaches in planning sustainable communities, it is necessary to evaluate these approaches in terms of the Three Spheres of Sustainability (refer: Chapter 2, paragraph 2.3, Figure 2 The Three Spheres of Sustainability). Table 24 illustrates this evaluation.

Table 24: Place-making approaches in the context of sustainability

Approach	Three Spheres of Sustainability		
	Social	Environmental	Economic
Livelihoods approach	☑	☑	
Power of 10 approach	☑		☑
Community participation approach	☑	☑	☑
New Urbanism approach	☑		☑
Green planning approach	☑	☑	☑

From the above evaluation it is evident that place-making is a concept that can be used to change and improve the spaces and places within communities. In the urban planning context, place-making, built fundamentally on various lively and sustainable objectives, can act as a catalyst to affect the planning for sustainable communities.

4.5 Conclusion

In conclusion, continuous monitoring of the implementation and progress of place-making approaches is imperative. Therefore, transparent management and evaluation of an approach should be maintained to ensure that effectual amendments are made timeously when deemed mandatory. Equally important is that legislation, policies and guidelines that regulate and manages place-making approaches should at all times endeavour to harmonise the needs of the community with the natural layout and resources of the environment, thereby ensuring an effective and sustainable design.

After completing the theoretical research, a Checklist, seen in Table 25 below, was compiled. The devised Checklist's indices and questions were based on the theoretical concepts, studied in Chapters 2 to 4 of this research. The objective of the Checklist is to evaluate, place-making, in public places, communities and areas in terms of the attributes of a "Great Place".

Table 25: Evaluate place-making, in public places, communities and areas in terms of the attributes of a "Great Place".

<u>CHECKLIST</u>	
Evaluate place-making, in public places, communities and areas in terms of the attributes of a "Great Place".	
SOCIABILITY	
• Do the people interact with each other?	
• Are there opportunities for social interaction in the specific area?	
• Is there a welcoming atmosphere in the area?	
• Do people experience a sense of satisfaction when they spend time in the area?	
USES AND ACTIVITIES	
• Are there a range of age groups and different cultures present in the area?	
• Is there a variety of activities presented in the area?	
• Are people attracted by the uses and activities presented in the area?	
• Is the area well-maintained?	
ACCESS AND LINKAGES	
• Are the activities in the area easy to identify?	
• Is the place accessible?	
• Is placement of internal routes supportive to the natural flow of the people?	
• Is the specific area pedestrian-friendly?	
COMFORT AND IMAGE	
• Is the first impression of the area positive?	
• Is the area clean and free of litter?	
• Is the area safe?	
• Are people's basic needs sufficiently provided for in the area?	

In the chapters that follow, place-making, in international and local context, will be evaluated using the Checklist above.

Hereby the theoretical part of this research is concluded. With the purpose of finding best practices that will serve to enhance planning for sustainable communities, the international and local

approach to place-making, through layout and design, will be analysed in Chapters 5 to 8 of this research.

Chapter 5 forms the first part of the empirical investigation of this research. In this chapter, the international approach to place-making, through layout and design are researched.

Chapter 5: International approach to place-making, through layout and design: The *Place des Wallons* pilot study

The following diagram illustrates the structure of Chapter 5.

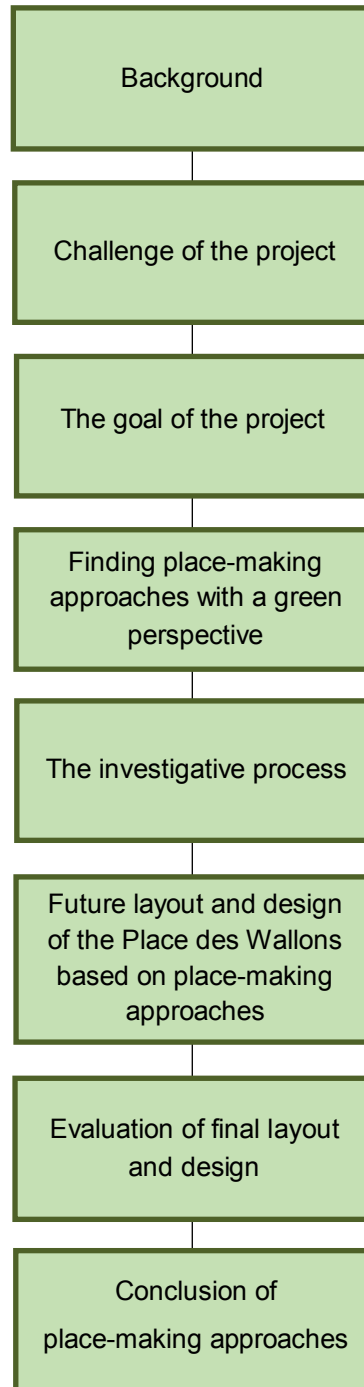


Diagram 5: Structure of Chapter 5

In this chapter, the international approach to place-making, through layout and design, is studied, on the basis of a pilot study, that deals with the renewal of the *Place des Wallons*, a public square located in the city *Louvain-la-Neuve* in Belgium.

5.1 Background

The *Place des Wallons* is a public square in the city *Louvain-la-Neuve*, which is located approximately 30 km southeast of Brussels, the capital of Belgium. Parts of the public square are co-owned by the University, the City Council and a few private property owners. A public-private partnership, known as *Gestion Centre Ville Ottignes-Louvain la Neuve* (GCVOLLN), represents the combined interest of the aforementioned owners. GCVOLLN furthermore conducts the public liaison of the partnership and is responsible for the maintenance and renovations of the common property. Figure 16 below indicates the location of *Louvain-la-Neuve*.



Figure 16: Location of Louvain-la-Neuve
Source: Jansen & Ruifrok (2012)

The land, on which *Louvain-la-Neuve* was developed, belonged to the “*Université de Louvain*” and was primarily reserved to accommodate the university. The original layout and design of *Louvain-*

la-Neuve was for a pedestrian city. For this reason, the city centre was built on a concrete slab, with all roads running beneath the concrete slab. Due to this layout and design and the associated practical difficulties of establishing green spaces on a concrete slab, green planning, and by implication the development of green public places, was not a priority in the city. However, as the city continued to expand and develop, extensions to the city were built on natural soil, and so the feasibility of green space development increased.



Figure 17: Louvain-la-Neuve today.
Source: Jansen & Ruifrok (2012)



Figure 18: Louvain-la-Neuve - City centre built on the concrete slab.
Source: Jansen & Ruifrok (2012)

Over time, the lack of efficient maintenance gave rise to the urgent need to renovate parts of the city, including the *Place des Wallons*. In 2010, GCVOLLN started a process informing the public of their intent to renovate the *Place des Wallons*. In the lengthy debate that subsequently followed the initial announcement, all the wishes and demands of the owners were discussed, however, allowing for a green perspective in the new design was not considered.

L'Association du Management de Centre-Ville (AMCV) is the leading partner in a European project called "Lively Cities". The project, which is funded by the European Union, aims at regaining public space for public use by bringing urban spaces in decline in North West Europe back to life. AMCV was aware of the decay of *Louvain-la-Neuve* and offered to assist GCVOLLN in regenerating the *Place des Wallons*. GCVOLLN accepted the offer and asked AMCV to advise them on a solution with a green perspective.

5.2 The challenge of the project

The *Place des Wallons* is part of a network of public squares in *Louvain-la-Neuve* that are linked together through streets and shops. This network of public places contributes to the unique

character of the town. In the beginning, the *Place des Wallons* had played a dominant role in the network, however, the development of new public squares and shops resulted in the *Place des Wallons* losing its position as the leading public place in the network.

The challenge was not restoring the public square to its former position, but rather the renewal of the *Place des Wallons* as a lively public place with a distinctly "green" identity that complemented *Louvain-la-Neuve* and contributed to the success of the network of public squares as a whole. Jansen & Ruifrok (2012) phrase the essence of the challenge as follows: "How do we turn misused, underused or non-used public spaces, with the help of green elements, into destinations where people choose to spend their spare time?".

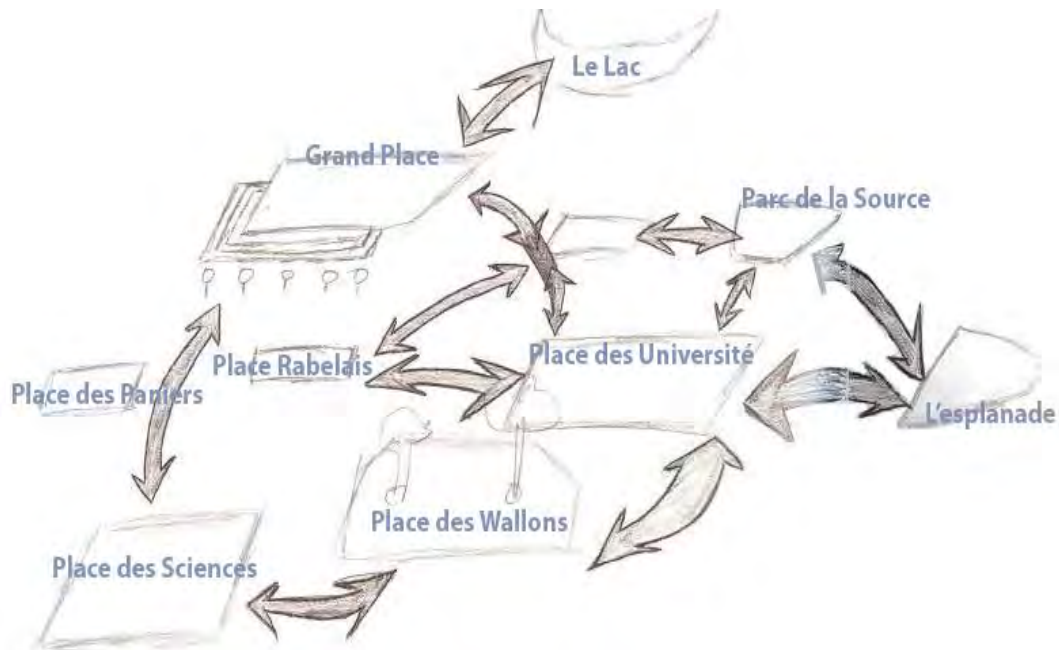


Figure 19: Louvain-la-Neuve as a network of public squares and the role of the *Place des Wallons*.
Source: Jansen & Ruifrok (2012)

5.3 The goal of the project

The goal of the project was to transform the *Place des Wallons* into a lively public place (refer: Chapter 4, paragraph 4.3.2 Lively public spaces) which attracts people and influences them to stay or return to the square.

5.4 Finding place-making approaches with a green perspective

In order to develop an effective and sustainable solution for the *Place des Wallons*, Jansen and Ruifrok (2012) made use of the place-making concept. Throughout the principle design process, they applied basic principles of place-making (refer: Chapter 4, paragraph 4.1 Table 16 Key principles of place-making) and utilised various place-making approaches, of which the community participation approach, through which the needs of the community are determined (refer: Chapter 4, paragraph 4.4.3 Community participation approach), played a primary role.

Before setting up a concept and vision on the future design for the *Place des Wallons*, Jansen and Ruifrok (2012) performed an investigative process of the environmental and social characteristics intrinsic to *Louvain-la-Neuve* and its surrounding areas, followed by an analysis of the surrounding factors that influence the *Place des Wallons* as a public place.

5.5 The investigative process

The first part of the investigative process includes a field inventory, which provides an overview of general features that shape and influence the city of *Louvain-la-Neuve*. The second part is an exploratory field analysis that examines internal and external factors that influence the liveability of *Louvain-la-Neuve*, and resultantly affect the *Place des Wallons* as a lively place.

5.5.1 Field inventory

The inventory is an overview on the location of *Louvain-la-Neuve* in relation to other cities, the design and architecture of the city centre, the internal method of transport as well as the accessibility of the city. Also included is a brief historical background of the city. The latter provides insight into the current composition of the community and stakeholders. Finally, a short description of the soil conditions in *Louvain-la-Neuve* concludes the field inventory.

5.5.2 Field analysis

The first part of the field analysis consists of a green analysis, which gives a thorough description of the existing plant material and trees in *Louvain-la-Neuve* and the *Place des Wallons*. It furthermore briefly describes the geometrical characteristics of *Louvain-la-Neuve* and the *Place des Wallons*.



Figure. 20: The Place des Wallons with only two trees.
Source: Jansen & Ruifrok (2012)

The second part comprises a social analysis which describes the composition of the community and thus the different users of the *Place des Wallons*. The analysis shows that the majority of the users are students and the remainder made up of families, young adults, elderly people and a small faction homeless people.

5.5.3 Analysis of surrounding factors

An analysis of the surrounding factors that influence the *Place des Wallons*, gives insight into the manner in which it functions as a public place and explains the context of the *Place des Wallons* in relation to *Louvain-la-Neuve* and the network of public squares in the city. Jansen & Ruifrok (2012) use an analysis called 'Surrounding Factors' by Frank de Josselin de Jong, which encompasses six (6) small analyses of factors including density, mixed function, connectivity, accessibility, routing and identity. The first three (3) represent external factors and the remainder internal factors.

The maps, images and schematic representations below reflect clearly the status quo with regard to the abovementioned surrounding factors that influence the *Place des Wallons*.

External factors

- Density

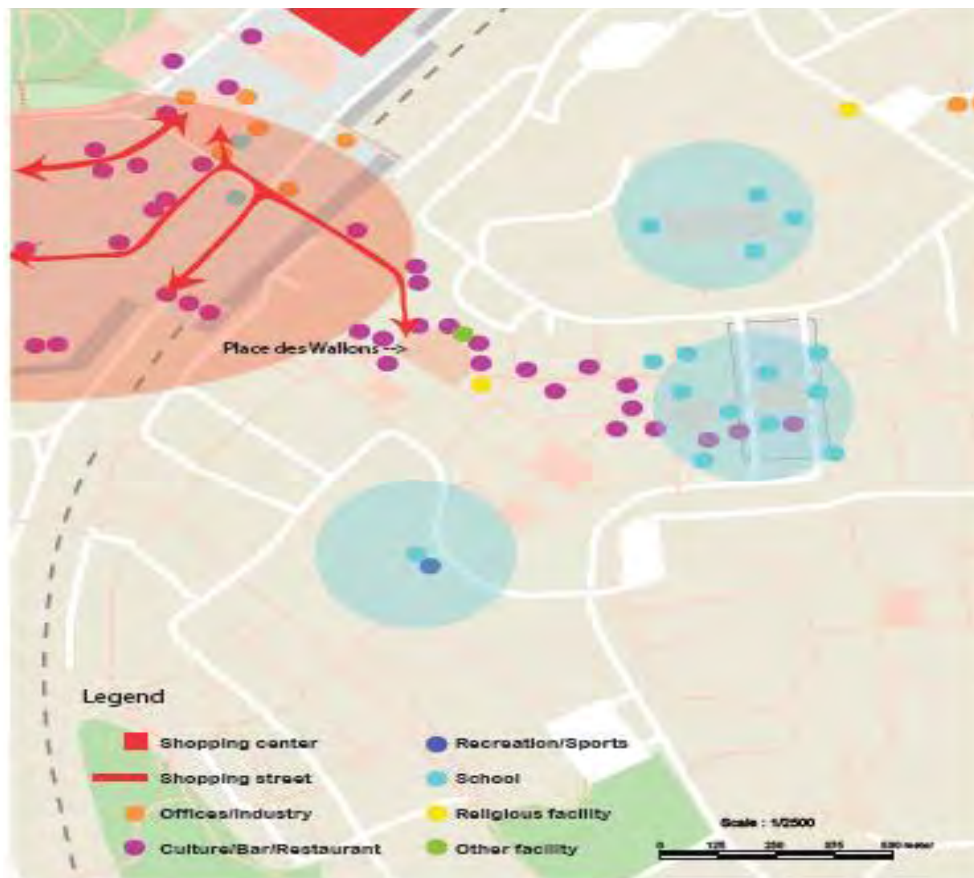
The image in Figure 21 below, depicts the density of the population living in the area surrounding the *Place des Wallons* and thus gives a good indication of the potential quantity of users.



Figure 21: External factor: Density
Source: Jansen & Ruifrok (2012)

- Mixed functions

The small dots in Figure 22 show the functions and facilities that are in close proximity to the *Place des Wallons* and that are used on a daily basis. The large blue and red areas mark the areas that attract a lot of people.



External factor: Surrounding factors

Figure 22: External factor: Mixed function
Source: Jansen & Ruifrok (2012)

- Connectivity

The connectivity of the *Place des Wallons*, depict in Figure 23 below, is measured in three steps. In step one, streets that lead directly to the *Place des Wallons* are identified. In step two, the streets that are connected to the streets indicated in step one are identified. In step three, the streets that are connected to the streets in step two are identified.



Figure 23: External factor: Connectivity
Source: Jansen & Ruifrok (2012)

Internal factors

- Accessibility

In the schematic representations depicted in Figure 24, the first figure shows existing entrances and exits of the *Place des Wallons*. The second figure indicates whether the aforementioned are public, semi-public or private. The third figure and the strings below the figures indicate the visibility of these entrances or exits.

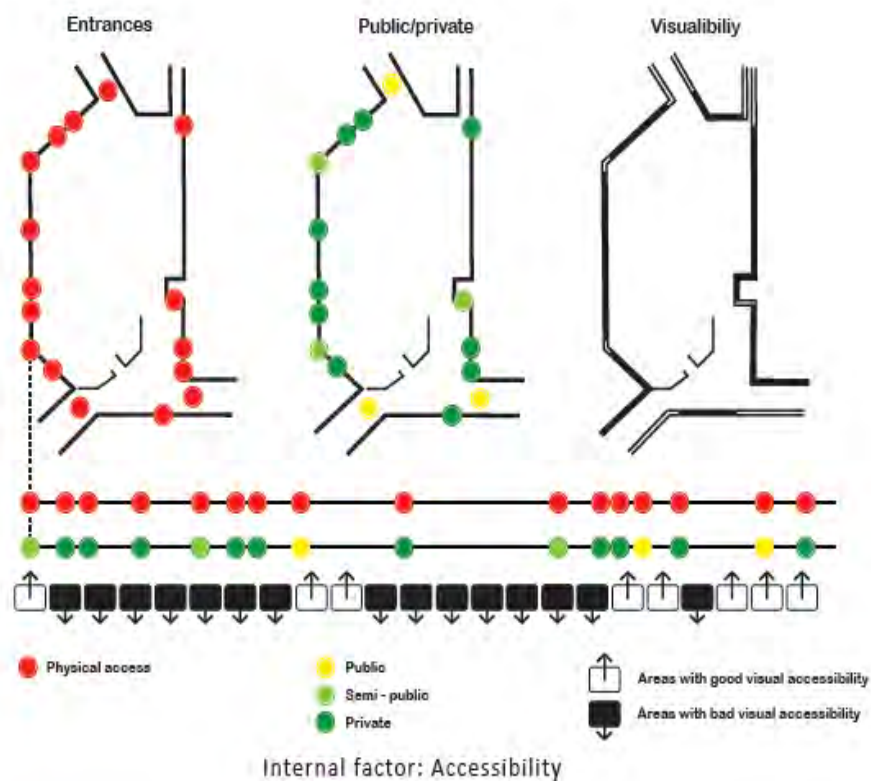


Figure 24: Internal factor: Accessibility
Source: Jansen & Ruifrok (2012)

- Routing

The different routes in the *Place des Wallons* and the frequency with which these routes are used, are indicated on the map in Figure 25. Although a road that is wide enough for cars to use is marked on the map, no cars use this route due to the fact that all actual roads are under the concrete slab on which this part of the city is built. By this analysis, the existing trends and habits of the *Place des Wallons* was determined (refer: Chapter 4, paragraph 4.1, Table 16: Key principles of place-making - Form support functions).

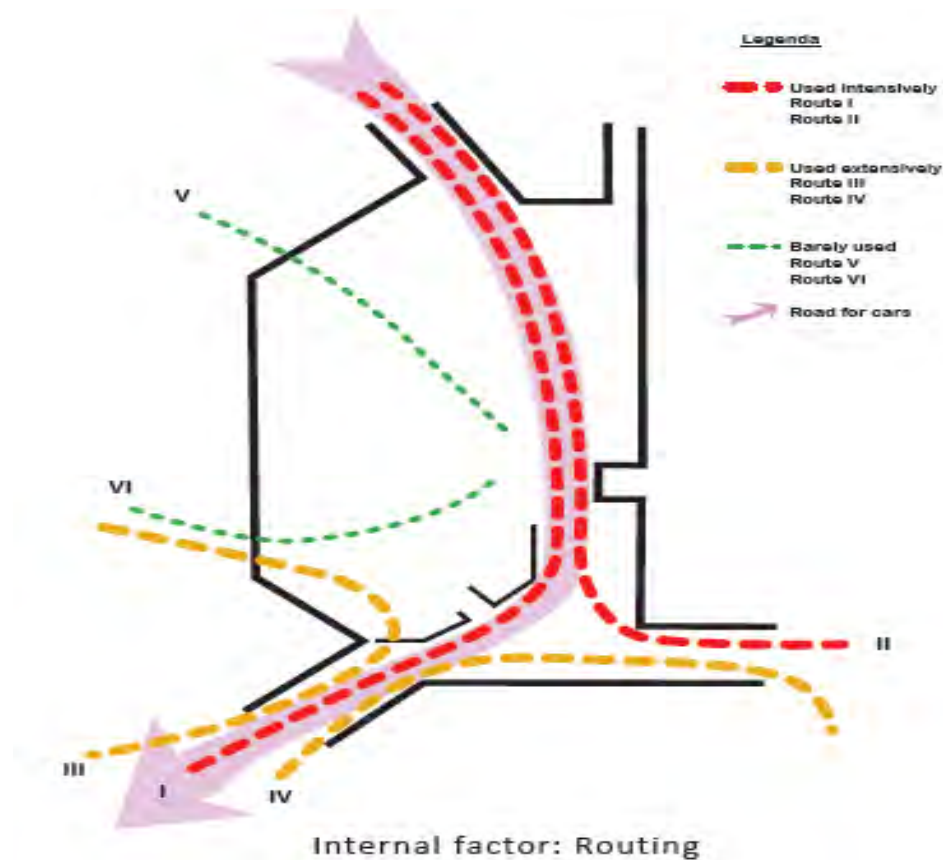


Figure 25: Internal factor: Routing
Source: Jansen & Ruifrok (2012)

- Identity

In the map in Figure 25, certain unique characteristics of the *Place des Wallons* are highlighted in such a way that the public square is easily explained, especially to people who have never before visited the square.



Figure 26: Internal factor: Identity
Source: Jansen & Ruifrok (2012)

Derived from the analysis of the surrounding factors, Jansen & Ruifrok (2012) conclude that the *Place des Wallons* has no real identity. The main function of the *Place des Wallons* is a social potential and is thus primarily a place where people meet and consequently socialise. In respect hereof, there are enough potential users, however, unattractive shop entrances and a fixed main internal route that most people use result in the square being used by the majority users only as a thoroughfare to other public squares.

5.5.4 Night and day analysis

The night and day analysis of the *Place des Wallons* consists of a participation process during which the input of mainly students was used to acquire an objective view of the *Place des Wallons*, followed by an analysis of this information.

The *Place des Wallons* offers various functions during the day, however, many of the functions that are available in the daytime are closed at night. The figures below, which compare the daytime functions with those that are available at 12 o'clock at night, clearly show a descent in activities at night.

Mixed functions during the day

Mixed functions during the night

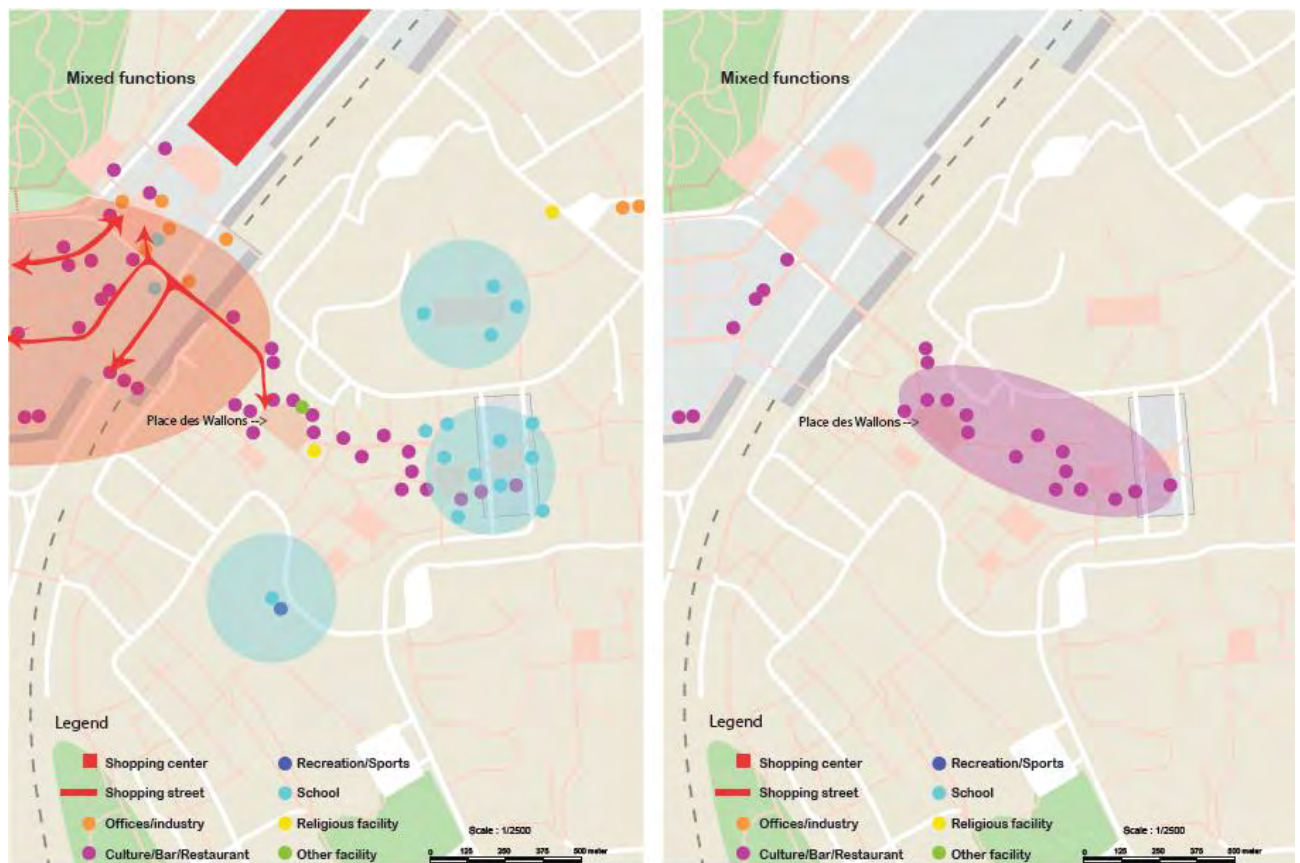


Figure 27: Mixed functions during the day and night
Source: Jansen & Ruifrok (2012)

5.5.5 Participation process

To determine the needs and preferences of the users of the *Place des Wallons*, Jansen and Ruifrok (2012) employed the participation approach of place-making; “The concept of place-making is all about involving citizens in the transformation of public areas” (Jansen & Ruifrok, 2012).

The participation process was carried out in two parts: the first part was composed of a one-way communication process which included “Like” and “Dislike” posters as well as an idea tree, on which the public could hang their written ideas and suggestions. In Figures 28 and 29 are images that show this process.



Figure 28: “Like” and “dislike” posters
Source: Jansen & Ruifrok (2012)



Figure 29: Idea tree
Source: Jansen & Ruifrok (2012)

The second part of the participation process included interactive interviews with the public and an interactive Facebook page.

The participation process concluded that there was a need for a seating area, a “greener” *Place des Wallons*, a legal space to display posters, garbage bins in the square, a space where students and inhabitants can express their creativity and allow the opportunity to organise events in the square.

During the participation process, Robert-Jan Ruifrok and Rick Jansen placed a mobile bench (“the Snake”) in the middle of the *Place des Wallons* (public square). This mobile bench is demonstrated in the figure below.

“The snake” during participation days



“The snake” after placement



Figure 30: “The Snake”
Source: Jansen & Ruifrok (2012)

The “snake” bench was intended to be used as a resting place and simultaneously to influence the walking routine of the people in this square. This is a typical example of how, through layout and design and the inclusion of place-making elements, a place can be created.

5.6 Future layout and design of the *Place des Wallons* based on place-making approaches

Jansen & Ruifrok (2012) use all the information they accrued and all the conclusions they had drawn from the various processes they followed to formulate a concept and vision for the future design of the *Place des Wallons*. The underlying principle of the design is to create a connection

between the analysis and the real design. In the design, Jansen & Ruifrok attempt to incorporate fundamental elements such as a strong “green” identity, recognisable entrances and scattered routing.

The figure below shows the four fundamental elements of the concept and vision incorporated in a future design of the *Place des Wallons*.

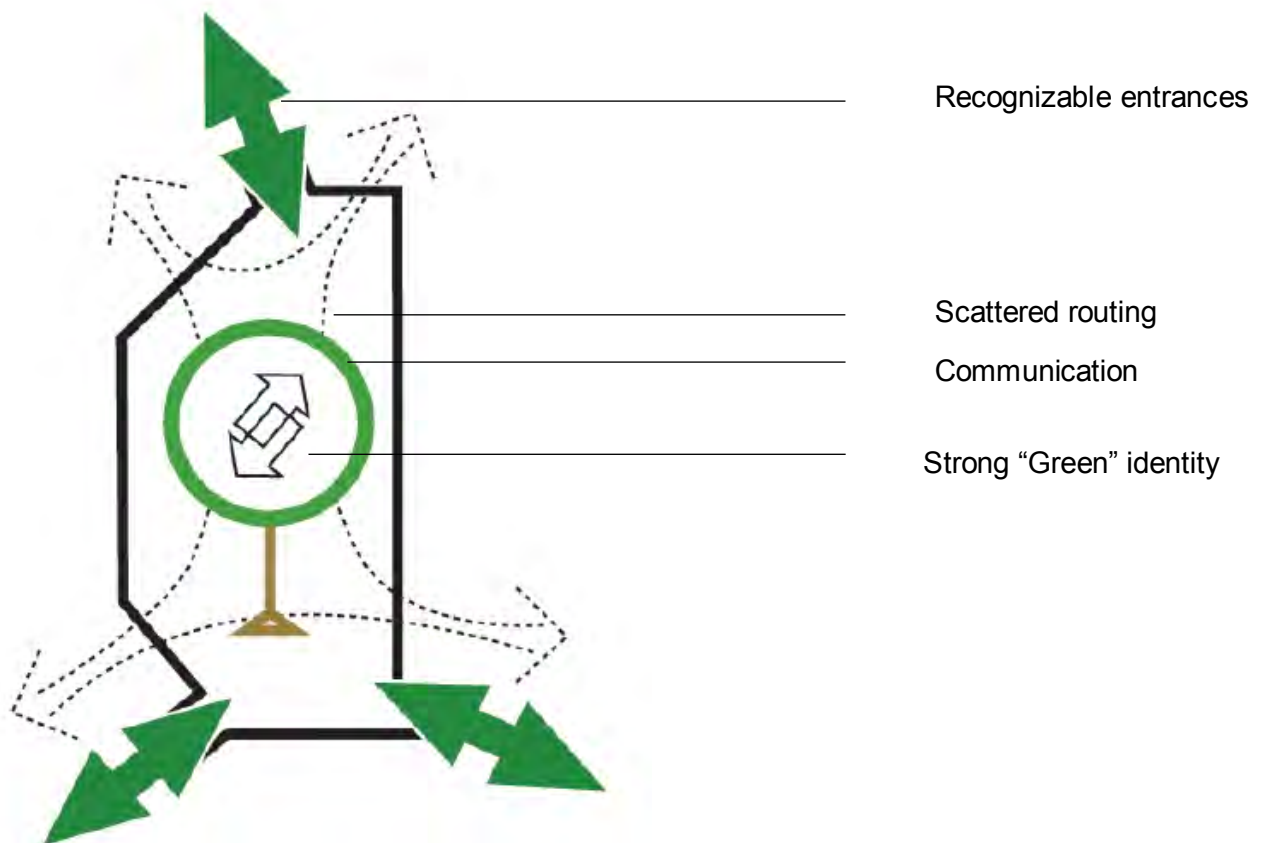


Figure 31: Link between analysis and design

Source: Own construction inspired by Jansen & Ruifrok (2012)

As illustrated below, the combination of various place-making elements, included in the principle layout and design for the area, are focused on creating a green identity for the square. (*Place des Wallons*)



Figure 32: Principle design example
Source: Jansen & Ruifrok (2012)

5.7 Evaluation of final layout and design

The final layout and design that were created for the *Place des Wallons* is evaluated as part of the empirical investigation of this study, based on the theoretical founding and objectives evaluated in Chapter 2 to 4 of this research.

The layout and design were evaluated based on:

- Place-making principles.
- Successful public space attributes.
- Factors of successful public spaces.
- SWOT analysis of the *Place des Wallons*.

- The Checklist drawn up as found in Chapter 4, (refer: Chapter 4, paragraph 4.5, Table 25: Evaluate place-making in public places, communities and areas in terms of the attributes of a "Great Place").

Throughout the investigative strategy and in the subsequent principle layout and design, the key principles of place-making were adhered to, including: the community is the expert; creating a place and not just a design; you can't do it alone; they will always say, "it can't be done"; you can see a lot just by observing; develop a vision; form support functions; triangulate; start with the petunias; money is not the issue; and you are never finished. (refer: Chapter 4, paragraph 4.1 Table 16: Key principles of place-making).

The strategy, furthermore, embraced an evaluation of the *Place des Wallons* in terms of the four main key attributes that are needed for a space to be regarded as a successful public place (refer: Chapter 4, paragraph 4.3.2, Lively public spaces), and as illustrated in the table below, amendments by means of place-making principles were made where and when deemed necessary.

Table 26: The *Place des Wallons* measured in terms of the key attributes of a great public place

The <i>Place des Wallons</i> measured in terms of the key attributes of a great public place		
	Before	After
Access and linkages		<input checked="" type="checkbox"/>
Comfort and image		<input checked="" type="checkbox"/>
Uses and activities		<input checked="" type="checkbox"/>
Sociability		<input checked="" type="checkbox"/>

The strategy also succeeded in identifying factors of successful public spaces (refer: Chapter 4, paragraph 4.3.2, Table 18 - Factors of successful public places) present in the *Place des Wallons* and, as illustrated in the table below, in adding more factors in order to create a lively public space.

Table 27: Factors of a successful public space that are present in the *Place des Wallons*

Factors of a successful public space that are present in <i>Place des Wallons</i>		
	Before	After
Identity		☑
Attractions		☑
Amenities	☑	☑
Flexibility		☑
Seasonal	☑	☑
Access	☑	☑
Visibility		☑

The following diagram depicts a SWOT analysis of the principle design that Jansen & Ruifrok (2012) created for the *Place des Wallons* in terms of place-making principles.



Diagram 6: SWOT analysis of the *Place des Wallons*

In Table 28 below, place-making, in the *Place des Wallons*, is evaluated, using the Checklist drawn up as found in Chapter 4 (refer: Chapter 4, paragraph 4.5, Table 25: Evaluate place-making in public places, communities and areas in terms of the attributes of a "Great Place").

Table 28: Evaluate place-making in the *Place des Wallons* in terms of the attributes of a "Great Place"

<u>CHECKLIST</u>	
Evaluate place-making, in public places, communities and areas in terms of the attributes of a "Great Place".	
SOCIABILITY	
• Do the people interact with each other?	<input checked="" type="checkbox"/>
• Are there opportunities for social interaction in the specific area?	<input checked="" type="checkbox"/>
• Is there a welcoming atmosphere in the area?	<input checked="" type="checkbox"/>
• Do people experience a sense of satisfaction when they spend time in the area?	<input checked="" type="checkbox"/>
USES AND ACTIVITIES	
• Are there a range of age groups and different cultures present in the area?	<input checked="" type="checkbox"/>
• Is there a variety of activities presented in the area?	<input checked="" type="checkbox"/>
• Are people attracted by the uses and activities presented in the area?	<input checked="" type="checkbox"/>
• Is the area well-maintained?	<input checked="" type="checkbox"/>
ACCESS AND LINKAGES	
• Are the activities in the area easy to identify?	<input checked="" type="checkbox"/>
• Is the place accessible?	<input checked="" type="checkbox"/>
• Is placement of internal routes supportive to the natural flow of the people?	<input checked="" type="checkbox"/>
• Is the specific area pedestrian-friendly?	<input checked="" type="checkbox"/>
COMFORT AND IMAGE	
• Is the first impression of the area positive?	<input checked="" type="checkbox"/>
• Is the area clean and free of litter?	<input checked="" type="checkbox"/>
• Is the area safe?	<input checked="" type="checkbox"/>
• Are people's basic needs sufficiently provided for in the area?	<input checked="" type="checkbox"/>

5.8 Conclusion of place-making approaches

Derived from results of the above checklist, it is evident that place-making, through layout and design in the *Place des Wallons*, is successful in terms of the attributes of a "Great Place".

In the following chapter, the local approach to place-making, through layout and design are discussed in terms of South African policies and legislation.

Chapter 6: Local approach to place-making, through layout and design

The following diagram illustrates the structure of Chapter 6.

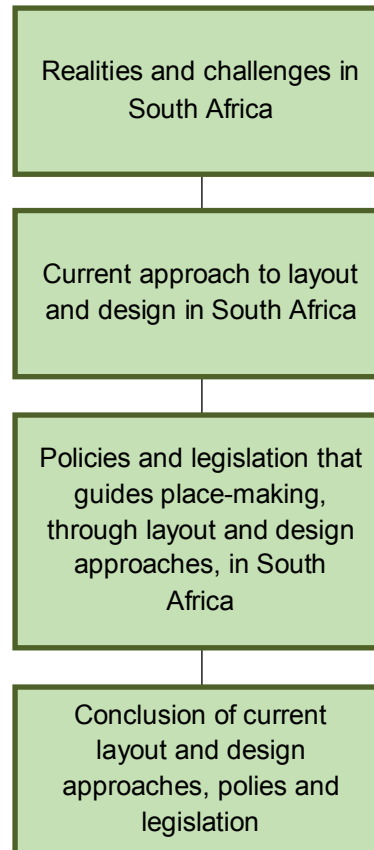


Diagram 7: Structure of Chapter 6

Place-making, through layout and design is primarily an international approach. This part of the study, however, focuses on local challenges and problems. Therefore, in order to determine best international practices in terms of the local context, this research includes a detailed evaluation of local reality and a summary of current policies and legislation regarding place-making, through layout and design in South Africa.

6.1 Realities and challenges of South Africa

“The victory over the apartheid state in 1994 set policy makers in all spheres of public life the mammoth task of overhauling the social, political, economic and cultural institutions of South Africa to bring them in line with imperatives of a new democratic order” (Asmal, 2001, as cited by Donaldson, 2001).

“Sustainable development is sometimes perceived as an abstract concept which is difficult to achieve in environments where the social needs and priorities of people in the community suffered as a result of neglect, poverty, unemployment and industrial decline” (Dixon & Pretorius, 2005).

The 1998 White Paper on Local Government accentuates the fact that the spatial, social and economic spheres (in other words, the sustainability) of the urban and rural environments were profoundly impaired by the policy of apartheid (Cooperative Governance and Traditional Affairs, 2013). The intent of current policies, legislation and guidelines in South Africa is to, through the Reconstruction and Development Program, promote and support integrated sustainable development of urban and rural areas. However, deeply rooted spatial, economic and social disparities continue to exist and are noticeable throughout rural and urban environments in South Africa. One of the main reasons cited in explaining why planning, policies, legislation and guidelines aimed at sustainable development in South Africa do not conclusively deliver the desired results, is increased urbanization (Cooperative Governance and Traditional Affairs, 2013).

Worldwide economic opportunities are the main reason for urbanization (Turok, 2012). Urbanization refers not only to the movement of people to cities, but also the migration of people to smaller towns. During the apartheid era, rural-urban migration was curtailed by discriminatory government controls. Due to restrictions such as poor education and training, prohibition to own land, restraints on choice of residence and regulation of employment, the majority of people in South Africa were forced to live and to work primarily in rural areas where work opportunities were dominated by farming (Turok, 2012). Since 1994, a large number people have moved off farms, either by way of eviction or by own free will. Of these people, the majority moved to townships or informal settlements in and around cities and the minority relocated to small rural towns (Todes, *et al.*, 2010). Post-1994, many people from the rest of Africa, as well as Asia and the Indian subcontinent, also migrated to South African towns and cities (Todes, *et al.*, 2010).

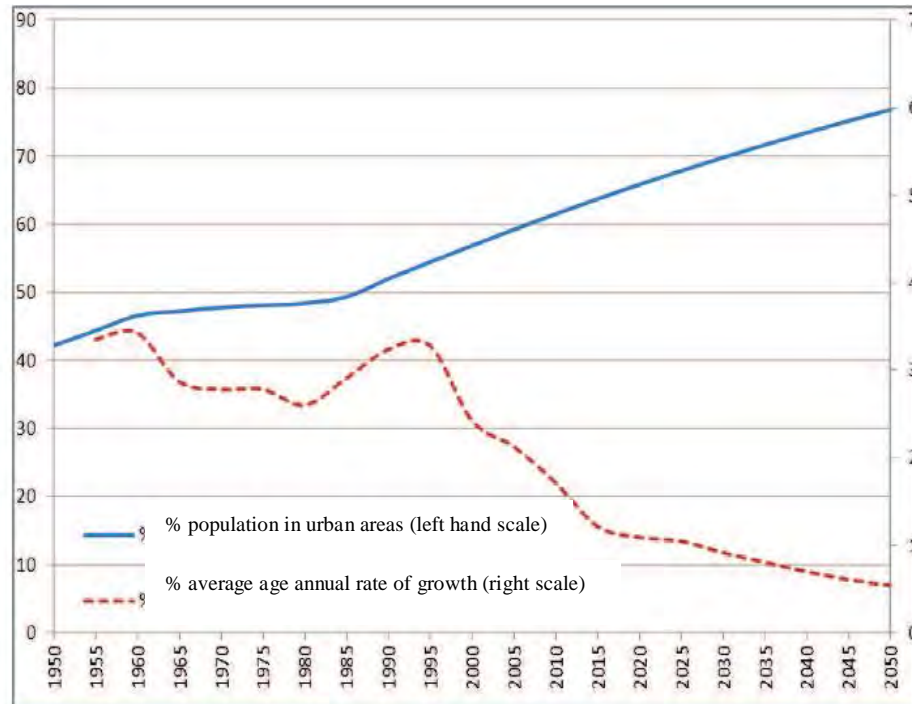


Figure 33: South Africa's urban population and its growth rate, 1950–2050

Source: United Nations Population Division, *World Urbanisation Prospects: The 2011 Revision*, as cited by Turok (2012)

Donaldson (1999), asserts that it is difficult to categorize South Africa's spatial settlement patterns into specific settlement types. Due to separate development and apartheid policies prior 1994, a unique set of settlement environments has developed, which is different from the familiar urban and rural differentiation pattern. The White Paper on Local Government (1998, 33) lists these environments in 9 categories:

- Urban core
- Urban fringe
- Small towns
- Dense rural settlements
- "Betterment" settlements
- Informal settlements
- Villages
- Agri-Villages
- Dispersed and scattered settlement

Factors such as variations in land tenure systems complicate the issue of land ownership in all of the above mentioned settlement types (Donaldson, 1999).

“Sustainable development is a programme to change the process of economic development so that it ensures a basic quality of life for all people, and protects the ecosystems and community systems that make life possible and worthwhile.” (Van der Merwe & Van der Merwe, 1999:5, as cited by Dixon & Pretorius, 2005). The incidence of relocation from rural communities in South Africa is highest among young, poor and jobless people, and gives rise to an increase in the levels of unemployment and poverty in cities and towns. Local governments are predominantly responsible for the planning and practical implementation of strategies, policies and legislation regarding the sustainable development, layout and design of urban and rural areas respectively. The growing population in cities and towns, however, creates tremendous pressure, and municipalities struggle to provide the basic needs of communities. Consequently, the backlog in providing and maintaining infrastructure and services such as roads, reliable public transport, sanitation, water and electricity is constantly growing (Cooperative Governance and Traditional Affairs, 2013).

The South African government recognises that the sustainable development of urban and rural communities is equally important, and that the economies of these respective areas are inextricably connected and dependent on each other (Cooperative Governance and Traditional Affairs, 2013). Conversely, Turok (2012) states that “Policymakers have often overlooked such connections, and viewed rural and urban areas in isolation”. Hereby they ignore the reality that the different rolls and functions of different places in South Africa are integrated and should complement and support each other in such a way that will result in sustainable economic development of the whole country. Although urban economies are more self-sufficient and stronger than rural economies (Turok, 2012), numerous urban economic activities (e.g. retail in food, etc.) would be unable to proceed without rural economic activities (Cooperative Governance and Traditional Affairs, 2013).

The government continuously makes resources available to eradicate poverty and to address basic needs by providing houses and basic services. The distribution and application of these funds, with specific reference to infrastructure investment, is however primarily sector-driven. Funds are therefore utilized either for housing or transport or water individually. Thus, these funds are not effectively used to achieve holistic long-term goals that will contribute to the overall functionality, or spatial and economic performance, of the specific municipality or community (Cooperative Governance and Traditional Affairs, 2013).

A further issue is that South African decision makers often tend to prioritise social and economic development regardless of the impact this may have on the environment. A typical example is the

Accelerated Shared Growth Initiative for South Africa (ASGISA). This initiative, which was accepted in 2006, aims to reduce unemployment to below 15% and poverty to less than one-sixth of households by 2014. This overarching macroeconomic framework, which will guide all policy development in South Africa until 2014, explicitly makes environmental goals subordinate to its socio-political and economic goals (South African context) (Cooperative Governance and Traditional Affairs, 2013).

“South Africa does not lack development plans and well-quantified development goals. The national plan has laid important foundations in this direction, along with the previous but neglected sustainable development framework and abundant sectoral plans. Yet, the risk for the national development plan to marginalize is very high, because of the missing political commitment and multiple policy uncertainties. The big bottleneck is the implementation and a commitment to carry the work further from the planning stage” (Rennkamp, 2010). Actions of stakeholders have unintentionally strengthened social and spatial segregation, as well as the already existing dominant urban sprawl patterns in South Africa. Such trends increase the consumption levels of non-renewable resources, which in turn result in damage to the environment. It is therefore obvious that, “...we are still struggling to find mechanisms for integrating investments with planning that will allow the creation of well-designed and more liveable cities” (Cooperative Governance and Traditional Affairs, 2013).

6.2 Current approach to layout and design in South Africa

During the apartheid era in South Africa, the ruling political party had dominant say in the development, location, layout and design of cities, towns, and more specifically the so-called townships where most of the indigenous population resided. Since the new democratic dispensation in 1994, the urgent need to enhance liveability in South Africa by rebuilding, redefining and redesigning society has emerged (African National Congress, 2011).

In 1995, the National Government instituted the “Development Facilitation Act” (developed by the RDP Office). The Development Facilitation Act (Act no. 67 of 1995) was the first legislation affecting planning and redevelopment in the post-apartheid era. In this Act, it was determined that old planning mechanisms be bypassed, and land development objectives be decided by all involved authorities. In addition, the Act makes provision for an appointed commission to further govern the development programme. The RDP plan is to address social, economic problems facing South Africa (African National Congress, 2011).

The African National Congress define the five key curricula of the Reconstruction and Development Programme (RDP) as follow:

1. Meeting basic needs
2. Developing our human resources
3. Building the economy
4. Democratising the state and society
5. Implementing the RDP

Five reasons, why South Africa needs the Reconstruction and Development Programme include: the reality of divided towns and cities; divided rural areas; inequality within society; an economy which previously benefited the minority; and lastly that small and medium sized businesses do not get enough support (African National Congress, 2011).

The Reconstruction and Development Programme (RDP) discusses social and economic problems in South Africa's society, such as violence, inadequate housing programmes, scarce job opportunities, poor education and health care, modest democracy and a failing economy. According to the ANC's Reconstruction and Development Programme the six basic principles of the RDP are as follows:

1. To address the whole problem, not just part of it (holistic approach)
2. Based on the needs and energies of all of our people
3. To provide peace and security for all
4. To build the nation
5. To link reconstruction and development
6. To build and strengthen democracy (African National Congress, 2011).

6.3 Policies and legislation that guides place-making, through layout and design approaches, in South Africa

Table 29 describes the role of the Town Planning Scheme and Land Use Management Scheme (LUMS) on a local level, as well as the Ordinance and Spatial Development Framework (SDF) on a national level of governance in South Africa and the extent of guiding the layout and design approaches in South Africa.

Table 29: Policies and legislation guiding layout and design in South Africa

Level of Governance		
Local level:	<p>Town Planning Scheme</p> <p>Town Planning Scheme describes the property zoning that is applicable and determines such aspects as possible land use, floor area, coverage, building lines, parking provisions etc. There are presently different Town Planning Schemes for different areas of the city stating requirement and development limitation impacting the layout and design areas (Cilliers, 2010).</p>	<p>LUMS (Land use Management Schemes)</p> <p>Land Use Management is the system of legal requirements and regulations that applies to land to meet desirable and harmonious development of the built environment. The LUMS is the summary of these requirements for a specific area (Cilliers, 2010).</p>
National level:	<p>Ordinance</p> <p>A land use ordinance consists of the following:</p> <ul style="list-style-type: none"> • Structured plans • Zoning schemes • Subdivision of land • Planning advisory board • General provisions (Grobler, 1997). 	<p>SDF (Spatial Development Framework)</p> <p>The collective goal is to help development within the local municipality in context with the metropolitan region within which it functions. It is also required to meet economic, social and environmental sustainability related to the IDP development cycle (Cilliers, 2010).</p>

Presented in Table 30 are policies, legislation, and guidelines with regards to good governance, urban development, rural development, and environmental and spatial planning. These policies and legislation currently has an impact on the design process in South Africa in terms of sustainable communities, place-making, through layout and design approaches.

Table 30: Legislation, policies and guidelines: Planning for sustainable communities.

Guiding	Type	Details
Good Governance		
Policy	White Paper on Local Government. 1998	It places municipalities at the centre of planning. It emphasises integrated development planning as a tool for realising the vision of developmental local government.
Development		
Legislation	Development Facilitation Act No. 67 of 1995	A “fast-track” approach to development. It resolves conflicts through “development tribunals” at provincial level. Facilitates development of settlements, discourages land invasions, promotes efficient and integrated land development, discourages urban sprawl, makes maximum use of resources and provides guidance and information to people.
Policy	Green Paper on Development and Planning. April 1999	The emphasis is on co-operative governance between national, provincial and local spheres of government. The Commission emphasises the importance of establishing a shared vision and consistent direction for spatial development based on protecting the rights of people and the environment.
Guidelines	Integrated Development Plans (IDP)	A key tool for local government to cope with its developmental role. Integrated development planning is now seen as a function of municipal management, as part of an integrated system of planning and delivery. Guides decisions on issues such as municipal budgets, land management, promotion of local economic development and institutional transformation.

Rural development		
Policy	Integrated Sustainable Rural Development Strategy (ISRDS). November 2000	The ISRDS is designed to realise a vision that will attain socially-cohesive and stable rural communities with viable institutions, sustainable economies and universal access to social amenities, able to attract and retain skilled and knowledgeable people, equipped to contribute to growth and development.
Policy	Rural Development Framework 1997 (RDF)	Describes how government aims to achieve a rapid and sustainable reduction in absolute rural poverty.
Environmental		
Legislation	National Environmental Management Act (NEMA). No. 107 of 1998	The National Environmental Management Act provides co-operative environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance and procedures for co-coordinating environmental functions; and to provide for matters connected therewith.
Guidelines	Environmental Impact Assessment (EIA)	A study of the environmental effects of a decision, project, undertaking or activity. It is used within an Integrated Environmental Management (IEM) planning process as a decision support tool to compare different options.
Guidelines	Strategic Environmental Assessment (SEA)	Relates primarily to the planning and programme level. SEA aims to ensure that environmental issues are addressed from an early stage in the process of formulating policies, plans and programmes, and incorporated throughout this process. It is a pro-active management instrument.

Spatial Planning		
Policy	Urban Development Framework. April 1997 (UDF)	Examines current dilemmas and realities facing South Africa's urban areas. It provides a positive and common vision of a desired future for South Africa's urban areas in the year 2020. Contains Government's vision for sustainable urban settlements, as well as guidelines and programmes for the achievement of the vision.
Policy	Land Use Management Bill. 2003	Provides for the uniform regulation of land-use management in South Africa, sets principles for spatial planning, land development and land-use management, provides for spatial development frameworks, guides certain laws and provides for matters connected therewith.
Policy	National Spatial Development Perspective (NSDP). 2006	Endorsed by Cabinet in March 2003 to ensure economic growth, government spending on fixed investment on localities of economic growth, future settlement and economic development channelled into activity corridors and nodes adjacent to the main growth centres; informs the respective development plans of the three spheres of government; and gives support to government's national spatial development vision.

Source: Cilliers (2010)

6.4 Conclusion of current layout and design approaches, policies and legislation

The purpose of layout and design is to create a framework, within which multiple investments be accommodated, which over time jointly reinforces development (Behrens & Watson, 1996). This implies that the layout plan should include, a minimum set of spatial interventions rather than attempting to be comprehensive (Behrens & Watson, 1996).

It is the responsibility of government, to not only, create legislation and policies that will result in the sustainable development of areas and communities, but also to define the objectives of the place-making approach, which will determine, the specific layout and design model of a area. It is therefore imperative to continuously, evaluate the progress of implementation and the practical outcome of the approach, to ensure that policies and legislation are relevant and that objectives is reached.

In Table 31 the South African approach to layout and design is summarized, along with supporting policies and legislation.

Table 31: South African approaches to layout and design

South African approaches to layout and design	
Current approach to Layout and design in South Africa	
Primary objectives and focus	<ul style="list-style-type: none"> The objective is to enhance liveability in South Africa by rebuilding, redefining and redesigning of society through reconstructive development.
Programmes implemented	<ul style="list-style-type: none"> The Reconstruction and Development Programme (RDP)
Success with regards to place-making and liveability	<ul style="list-style-type: none"> The RDP focuses on community participation and democratising the state and society, the development of human resources is another aim in the programme. These are all elements, which affect place-making and liveability.
Urban context	
Primary objectives and focus	<ul style="list-style-type: none"> Integrated mixed-use housing Redevelopment of areas
Programmes implemented	<ul style="list-style-type: none"> Urban Development Framework Integrated Development Plan (IDP)
Success with regards to place-making and liveability	<ul style="list-style-type: none"> Urban Design Framework – establishing relationships between local government and civil society. Overcome separation between spatial planning and economic planning Successful land reform IDP - Integrating different land uses and creating new spaces that includes restructuring, public participation and liveable elements.

Rural context	
Primary objectives and focus	<ul style="list-style-type: none"> • Improving opportunities and health of people in communities by implementing sustainable elements. • Improving rural-urban linkages • Eradication of poverty • Job creation
Programmes implemented	<ul style="list-style-type: none"> • Integrated Sustainable Rural Development Strategy (ISRDS) • Decentralisation and promotion of local power and autonomy in decision making • Rural Development Framework (RDF) <p>GEAR (<i>Growth Employment and Redistribution</i>)</p>
Success with regards to place-making and liveability	<ul style="list-style-type: none"> • As mentioned, the RDP has a chapter based on sustainability and livelihoods. Therefore, if implemented accordingly, the policy can be regarded as successful. • ISRDS focuses on providing opportunities for rural people. This is a core aspect of liveability (especially with regards to multiple opportunities and functions) and, as mentioned above, if the policy is implemented accordingly, it can have a successful influence on livelihood.

Current goals of the RDP are the merging, reconstruction and development of fragmented, neglected and underdeveloped areas, which resulted from the policy of apartheid in South Africa. The basic needs of the people, strong economy, democracy, peace and security, are of the main fundamental place-making objectives that are encapsulated in the framework of this approach towards the sustainable reconstruction and development of South Africa.

In Chapter 7, the effectiveness of this approach to place-making, through layout and design in planning for sustainable communities in South Africa, are discussed and analysed by means of an qualitative and quantitative investigation process.

Chapter 7: Qualitative and quantitative investigations of the local approach to place-making, through layout and design

The following diagram illustrates the structure of Chapter 7.

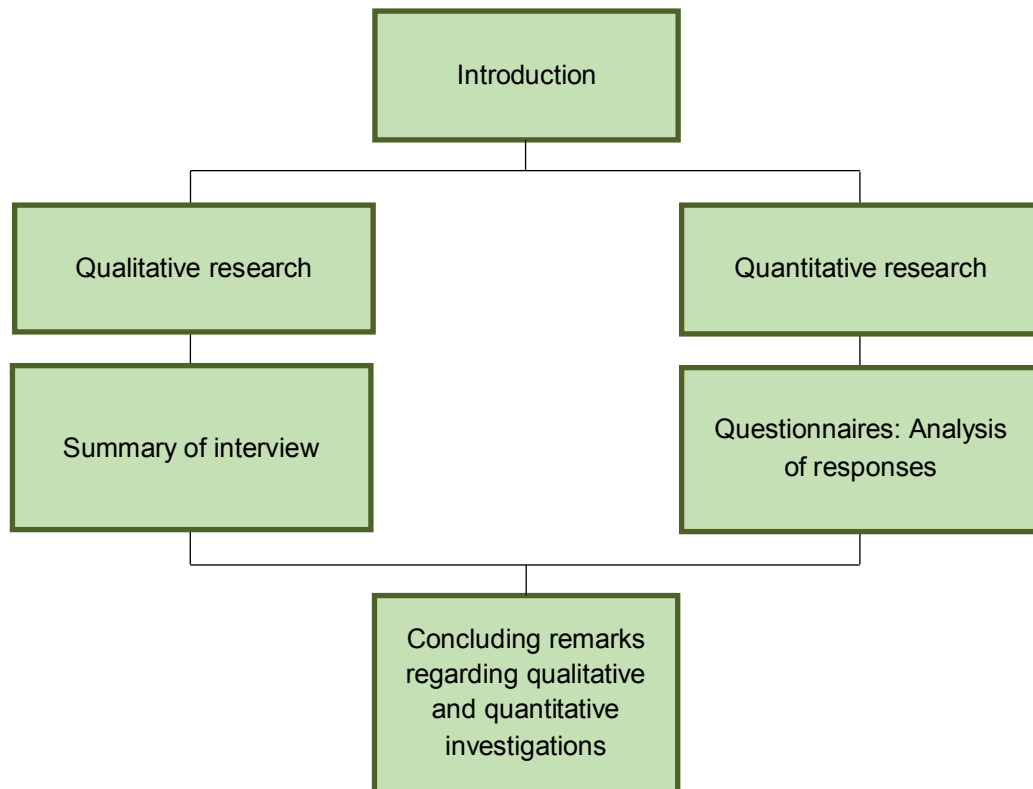


Diagram 8: Structure of Chapter 7

In this chapter, the South African approach to place-making, through layout and design is evaluated by means of a quantitative and qualitative investigation.

7.1 Introduction

Quantitative and qualitative research methods were used to obtain the opinions of experts and members of the general public regarding sustainability, sustainable communities, place-making approaches and layout and design approaches in South Africa, and at the same time, determine the participants' knowledge and comprehension of these concepts.

7.2 Qualitative investigation

The research findings are based on an interview with Professor Sarel Cilliers, an international leader in the field of Urban Ecology (integration between environmental aspects and urban reality) and senior lecturer at the Faculty of Natural Sciences: School of Environmental Sciences and Development, North West University, Potchefstroom.

The objective of this qualitative research was to determine the relevance of green planning as a sustainable place-making approach in rural areas in South Africa and furthermore to identify practical guidelines for the Green planning approach and the implementation thereof in these areas.

7.2.1 Summary of interview

In the qualitative investigation, the informal, open-ended interview technique was used to gain insight in an expert's subjective understanding of the concepts of sustainable development, place-making, through layout and design and green planning, as well in his approach to the implementation thereof in the South African context.

In the interview the following questions were raised:

- How can one, through place-making and layout and design approaches, make communities more sustainable?
- What guidelines exist regarding green planning?
- How can green areas be implemented successfully in rural areas to improve the quality of life of the people?
- Do you believe that South Africa has a future in terms of sustainability and sustainable communities?

Cilliers (2013) concurs that an effective Green planning approach is a fundamental building block of place-making, and will result in an environmentally-friendly, economically viable, socially equitable, and thus sustainable community. Cilliers accentuates that multifunctional green spaces should be the primary goal when the layout and design of sustainable communities are planned, and that planners should lay emphasis on a value-driven approach when planning green spaces in an area.

Cilliers (2013) concedes that the diverse composition of communities, as well as the various circumstances in different areas, give rise to unique challenges in terms of sustainable development. He furthermore admits that people in South Africa, especially in rural communities, have a limited knowledge of the concept of sustainability and the valuable role of green open spaces in this regard. For this reason, the Green planning approach cannot be defined or be limited by exact guidelines, but should rather be guided by prevailing circumstances in an area, fundamental place-making principles (refer: Chapter 4, paragraph 4.1, Table 16: Key principles of place-making), and the primary values of sustainability (refer: Chapter 2, paragraph 2.3, Figure 2 The Three Spheres of Sustainability).

Cilliers (2013) states that a Green planning approach should evolve around the needs of the community. To effectively determine what the needs of the community are, and discover their lived experience of an area, Cilliers (2013) suggests the use of the place-making approach of community participation (refer: Chapter 4, paragraph 4.4.3: Community participation approach). He further asserts that the participation process offers an opportunity to ascertain the skills of the local population, and to enhance their knowledge and awareness of the substantial contribution of green open spaces towards the sustainability of an area. Furthermore, it is necessary to execute an extensive study of the area, in order to determine current trends (refer: Chapter 4, paragraph 4.1, Table 16: Key principles of place-making), and identify the prevailing flora of the area.

Cilliers (2013) lists four actions, for which provision must be made in the Green planning approach: proactive action; reactive action; restore and apply, and opportunistic action. The fundamentals of each of the four actions, as well as their function in place-making, through layout and design, are briefly discussed in Table 32 below.

Table 32: Four actions in the Green planning approach

Strategy	Explanation	Place-making, through layout and design
Proactive action,	Preserve and improve the status quo with regard to natural areas by early identification and protection of these areas.	Implement place-making, through layout and design approaches in an attempt to reduce any future possibility of ineffective communities.
Reactive action	Refer to the conservation of the remaining natural areas, in areas where natural areas already has been disturbed.	Identify remaining undisturbed natural areas in communities and protect these areas by the process of place-making, through layout and design
Restore and apply	Restore disturbed areas by means of appropriate engineer practices.	Incorporate place-making elements into layout and design to restore disturbed areas.
Opportunistic:	Develop new green areas, for example gardens, parks and semi- natural areas that will perform important functions.	Implement the Green planning approach of place-making, through layout and design This is the strategy where the impact of the correct place-making principles and layout and design approaches can make an immense difference within a community.

Cilliers (2013) warns that implementation of the Green planning approach of place-making in rural areas is not an easy task, mainly because of the high level of uneducated people and limited financial resources. Cilliers is of the opinion that sustainability, and the realism of sustainable communities in South Africa, is for many people simply a theory. Therefore, the only way to ensure sustainability in an area is by integrating multiple disciplines such as theoretical knowledge and available skills in the community. However, Cilliers insists that green spaces play an essential role in sustainable communities. Therefore, considering the economic capability of the area, provisions for the regeneration and conservation of existing green places, and development of new green spaces with specific purposes and values, are essential in the layout and design of sustainable communities (Cilliers, 2013).

Cilliers (2013) is excited by the noticeable progress that South Africa has made in terms of sustainability and the planning of sustainable communities. He therefore remains optimistic that sustainable communities will play a leading role in the development of South Africa in the future.

7.3 Quantitative investigation

In the quantitative investigation, questionnaires were distributed amongst twenty (20) participants. To ensure that answers could be reliably aggregated and that comparisons could be made with confidence, questionnaires were identical in terms of the questions and the order of the questions

The twenty (20) participants are from diverse backgrounds. Fifteen (15) participants, by virtue of their specific professions, can play a decisive role in planning for sustainable communities and place-making, through layout and design. The remainder of the participants represent the educated voice of the general public. Table 33 is a summary of the participants.

Table 33: Summary of participants

	Name and Surname	Occupation
1	Derick Potgieter	Architect
2	Chris Schlebusch	Developer
3	Manda Smit	Urban Geographer
4	Eddie Taute	Urban Planner
5	Christiaan Harmse	Environmental Scientist
6	Jan-Harm Steenkamp	Town and regional planner
7	Sarel Cilliers	Urban Ecologist
8	Nita Conradie	Town Planner
9	Riaan Lotriet	IT Manager (Trollope mining services)
10	Christel Pretorius	Environmental Sciences Student
11	Coleen Obeholzer	SAPS Computer (AngloGold)
12	Adelle Loock	HR Officer (Trollope mining services)
13	Bronwyn Prinsloo	Architectural draughtsman
14	Chris Bates	Survey manager
15	Sansha Van der Merwe	Engineer

16	Louisa Oberholzer	Environmental Coordinator
17	Michelle Kruger	Personal assistant of an Urban Planner
18	Luanita van der Walt	Environmental Scientist
19	Sinead Drew	Training Administrator (Trollope mining services)
20	Elandrie Davoren	Environmental Sciences student

The objective of the research was to obtain the opinions of educated members of the public and experts, regarding sustainability, sustainable communities, layout and design approaches and place-making approaches in South Africa; and simultaneously to measure their knowledge and understanding of these concepts.

7.3.1 Analysis of responses

Ten questions were answered by the selected participants. The following section presents the results of the answers provided, illustrated by means of graphs.

Question 1:

As a professional, rate the importance of the following sustainable strategies for a rural area and community.

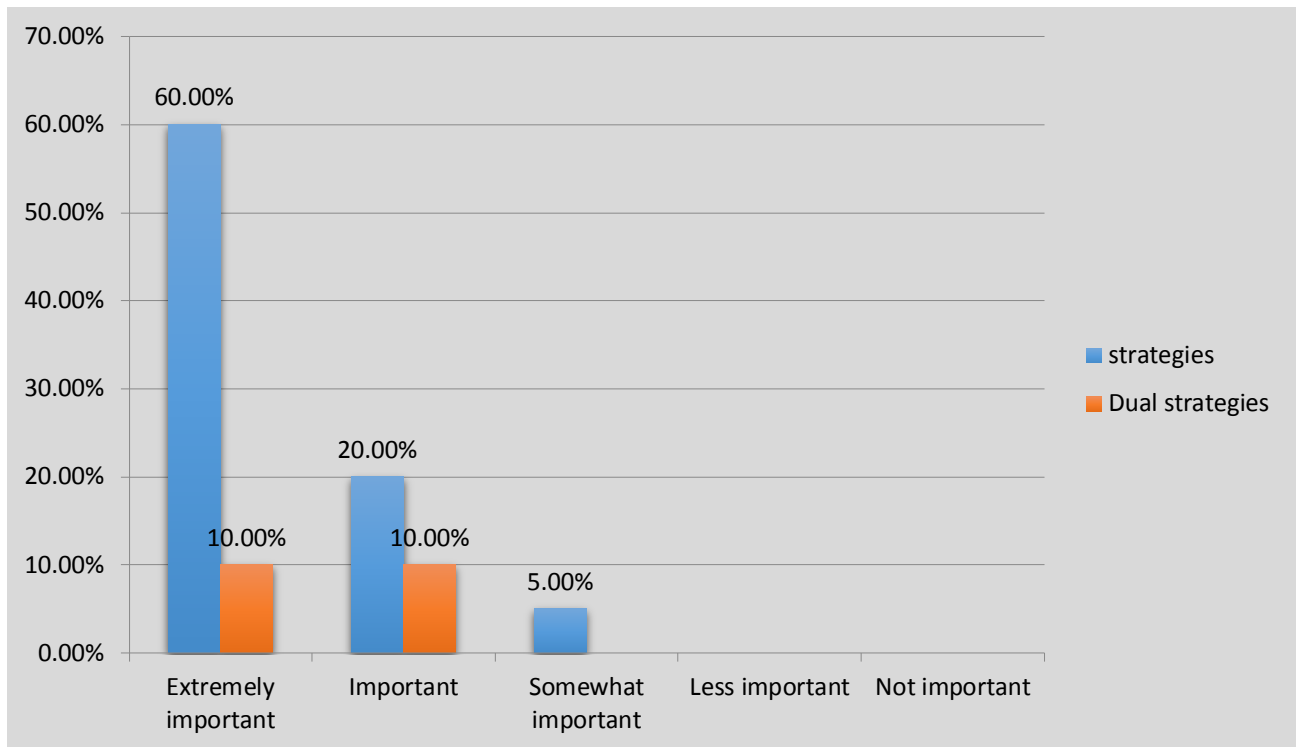


Figure 34: Bar graph depicting the responses to question 1

Analysis of response

For the purpose of this analysis, the highest incidence of votes in a category for any one strategy will be used to identify the strategy in terms of a specific category. Therefore based on these calculations, not one strategy was categorized as, “somewhat important”, “less important” or “not important”.

Based on the same calculations, the strategies: protecting agricultural land; supporting food security and local producers; protecting drinking water supplies; increasing use of renewable energy; promoting water conservation; promoting and or providing recycling services; providing public transit, developing walking and/or cycling routes; encouraging help and social well-being, and supporting volunteerism and community spirit, are categorized as "extremely important". The strategies: developing a district or community energy system; reducing solid waste and supporting higher density development suitable for a small town, are categorized as "important". The

strategies: supporting locally-owned small businesses and preventing urban sprawl are divided equally between the categories "extremely important" and "important".

In the category "extremely important", the strategy: protecting drinking water supplies received 100% of the votes; while the strategy: promoting water conservation received 90% of the votes, and the strategy: supporting food security and local producers that received 75% of the votes.

Protecting the environment and natural resources are both fundamental characteristics and goals of a sustainable community (refer: Chapter 2, paragraph 2.4, Sustainable Communities).

Question 2:

In your opinion, which of the following are the three most important strategies for a rural area and community?

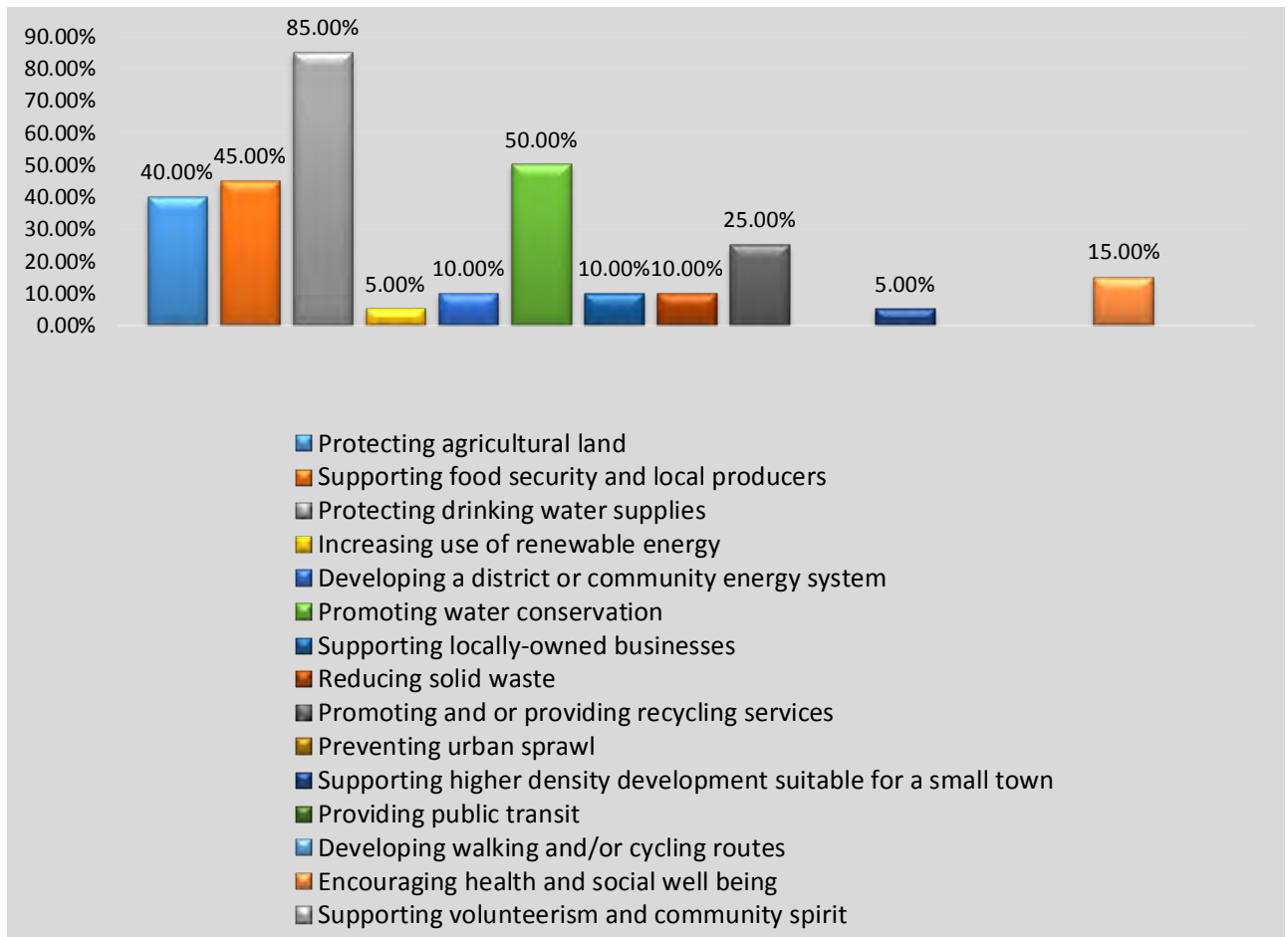


Figure 35: Bar graph depicting the responses to question 2

Analysis of reponse

The participants indicated that the conservation of drinking water (85%) and natural water resources (50%), are pivotal to sustainability of rural communities. Food security (45%), and the protection of agricultural land (40%), are closely related to the availability of water, and the importance of both strategies was also emphasized by the participants. Deduced from these results and the results of question 1, it is clear that the majority of the participants are convinced, that the approach for the development of rural communities, should primarily focus on conservation and protection of drinking water and natural water resources, which in turn are essential for food security.

Question 3:

Do you understand the concept of sustainable development?

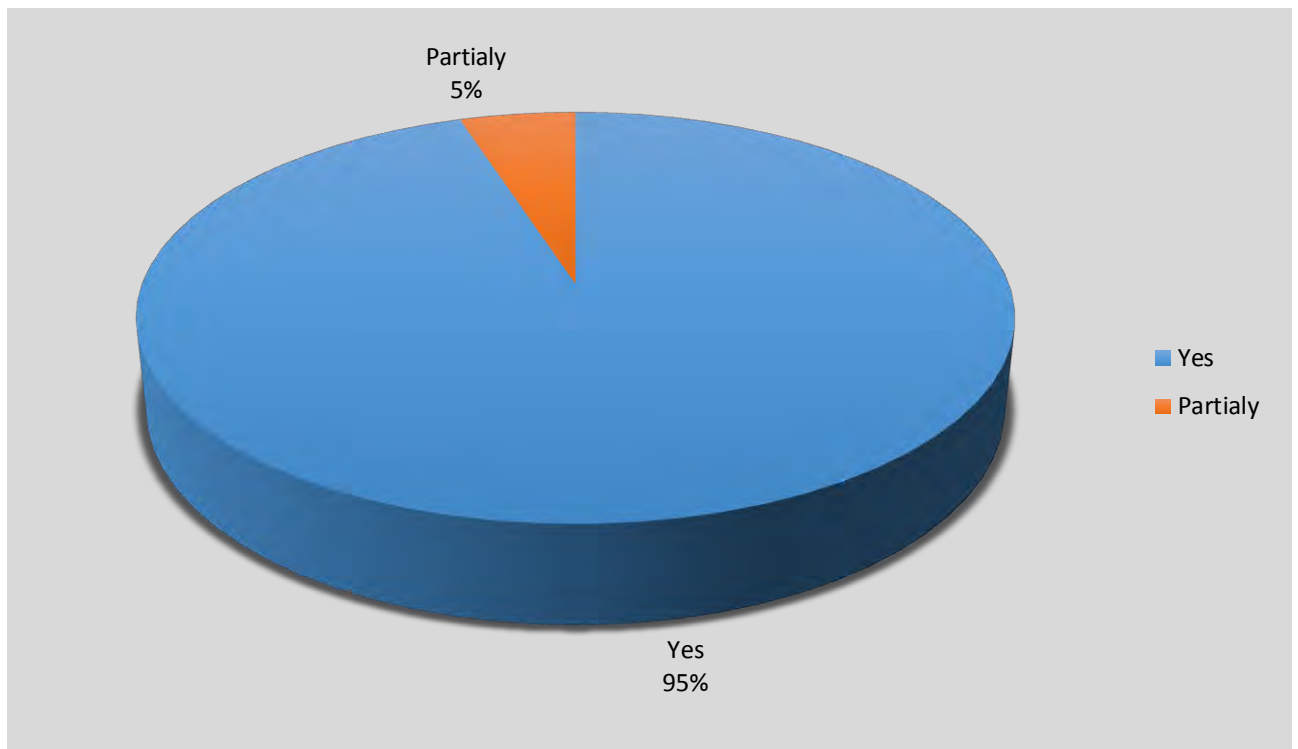


Figure 36: Graph depicting the responses to question 3

Analysis of response

The response, as can be seen in Figure 36 above, shows that 95% of the participants have an understanding of the concept of sustainable development. However, it must be noted that the real challenge of sustainable development lies in the planning approach, whereby the expectations and needs of the community are fulfilled in terms of “The Three Spheres of Sustainability” (refer: Chapter 2, paragraph 2.3, Figure 2: The Three Spheres of Sustainability). This can only be accomplished through purposeful planning and an effective layout and design.

Question 4:

In your opinion, does South Africa effectively plan for sustainable communities?

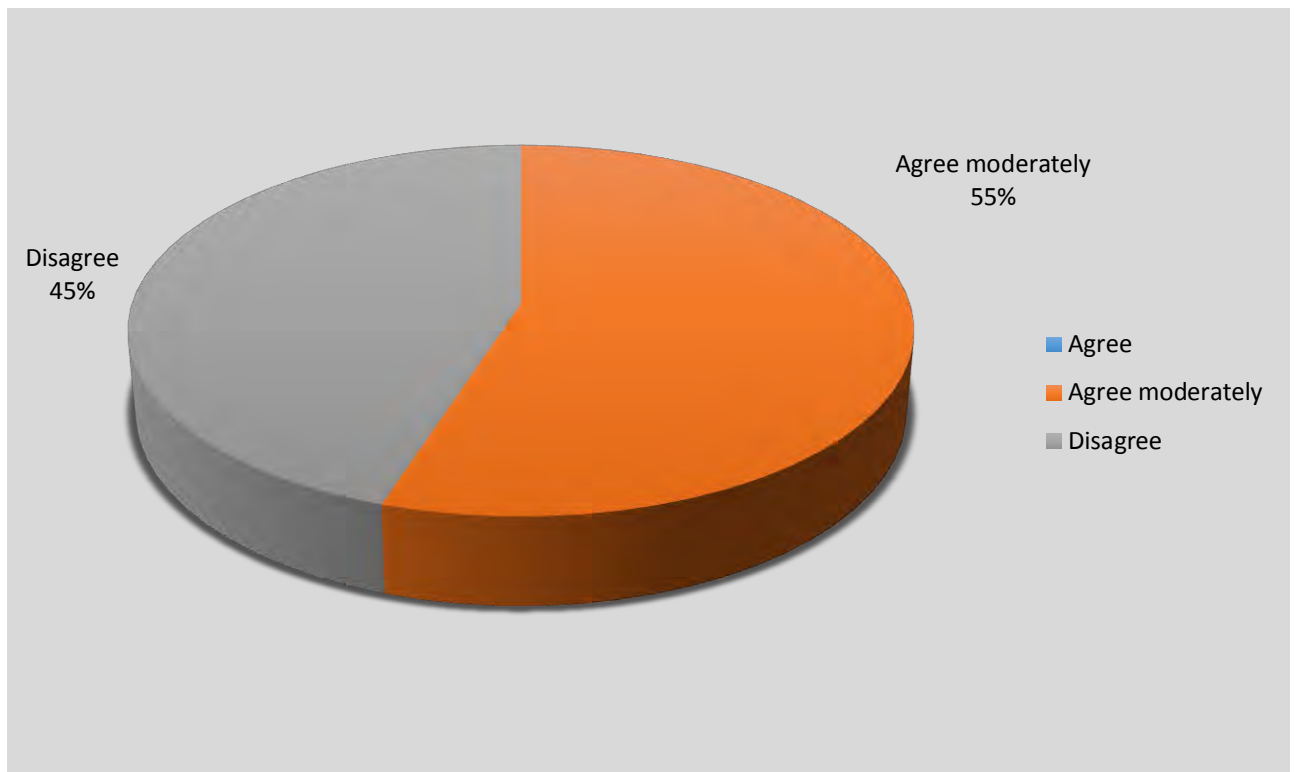


Figure 37: Graph to depicting the responses to question 4

Analysis of response

More than half of the participants (55%) only moderately agree that planning is effective, while 45% assert that it is not. The lukewarm positive response (combined with the fact that none of the participants indicated that they agreed with the statement) and the large percentage of participants who did not agree, creates the impression that the current planning regarding sustainable communities in South Africa is not convincingly effective.

Question 5:

In your opinion, is the current layout and design approach of South Africa for rural communities effective?

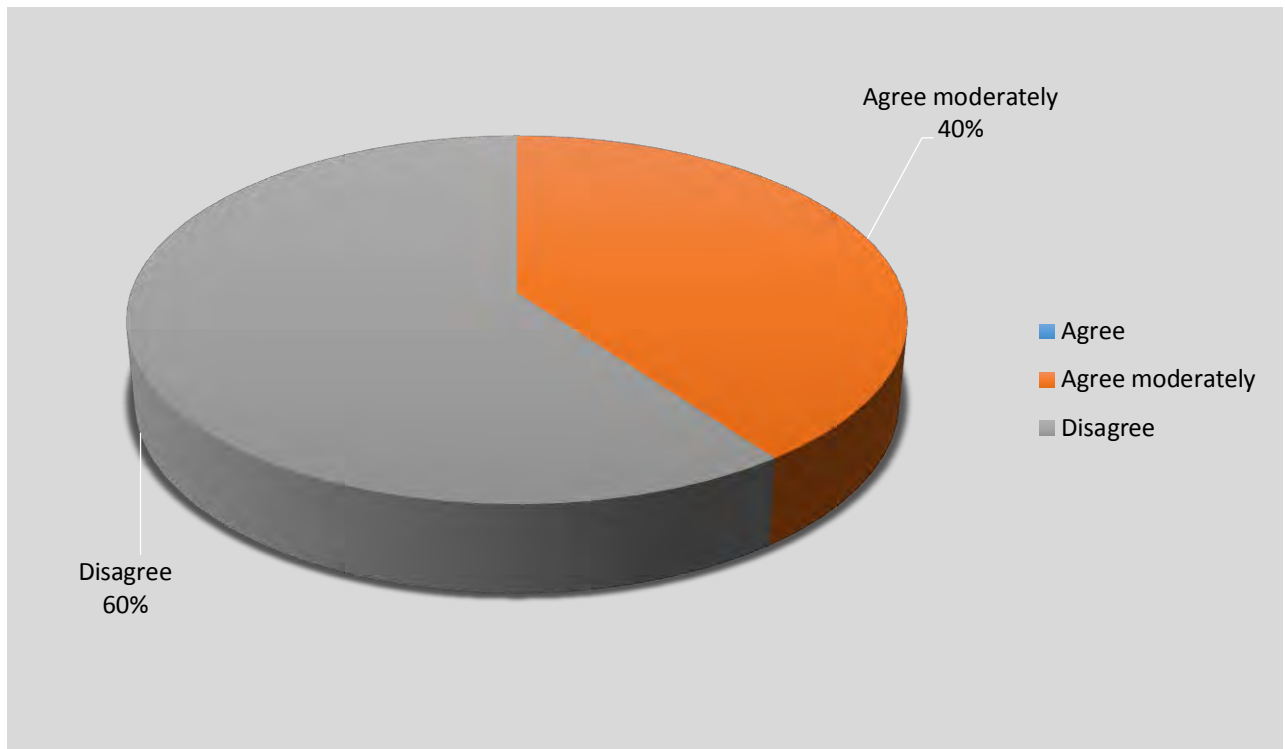


Figure 38: Graph depicting the responses to question 5

Analysis of response

None of the participants indicated that the current layout and design approach for rural communities in South Africa is effective. In fact, 60% of the participants disagree with this statement, while the other 40% agree only moderately. The response to this question reinforces the inferences made in question 4; and thus confirms that, according to the participants, the planning for sustainable communities in South Africa is not efficient, and even less so in respect to rural areas.

Question 6:

In your opinion does South Africa have an integrated approach to green open spaces?

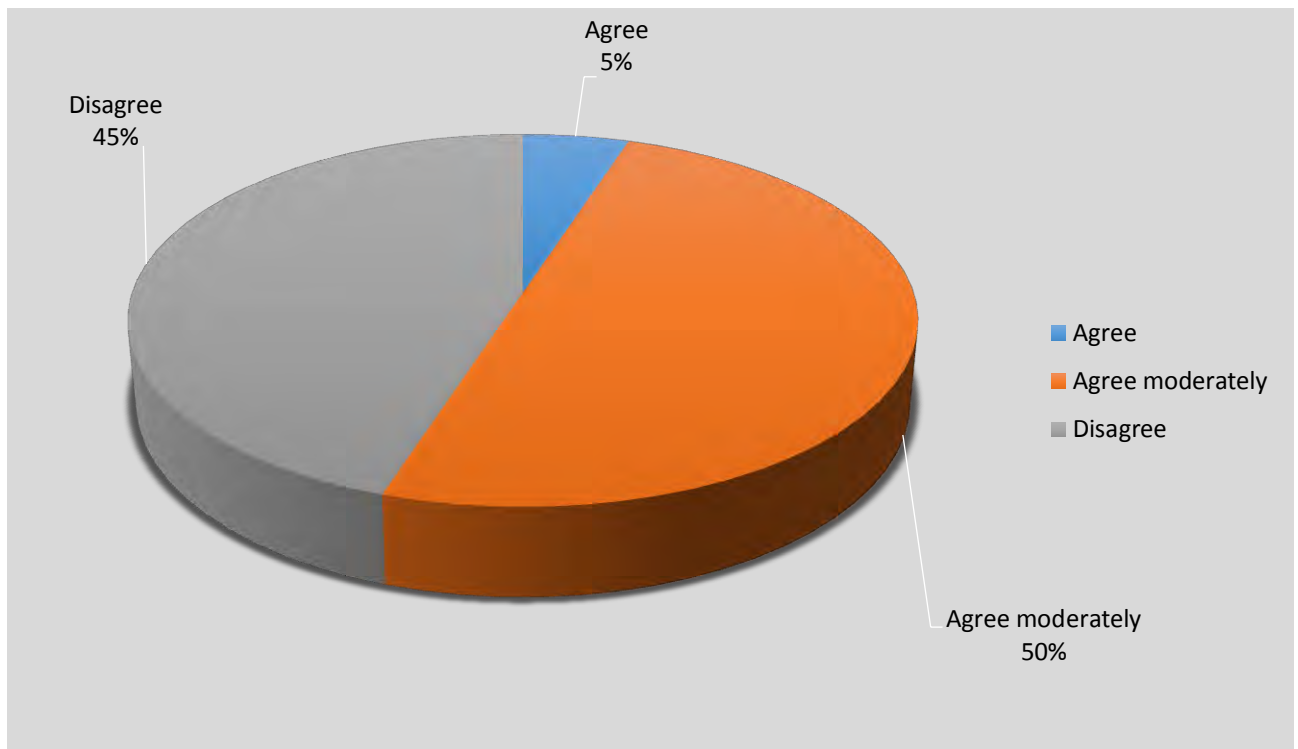


Figure 39: Graph depicting the responses to question 6

Analysis of Response

Barring the response of one participant, the responses of the participants are almost equally divided between those that agree moderately 50% and 45% that disagree with the statement contained in the question. Derived from the responses, it is clear that the value of green spaces as a sustainable element is not appreciated in South Africa, and likewise the role of green spaces in sustainable community development not comprehended fully.

Question 7:

From the list below, select the five (5) leading fundamentals that in your opinion will influence the layout and design approach for an effective sustainable community.

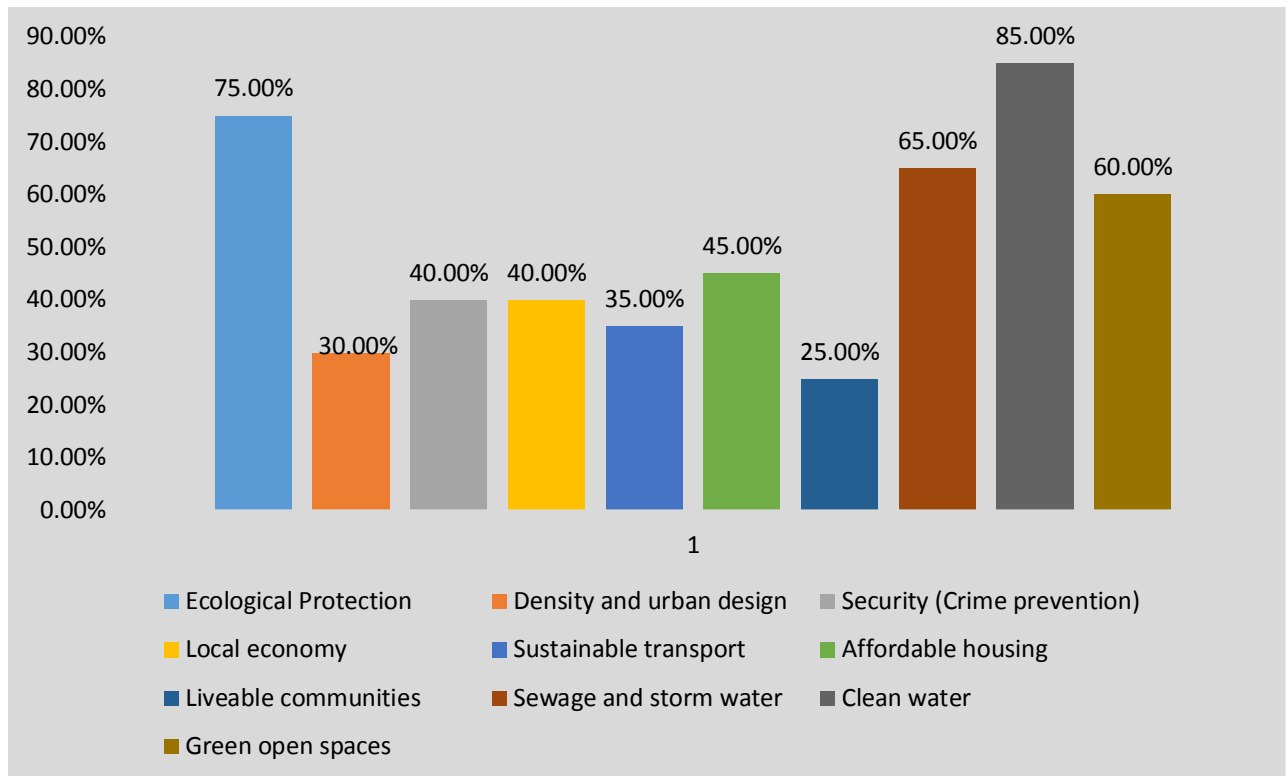


Figure 40: Bar graph depicting the responses to question 7

Analysis of response

The 5 topmost categories which were chosen by the participants were: clean water 85%; ecological protection 75%; sewage and storm water 65%; green open spaces 60% and affordable housing 45%. The result demonstrates clearly that the participants primarily preferred the elements that are focused to provide in the basic needs of people and which also would contribute to the liveability and wellbeing of the community.

Question 8:

In your opinion, which one of the following 4 elements is the most important when planning for a specific place?

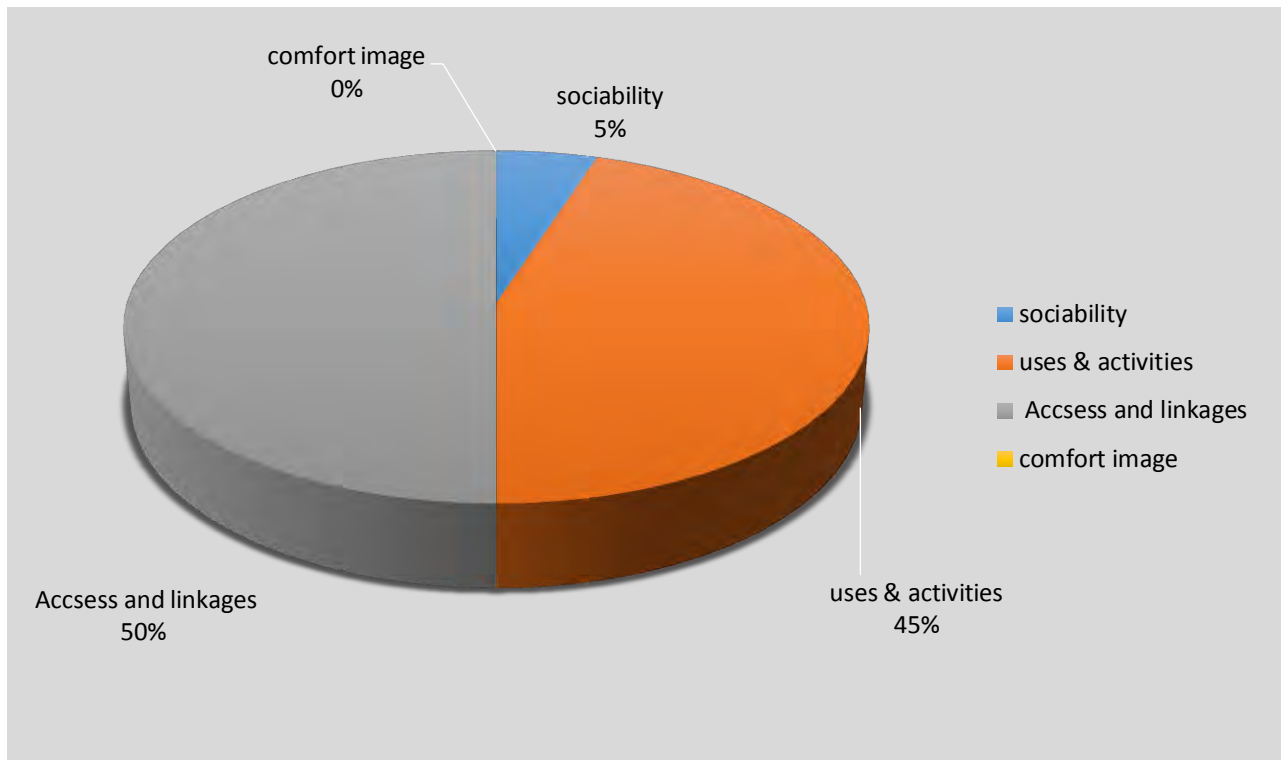


Figure 41: Graph depicting the responses to question 8

Analysis of response

Access and linkages received the highest number of votes (50%). Thus, half of the participants consider characteristics such as: easy to identify; the availability and quality of transit; walkability of a place and convenient access to amenities, important when planning for one place.

Question 9:

South Africa today still has major challenges because of the apartheid era that lead to fragmented and disjointed cities and communities. Planning for sustainable development is directed by a combination of broad planning guidelines and normative planning concerns. General planning guidelines for urban planning include:

- The movement network and transport.
- The open space system which is made up of the hard open spaces and the soft open spaces.
- Public facilities.
- Land subdivision.

(Guidelines for Human Settlement Planning and Design: 2000: National Department of Housing)

In your opinion are the above planning guidelines for urban planning employed noticeably in South Africa?

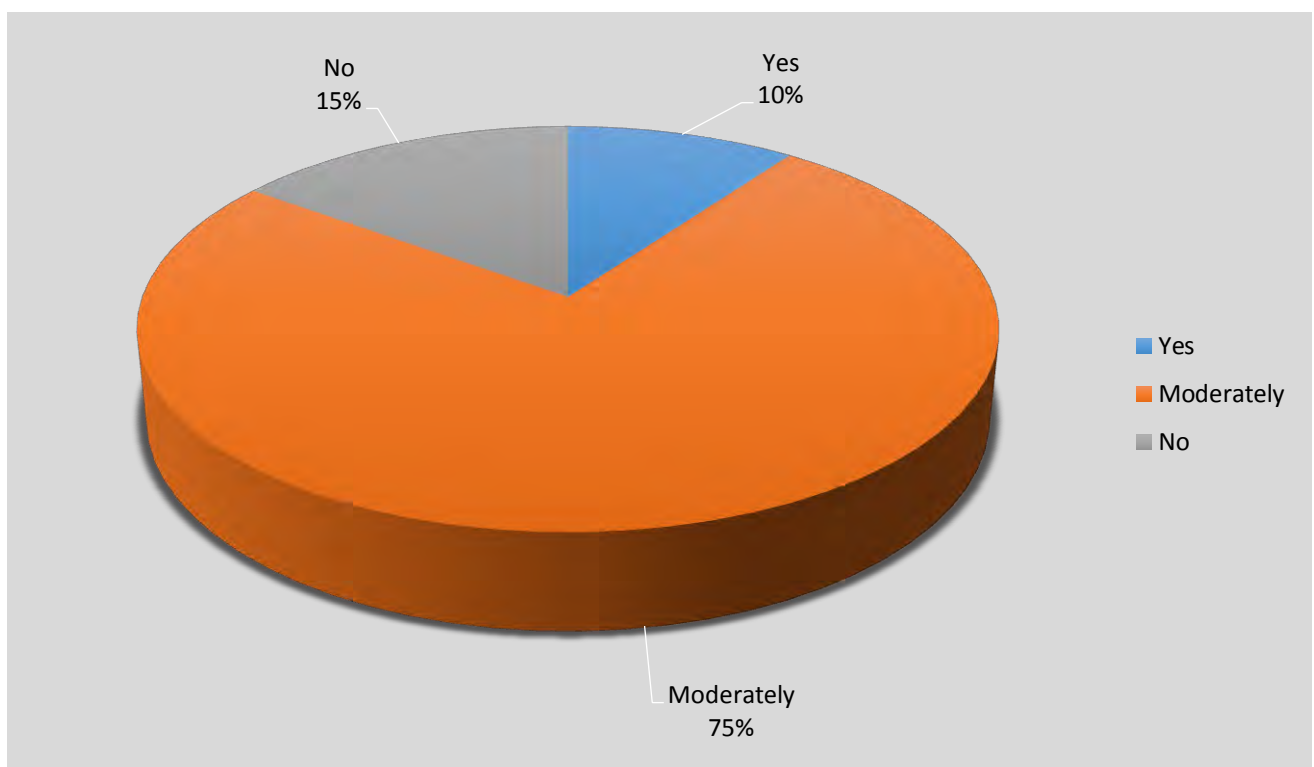


Figure 42: Graph depicting the responses to question 9

Analysis of response

75% of the participants are of opinion that the planning guidelines that are employed for urban planning in South Africa are only moderately noticeable.

Question 10:

In your opinion, is it important that South Africa have sustainable communities?

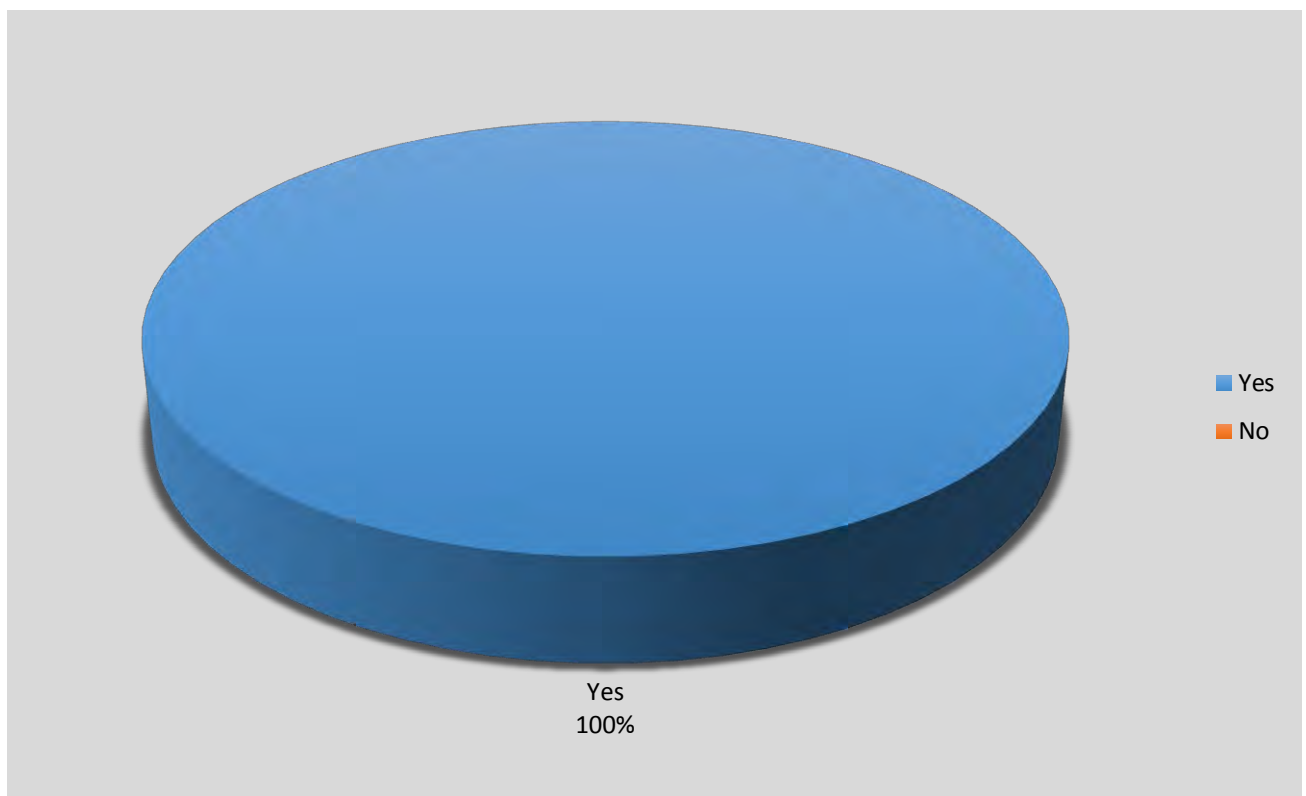


Figure 43: Graph depicting the responses to question 10

Analyses of response

Derived from the overwhelming positive response (100%), it is clear that the participants considered sustainable communities as a high priority in the present and future South Africa.

7.4 Concluding remarks regarding qualitative and quantitative investigations

The participants' assessments of the various concepts and scenarios provide valuable insight and perspective on the status quo in South Africa in terms of sustainability, place-making, the planning for sustainable communities and the perspectives of the experts regarding these matters. The participants and experts' responses in both the qualitative and quantitative investigations also accentuates the shortcomings in the South African approach regarding the abovementioned matters.

The following table recapitulates the primary matters and shortcomings, which were emphasized in the quantitative and qualitative research.

Table 34: Primary matters and shortcomings emphasized in the quantitative and qualitative research

Primary matters and shortcomings emphasized in the qualitative and quantitative research	
Qualitative research	<ul style="list-style-type: none"> • Green planning as a place-making approach plays an all-important role in layout and design of sustainable communities. • Knowledge to the value of sustainability and green open spaces are insufficient in rural communities.
Quantitative research	<ul style="list-style-type: none"> • Provision for the basic needs of people is of utmost importance. • The concepts of sustainability and sustainable development are well understood and supported. • Planning and development of sustainable communities are unsatisfactory. • Planning for green open spaces is currently not a priority in South Africa. • Current layout and design of rural areas are insufficient. • Planning guidelines are inadequate and unobtrusive.

In Chapter 8, local approaches to place-making, through layout and design in South Africa is studied on the basis of a case study of the Vaalharts region.

Chapter 8: Local approach to place-making, through layout and design: The Vaalharts case study.

The following diagram illustrates the structure of Chapter 8.

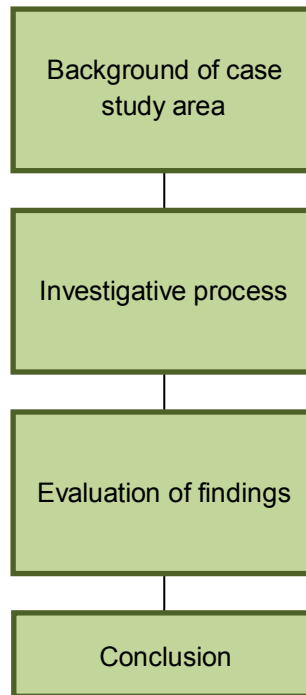


Diagram 9: Structure of Chapter 8

This chapter, includes a case study of the Vaalharts Region located in the rural areas of the Northern Cape Province in South Africa, with the purpose of determining the prevailing circumstances in the area. This has been done to evaluate, place-making, through layout and design approaches, in South Africa, in context to this area.

8.1 Background of case study area

The Vaalharts region, also known as the Vaalharts Irrigation Scheme falls within the jurisdiction of the North West and Northern Cape provinces in South Africa. The Vaalharts Irrigation Scheme name was derived from the Vaal River and Harts River that flows through the area and is the largest irrigation scheme in South Africa (Claasen 1989). Construction of the Vaalharts Irrigation Scheme started in 1934 and includes, a network totalling 1,176 kilometres of concrete-coated canals. The Vaalharts Weir, built in the Vaal River upstream from Warrenton, diverts water from the Vaal River into the Vaalharts Main Canal which in turn channels water to the North Canal, the Klipdam-Barkly Canal and the Taung Canal. By means of these canals, water is distributed to

39,820 ha land, scheduled for irrigation; supplies water for six (6) towns; provides water for industries, thus used for industrial purposes; gives water to various properties for their primary use and, it is drinking water for livestock in the area (Vaalharts Water User Association, 2013a).

An image of the concrete canal is captured in Figure 44 below.



Figure 44: Canal in the Vaalharts Irrigation Scheme
Source: Aurecon Group, (2013)

The rural settlements Taung, Valspan, Ganspan, Sekhing and Pampierstad situated in the area, have developed mainly because of the agricultural activities in the area. Spatial, economic and social inequalities are still highly visible in the region. These are exacerbated by the diversity of cultures, religions and the disparity in the available job opportunities and number of people residing in the area. The inadequate levels of literacy and limited proficiencies of the majority of people in the region also play a negative role in this regard (Coetzee, 2011).

Figure 45 below is a Geological Information System (GIS) map depicting the data of the towns and settlements applicable to this case study, in the Vaalharts region.



Figure 45: Towns and settlements in the Vaalharts region

The aim of the case study is to evaluate the local approach to place-making, through layout and design, in terms of place-making elements in the Vaalharts area with the intention of determining best practices for an integrated place-making, through layout and design approach which will enhance planning for sustainable communities in South Africa.

For this reason it is imperative to investigate the environmental, economic and social characteristics of the Vaalharts Irrigation Scheme and the surrounding areas.

8.2 Investigative process

The first part of the investigative process is a field inventory, comprising of an overview of the location of the Vaalharts region in relation to other rural towns and cities as well as how accessible the region is. The second part of the investigative process is an exploratory field analysis, which includes an analysis of the internal, external and surrounding factors that influence the Vaalharts region.

8.2.1 Field inventory

The Vaalharts Irrigation Scheme located in both the North West and Northern Cape provinces is a remote rural area governed by more than one provincial authority. “The geographical area of the Scheme passes through the local municipalities (LMs) of Dikgatlong, Magareng and Phokwane in the Frances Baard District Municipality, and the Frances Baard District Municipal Area (DMA) in the Northern Cape Province; and the Greater Taung LM in the Dr. Ruth Segomotsi Mompati District Municipality (DM) in the North West Province. Population projections for the area indicate that by 2030, given the most likely scenario, the population may reach almost 400,000; with the largest population in the Greater Taung Municipal area” (Vaalharts Water User Association, 2013b). It is therefore difficult to find explicit uniform guidelines for the sustainable development of this area.

The small towns, Jan Kempdorp and Hartswater are located in the Vaalwater Irrigation Scheme area. Other rural towns are located in the area surrounding the Vaalwater Irrigation Scheme such as: Warrenton, in the south (Northern Cape Province); Schweizer-Reneke, to the northeast (North West Province); Vryburg, to the north (North West Province) and Christiana, to the east (North West Province) . Larger towns close to the area are Upington, in the west (Northern Cape Province) and Kimberley, in the south (Northern Cape Province) and the nearest major city is Bloemfontein located approximately 250 km southeast of the Scheme in the Free State Province.

The figure below displays a map indicating where the surrounding towns are situated (Longman, 1996).



Figure 46: Towns surrounding the Vaalharts region

Access to the region is made possible via various roads. The N18 national road passes through the region in a North / South direction. Access from the west, is by the N14 which intersect the N18 north of the area and from the East by the N12 which intersect the N18 south of the region (Longman, 1996).

8.2.2 Field analysis

Internal factors

Internal factors analysed in the field analysis includes: identity; density; basic needs and liveability.

- Identity

Agriculture is the main activity in the area. Therefore, the region has a typical, rural identity unique to farming communities in South Africa

- Density

The Vaalharts region and the surrounding areas are sparsely populated and the majority of people in the area are farmers and farm labourers.

- Basic needs analysis

The data which was used to determine the overall basic needs of selected communities in the Vaalharts region in this research, was captured (given the necessary consent) from the results of a Needs Analysis for this specific area carried out by Hendri Coetzee and his team in partnership with The Department of Science & Technology of the North-West University. Coetzee is a research psychologist and psychological counsellor in the category “community mental health” (Coetzee, 2011).

The larger project was founded on the responses of thirty-one (31) pre-selected individuals willing to participate and a stratified sample of nine hundred and fifty-eight (958) participants randomly drawn from the communities. These participants proportionally represented the five communities; Taung, Valspan, Ganspan, Sekhing and Pampierstad located in the Vaalharts rural area. The data derived from this analysis should be deemed relevant to the greater Vaalharts rural area (Coetzee, 2011).

The participants were asked to respond to the following three fundamental questions:

- What are the actual needs of the community?
- What are the most important needs in the community?
- Name the perceived strengths/assets and resources of each community.

Process of analysis

In the first phase of the project, the research team selected thirty-one (31) willing, knowledgeable participants to participate in a qualitative investigation aim to identify the basic needs, strengths/assets and resources of the five communities. This group was comprised of fourteen (14) male and seventeen (17) female participants, of which twenty-five (25) were black or coloured and six (6) were white.

Each participant was interviewed separately. During the interview, the individual was asked to give his or her personal perception of the particular community he or she represented. Furthermore, each participant was asked to identify the needs of his or her particular community. The interview was tape-recorded continuously and the verbal data transcribed thereafter. Members of the research team also carried out an independent, observation process on each community respectively. After all the data of the communities was obtained autonomously, the data was merged with the purpose of identifying the collective needs of each of the five communities.

In the second phase the research team carried out a quantitative investigation in order to verify and quantify the needs, or need-related themes, identified during the first phase of the project. A stratified sample of nine hundred and fifty-eight (958) participants were randomly drawn from the five communities. They were ranked according to; gender, age, marital status, nationality, level of education, occupation and household income per month and were invited to complete a questionnaire compiled from the qualitative data obtained during the first phase of the research.

The following table gives a summary of what the participants identify as the most important needs.

Table 35: Highest scoring needs

Highest scoring needs (descending in terms of percentage)	Corresponding needs-related theme
Water supply (86.5%)	Basic municipal services
Housing (85.4%)	Infrastructure/additional facilities
Police services (84.4%)	Safety and security; Emergency services
Social workers (80%)	Health and welfare
Livestock supplies (78.5%)	Agriculture
Access to information (i.e. libraries and internet) (77.8%)	Educational or training related services
Need for IDs and passports (77.1%)	Access to basic government services
Job opportunities (75.4%)	Employment
HIV/AIDS awareness campaigns (43.6%)	Awareness campaigns

Source: Own construction based on the Vaalharts Report (Coetzee, 2011:2)

It is important to note that according to Hofstede (1984) basic needs do not necessarily follow each other in a linear way but rather purports these are linked and complex in nature.

Conclusion of the basic need analysis

Derived from the participants' response to the questions it is evident residents of the settlements have an urgent need for the improvement of the basic municipal, health and welfare and emergency services to take place. Their awareness of the explicit need for an improved education and training reflects the people know that higher levels of literacy and education would result in better job opportunities or self-employment consequently leading to their economic self-reliance and independence. All the needs expressed and highlighted by participants give an indication of the level of liveability and quality of life in the area, which ultimately affects the sustainability of the area.

- Liveability analysis

Liveability is fundamental to the place-making concept. Due to the fact that there is very little information available regarding the communities in the settlements of: Taung, Valspan, Ganspan, Sekhing and Pampierstad in the Vaalharts region it was imperative to visit these settlements in order to evaluate the liveability, liveliness and quality of life in the area.

Process of analysis

All information was gathered either by means of: visual observation; from discussions with members of the communities; and discussions with other individuals involved with the communities in the Vaalharts region (i.e. upholding the importance of participation process). The place-making elements, which were used to evaluate the liveability and liveliness, as well as the communities' experience of quality of life in the Vaalharts region, includes: sociability: uses and activities: access and linkages; and comfort and image (refer: Chapter 4, paragraph 4.3.2, Figure 13: What makes a great place?).

Sociability

Unlike the people in the settlements of Taung, Sekhing and Pampierstad, who were aloof and anti-social, individuals from two communities, in the Valspan and Ganspan settlements, (closer to the

town Jan Kempdorp) appeared to be more literate and the atmosphere in the two communities was more hospitable and friendly.

Examples of social interactive elements such as street vendors were found in the communities. Vendors on the side of the road outside the school in Valspan are depicted in Figure 47 below. These activities can be seen as a form of a street market, promoting an interactive street life in the community.

Figure 48 below is an image of students from North-West University providing training to the community in Valspan. These programs aim to train the community to design and manufacture merchandise from recycled material, which can be sold on the open market. Through this training, the community will be empowered to contribute to the economic sustainability of the region and for the promotion of the protection of the natural environment.



Figure 47: Street vendors in the Vaalharts region
Source: Personal source (2013)



Figure 48: Educational training
Source: Personal source (2013)

Uses and activities

The uses and activities in the Vaalharts settlements are indicative to those of other rural communities in South Africa. Public places in the settlements where people meet and socialize apart from the schools and churches in the region are several cafes/supermarkets in the communities, as illustrated below in figures 49 and 50.



Figure 49: Shemoly Fruit and Veg
Source : Personal source (2013)



Figure 50: Generations Supermarket
Source: Personal source (2013)

Figure 51 is an image of the Valspan community hospital. When in deliberation with medical staff of the hospital in Valspan it was revealed that health and welfare services in the region were in poor condition and there was a shortage of qualified personnel at the hospital.

All communities visited have at least one church. As is evident in the image in Figure 52 below, the church buildings are all in good condition and serve as focal points in the area.



Figure 51: Hospital (Valspan community)
Source: Personal source (2013)



Figure 52: Church
Source: Personal source (2013)

Figure 53 below is an image of a public park with a playground but it was observed there was no activity in the park during the time of the visit. As is evident from the image, the park facility is not maintained and the equipment is unsafe to use. This park's condition is representative of all the parks in all of the other settlements visited. And, it was noted, except for the public parks, there are in fact no other structured forms of recreational, entertainment places in any of the communities.



Figure 53: Playground
Source: Personal source (2013)

Access and linkages

The five settlements in the region are situated relatively far apart. As demonstrated in the image in Figure 54, the roads inside the settlements are primarily dirt roads and are not well-maintained. Some of the roads, which link the various settlements as shown in the image in Figure 55, have been upgraded with a more permanent surface but they are only a few in number. The remainder of the surfaces are dirt roads.



Figure 54: Gravel roads in the Vaalharts region
Source: Personal source (2013)



Figure 55: Upgrading of roads
Source: Personal source (2013)

Since the communities in the settlements are poor, very few people own a private means of transport. The community members are mainly dependent on public transport making use of taxi

services. As displayed in the photographs in figures 56 and 57, the main mode of transport is by foot, as pedestrians.



Figure 56: Transit: pedestrian based (a)
Source: Personal source (2013)



Figure 57: Transit: pedestrian based (b)
Source: Personal source (2013)

Comfort and image

The category most neglected includes the aspects of comfort and the image of places. is the most neglected. The existing infrastructure is limited, i.e. water, electricity and sanitation in the settlements and was found to be inadequate per se. It is poorly managed and systems are hardly maintained. The settlements of Taung, Sekhing and Pampierstad, located in the northern part of the region, experience the aforementioned conditions more severely. Waste management is totally sub-standard gauging by the notable lack of control and management measures to manage waste sites. Although storm water within the region is well-managed and controlled by the cement canals, there is no adequate infrastructure put in place to manage storm water in the settlements.



Figure 58: Waste dump
Source: Personal source (2013)



Figure 59: Sub-standard infrastructure
Source: Personal source (2013)

There is a police presence in, or situated close by to the settlements. However, during conversations with members of the different communities, they indicated the high incidence of crime in the region make that they still feel unsafe.

Finally, the architecture and internal layout of the settlements are stereotypical. The buildings are unattractive are built of sub-standard materials and are gradually falling apart.

Conclusion of the liveability analysis

Derived from the analysis, it is clear that current levels of liveability and quality of life in the Vaalharts region, is poor and thus will not contribute to the sustainable development of the region.

External factors

The external factors analysed in the Field analysis includes the geometrical and climate factors and the natural vegetation of the area.

- Geometrical and climate factors

The Vaalharts region lies between the Ghaapseberg to the west and the Marroccan ridges to the east. Despite a gentle gradient toward the Harts River the area has mainly a flat topography. There are numerous farm dams located in the area. Three larger dams, the Taung Dam, the Spitskop Dam and the Vaalharts Dam are located just outside the region. Rainfall of the area ranges between 400-450 mm per annum, and the area experiences maximum temperatures in January of around 32°C, with minimum temperatures of around 16°C in June (Claasens, 1989).

- Natural vegetation

Except for the lush, green, agricultural plants covering the largest part of the natural soil in the Vaalharts Irrigation Scheme the remaining areas are semi-arid plains with typical Kalahari vegetation.



Figure 60: Irrigation fields in the Vaalharts region
Source: Aurecon Group, (2013)



Figure 61: Semi-arid plains with typical Kalahari vegetation
Source: Aurecon Group, (2013)

- Surrounding factors

With the exception of the irrigation channels which meander through the region and a few places of historic interest in the surrounding areas, there is little else within the Vaalharts region that will entice people to visit the area.

8.3 Evaluation of the findings

The findings of the investigative process in the Vaalharts region was evaluated as part of the empirical investigation of this study, based on the theoretical founding and objectives evaluated in Chapter 2 to 4 of this research.

The layout and design were evaluated based on:

- SWOT analysis of the Vaalharts region.
- The Checklist drawn up as found in Chapter 4 (refer: Chapter 4, paragraph 4.5, Table 25: Evaluate place-making in public places, communities and areas in terms of the attributes of a "Great Place").

The following diagram, depicts a SWOT analysis of the Vaalharts region.



Diagram10: SWOT analysis of the Vaalharts region

The Vaalharts region is evaluated in Table 36 below, using the Checklist drawn up as found in Chapter 4 (refer: Chapter 4, paragraph 4.5, Table 25: Evaluate place-making in public places, communities and areas in terms of the attributes of a "Great Place").

Table 36: Evaluate place-making, in the Vaalharts region in terms of the attributes of a "Great Place".

<u>CHECKLIST</u>	
Evaluate place-making, in public places, communities and areas in terms of the attributes of a "Great Place".	
SOCIABILITY	
• Do the people interact with each other?	<input checked="" type="checkbox"/>
• Are there opportunities for social interaction in the specific area?	<input checked="" type="checkbox"/>
• Is there a welcoming atmosphere in the area?	
• Do people experience a sense of satisfaction when they spend time in the area?	
USES AND ACTIVITIES	
• Are there a range of age groups and different cultures present in the area?	<input checked="" type="checkbox"/>
• Is there a variety of activities presented in the area?	
• Are people attracted by the uses and activities presented in the area?	
• Is the area well-maintained?	
ACCESS AND LINKAGES	
• Are the activities in the area easy to identify?	<input checked="" type="checkbox"/>
• Is the place accessible?	<input checked="" type="checkbox"/>
• Is placement of internal routes supportive to the natural flow of the people?	
• Is the specific area pedestrian-friendly?	
COMFORT AND IMAGE	
• Is the first impression of the area positive?	
• Is the area clean and free of litter?	
• Is the area safe?	
• Are people's basic needs sufficiently provided for in the area?	

8.4 Conclusion

The results from both the evaluations above clearly shows the approach to place-making through layout and design in the Vaalharts region is inefficient and not conducive for sustainability in the region.

Quality of life in the region is sub-standard, and key place-making attributes such as sociability, uses and activities, access and linkages, and comfort and image that support and enhance quality of life are virtually absent in the region.

Planning for the renewal of further sustainable development of this area should, first and foremost, focus on providing for basic needs of the communities in the area. Cognisant of the inequalities that are deeply rooted in the area, and the low levels of education and training, it is essential that the planning process should be preceded by an extensive community participation approach, and that changes should be introduced progressively in small steps.

The theoretical and empirical investigation of the reasearch, dealing with planning for sustainable communities: place-making, through layout and design approaches, are hereby complete and conclusions in this regard will be discussed in Chapter 9.

Chapter 9: Conclusions

In this chapter, the main purpose of the study is re-stated, followed by conclusions made in the context of planning for sustainable communities: place-making, through layout and design approaches.

9.1 Main purpose of study

This research aims to explore the potential and possibility of creating and understanding integrated approaches to guide the planning for sustainable communities. Sustainable community planning principles are applicable to both urban and rural areas, although different in terms of basic needs, it is evident that sustainable community development in all developing and developed countries, cities and regions should be regarded as priority.

From the urban planning context, reviewing different international and local layout and design approaches will aid in defining the best practices and improving planning approaches for sustainable communities. This will include the concept of public participation playing an essential role in determining the basic needs of the community and being a fundamental building block in the planning process.

The main objective of this research is to evaluate and analyse approaches to plan for sustainable communities, focussing on place-making, through layout and design approaches that will encourage social progress which recognises the needs of everyone; protect the environment; safeguard prudent use of natural resources; and maintain high and stable levels of economic growth and employment while considering the long term implications of decisions. International approaches will be identified and evaluated to create best practices that can be adopted and applied to the local South African planning context in an attempt to create and plan for successful sustainable communities focussing on the Vaalharts rural area.

9.2 Conclusion

Due to urbanization and the resultant increase in population in regions, cities, towns and communities, the needs of people in relation to their natural environments have become more complex.

The theoretical and empirical research confirm that for a community to be sustainable, provision for the needs of people should take place in harmony with the natural environment and within the capacity of available resources. The key tool to achieve this objective is effective place-making, through layout and design. In order to satisfy the aspirations of all stakeholders, the research also accentuates it is critical a holistic vision of the needs of the people be obtained. This holistic vision can be formed by the inclusive process of community participation. In order to ensure the harmony between the growing needs and expectations of the community and the resultant strain on the environment be managed effectively, it is imperative the community participation process be ongoing, thereby ensuring the layout and design approaches remain effective.

It is evident that the core issues, in terms of the concept and language of sustainability, should be addressed before proper place-making, through layout and design approaches are introduced into any area, more specifically rural areas. Conversely, many recent theories depict that the objective location of people is not directly related to their subjective contentment. The latter can be manipulated by sustainable and lively initiatives that will enhance quality of life, irrespective of income, education, age or gender. Hence policies and strategies should not merely endeavour to eradicate poverty, create jobs or deliver housing, but embrace decisive sustainable and innovative initiatives that will effectively transform an area into a liveable and sustainable community. The liveability and liveliness of a place, and the people's sense of connectedness to a place, relies mostly on the people's, lived, experience of a place. Therefore, planning of sustainable communities should aim to enhance the key attributes of public places by means of the place-making, through the layout and design approaches.

A new and innovative way of thinking regarding inter-relationships between economic, environmental and social well-being of the community is desirable in the place-making, through layout and design approach of sustainable communities. Resourceful design approaches, strategies and policies regarding sustainable communities and the redevelopment of existing areas will ultimately lead to effective management and healthier, safer, greener, economically sustainable and liveable communities. Internationally, and more specifically in developed countries, this process is continuous and the concept of sustainability is now entrenched.

Certain conclusions could be drawn with regard to the planning for sustainable communities through layout and design approaches, in particular in the context of rural areas in South Africa. South African policy makers are confronted with a unique set of circumstances. The consequence of the policy of apartheid, which was enforced until 1994, still has noticeable impact on the implementation of sustainable development and layout and design of this country. Urban and

Regional Planners are continuously confronted with complex settlement patterns of fragmented and spatially detached communities in which even today, only a minority of the population has access to quality infrastructure and services. The cultural diversity, and spatial, economic and social disparity that perseveres in communities throughout the country impair liveability and quality of life and complicate efforts directed towards the development of sustainable communities.

Since the beginning of the democratic dispensation, policy makers have devised policies, legislation and guidelines that, in theory, are aimed at promoting the liveability and quality of life of communities in South Africa by eradicating social, economic and spatial inequality. Knowledge of the needs and aspirations of the various communities in South Africa was mainly obtained by the place-making community participation approach. However, the idealistic, and sometimes unrealistic, expectations of the majority of the population, has weakened the effectiveness of the approach and the laws and guidelines that flowed from it. In turn, this attitude has contributed to prolonged neglect of the people's needs, and ignorance of the intended long-term sustainable outcome of the policies, legislation and guidelines.

Authorities' unsatisfactory commitment to implementing strategies, and their preference of politically-inspired goals, leads to further deterioration in the liveability and quality of life of urban and rural communities. South Africa can benefit greatly from the compilation of a framework wherein detailed practical guidelines for implementation of sustainable solutions are described. The framework should furthermore define short and long term goals, and timelines for the development of sustainable communities in different areas.

9.3 Evaluation of key findings of the study integrated with the key literature findings

Table 37: The ideal situation vs. current reality of developed and developing countries.

	Ideal situation	Current reality of developed and developing countries
Sustainability	<ul style="list-style-type: none"> • Harmonize people's needs with the natural environment and available resources. • Promote social, economic, and spatial equality for present and future generations. • Live a sustainable lifestyle. 	<p>Although there is a universal language that the majority of people understand, there are many different interpretations regarding the concept. Urbanization places great pressure on the natural environment and the resources of urban and rural communities.</p>

<p>Layout and design</p>	<ul style="list-style-type: none"> • Layout and design promotes the development of sustainable communities. • Enables people to be more self-sufficient. • Effective layout and design improves liveability and quality of life in communities. • Sustainable layout and design provides for future development. 	<p>In most developed countries, implementing layout and design approaches has been effective. However, in most developing countries such as South Africa, formation of informal settlements and urban sprawl has influenced the original layout and design negatively, and has left little to no opportunity for future expansion and development. Thus sustainable community planning is a challenge in these countries and various basic needs should first be addressed.</p>
<p>Place-making</p>	<p>Creates great public places, which meet the needs of the community, increases quality of life, liveability and liveliness.</p>	<p>The concept of place-making is successfully implemented in most developed countries. Conversely, spatial, social and economic inequality in most developing countries causes delay and disrupts the effective implementing of place-making.</p>

9.4 Conclusion: Qualitative investigation (interview)

It is quite evident, especially in developed countries, that green planning as a place-making approach in layout and design plays an important role in planning for sustainable communities. Effectual examples of multifunctional green spaces, such as the *Place des Wallons* (refer: Chapter 5, International approach to place-making, through layout and design: The *Place des Wallons* pilot study), is found in communities across the world.

In South Africa, it is the fact that the backlog in providing for basic needs such as jobs, drinking water, electricity, sewage and other essential infrastructure in urban and even more so in rural communities, definitely takes precedence over planning for green open spaces. Meaningful, multifunctional, green open spaces are mainly found in bigger towns and cities and the incidence of functional green open spaces in rural communities is hardly significant.

9.5 Conclusion: Quantitative investigation (questionnaires)

All the individuals involved in the quantitative research seemed to have sufficient knowledge and understanding of the concepts of sustainability, place-making and layout and design approaches. The importance of providing for the basic needs of the community, with specific reference to drinking water and food security were emphasised by all the participants. Transport, and the conservation and protection of natural resources such as water and agricultural land were also highlighted.

The results of the research clearly showed an overall commitment by these participants to the value of creating sustainable community development. However, the results stressed simultaneously the absence of an integrated approach to green, open spaces, inadequate layout and design approaches for rural areas, and the inconspicuous planning guidelines for planning in urban areas.

9.6 Conclusion: Vaalharts case study

Continued social, economic and spatial inequality has a visible impact on the liveability of the Vaalharts region. It is especially noticeable in the deficient quality of life in the five communities investigated in that region. Agriculture determines the economy of the region. Therefore, training, skills, and jobs opportunities are mainly based in this sector. The level of education in the area limits the probability of alternative employment or self-employment, with results that are detrimental to the economic growth and economic independence of the region.

It is evident that the basic needs, expressed in the Vaalharts case study (refer: Vaalharts case study Chapter 7, Table 36: Needs inventory for five preselected communities in the Vaalharts region), are fundamental needs related to liveability. The needs-analysis depicts that the communities in the Vaalharts region experiencing a low quality of life, thus the Vaalharts rural area cannot be considered a sustainable environment. The circumstances depicted in the Vaalharts case study area, are representative of circumstances that exist in the majority of rural areas in South Africa.

The practical implementation of the South African policy regarding development of rural areas, and the provision of basic services and infrastructure in any particular area is primarily the responsibility of local government. In this regard, it appears the efforts of the local governments, which are

responsible for the Vaalharts region, are unsuccessful and the evidence of this is remarkably obvious.

Although an unilateral attempt made to address the basic needs of the communities in the Vaalharts region may improve the quality of life of the people and thus the liveability of the environment, it will be only a temporary change. Achieving long-term sustainability of the region will require a more holistic approach to be taken and followed through, such as was done in the case of the *Place des Wallons* (refer: Chapter 5, International approach to place-making, through layout and design: The Place des Wallons pilot study).

Chapter 10: Recommendations

In this chapter, certain recommendations are made in an attempt to create a point of departure for the enhancement of planning for sustainable communities.

Misconceptions and ignorance regarding sustainability and place-making are a reality. Therefore, informative programs should be followed at educational institutions and companies to inform people on the importance of these concepts. Should planners and experts be involved in communities where the people have little or no knowledge of the concepts, they must provide the necessary guidance to give information.

Provision of basic needs and aspirations of people in harmony with its environment, lies at the heart of the place-making approach. Hence, it is imperative to determine and understand the basic needs and aspirations of a community. To determine what the basic needs and aspirations of a community are and to deepen understanding thereof, can best be achieved by on-going reciprocal communication between the community, authorities, designers and planners. For this reason, a transparent and comprehensive community participation approach to place-making, is strongly advocated.

Policies and legislation which guide the place-making, through layout and design approaches, should focus on providing the basic needs, protecting the environment and the promotion of impartiality between different generations and races in order to ensure equality.

In planning for sustainable communities, practical and outcome-based objectives should be pursued. Therefore, the following practical guidelines to set objectives are recommended:

- Base the planning of further expansion or renewal of areas on existing traditions, patterns and trends in the area in order to conserve and strengthen the inherent culture of the community (refer: Chapter 2, paragraph 4.1 , Table 16: Key principles of place-making).
- Incorporate the attractive features of the natural environment as part of the layout and design. This will accentuate the uniqueness of the area (refer: Chapter 4, Paragraph 4.4.5, Table 21: Environmental Benefits of Urban Green Space Table 22: Economic and Aesthetic Benefits of Green Space and Table 23: Social and Psychological Benefits of Urban Green Spaces).

- Create several, public places in which a good spirit of community can be experienced in order to attract people from within and outside the community (refer: Chapter 4, paragraph 4.3.2, Lively public spaces).
- Clearly demarcate and accentuate spaces such as public places, squares, green open spaces and road reserves by how buildings and vegetation are placed. It create a sense of safety and give protection against natural elements (refer: Chapter 7, paragraph, 7.2.1, Table 34 Four actions in the Green planning approach).
- Link different public spaces in order to form networks, which will result in easy access to various opportunities for users (refer: Chapter 4, paragraph Lively public spaces).
- Provide sufficient middle and lower order internal road networks that adhere to the needs of all the users (refer: Chapter 5, paragraph 5.5.3: Internal surrounding factors).
- Integrate the internal road networks with all the transport networks surrounding the area in order to provide the optimal interconnection, with the adjacent areas and other areas further away.
- Provide safe pedestrian routes in order to make all the available facilities accessible to all spheres of the population (refer: Chapter 5 paragraph 5.5.3: Internal surrounding factors).
- Provide visible and attractive points of access to public spaces in order to attract people and to enhance the character of the public space (refer: Chapter 4, paragraph 4.4).
- Concentrate public facilities and businesses along main roads and through-roads to give them optimal exposure. This will make a positive impact on their visibility, accessibility and consequently, their economic viability. This likewise, increases the possibility of external capital investments that will further stimulate the economy of the community (Refer: Chapter 4: paragraph 4.4.2 Figure 15: Place-making and functions).
- Incorporate place-making elements, through layout and design (refer: Chapter 4, paragraph 4.3.2, Figure 13: What makes a great place?, Table 18: Factors of successful public places and Figure 14: The benefits of good places)

10.1 Linking theory and practice

In practice, planning is a transparent, participative, systematic and progressive building process. The figure below is recommended as a tool, to guide the steps and chronology in the planning for sustainable communities.

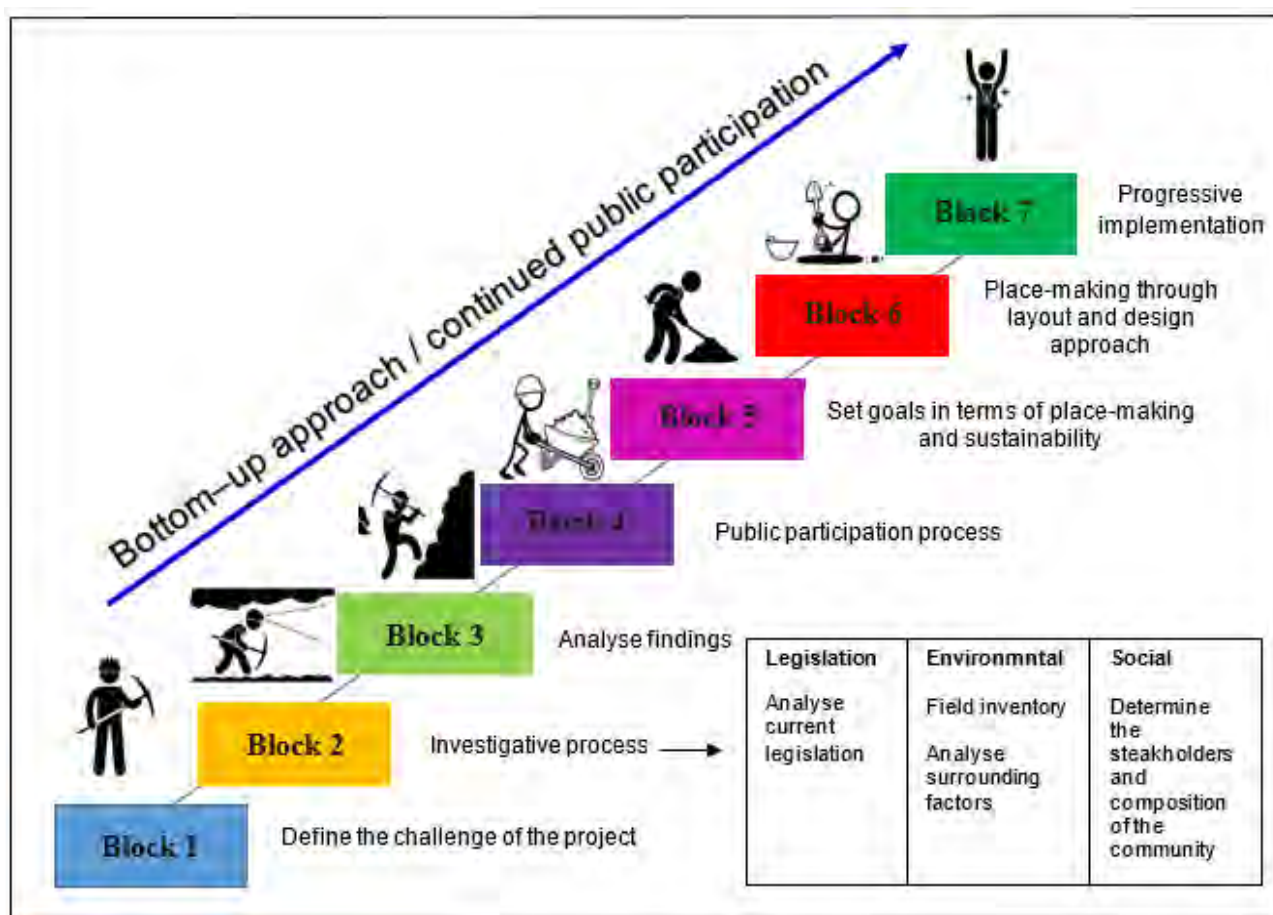


Figure 62: Building blocks in planning for sustainable communities: place-making through layout and design

The planning process, illustrated by building blocks, is representative of the bottom-up approach in planning for sustainable communities and emphasizes the necessity of continued public participation.

10.2 Recommendations in terms of the Vaalharts case study

As seen in the Vaalharts case study (refer: Chapter 8), there are many challenges in the rural areas of South Africa, therefore, innovative and effective planning founded on place-making,

through layout and design approaches, are urgently needed to enhance the sustainability in these areas.

Due to the socio-cultural diversity in the area, the community participation approach to place-making is imperative for the Vaalharts region. The process should be transparent and comprehensive, and the local communities in the region should firstly, individually and thereafter, jointly be involved in the process. Resolving the issues around the collective, basic needs of the communities will certainly affect the sustainability of the whole region.

Dual approaches for reconstruction of the region are proposed. A short-term strategy which comprises of actions immediately, visibly, identifiable and secondly, a progressive long-term strategy.

10.2.1 Short-term strategy

An in-depth investigation to the environmental, economic and social characteristics of the area and surrounding areas.

Reaffirm what the needs are of the community.

The immediate implementation of effective and noticeable changes aimed at enhancing quality of life of the communities and liveability in the region, should address the following:

- Provide basic municipal services.
- Provide educational and training facilities.
- Provide health facilities (hospital, clinic, welfare).
- Determine other place-making approaches that will be effective in the region.

Additional short-term actions to be effected should focus on exploiting the strengths and assets of the community as identified by community leaders and key stakeholders/participants, and ideally should be sponsored by private sector and government.

10.2.2 Long-term strategy

The long-term strategy should be transparent and focus on the involvement of local government, the community and resourceful, professional consultants such as environmental specialists, town

planners, economists, engineers and architects. Involvement of these role players should include financial support and the management and planning of the continued economic and social development of the area, as well as the protection of the natural environment.

10.2.3 Place-making, through layout and design proposal

A place-making, through layout and design proposal, for the Ganspan rural settlement, located in the Vaalharts region, depicted in Figure 63 below, is to show just how the incorporation of place-making elements, through layout and design approaches, can result in the sustainable development of a community.



Figure 63: Proposed layout and design based on the Ganspan community

Below, the above proposal is evaluated by means of a SWOT analysis and the Checklist, compiled in Chapter 4, (refer: Chapter 4, paragraph 4.5, Table 25: Evaluate, place-making, through layout and design approaches, in terms of the attributes of a “Great Place”), in order to determine the effectiveness thereof, in terms of place-making, through layout and design.

SWOT analysis of the Ganspan community after implementing the proposed place-making, through layout and design approaches.



Diagram 11: SWOT analysis of proposed place-making, through layout and design in Ganspan

In Table 38 below, the proposed place-making, through layout and design approaches implemented in the Ganspan community are evaluated, using the Checklist drawn up as found in Chapter 4 (refer: Chapter 4, paragraph 4.5, Table 25: Evaluate place-making in public places, communities and areas in terms of the attributes of a "Great Place").

Table 38: Evaluate place-making, in Ganspan community in terms of the attributes of a "Great Place".

<u>CHECKLIST</u>	
Evaluate place-making, in public places, communities and areas in terms of the attributes of a "Great Place".	
SOCIABILITY	
• Do the people interact with each other?	<input checked="" type="checkbox"/>
• Are there opportunities for social interaction in the specific area?	<input checked="" type="checkbox"/>
• Is there a welcoming atmosphere in the area?	<input checked="" type="checkbox"/>
• Do people experience a sense of satisfaction when they spend time in the area?	<input checked="" type="checkbox"/>
USES AND ACTIVITIES	
• Are there a range of age groups and different cultures present in the area?	<input checked="" type="checkbox"/>
• Is there a variety of activities presented in the area?	<input checked="" type="checkbox"/>
• Are people attracted by the uses and activities presented in the area?	
• Is the area well-maintained?	
ACCESS AND LINKAGES	
• Are the activities in the area easy to identify?	<input checked="" type="checkbox"/>
• Is the place accessible?	<input checked="" type="checkbox"/>
• Is placement of internal routes supportive to the natural flow of the people?	<input checked="" type="checkbox"/>
• Is the specific area pedestrian-friendly?	<input checked="" type="checkbox"/>
COMFORT AND IMAGE	
• Is the first impression of the area positive?	<input checked="" type="checkbox"/>
• Is the area clean and free of litter?	
• Is the area safe?	
• Are people's basic needs sufficiently provided for in the area?	<input checked="" type="checkbox"/>

In the evaluation, as derived from the results, place-making, through layout and design approaches, implemented in the Ganspan Community is successful and will result in the sustainable development of the Ganspan community.

The proposed approaches, through on-going community participation and effective management, should progressively evolve. If these approaches are applied consistently throughout the region, the Vaalharts region will eventually be transformed in a sustainable area.

10.3 Conclusion

The Checklist compiled in Chapter 4, (refer: Chapter 4, paragraph 4.5, Table 25: Evaluate place-making in public places, communities and areas in terms of the attributes of a "Great Place"), can be used as a key tool for evaluating place-making, through layout and design approaches.

Monitoring the effective implementation and progress of the process is an unending task which to commit. Therefore appropriate transparent management and continuous evaluation of approaches should be maintained, and effective amendments made when deemed mandatory.

South Africa realizes the importance of planning for sustainable communities in terms of place-making, through layout and design approaches. However, the lack of structured guidelines impairs the effectiveness of the practical outcome of the process. For this reason, it is strongly advocated that exact guidelines for place-making, through layout and design approaches, should form part of policies, legislation and frameworks.

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ANNEXURES



NAME:	
SURNAME:	
PROFESSION :	
COMPANY:	
CONTACT NUMBER:	
EMAIL:	

Definitions:

Sustainability: “Sustainability is based on a simple principle: Everything that we need for our survival and well-being depends, either directly or indirectly, on our natural environment. Sustainability creates and maintains the conditions under which humans and nature can exist in productive harmony that permits fulfilling the social, economic and other requirements of present and future generations”

Sustainable development: A definition for sustainable development: “ Sustainable development is a process in which communities anticipate and accommodate the needs of current and future generations in ways that reproduce and balance local social, economic and ecological systems and link local actions to global concerns”

Sustainable communities: Hart (2012) argues that “a sustainable community seeks to maintain and improve the economic, environmental and social characteristics of an area so its members can continue to lead healthy, productive, enjoyable lives”.

Green open Spaces: “public and private open spaces in urban areas, primarily covered by vegetation, which are directly (e.g. active or passive recreation) or indirectly (e.g. positive influence on the urban environment) available for the users.”

Place making: Place making is the principle of creating of a place where the structure and the uses are determined by the people inhabiting that place and are essential components for building vibrant neighbourhood communities.

Integrated planning approach: Joint planning exercise that ensures participation of all stakeholders and affected departments. Its objective is to examine all economic, social, and environmental costs and benefits, in order to determine most appropriate option and to plan a suitable course of action.

Question 1: Sustainability

As a professional rate the importance of the following sustainable strategies for a rural area and community.

Protecting agricultural land	Extremely Important	Important	Somewhat important	Less important	Not important
Supporting food security and local producers	Extremely Important	Important	Somewhat important	Less important	Not important
Protecting drinking water supplies	Extremely Important	Important	Somewhat important	Less important	Not important
Increasing use of renewable energy	Extremely Important	Important	Somewhat important	Less important	Not important
Developing a district or community energy system	Extremely Important	Important	Somewhat important	Less important	Not important
Promoting water conservation	Extremely Important	Important	Somewhat important	Less important	Not important
Supporting locally owned small businesses	Extremely Important	Important	Somewhat important	Less important	Not important
Reducing solid waste	Extremely Important	Important	Somewhat important	Less important	Not important
Promoting and/or providing recycling services	Extremely Important	Important	Somewhat important	Less important	Not important
Preventing urban sprawl	Extremely Important	Important	Somewhat important	Less important	Not important
Supporting higher density development suitable for a small town	Extremely Important	Important	Somewhat important	Less important	Not important
Providing public transit	Extremely Important	Important	Somewhat important	Less important	Not important
Developing walking and/or cycling routes	Extremely Important	Important	Somewhat important	Less important	Not important
Encouraging health and social well being	Extremely Important	Important	Somewhat important	Less important	Not important
Supporting volunteerism and community spirit	Extremely Important	Important	Somewhat important	Less important	Not important

Question 2: Sustainability

In your opinion which of the following are the three most important strategies for a rural area and community.

<input type="checkbox"/>	Protecting agricultural land
<input type="checkbox"/>	Supporting food security and local producers
<input type="checkbox"/>	Protecting drinking water supplies
<input type="checkbox"/>	Increasing use of renewable energy
<input type="checkbox"/>	Developing a district or community energy system
<input type="checkbox"/>	Promoting water conservation
<input type="checkbox"/>	Supporting locally owned small businesses
<input type="checkbox"/>	Reducing solid waste
<input type="checkbox"/>	Promoting and/or providing recycling services

<input type="checkbox"/>	Preventing urban sprawl
<input type="checkbox"/>	Supporting higher density development suitable for a small town
<input type="checkbox"/>	Providing public transit
<input type="checkbox"/>	Developing walking and/or cycling routes
<input type="checkbox"/>	Encouraging health and social well being
<input type="checkbox"/>	Supporting volunteerism and community spirit

Question 3 – Sustainable Development

Do you understand the concept of sustainable development?

1- Yes	2- Partially	3- No
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Question 4 – Sustainable communities

In your opinion does South Africa effectively plan for sustainable communities?

1- Agree	2- Agree Moderately	3- Disagree
----------	---------------------	-------------

Question 5 – Current approaches to layout and design

In your opinion is the current layout and design approach of South Africa for rural communities effective?

1- Agree	2- Agree Moderately	3- Disagree
----------	---------------------	-------------

Question 6 - Green spaces

In your opinion does South Africa have an integrated approach to green open spaces?

1- Agree	2- Agree Moderately	3- Disagree
----------	---------------------	-------------

Question 7 – Design approaches in community planning

An appropriate layout and design approach ensures an efficient sustainable community.

From the list below, select the five (5) leading fundamentals that in your opinion will influence the layout and design approach for an effective sustainable community.

1	Ecological protection	
2	Density and urban design	
3	Security (crime prevention)	
4	Local economy	
5	Sustainable transport	
6	Affordable housing	
7	Liveable community	
8	Sewage and storm water	
9	Water	

10	Green open spaces	
----	-------------------	--

Question 8 Place making

In your opinion which one of the following 4 elements is the most important when planning for a specific place?

1	Sociability	
2	Uses and activities	
3	Access and linkages	
4	Comfort and image	

Question 9- Planning for sustainable development

South Africa today still has major challenges because of the apartheid era that lead to fragmented and disjointed cities and communities. Planning for sustainable development is directed by a combination of broad planning guidelines and normative planning concerns. General planning guidelines for urban planning include:

- The movement network and transport
- The open space system which is made up of the hard open spaces and the soft open spaces.
- Public facilities
- Land subdivision

(Guidelines for Human Settlement Planning and Design: 2000: National Department of Housing)

In your opinion are the above planning guidelines for urban planning employed noticeable in South Africa?

1- Yes	2- Moderately	3- No
--------	---------------	-------

Question 10 – Sustainable communities

In your opinion is it important that South Africa have sustainable communities?

1- Yes	2- No
--------	-------

Thank you for completing this questionnaire. Your participation is greatly appreciated.

Planning for sustainable communities: Place-making through layout and design approaches

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21695377

Dissertation submitted in fulfilment of the requirements for the
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Abstract

The survival and quality of life of people are irrefutably dependent on the natural environment in which they live. In order to ensure that the basic needs of man are consistently satisfactorily met in the long-term, the development and implementation of a planning approach that encompasses the protection of the natural environment and prudent use of the available resources is essential. The composition of communities, however, is complex; the diversity in culture, gender and age of a community leads to specific needs that are unique to the community and the impact thereof on the surrounding natural environment. The planning approach for the sustainable development of a particular community must therefore be structured to gratify the specific social needs of that community.

Ingenious design approaches, strategies and policies that are used in the planning of sustainable communities and the redevelopment of existing areas, can ultimately lead to healthier, safer, greener, economically sustainable and liveable communities that are well managed. Varied use of activities and facilities such as employment centres, residential neighbourhoods, natural areas, parks, local trails, schools and public places induce a physical connection, which results in creating authentic neighbourhoods with good quality of life. Sustainable communities tend to have lower transportation costs and less traffic, are more economic in terms of housing and market demands, have decreasing costs in terms of infrastructure, a reduced rate of air pollution, and have the ability to create a safer environment.

This research aims to explore and understand the international and local integrated planning and design approaches which are currently used in the planning of sustainable communities. Reviewing different international and local layout and design approaches will aid in defining the best practices in order to develop improved planning approaches for sustainable communities. In this sense, proposed planning approaches should consider the complexity of the social environment of modern society. Along with the public participation approach, which plays an essential role in determining the basic needs of the community and is seen as a fundamental building block in planning for sustainable communities, other planning approaches are also evaluated as part of this research in order to determine best practices. Recommendations are made on how these approaches can be adopted within local rural South African areas, using the Vaalharts area as case study.

Key words: Sustainability, Sustainable development, Sustainable communities, Layout and design approaches, Place-making, Liveability, Lively public spaces, Integrated approach.

Opsomming

Die oorlewing en die kwaliteit van lewe van mense is onteenseglik afhanklik van die natuurlike omgewing waarin hulle woon. Ten einde te verseker dat die basiese behoeftes van die mens konsekwent en in die langtermyn bevredigend nagekom word, is die ontwikkeling en implementering van 'n beplanningsbenadering wat die beskerming van die natuurlike omgewing en die bestuur van die beskikbare hulpbronne insluit, noodsaaklik. Die samestelling van gemeenskappe is egter kompleks; die diversiteit in kultuur, geslag en ouderdom van 'n gemeenskap lei tot spesifieke behoeftes wat eie is aan die gemeenskap en die impak daarvan op die natuurlike omgewing beïnvloed. Die beplanningsbenadering vir die volhoubare ontwikkeling van 'n bepaalde gemeenskap moet dus so gestruktureer word om die spesifieke maatskaplike behoeftes van daardie gemeenskap te bevredig.

Vernuftige ontwerpbenaderings, -strategieë en -beleide wat gebruik word in die beplanning van volhoubare gemeenskappe en die herontwikkeling van die bestaande gebiede, kan uiteindelik lei tot gesonder, veiliger, groener, ekonomies volhoubare en leefbare gemeenskappe wat goed bestuur word. Gevarieerde gebruik van aktiwiteite en fasiliteite soos indiensnemingsentrums, woonbuurte, natuurlike gebiede, parke, plaaslike paaie, skole en openbare plekke veroorsaak 'n fisiese verband wat lei tot die skep van outentieke woonbuurte met 'n goeie lewenskwaliteit vir die inwoners. Volhoubare gemeenskappe is geneig om laer vervoerkoste en minder verkeer te hê, is meer ekonomies in terme van behuising en vereistes van die mark, het dalende koste in terme van infrastruktuur, verlaagde lugbesoedeling en het die vermoë om 'n veiliger omgewing te skep.

Hierdie navorsing het ten doel om die internasionale en plaaslike geïntegreerde beplannings- en ontwerpbenaderings wat tans gebruik word in die beplanning van 'n volhoubare gemeenskappe, te verken en te verstaan. Hersiening van verskeie internasionale en plaaslike uitleg en ontwerpbenaderings sal help om die beste praktyke te definieer en verbeterde beplanningsbenaderings vir volhoubare gemeenskappe te ontwikkel. In hierdie sin moet voorgestelde beplanningsbenaderings bewus wees van die kompleksiteit van die sosiale omgewing van die moderne samelewing. Saam met die openbare deelname benadering, wat 'n belangrike rol speel in die bepaling van die basiese behoeftes van die gemeenskap en wat beskou word as 'n fundamentele boublok in die beplanning van volhoubare gemeenskappe, word ook ander beplanning benaderings as deel van hierdie navorsing geëvalueer om die beste praktyke te bepaal. Aanbevelings word gemaak oor hoe hierdie benaderings binne die plaaslike landelike Suid-Afrikaanse gebiede aangeneem kan word, met behulp van die Vaalharts-gebied as gevallestudie.

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Table of Acronyms

Table 1: Acronyms

AMCV	L'Association du Management de Centre Ville
ANC	African National Congress
ASGISA	Accelerated Shared Growth Initiative for South Africa
DETR	Department for Environment Transport and the Regions
DFA	Development Facilitation Act
DFID	Department for International Development
DM	District Municipality
DMA	District Municipality Area
EIA	Environmental Impact Assessment
GCVOLLN	Gestion Centre Ville Ottignes-Louvain la Neuve
GIS	Geometrical Information Systems
IDP	Integrated Development Plan
ISRDS	Integrated Sustainable Rural Development Strategy
LUMS	Land Use Management Schemes
NEMA	National Environmental Management Act
NSDP	National Spatial Development Perspective
RDF	Rural Development Framework
RDP	Reconstruction and Development Programme
SDC	Sustainable Development Commission
SDF	Spatial Development Framework
SEA	Strategy Environmental Assessment
SWOT	Strengths, Weaknesses, Opportunities and Threats

UDF	Urban Development Framework
UN	United Nations
UNCED	United Nations Conference on Environment and Development
VCEC	Victorian Competition and Efficiency Commission's
WCEP	The World Commission on Environment and Development

Chapter 1: Introduction

1.1 Points of departure

Sustainability is essential in the process of community planning and plays an important role in the long-term success of communities. Planning for sustainable communities is primarily based on addressing the needs of the people in the community and ensuring a better quality of life. Public participation plays a critical part throughout the process of planning for sustainable communities and in this sense, a sustainable community is created through balancing the environmental, social and economic activities within the community.

Place-making, through layout and design is an integrative approach to the planning and sustainable development of communities. People are attracted to good places with high quality of life, which consist of effective place-making principles that are implemented through layout and design. Good places are a focal point of economic and social activity, thus place-making, through layout and design approaches can contribute to planning and creating attractive, focal points by including various functions within one space.

1.2 Problem statement

According to Girardet (1999), a sustainable city [in this instance a community] is planned to enable all of its citizens to meet their own needs and to enhance their wellbeing without damaging the natural world or endangering the living conditions of other people, now or in the future. Planning for sustainable communities is challenging and thus it is essential to compile a framework wherein detailed practical guidelines for implementation of sustainable solutions are described.

Power (2004) states that the heart of sustainable development encompasses the simple idea of ensuring a better quality of life for everyone, now and for future generations. It implies meeting the following four objectives simultaneously:

- Social progress which recognises the needs of everyone;
- Effective protection of the environment;
- Prudent use of natural resources;
- Maintenance of high and stable levels of economic growth and employment; and considering the long-term implications of decisions. (DETR, 1999, as cited by Power, 2004)

There is a need for an integrated place-making, through layout and design approach that will contribute to the planning for sustainability communities of rural and urban areas in South Africa. Although place-making, through layout and design has proven to contribute to sustainable community planning, it is not currently a core part of planning in South Africa.

1.3 Primary research questions

The following primary research questions will be answered as part of this research:

- How can communities, in urban and rural areas, be defined as sustainable communities?
- What is the current approach to place-making internationally and locally?
- What is the current approach to layout and design internationally and locally?
- How can layout and design approaches enhance place-making and contribute to local sustainable community planning?

1.4 Aims and objectives of this study

This research aims to explore the potential and possibility of creating and understanding integrated approaches to guide the planning for sustainable communities. Sustainable community planning principles are applicable to both urban and rural areas, although different in terms of basic needs, it is evident that sustainable community development in all developing and developed countries, cities and regions should be regarded as priority.

From the urban planning context, reviewing different international and local layout and design approaches will aid in defining the best practices and improving planning approaches for sustainable communities. This will include the concept of public participation playing an essential role in determining the basic needs of the community and being a fundamental building block in the planning process.

The main objective of this research is to evaluate and analyse approaches to plan for sustainable communities, focussing on place-making, through layout and design approaches that will encourage social progress which recognises the needs of everyone; protect the environment; safeguard prudent use of natural resources; and maintain high and stable levels of economic growth and employment while considering the long-term implications of decisions. International approaches will be identified and evaluated to create best practices that can be adopted and

applied to the local South African planning context in an attempt to create and plan for successful sustainable communities focussing on the Vaalharts rural area.

1.5 Method

A comprehensive theoretical research was conducted regarding the fundamentals of sustainability and sustainable communities; layout and design approaches and models; and the approaches regarding the concept of place-making.

The theoretical research includes:

Literature concerning the concept of sustainable communities has been included in order to understand the role of sustainable communities and thereby highlighting the importance of planning for these sustainable communities. Therefore, the concept of sustainability and sustainable communities, along with the planning of such communities were discussed in Chapter 2. This research, however, is not focussed on sustainable indicators, but rather on recovering the balance between “The Three Spheres of Sustainability” as applicable to the place-making, through layout and design approach.

Layout and design approaches focus on urban forms, public spaces, green planning initiatives; and the complexities and differences of urban spaces. Various international layout and design models were studied in Chapter 3, in order to determine how these layout and design approaches can improve planning for sustainable communities.

Place-making approaches such as the livelihoods approach, the power of ten approach, the community participation approach, the New Urbanism approach, and the Green planning approach forms an integral part to planning for sustainable communities. Hence, these place-making approaches, along with the principles of place-making were discussed in Chapter 4.

The empirical investigation comprises of the following:

Chapter 5 forms the first part of the empirical investigation in the research. In this chapter, the international approach to place-making, through layout and design was discussed by means of a pilot study of the *Place des Wallons*, a public square in *Louvain-la-Neuve in Belgium*.

Policies and legislation frameworks guides layout and design approaches. In Chapter 6, the South African realities and challenges in this regard were analysed and policies and legislation were summarized.

In Chapter 7, qualitative and quantitative research methods were employed in order to gain the opinions and perspective of the public and experts regarding sustainability, place-making and layout and design in South Africa. The qualitative research includes an interview with Professor Sarel Cilliers, an international leader in the field Urban Ecology (the integration of environmental aspects and urban reality). The quantitative research includes a questionnaire completed by twenty participants from various backgrounds.

Local approaches to place-making, through layout and design in South Africa, were studied in Chapter 8 on the basis of a case study of the Vaalharts region.

Conclusions in terms of the theoretical and empirical research were discussed in Chapter 9, followed by recommendations in terms thereof in Chapter 10.

Relevant best-practice approaches (place-making, through layout and design) were applied to the rural Vaalharts area in order to link international approaches and successful urban planning approaches to the local rural environment.

A layout and design proposal was offered as final recommendation in Chapter 10. This layout is a proposal of an integrated approach to sustainable community development by incorporating elements of place-making and sustainable development within the layout and design approach. Considering the fact that all areas are unique and require tailor-made layout and designs, this proposal and design can be used as a point of departure for the layout and design of similar rural areas in South Africa.

1.6 Delineation of the study area

The Vaalharts rural area has been selected as the case study for this research because there are several challenges and problems found in this region, especially in terms of sustainability. The apparent resemblance of characteristics of this area is comparative to the average rural areas of South Africa.

This rural area is located within the jurisdiction of the North-West and Northern Cape provinces of South Africa. Given that the region stretches across two provinces and is thus governed by two distinct provincial authorities, complexities in determining dominant policies arise. The Vaalharts water scheme and the variety of available agricultural land serves as positive attractions for the area.

This study focuses on the Vaalharts region as a whole, but mainly consists of the data made available for the purpose of this study and is representative of the communities Taung, Valspan, Ganspan, Taung and Pampierstad, all located within the Vaalharts rural area.

The Vaalharts region in the context of South Africa is presented in Map 1: location of the case study.

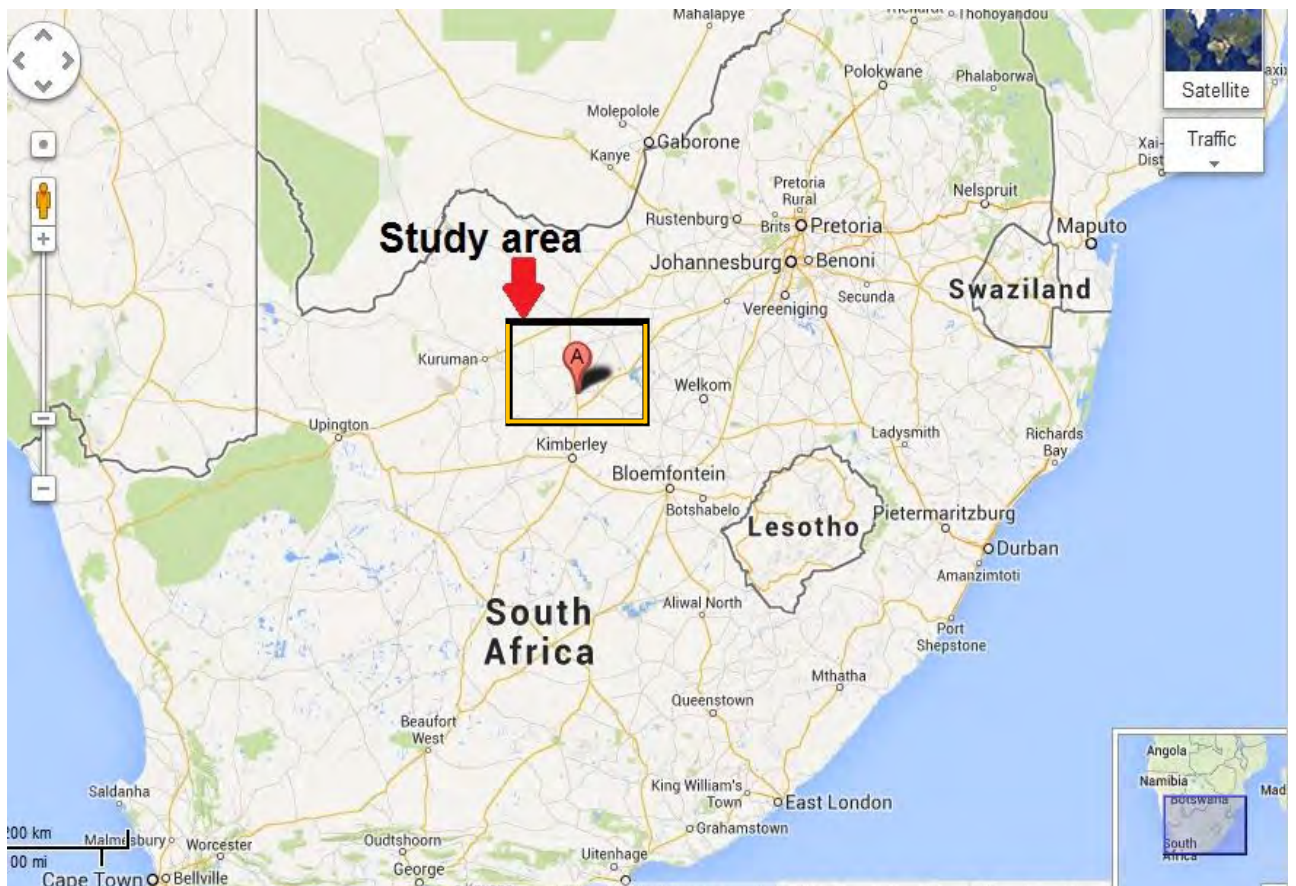


Figure 1: Location of the case study in the context of the South African map

1.7 Limitations of the research

Sustainable community planning and layout and design approaches in South Africa are a complex and unique issue. The *status quo* in South Africa, with regard to the locality, layout and design of regions, cities, towns, and, more specifically, townships where the indigenous population primarily resides, was influenced, for the most part, by political ideology. Thus adopting traditional approaches can be applied successfully in every area.

The data, findings and analyses included in this research were predominantly acquired from a Vaalharts case study, which was carried out by the company “Research Logistics”, in partnership with the North-West University over a period of seven years, ending in 2011. These should therefore be considered as a secondary source.

There are a wide range of factors that influence sustainability on various levels. This study, however, is not focused on all the factors that influence sustainability. Although some of these aspects are briefly discussed where applicable, the focus of the study is based on an urban planning perspective, more specifically place-making, through layout and design approaches and how these approaches can lead to sustainable community development in South Africa.

The study does not assume to have answers on how to implement sustainability in general. Instead, the study aims only to illustrate the problems associated with planning for sustainable communities, place-making, through layout and design approaches (which merit further investigation by other specialists in their fields) and to address those of a spatial nature. There are limited case studies regarding place-making in South Africa.

1.8 Structure of the dissertation

The following is a summary of the structure and content of the dissertation:

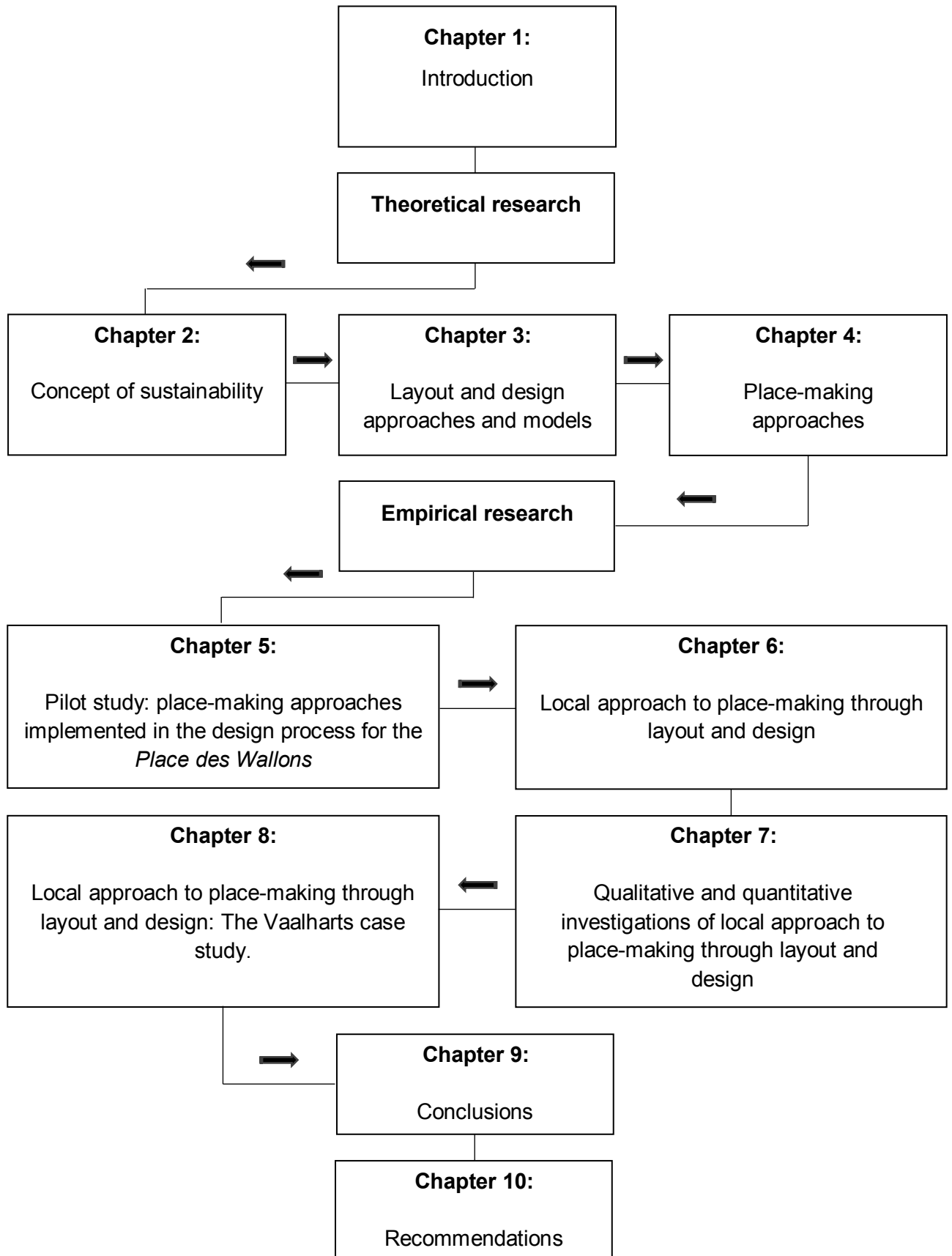


Diagram 1: Structure of research

1.9 Definitions

The following are important definitions of terminology, which is highly applicable in this study:

Table 2: Glossary.

Green open spaces	“Public and private open spaces in urban areas, primarily covered by vegetation, which are directly (e.g. active or passive recreation) or indirectly (e.g. positive influence on the urban environment) available for the users” (The Green Infrastructure Research Group, 2013).
Integrated planning approach	Joint planning exercise that ensures participation of all stakeholders and affected departments. Its objective is to examine all economic, social, and environmental costs and benefits, in order to determine the most appropriate option and to plan a suitable course of action (Cities Matter, 2011).
Lively Places	A place is regarded as ‘lively’ when the focus is on the public grounds, is inclusive for all and is open for a wide range of user groups (Hobart City Council, 2011:1).
Lively Cities	Cities which focus on the public realm by being inclusive and creating invitations for a wider range of user groups. This can be achieved through a number of initiatives such as encouraging more residential development, attracting more education institutions in the city centre, as well as providing facilities and open spaces that make city living more attractive (Hobart City Council, 2011:1).
Liveability	Liveability reflects the wellbeing of a community and represents the many characteristics that make a location a place where people want to live now and in the future, such as employment and incomes, community strength, environment, amenity and place, planning, participation, and infrastructure. Economic and community strength are critical to liveability. (Cilliers <i>et al.</i> , 2012:6).
Liveliness	“... liveliness is entirely associated with people and activities and it can be assessed by measuring pedestrian flows and movements, the uptake of facilities and the existence or otherwise of ‘things to do’” (Montgomery, 2006 cited by Lamit <i>et al.</i> , 2012).
Participation	Active participation implies the community has a bigger role to play in terms of discussions with authorities, policy formalization,

	creating solutions and decision-making (Cilliers <i>et al.</i> , 2011).
Place	Place is the notion that includes the dimensions of lived experience, interaction and use of a space by its inhabitants (Harrison & Dourish, 1996:67).
Place-making	Place-making is the principle of creating of a place where the structure and the uses are determined by the people inhabiting that place and are therefore essential components for building vibrant neighbourhood communities (Cowan <i>et al.</i> , 2006:23).
Rural areas	The concept of 'rural areas' refers to an area that lags behind in a variety of aspects, such as population per square mile, need and lack of education programmes and institutions, experiences and the power to control its own destiny when compared to more urban areas (Buxon, 1976:29).
Space	Space refers to the structural, geometrical qualities of a physical environment, (Harrison & Dourish, 1996:67).
Sustainability	"Sustainability is based on a simple principle: Everything that we need for our survival and wellbeing depends, either directly or indirectly, on our natural environment. Sustainability creates and maintains the conditions under which humans and nature can exist in productive harmony that permits fulfilling the social, economic and other requirements of present and future generations" (United States Environmental Protection Agency, 2013).
Sustainable communities	"A sustainable community seeks to maintain and improve the economic, environmental and social characteristics of an area so its members can continue to lead healthy, productive, enjoyable lives" (Hart, 2012 cited by United States Environmental Protection Agency 2012).
Sustainable development	"Sustainable development is development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs" (United Nations, 1987). (Brundtland Report)

Chapter 2: Concept of sustainable communities

The following diagram illustrates the structure of Chapter 2.

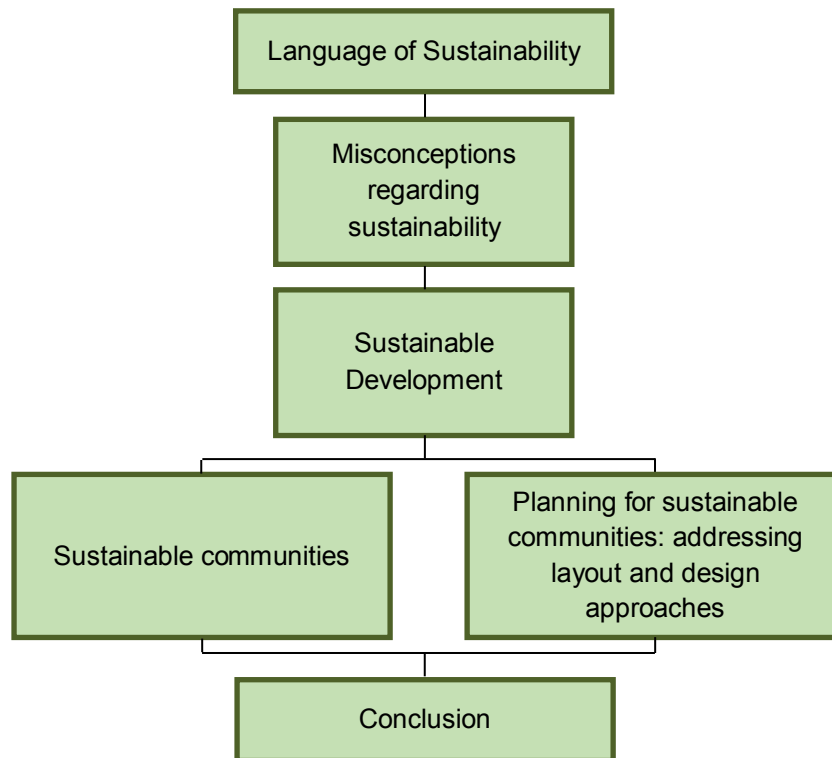


Diagram 2: Structure of Chapter 2

2.1 The language of sustainability

Einstein (as cited by Geis & Kutzmark, 2006) echoed his concern apropos the impact that past human practices have had on the resources and capacity of the environment to regenerate and sustain life, by saying: “We shall require a substantially new manner of thinking if mankind is to survive.” The necessity to find a harmonious balance between mankind’s way of living with his environment, and framing the essence of this balance in a comprehensible language, was strongly elevated in the 1950’s by Aldo Leopold (Geis & Kutzmark, 2006). George Lakoff, of the University of California at Berkeley, defines framing as being “about getting language that fits your worldview. It is not just language. The idea is primary, and the language carries those ideas, evokes those ideas” (Jaber, 2009).

The internationally accepted linguistic term “sustainability” was chosen to best evoke and convey the characteristics of a world that will be beneficial to all and best expresses the equilibrium

between man and his environment. The concept of sustainability has evolved since the United Nations (UN) Conference on The Human Environment, which was held in Stockholm in 1972 (ISCIENCES, 2012). In 1992, at the Earth Summit in Rio de Janeiro, convened by the UN World Commission on Environment and Development (UNCED), the concept and application of sustainability were further endorsed by 120 nations (Geis & Kutzmark, 2006).

A definition of sustainability is: “Sustainability is based on a simple principle: Everything that we need for our survival and wellbeing depends, either directly or indirectly, on our natural environment. Sustainability creates and maintains the conditions under which humans and nature can exist in productive harmony that permits fulfilling the social, economic and other requirements of present and future generations” (United States Environmental Protection Agency, 2013).

The worldwide importance of sustainability is increasing, but at the same time, it is found that the forces that influence sustainability change frequently. The effect of environmental traditions that have influenced sustainability in the past may now have been augmented or replaced by forces unique to this decade (Geis & Kutzmark, 2006). In a dissertation by Geis & Kutzmark (2006), forces that are exclusively typical of the twenty-first century are identified as: limited resources, urbanisation, scientific knowledge, technology, social awareness, health and safety imperatives and new economics.

2.2 Misconceptions regarding sustainability

According to Filho (2000), there are many misconceptions regarding the concept of sustainability. Filho is of the opinion that individuals and/or communities opposing sustainability or sustainable development often do not fully comprehend the all-inclusive value and significance of sustainability. These misconceptions usually have a negative impact on the community or society and affect their efforts to work towards a more sustainable future (Filho, 2000). Table 3 explains the perceptions that Filho asserts have a negative influence on society’s attitude towards sustainability:

Table 3: Misconceptions of the concept of sustainability

Misconception	Explanation
Sustainability is not a subject <i>per se</i> .	Notwithstanding sustainability being a high priority in virtually all scientific fields, many continue to view the concept as being vague, without scientific base and expensive to implement.
Sustainability is too theoretical.	Sustainability and sustainable approaches have become popular terms often considered in marginally or unrelated perspectives. The result is that many see the concept as indistinct and theoretical.
Sustainability is too broad.	People and institutions, intimidated and discouraged by the scope of the concept, believe the implementation of sustainability difficult to manage.
Sustainability is too recent a field.	Many perceive sustainability a new and experimental idea and thus prefer to hold back and not partake in the implementation process.
Sustainability is a fashion.	Poor knowledge of the significant value of sustainability leads to the unfounded criticism that sustainability merely represents a fashionable trend that only the minority can afford.

Source: Filho (2000)

To eradicate these misconceptions and reservations, Filho (2000) suggests that an aggressive informative effort which educates the community extensively on the importance and long-term advantages versus short-term economic sacrifices, simultaneously supported by practical pilot projects and initiatives that illustrate the feasibility of sustainability, will result in individual and collective resolve to pursue sustainable objectives and solutions (Filho, 2000).

2.3 Sustainable development

Berke (2002) asserts that the history of the process that was followed in the development as applicable to urban planning of towns, cities and regions has been dominated by the physical design model and the rational planning model, both distinctively representative of a top down approach. This approach permitted government and other major role players the opportunity to manipulate the planning and development process, thereby promoting subjective political and economic objectives and at times overlooking the aspirations and needs of people in specific communities. Since 1960, denunciation of the aforementioned development models mounted as critics progressively exposed the fundamental weaknesses in these models and displeased citizens (Berke, 2002).

The necessity to devise an alternative approach embracing a common goal that would serve the interests of all the people and at the same time protect the environment became noticeably essential (Berke, 2002).

The World Commission on Environment and Development (WCED) of the United Nations was commissioned to conceive a philosophy that will be instrumental to reverse environmental degradation, reduce over-consumption and grind poverty. In their report, *Our Common Future*, that was published in 1987, portraying the common goal as equity to future generations, the WCED defined the hypothesis of sustainable development as follows: “Sustainable development is development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs” (Berke, 2002:8).

Following the report, the majority of the international community commendably acknowledged that this hypothesis was to be embraced in all policies and approaches that determine the harmonious balance between the three foremost values of sustainable development, which are the environment, the economy and equity (Geis & Kutzmark, 2006).

An illustration that examines the three primary values of sustainable development is presented in Figure 2. The expanses where the circles transcend display the core characteristics of sustainable development.

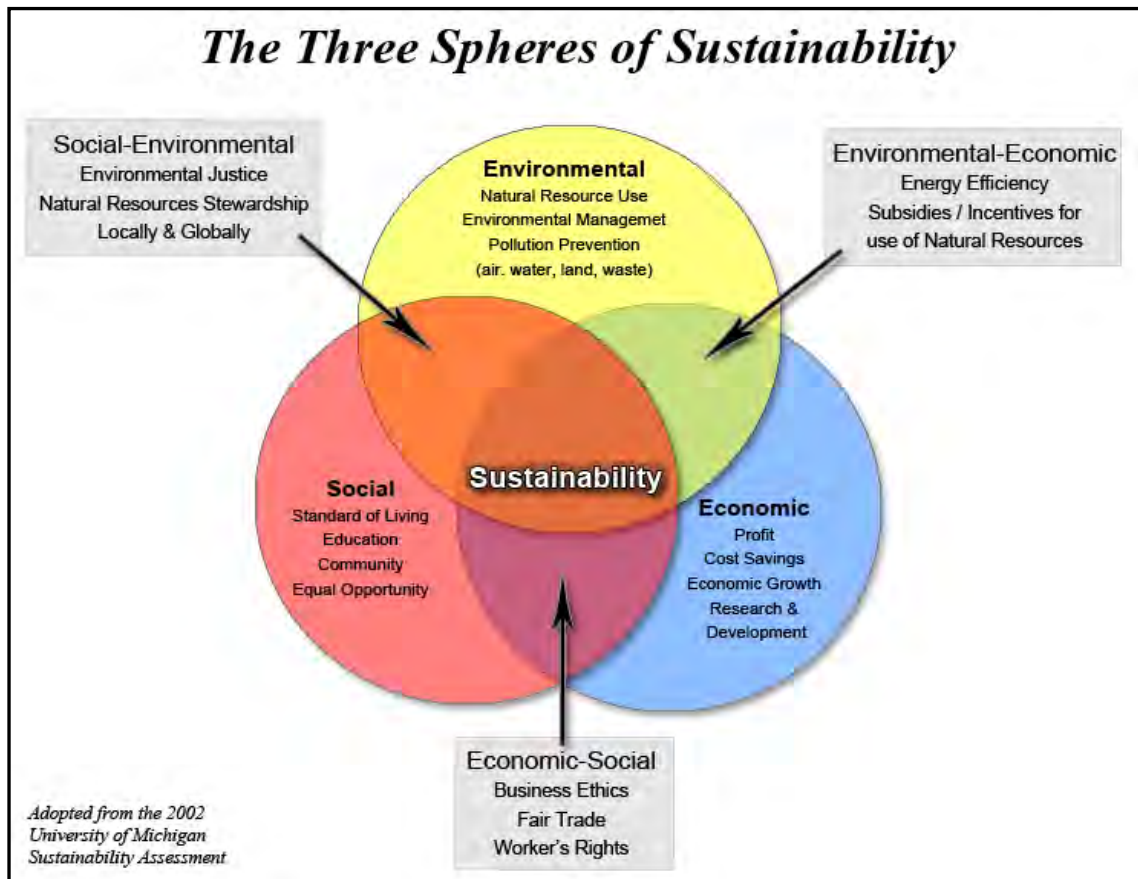


Figure 2: The Three Spheres of Sustainability

Source: Vanderbilt University Sustainability and Environmental Management Office (2013)

Grasping the aim of the WCED’s definition of sustainable development is undemanding, however, translating the concept into procedure shows a diverse interpreting methodology, which is clearly evident in the seven sample definitions of sustainable development below.

Table 4 describes the definitions as provided by The World Commission on Environment and Development (WCED) to capture the essence of sustainable development on a variety of levels.

Table 4: Seven examples of sustainable development definitions

Level	Definition
International	“Sustainable development respects and defines traditional livelihoods and indigenous culture and societies. It recognizes that communities must define and develop their own solutions to environmental and development problems. It also works toward shared power and participation, at the local, national, and international levels” (Canadian University Students Organization, 1989: 3).

National	<p>“Our vision is of a life-sustaining Earth. We are committed to the achievement of a dignified, peaceful, and equitable existence. A sustainable United States will have a growing economy that provides equitable opportunities for satisfying livelihoods and a safe, healthy, high quality of life for current and future generations. Our nation will protect its environment, its natural resource base, and the functions and viability of natural systems on which all life depends” (President’s Council on Sustainable Development, 1996: i).</p>
State	<p>“Sustainable development links the environment, economy and social equity into practices that benefit present and future generations” (North Carolina Environmental Resource Program, 1997: 1).</p>
Regional	<p>Sustainable development involves “achieving positive change that enhances the ecological, economic, and social systems upon which South Florida and its communities depend. Once implemented these strategies will bolster the regional economy, promote quality communities, secure healthy South Florida ecosystems, and assure today’s progress is not achieved at tomorrow’s expense” (Governor’s Commission for a Sustainable South Florida, 1996).</p>
Local	<p>Sustainability is “long-term cultural, economic, and environmental health and vitality” (Seattle Planning Department, 1994).</p> <p>“As a community, we need to create the basis for a more sustainable way of life both locally and globally through the safeguarding and enhancing of our resources and by preventing harm to the natural environment and human health” (Santa Monica Planning Department, 1995: 1).</p> <p>Sustainable development is “the ability of [the] community to utilize its natural, human and technological resources to ensure that all members of present and future generations can attain high degrees of health and wellbeing, economic security, and a say in shaping their future while maintaining the integrity of the ecological systems on which all life and production depends” (Cambridge Planning Board, 1993: 43).</p>

Source: Cited by Berke (2002)

Deduced from the multiplicity of the above definitions, it is reasonable to argue that the people and the prevailing circumstances in a specific community, town, region, state or country will determine in what manner the definition of sustainable development should be paraphrased.

The Sustainable Development Commission (2002) (as cited by Power, 2004), an independent advisor to the United Kingdom Government on sustainable development, founded six core principles that, from their perspective, determine what sustainable development is and ought to be.

Table 5: Principles for sustainable development

Principles of sustainable development	Explanation
1. Putting sustainable development at the centre	Sustainable development must be the organising principle of all democratic societies, underpinning all other goals, policies and processes.
2. Value nature	We are and always will be part of nature, embedded in the natural world and very dependent for our own economic and social well-being on the resources and systems that sustain life on earth.
3. Fair shares	Sustainable economic development means 'fair shares for all', ensuring that people's basic needs are properly met across the world, whilst securing constant improvements in the quality of peoples' lives through efficient, inclusive economies.
4. Polluter pays	Sustainable development requires that we make explicit the costs of pollution and inefficient resource use, and reflect those in the prices we pay for all products and services, recycling the revenues from higher prices to drive the sustainability revolution that is now so urgently needed, and compensating those whose environments have been damaged.
5. Good governance	There is no one blueprint for delivering sustainable development. It requires different strategies in different societies. However, all strategies will depend on effective, participative systems of governance and institutions, engaging the interest, creativity and energy of all citizens.
6. Adopting a precautionary approach	Scientists, innovators and wealth creators have a crucial part to play in creating genuinely sustainable economic progress. However, human ingenuity and technological power is now so great that we are capable of causing serious damage to the environment or to peoples' health through unsustainable development that pays insufficient regard to wider impacts.

Source: Sustainable Development Commission, 2002 (as cited by Power, 2004)

Although strategies for the sustainable development of any one community may differ due to different circumstances in the community, strategies should primarily be founded on the principles for sustainable development.

2.4 Sustainable communities

“The sustainable community is a model, an ideal set of goals to work toward. But it also is a philosophy for envisioning those goals and a practical problem-solving process for achieving them” (Geis & Kutzmark, 2006). “A sustainable community seeks to maintain and improve the economic, environmental and social characteristics of an area so its members can continue to lead healthy, productive, enjoyable lives” (Hart, 2012 cited by United States Environmental Protection Agency 2012). The real challenge of creating a sustainable community lies in the process of harmonizing the expectations and needs of the community with the values of sustainability. A sustainable community is a community that is economically, environmentally, and socially healthy and strong (Institute for Sustainable Communities, 2014).

To accomplish the process successfully, the fundamental values of sustainability have to form the nucleus of the development and planning approach. A sustainable community underwrites objectives that reflect respect for both the natural environment and human nature (Geis, & Kutzmark, 2006). A sustainable community should essentially strive to achieve the following characteristics and goals:

- Place a high value on quality of life. A sustainable community accepts that communities are first and foremost for people and that the primary objective of the planning and development process is to improve the quality of life of its residents socially, economically, psychologically, and spiritually. It implements policies to achieve quality of life and does so in a fair, open, and democratic manner.
- Respect the natural environment. A sustainable community recognises its relationship to nature and sees nature's systems and components as essential to its wellbeing. It provides access to nature through metropolitan parks, open-space zones, and urban gardens. It understands the sensitive interface between the natural and built environment, develops in a way that will support and complement – not interfere with – nature, and avoids ecological disasters.
- Infuse technology with purpose. A sustainable community uses appropriate technology, while ensuring that technology in the built environment is a means to an end, rather than an end unto itself. It emphasizes learning and understanding how existing and new technology can serve and improve communities, not vice versa. It sets clear and measurable goals for what it wants technology to achieve.
- Optimise key resources. A sustainable community takes an inventory of its human, natural, and economic resources and understands their finite quality. It ensures that forests are not

overused, people are not underemployed, and the places of the built environment are not stagnant and empty. It reduces waste and reuses resources; it creates conditions in which all these resources can be used to their fullest and best potential, without harming or diminishing them.

- Maintain scale and capacity. A sustainable community recognises the importance of scale and capacity with regard to the natural and human environment. It ensures that the environment is not overdeveloped, overbuilt, overused, or overpopulated. It recognises the signs of tension that indicate when the environment is overstressed and can adjust its demands on the environment to avoid pollution, natural disaster, and social disintegration (Geis, & Kutzmark, 2006).

“[A] sustainable community reflects the interdependence of economic, environmental, and social issues by growing and prospering without diminishing the land, water, air, natural and cultural resources on which communities depend. Housing, transportation and resource conservation are managed in ways that protect economic, ecological and scenic values” (Natural Resources Defence Council, 2012).

The Institute for Sustainable Communities (2014) views the concept of a sustainable community as a framework to guide action; the following table offers some examples from their experience:

Table 6: The concept of a sustainable community as a framework to guide action

Example:	Explanation
A Healthy Climate and Environment	<ul style="list-style-type: none"> • Protection and enhancement of local and regional ecosystems and biological diversity. • Conservation of water, land, energy, and non-renewable resources. • Utilisation of prevention strategies and appropriate technology to minimise pollution. • Use of renewable resources no faster than their rate of renewal. • Infrastructure that improves access to services and markets without damaging the environment.
Social Wellbeing	<ul style="list-style-type: none"> • Satisfaction of basic human needs for clean air and water and locally sourced nutritious, uncontaminated food. • Affordable provision of quality health prevention, care, and treatment services for all community members. • Safe and healthy housing accessible to all.

	<ul style="list-style-type: none"> • Equitable access to quality education services, formal and informal. • The basic human rights of all community members are respected and defended against injustices including exploitation and psychological and physical harm. • Protection, enhancement and appreciation of community manifestations of cultural diversity, treasures, customs, and traditions.
Economic Security	<ul style="list-style-type: none"> • Community members equitably benefit from a strong and healthy community-centred economy. • Diverse and financially viable economic base. • Reinvestment of resources in the local economy. • Maximisation of local ownership of businesses. • Meaningful employment opportunities for all citizens. • Responsive and accessible job training and education programs that enable the workforce to adjust to future needs. • Businesses that enhance community sustainability.

Source: Institute for Sustainable Communities (2014)

2.5 Planning for sustainable communities: addressing layout and design approaches.

“The kind of change required by sustainability implicates each community, each household, and each individual. Successful solutions to problems at this level of society will need to be rooted in the cultural specificity of the town or region if the people are to be supportive of and involved in such change” (UNESCO, 1997, as cited by Teaching and Learning for a Sustainable Future, 2010).

Subsequent to an eighteen-month investigation, during which contributions of over seventy national, regional and local regeneration and development organisations were obtained and scrutinised, the Sustainable Development Commission (SDC) concluded that there are three (3) fundamental aims that should dominate the development or regeneration approach regarding a sustainable community. These aims are a healthy environment, a prosperous economy and the social wellbeing of the inhabitants (Power, 2004). In terms of the urban planning context, these aims also need to be addressed in the layout and design approaches. The planning and design of sustainable communities are essential. “Everyone has the right to an environment that is not harmful to their health or wellbeing; and to have the environment protected for the benefit of

present and future generations through reasonable legislative and other measures that prevent pollution and ecological degradation as well as promote conservation and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development” (United Nations, 1997).

“Inclusiveness and low-footprint design that targets public transport, pedestrianisation schemes and cycle lanes and facilities, urban gardens and food markets, energy and water efficient, low-footprint design of buildings and infrastructure, are essential elements that, in combination can be employed for successful urban design and spatial planning” (Peter & Swilling, 2012).

The table below summarises the sustainable community building blocks, which should form part of the layout and design approach, described by Williams (2000).

Table 7: Sustainable community building blocks

Sustainable community building blocks	Explanation
Parks	In urban areas, open spaces are a vital feature of sustainable development and initiatives for it can contribute to the surrounding environment and community if it is located correctly and maintained properly. These parks can provide places where people can meet and take part in various activities.
Water supply	Water is a limited resource and the quality of water, especially in urban areas, is not very high. Urbanisation adds more pressure on the municipalities to provide clean water for the people. Water conservation strategies must be supported by the public and programmes as the use of water in a sustainable manner is vital – especially in urban cities.
Sewerage	It is important that the sewerage systems are well designed and well maintained in order to ensure the optimal functionality of the systems. Equally important is the availability of well-trained maintenance personnel.
Solid Waste Management	Urbanisation increases pressure on solid waste management. The solution includes preventing the situation from getting worse rather than to follow an entire clean-up process. The four R’s are the preferred options: reduce, reuse, recycle and recover.

Energy Efficiency	Energy efficiency refers to getting more done with less to do it with. Delivering the same quality of service while requiring a lot less energy and electricity is a challenge. This can be done by making use of solar terminal energy, wind power, biomass, micro-hydro-projects and by integrating energy considerations into all planning decisions.
Air Quality	The effect of bad air quality on both the health of the people in communities and the natural environment is critical. Air quality is closely linked with climate change and ozone layer depletion. Therefore, this building block should be considered as vital in the designing and planning process of sustainable communities.
Transportation	Motor vehicles are a serious form of unsustainability and unsustainable transport systems. These systems increase congestion, longer commuting times and higher prices due to reduced work production. This problem can be solved by planning layouts and communities that are more focused on mixed land uses, low car use infrastructure, higher transit systems and more modes with opportunities for walking and cycling.
Land Use	Sustainable land use can help revitalise communities and provide substantial environmental, economic, social and cultural benefits.
Housing and Community Development	Creating liveable communities is important for increasing the life quality for community members of all ages and statuses.

Source: Williams (2000) based on *Environmental Planning for Sustainable Urban Development*.

2.6 Conclusion

The concept of sustainability is more than only a theory. Fundamentally it is a long-term practical solution through which the quality of life of people is prolonged, improved and protected. This outcome can however only be realized, when the basic values, principles and objectives which are intrinsic to the concept, are entrenched in a clearly defined policy which is applicable to all facets of life and that are supported by the community and individuals.

Layout and design are the spatial planning for communities and are considered as, the framework within which opportunities are created to develop sustainable communities. Creating the layout and design of sustainable communities requires visionary planning, guided by innovative initiatives and properly defined long-term objectives. Although the social composition and environmental characteristics, of any one community differs from the other, various layout and design models had been devised, had been implemented, and could be integrated as building blocks for the layout

and design for sustainable communities. For this reason, certain existing layout and design models will be discussed in Chapter 3.

Chapter 3: Layout and design approaches and models

The following diagram illustrates the structure of Chapter 3.

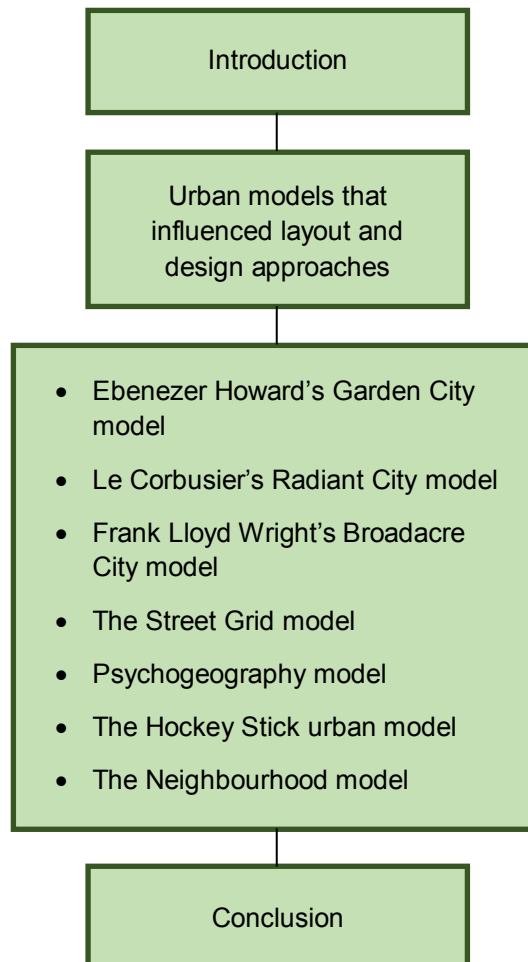


Diagram 3: Structure of Chapter 3

3.1 Introduction

In light of the emphasis placed on sustainability and sustainable development as part of urban planning approaches, various layout and design models were evaluated in this chapter, in an attempt to determine best practices and applicable models that underwrite objectives of sustainability.

Many schematic layouts and designs were structured in an attempt to design/create the ideal city form (sustainable urban form), of which only a few have had an enduring influence on modern concepts. According to Badger (2012), there are ten layout and design diagrams, which have

influenced urban planning since the early twentieth century. Seven of these diagrams are discussed below, including Ebenezer Howard's Garden City model, *Le Corbusier's* Radiant City model, Frank Lloyd Wright's Broadacre City model, Street Grid model, Psychogeography model, Hockey Stick model and The Neighbourhood model.

3.2 Urban models that influenced layout and design approaches

3.2.1 Ebenezer Howard's Garden City model

At the beginning the nineteenth century, industrial cities were overcrowded and polluted. To eradicate this problem, Howard came up with the idea to develop smaller cities situated in a greenbelt surrounding the inner-city. The so-called "Garden Cities" accommodating \pm 32 000 people, were to be in close proximity to each other and linked by multiple channels and passageways (Badger, 2012).

The Town and Country Planning Association (2012) proclaims that "[a] Garden City is a town designed for healthy living and industry; of a size that makes possible a full measure of social life, but not larger; surrounded by a rural belt; the whole of the land being in public ownership, or held in trust for the community." In Figure 3 Ebenezer Howard's Garden City model will be illustrated.



Figure 3: Ebenezer Howard's Garden City model
Source: Badger (2012) Courtesy of the Town and Country Planning Association

Howard delineated three respective dynamic elements (three magnets), demonstrated below in Figure 4, that he believed would persuade and attract people to live in these “Garden Cities”:

- **The town element:** typically associated with economic and cultural opportunities, amusement and high wages;
- **The country element:** representative of tranquillity, natural beauty, fresh air and low rents; and
- **The town-country element:** embodies a combination of all of the aforementioned advantages (LeGates & Stout, 2013).

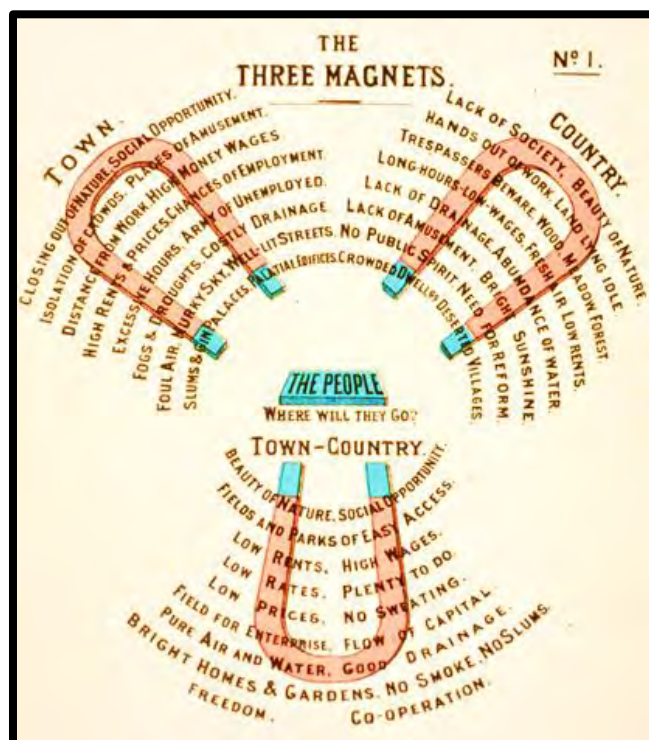


Figure 4: The Three Magnets
Source: Turner (2011)

With this model, Howard envisioned self-sufficient communities where people could simultaneously experience the benefits of city and country life. Howard was convinced that this layout and design would prevent metropolitan sprawl and industrial centralisation (Howard, 1902).

The following table recapitulates the principle concern, characteristics, advantages and disadvantages of the Garden City layout. Current examples of the layout and place-making principles are likewise displayed.

Table 8: Ebenezer Howard’s Garden City model

Ebenezer Howard’s Garden City model	
Principle concern	<ul style="list-style-type: none"> • Depopulation of rural areas.
Characteristics	<ul style="list-style-type: none"> • Self-reliant satellite towns. • Encircled by a green belt. • Low residential densities. • Separation of land uses. • Open road networks.
Advantages	<ul style="list-style-type: none"> • Combining the best elements of city and country. • The size of the garden city enriches social life.
Disadvantages	<ul style="list-style-type: none"> • Low density does not promote self-containment. • In most instances, the greenbelt separating the “Garden Cities” from the inner-city eventually disappeared due to urban infill (LeGates & Stout, 2013). • Traffic upsurges.
Current examples and applicability of the concept	<ul style="list-style-type: none"> • Letchworth in England. • Radburn (New York) in the USA.

3.2.2 *Le Corbusier’s* Radiant City model

In 1920, a French architect named Le Corbusier, contrary to Howard, proposed the “Radiant City” or the “Towers in the Park” layout and design model that endorses a high-density city. At the core of Le Corbusier’s design lay the notion to find a solution for the traffic congested streets and smoke-filled slums of the modern city. Le Corbusier advocated that condensed cities would reduce the distance that people would have to travel into the city. The model suggested that the city be divided into large blocks, each block having extremely tall buildings that could accommodate a high number of people and businesses, surrounded by large parks or grasslands covering 48% to 95% of the area. The blocks were divided further into different zones reserved for either business or residential purposes. Moreover, Le Corbusier was convinced that his model would prevent urban sprawl and ensure easy access to the surrounding parks or grasslands (Badger, 2012).

Later, during the era of urban renewal, *Le Corbusier’s* design played a significant role in the design of massive public housing projects in the US (Badger, 2012). The figure below illustrates *Le Corbusier’s* Radiant City model.

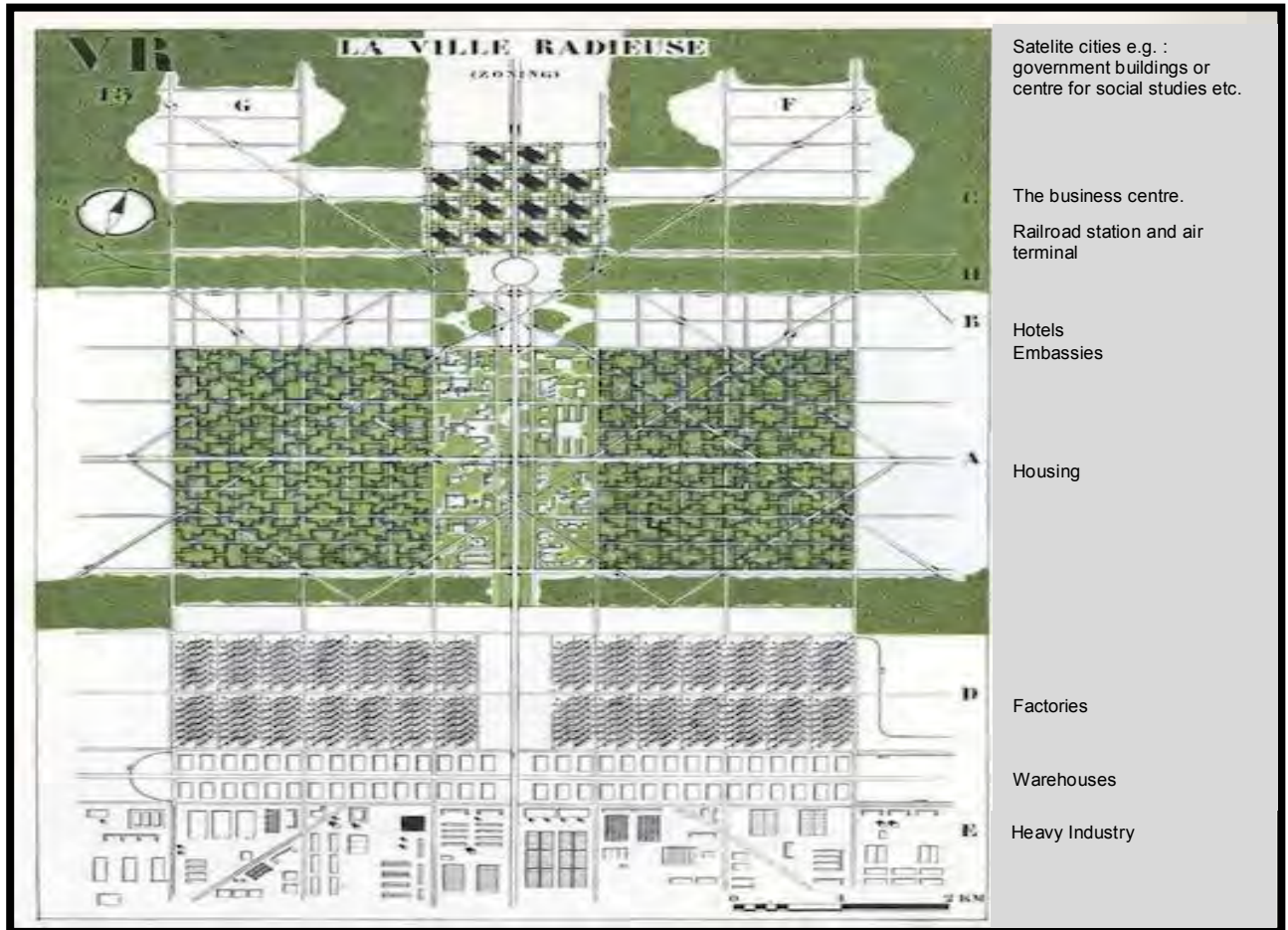


Figure 5: Le Corbusier's Radiant City model
Source: Badger, 2012, from Le Corbusier's "The Radiant City" (1933)

The figures below illustrate a typical example of the *Le Corbusier's* design, are of the *Pruitt-Igoe* housing project in St. Louis that was demolished just eighteen (18) years after it was built.

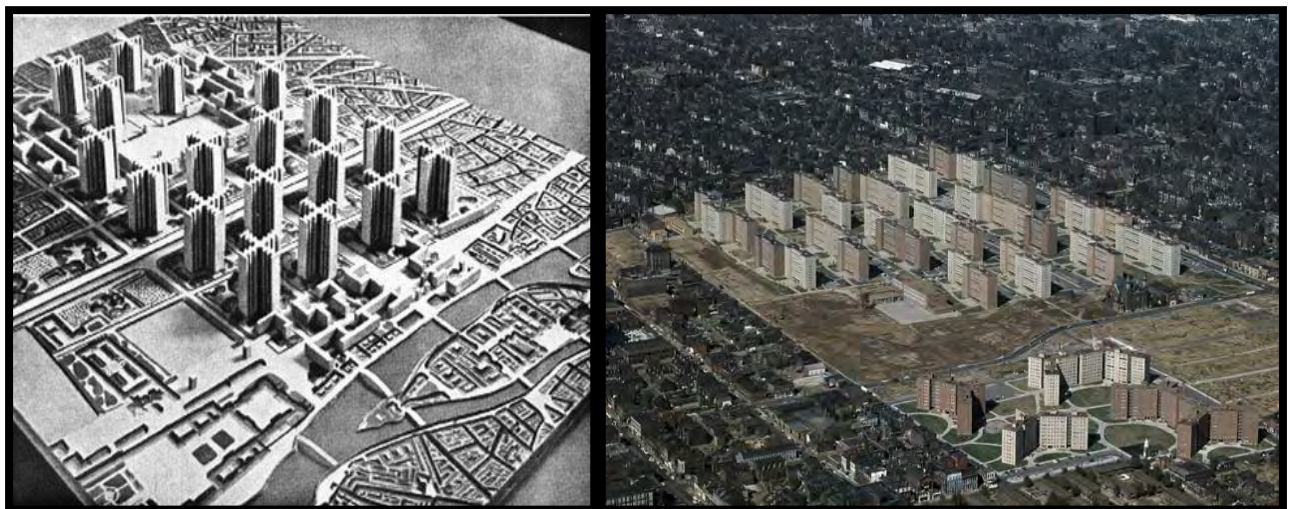


Figure 6: Pruitt-Igoe housing project
Source: Badger, 2012 United States Geological Survey

The following table summarises the principle concerns, characteristics, advantages and disadvantages of the Radiant City layout. Current examples of the layout and place-making principles are likewise displayed.

Table 9: Le Corbusier’s Radiant City model

Le Corbusier’s Radiant City model	
Principle concern	"Towers in the Park" layout and design model that endorsed a high-density city.
Characteristics	Blocks that had extremely tall buildings that could accommodate a high number of people and businesses. The blocks were surrounded by large parks or grasslands.
Advantages	The blocks were divided and could be used for residential and/or business purposes. Transport would have had minimal impact on environment – lower carbon footprint. Prevent urban sprawl. Ensure easy access to the green spaces (parks or grasslands).
Disadvantages	Isolation into a separate world. Limited services available. Fragmented areas.
Current examples and applicability of the concept	Brazilian Capitol – Brazil. The first and most famous of these buildings, also known as <i>Cité radieuse</i> (radiant city) and, informally, as <i>La Maison du Fada</i> (French – Provençal, "The Nutter's House"), is located in Marseille, France, and was built between 1947 and 1952.

3.2.3 Frank Lloyd Wright’s Broadacre City model

Frank Lloyd Wright, born in 1867, was both architect and writer and explained his theory on the suburban “Broadacre City” design as follows: “The Broadacre city, where every family will have at least an acre of land, is the inevitable municipality of the future. We live now in cities of the past, slaves of the machine and of traditional building. We cannot solve our living and transportation problems by burrowing under or climbing over, and why should we? We will spread out, and in so doing will transform our human habitation sites into those allowing beauty of design and

landscaping, sanitation and fresh air, privacy and playgrounds, and a plot whereon to raise things” (dpr-barcelona, 2010).

Pimlott (2011) states that “Frank Lloyd Wright (1869-1958) revealed his approach to the problems of the American city and territory.” The Broadacre City (1935-1950s) project, presented a vision with fundamentals dispersed across a section grid. The Broadacre City was planned as a natural development starting the urban, centralised city to a decentralised, rural sprawl (Metcalf, 2010).

Badger (2012) asserts that “America’s 1785 Land Ordinance divided most of the country’s unsettled interior west of the Ohio River into a neat grid of townships six (6) square miles in size (each containing thirty-six (36) square-mile parcels of land for the kind of agrarian, land-owning society Thomas Jefferson envisioned).” Frank Lloyd Wright divided this rural grid into acres so that each family would live on their own acre. By executing this vision, Suburbia would spread over the entire country (Badger, 2012).

The vertical roads and the perfectly arranged square farms are remnants of the Land Ordinance of 1785 and are still visible today. (Badger, 2012).



Figure 7: Frank Lloyd Wright’s Broadacre City model
Source: Badger, 2012, courtesy the Frank Lloyd Wright Foundation Archives

The following table recapitulates the principle concerns, characteristics, advantages and disadvantages of the Broadacre City layout. Current examples of the layout and place-making principles are likewise displayed.

Table 10: Frank Lloyd Wright’s Broadacre City model

Frank Lloyd Wright’s Broadacre City model	
Principle concern	<ul style="list-style-type: none"> • Frank Lloyd Wright worked on a utopian scheme in the early 1930’s. This scheme was called Broadacre City, which was exclusive, for it was built on the sizes of the township and section grid.
Characteristics	<ul style="list-style-type: none"> • A pattern was established that would shape further development that followed.
Advantages	<ul style="list-style-type: none"> • Villages infrequently formed because farmhouses stood in their square fields. • State and county borders were straight because of the firm layout of the acres. • A one-mile grid of arterial streets was created due to urban development that occurred in sectional increases.
Disadvantages	<ul style="list-style-type: none"> • High volume traffic. • Increased pollution. • Urban sprawl.
Current examples and applicability of the concept	<ul style="list-style-type: none"> • Phoenix, USA. • Chicago, USA. • Las Vegas, USA.

3.2.4 The Street Grid model

According to Grant (2012), “[t]he grid embodies a rational, Cartesian conception of space, but its chief virtues are its simplicity, scalability and pragmatism.”

“The Rectilinear Grid Pattern is a street system providing maximum road connections and some road hierarchy. It represents the classic grid street pattern used in many street systems laid out at the turn of the century. This pattern is the preferred pattern in the absence of natural features to

prevent its use” (County of Albemarle Department of Planning and Community Development, 2001).

Characteristics of street grids can include providing opportunities for the creation of blocks, allowing a variety of lot types within an easily managed menu of options, a hierarchy of thoroughfares that provides opportunities for architectural treatment of buildings at corners, alleys that can be loaded on both sides, providing efficiency in infrastructure. It may have park spaces interspersed at regular intervals or more randomly, straight thoroughfares that enhance the character of rolling terrain, it has an easily expandable pattern, does not work well on a steeply sloping terrain in cold climates and it must be seriously deformed to accommodate environmental features such as ravines (County of Albemarle Department of Planning and Community Development, 2001).

In 1960, the street grid was designed to support motor traffic and enable the motor vehicle drivers to drive easy from one destination to another. The street designs fluctuated from each other, for some were wider than the others were and served as a through street. Streets were virtuously residential and all streets shared a similar speed limit (County of Albemarle Department of Planning and Community Development, 2001).

For many years, the street grid has predominantly been the choice of planner’s because of its logical structure, and is still visible today in most cities and towns. The 1811 Commissioner’s Plan for Manhattan proposed a strict and exact street grid to determine the expansion and development of the island. Extension rules and regulations were ignored as well as the irregularly shaped coastline and topography (Grant, 2012).

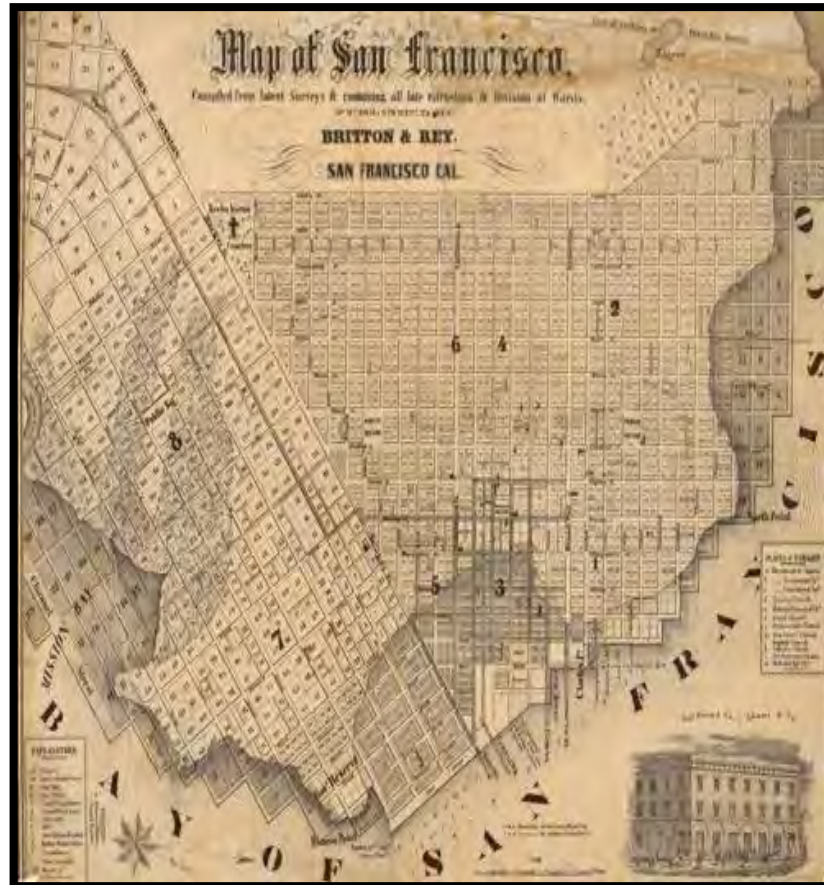


Figure 8: The Street Grid model
 Source: Badger, 2012, courtesy of the David Rumsey Map Collection

The following table describes the principle concerns, characteristics, advantages and disadvantages of the Street grid layout. Current examples of the layout and place-making principles are likewise displayed.

Table 11: The Street Grid model

The Street Grid model	
Principle concern	<ul style="list-style-type: none"> • Enable the motor vehicle drivers to drive comfortably from one destination to another and supports motor traffic.
Characteristics	<ul style="list-style-type: none"> • Ordered and regulatory. • Orientation in space and to elements. • Simplicity and ease of navigation. • Speed of layout. • Adaptability to circumstance.

Advantages	<ul style="list-style-type: none">• Not difficult to survey.• Easily subdivided into regular parcels that are easy to extend.• It is modular, so new districts can be added incrementally as a city grows.
Disadvantages	<ul style="list-style-type: none">• Idealising the winding streets of the past began in the early 19th century.• By the 1950s, huge tracts of suburban cul-de-sacs were being laid out, and the virtues of the grid were forgotten.
Current examples and applicability of the concept	<ul style="list-style-type: none">• Manhattan, New York City, USA.• Potchefstroom, South Africa.• Miami, USA.

3.2.5 Psychogeography model

Guy Debord (1995), self-proclaimed leader of the "Situationist", in his essay *Introduction to a Critique of Urban Geography*, defines Psychogeography as "the study of the precise laws and specific effects of the geographical environment, consciously organized or not, on the emotions and behaviour of individuals."

"Situationist" architects and artists from the 1950s strongly advocated that the layout and design of cities should be inspired by the experienced effects that the built environment has had upon the occupants. The aforementioned is a typical characteristic of the bottom-up layout and design approach in which, through community participation, the experience and needs of the general public are captured and addressed (Debord, 1995).

The map below (1961), from MIT's Kevin Lynch, resulted from a project where individuals were asked to plot the city of Boston from memory, identifying in essence the most unforgettable parts of the city.

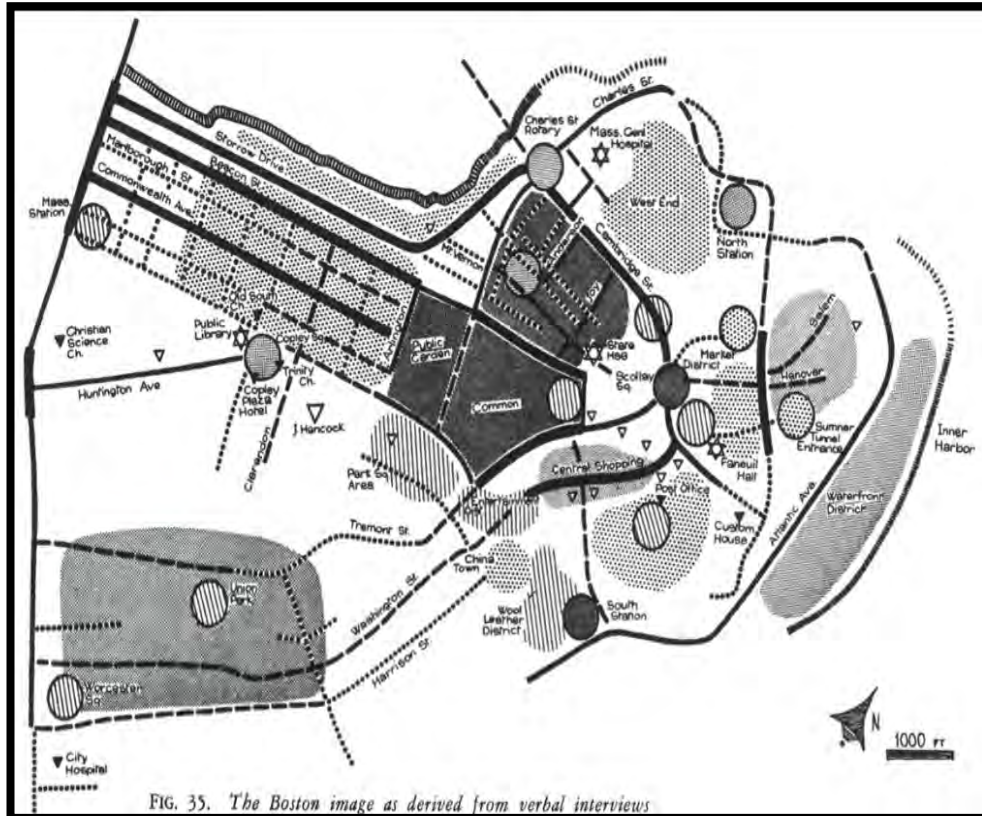


Figure 9: Psychogeography model
 Source: Badger, 2012, from Kevin Lynch, "The Image of the City" (1960)

The following table recapitulates the principle concerns, characteristics, advantages and disadvantages of the Psychogeography layout. Current examples of the layout and place-making principles are likewise displayed.

Table 12: Psychogeography model

Psychogeography model	
Principle concern	<ul style="list-style-type: none"> The psychogeography model was representative of individuals' personal experience and ascribed meaning of the city life.
Characteristics	<ul style="list-style-type: none"> People of the city were responsible to create the city by mapping their memories and experience.
Advantages	<ul style="list-style-type: none"> Public participation was the main objective. The experience of the city life was captured. The image of the city was adjusted to meet the needs and desires of the people. This way of planning encouraged a more bottom-up approach.

Disadvantages	<ul style="list-style-type: none">• Cultural diversity of communities complicates implementation.
Current examples and applicability of the concept	<ul style="list-style-type: none">• Boston, USA.

3.2.6 The Hockey Stick urban model

Where most of the above layout and designs have been the creation of planners and architects, none has affected the underlying principles of layout and design approaches as Michael Mann's "Hockey Stick" has (Badger, 2012).

Irrespective of the opinion of some cynics, the mainstream assessment is that human settlements and lifestyles have had a direct and decisive impact on climate change. A current view of planners, architects, scientists and other role players are that the layout and design of cities with an efficient infrastructure that promotes walkability, transit access, smaller homes, fewer cars etc. will limit the carbon footprint that the location and form of development have on the climate (Grant, 2012).

This graph from climate scientist Michael Mann illustrates the sudden increase in temperatures in the Northern Hemisphere since the beginning of the Industrial Revolution (Badger, 2012).

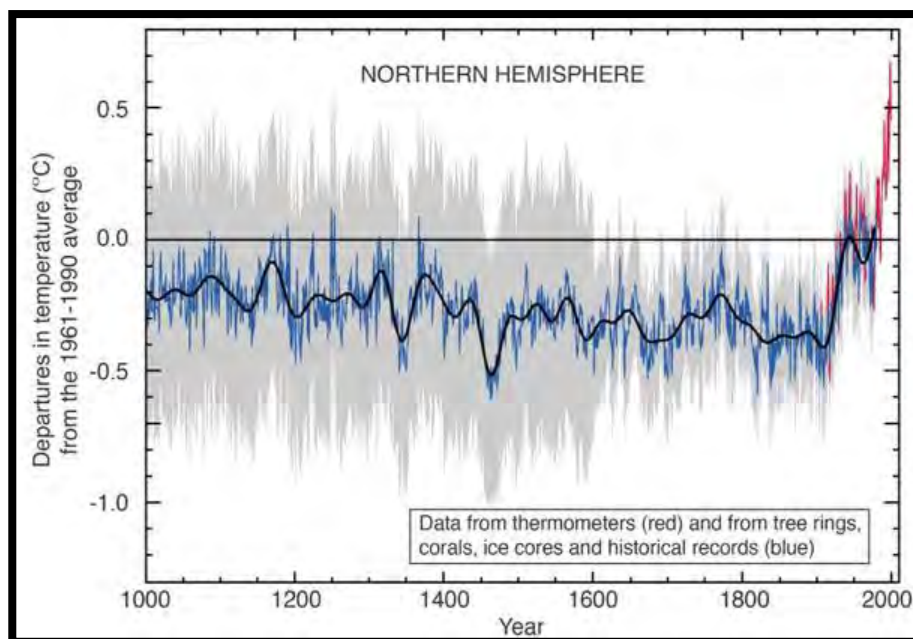


Figure 10: The Hockey Stick urban model
Source: Badger, 2012 Courtesy Michael Mann

The following table summarises the principle concerns, characteristics, advantages and disadvantages of the Hockey stick layout. Current examples of the layout and place-making principles are likewise displayed.

Table 13: The Hockey Stick urban model

The Hockey Stick urban model	
Principle concern	<ul style="list-style-type: none"> Human settlements play a remarkable role in global climate change and have become a dominant elemental idea in planning and architecture.
Characteristics	<ul style="list-style-type: none"> Walkability, transit access, smaller homes, fewer cars and more efficient infrastructure are examples of imperative competences in cities. These competences are necessary tools to reduce the impact on the climate (Grant, 2012).
Advantages	<ul style="list-style-type: none"> Smaller carbon footprint= smaller impact on global climate.
Disadvantages	<ul style="list-style-type: none"> Changing weather patterns.
Current examples and applicability of the concept	<ul style="list-style-type: none"> California, USA.

3.2.7 The Neighbourhood model

The size of a neighbourhood has been defined during the course of planning history. The Treasure Coast regional planning Council (2004) defines the neighbourhood as “a component of a town” and defines its size based upon “a five-minute walking radius”. Figure 11, created by Clarence Perry called *Neighbourhood Unit of the 1920 New York Regional Plan*, was designed with a radius that is measured from the centre of an area. The centre contains elements such as cultural uses, for example a school. Various neighbourhoods were connected together in order to form a town, still with the starting point of designing neighbourhoods with a five-minute walking distance. The centres of neighbourhoods in the 1920s and 1940s were the schools, however, this has changed dramatically in the context of neighbourhoods today. More recently, transit hubs and longer distances were designed and implemented (Treasure Coast regional planning Council, 2004).

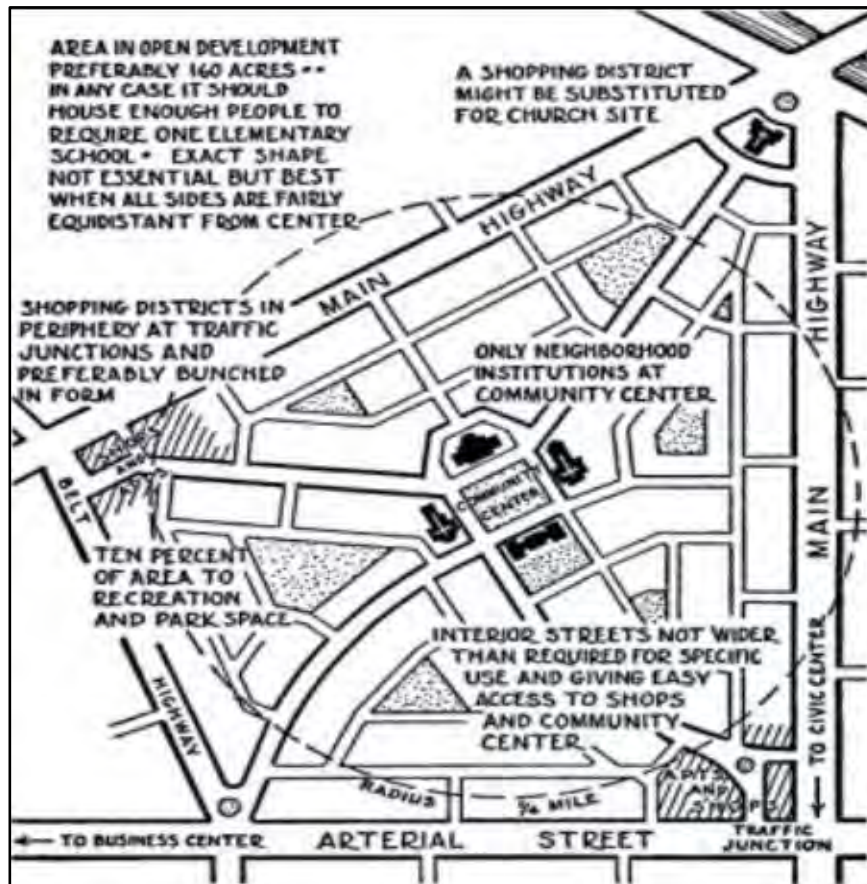


Figure 11: Clarence Perry's Neighbourhood unit
Source: Treasure Coast regional planning Council (2004)

Principles of the Neighbourhood model include pedestrian orientation, neighbourhood friendly streets and paths, interconnected streets and transportation networks, parks and open space neighbourhood centres, buildings and spaces of human scale and relegated parking. It also includes a mix of uses, mix of housing types, affordability with dignity, redevelopment rather than abandonment as well as site planning that respects terrain and clear edges (County of Albemarle Department of Planning and Community Development, 2001).

Figure 12 illustrates the Neighbourhood model.

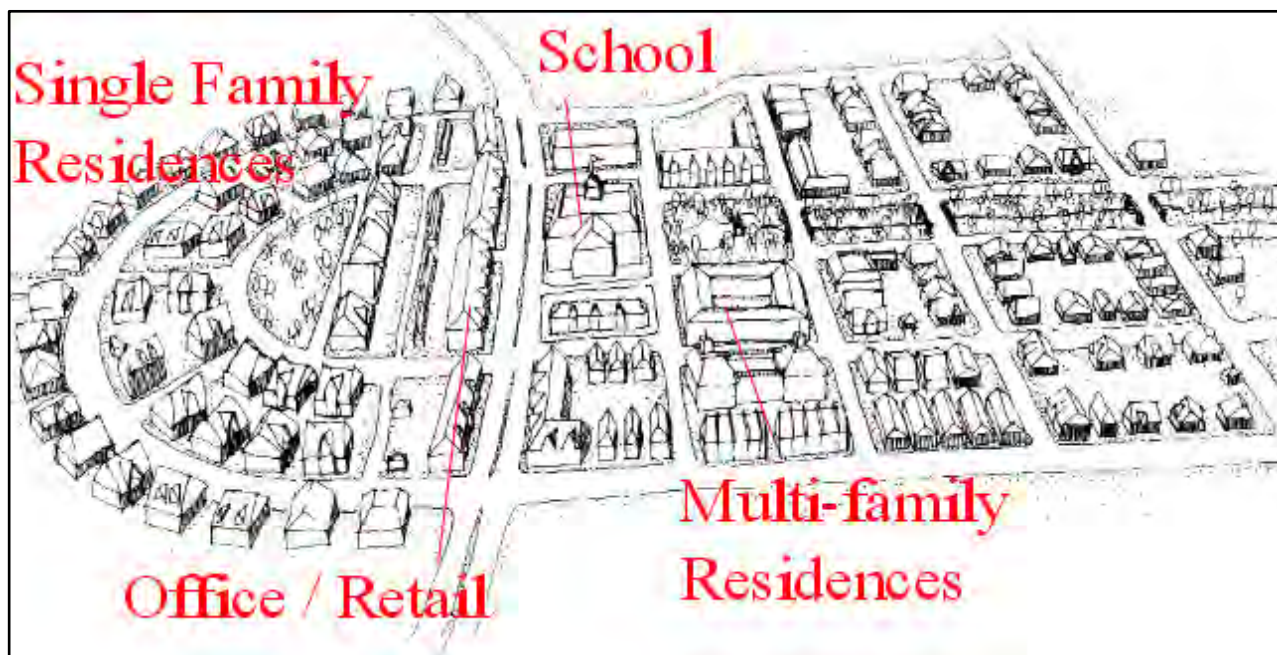


Figure 12: The Neighbourhood model

Source: County of Albemarle Department of Planning and Community Development

The following table recapitulates the principle concerns, characteristics, advantages and disadvantages of the Neighbourhood model. Current examples of the layout and place-making principles are likewise displayed.

Table 14: The Neighbourhood model

The Neighbourhood model	
Principle concern	<ul style="list-style-type: none"> • Changing the form of development.
Characteristics	<ul style="list-style-type: none"> • Market Appeal. • Functional. • Sustainable. • High Quality of Life.
Advantages	<ul style="list-style-type: none"> • Accommodates walkers, cyclists and public transportation. • Open space integral to overall design. • Buildings and spaces are human scaled. • Incorporates varying densities. • Contains a mix of uses. • Streets are interconnected.

	<ul style="list-style-type: none">• Large parking lots are out of site.• Emphasizes the re-use of sites.• Adapts to terrain.• Distinguish clearly between developed areas and rural areas.• Focuses greatest density in neighbourhood centres.
Disadvantages	<ul style="list-style-type: none">• Idealistic more than realistic, in terms of image.
Current examples and applicability of the concept	<ul style="list-style-type: none">• Florida, Johannesburg, South Africa

3.3 Conclusion

There are a number conclusive circumstances, influences, and characteristics unique to a specific area and the surrounding areas that affect the final layout and design of the particular area. In Table 15, the layout and design models discussed above are evaluated in terms of “The Three Spheres of Sustainability”, namely: social, economic and environmental, as delineated in Chapter 2, paragraph 2.3, Figure 2: The Three Spheres of Sustainability, in order to determine to what extent these layout and design models endorse sustainability.

Table 15: The layout and design models evaluated in terms of the Three Spheres of Sustainability.

Layout and design models	Three Spheres of Sustainability		
	Social	Environmental	Economic
Garden city model		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Radiant City model		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Broadacre city model		<input checked="" type="checkbox"/>	
Street Grid model			<input checked="" type="checkbox"/>
Psychogeography model	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Hockey Stick urban model		<input checked="" type="checkbox"/>	
The Neighbourhood model	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Deduced from the above evaluation, barring the Neighbourhood model, it is reasonable to conclude that these layout and design models were not primarily developed to promote the sustainability of a particular area, but rather as a solution for certain circumstances during a specific time period.

From a sustainability point of view, models are reassessed in order to determine best practices that will lead to an integrated approach. Place-making can then be managed as it is an approach through which “The Three Spheres of Sustainability” explicitly integrated through a layout and design approach create a better place for people.

Chapter 4: Place-making approaches

The following diagram illustrates the structure of Chapter 4.

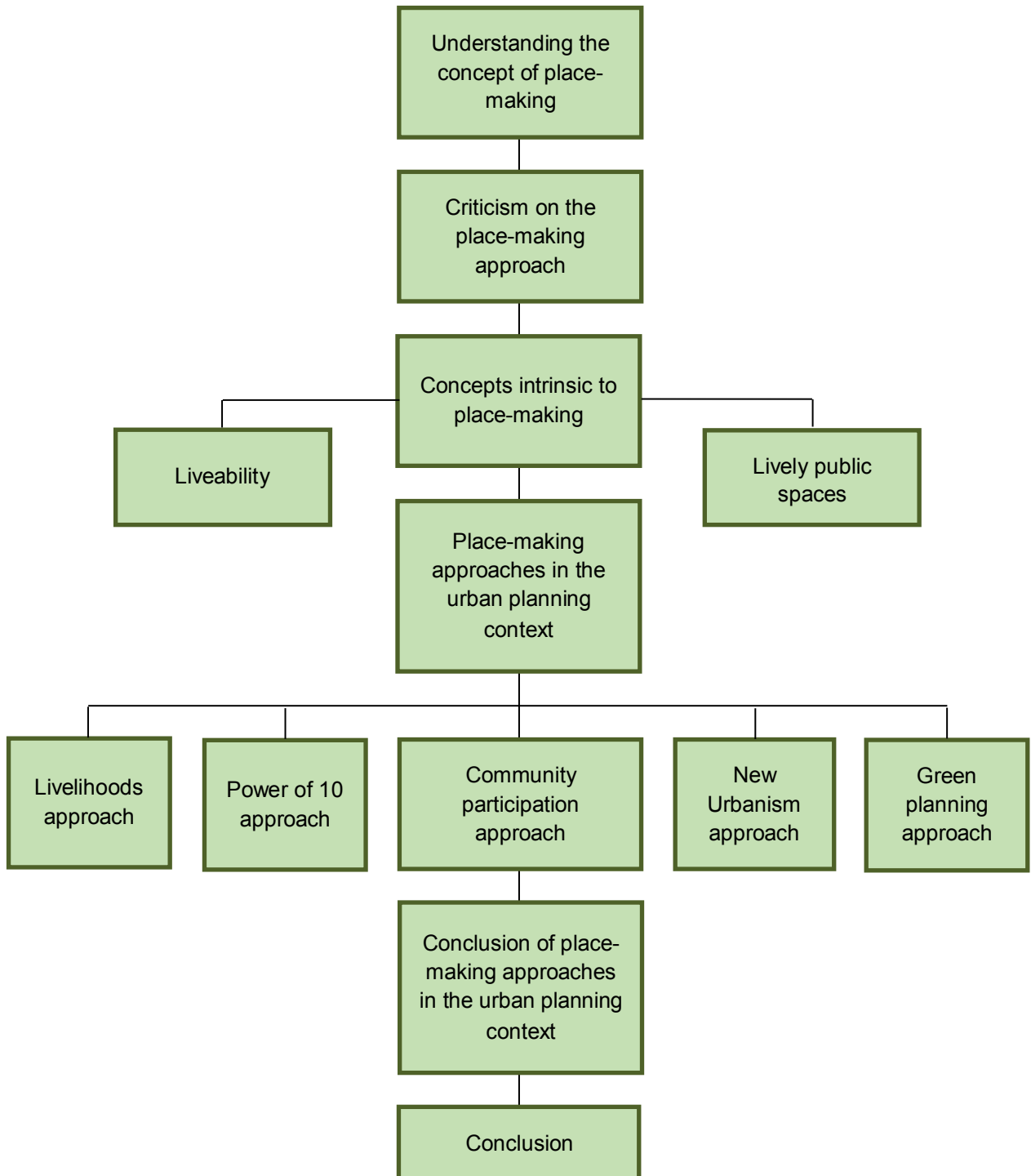


Diagram 4: Structure of Chapter 4

Place-making is discussed in this chapter as an approach to layout and design, which ensures the incorporation of sustainability objectives.

4.1 Understanding the concept of place-making

In his post-World War II speech, Winston Churchill (cited by Geis, & Kutzmark, 2006) considering the reconstruction of neighbourhoods, communities and buildings, said, "[w]e shape our buildings and then they shape us."

There are many descriptions of the concept of place-making, such as "both an overarching idea and a hands-on tool for improving a neighbourhood, city or region" (Project for Public Spaces, 2011a) or, according to Placemaking Chicago (2008), "the art of creating public 'places of the soul', that uplift and help us connect to each other." It is therefore evident that the concept of place-making cannot be encapsulated by one specific definition, but should rather be understood as a wide range of community strategies and initiatives aimed at the improvement of the community's environment and their quality of life (Montgomery, 2006, as cited by Lamit *et al.*, 2012).

"An effective Placemaking process capitalizes on a local community's assets, inspiration, and potential, ultimately creating good public spaces that promote people's health, happiness, and wellbeing". Thus, place-making is a continuous process, which encapsulate peoples' ideas and through which their needs in terms of the liveability and quality of life are fulfilled by using effective planning, layout and design or redesign of their environment (Project for Public Spaces, 2011a).

The Project for Public Spaces (2011a) asserts that perspectives that were presented by futurists Jacobs (2011) and Whyte (1961) (as cited by Jacobs, 2011), were the inspiration which eventually gave way to place-making concepts. In her treatise, *The Death and Life of Great American Cities*, Jacobs proposes ideas, which irrevocably altered planners and activists' approach regarding urban planning. Jacobs (2011) underlines five important perspectives regarding place-making, namely: **Cities as Ecosystems**, where cities should be viewed as living beings and ecosystems wherein the dynamics of streets, buildings and functions can change in response to human use patterns and related interactions; **Mixed Use Development**, a diversity of buildings in a city that are used at different times of the day by different genders and age groups to ensure liveliness in the city; **Bottom-Up Community Planning** – planning for the development of the community, is guided by the community itself and not by other external agendas; **The Case for Higher Density**, where a high concentration of people is imperative for city life, however, the difference between overcrowding and high density lies in the critical mass of people that are needed to stimulate the

community's vitality; and **Local Economies**, in which case, a city's economy is not dependent on large corporation business, the growth of a city's economy is stimulated by more innovative small business entrepreneurs.

A rudimentary objective of the place-making approach is to discover the needs and ambitions of the local community by observing, listening and communicating with the community and subsequently drawing on this knowledge to devise and implement a strategy that effectively fulfils these needs (Placemaking Chicago, 2008). Project for Public Spaces (cited by Placemaking Chicago, 2008) formulated eleven (11) principles to direct a strategy towards efficient place-making. These principles are portrayed in Table 16.

Table 16: Key principles of place-making

Principles	Explanation
The community is the expert	The community members themselves best communicate the community's needs.
Creating a place and not just a design	The place-making concept should be fundamental to the layout and design approach. The layout and design are only the tools.
You can't do it alone	Identify partners who can contribute in terms of management and innovative ideas and can provide political and financial support.
They will always say, "it can't be done"	"We've never done things that way before." Identify and engage people in the community that share the same vision. Use the positives and if possible elderly people to help influence the rest of the community.
You can see a lot just by observing	Observing a space enables you to absorb and understand how that specific space is used on a daily basis.
Develop a vision	The people that use the space effectively should define the vision and character of a space.
Form supports function	Existing trends and habits of a specific area should guide the place-making process
Triangulate	Identifying elements that are situated next to each other to use in a way that promotes activity.
Start with the petunias	Render small changes and implement progressively.
Money is not the issue	Combining the location and the level of activity of the public space, with the involvement and willingness of the partners and local community members can elicit resources from those involved to

	improve these spaces.
You are never finished	Management is the key, because uses of places change constantly and effective responses thereto can only be achieved through good management.

Source: based on *Eleven Principles for Creating Great Community Places (Placemaking Chicago, 2008)*

Thus, place-making as an approach is on-going and driven by the community for the community, facilitated by planners and experts, and takes form in practice through a well-managed and effective layout and design approach, which will transform the community and their environment progressively into a place with good living conditions.

4.2 Criticism on the place-making approach

There are critics who doubt the conclusive role of place-making in layout and design approaches for sustainable communities. Grant (2006) declares: “We can predict planners to continue to look for the one big theory that can explain all, predict all, and offer guidance for practice to create good communities. We can also safely predict that we are not likely to find such a model”.

Critics claims that place-making does not contribute to the development of local economies in previously disadvantaged communities. They assert that place-making only accelerates the gentrification of an area and thereby succeeds in reducing the pressure exerted by the local community and the general public in this regard. If gentrification is primarily project-driven, development-driven, design-driven or artist-led, this criticism is justified and transformation will only be superficial and limit in terms of the long-term outcome. However, in most instances, this criticism is largely due to ignorance regarding the value and objectives of place-making and confusion as to whom the stakeholders and beneficiaries of the process are (Project for Public Spaces, 2013).

4.3 Concepts intrinsic to place-making

From the above definition and description of place-making, it is evident that two concepts are an inextricable part of the place-making approach, namely (1) liveability and (2) lively public spaces, which will be described accordingly.

4.3.1 Liveability

The theory of liveability maintains that a person's subjective appreciation of life primarily depends on the objective quality of life. In other words, the better the living conditions in an area or community, the more contented the people living in the area or community will be (Veenhoven & Ehrhardt, 1995). In turn, the comparison-theory advocates that people in a specific place will be contented if their living conditions are good, irrespective of the knowledge that people living in a different place may experience even better living conditions (Veenhoven & Ehrhardt, 1995). People have widespread needs; liveability is the collective arrangement to fulfil these needs. To regard a place as liveable, the collective requirements and demands have to comply with the needs and capacities of individuals. Hence, citizen-centred initiatives should be the principal angle of incidence in conceiving an approach intending to make a place more liveable (Veenhoven & Ehrhardt, 1995).

Cilliers et al. (2012) states that "liveability reflects the wellbeing of a community and comprises the many characteristics that make a location a place where people want to live now and in the future, such as: employment and incomes, community strength, environment, amenity and place, planning, participation, and infrastructure. Economic and community strength are critical to liveability."

Pacione (2005) asserts that the relation of people to their everyday environment or living space determines the living conditions in the area and that the prevailing living conditions are a measure of the liveability of the area. Pacione (2005) delineates the two fundamental measures of liveability as the cost of living and the quality of life.

Economic, social and environmental factors are used when either liveability or quality of life is measured, however, the purpose and the results are different. When the liveability of a place is measured, the objective would be to gauge the liveability characteristics as well as the quality and incidence of services and facilities of a place in terms of these factors. Conversely, when the quality of life is measured, the focus would be to gauge the liveability characteristics and the wellbeing of the inhabitants of a place in terms of these factors. As opposed to quality of life that is primarily being dictated by the subjective experience of people, the liveability of a specific area can be manipulated and influenced through devised policies and layout and design (VCEC, 2011).

Although indices of liveability and quality of life is derive from a weighted list of mostly locational characteristics that supposedly contribute to liveability, they are currently used as a benchmarking tool in the evaluation of towns and cities in terms of liveability and quality of life (VCEC, 2011).

Table 17 encapsulates fundamental liveability indices currently employed to measure liveability in a city.

Table 17: Summary of the core liveability indices

Indices	Measurement
<p>Economist Intelligence Unit</p> <p>Ranks 127 cities on <u>liveability</u> as part of the Worldwide Cost of Living Survey, based on five weighted categories (VCEC, 2011:6):</p>	<ol style="list-style-type: none"> 1. Stability (25%) – crime and conflict 2. Healthcare (20%) – availability, quality 3. Culture and environment (25%) – climate, recreation, services 4. Education (10%) – availability, quality 5. Infrastructure (20%) – transport, links, housing, utilities, services
<p>Mercer human resource survey</p> <p>The <u>quality of living</u> study has 39 factors that are grouped into 9 key categories (VCEC, 2011:6):</p>	<ol style="list-style-type: none"> 1. Political and social environment 2. Economic environment 3. Socio-cultural environment 4. Health and sanitation 5. Schools and education 6. Public services and transportation 7. Recreation, natural environment 8. Consumer goods 9. Housing
<p>Anholt city brand index</p> <p>Assesses how people <u>perceive</u> the images of cities, using a survey of nearly 20,000 consumers in 18-20 countries. Cities are evaluated in terms of:</p>	<ol style="list-style-type: none"> 1. Presence (city’s international status and standing) 2. Place (beauty, climate and other physical attributes) 3. Potential (economic and educational opportunities) 4. Pulse (urban appeal and lifestyle) 5. People (friendliness, openness, cultural diversification and safety)

	<ol style="list-style-type: none"> 6. Prerequisites (basic facilities: hotels, schools, transport, sports)
<p>EU Urban Audit</p> <p>Benchmarking of <u>quality of life</u> in 58 European cities. Represents the most comprehensive attempt to assess the liveability and competitiveness of cities and regions (VCEC, 2011:7). The core issues include:</p>	<ol style="list-style-type: none"> 1. Population, nationality, household structure 2. Labour market, employment, income disparities, poverty 3. Housing 4. Health 5. Crime 6. Economic activity, civic involvement 7. Education and training, level of educational qualifications 8. Air quality, noise, water, waste management 9. Land use, travel patterns, energy use 10. Climate and geography, culture, recreation
<p>Global competitiveness index</p> <p>Developed in 2004, measures national competitiveness in using a weighted average of factors that contribute to countries <u>competitiveness</u>. The factors are grouped into twelve categories (VCEC, 2011:13):</p>	<ol style="list-style-type: none"> 1. Institutions 2. Infrastructure 3. Macro economy 4. Health and primary education 5. Further education and training 6. Goods market efficiency 7. Labour market efficiency 8. Financial market sophistication 9. Technological readiness 10. Market size 11. Business sophistication 12. Innovation
<p>Creativity index</p> <p>Indicator for 'overall standing in creative economy, <u>economic potential</u>' (Florida 2002), based on four factors:</p>	<ol style="list-style-type: none"> 1. Creative share of workforce (proportion in creative occupations) 2. High tech industries 3. Innovation (measured as the number of patents per capita) 4. Diversity (measured by the number of gay people per capita)

Source: VCEC, 2011 (as cited by Cilliers et al., 2012)

Although the combination liveability measures encompassed in the different surveys varies, common factors such as access to infrastructure and services, social equity and cohesion and climatic conditions are included. Notwithstanding fact that the weighting given to each factor is subjective and therefore differs according to the survey (VCEC, 2011), it suffices to find the most common used issues of liveability.

It is important to understand that there is a definitive difference between liveability and liveliness. While liveability is defined in terms of the quality and incidence of services in a place, the liveliness of a place is measured in terms of the frequency and way in which the community takes advantage of the services and facilities available in one place; "... liveliness is entirely associated with people and activities and it can be assessed by measuring pedestrian flows and movements, the uptake of facilities and the existence or otherwise of 'things to do'" (Montgomery, 2006, as cited by Lamit *et al.*, 2012). The following section will elaborate on lively public spaces.

4.3.2 Lively public spaces

The people living in a specific place are the so-called "public", therefore, the focus throughout the process of creating lively public places should primarily be to ensure that the public grounds are accessible and open for a wide range of user groups (Hobart City Council, 2011).

The place-making approach is rooted in the principle that a successful public space is also a lively place with distinctive functions that attract a wide variety people. In these lively public spaces, the many functions and activities about community life that take place induce a feeling of ownership and connectedness that therefore influence people to stay or return to the place. Lively places can be regarded as spaces with a function (*Cilliers et al.*, 2012).

A space signifies the physical and geometrical characteristics of an environment, which, when occupied by people and enhanced by lively elements, are transformed into a place (Harrison & Dourish, 1996).

Great public places have four main key attributes: access and linkages, comfort and image, uses and activities, and sociability. These are evaluated in terms of specific factors within each key attribute that are needed for the space to be regarded as a successful public place (*Cilliers et al.*, 2012).

As illustrated in Figure 13 below, an ordinary place can be transformed into a lively place by augmenting certain key attributes in intangible measurements.



Figure 13: What makes a Great Place?
 Source: *Project for public spaces (2012)*

To effectively accomplish the transformation of a space into a lively public place, the public place should be made highly attractive (Soholt, 2004) which can be done by including various initiatives such as residential development, educational institutions, open spaces and other facilities (Hobart City Council, 2011). Paul Bevan (The Economist Intelligence Unit, 2010) notes that living, working and playing are ideally much closer together than often found and that, when an area is unliveable, it may be owing to the loss of this proximity.

Cilliers *et al.* (2012) assert that norms by which places are evaluated are wide-ranging and common factors that are representative of successful public spaces are not limited to the physical dimensions of a place, as summarised in Table 18 below:

Table 18: Factors of successful public places

Factor	Description of successful public space
Identity	Historically, public spaces were the centre of communities; traditionally it helped shape the identity of entire cities by their image.
Attractions	Great public spaces have a variety of smaller "places" within it that appeal to various people. Functions create attractions.
Amenities	A public space should feature amenities that make it comfortable for people to use. A good amenity will help establish social interaction.
Flexibility	The use of a public space naturally changes during the day, week, and year. To respond to natural fluctuations, flexibility needs to be built in at the outset.
Seasonal	Successful public spaces need more than one design, which can change with the seasons. Adaptive usage.
Access	A civic destination needs to be easily accessible, include crosswalks, lights timed for pedestrians, slow moving traffic and proper signage.
Visibility	The elements within space should be visible from a distance, and the ground floor activity of buildings surrounding it should entice pedestrians to move.

Source: Adopted from Baltimore City Department of Planning (2010, as cited by Cilliers et al., 2012)

Historically, public spaces were places with streets, marketplaces, boulevards, gardens, squares, courtyards, etc., where residents spent a great deal of their time (Loudier & Dubois, 2001). Present-day traditional planning schemes that are implemented have proved to be somewhat unsuitable to new lifestyles; public places are mostly rather dysfunctional and dehumanized places lacking quality and proper use, and the absence of on-site managers contributes to ineffective public spaces (Loudier & Dubois, 2001).

To create lively public spaces, efforts in the area should focus to render services and opportunities that are versatile, accessible and attractive to a wider range of user-groups and that encourage them to stay. To accomplish this, initiatives such as more residential development, more education institutions in the city centre and attractive facilities and open spaces can be developed (Hobart City Council, 2011). Initiatives such as public transport and roads, arts, entertainment and sporting, social and cultural events may be added (The Economist Intelligence Unit, 2010). To achieve versatility in an area, alternative uses of the city space should be encouraged (Hobart City Council, 2011).

The current physical structure of cities provides for public life, but further opportunities should be developed to strengthen a range of activities within one space in order to create lively city spaces with many benefits, as portrayed in Figure 14 below.

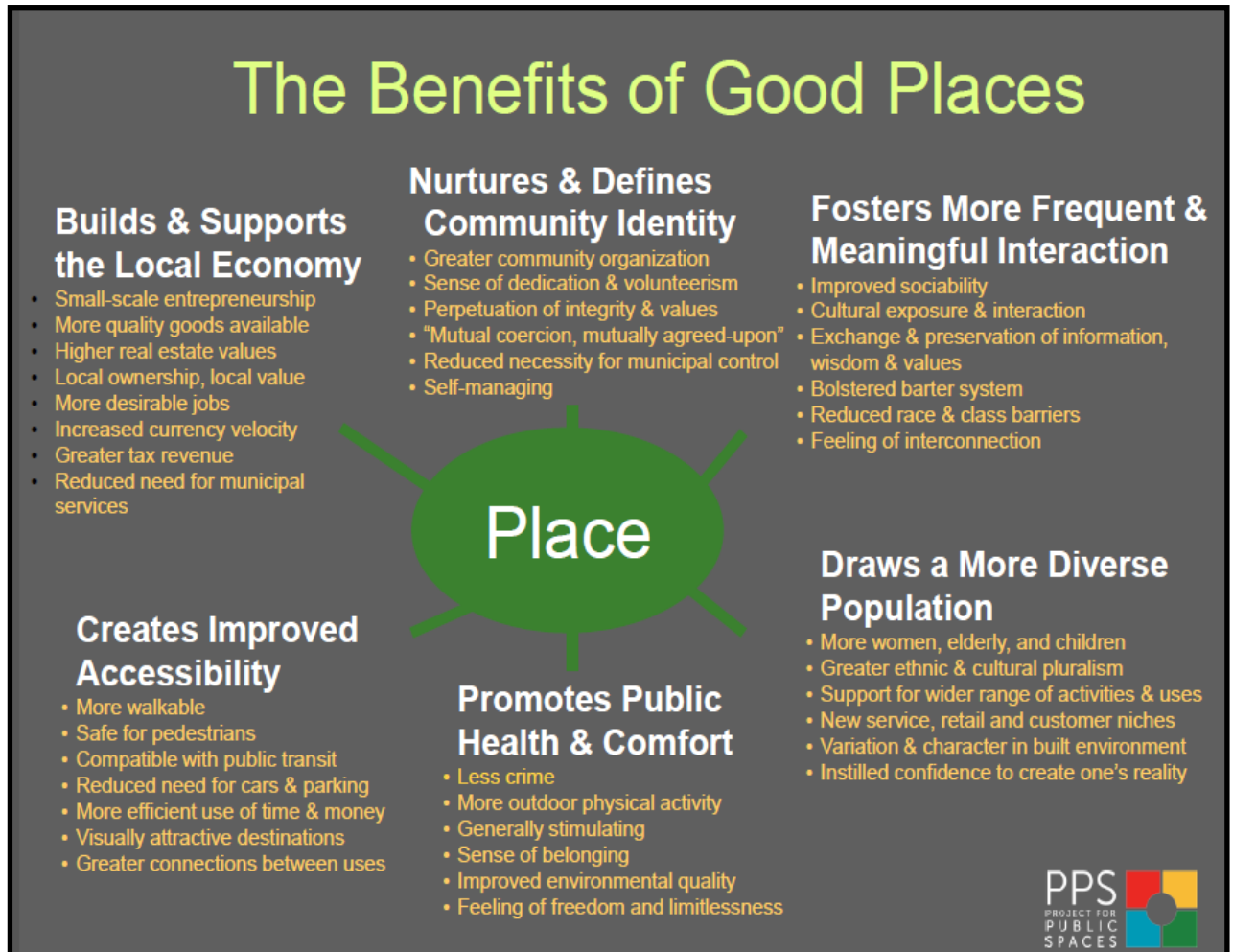


Figure 14: The Benefits of Good Places
Source: Project for Public Spaces, (2012)

Place-making is therefore a socially constructed process that shapes spaces by including different functions, aspects and even capital investment, designed to generate economic growth and promote cultural tourism in order to create a place worth living and working in (Lanham, 2007).

4.4 Place-making approaches in urban planning context

“You have to turn everything upside down to get it right side up” (Project for public spaces, 2011b). The aforementioned articulates, in essence, the basic principle underlying the bottom-up approach and community-scale of planning.

Place-making was introduced in the urban planning sphere to address community-scale planning with the objective to create qualitative, liveable environments that adhere to the principles of sustainability and progress in the transformation of areas from merely being places that people occupy, so-called ordinary places, into lively places that are good places to live in (Montgomery, 2006, as cited by Lamit *et al.*, 2012).

The place-making approach can be employed, within the urban planning context, to realise liveability by planning for, and implementing various functions within one space. This can entail the transformation of areas from solely being places that people occupy, into vibrant lively places, by focusing on current public spaces that have potential, and developing these spaces according to the place-making objectives in order to create places with function in which people can socialise and interact (Cilliers *et al.*, 2012).

Five place-making approaches include: the livelihoods approach; Power of 10 approach; community participation approach; New Urbanism approach and Green planning approach. These approaches will be discussed accordingly, as these approaches enable place-making within the urban planning (and layout and design) context.

4.4.1 Livelihoods approach

Understanding the diverse needs and activities of people, ingrained in the different ways that different people live in different places, is known as the so-called livelihoods approach (IFAD, 2014).

Livelihood can be explained as a prevailing condition that involves capabilities, material and social assets, and activities as a means of living. For this livelihood to become sustainable, it needs to cope with and recover from stresses and shocks; maintain or enhance its capabilities and assets while focusing not to undermine the natural resource base (Scoones, 2009).

The sustainable livelihood approach is indicated as a framework that provides an understanding of survival strategies in poor communities and can help to put pro-poor tourism in a better position and guide it towards successful implementation. (De Beer, 2014)

The collective term “livelihoods” is considered flexible because of its possible attachment to a number of other phrases such as “...locales (rural or urban livelihoods), occupations (farming pastoral or fishing livelihoods), social difference, (gendered, age-defined livelihoods), directions

(livelihood pathways, trajectories), dynamic patterns (sustainable or silent livelihoods) and many more”. (Scoones, 2009). Therefore, it is a widely applicable term and is especially relevant when planning for rural areas. The perspectives of livelihoods have been central to rural development thinking and practice in the past decade, and the perspective is rooted in the different ways that different people live in different places (Scoones, 2009).

Within the livelihoods approach, the focus is on “diversity”. Fundamental, single-sector approaches to livelihoods and liveability, like that of the comparison theory (Veenhoven & Ehrhardt, 1995), have been challenged by this approach in order to address complex rural development problems in a more hands-on and adequate manner (Scoones, 2009). This approach is a simple and straightforward one, as it purely focuses on understanding things (needs, activities, people, etc.) from a local perspective (Scoones, 2009). In order to implement or promote the liveability theory and expand livelihoods accordingly, different aspects should be addressed, including knowledge, politics and scale and dynamics. Portrayed in Table 19 below is an own creation that explains the four above-mentioned perspectives.

Table 19: Perspectives to address

Knowledge	Livelihoods can be expanded by focusing on inclusive debates about livelihood frameworks and proposed directions of change, rather than relying on a bland listing of principles or by keeping questions of values and politics away.
Politics	Within these communities, a need for municipal and government services were identified. These needs include an explicit, theoretically based concern and knowledge of how class, gender and capitalist relations operate. They need to be given the opportunity and right to actively participate in politics and political discussions by being allowed to ask up front questions regarding gains and losses based on theories of power and the political economy.
Scale	Scale is an important element to take into consideration when expanding a community’s livelihood. Therefore, a livelihood analysis needs to be developed and implemented. This analysis will examine networks, linkages, connections, flows and chains across different scales yet will remain in its specific place and context – i.e. rural communities.
Dynamics	The improvement of livelihoods in terms of dynamics requires local people, policymakers, outsiders, etc., to think about long-term change. This shift in mind-set can be ensured by providing future strategies and pathways for development and growth.

4.4.2 Power of 10 approach

The Power of 10 place-making approach endorses the concept that an authentic, lively city has at least 10 great public places throughout the city that attract a wide range of user-groups. In these great public places, people are offered many mixed-use opportunities to take pleasure in public life. “And, it’s not enough to have one liveable city or town in a region; you need a collection of interesting communities” (Placemaking Chicago, 2008).

A great place offers people opportunities of at least ten (10) things to do or ten (10) reasons to visit the place. For example, a place to sit, art to touch, music to hear, food to purchase, historic information to learn about, and books to read (Cilliers *et al.*, 2012). The opportunities, however, should give expression to the people’s experience of the city (Placemaking Chicago, 2008). “The concept also provides people something tangible to strive for and helps them visualize what it takes to make their community great” (Project for Public Spaces, 2012).

The concept of mixed use and multiple functions in these ten (10) great places should also be dynamic enough to stimulate continuous development and inspire people to come back to the place (Placemaking Chicago, 2008), as illustrated by the Chicago study, captured in the following figure.



Figure 15: Place-making and functions
Source: Placemaking Chicago (2012)

Cowan *et al.* (2006) are of the opinion that this type of public place will create lively neighbourhoods where interaction arises between people, social gatherings are held and where people simply enjoy spending time. An example of this approach is found in the Canadian city, Toronto, where the focus is placed on combining the rich cultural heritage with creativity. These activities include the Toronto International Film Festival (the largest and arguably the most influential festival in the world); Ontario College of Art and Design; The Young Centre; Wychwood Car Barns and numerous other similar examples (Toronto, 2008).

4.4.3 Community participation approach

“When citizens are effectively engaged in the design process, designers and planners can be at their most effective in facilitating a process that synthesises local experience and wisdom with design principles and technical expertise. Designers can help people uncover their common interests and work towards practical and creative solutions that build local character and assets” (McBride, 2013).

Irrespective of the environmental attributes of an area, the community should be the primary source of information when planning and designing a specific place. Community participation can be seen as an approach to lively planning, or as an indispensable element needed to create a lively place. However, the composition and dynamics of communities, especially in the urban environment, have become increasingly complex. Cultural diversity, in particular, offers an enormous challenge to public participation; the more diverse the group, the more needs that need to be taken into consideration and therefore the more complex the participation process and input will be (Breman *et al.*, 2008).

Even though it is difficult to implement, participation remains a critical part of planning for sustainable communities and public places, and the participation of all residents along with supervision, reviews and awareness are important for effective place-making (Loudier & Dubois, 2001). This qualitative participation approach is needed to address and successfully implement a bottom-up approach, as well as to ensure the planning of functional and usable spaces that can be regarded as lively. To create this type of situation, where active participation is present, it is crucial for the community to play a bigger role in deliberations with authorities, policy formalisation and the devising of solutions (Cilliers *et al.*, 2012).

4.4.4 New Urbanism approach

The planning concept of New Urbanism has been known for some time, however, the implementation thereof only progressively increased since US Congress adopted *The Charter of New Urbanism* in 1993 that reads as follows: “We advocate the restructuring of public policy and development practices to support the following principals: Neighborhoods should be diverse in use and population. Communities should be designed for the pedestrian and transit, as well as the car. Cities and towns should be shaped by physically defined and universally accessible public spaces and community institutions. Urban spaces should be framed by architecture and landscape design that celebrate local history, climate, ecology and building practices” (Thornton, 2010).

The invention and rapid development of the automobile has had a distinct impact on development of cities and towns that was noticeable in the decentralisation from the central city. In the 1970s, while attempting to design a pedestrian based town that is sustainable, USA planners and designers started converting streets into pedestrian walkways as an experiment (Craven, 2013). Craven (2013) declares: “New Urbanist town planners, developers, architects, and designers try to reduce traffic and eliminate sprawl”.

“In simplistic, layman’s terms, New Urbanism might be defined as taking the most desirable land use and architectural features of communities from the past and adapting them to the technological needs of the present” (Thornton, 2010). The basic principles of New Urbanism are explained in Table 20 below.

Table 20: Principles of New Urbanism

Principle	Explanation
Walkability	<ul style="list-style-type: none">• Most things within a 10-minute walk of home and work.• Pedestrian friendly street design (buildings close to street; porches, windows and doors; tree-lined streets; on-street parking; hidden parking lots; garages in rear lane; narrow, slow speed streets).• Pedestrian streets free of cars in special cases.
Connectivity	<ul style="list-style-type: none">• Interconnected street grid network disperses traffic and eases walking.• A hierarchy of narrow streets, boulevards, and alleys.• High quality pedestrian network and public realm make walking pleasurable.

<p>Mixed-Use & Diversity</p>	<ul style="list-style-type: none"> • A mix of shops, offices, apartments, and homes on-site. Mixed-use within neighbourhoods, within blocks, and within buildings. • Diversity of people – of ages, income levels, cultures, and races.
<p>Mixed Housing</p>	<ul style="list-style-type: none"> • A range of types, sizes and prices in closer proximity.
<p>Quality Architecture & Urban Design</p>	<ul style="list-style-type: none"> • Emphasis on beauty, aesthetics, human comfort, and creating a sense of place; special placement of civic uses and sites within community. • Human scale architecture and beautiful surroundings nourish the human spirit.
<p>Traditional Neighbour-hood Structure</p>	<ul style="list-style-type: none"> • Discernible centre and edge. • Public space at centre. • Importance of quality public realm; public open space designed as civic art. • Contains a range of uses and densities within a 10-minute walk. • Transect planning: highest densities at town centre; progressively less dense towards the edge. The Transect is an analytical system that conceptualises mutually reinforcing elements, creating a series of specific natural habitats and/or urban lifestyle settings. The Transect integrates environmental methodology for habitat assessment with zoning methodology for community design. The professional boundary between the natural and manmade disappears, enabling environmentalists to assess the design of the human habitat and the urbanists to support the viability of nature. This urban-to-rural transect hierarchy has appropriate building and street types for each area along the continuum.
<p>Increased Density</p>	<ul style="list-style-type: none"> • More buildings, residences, shops, and services closer together for ease of walking, to enable a more efficient use of services and resources, and to create a more convenient, enjoyable place to live. • New Urbanism design principles are applied to the full range of densities from small towns to large cities.
<p>Green Transportation</p>	<ul style="list-style-type: none"> • A network of high-quality trains connecting cities, towns, and neighbourhoods together. • Pedestrian-friendly design that encourages a greater use of bicycles, rollerblades, scooters, and walking as daily transportation.

Sustainability	<ul style="list-style-type: none">• Minimal environmental impact of development and its operations.• Eco-friendly technologies, respect for ecology and value of natural systems.• Energy efficiency.• Less use of finite fuels.• More local production.• More walking, less driving.
Quality of Life	<ul style="list-style-type: none">• Taken together, these add up to high quality of life well worth living, and create places that enrich, uplift and inspire the human spirit.

Source: Michigan Land Use Institute (2006)

Thus, New Urbanism is an urban planning approach, which provides for the implementation of place-making principles through which the urban environment is transformed into an integrated, compact, walkable, mixed-use, vibrant and sustainable community where people experience high quality of life.

4.4.5 Green planning approach

The widely accepted definition of urban green spaces is that they are “public and private open spaces in urban areas, primarily covered by vegetation, which are directly (e.g. active or passive recreation) or indirectly (e.g. positive influence on the urban environment) available for the users” (Haq, 2011).

Unplanned development and urbanisation patterns, especially in cities, have had a negative influence on green spaces that consequently resulted in a significant decrease in the environmental benefits of green spaces (Gomes & Moretto, 2011). “If green spaces are so important for human wellbeing, how is it possible to increase these areas and maximise the positive aspects for humans, while at the same time decrease the negative aspects of cities for the environment?” (Schilling, 2010).

Urban green spaces play a key role in the sustainable development of cities and likewise contribute decisively to the liveability of the built-up environment. Urban green spaces have a direct link to place-making and add quality to a place. The character of a community or city is often identified and labelled by the quality of its green spaces. Well designed, efficiently managed and maintained green spaces enhance living and working conditions, has social and visual value and, equally importantly, attract people and investment into an area (Baycan-Levent & Nijkamp, 2004).

Development of green spaces is an integrated approach to sustainable environments and plays an important role in terms of social, economic, cultural and environmental aspects of sustainable development (Haq, 2011). A strategy for green spaces has to effectively and concurrently address a variety of (ecological) environmental, social, economic and sustainable development issues (Kasperidus *et al.*, 2006).

Green planning approaches of countries, cities and communities may be at variance, however, the central focus should underwrite the place-making concept and conclusively achieve transformation of a space into a lively public place. Therefore, a Green planning approach should include objectives such as: to safeguard the future of green spaces; to enhance the quality of urban areas; to render urban areas more attractive and thereby attract more resources; and to enhance the wellbeing of the user-group (Kasperidus *et al.*, 2006).

Benefits derived from an effective Green planning approach can be categorised according to three main groups, including: environmental benefits, economic and aesthetic benefits and social and psychological benefits (Haq, 2011). These are discussed briefly in the table below.

Table 21: Environmental Benefits of Urban Green Spaces

	Environmental Benefits
Ecological Benefits	<ul style="list-style-type: none"> Urban green spaces supply cities with ecosystem services ranging from maintenance of biodiversity to the regulation of urban climate. Compared to rural areas, differences in solar input, rainfall pattern and temperature are usual in urban areas. <p>Solar radiation, air temperature, wind speed and relative humidity vary significantly due to the built environment in cities. The urban heat island effect is caused by the large areas of heat absorbing surfaces, in combination with high-energy use in cities. Urban heat island effect can increase urban temperatures by 5°C.</p> <p>Therefore, adequate forest plantation, vegetation around urban dwellers' homes and authorities' management of water bodies can help to mitigate the situation.</p>
Pollution Control	<ul style="list-style-type: none"> Pollution in cities is due to pollutants which include chemicals, particulate matter and biological materials, which occur in the form of solid particles, liquid droplets or gases. <p>Air and noise pollution is common phenomenon in urban areas. The presence of many motor vehicles in urban areas produces noise and air pollutants such as carbon dioxide and carbon monoxide. Emissions from factories, such as sulphur dioxide and</p>

	<p>nitrogen oxides, are very toxic to both human beings and the environment.</p> <p>The most affected by such detrimental contaminants are children, the elderly and people with respiratory problems. Urban greening can reduce air pollutants directly, as dust and smoke particles are trapped by vegetation.</p> <p>Research has shown that, on average, 85% of air pollution in a park can be filtered. Noise pollution from traffic and other sources can be stressful and creates health problems for people in urban areas. The overall costs of noise have been estimated to be in the range of 0.2% - 2% of European Union gross domestic product. Urban green spaces in overcrowded cities can largely reduce the levels of noise, depending on their quantity, quality and the distance from the source of the noise pollution.</p> <p>Contemporary studies on urban green spaces consider the complex urban eco-system and the conservation of the urban green spaces to maintain a natural ecological network for environmental sustainability in cities. For the cities in a fast urbanising and growing economy, countries like China should consider the dynamic form of urban expansion to manage effective urban green spaces, which will contribute to reduce the overall CO₂ by maintaining or even increasing the ability of CO₂ absorption via natural eco-systems.</p>
<p>Biodiversity and Nature Conservation</p>	<ul style="list-style-type: none"> • Green spaces function as protection centres for the reproduction of species and conservation of plants, soil and water quality. Urban green spaces provide the linkage of the urban and rural areas. They provide visual relief, seasonal change and a link with the natural world. <p>A functional network of green spaces is important for the maintenance of ecological aspects of a sustainable urban landscape, with greenways and use of plant species adapted to the local condition with low maintenance cost, self-sufficiency and sustainability</p>

Source: Haq (2011)

Table 22: Economic and Aesthetic Benefits of Urban Green Spaces

	Economic and Aesthetic Benefits
Energy Savings	<ul style="list-style-type: none"> Using vegetation to reduce the energy costs of cooling buildings has increasingly been recognised as a cost effective reason for increasing green space and tree planting in temperate climate cities. Plants improve air circulation, provide shade and they evapotranspire. This provides a cooling effect and helps lower air temperatures. A park of 1.2 km by 1.0 km can produce an air temperature between the park and the surrounding city that is detectable up to 4 km away. A study in Chicago has shown that increasing tree cover in the city by 10% may reduce the total energy for heating and cooling by 5% to 10%.
Property Value	<ul style="list-style-type: none"> Areas of the city with enough greenery are aesthetically pleasing and attractive to both residents and investors. The beautification of Singapore and Kuala Lumpur, Malaysia, was one of the factors that attracted significant foreign investments that assisted rapid economic growth. Still, indicators are very strong that green spaces and landscaping increase property values and financial returns for land developers of between 5% and 15%, depending on the type of project.

Source: Haq, (2011)

Table 23: Social and Psychological Benefits of Urban Green Spaces

	Social and Psychological Benefits
Recreation and Wellbeing	<ul style="list-style-type: none"> People satisfy most of their recreational needs within the locality where they live. Findings by Nicol and Blake (2000) show that over 80% of the UK's population live in urban areas, and thus green spaces within urban areas provide a sustainable proportion of the total outdoor leisure opportunities. <p>A study conducted in Helsinki, Finland, indicated that nearly all (97%) city residents participate in some outdoor recreation during the year. Half of the residents make outdoor visits on a daily basis, or every second day.</p> <p>Urban green spaces serve as a near resource for relaxation and provide emotional warmth. In Mexico City, the centrally located Chapultepec Park draws up to three million visitors, who enjoy a wide variety of activities, weekly.</p>

Human Health	<ul style="list-style-type: none">• The level of stress in people who were exposed to natural environments decreased rapidly compared to people who were exposed to urban environments, whose stress levels remained high. In the same review, hospital patients whose rooms were facing a park had a 10% faster recovery rate and needed 50% less strong pain relieving medication compared to patients whose rooms were facing a building wall. <p>This is a clear indication that urban green spaces can increase the physical and psychological wellbeing of urban citizens. In other research conducted in Swedish cities, people who spent more time outdoors in urban green spaces were less affected by stress.</p> <p>Certainly, improvements in air quality due to vegetation have a positive impact on physical health, with such obvious benefits as a decrease in respiratory illnesses. The connection between people and nature is important for everyday enjoyment, work productivity and general mental health.</p>
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Source: Haq, (2011)

It is thus evident that, depending on the dominant conditions of a place, development of green spaces may present many challenges. Nevertheless, through careful planning and site-responsive design, urban green spaces can make a meaningful contribution to sustainable development at regional, district and local levels. The planning of layout and design approaches for urban green spaces should strive to meet the needs of the community, optimise opportunities in the community to grow towards sustainability, and furthermore contribute to the specific character and image of a place and the community. Uncomplicated access to green spaces will benefit these efforts and stimulate physical activity.

4.4.6 Conclusion of place-making approaches in urban planning context

The main objective of the place-making concept is the improvement of the community's environment and their quality of life (Montgomery, 2006, as cited by Lamit *et al.*, 2012).

In order to evaluate the contribution of the five place-making approaches in planning sustainable communities, it is necessary to evaluate these approaches in terms of the Three Spheres of Sustainability (refer: Chapter 2, paragraph 2.3, Figure 2 The Three Spheres of Sustainability). Table 24 illustrates this evaluation.

Table 24: Place-making approaches in the context of sustainability

Approach	Three Spheres of Sustainability		
	Social	Environmental	Economic
Livelihoods approach	☑	☑	
Power of 10 approach	☑		☑
Community participation approach	☑	☑	☑
New Urbanism approach	☑		☑
Green planning approach	☑	☑	☑

From the above evaluation, it is evident that place-making is a concept that can be used to change and improve the spaces and places within communities. In the urban planning context, place-making, built fundamentally on various lively and sustainable objectives, can act as a catalyst to affect the planning for sustainable communities.

4.5 Conclusion

In conclusion, continuous monitoring of the implementation and progress of place-making approaches is imperative. Therefore, transparent management and evaluation of an approach should be maintained to ensure that effectual amendments are made timeously when deemed mandatory. Equally important is that legislation, policies and guidelines that regulate and manages place-making approaches should at all times endeavour to harmonise the needs of the community with the natural layout and resources of the environment, thereby ensuring an effective and sustainable design.

After completing the theoretical research, a Checklist, seen in Table 25 below, was compiled. The devised Checklist's indices and questions were based on the theoretical concepts, studied in Chapters 2 to 4 of this research. The objective of the Checklist is to evaluate, place-making, in public places, communities and areas in terms of the attributes of a "Great Place".

Table 25: Evaluate place-making, in public places, communities and areas in terms of the attributes of a "Great Place".

<u>CHECKLIST</u>	
Evaluate place-making, in public places, communities and areas in terms of the attributes of a "Great Place".	
SOCIABILITY	
• Do the people interact with each other?	
• Are there opportunities for social interaction in the specific area?	
• Is there a welcoming atmosphere in the area?	
• Do people experience a sense of satisfaction when they spend time in the area?	
USES AND ACTIVITIES	
• Are there a range of age groups and different cultures present in the area?	
• Is there a variety of activities presented in the area?	
• Are people attracted by the uses and activities presented in the area?	
• Is the area well-maintained?	
ACCESS AND LINKAGES	
• Are the activities in the area easy to identify?	
• Is the place accessible?	
• Is placement of internal routes supportive to the natural flow of the people?	
• Is the specific area pedestrian-friendly?	
COMFORT AND IMAGE	
• Is the first impression of the area positive?	
• Is the area clean and free of litter?	
• Is the area safe?	
• Are people's basic needs sufficiently provided for in the area?	

In the chapters that follow, place-making, in international and local context will be evaluated using the Checklist above.

Hereby the theoretical part of this research is concluded. With the purpose of finding best practices that will serve to enhance planning for sustainable communities, the international and local

approach to place-making, through layout and design, will be analysed in Chapters 5 to 8 of this research.

Chapter 5 forms the first part of the empirical investigation of this research. In this chapter, the international approach to place-making, through layout and design are researched.

Chapter 5: International approach to place-making, through layout and design: The *Place des Wallons* pilot study

The following diagram illustrates the structure of Chapter 5.

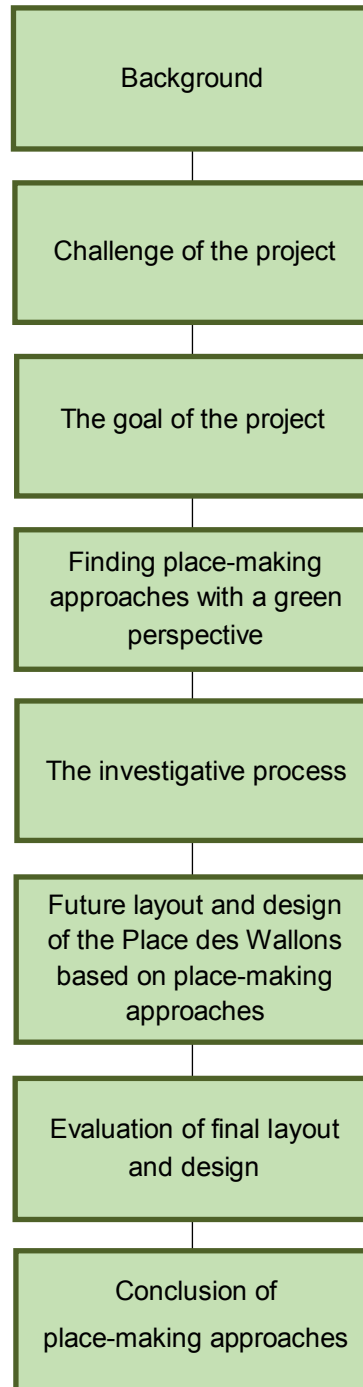


Diagram 5: Structure of Chapter 5

In this chapter, the international approach to place-making, through layout and design, is studied, on the basis of a pilot study, that deals with the renewal of the *Place des Wallons*, a public square located in the city *Louvain-la-Neuve* in Belgium.

This specific case study has been identified, for it clearly shows how in Jansen and Ruifrok's (2012) planning approach, by applying fundamental place-making principles (as discussed in Table 16) and by integrating various place-making approaches (Power of 10 approach; community participation approach; New Urbanism approach and Green planning approach) can influence and renew the sustainability of a specific area.

Although this case study focusses on an urban area, the fundamentals of Jansen and Ruifrok's (2012) planning approach are likewise applicable to the development and or renewal of rural areas.

5.1 Background

The *Place des Wallons* is a public square in the city *Louvain-la-Neuve*, which is located approximately 30 km southeast of Brussels, the capital of Belgium. Parts of the public square are co-owned by the University, the City Council and a few private property owners. A public-private partnership, known as *Gestion Centre Ville Ottignes-Louvain la Neuve* (GCVOLLN), represents the combined interest of the aforementioned owners. GCVOLLN furthermore conducts the public liaison of the partnership and is responsible for the maintenance and renovations of the common property. Figure 16 below indicates the location of *Louvain-la-Neuve*.



Figure 16: Location of Louvain-la-Neuve
Source: Jansen & Ruifrok (2012)

The land, on which *Louvain-la-Neuve* was developed, belonged to the “*Université de Louvain*” and was primarily reserved to accommodate the university. The original layout and design of *Louvain-la-Neuve* was for a pedestrian city. For this reason, the city centre was built on a concrete slab, with all roads running beneath the concrete slab. Due to this layout and design and the associated practical difficulties of establishing green spaces on a concrete slab, green planning, and by implication the development of green public places, was not a priority in the city. However, as the city continued to expand and develop, extensions to the city were built on natural soil, and so the feasibility of green space development increased.



Figure 17: Louvain-la-Neuve today.
Source: Jansen & Ruifrok (2012)



Figure 18: Louvain-la-Neuve - City centre built on the concrete slab.
Source: Jansen & Ruifrok (2012)

Over time, the lack of efficient maintenance gave rise to the urgent need to renovate parts of the city, including the *Place des Wallons*. In 2010, GCVOLLN started a process informing the public of their intent to renovate the *Place des Wallons*. (Jansen & Ruifrok, 2012). In the lengthy debate that subsequently followed the initial announcement, all the wishes and demands of the owners were discussed, however, allowing for a green perspective in the new design was not considered.

L'Association du Management de Centre-Ville (AMCV) is the leading partner in a European project called "Lively Cities" (Jansen & Ruifrok, 2012). The project, which is funded by the European Union, aims at regaining public space for public use by bringing urban spaces in decline in North West Europe back to life. AMCV was aware of the decay of *Louvain-la-Neuve* and offered to assist GCVOLLN in regenerating the *Place des Wallons*. GCVOLLN accepted the offer and asked AMCV to advise them on a solution with a green perspective. (Jansen & Ruifrok, 2012).

5.2 The challenge of the project

The *Place des Wallons* is part of a network of public squares in *Louvain-la-Neuve* that are linked together through streets and shops. This network of public places contributes to the unique character of the town. In the beginning, the *Place des Wallons* had played a dominant role in the network, however, the development of new public squares and shops resulted in the *Place des Wallons* losing its position as the leading public place in the network.

The challenge was not restoring the public square to its former position, but rather the renewal of the *Place des Wallons* as a lively public place with a distinctly "green" identity that complemented *Louvain-la-Neuve* and contributed to the success of the network of public squares as a whole.

Jansen & Ruifrok (2012) phrase the essence of the challenge as follows: “How do we turn misused, underused or non-used public spaces, with the help of green elements, into destinations where people choose to spend their spare time?”

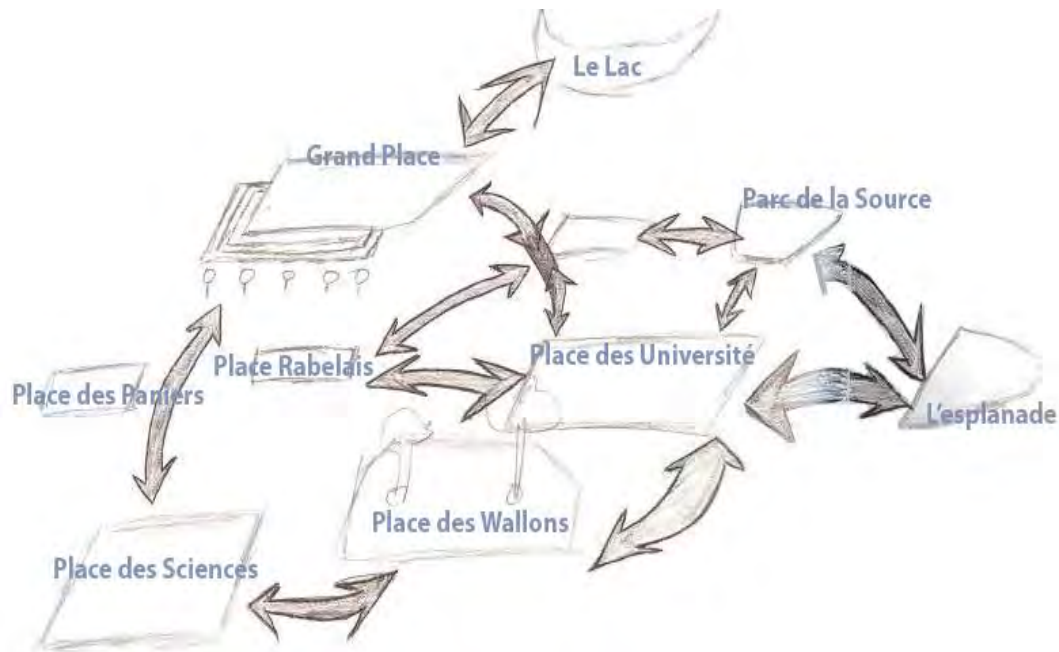


Figure 19: Louvain-la-Neuve as a network of public squares and the role of the Place des Wallons.
Source: Jansen & Ruifrok (2012)

5.3 The goal of the project

The goal of the project was to transform the *Place des Wallons* into a lively public place (refer: Chapter 4, paragraph 4.3.2 Lively public spaces) which attracts people and influences them to stay or return to the square.

5.4 Finding place-making approaches with a green perspective

In order to develop an effective and sustainable solution for the *Place des Wallons*, Jansen and Ruifrok (2012) made use of the place-making concept. Throughout the principle design process, they applied basic principles of place-making (refer: Chapter 4, paragraph 4.1 Table 16 Key principles of place-making) and utilised various place-making approaches, of which the community participation approach, through which the needs of the community are determined (refer: Chapter 4, paragraph 4.4.3 Community participation approach), played a primary role.

Before setting up a concept and vision on the future design for the *Place des Wallons*, Jansen and Ruifrok (2012) performed an investigative process of the environmental and social characteristics intrinsic to *Louvain-la-Neuve* and its surrounding areas, followed by an analysis of the surrounding factors that influence the *Place des Wallons* as a public place.

5.5 The investigative process

The first part of the investigative process includes a field inventory, which provides an overview of general features that shape and influence the city of *Louvain-la-Neuve*. The second part is an exploratory field analysis that examines internal and external factors that influence the liveability of *Louvain-la-Neuve*, and resultantly affect the *Place des Wallons* as a lively place.

5.5.1 Field inventory

The inventory is an overview on the location of *Louvain-la-Neuve* in relation to other cities, the design and architecture of the city centre, the internal method of transport as well as the accessibility of the city. Also included is a brief historical background of the city. The latter provides insight into the current composition of the community and stakeholders. Finally, a short description of the soil conditions in *Louvain-la-Neuve* concludes the field inventory.

5.5.2 Field analysis

The first part of the field analysis consists of a green analysis, which gives a thorough description of the existing plant material and trees in *Louvain-la-Neuve* and the *Place des Wallons*. It furthermore briefly describes the geometrical characteristics of *Louvain-la-Neuve* and the *Place des Wallons*.



Figure 20: The Place des Wallons with only two trees.
Source: Jansen & Ruifrok (2012)

The second part comprises a social analysis, which describes the composition of the community and thus the different users of the *Place des Wallons*. The analysis shows that the majority of the users are students and the remainder made up of families, young adults, elderly people and a small faction homeless people.

5.5.3 Analysis of surrounding factors

An analysis of the surrounding factors that influence the *Place des Wallons*, gives insight into the manner in which it functions as a public place and explains the context of the *Place des Wallons* in relation to *Louvain-la-Neuve* and the network of public squares in the city. Jansen & Ruifrok (2012) use an analysis called 'Surrounding Factors' by Frank de Josselin de Jong, which encompasses six (6) small analyses of factors including density, mixed function, connectivity, accessibility, routing and identity. The first three (3) represent external factors and the remainder internal factors.

The maps, images and schematic representations below reflect clearly the status quo with regard to the abovementioned surrounding factors that influence the *Place des Wallons*.

External factors

- Density

The image in Figure 21 below depicts the density of the population living in the area surrounding the *Place des Wallons* and thus gives a good indication of the potential quantity of users.

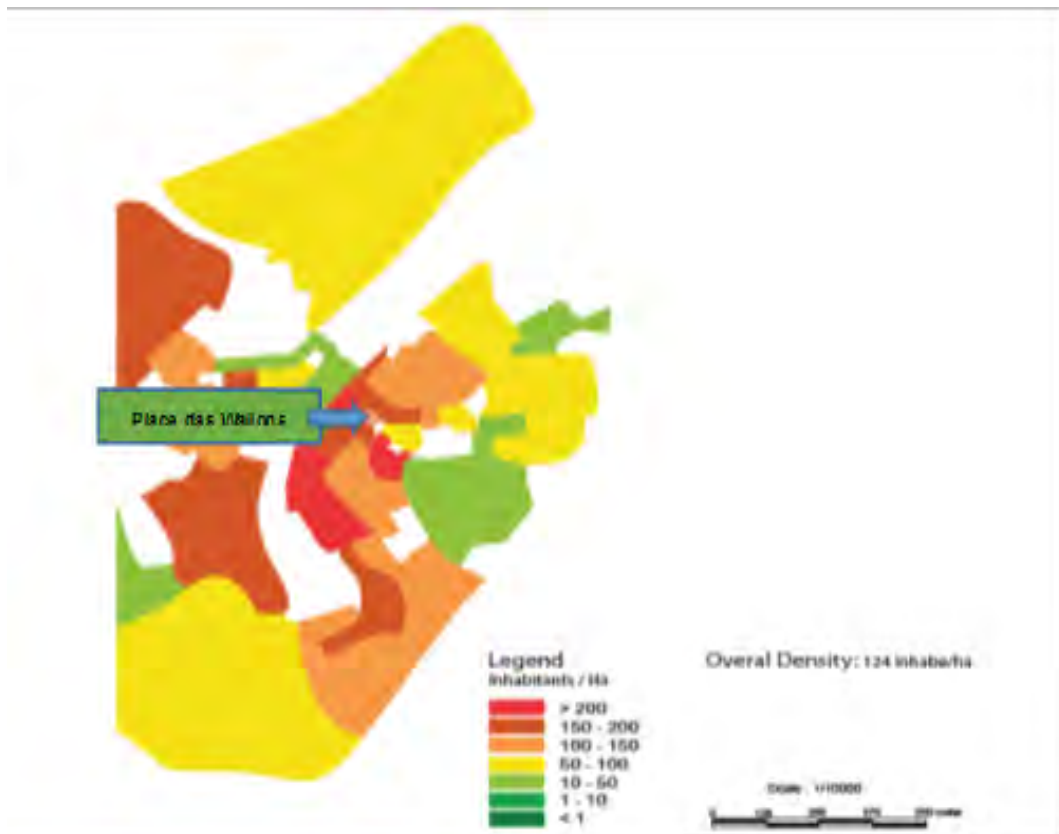
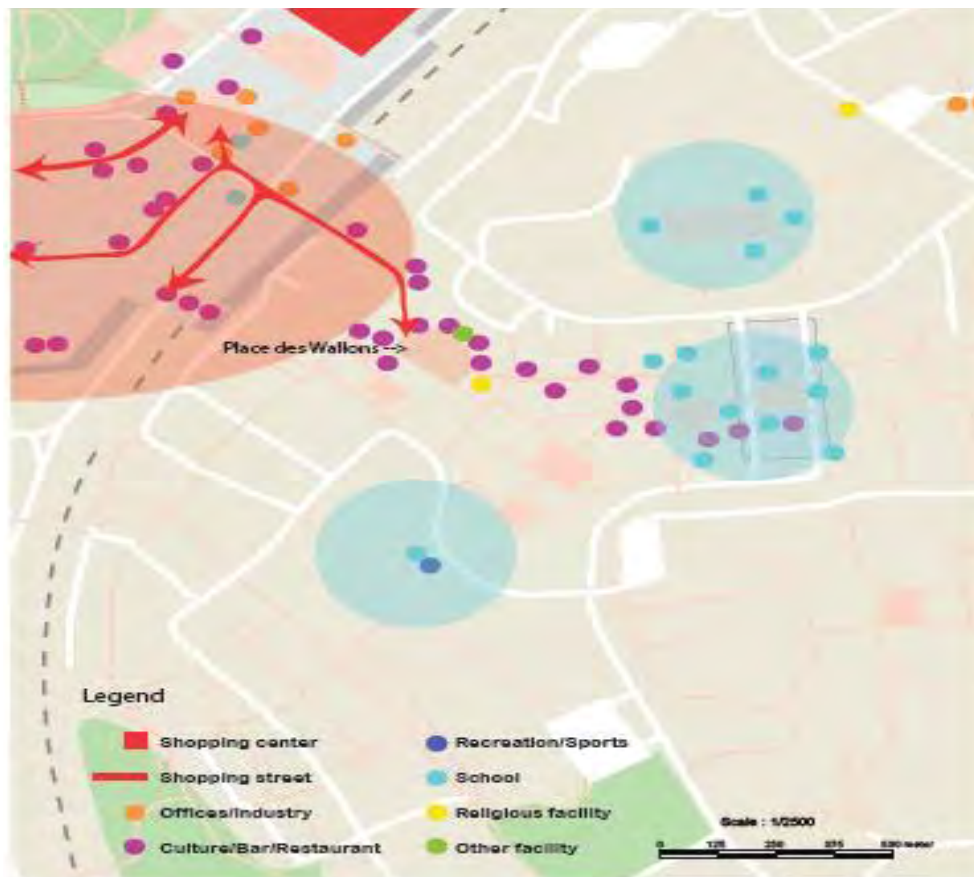


Figure 21: External factor: Density
Source: Jansen & Ruifrok (2012)

- Mixed functions

The small dots in Figure 22 show the functions and facilities that are in close proximity to the *Place des Wallons* and that are used on a daily basis. The large blue and red areas mark the areas that attract many people.



External factor: Surrounding factors

Figure 22: External factor: Mixed function
Source: Jansen & Ruifrok (2012)

- Connectivity

The connectivity of the *Place des Wallons*, depict in Figure 23 below, is measured in three steps. In step one, streets that lead directly to the *Place des Wallons* are identified. In step two, the streets that are connected to the streets indicated in step one are identified. In step three, the streets that are connected to the streets in step two are identified.



Figure 23: External factor: Connectivity
Source: Jansen & Ruifrok (2012)

Internal factors

- Accessibility

In the schematic representations depicted in Figure 24, the first figure shows existing entrances and exits of the *Place des Wallons*. The second figure indicates whether the aforementioned are public, semi-public or private. The third figure and the strings below the figures indicate the visibility of these entrances or exits.

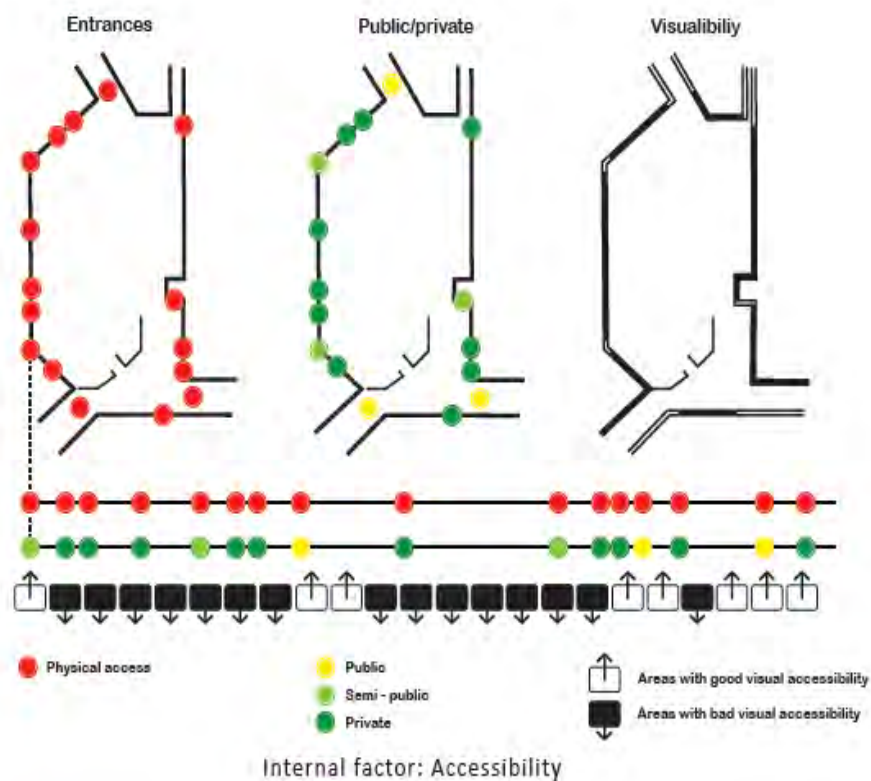


Figure 24: Internal factor: Accessibility
Source: Jansen & Ruifrok (2012)

- Routing

The different routes in the *Place des Wallons* and the frequency, with which these routes are used, are indicated on the map in Figure 25. Although a road that is wide enough for cars to use is marked on the map, no cars use this route due to the fact that all actual roads are under the concrete slab on which this part of the city is built. By this analysis, the existing trends and habits of the *Place des Wallons* was determined (refer: Chapter 4, paragraph 4.1, Table 16: Key principles of place-making - Form support functions).

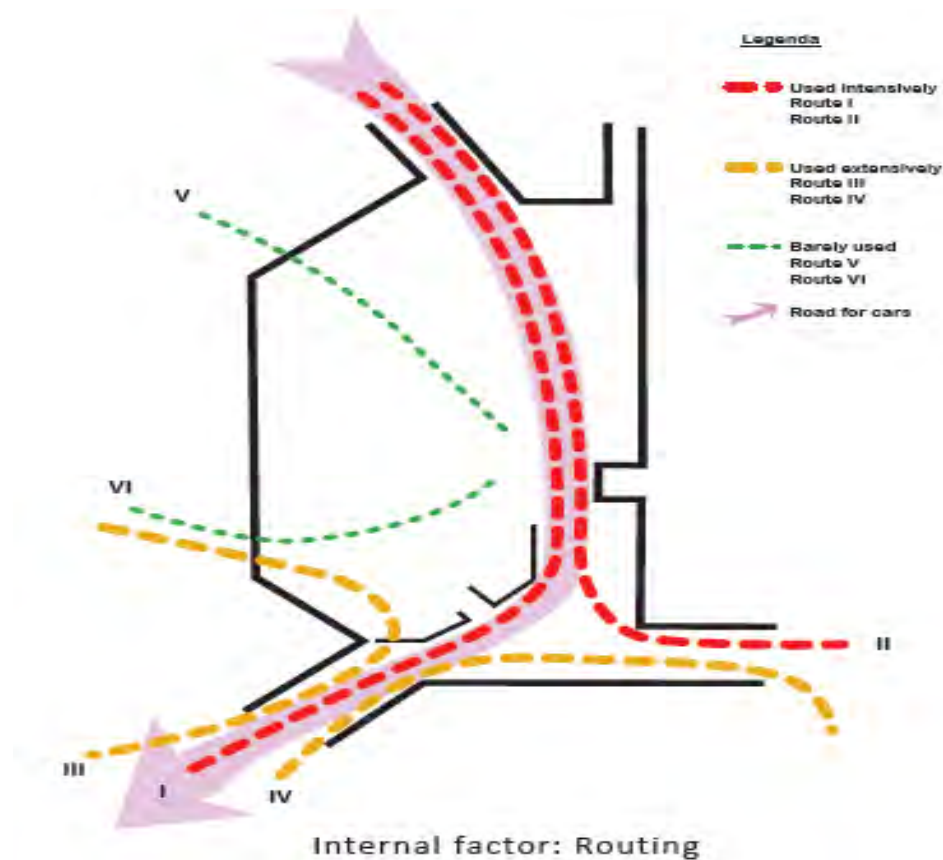


Figure 25: Internal factor: Routing
Source: Jansen & Ruifrok (2012)

- Identity

In the map in Figure 25, certain unique characteristics of the *Place des Wallons* are highlighted in such a way that the public square is easily explained, especially to people who have never before visited the square.



Figure 26: Internal factor: Identity
Source: Jansen & Ruifrok (2012)

Derived from the analysis of the surrounding factors, Jansen & Ruifrok (2012) conclude that the *Place des Wallons* has no real identity. The main function of the *Place des Wallons* is a social potential and is thus primarily a place where people meet and consequently socialise. In respect hereof, there are enough potential users, however, unattractive shop entrances and a fixed main internal route that most people use result in the square being used by the majority users only as a thoroughfare to other public squares.

5.5.4 Night and day analysis

The night and day analysis of the *Place des Wallons* consists of a participation process during which the input of mainly students was used to acquire an objective view of the *Place des Wallons*, followed by an analysis of this information.

The *Place des Wallons* offers various functions during the day, however, many of the functions that are available in the daytime are closed at night. The figures below, which compare the daytime functions with those that are available at 12 o'clock at night, clearly show a descent in activities at night.

Mixed functions during the day

Mixed functions during the night

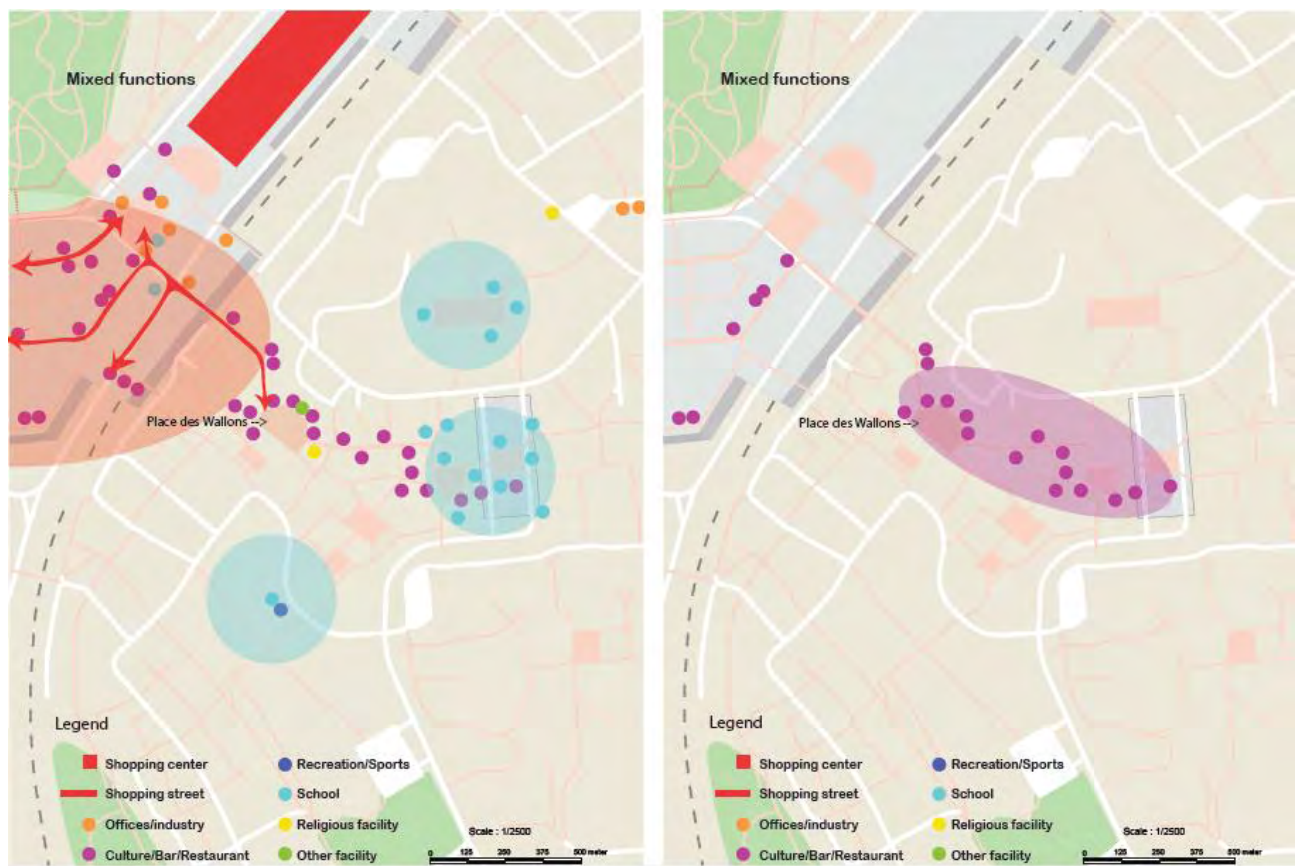


Figure 27: Mixed functions during the day and night
Source: Jansen & Ruifrok (2012)

5.5.5 Participation process

To determine the needs and preferences of the users of the *Place des Wallons*, Jansen and Ruifrok (2012) employed the participation approach of place-making; “The concept of place-making is all about involving citizens in the transformation of public areas” (Jansen & Ruifrok, 2012).

The participation process was carried out in two parts: the first part was composed of a one-way communication process, which included “Like and Dislike” posters, as well as an idea tree, on which the public could hang their written ideas and suggestions. In Figures 28 and 29 are images that show this process.



Figure 28: “Like” and “dislike” posters
Source: Jansen & Ruifrok (2012)



Figure 29: Idea tree
Source: Jansen & Ruifrok (2012)

The second part of the participation process included interactive interviews with the public and an interactive Facebook page.

The participation process concluded that there was a need for a seating area, a “greener” *Place des Wallons*, a legal space to display posters, garbage bins in the square, a space where students and inhabitants can express their creativity and allow the opportunity to organise events in the square.

During the participation process, Robert-Jan Ruifrok and Rick Jansen placed a mobile bench (“the Snake”) in the middle of the *Place des Wallons* (public square). This mobile bench is demonstrated in the figure below.

“The snake” during participation days



“The snake” after placement



Figure 30: “The Snake”
Source: Jansen & Ruifrok (2012)

The “snake” bench was intended to be used as a resting place and simultaneously to influence the walking routine of the people in this square. This is a typical example of how, through layout and design and the inclusion of place-making elements, a place can be created.

5.6 Future layout and design of the *Place des Wallons* based on place-making approaches

Jansen & Ruifrok (2012) use all the information they accrued and all the conclusions they had drawn from the various processes they followed to formulate a concept and vision for the future design of the *Place des Wallons*. The underlying principle of the design is to create a connection

between the analysis and the real design. In the design, Jansen & Ruifrok attempt to incorporate fundamental elements such as a strong “green” identity, recognisable entrances and scattered routing.

The figure below shows the four fundamental elements of the concept and vision incorporated in a future design of the *Place des Wallons*.

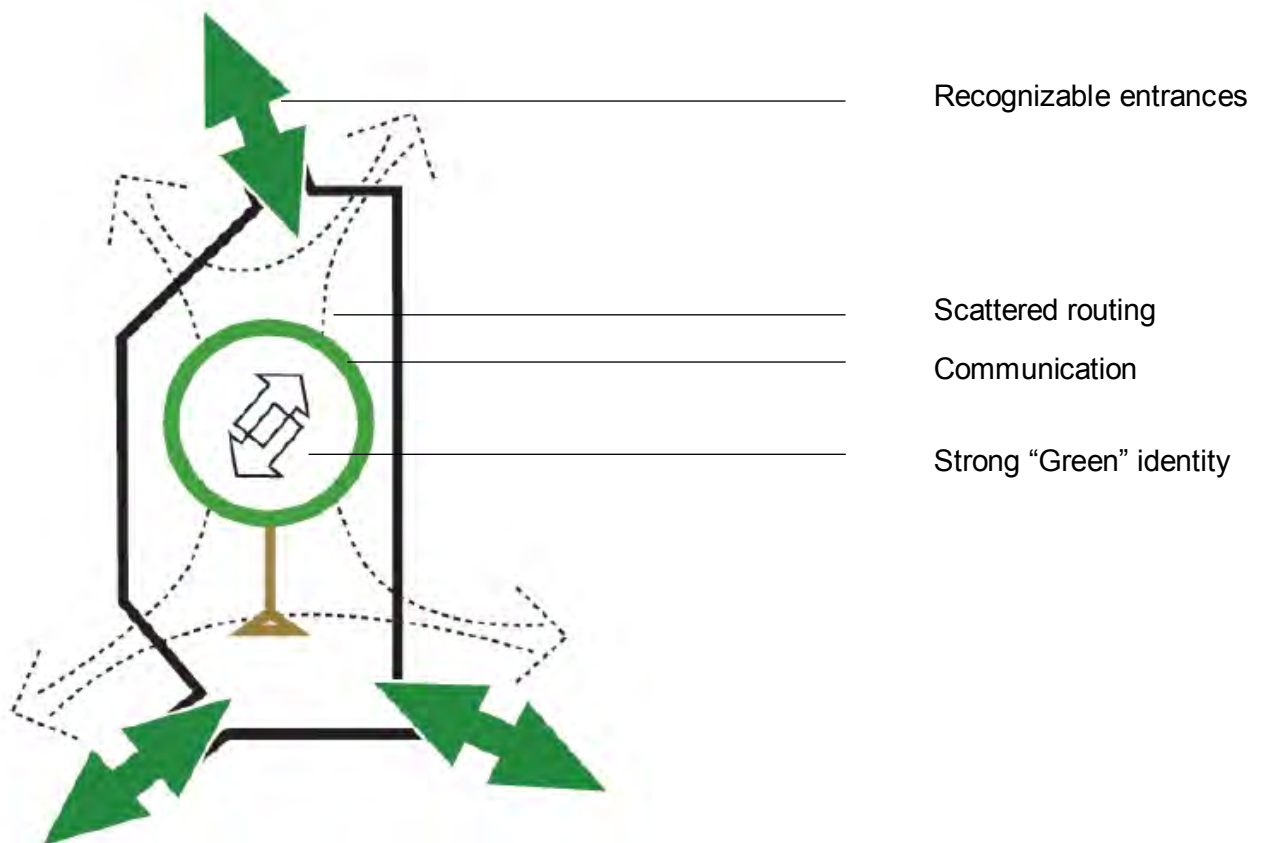


Figure 31: Link between analysis and design
Source: Own construction inspired by Jansen & Ruifrok (2012)

As illustrated below, the combination of various place-making elements, included in the principle layout and design for the area, are focused on creating a green identity for the square. (*Place des Wallons*)



Figure 32: Principle design example
Source: Jansen & Ruifrok (2012)

5.7 Evaluation of final layout and design

The final layout and design that were created for the *Place des Wallons* is evaluated as part of the empirical investigation of this study, based on the theoretical founding and objectives evaluated in Chapter 2 to 4 of this research.

The layout and design were evaluated based on:

- Place-making principles.
- Successful public space attributes.
- Factors of successful public spaces.
- SWOT analysis of the *Place des Wallons*.

- The Checklist drawn up as found in Chapter 4, (refer: Chapter 4, paragraph 4.5, Table 25: Evaluate place-making in public places, communities and areas in terms of the attributes of a "Great Place").

Throughout the investigative strategy and in the subsequent principle layout and design, the key principles of place-making were adhered to, including: the community is the expert; creating a place and not just a design; you can't do it alone; they will always say, "it can't be done"; you can see a lot just by observing; develop a vision; form support functions; triangulate; start with the petunias; money is not the issue; and you are never finished. (refer: Chapter 4, paragraph 4.1 Table 16: Key principles of place-making).

The strategy, furthermore, embraced an evaluation of the *Place des Wallons* in terms of the four main key attributes that are needed for a space to be regarded as a successful public place (refer: Chapter 4, paragraph 4.3.2, Lively public spaces), and as illustrated in the table below, amendments by means of place-making principles were made where and when deemed necessary.

Table 26: The *Place des Wallons* measured in terms of the key attributes of a great public place

The <i>Place des Wallons</i> measured in terms of the key attributes of a great public place		
	Before	After
Access and linkages		<input checked="" type="checkbox"/>
Comfort and image		<input checked="" type="checkbox"/>
Uses and activities		<input checked="" type="checkbox"/>
Sociability		<input checked="" type="checkbox"/>

The strategy also succeeded in identifying factors of successful public spaces (refer: Chapter 4, paragraph 4.3.2, Table 18 - Factors of successful public places) present in the *Place des Wallons* and, as illustrated in the table below, in adding more factors in order to create a lively public space.

Table 27: Factors of a successful public space that is present in the *Place des Wallons*

Factors of a successful public space that are present in <i>Place des Wallons</i>		
	Before	After
Identity		☑
Attractions		☑
Amenities	☑	☑
Flexibility		☑
Seasonal	☑	☑
Access	☑	☑
Visibility		☑

The following diagram depicts a SWOT analysis of the principle design that Jansen & Ruifrok (2012) created for the *Place des Wallons* in terms of place-making principles.



Diagram 6: SWOT analysis of the *Place des Wallons*

In Table 28 below, place-making, in the *Place des Wallons*, is evaluated, using the Checklist drawn up as found in Chapter 4 (refer: Chapter 4, paragraph 4.5, Table 25: Evaluate place-making in public places, communities and areas in terms of the attributes of a "Great Place").

Table 28: Evaluate place-making in the *Place des Wallons* in terms of the attributes of a "Great Place"

<u>CHECKLIST</u>	
Evaluate place-making, in public places, communities and areas in terms of the attributes of a "Great Place".	
SOCIABILITY	
• Do the people interact with each other?	<input checked="" type="checkbox"/>
• Are there opportunities for social interaction in the specific area?	<input checked="" type="checkbox"/>
• Is there a welcoming atmosphere in the area?	<input checked="" type="checkbox"/>
• Do people experience a sense of satisfaction when they spend time in the area?	<input checked="" type="checkbox"/>
USES AND ACTIVITIES	
• Are there a range of age groups and different cultures present in the area?	<input checked="" type="checkbox"/>
• Is there a variety of activities presented in the area?	<input checked="" type="checkbox"/>
• Are people attracted by the uses and activities presented in the area?	<input checked="" type="checkbox"/>
• Is the area well-maintained?	<input checked="" type="checkbox"/>
ACCESS AND LINKAGES	
• Are the activities in the area easy to identify?	<input checked="" type="checkbox"/>
• Is the place accessible?	<input checked="" type="checkbox"/>
• Is placement of internal routes supportive to the natural flow of the people?	<input checked="" type="checkbox"/>
• Is the specific area pedestrian-friendly?	<input checked="" type="checkbox"/>
COMFORT AND IMAGE	
• Is the first impression of the area positive?	<input checked="" type="checkbox"/>
• Is the area clean and free of litter?	<input checked="" type="checkbox"/>
• Is the area safe?	<input checked="" type="checkbox"/>
• Are people's basic needs sufficiently provided for in the area?	<input checked="" type="checkbox"/>

5.8 Conclusion of place-making approaches

Derived from results of the above checklist, it is evident that place-making, through layout and design in the *Place des Wallons*, is successful in terms of the attributes of a "Great Place".

In the following chapter, the local approach to place-making, through layout and design are discussed in terms of South African policies and legislation.

Chapter 6: Local approach to place-making, through layout and design

The following diagram illustrates the structure of Chapter 6.

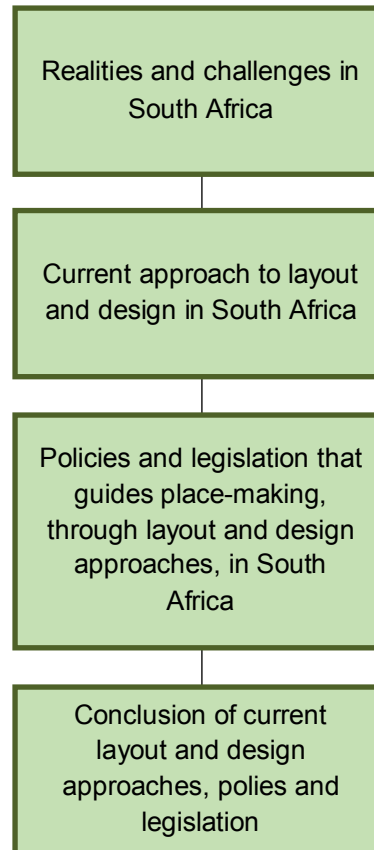


Diagram 7: Structure of Chapter 6

Place-making, through layout and design is primarily an international approach. This part of the study, however, focuses on local challenges and problems. Therefore, in order to determine best international practices in terms of the local context, this research includes a detailed evaluation of local reality and a summary of current policies and legislation regarding place-making, through layout and design in South Africa.

6.1 Realities and challenges of South Africa

“The victory over the apartheid state in 1994 set policy makers in all spheres of public life the mammoth task of overhauling the social, political, economic and cultural institutions of South Africa to bring them in line with imperatives of a new democratic order” (Asmal, 2001, as cited by Donaldson, 2001).

“Sustainable development is sometimes perceived as an abstract concept which is difficult to achieve in environments where the social needs and priorities of people in the community suffered as a result of neglect, poverty, unemployment and industrial decline” (Dixon & Pretorius, 2005).

The 1998 White Paper on Local Government accentuates the fact that the spatial, social and economic spheres (in other words, the sustainability) of the urban and rural environments were profoundly impaired by the policy of apartheid (Cooperative Governance and Traditional Affairs, 2013). The intent of current policies, legislation and guidelines in South Africa is to, through the Reconstruction and Development Program, promote and support integrated sustainable development of urban and rural areas. However, deeply rooted spatial, economic and social disparities continue to exist and are noticeable throughout rural and urban environments in South Africa. One of the main reasons cited in explaining why planning, policies, legislation and guidelines aimed at sustainable development in South Africa do not conclusively deliver the desired results, is increased urbanization (Cooperative Governance and Traditional Affairs, 2013).

Worldwide economic opportunities are the main reason for urbanization (Turok, 2012). Urbanization refers to not only the movement of people to cities, but also the migration of people to smaller towns. During the apartheid era, rural-urban migration was curtailed by discriminatory government controls. Due to restrictions such as poor education and training, prohibition to own land, restraints on choice of residence and regulation of employment, the majority of people in South Africa were forced to live and to work primarily in rural areas where work opportunities were dominated by farming (Turok, 2012). Since 1994, a large number people have moved off farms, either by way of eviction or by own free will. Of these people, the majority moved to townships or informal settlements in and around cities and the minority relocated to small rural towns (Todes, *et al.*, 2010). Post-1994, many people from the rest of Africa, as well as Asia and the Indian subcontinent, also migrated to South African towns and cities (Todes, *et al.*, 2010).

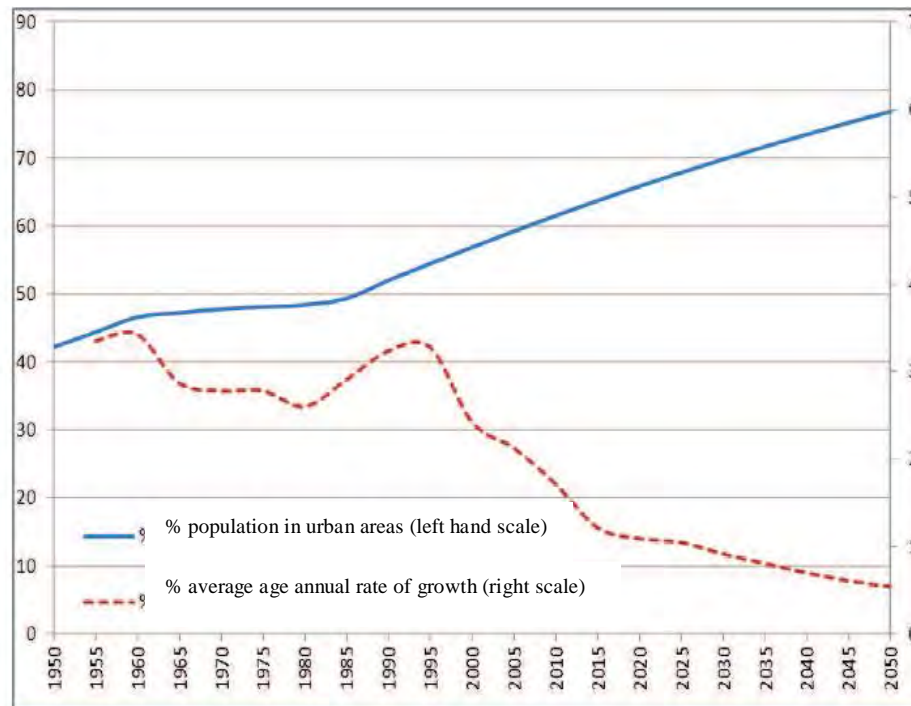


Figure 33: South Africa's urban population and its growth rate, 1950–2050

Source: United Nations Population Division, *World Urbanisation Prospects: The 2011 Revision*, as cited by Turok (2012)

Donaldson (1999) asserts that it is difficult to categorize South Africa's spatial settlement patterns into specific settlement types. Due to separate development and apartheid policies prior 1994, a unique set of settlement environments has developed, which is different from the familiar urban and rural differentiation pattern. The White Paper on Local Government (1998, 33) lists these environments in nine (9) categories:

- Urban core
- Urban fringe
- Small towns
- Dense rural settlements
- "Betterment" settlements
- Informal settlements
- Villages
- Agri-Villages
- Dispersed and scattered settlement

Factors such as variations in land tenure systems complicate the issue of land ownership in all of the above mentioned settlement types (Donaldson, 1999).

“Sustainable development is a programme to change the process of economic development so that it ensures a basic quality of life for all people, and protects the ecosystems and community systems that make life possible and worthwhile.” (Van der Merwe & Van der Merwe, 1999:5, as cited by Dixon & Pretorius, 2005). The incidence of relocation from rural communities in South Africa is highest among young, poor and jobless people, and gives rise to an increase in the levels of unemployment and poverty in cities and towns. Local governments are predominantly responsible for the planning and practical implementation of strategies, policies and legislation regarding the sustainable development, layout and design of urban and rural areas respectively. The growing population in cities and towns, however, creates tremendous pressure, and municipalities struggle to provide the basic needs of communities. Consequently, the backlog in providing and maintaining infrastructure and services such as roads, reliable public transport, sanitation, water and electricity is constantly growing (Cooperative Governance and Traditional Affairs, 2013).

The South African government recognises that the sustainable development of urban and rural communities is equally important, and that the economies of these respective areas are inextricably connected and dependent on each other (Cooperative Governance and Traditional Affairs, 2013). Conversely, Turok (2012) states that “Policymakers have often overlooked such connections, and viewed rural and urban areas in isolation”. Hereby they ignore the reality that the different rolls and functions of different places in South Africa are integrated and should complement and support each other in such a way that will result in sustainable economic development of the whole country. Although urban economies are more self-sufficient and stronger than rural economies (Turok, 2012), numerous urban economic activities (e.g. retail in food, etc.) would be unable to proceed without rural economic activities (Cooperative Governance and Traditional Affairs, 2013).

The government continuously makes resources available to eradicate poverty and to address basic needs by providing houses and basic services. The distribution and application of these funds, with specific reference to infrastructure investment, is however primarily sector-driven. Funds are therefore utilized for either housing or transport or water individually. Thus, these funds are not effectively used to achieve holistic long-term goals that will contribute to the overall functionality, or spatial and economic performance, of the specific municipality or community (Cooperative Governance and Traditional Affairs, 2013).

A further issue is that South African decision makers often tend to prioritise social and economic development regardless of the impact this may have on the environment. A typical example is the

Accelerated Shared Growth Initiative for South Africa (ASGISA). This initiative, which was accepted in 2006, aims to reduce unemployment to below 15% and poverty to less than one-sixth of households by 2014. This overarching macroeconomic framework, which will guide all policy development in South Africa until 2014, explicitly makes environmental goals subordinate to its socio-political and economic goals (South African context) (Cooperative Governance and Traditional Affairs, 2013).

“South Africa does not lack development plans and well-quantified development goals. The national plan has laid important foundations in this direction, along with the previous but neglected sustainable development framework and abundant sectoral plans. Yet, the risk for the national development plan to marginalize is very high, because of the missing political commitment and multiple policy uncertainties. The big bottleneck is the implementation and a commitment to carry the work further from the planning stage” (Rennkamp, 2010). Actions of stakeholders have unintentionally strengthened social and spatial segregation, as well as the already existing dominant urban sprawl patterns in South Africa. Such trends increase the consumption levels of non-renewable resources, which in turn result in damage to the environment. It is therefore obvious that, “...we are still struggling to find mechanisms for integrating investments with planning that will allow the creation of well-designed and more liveable cities” (Cooperative Governance and Traditional Affairs, 2013).

6.2 Current approach to layout and design in South Africa

During the apartheid era in South Africa, the ruling political party had dominant say in the development, location, layout and design of cities, towns, and more specifically the so-called townships where most of the indigenous population resided. Since the new democratic dispensation in 1994, the urgent need to enhance liveability in South Africa by rebuilding, redefining and redesigning society has emerged (African National Congress, 2011).

In 1995, the National Government instituted the “Development Facilitation Act” (developed by the RDP Office). The Development Facilitation Act (Act no. 67 of 1995) was the first legislation affecting planning and redevelopment in the post-apartheid era. In this Act, it was determined that old planning mechanisms are bypassed, and land development objectives be decided by all involved authorities. In addition, the Act makes provision for an appointed commission to govern the development programme further. The RDP plan is to address social, economic problems facing South Africa (African National Congress, 2011).

The African National Congress defines the five key curricula of the Reconstruction and Development Programme (RDP) as follow:

1. Meeting basic needs
2. Developing our human resources
3. Building the economy
4. Democratising the state and society
5. Implementing the RDP

Five reasons, why South Africa needs the Reconstruction and Development Programme include: the reality of divided towns and cities; divided rural areas; inequality within society; an economy which previously benefited the minority; and lastly that small and medium sized businesses do not get enough support (African National Congress, 2011).

The Reconstruction and Development Programme (RDP) discusses social and economic problems in South Africa's society, such as violence, inadequate housing programmes, scarce job opportunities, poor education and health care, modest democracy and a failing economy. According to the ANC's Reconstruction and Development Programme, the six basic principles of the RDP are as follows:

1. To address the whole problem, not just part of it (holistic approach)
2. Based on the needs and energies of all of our people
3. To provide peace and security for all
4. To build the nation
5. To link reconstruction and development
6. To build and strengthen democracy (African National Congress, 2011).

6.3 Policies and legislation that guides place-making, through layout and design approaches, in South Africa

Table 29 describes the role of the Town Planning Scheme and Land Use Management Scheme (LUMS) on a local level, as well as the Ordinance and Spatial Development Framework (SDF) on a national level of governance in South Africa and the extent of guiding the layout and design approaches in South Africa.

Table 29: Policies and legislation guiding layout and design in South Africa

Level of Governance			
Local level:	<p>Town Planning Scheme</p> <p>Town Planning Scheme describes the property zoning that is applicable and determines such aspects as possible land use, floor area, coverage, building lines, parking provisions etc. There are presently different Town Planning Schemes for different areas of the city stating requirement and development limitation affecting the layout and design areas (Cilliers, 2010).</p>	<p>LUMS (Land use Management Schemes)</p> <p>Land Use Management is the system of legal requirements and regulations that applies to land to meet desirable and harmonious development of the built environment. The LUMS is the summary of these requirements for a specific area (Cilliers, 2010).</p>	<p>SDF (Spatial Development Framework)</p> <p>The collective goal is to help development within the local municipality in context with the metropolitan region within which it functions. It is also required to meet economic, social and environmental sustainability related to the IDP development cycle (Cilliers, 2010).</p>
Provincial level:	<p>Ordinance</p> <p>A land use ordinance consists of the following:</p> <ul style="list-style-type: none"> Structured plans Zoning schemes Subdivision of land Planning advisory board General provisions (Grobler, 1997). 		

Presented in Table 30 are policies, legislation, and guidelines with regards to good governance, urban development, rural development, and environmental and spatial planning. These policies and legislation currently has an impact on the design process in South Africa in terms of sustainable communities, place-making, through layout and design approaches.

Table 30: Legislation, policies and guidelines: Planning for sustainable communities.

Guiding	Type	Details
Good Governance		
Policy	White Paper on Local Government. 1998	It places municipalities at the centre of planning. It emphasises integrated development planning as a tool for realising the vision of developmental local government.
Legislation	Municipal Structures Act No. 117 of 1998	To provide for the establishment of municipalities in accordance with the requirements relating to categories and types of municipality; to establish criteria for determining the category of municipality; to define the types of municipality.
Legislation	Municipal Systems Act No. 32 of 2000	To define the legal nature of a municipality; to provide for the manner in which municipal powers and functions are performed; to provide for community participation; to establish a simple and enabling framework for the core processes of planning, performance and management.
Development		
Legislation	Development Facilitation Act No. 67 of 1995	A “fast-track” approach to development. It resolves conflicts through “development tribunals” at provincial level. Facilitates development of settlements, discourages land invasions, promotes efficient and integrated land development, discourages urban sprawl, makes maximum use of resources and provides guidance and information to people.

Policy	Green Paper on Development and Planning. April 1999	The emphasis is on co-operative governance between national, provincial and local spheres of government. The Commission emphasises the importance of establishing a shared vision and consistent direction for spatial development based on protecting the rights of people and the environment.
Guidelines	Integrated Development Plans (IDP)	A key tool for local government to cope with its developmental role. Integrated development planning is now seen as a function of municipal management, as part of an integrated system of planning and delivery. Guides decisions on issues such as municipal budgets, land management, promotion of local economic development and institutional transformation.
Rural development		
Policy	Integrated Sustainable Rural Development Strategy (ISRDS). November 2000	The ISRDS is designed to realise a vision that will attain socially cohesive and stable rural communities with viable institutions, sustainable economies and universal access to social amenities, able to attract and retain skilled and knowledgeable people, equipped to contribute to growth and development.
Policy	Rural Development Framework 1997 (RDF)	Describes how government aims to achieve a rapid and sustainable reduction in absolute rural poverty.
Environmental		
Legislation	National Environmental Management Act (NEMA). No. 107 of 1998	The National Environmental Management Act provides co-operative environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance and procedures for co-coordinating environmental functions; and to provide for matters connected therewith.

Guidelines	Environmental Impact Assessment (EIA)	A study of the environmental effects of a decision, project, undertaking or activity. It is used within an Integrated Environmental Management (IEM) planning process as a decision support tool to compare different options.
Guidelines	Strategic Environmental Assessment (SEA)	Relates primarily to the planning and programme level. SEA aims to ensure that environmental issues are addressed from an early stage in the process of formulating policies, plans and programmes, and incorporated throughout this process. It is a proactive management instrument.
Spatial Planning		
Policy	Urban Development Framework. April 1997 (UDF)	Examines current dilemmas and realities facing South Africa's urban areas. It provides a positive and common vision of a desired future for South Africa's urban areas in the year 2020. Contains Government's vision for sustainable urban settlements, as well as guidelines and programmes for the achievement of the vision.
Policy	Land Use Management Bill. 2003	Provides for the uniform regulation of land-use management in South Africa, sets principles for spatial planning, land development and land-use management, provides for spatial development frameworks, guides certain laws and provides for matters connected therewith.
Policy	National Spatial Development Perspective (NSDP). 2006	Endorsed by Cabinet in March 2003 to ensure economic growth, government spending on fixed investment on localities of economic growth, future settlement and economic development channelled into activity corridors and nodes adjacent to the main growth

		centres; informs the respective development plans of the three spheres of government; and gives support to government's national spatial development vision.
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Source: Cilliers (2010)

6.4 Conclusion of current layout and design approaches, policies and legislation

The purpose of layout and design is to create a framework, within which multiple investments be accommodated, which over time jointly reinforces development (Behrens & Watson, 1996). This implies that the layout plan should include, a minimum set of spatial interventions rather than attempting to be comprehensive (Behrens & Watson, 1996).

It is the responsibility of government, to not only, create legislation and policies that will result in the sustainable development of areas and communities, but also to define the objectives of the place-making approach, which will determine, the specific layout and design model of a area. It is therefore imperative to continuously, evaluate the progress of implementation and the practical outcome of the approach, to ensure that policies and legislation are relevant and that objectives is reached.

In Table 31 the South African approach to layout and design is summarized, along with supporting policies and legislation.

Table 31: South African approaches to layout and design

South African approaches to layout and design	
Current approach to Layout and design in South Africa	
Primary objectives and focus	<ul style="list-style-type: none"> The objective is to enhance liveability in South Africa by rebuilding, redefining and redesigning of society through reconstructive development.
Programmes implemented	<ul style="list-style-type: none"> The Reconstruction and Development Programme (RDP)
Success with regards to place-making	<ul style="list-style-type: none"> The RDP focuses on community participation and democratising the state and society, the development of human resources is another aim in the programme. These are all elements, which affect place-making

and liveability	and liveability.
Urban context	
Primary objectives and focus	<ul style="list-style-type: none"> • Integrated mixed-use housing • Redevelopment of areas
Programmes implemented	<ul style="list-style-type: none"> • Urban Development Framework • Integrated Development Plan (IDP)
Success with regards to place-making and liveability	<ul style="list-style-type: none"> • Urban Design Framework – establishing relationships between local government and civil society. • Overcome separation between spatial planning and economic planning • Successful land reform • IDP - Integrating different land uses and creating new spaces that includes restructuring, public participation and liveable elements.
Rural context	
Primary objectives and focus	<ul style="list-style-type: none"> • Improving opportunities and health of people in communities by implementing sustainable elements. • Improving rural-urban linkages • Eradication of poverty • Job creation
Programmes implemented	<ul style="list-style-type: none"> • Integrated Sustainable Rural Development Strategy (ISRDS) • Decentralisation and promotion of local power and autonomy in decision making • Rural Development Framework (RDF) GEAR (<i>Growth Employment and Redistribution</i>)
Success with regards to place-making and liveability	<ul style="list-style-type: none"> • As mentioned, the RDP has a chapter based on sustainability and livelihoods. Therefore, if implemented accordingly, the policy can be regarded as successful. • ISRDS focuses on providing opportunities for rural people. This is a core aspect of liveability (especially with regards to multiple opportunities and functions) and, as mentioned above, if the policy is implemented accordingly, it can have a successful influence on livelihood.

Current goals of the RDP are the merging, reconstruction and development of fragmented, neglected and underdeveloped areas, which resulted from the policy of apartheid in South Africa. The basic needs of the people, strong economy, democracy, peace and security, are of the main fundamental place-making objectives that are encapsulated in the framework of this approach towards the sustainable reconstruction and development of South Africa.

In Chapter 7, the effectiveness of this approach to place-making, through layout and design in planning for sustainable communities in South Africa, are discussed and analysed by means of a qualitative and quantitative investigation process.

Chapter 7: Qualitative and quantitative investigations of the local approach to place-making, through layout and design

The following diagram illustrates the structure of Chapter 7.

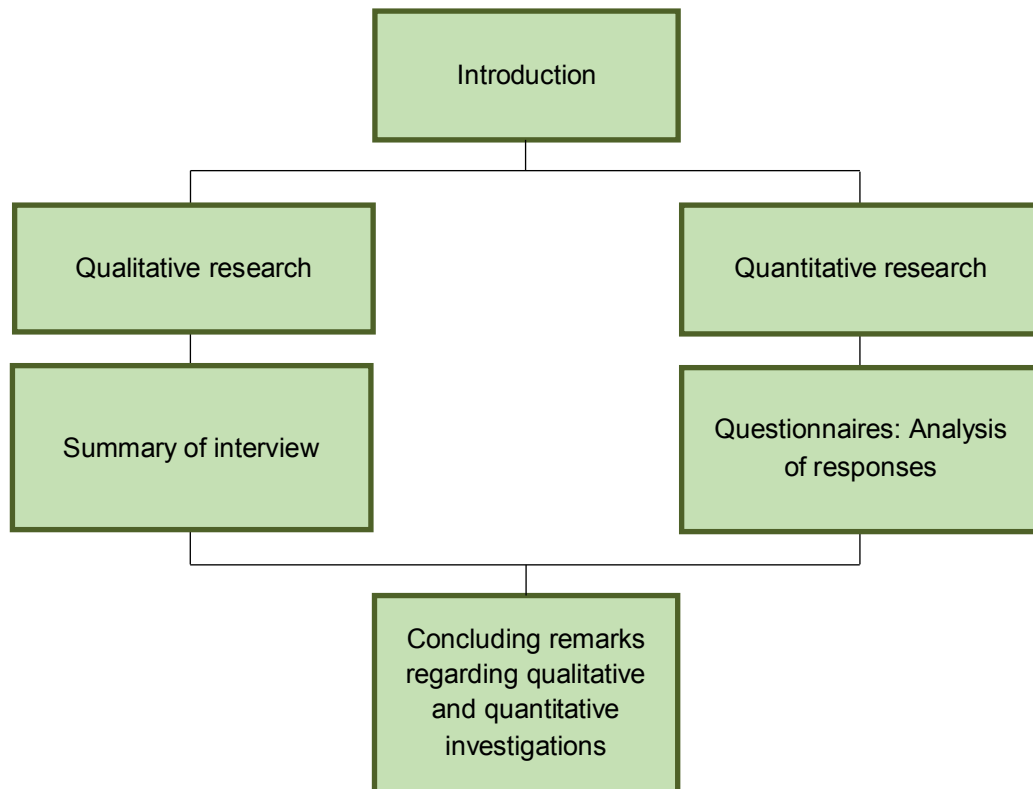


Diagram 8: Structure of Chapter 7

In this chapter, the South African approach to place-making, through layout and design is evaluated by means of a quantitative and qualitative investigation.

7.1 Introduction

Quantitative and qualitative research methods were used to obtain the opinions of experts and members of the general public regarding sustainability, sustainable communities, place-making approaches and layout and design approaches in South Africa, and at the same time, determine the participants' knowledge and comprehension of these concepts.

7.2 Qualitative investigation

The research findings are based on an interview with Professor Sarel Cilliers, an international leader in the field of Urban Ecology (integration between environmental aspects and urban reality) and senior lecturer at the Faculty of Natural Sciences: School of Environmental Sciences and Development, North West University, Potchefstroom.

The objective of this qualitative research was to determine the relevance of green planning as a sustainable place-making approach in rural areas in South Africa and furthermore to identify practical guidelines for the Green planning approach and the implementation thereof in these areas.

7.2.1 Summary of interview

In the qualitative investigation, the informal, open-ended interview technique was used to gain insight in an expert's subjective understanding of the concepts of sustainable development, place-making, through layout and design and green planning, as well in his approach to the implementation thereof in the South African context.

In the interview, the following questions were raised:

- How can one, through place-making and layout and design approaches, make communities more sustainable?
- What guidelines exist regarding green planning?
- How can green areas be implemented successfully in rural areas to improve the quality of life of the people?
- Do you believe that South Africa has a future in terms of sustainability and sustainable communities?

Cilliers (2013) concurs that an effective Green planning approach is a fundamental building block of place-making, and will result in an environmentally-friendly, economically viable, socially equitable, and thus sustainable community. Cilliers accentuates that multifunctional green spaces should be the primary goal when the layout and design of sustainable communities are planned, and that planners should lay emphasis on a value-driven approach when planning green spaces in an area.

Cilliers (2013) concedes that the diverse composition of communities, as well as the various circumstances in different areas, give rise to unique challenges in terms of sustainable development. He furthermore admits that people in South Africa, especially in rural communities, have a limited knowledge of the concept of sustainability and the valuable role of green open spaces in this regard. For this reason, the Green planning approach cannot be defined or be limited by exact guidelines, but should rather be guided by prevailing circumstances in an area, fundamental place-making principles (refer: Chapter 4, paragraph 4.1, Table 16: Key principles of place-making), and the primary values of sustainability (refer: Chapter 2, paragraph 2.3, Figure 2 The Three Spheres of Sustainability).

Cilliers (2013) states that a Green planning approach should evolve around the needs of the community. To effectively determine what the needs of the community are, and discover their lived experience of an area, Cilliers (2013) suggests the use of the place-making approach of community participation (refer: Chapter 4, paragraph 4.4.3: Community participation approach). He further asserts that the participation process offers an opportunity to ascertain the skills of the local population, and to enhance their knowledge and awareness of the substantial contribution of green open spaces towards the sustainability of an area. Furthermore, it is necessary to execute an extensive study of the area, in order to determine current trends (refer: Chapter 4, paragraph 4.1, Table 16: Key principles of place-making), and identify the prevailing flora of the area.

Cilliers (2013) lists four actions, for which provision must be made in the Green planning approach: proactive action; reactive action; restore and apply, and opportunistic action. The fundamentals of each of the four actions, as well as their function in place-making, through layout and design, are briefly discussed in Table 32 below.

Table 32: Four actions in the Green planning approach

Strategy	Explanation	Place-making, through layout and design
Proactive action,	Preserve and improve the status quo with regard to natural areas by early identification and protection of these areas.	Implement place-making, through layout and design approaches in an attempt to reduce any future possibility of ineffective communities.
Reactive action	Refer to the conservation of the remaining natural areas, in areas where natural areas already has been disturbed.	Identify remaining undisturbed natural areas in communities and protect these areas by the process of place-making, through layout and design
Restore and apply	Restore disturbed areas by means of appropriate engineer practices.	Incorporate place-making elements into layout and design to restore disturbed areas.
Opportunistic:	Develop new green areas, for example gardens, parks and semi- natural areas that will perform important functions.	Implement the Green planning approach of place-making, through layout and design This is the strategy where the impact of the correct place-making principles and layout and design approaches can make an immense difference within a community.

Cilliers (2013) warns that implementation of the Green planning approach of place-making in rural areas is not an easy task, mainly because of the high level of uneducated people and limited financial resources. Cilliers is of the opinion that sustainability, and the realism of sustainable communities in South Africa, is for many people simply a theory. Therefore, the only way to ensure sustainability in an area is by integrating multiple disciplines such as theoretical knowledge and available skills in the community. However, Cilliers insists that green spaces play an essential role in sustainable communities. Therefore, considering the economic capability of the area, provisions for the regeneration and conservation of existing green places, and development of new green spaces with specific purposes and values, are essential in the layout and design of sustainable communities (Cilliers, 2013).

Cilliers (2013) is excited by the noticeable progress that South Africa has made in terms of sustainability and the planning of sustainable communities. He therefore remains optimistic that sustainable communities will play a leading role in the development of South Africa in the future.

7.3 Quantitative investigation

In the quantitative investigation, questionnaires were distributed amongst twenty (20) participants. To ensure that answers could be reliably aggregated and that comparisons could be made with confidence, questionnaires were identical in terms of the questions and the order of the questions

The twenty (20) participants are from diverse backgrounds. Fifteen (15) participants, by virtue of their specific professions (refer Table 33 below), can play a decisive role in planning for sustainable communities and place-making, through layout and design. The remainder of the participants represent the educated voice of the general public. Table 33 is a summary of the participants.

Table 33: Summary of participants

	Name and Surname	Occupation
1	Derick Potgieter	Architect
2	Chris Schlebusch	Developer
3	Manda Smit	Urban Geographer
4	Eddie Taute	Urban Planner
5	Christiaan Harmse	Environmental Scientist
6	Jan-Harm Steenkamp	Town and regional planner
7	Sarel Cilliers	Urban Ecologist
8	Nita Conradie	Town Planner
9	Riaan Lotriet	IT Manager (Trollope mining services)
10	Christel Pretorius	Environmental Sciences Student
11	Coleen Obesholzer	SAPS Computer (AngloGold)
12	Adelle Loock	HR Officer (Trollope mining services)
13	Bronwyn Prinsloo	Architectural draughtsman
14	Chris Bates	Survey manager

15	Sansha Van der Merwe	Engineer
16	Louisa Oberholzer	Environmental Coordinator
17	Michelle Kruger	Personal assistant of an Urban Planner
18	Luanita van der Walt	Environmental Scientist
19	Sinead Drew	Training Administrator (Trollope mining services)
20	Elandrie Davoren	Environmental Sciences student

The objective of the research was to obtain the opinions of educated members of the public and experts, regarding sustainability, sustainable communities, layout and design approaches and place-making approaches in South Africa; and simultaneously to measure their knowledge and understanding of these concepts.

7.3.1 Analysis of responses

The selected participants answered ten questions. The following section presents the results of the answers provided, illustrated by means of graphs.

Question 1:

As a professional, rate the importance of the following sustainable strategies for a rural area and community.

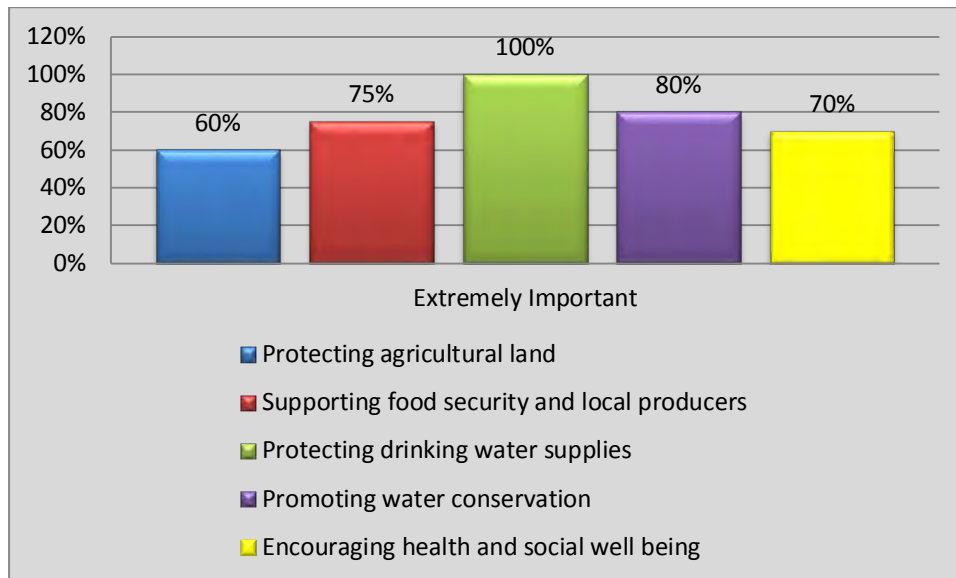


Figure 34: Bar graph depicting the responses to question 1

Analysis of response

Only sustainable strategies, which are rated by more than 50% of the participants as extremely important are depicted in the bar graph.

Derived from these responses, the strategies protecting drinking water supplies (100%); promoting water conservation (80%); supporting food security and local producers (75%); encouraging health and social well-being (70%) and protecting agricultural land (60%) are deemed by the participants to be the most important sustainable strategies.

Four of the above mentioned strategies refers to protecting the environment and natural resources which in turn reflect fundamental characteristics and goals of a sustainable community (refer: Chapter 2, paragraph 2.4, Sustainable Communities).

Question 2:

In your opinion, which of the following are the three most important strategies for a rural area and community?

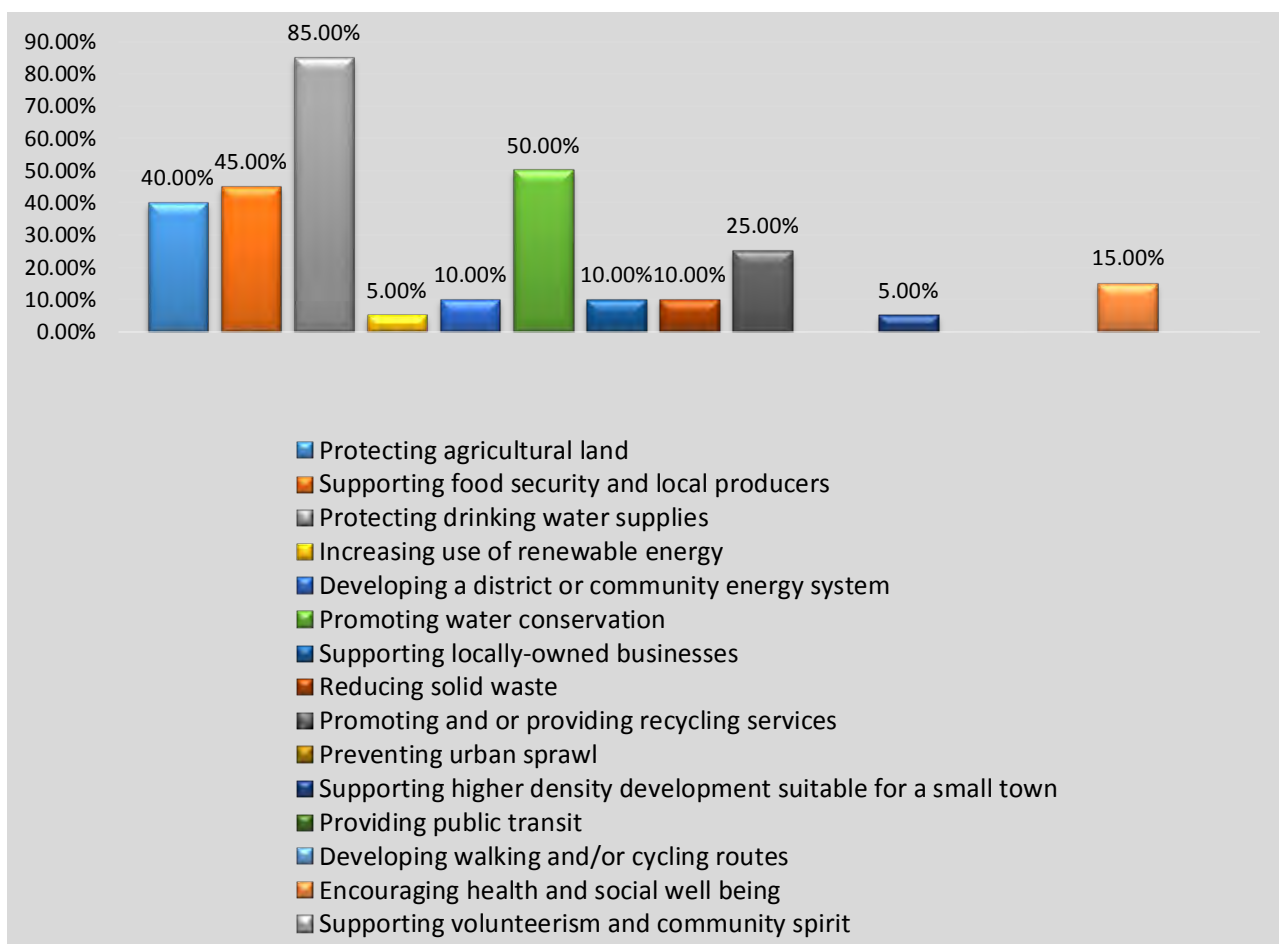


Figure 35: Bar graph depicting the responses to question 2

Analysis of response

The participants indicated that the conservation of drinking water (85%) and natural water resources (50%), are pivotal to sustainability of rural communities. Food security (45%), and the protection of agricultural land (40%), is closely related to the availability of water, and the importance of both strategies was emphasized by the participants. Deduced from these results and the results of question 1, it is clear that the majority of the participants are convinced that the approach for the development of rural communities should primarily focus on conservation and protection of drinking water and natural water resources, which in turn are essential for food security.

Question 3:

Do you understand the concept of sustainable development?

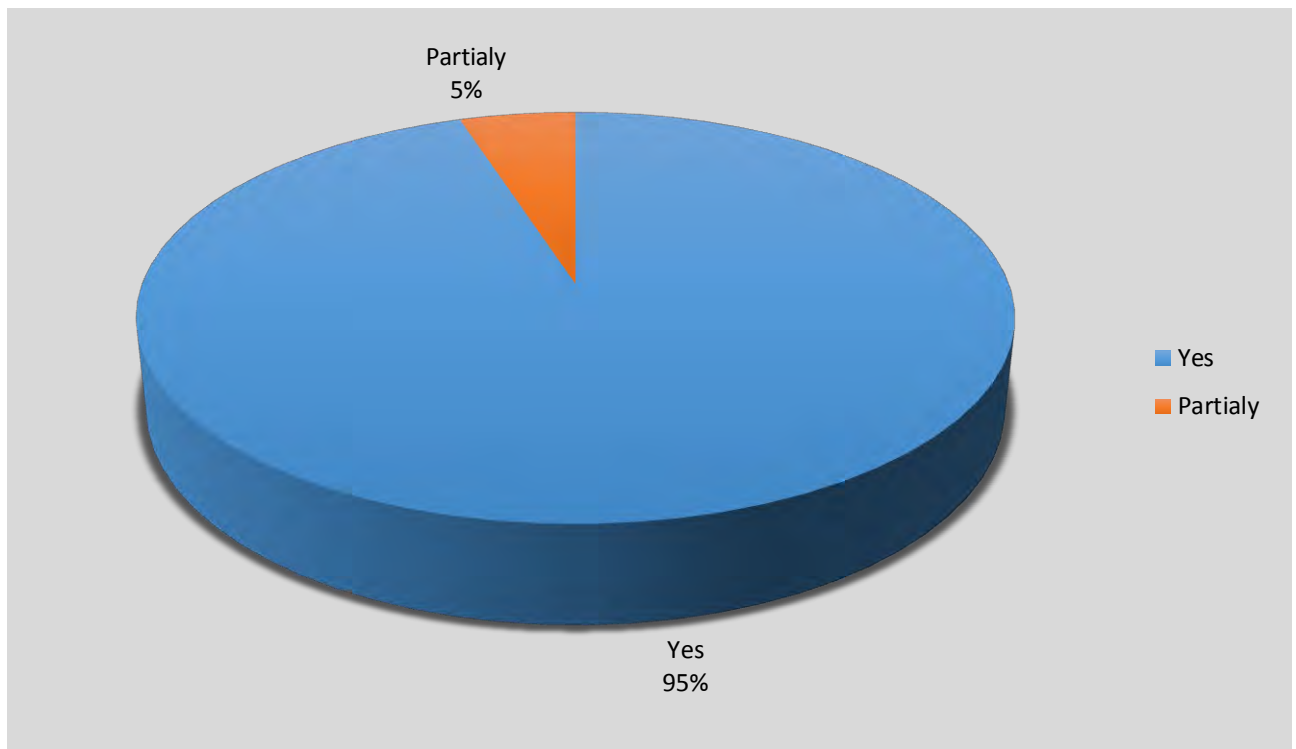


Figure 36: Graph depicting the responses to question 3

Analysis of response

The response, as can be seen in Figure 36 above, shows that 95% of the participants have an understanding of the concept of sustainable development. However, it must be noted that the real challenge of sustainable development lies in the planning approach, whereby the expectations and needs of the community are fulfilled in terms of “The Three Spheres of Sustainability” (refer: Chapter 2, paragraph 2.3, Figure 2: The Three Spheres of Sustainability). This can only be accomplished through purposeful planning and an effective layout and design.

Question 4:

In your opinion, does South Africa effectively plan for sustainable communities?

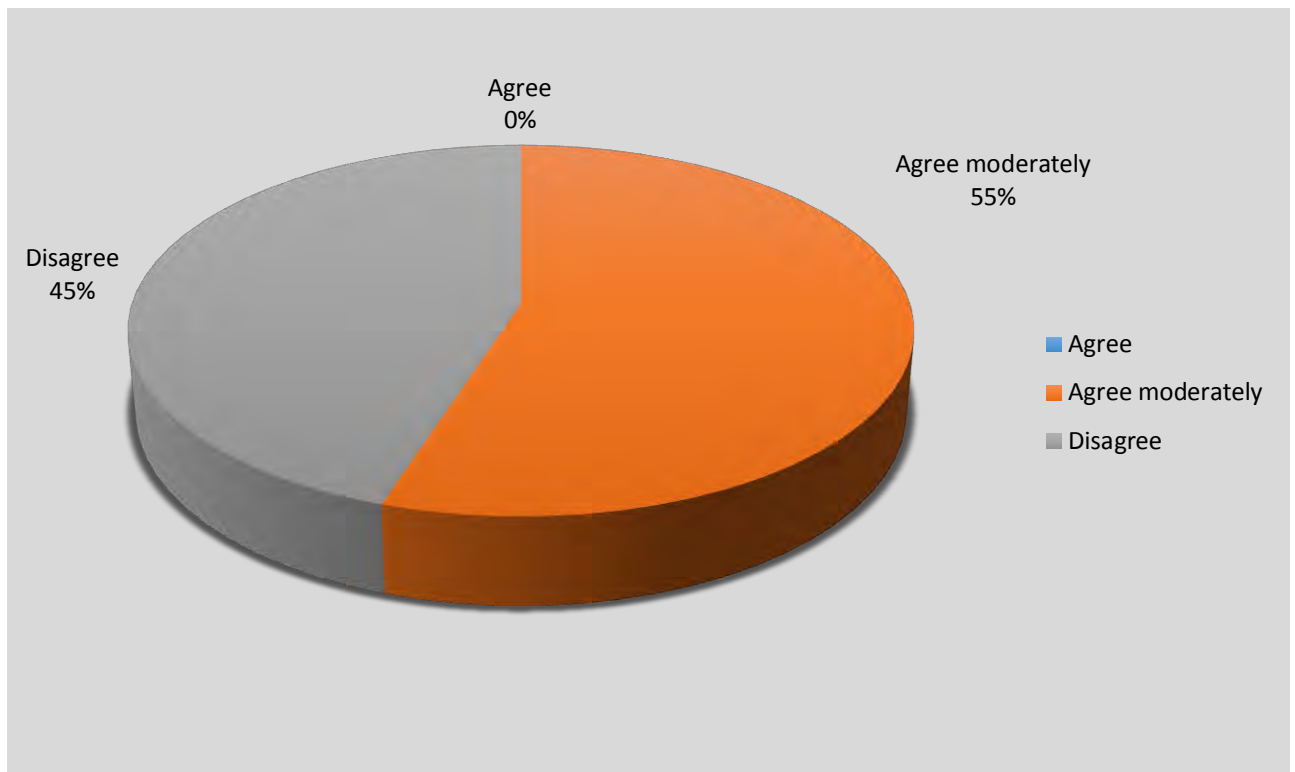


Figure 37: Graph to depicting the responses to question 4

Analysis of response

More than half of the participants (55%) only moderately agree that planning is effective, while 45% assert that it is not. The lukewarm positive response (combined with the fact that none of the participants indicated that they agreed with the statement) and the large percentage of participants who did not agree, creates the impression that the current planning regarding sustainable communities in South Africa is not convincingly effective.

Question 5:

In your opinion, is the current layout and design approach of South Africa for rural communities effective?

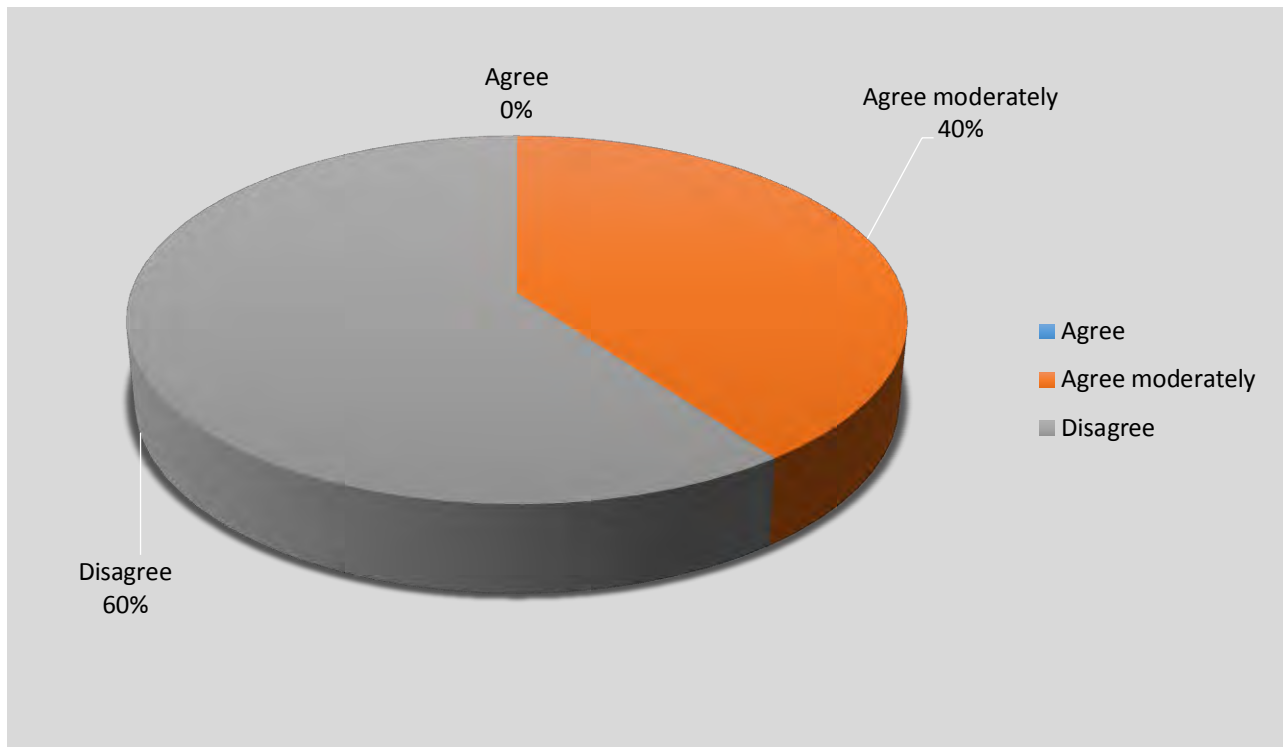


Figure 38: Graph depicting the responses to question 5

Analysis of response

None of the participants indicated that the current layout and design approach for rural communities in South Africa is effective. In fact, 60% of the participants disagree with this statement, while the other 40% agree only moderately. The response to this question reinforces the inferences made in question 4; and thus confirms that, according to the participants, the planning for sustainable communities in South Africa is not efficient, and even less so in respect to rural areas.

Question 6:

In your opinion, does South Africa have an integrated approach to green open spaces?

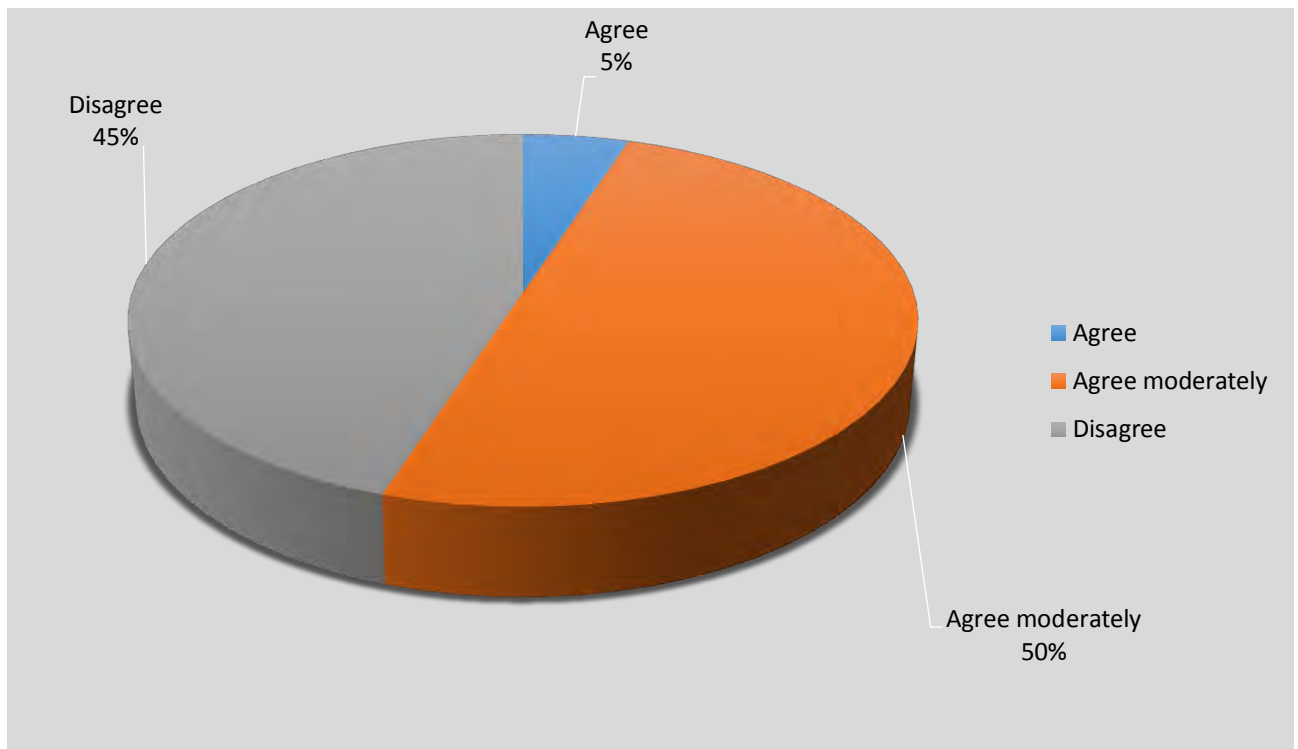


Figure 39: Graph depicting the responses to question 6

Analysis of Response

Barring the response of one participant, the responses of the participants are almost equally divided between those that agree moderately 50% and 45% that disagree with the statement contained in the question. Derived from the responses, it is clear that the value of green spaces as a sustainable element is not appreciated in South Africa, and likewise the role of green spaces in sustainable community development not comprehended fully.

Question 7:

From the list below, select the five (5) leading fundamentals that in your opinion will influence the layout and design approach for an effective sustainable community.

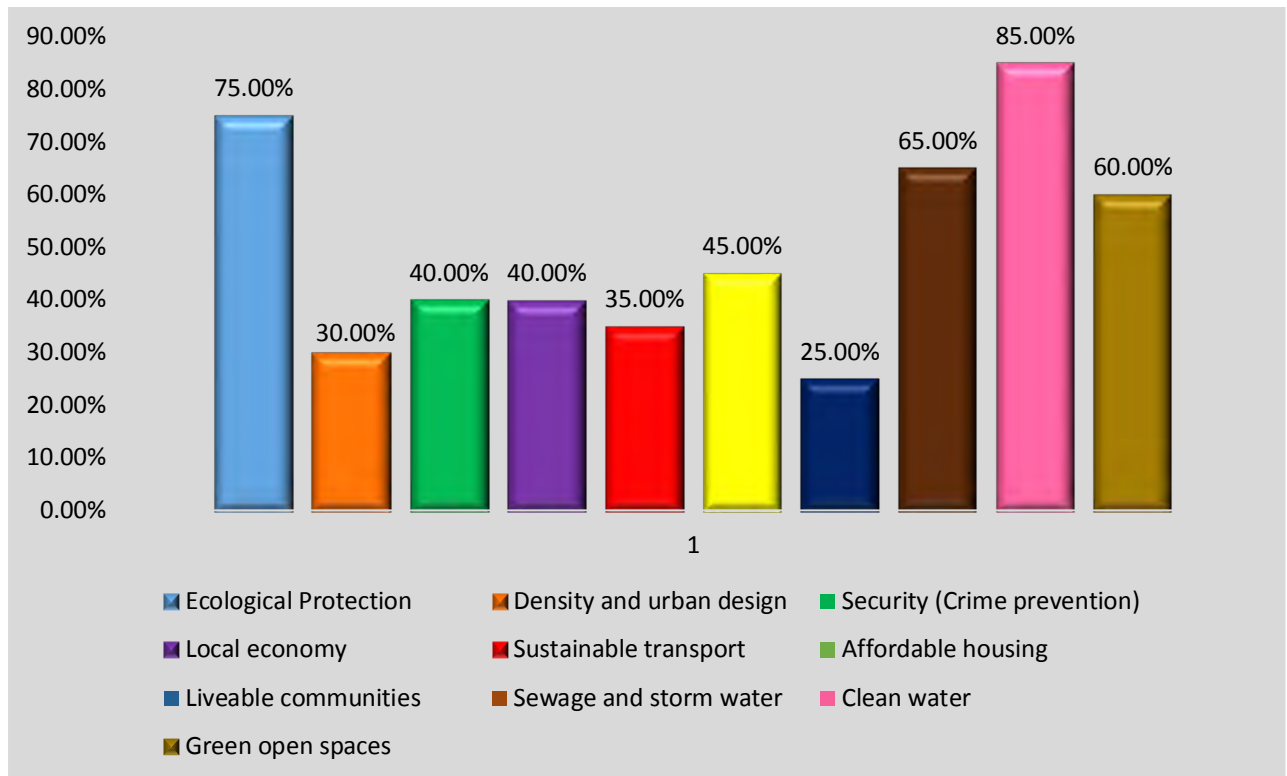


Figure 40: Bar graph depicting the responses to question 7

Analysis of response

The five (5) topmost categories, which were chosen by the participants, were: clean water 85%; ecological protection 75%; sewage and storm water 65%; green open spaces 60% and affordable housing 45%. The result demonstrates clearly that the participants primarily preferred the elements that are focused to provide in the basic needs of people and which would contribute to the liveability and wellbeing of the community.

Question 8:

In your opinion, which one of the following 4 elements is the most important when planning for a specific place?

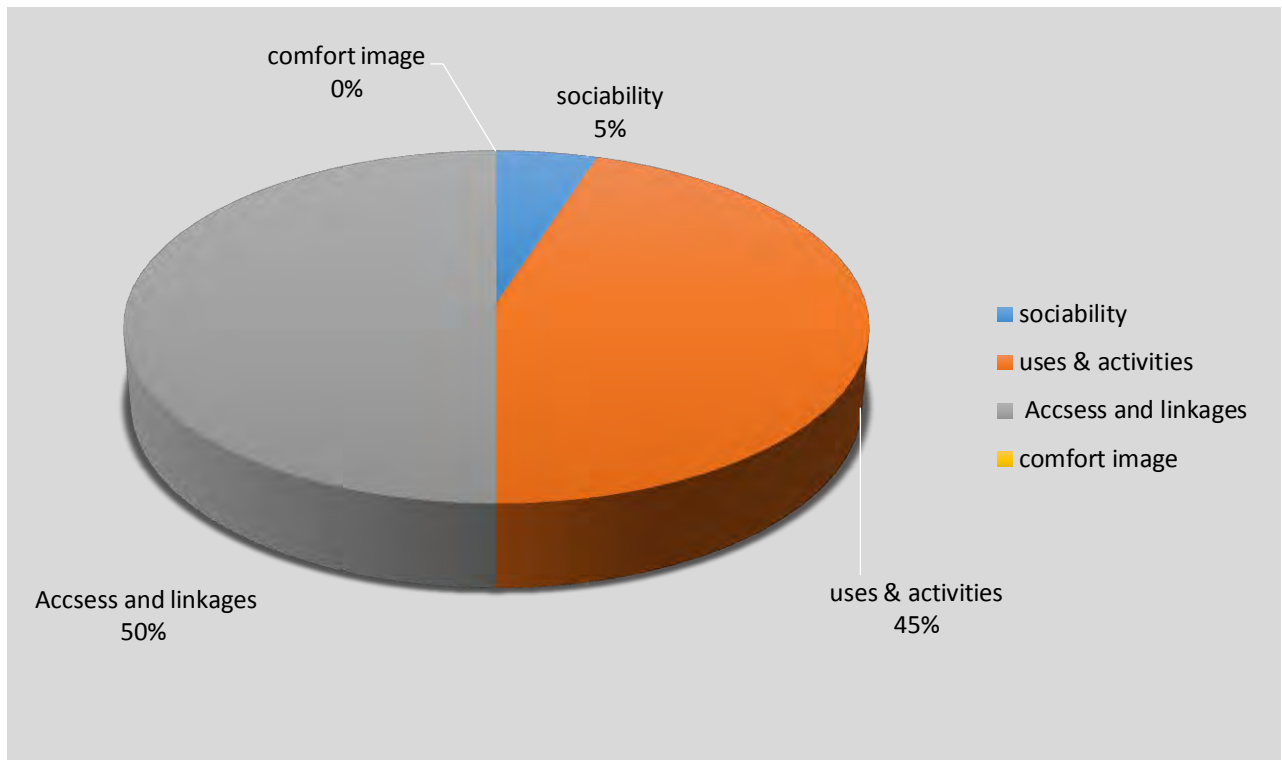


Figure 41: Graph depicting the responses to question 8

Analysis of response

Access and linkages received the highest number of votes (50%). Thus, half of the participants consider characteristics such as: easy to identify; the availability and quality of transit; walkability of a place and convenient access to amenities, important when planning for one place.

Question 9:

South Africa today still has major challenges because of the apartheid era that lead to fragmented and disjointed cities and communities. Planning for sustainable development is directed by a combination of broad planning guidelines and normative planning concerns. General planning guidelines for urban planning include:

- The movement network and transport.
- The open space system, which is made up of the hard open spaces and the soft open spaces.
- Public facilities.
- Land subdivision.

(Guidelines for Human Settlement Planning and Design: 2000: National Department of Housing)

In your opinion, are the above planning guidelines for urban planning employed noticeable in South Africa?

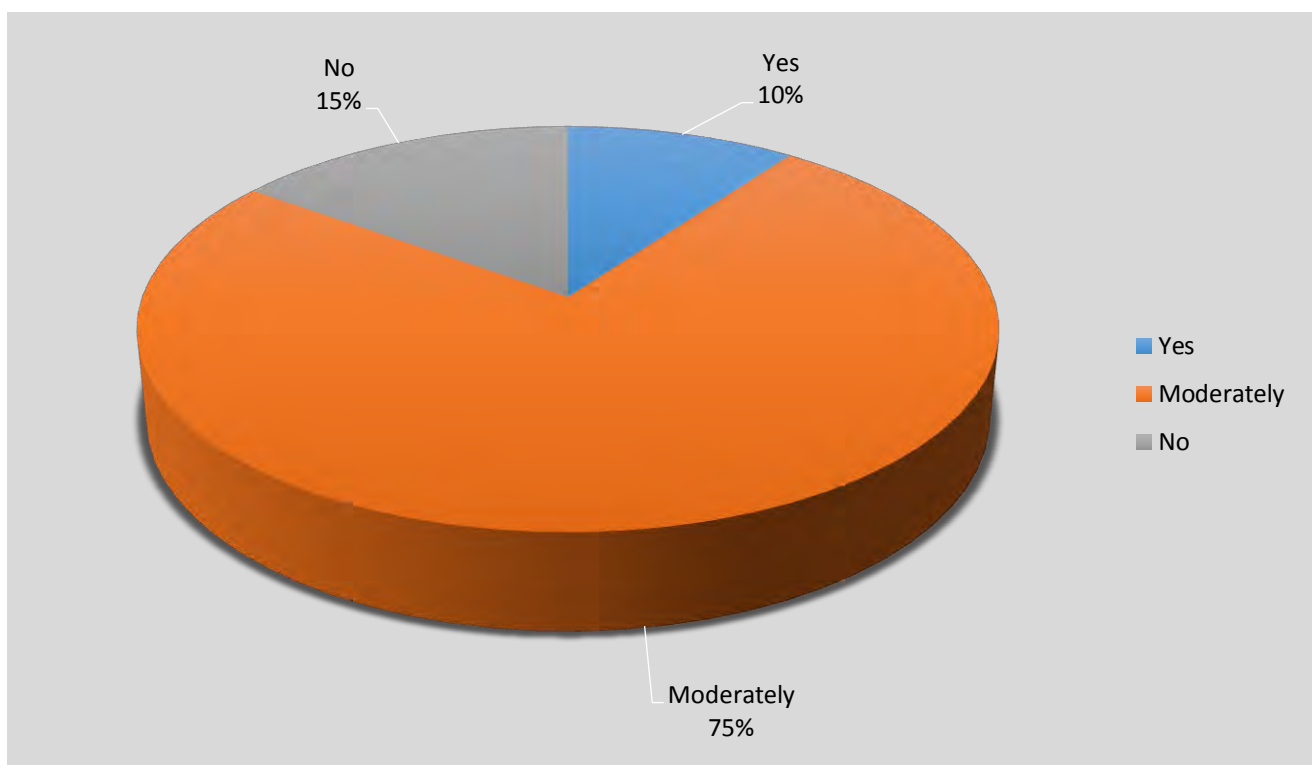


Figure 42: Graph depicting the responses to question 9

Analysis of response

Seventy five percent (75%) of the participants are of opinion that the planning guidelines that are employed for urban planning in South Africa are only moderately noticeable.

Question 10:

In your opinion, is it important that South Africa have sustainable communities?

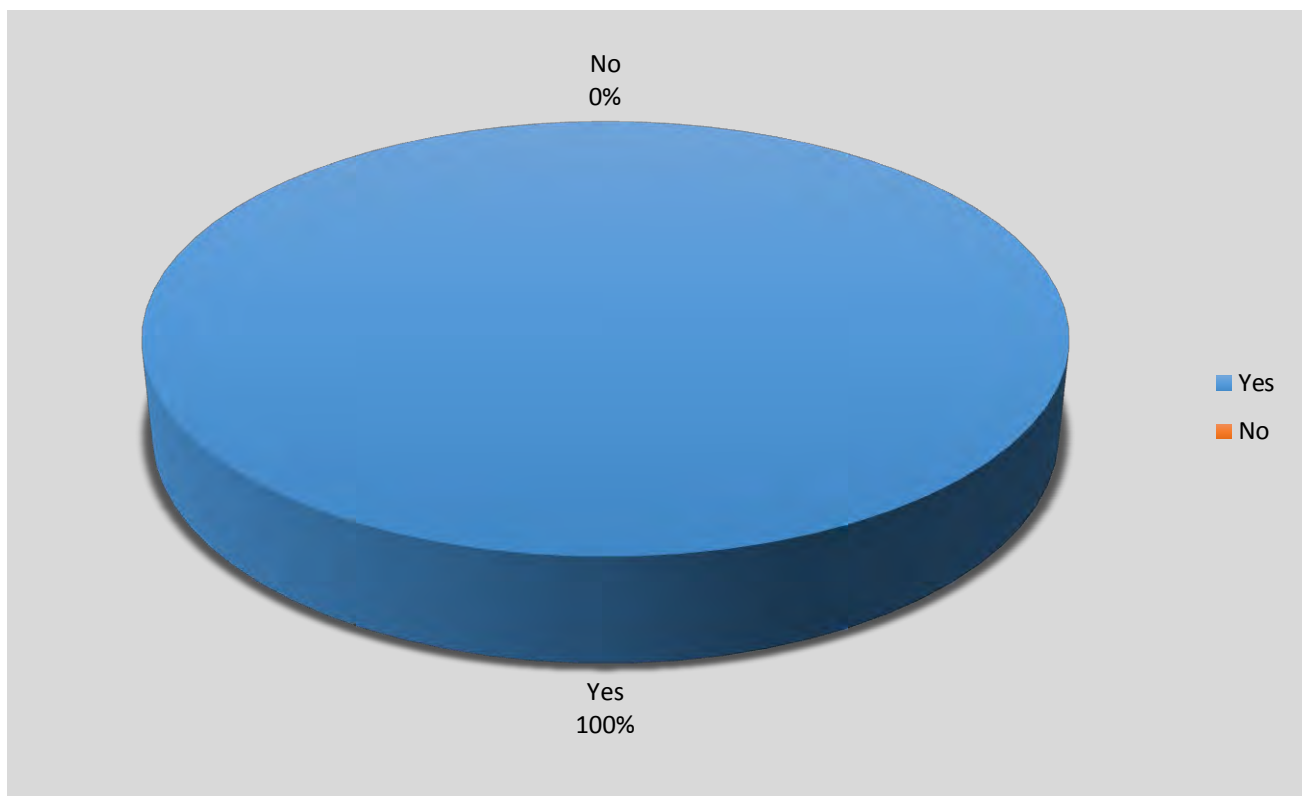


Figure 43: Graph depicting the responses to question 10

Analyses of response

Derived from the overwhelming positive response (100%), it is clear that the participants considered sustainable communities as a high priority in the present and future South Africa.

7.4 Concluding remarks regarding qualitative and quantitative investigations

The participants' assessments of the various concepts and scenarios provide valuable insight and perspective on the status quo in South Africa in terms of sustainability, place-making, the planning for sustainable communities and the perspectives of the experts regarding these matters. The participants and experts' responses in both the qualitative and quantitative investigations also accentuate the shortcomings in the South African approach regarding the abovementioned matters.

The following table recapitulates the primary matters and shortcomings, which were emphasized in the quantitative and qualitative research.

Table 34: Primary matters and shortcomings emphasized in the quantitative and qualitative research

Primary matters and shortcomings emphasized in the qualitative and quantitative and research	
Qualitative research	<ul style="list-style-type: none"> • Green planning as a place-making approach plays an all-important role in layout and design of sustainable communities. • Knowledge to the value of sustainability and green open spaces are insufficient in rural communities.
Quantitative research	<ul style="list-style-type: none"> • Provision for the basic needs of people is of utmost importance. • The concepts of sustainability and sustainable development are well understood and supported. • Planning and development of sustainable communities are unsatisfactory. • Planning for green open spaces is currently not a priority in South Africa. • Current layout and design of rural areas are insufficient. • Planning guidelines are inadequate and unobtrusive.

In Chapter 8, a local approach to place-making, through layout and design in South Africa is studied on the basis of a case study of the Vaalharts region.

Chapter 8: Local approach to place-making, through layout and design: The Vaalharts case study.

The following diagram illustrates the structure of Chapter 8.

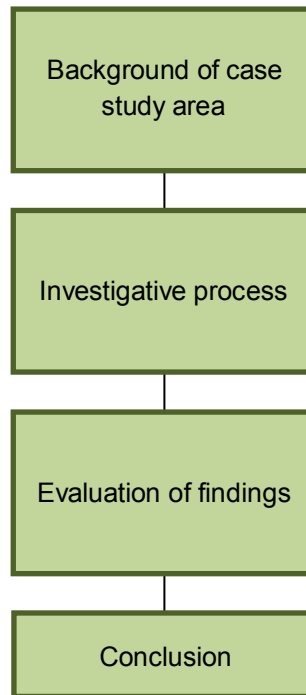


Diagram 9: Structure of Chapter 8

This chapter includes a case study of the Vaalharts Region located in the rural areas of the Northern Cape Province in South Africa, with the purpose of determining the prevailing circumstances in the area. This has been done to evaluate, place-making, through layout and design approaches, in South Africa, in context to this area.

8.1 Background of case study area

The Vaalharts region, also known as the Vaalharts Irrigation Scheme falls within the jurisdiction of the North West and Northern Cape provinces in South Africa. The Vaalharts Irrigation Scheme name was derived from the Vaal River and Harts River that flows through the area and is the largest irrigation scheme in South Africa (Claasen 1989). Construction of the Vaalharts Irrigation Scheme started in 1934 and includes a network totalling 1,176 kilometres of concrete-coated canals. The Vaalharts Weir, built in the Vaal River upstream from Warrenton, diverts water from the Vaal River into the Vaalharts Main Canal, which in turn channels water to the North Canal, the Klipdam-Barkly Canal and the Taung Canal. By means of these canals, water is distributed to

39,820 ha land, scheduled for irrigation; supplies water for six (6) towns; provides water for industries, thus used for industrial purposes; gives water to various properties for their primary use and, it is drinking water for livestock in the area (Vaalharts Water User Association, 2013a).

An image of the concrete canal is captured in Figure 44 below.



Figure 44: Canal in the Vaalharts Irrigation Scheme
Source: Aurecon Group, (2013)

The rural settlements Taung, Valspan, Ganspan, Sekhing and Pampierstad situated in the area, have developed mainly because of the agricultural activities in the area. Spatial, economic and social inequalities are still highly visible in the region. These are exacerbated by the diversity of cultures, religions and the disparity in the available job opportunities and number of people residing in the area. The inadequate levels of literacy and limited proficiencies of the majority of people in the region also play a negative role in this regard (Coetzee, 2011).

Figure 45 below is a Geological Information System (GIS) map depicting the data of the towns and settlements applicable to this case study, in the Vaalharts region.



Figure 45: Towns and settlements in the Vaalharts region

The aim of the case study is to evaluate the local approach to place-making, through layout and design, in terms of place-making elements in the Vaalharts area with the intention of determining best practices for an integrated place-making, through layout and design approach which will enhance planning for sustainable communities in South Africa.

For this reason, it is imperative to investigate the environmental, economic and social characteristics of the Vaalharts Irrigation Scheme and the surrounding areas.

8.2 Investigative process

The first part of the investigative process is a field inventory, comprising of an overview of the location of the Vaalharts region in relation to other rural towns and cities as well as how accessible the region is. The second part of the investigative process is an exploratory field analysis, which includes an analysis of the internal, external and surrounding factors that influence the Vaalharts region.

8.2.1 Field inventory

The Vaalharts Irrigation Scheme located in both the North West and Northern Cape provinces is a remote rural area governed by more than one provincial authority. “The geographical area of the Scheme passes through the local municipalities (LMs) of Dikgatlong, Magareng and Phokwane in the Frances Baard District Municipality, and the Frances Baard District Municipal Area (DMA) in the Northern Cape Province; and the Greater Taung LM in the Dr. Ruth Segomotsi Mompati District Municipality (DM) in the North West Province. Population projections for the area indicate that by 2030, given the most likely scenario, the population may reach almost 400,000; with the largest population in the Greater Taung Municipal area” (Vaalharts Water User Association, 2013b). It is therefore difficult to find explicit uniform guidelines for the sustainable development of this area.

The small towns, Jan Kempdorp and Hartswater are located in the Vaalwater Irrigation Scheme area. Other rural towns are located in the area surrounding the Vaalwater Irrigation Scheme such as: Warrenton, in the south (Northern Cape Province); Schweizer-Reneke, to the northeast (North West Province); Vryburg, to the north (North West Province) and Christiana, to the east (North West Province). Larger towns close to the area are Upington, in the west (Northern Cape Province) and Kimberley, in the south (Northern Cape Province) and the nearest major city is Bloemfontein located approximately 250 km southeast of the Scheme in the Free State Province.

The figure below displays a map indicating where the surrounding towns are situated (Longman, 1996).



Figure 46: Towns surrounding the Vaalharts region

Access to the region is made possible via various roads. The N18 national road passes through the region in a North / South direction. Access from the west, is by the N14 which intersect the N18 north of the area and from the East by the N12 which intersect the N18 south of the region (Longman, 1996).

8.2.2 Field analysis

Internal factors

Internal factors analysed in the field analysis includes: identity; density; basic needs and liveability.

- Identity

Agriculture is the main activity in the area. Therefore, the region has a typical, rural identity unique to farming communities in South Africa

- Density

The Vaalharts region and the surrounding areas are sparsely populated and the majority of people in the area are farmers and farm labourers.

- Basic needs analysis

The data which was used to determine the overall basic needs of selected communities in the Vaalharts region in this research, was captured (given the necessary consent) from the results of a Needs Analysis for this specific area carried out by Hendri Coetzee and his team in partnership with The Department of Science & Technology of the North-West University. Coetzee is a research psychologist and psychological counsellor in the category “community mental health” (Coetzee, 2011).

The larger project was founded on the responses of thirty-one (31) pre-selected individuals willing to participate and a stratified sample of nine hundred and fifty-eight (958) participants randomly drawn from the communities. These participants proportionally represented the five communities; Taung, Valspan, Ganspan, Sekhing and Pampierstad located in the Vaalharts rural area. The data derived from this analysis should be deemed relevant to the greater Vaalharts rural area (Coetzee, 2011).

The participants were asked to respond to the following three fundamental questions:

- What are the actual needs of the community?
- What are the most important needs in the community?
- Name the perceived strengths/assets and resources of each community.

Process of analysis

In the first phase of the project, the research team selected thirty-one (31) willing, knowledgeable participants to participate in a qualitative investigation aim to identify the basic needs, strengths/assets and resources of the five communities. This group was comprised of fourteen (14) male and seventeen (17) female participants, of which twenty-five (25) were black or coloured and six (6) were white.

Each participant was interviewed separately. During the interview, the individual was asked to give his or her personal perception of the particular community he or she represented. Furthermore, each participant was asked to identify the needs of his or her particular community. The interview was tape-recorded continuously and the verbal data transcribed thereafter. Members of the research team also carried out an independent, observation process on each community respectively. After all the data of the communities was obtained autonomously, the data was merged with the purpose of identifying the collective needs of each of the five communities.

In the second phase, the research team carried out a quantitative investigation in order to verify and quantify the needs, or need-related themes, identified during the first phase of the project. A stratified sample of nine hundred and fifty-eight (958) participants was randomly drawn from the five communities. They were ranked according to; gender, age, marital status, nationality, level of education, occupation and household income per month and were invited to complete a questionnaire compiled from the qualitative data obtained during the first phase of the research.

The following table gives a summary of what the participants identify as the most important needs.

Table 35: Highest scoring needs

Highest scoring needs (descending in terms of percentage)	Corresponding needs-related theme
Water supply (86.5%)	Basic municipal services
Housing (85.4%)	Infrastructure/additional facilities
Police services (84.4%)	Safety and security; Emergency services
Social workers (80%)	Health and welfare
Livestock supplies (78.5%)	Agriculture
Access to information (i.e. libraries and internet) (77.8%)	Educational or training related services
Need for IDs and passports (77.1%)	Access to basic government services
Job opportunities (75.4%)	Employment
HIV/AIDS awareness campaigns (43.6%)	Awareness campaigns

Source: Own construction based on the Vaalharts Report (Coetzee, 2011:2)

It is important to note that according to Hofstede (1984) basic needs do not necessarily follow each other in a linear way but rather purports these are linked and complex in nature.

Conclusion of the basic need analysis

Derived from the participants' response to the questions it is evident residents of the settlements have an urgent need for the improvement of the basic municipal, health and welfare and emergency services to take place. Their awareness of the explicit need for an improved education and training reflects the people know that higher levels of literacy and education would result in better job opportunities or self-employment consequently leading to their economic self-reliance and independence. All the needs expressed and highlighted by participants give an indication of the level of liveability and quality of life in the area, which ultimately affects the sustainability of the area.

- Liveability analysis

Liveability is fundamental to the place-making concept. Due to the fact that there is very little information available regarding the communities in the settlements of: Taung, Valspan, Ganspan, Sekhing and Pampierstad in the Vaalharts region it was imperative to visit these settlements in order to evaluate the liveability, liveliness and quality of life in the area.

Process of analysis

All information was gathered either by means of: visual observation; from discussions with members of the communities; and discussions with other individuals involved with the communities in the Vaalharts region (i.e. upholding the importance of participation process). The place-making elements, which were used to evaluate the liveability and liveliness, as well as the communities' experience of quality of life in the Vaalharts region, includes: sociability: uses and activities: access and linkages; and comfort and image (refer: Chapter 4, paragraph 4.3.2, Figure 13: What makes a great place?).

Sociability

Unlike the people in the settlements of Taung, Sekhing and Pampierstad, who were aloof and anti-social, individuals from two communities, in the Valspan and Ganspan settlements, (closer to the

town Jan Kempdorp) appeared to be more literate and the atmosphere in the two communities was more hospitable and friendly.

Examples of social interactive elements such as street vendors were found in the communities. Vendors on the side of the road outside the school in Valspan are depicted in Figure 47 below. These activities can be seen as a form of a street market, promoting an interactive street life in the community.

Figure 48 below is an image of students from North-West University providing training to the community in Valspan. These programs aim to train the community to design and manufacture merchandise from recycled material, which can be sold on the open market. Through this training, the community will be empowered to contribute to the economic sustainability of the region and for the promotion of the protection of the natural environment.



Figure 47: Street vendors in the Vaalharts region
Source: Personal source (2013)



Figure 48: Educational training
Source: Personal source (2013)

Uses and activities

The uses and activities in the Vaalharts settlements are indicative to those of other rural communities in South Africa. Public places in the settlements where people meet and socialize apart from the schools and churches in the region are several cafes/supermarkets in the communities, as illustrated below in figures 49 and 50.



Figure 49: Shemoly Fruit and Veg
Source : Personal source (2013)



Figure 50: Generations Supermarket
Source: Personal source (2013)

Figure 51 is an image of the Valspan community hospital. When in deliberation with medical staff of the hospital in Valspan it was revealed that health and welfare services in the region were in poor condition and there was a shortage of qualified personnel at the hospital.

All communities visited have at least one church. As is evident in the image in Figure 52 below, the church buildings are all in good condition and serve as focal points in the area.



Figure 51: Hospital (Valspan community)
Source: Personal source (2013)



Figure 52: Church
Source: Personal source (2013)

Figure 53 below is an image of a public park with a playground but it was observed there was no activity in the park during the time of the visit. As is evident from the image, the park facility is not maintained and the equipment is unsafe to use. This park's condition is representative of all the parks in all of the other settlements visited. In addition, it was noted, except for the public parks, there are in fact no other structured forms of recreational, entertainment places in any of the communities.



Figure 53: Playground
Source: Personal source (2013)

Access and linkages

The five settlements in the region are situated relatively far apart. As demonstrated in the image in Figure 54, the roads inside the settlements are primarily dirt roads and are not well-maintained. Some of the roads, which link the various settlements as shown in the image in Figure 55, have been upgraded with a more permanent surface but they are only a few in number. The remainder of the surfaces are dirt roads.



Figure 54: Gravel roads in the Vaalharts region
Source: Personal source (2013)



Figure 55: Upgrading of roads
Source: Personal source (2013)

Since the communities in the settlements are poor, very few people own a private means of transport. The community members are mainly dependent on public transport making use of taxi

services. As displayed in the photographs in figures 56 and 57, the main mode of transport is by foot, as pedestrians.



Figure 56: Transit: pedestrian based (a)
Source: Personal source (2013)



Figure 57: Transit: pedestrian based (b)
Source: Personal source (2013)

Comfort and image

The category most neglected includes the aspects of comfort and the image of places. The existing infrastructure is limited, i.e. water, electricity and sanitation in the settlements and was found to be inadequate per se. It is poorly managed and systems are hardly maintained. The settlements of Taung, Sekhing and Pampierstad, located in the northern part of the region, experience the aforementioned conditions more severely. Waste management is very sub-standard gauging by the notable lack of control and management measures to manage waste sites. Although storm water within the region is well-managed and controlled by the cement canals, there is no adequate infrastructure put in place to manage storm water in the settlements.



Figure 58: Waste dump
Source: Personal source (2013)



Figure 59: Sub-standard infrastructure
Source: Personal source (2013)

There is a police presence in or situated close by to the settlements. However, during conversations with members of the different communities, they indicated the high incidence of crime in the region make that they still feel unsafe.

Finally, the architecture and internal layout of the settlements are stereotypical. The buildings are unattractive are built of sub-standard materials and are gradually falling apart.

Conclusion of the liveability analysis

Derived from the analysis, it is clear that current levels of liveability and quality of life in the Vaalharts region, is poor and thus will not contribute to the sustainable development of the region.

External factors

The external factors analysed in the Field analysis includes the geometrical and climate factors and the natural vegetation of the area.

- Geometrical and climate factors

The Vaalharts region lies between the Ghaapseberg to the west and the Marroccan ridges to the east. Despite a gentle gradient toward the Harts River, the area has mainly a flat topography. There are numerous farm dams located in the area. Three larger dams, the Taung Dam, the Spitskop Dam and the Vaalharts Dam are located just outside the region. Rainfall of the area ranges between 400-450 mm per annum, and the area experiences maximum temperatures in January of around 32°C, with minimum temperatures of around 16°C in June (Claasens, 1989).

- Natural vegetation

Except for the lush, green, agricultural plants covering the largest part of the natural soil in the Vaalharts Irrigation Scheme, the remaining areas are semi-arid plains with typical Kalahari vegetation.



Figure 60: Irrigation fields in the Vaalharts region
Source: Aurecon Group, (2013)



Figure 61: Semi-arid plains with typical Kalahari vegetation
Source: Aurecon Group, (2013)

- Surrounding factors

With the exception of the irrigation channels which meander through the region and a few places of historic interest in the surrounding areas, there is little else within the Vaalharts region that will entice people to visit the area.

8.3 Evaluation of the findings

The findings of the investigative process in the Vaalharts region was evaluated as part of the empirical investigation of this study, based on the theoretical founding and objectives evaluated in Chapter 2 to 4 of this research.

The layout and design were evaluated based on:

- SWOT analysis of the Vaalharts region.
- The Checklist drawn up as found in Chapter 4 (refer: Chapter 4, paragraph 4.5, Table 25: Evaluate place-making in public places, communities and areas in terms of the attributes of a "Great Place").

The following diagram depicts a SWOT analysis of the Vaalharts region.



Diagram10: SWOT analysis of the Vaalharts region

The Vaalharts region is evaluated in Table 36 below, using the Checklist drawn up as found in Chapter 4 (refer: Chapter 4, paragraph 4.5, Table 25: Evaluate place-making in public places, communities and areas in terms of the attributes of a "Great Place").

Table 36: Evaluate place-making, in the Vaalharts region in terms of the attributes of a "Great Place".

<u>CHECKLIST</u>	
Evaluate place-making, in public places, communities and areas in terms of the attributes of a "Great Place".	
SOCIABILITY	
• Do the people interact with each other?	<input checked="" type="checkbox"/>
• Are there opportunities for social interaction in the specific area?	<input checked="" type="checkbox"/>
• Is there a welcoming atmosphere in the area?	
• Do people experience a sense of satisfaction when they spend time in the area?	
USES AND ACTIVITIES	
• Are there a range of age groups and different cultures present in the area?	<input checked="" type="checkbox"/>
• Is there a variety of activities presented in the area?	
• Are people attracted by the uses and activities presented in the area?	
• Is the area well-maintained?	
ACCESS AND LINKAGES	
• Are the activities in the area easy to identify?	<input checked="" type="checkbox"/>
• Is the place accessible?	<input checked="" type="checkbox"/>
• Is placement of internal routes supportive to the natural flow of the people?	
• Is the specific area pedestrian-friendly?	
COMFORT AND IMAGE	
• Is the first impression of the area positive?	
• Is the area clean and free of litter?	
• Is the area safe?	
• Are people's basic needs sufficiently provided for in the area?	

8.4 Conclusion

The results from both the evaluations above clearly shows the approach to place-making through layout and design in the Vaalharts region is inefficient and not conducive for sustainability in the region.

Quality of life in the region is sub-standard, and key place-making attributes such as sociability, uses and activities, access and linkages, and comfort and image that support and enhance quality of life are virtually absent in the region.

Planning for the renewal of further sustainable development of this area should, first and foremost, focus on providing for basic needs of the communities in the area. Cognisant of the inequalities that are deeply rooted in the area, and the low levels of education and training, it is essential that the planning process should be preceded by an extensive community participation approach, and that changes should be introduced progressively in small steps.

The theoretical and empirical investigation of the research, dealing with planning for sustainable communities: place-making, through layout and design approaches, are hereby complete and conclusions in this regard will be discussed in Chapter 9.

Chapter 9: Conclusions

In this chapter, the main purpose of the study is re-stated, followed by conclusions made in the context of planning for sustainable communities: place-making, through layout and design approaches.

9.1 Main purpose of study

This research aims to explore the potential and possibility of creating and understanding integrated approaches to guide the planning for sustainable communities. Sustainable community planning principles are applicable to both urban and rural areas, although different in terms of basic needs, it is evident that sustainable community development in all developing and developed countries, cities and regions should be regarded as priority.

From the urban planning context, reviewing different international and local layout and design approaches will aid in defining the best practices and improving planning approaches for sustainable communities. This will include the concept of public participation playing an essential role in determining the basic needs of the community and being a fundamental building block in the planning process.

The main objective of this research is to evaluate and analyse approaches to plan for sustainable communities, focussing on place-making, through layout and design approaches that will encourage social progress which recognises the needs of everyone; protect the environment; safeguard prudent use of natural resources; and maintain high and stable levels of economic growth and employment while considering the long-term implications of decisions. International approaches will be identified and evaluated to create best practices that can be adopted and applied to the local South African planning context in an attempt to create and plan for successful sustainable communities focussing on the Vaalharts rural area.

9.2 Conclusion

Due to urbanization and the resultant increase in population in regions, cities, towns and communities, the needs of people in relation to their natural environments have become more complex.

The theoretical and empirical research confirm that for a community to be sustainable, provision for the needs of people should take place in harmony with the natural environment and within the capacity of available resources. The key tool to achieve this objective is effective place-making, through layout and design. In order to satisfy the aspirations of all stakeholders, the research also accentuates it is critical a holistic vision of the needs of the people be obtained. The inclusive process of community participation can form this holistic vision. In order to ensure the harmony between the growing needs and expectations of the community and the resultant strain on the environment be managed effectively, it is imperative the community participation process be ongoing, thereby ensuring the layout and design approaches remain effective.

It is evident that the core issues, in terms of the concept and language of sustainability, should be addressed before proper place-making, through layout and design approaches are introduced into any area, more specifically rural areas. Conversely, many recent theories depict that the objective location of people is not directly related to their subjective contentment. The latter can be manipulated by sustainable and lively initiatives that will enhance quality of life, irrespective of income, education, age or gender. Hence, policies and strategies should not merely endeavour to eradicate poverty, create jobs or deliver housing, but embrace decisive sustainable and innovative initiatives that will effectively transform an area into a liveable and sustainable community. The liveability and liveliness of a place, and the people's sense of connectedness to a place, relies mostly on the people's, lived, experience of a place. Therefore, planning of sustainable communities should aim to enhance the key attributes of public places by means of the place-making, through the layout and design approaches.

A new and innovative way of thinking regarding inter-relationships between economic, environmental and social well-being of the community is desirable in the place-making, through layout and design approach of sustainable communities. Resourceful design approaches, strategies and policies regarding sustainable communities and the redevelopment of existing areas will ultimately lead to effective management and healthier, safer, greener, economically sustainable and liveable communities. Internationally, and more specifically in developed countries, this process is continuous and the concept of sustainability is now entrenched.

Certain conclusions could be drawn with regard to the planning for sustainable communities through layout and design approaches, in particular in the context of rural areas in South Africa. South African policy makers are confronted with a unique set of circumstances. The consequence of the policy of apartheid, which was enforced until 1994, still has noticeable impact on the implementation of sustainable development and layout and design of this country. Urban and

Regional Planners are continuously confronted with complex settlement patterns of fragmented and spatially detached communities in which even today, only a minority of the population has access to quality infrastructure and services. The cultural diversity and spatial, economic and social disparity that perseveres in communities throughout the country impair liveability and quality of life and complicate efforts directed towards the development of sustainable communities.

Since the beginning of the democratic dispensation, policy makers have devised policies, legislation and guidelines that, in theory, are aimed at promoting the liveability and quality of life of communities in South Africa by eradicating social, economic and spatial inequality. Knowledge of the needs and aspirations of the various communities in South Africa was mainly obtained by the place-making community participation approach. However, the idealistic, and sometimes unrealistic, expectations of the majority of the population, has weakened the effectiveness of the approach and the laws and guidelines that flowed from it. In turn, this attitude has contributed to prolonged neglect of the people's needs, and ignorance of the intended long-term sustainable outcome of the policies, legislation and guidelines.

Authorities' unsatisfactory commitment to implementing strategies, and their preference of politically inspired goals, leads to further deterioration in the liveability and quality of life of urban and rural communities. South Africa can benefit greatly from the compilation of a framework wherein detailed practical guidelines for implementation of sustainable solutions are described. The framework should furthermore define short and long-term goals, and timelines for the development of sustainable communities in different areas.

9.3 Evaluation of key findings of the study integrated with the key literature findings

Table 37: The ideal situation vs. current reality of developed and developing countries.

	Ideal situation	Current reality of developed and developing countries
Sustainability	<ul style="list-style-type: none"> • Harmonize people's needs with the natural environment and available resources. • Promote social, economic, and spatial equality for present and future generations. • Live a sustainable lifestyle. 	<p>Although there is a universal language that the majority of people understand, there are many different interpretations regarding the concept. Urbanization places great pressure on the natural environment and the resources of urban and rural communities.</p>

<p>Layout and design</p>	<ul style="list-style-type: none"> • Layout and design promotes the development of sustainable communities. • Enables people to be more self-sufficient. • Effective layout and design improves liveability and quality of life in communities. • Sustainable layout and design provides for future development. 	<p>In most developed countries, implementing layout and design approaches has been effective. However, in most developing countries such as South Africa, formation of informal settlements and urban sprawl has influenced the original layout and design negatively, and has left little to no opportunity for future expansion and development. Thus sustainable community planning is a challenge in these countries and various basic needs should first be addressed.</p>
<p>Place-making</p>	<p>Creates great public places, which meet the needs of the community, increases quality of life, liveability and liveliness.</p>	<p>The concept of place-making is successfully implemented in most developed countries. Conversely, spatial, social and economic inequality in most developing countries causes delay and disrupts the effective implementing of place-making.</p>

9.4 Conclusion: Qualitative investigation (interview)

It is quite evident, especially in developed countries, that green planning as a place-making approach in layout and design plays an important role in planning for sustainable communities. Effectual examples of multifunctional green spaces, such as the *Place des Wallons* (refer: Chapter 5, International approach to place-making, through layout and design: The *Place des Wallons* pilot study), is found in communities across the world.

In South Africa, it is the fact that the backlog in providing for basic needs such as jobs, drinking water, electricity, sewage and other essential infrastructure in urban and even more so in rural communities, definitely takes precedence over planning for green open spaces. Meaningful, multifunctional, green open spaces are mainly found in bigger towns and cities and the incidence of functional green open spaces in rural communities is hardly significant.

9.5 Conclusion: Quantitative investigation (questionnaires)

All the individuals involved in the quantitative research seemed to have sufficient knowledge and understanding of the concepts of sustainability, place-making and layout and design approaches. The importance of providing for the basic needs of the community, with specific reference to drinking water and food security were emphasised by all the participants. Transport, and the conservation and protection of natural resources such as water and agricultural land were also highlighted.

The results of the research clearly showed an overall commitment by these participants to the value of creating sustainable community development. However, the results stressed simultaneously the absence of an integrated approach to green, open spaces, inadequate layout and design approaches for rural areas, and the inconspicuous planning guidelines for planning in urban areas.

9.6 Conclusion: Vaalharts case study

Continued social, economic and spatial inequality has a visible impact on the liveability of the Vaalharts region. It is especially noticeable in the deficient quality of life in the five communities investigated in that region. Agriculture determines the economy of the region. Therefore, training, skills, and jobs opportunities are mainly based in this sector. The level of education in the area limits the probability of alternative employment or self-employment, with results that are detrimental to the economic growth and economic independence of the region.

It is evident that the basic needs, expressed in the Vaalharts case study (refer: Vaalharts case study Chapter 7, Table 36: Needs inventory for five preselected communities in the Vaalharts region), are fundamental needs related to liveability. The needs-analysis depicts that the communities in the Vaalharts region experiencing a low quality of life, thus the Vaalharts rural area cannot be considered a sustainable environment. The circumstances depicted in the Vaalharts case study area, are representative of circumstances that exist in the majority of rural areas in South Africa.

The practical implementation of the South African policy regarding development of rural areas, and the provision of basic services and infrastructure in any particular area is primarily the responsibility of local government. In this regard, it appears the efforts of the local governments, which are

responsible for the Vaalharts region, are unsuccessful and the evidence of this is remarkably obvious.

Although an unilateral attempt made to address the basic needs of the communities in the Vaalharts region may improve the quality of life of the people and thus the liveability of the environment, it will be only a temporary change. Achieving long-term sustainability of the region will require a more holistic approach to be taken and followed through, such as was done in the case of the *Place des Wallons* (refer: Chapter 5, International approach to place-making, through layout and design: The Place des Wallons pilot study).

Chapter 10: Recommendations

In this chapter, certain recommendations are made in an attempt to create a point of departure for the enhancement of planning for sustainable communities.

Misconceptions and ignorance regarding sustainability and place-making are a reality. Therefore, informative programs should be followed at educational institutions and companies to inform people on the importance of these concepts. Should planners and experts be involved in communities where the people have little or no knowledge of the concepts, they must provide the necessary guidance to give information.

Provision of basic needs and aspirations of people in harmony with its environment, lies at the heart of the place-making approach. Hence, it is imperative to determine and understand the basic needs and aspirations of a community. To determine what the basic needs and aspirations of a community are and to deepen understanding thereof, can best be achieved by on-going reciprocal communication between the community, authorities, designers and planners. For this reason, a transparent and comprehensive community participation approach to place-making, is strongly advocated.

Policies and legislation which guide the place-making, through layout and design approaches, should focus on providing the basic needs, protecting the environment and the promotion of impartiality between different generations and races in order to ensure equality.

In planning for sustainable communities, practical and outcome-based objectives should be pursued. Therefore, the following practical guidelines to set objectives are recommended:

- Base the planning of further expansion or renewal of areas on existing traditions, patterns and trends in the area in order to conserve and strengthen the inherent culture of the community (refer: Chapter 2, paragraph 4.1 , Table 16: Key principles of place-making).
- Incorporate the attractive features of the natural environment as part of the layout and design. This will accentuate the uniqueness of the area (refer: Chapter 4, Paragraph 4.4.5, Table 21: Environmental Benefits of Urban Green Space Table 22: Economic and Aesthetic Benefits of Green Space and Table 23: Social and Psychological Benefits of Urban Green Spaces).

- Create several, public places in which a good spirit of community can be experienced in order to attract people from within and outside the community (refer: Chapter 4, paragraph 4.3.2, Lively public spaces).
- Clearly demarcate and accentuate spaces such as public places, squares, green open spaces and road reserves by how buildings and vegetation are placed. It creates a sense of safety and gives protection against natural elements (refer: Chapter 7, paragraph, 7.2.1, Table 34 Four actions in the Green planning approach).
- Link different public spaces in order to form networks, which will result in easy access to various opportunities for users (refer: Chapter 4, paragraph Lively public spaces).
- Provide sufficient middle and lower order internal road networks that adhere to the needs of all the users (refer: Chapter 5, paragraph 5.5.3: Internal surrounding factors).
- Integrate the internal road networks with all the transport networks surrounding the area in order to provide the optimal interconnection, with the adjacent areas and other areas further away.
- Provide safe pedestrian routes in order to make all the available facilities accessible to all spheres of the population (refer: Chapter 5 paragraph 5.5.3: Internal surrounding factors).
- Provide visible and attractive points of access to public spaces in order to attract people and to enhance the character of the public space (refer: Chapter 4, paragraph 4.4).
- Concentrate public facilities and businesses along main roads and through-roads to give them optimal exposure. This will make a positive impact on their visibility, accessibility and consequently, their economic viability. This likewise, increases the possibility of external capital investments that will further stimulate the economy of the community (Refer: Chapter 4: paragraph 4.4.2 Figure 15: Place-making and functions).
- Incorporate place-making elements, through layout and design (refer: Chapter 4, paragraph 4.3.2, Figure 13: What makes a great place?, Table 18: Factors of successful public places and Figure 14: The benefits of good places)

10.1 Linking theory and practice

In practice, planning is a transparent, participative, systematic and progressive building process. The figure below is recommended as a tool, to guide the steps and chronology in the planning for sustainable communities.

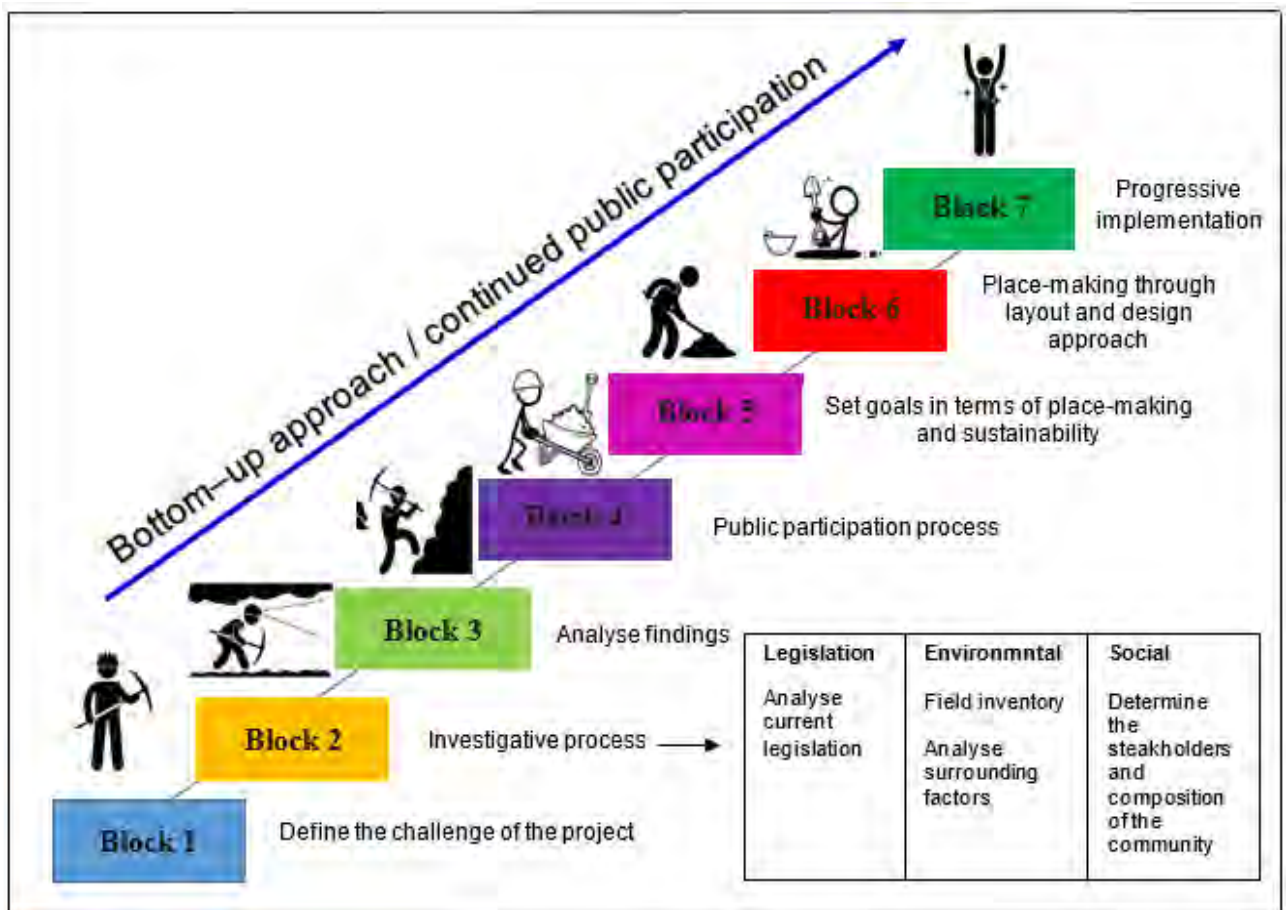


Figure 62: Building blocks in planning for sustainable communities: place-making through layout and design

The planning process, illustrated by building blocks, is representative of the bottom-up approach in planning for sustainable communities and emphasizes the necessity of continued public participation.

10.2 Recommendations in terms of the Vaalharts case study

As seen in the Vaalharts case study (refer: Chapter 8), there are many challenges in the rural areas of South Africa, therefore, innovative and effective planning founded on place-making,

through layout and design approaches, are urgently needed to enhance the sustainability in these areas.

Due to the socio-cultural diversity in the area, the community participation approach to place-making is imperative for the Vaalharts region. The process should be transparent and comprehensive, and the local communities in the region should firstly, individually and thereafter, jointly be involved in the process. Resolving the issues around the collective, basic needs of the communities will certainly affect the sustainability of the whole region.

Dual approaches for reconstruction of the region are proposed. A short-term strategy which comprises of actions immediately, visibly, identifiable and secondly, a progressive long-term strategy.

10.2.1 Short-term strategy

An in-depth investigation to the environmental, economic and social characteristics of the area and surrounding areas.

Reaffirm what the needs are of the community.

The immediate implementation of effective and noticeable changes aimed at enhancing quality of life of the communities and liveability in the region, should address the following:

- Provide basic municipal services.
- Provide educational and training facilities.
- Provide health facilities (hospital, clinic, welfare).
- Determine other place-making approaches that will be effective in the region.

Additional short-term actions to be effected should focus on exploiting the strengths and assets of the community as identified by community leaders and key stakeholders/participants, and ideally should be sponsored by private sector and government.

10.2.2 Long-term strategy

The long-term strategy should be transparent and focus on the involvement of local government, the community and resourceful, professional consultants such as environmental specialists, town

planners, economists, engineers and architects. Involvement of these role players should include financial support and the management and planning of the continued economic and social development of the area, as well as the protection of the natural environment.

10.2.3 Place-making, through layout and design proposal

A place-making, through layout and design proposal, for the Ganspan rural settlement, located in the Vaalharts region, depicted in Figure 63 below, is to show just how the incorporation of place-making elements, through layout and design approaches, can result in the sustainable development of a community.

Below, the above proposal is evaluated by means of a SWOT analysis and the Checklist, compiled in Chapter 4, (refer: Chapter 4, paragraph 4.5, Table 25: Evaluate, place-making, through layout and design approaches, in terms of the attributes of a “Great Place”), in order to determine the effectiveness thereof, in terms of place-making, through layout and design.

SWOT analysis of the Ganspan community after implementing the proposed place-making, through layout and design approaches.



Diagram 11: SWOT analysis of proposed place-making, through layout and design in Ganspan

In Table 38 below, the proposed place-making, through layout and design approaches implemented in the Ganspan community are evaluated, using the Checklist drawn up as found in Chapter 4 (refer: Chapter 4, paragraph 4.5, Table 25: Evaluate place-making in public places, communities and areas in terms of the attributes of a "Great Place").

Table 38: Evaluate place-making, in Ganspan community in terms of the attributes of a "Great Place".

<u>CHECKLIST</u>	
Evaluate place-making, in public places, communities and areas in terms of the attributes of a "Great Place".	
SOCIABILITY	
• Do the people interact with each other?	<input checked="" type="checkbox"/>
• Are there opportunities for social interaction in the specific area?	<input checked="" type="checkbox"/>
• Is there a welcoming atmosphere in the area?	<input checked="" type="checkbox"/>
• Do people experience a sense of satisfaction when they spend time in the area?	<input checked="" type="checkbox"/>
USES AND ACTIVITIES	
• Are there a range of age groups and different cultures present in the area?	<input checked="" type="checkbox"/>
• Is there a variety of activities presented in the area?	<input checked="" type="checkbox"/>
• Are people attracted by the uses and activities presented in the area?	<input type="checkbox"/>
• Is the area well-maintained?	<input type="checkbox"/>
ACCESS AND LINKAGES	
• Are the activities in the area easy to identify?	<input checked="" type="checkbox"/>
• Is the place accessible?	<input checked="" type="checkbox"/>
• Is placement of internal routes supportive to the natural flow of the people?	<input checked="" type="checkbox"/>
• Is the specific area pedestrian-friendly?	<input checked="" type="checkbox"/>
COMFORT AND IMAGE	
• Is the first impression of the area positive?	<input checked="" type="checkbox"/>
• Is the area clean and free of litter?	<input type="checkbox"/>
• Is the area safe?	<input type="checkbox"/>
• Are people's basic needs sufficiently provided for in the area?	<input checked="" type="checkbox"/>

In the evaluation, as derived from the results, place-making, through layout and design approaches, implemented in the Ganspan Community is successful and will result in the sustainable development of the Ganspan community.

The proposed approaches, through on-going community participation and effective management, should progressively evolve. If these approaches are applied consistently throughout the region, the Vaalharts region will eventually be transformed in a sustainable area.

10.3 Conclusion

The Checklist compiled in Chapter 4, (refer: Chapter 4, paragraph 4.5, Table 25: Evaluate place-making in public places, communities and areas in terms of the attributes of a "Great Place"), can be used as a key tool for evaluating place-making, through layout and design approaches.

Monitoring the effective implementation and progress of the process is an unending task which to commit. Therefore, appropriate transparent management and continuous evaluation of approaches should be maintained, and effective amendments made when deemed mandatory.

South Africa realizes the importance of planning for sustainable communities in terms of place-making, through layout and design approaches. However, the lack of structured guidelines impairs the effectiveness of the practical outcome of the process. For this reason, it is strongly advocated that exact guidelines for place-making, through layout and design approaches, should form part of policies, legislation and frameworks.

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ANNEXURES



NAME:	
SURNAME:	
PROFESSION :	
COMPANY:	
CONTACT NUMBER:	
EMAIL:	

Definitions:

Sustainability: “Sustainability is based on a simple principle: Everything that we need for our survival and well-being depends, either directly or indirectly, on our natural environment. Sustainability creates and maintains the conditions under which humans and nature can exist in productive harmony that permits fulfilling the social, economic and other requirements of present and future generations”

Sustainable development: A definition for sustainable development: “ Sustainable development is a process in which communities anticipate and accommodate the needs of current and future generations in ways that reproduce and balance local social, economic and ecological systems and link local actions to global concerns”

Sustainable communities: Hart (2012) argues that “a sustainable community seeks to maintain and improve the economic, environmental and social characteristics of an area so its members can continue to lead healthy, productive, enjoyable lives”.

Green open Spaces: “public and private open spaces in urban areas, primarily covered by vegetation, which are directly (e.g. active or passive recreation) or indirectly (e.g. positive influence on the urban environment) available for the users.”

Place making: Place making is the principle of creating of a place where the structure and the uses are determined by the people inhabiting that place and are essential components for building vibrant neighbourhood communities.

Integrated planning approach: Joint planning exercise that ensures participation of all stakeholders and affected departments. Its objective is to examine all economic, social, and environmental costs and benefits, in order to determine most appropriate option and to plan a suitable course of action.

Question 1: Sustainability

As a professional rate the importance of the following sustainable strategies for a rural area and community.

Protecting agricultural land	Extremely Important	Important	Somewhat important	Less important	Not important
Supporting food security and local producers	Extremely Important	Important	Somewhat important	Less important	Not important
Protecting drinking water supplies	Extremely Important	Important	Somewhat important	Less important	Not important
Increasing use of renewable energy	Extremely Important	Important	Somewhat important	Less important	Not important
Developing a district or community energy system	Extremely Important	Important	Somewhat important	Less important	Not important
Promoting water conservation	Extremely Important	Important	Somewhat important	Less important	Not important
Supporting locally owned small businesses	Extremely Important	Important	Somewhat important	Less important	Not important
Reducing solid waste	Extremely Important	Important	Somewhat important	Less important	Not important
Promoting and/or providing recycling services	Extremely Important	Important	Somewhat important	Less important	Not important
Preventing urban sprawl	Extremely Important	Important	Somewhat important	Less important	Not important
Supporting higher density development suitable for a small town	Extremely Important	Important	Somewhat important	Less important	Not important
Providing public transit	Extremely Important	Important	Somewhat important	Less important	Not important
Developing walking and/or cycling routes	Extremely Important	Important	Somewhat important	Less important	Not important
Encouraging health and social well being	Extremely Important	Important	Somewhat important	Less important	Not important
Supporting volunteerism and community spirit	Extremely Important	Important	Somewhat important	Less important	Not important

Question 2: Sustainability

In your opinion which of the following are the three most important strategies for a rural area and community.

<input type="checkbox"/>	Protecting agricultural land
<input type="checkbox"/>	Supporting food security and local producers
<input type="checkbox"/>	Protecting drinking water supplies
<input type="checkbox"/>	Increasing use of renewable energy
<input type="checkbox"/>	Developing a district or community energy system
<input type="checkbox"/>	Promoting water conservation
<input type="checkbox"/>	Supporting locally owned small businesses
<input type="checkbox"/>	Reducing solid waste
<input type="checkbox"/>	Promoting and/or providing recycling services

<input type="checkbox"/>	Preventing urban sprawl
<input type="checkbox"/>	Supporting higher density development suitable for a small town
<input type="checkbox"/>	Providing public transit
<input type="checkbox"/>	Developing walking and/or cycling routes
<input type="checkbox"/>	Encouraging health and social well being
<input type="checkbox"/>	Supporting volunteerism and community spirit

Question 3 – Sustainable Development

Do you understand the concept of sustainable development?

1- Yes	2- Partially	3- No
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Question 4 – Sustainable communities

In your opinion does South Africa effectively plan for sustainable communities?

1- Agree	2- Agree Moderately	3- Disagree
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Question 5 – Current approaches to layout and design

In your opinion is the current layout and design approach of South Africa for rural communities effective?

1- Agree	2- Agree Moderately	3- Disagree
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Question 6 - Green spaces

In your opinion does South Africa have an integrated approach to green open spaces?

1- Agree	2- Agree Moderately	3- Disagree
----------	---------------------	-------------

Question 7 – Design approaches in community planning

An appropriate layout and design approach ensures an efficient sustainable community.

From the list below, select the five (5) leading fundamentals that in your opinion will influence the layout and design approach for an effective sustainable community.

1	Ecological protection	
2	Density and urban design	
3	Security (crime prevention)	
4	Local economy	
5	Sustainable transport	
6	Affordable housing	
7	Liveable community	
8	Sewage and storm water	
9	Water	

10	Green open spaces	
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Question 8 Place making

In your opinion which one of the following 4 elements is the most important when planning for a specific place?

1	Sociability	
2	Uses and activities	
3	Access and linkages	
4	Comfort and image	

Question 9- Planning for sustainable development

South Africa today still has major challenges because of the apartheid era that lead to fragmented and disjointed cities and communities. Planning for sustainable development is directed by a combination of broad planning guidelines and normative planning concerns. General planning guidelines for urban planning include:

- The movement network and transport
- The open space system which is made up of the hard open spaces and the soft open spaces.
- Public facilities
- Land subdivision

(Guidelines for Human Settlement Planning and Design: 2000: National Department of Housing)

In your opinion are the above planning guidelines for urban planning employed noticeable in South Africa?

1- Yes	2- Moderately	3- No
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Question 10 – Sustainable communities

In your opinion is it important that South Africa have sustainable communities?

1- Yes	2- No
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Thank you for completing this questionnaire. Your participation is greatly appreciated.