

# An Exploration of Sense of Place as Informative for Spatial Planning Guidelines: A Case Study of the Vredefort Dome World Heritage Site, South Africa

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**Abstract**—This paper explores the sense of place in the Vredefort Dome World Heritage site, South Africa, as an essential input for the formulation of spatial planning proposals for the area. Intangible aspects such as personal and symbolic meanings of sites are currently not integrated in spatial planning in South Africa. This may have a detrimental effect on local inhabitants who have a long history with the site and built up a strong place identity. Involving local inhabitants at an early stage of the planning process and incorporating their attitudes and opinions in future intervention in the area, may also contribute to the acceptance of the legitimacy of future policy. An interdisciplinary and mixed-method research approach was followed in this study in order to identify possible ways to anchor spatial planning proposals in the identity of the place. In essence, the qualitative study revealed that inhabitants reflect a deep and personal relationship with and within the area, which contributes significantly to their sense of emotional security and self-identity. Results include a strong conservation-orientated attitude with regard to the natural rural character of the site, especially in the inner core.

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This paper is based on a research project, known as the Sense of Place (SOP) study, which was commenced in 2006 as one of two primary studies (the other being the Strategic Environmental Assessment, referred to as the SEA) to inform the Integrated Management Plan for the Vredefort Dome as requested by UNESCO to be presented to the evaluation committee in 2007. The project was mandated by the Department of Agriculture, Conservation and Tourism (North-West Province, South Africa) and the Department of Tourism, Environmental and Economic affairs (Free State Province, South Africa). The aim of the SOP study was to determine the sense of place (specifically personal symbolic meanings and values) of the Vredefort Dome site and to make preliminary suggestions for spatial planning guidelines with acknowledgments to these intangible aspects. A complete paper with comprehensive discussions on the findings was submitted to the *South African Geographical Journal* under the title: “*Sense of Place in the Vredefort Dome World Heritage Site, South Africa, as a basis for the formulation of Spatial Planning Guidelines*”.

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## I. INTRODUCTION

THE Vredefort Dome (hereafter referred to as the VDWHS), South Africa, declared as a World Heritage Site in 2005, currently awaits its formal proclamation by UNESCO in 2007. This unique geological region is the largest (190 kilometre radius) and oldest (2,023 million year old) visible meteorite impact structure known to man [1]. Its recently acclaimed status together with the natural, rural character of the site are currently challenging spatial disciplines and governmental structures in the formulation of sound inputs for the long-term management and conservation of the site, particularly because of an Integrated Management Plan (IMP) to be put in place by the time of the visit by UNESCO’s evaluation committee.

While conservation of the site might be obvious from a global perspective, natural and rural spaces in developing countries like South Africa, are constantly under pressure for development especially with regards to tourism and recreation related activities. Tourism currently accounts for 10.2% of the world’s GDP (Gross Domestic Product) while in South Africa it contributes 7.1% (R53.9bn) of the total GDP and is one of the fastest growing economic sectors [2]. The many enquiries and heated discussions that currently prevail among planners, developers, authorities and other role players about development opportunities within the area are therefore not unjustified.

Contrary to this is the existence of local inhabitants who have close ties with the site and developed deep symbolic meanings, values and interpersonal relationships with and within the site over time, that represent the identity (or sense of place) of the site. Spatial planning initiatives need to take cognisance of the effects of transformation or loss of ‘place identity’ and consequent detrimental impact of these on local inhabitants, since development can potentially harm the sense of belonging to the area [3], [4]. Intangible aspects like meanings and values should therefore be included in the formulation of spatial guidelines for the VDWHS. Exploring these aspects helps to understand the site’s place identity and

sense of place.

Since very little research has been done (and nothing been published yet) on sense of place in rural areas, and current South African spatial planning policy and legislation do not provide for the inclusion of these intangible aspects, existing spatial plans do not integrate concepts such as place, sense of place, place-making and place identity.

The aim of this research is to explore the esoteric qualities of the VDWS by investigating local inhabitants' sense of place and to interpret these findings into preliminary spatial planning guidelines for the area.

The challenge lies in finding a balance between the preservation of the site, maximising tourist accessibility and protection of those intangible qualities that foster unique attachments to the site. In this way spatial concepts could not only possibly be anchored in the identity of a site but also strengthen local place identities by involving local inhabitants at an early stage of the planning process.

## II. LITERATURE REVIEW: SENSE OF PLACE AND SPATIAL PLANNING

No universal definition for sense of place exists, although numerous academics and practitioners in various fields have contributed towards the investigation of this subject. This could possibly be ascribed to reasons, such as: (1) the intangible and subjective nature of sense of place, which makes it an abstract phenomena to research and (2) the inherently segregated nature of various disciplines due to their differences in philosophical orientation and rapid knowledge accumulation in their field [5]. It is nevertheless not impossible to research [6] and various publications have emerged since the 1960s which included related concepts such as *place*, *character* and *identity*, often used to explain sense of place in respect of conservation and the impact of development on existing areas [7].

Theories on sense of place and place identity, used to underpin spatial disciplines (geography, urban and regional planning, urban design and architecture) are firmly rooted in phenomenological traditions of research during the 1960s when geography took a strong turn towards a humanistic paradigm [5], [8]. The dimension of place experiences was particularly emphasised and that reinforced the idea of space as opposite to place. This inherently called for an alternative planning and design response to sites, based in a place-based approach instead of the mere making of spaces.

Major publications that influenced spatial disciplines include (1) Tuan's (1976) *Space and Place: The Perspective of Experience* [9]; (2) Relph's (1976) *Place and Placeness* [10]; (3) Norberg-Schulz's (1980) *Genius Loci: Towards a Phenomenology of Architecture* [11]. The *genius loci* (directly translated as *spirit of place*) perspective on place, views each site as unique in terms of its *character*, *spirit* or *identity* and implies that planning and design interventions must be sensitive towards a distinctive context and *release* these qualities in order to maximise the human experience of the place. Other works which influenced planning and design are: (4) Kevin Lynch's (1960) *The Image*

*of the City* [12] and (5) Gordon Cullen's (1971) *The Concise Townscape* [13] where the experience of urban space is explored from the perspective of the pedestrian and seeks to establish the essential components of experience. All these publications inherently called for spatial disciplines to become involved in the activity of place-making in which sense of place qualities are integrated into the making of built environments. This can be referred to as 'dwelling, a process by which a place becomes something personal and gives man an existential foothold on earth [14]. In short it implies an environment that is experienced as meaningful.

The above publications strongly emphasised the importance and role of physical properties with regards to sense of place and related concepts. Physical features exist as objective realities of space but the physical setting constitutes only one of three known constructs of place namely physical context, activities and meanings [8], [10], [15].

Research on place took quite a while to tear itself away from its phenomenological roots, but since then it has increasingly received attention within other disciplines and paradigms than those associated with spatial disciplines. Rose [16] for example refers to sense of place as, although something very personal, a process of receiving, reconstructing and communicating in a narrative way the individual and unique identity of space which in this case becomes place. Nanzer [4] defines sense of place as "*the manner in which humans relate to, or feel about, the environments in which they live*", while "*[p]laces are much more than points on a map, they exist in many sizes, shapes, and levels, and they can be tangible as well as symbolic*". The psychological relevance of place (and sense of place) has been extensively emphasised in research [3], [17], [18], [19]. Environmental psychology, has emphasised the role of place (and hence sense of place) in the definition of self. Place identity, based on emotional investment and association with location, is seen as part of self identity and regarded as the most important contributor to sense of place [4].

However, although identity is commonly used in the field of psychology, *place identity* cannot be interpreted solely in terms of its psychological status because it is relational of nature. It is seated in power relations and formed by feelings, meanings, experiences, memories and actions which are filtered through social structures and fostered through socialisation [7]. Place identity (and hence sense of place) is therefore more than a physical setting or psychological status and the authors [7] warn against the claim of a physical and psychological basis for authenticity in place identity. The social and contractual aspects, inherently part of identity needs to be realised.

Place identity (and hence sense of place) has recently moved centre-stage in planning discussions according to [7]. However, although various disciplines contribute to the understanding of sense of place, few disciplines, especially those using social theories know how to relate place to time, space and nature [21]. Spatial planning might contribute in this regard because the essence of planning implies that interventions or actions might deliberately maximise place-making by the manipulation of actions, feelings, meanings and

fabric that combine place identity [7]. Place-making is currently promoted in the new *alternative approach* to settlement planning in South Africa [22], [23]

Researchers have mostly been confined to the boundaries of their own disciplines regarding studies on sense of place, in stead of engaging in interdisciplinary research to explore sense of place – particularly true for research in urban and regional planning.

Authors such as [5] argue for a critical pluralist approach and reflective dialogue without necessarily striving for integration of viewpoints and refer to the danger of reducing diversity and standardising concepts such as place. Interdisciplinary research on place might prove to be rewarding for planners in general especially in the South African context (where this research is new) to expand existing knowledge of place in order to integrate it into place-making. This research seeks to integrate appropriate disciplines in this type of research and illustrates a possible method to investigate place identity and sense of place in the planning context. Various authors for example [4], [6] and [8] explored sense of place by measuring it through the use of questionnaires. But relying on empirical methods such as questionnaires means that crucial aspects, such as power structures and certain relations in community contexts would be omitted [7]; [8]. Community participation in an early stage (pre-planning stage) is regarded as important in constructing real an valid identities of place.

formal (tarred) road in the area, which connects small towns like Parys, Vredefort and Potchefstroom with one another and with the site (Fig. 2).

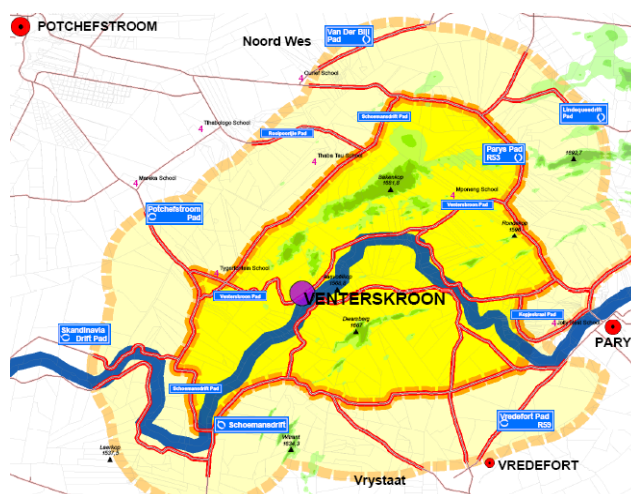


Fig. 2 Map of Vredefort Dome World Heritage Site [24]

Natural attractions such as hills and ridges that expose vertical rock layers as a result of the meteorite crater impact (Fig. 3), and the Vaal River, 1120 kilometres long and well known for recreation and water sports, form some of the major tourists' attractions in the area.



Fig. 3 Hills showing vertical rock formations as a result of the meteorite impact in the VDWHS

### III. RESEARCH SETTING

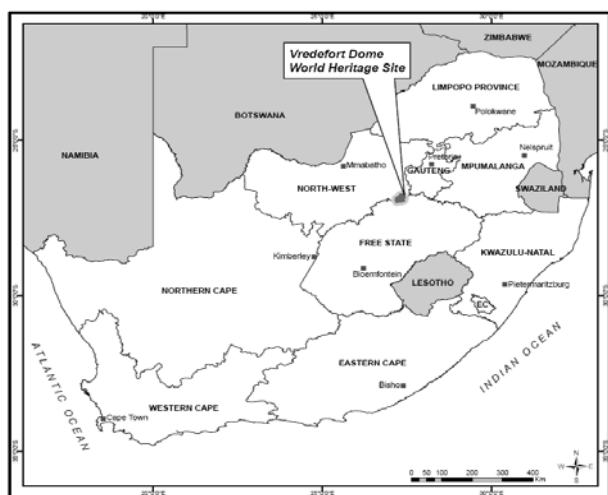


Fig. 1 Location of Vredefort Dome World Heritage Site [24]

The Vredefort Dome World Heritage Site is located approximately 120 kilometres south-west of Johannesburg metropolitan city (Fig. 1) and falls within the jurisdiction of both the North West and Free State provinces. The area consists of 420 farms in private ownership and comprises a total area of 282 square kilometres, including an inner *core area* and *buffer zone*. These zones are separated by the only

The site has significant ecological value and includes, amongst other valuable resources, 99 identified plant species, the largest wild olive forest in South Africa, more than 450 identified bird species, 70 butterfly species, and rare fauna such as the *rooikat*, *aardwolf*, leopard and rock *dassie* [25]. Due to the natural, rural character of the site together with the abundant ecological assets a major influx of tourists into the area is anticipated in the near future.

Land use is predominantly rural and includes small-scale agriculture in the valleys and tourists' facilities (accommodation and recreation). Venterskroon and

Schoemansdrift (known as main spots for fishing) function as local nodes from where farm-type shops (one per premise) are run.

The site boasts an excellent preserved farm landscape and settlement patterns. Features include old water furrows, irrigation gardens, orchards, giant tree complexes and old Iron Age settlement ruins. More than 55 heritage sites of provincial and local value have been identified in the VDWHS (one heritage site per five square kilometres) [26]. In terms of infrastructure no formal services exists: gravel roads, boreholes (for drinking water), the Vaal River (for irrigation purposes); rural electricity sources and septic tanks (used as sanitation systems) form the informal infrastructural support. Basic data on the demography and socio-economic statistics are lacking due to the fact that the VDWHS were not demarcated as present by the time of the South African population census in 2001. (Basic information were obtained through the research but will be dealt with under the research findings.)

#### IV. RESEARCH DESIGN

The application of psychological knowledge and methods in order to understand processes and implications of human-environment transactions and the application of this insight to improve the quality of the experience [27] was the most prominent motivation for following an *interdisciplinary research approach* in this particular case.

Due to the limited understanding of place and sense of place within the South African context, and the fact that sense of place and place identity have in general not yet penetrated spatial disciplines [28], it was decided to involve a discipline which deals readily with abstract concepts such as symbolic meanings and values and the interaction of people and their environment. Primary disciplines which were included were urban and regional planning (with regard to the spatial planning aspects) and environmental psychology, which investigated personal meanings and values in the area.

Interdisciplinary research includes research that builds on theories and previous research from more than one discipline and uses methods for data collection and analysis which are compiled from more than one research tradition [29], [30]. Interdisciplinary research is appropriate here, because (1) this type of research is more creative, (2) it is more likely to lead to applicable results because it is more orientated to problem-solving approaches [32] and (3) research on place-related topics is seen as more appropriate when informed by multiple research traditions; therefore the call for a critical pluralist view and reflective dialogue regarding place research by some authors [5].

In order to explore the concepts *sense of place* and *place identity*, and to make general findings about these, a *mixed-method approach* was selected as the appropriate research method. The value of using a combination of qualitative and quantitative methods is well documented in literature [33]-[37].

#### A. Qualitative Study

A Qualitative investigation of the relationship between people and their environment, their experiences and meanings contribute to an understanding *place* and promotes an understanding of the human dimensions that form part of natural resource management [38]. It is appropriate in this case because (1) the research is conducted in a natural setting, (2) it attempts to make sense of the experience of sense of place in terms of the meanings people attach to it and (3) there is no attempt to control extraneous influences.

Participants were obtained through purposive sampling from both provinces and consisted of the following individuals and groups who shared their experiences and interaction:

- (1) 13 people with vested interest in the area (either as property or product owners) participated in two *focus groups*;
- (2) 12 participants from different cultural backgrounds participated in *one-to-one interviews* and *written assignments*;
- (3) 26 school children made *visual presentations* of their relationship with the environment;
- (4) 20 people of all ages and backgrounds took *photographs* of the environment and were *interviewed* on the meanings they attached to the photograph; and
- (5) 40 people participated as *observers*.

Data gathering was conducted by means of triangulation, (the use of multiple data gathering techniques and sources to investigate a phenomenon [39]) in order to increase the trustworthiness of the research. Data obtained from focus groups, is a valuable source of real-life data and is flexible, has high face value, speedy results, and low costs [40]; interviews allow for immediate follow-up questions and clarification [41]; while observations [42] and visual methods are appropriate because they involve decisions and choices about the kind and amount of information supplied [43]. Visual methods used included various photographs taken by participants and the use of the Mmogo-method consisting of cultural artefacts (straw, clay, dried grass and coloured beads). Visual data was analysed by (1) the systematic listing of the constituents and cataloguing of the literal meanings of the material, (2) asking questions about the listed elements and (3) allowing themes and statements to be revealed spontaneously. Textual data was analysed according to the steps of Giorgi [45]: (1) read the description, (2) discriminate units of the descriptions from within a psychological perspective and with a focus on the phenomenon under study, (3) express the psychological insight contained in each of the meaning units, and (4) synthesise the transformed meaning units into a consistent statement regarding the participants' experiences.

#### B. Quantitative Study

The findings of the qualitative investigation served as input for the design of the qualitative investigation, performed by means of questionnaire-based structured interviews with participants. Face-to-face interviews have the highest response rates, permit for longer questionnaires, and have the advantage of non-verbal actions and surroundings being observed by the interviewers [47]. The quantitative study aimed to generalise findings on the symbolic meanings of participants, their experiences, and the visual character of the site, and to relate

these to specific spatial areas and features. Attitudes regarding to development and conservation were also tested in order to inform the formulation of spatial guidelines. A location-based randomly selected sample was used. A representative sample of 10% of the 420 farms [24] situated in the site was identified, after which participants staying on each farm were randomly selected to represent owners, employees, and non-employees (male and female). The background was explained to the participants and interviews were conducted in their mother tongue (Afrikaans, English, Tswana, or Sotho).

Questionnaires were structured around the following themes: *Firstly* demographic data, as well as the capacity of the participants (whether owner, employee or resident) and the length of stay in the area was included. *Secondly*, an experience profile was determined. Respondents were supplied with maps, photographs, and colour pens to identify areas where the intensity of place experience as well as the location of spots/zones where sense of place is experienced strongly, moderately or not at all. *Thirdly*, respondents ranked, in hierarchical order, the main visual characteristics of the site. Choices mainly included Kevin Lynch's five cognitive features of areas, namely landmarks, routes, edges, districts, and nodes. Data from the qualitative study was used to compile a cognitive map, supported by photographs of the environment, in order to concretise choices for respondents. *Fourthly*, attitudes and opinions on conservation and development issues were tested. Data collected included the identification by respondents of areas/zones and specific aspects/features to be considered for conservation. Options were also given with regard to the type of development (and facilities) necessary and the best location for these. *Fifthly*, preferences for specific architectural features and planning aspects were tested by presenting photographs of various architectural styles and spatial characteristics, which involved that participants had to choose one option for each question. All scale data was collected through Likert scales. The validity of the questionnaire was tested by means of content and correlation validity and is based on the principle of the statistical power of the test [48].

## V. RESULTS

### A. Qualitative Investigation

The following themes emerged from the qualitative investigation of the sense of place.

#### 1) Main Theme One: Contextual Description

The context consists of different role players: land and product owners, labourers, unemployed inhabitants (mainly women and older people), children and tourists, all of whom have diverse needs and expectations.

#### 2) Main Theme Two: Economic Indicators

There are extreme financial positions within the area. Land- and product owners can provide adequately for themselves in terms of luxury and leisure activities, food and transport. The lack of basic services and public transport has a negative impact on the current living conditions of people

who are depending on available, but limited economic opportunities to provide for their own needs.

### 3. Main Theme Three: Personal Symbolic Meanings

The personal symbolic meanings attached to the environment are intertwined with the natural, social, historical, and cultural processes in the area. Some of the qualities that are valued include experiences of independence and autonomy, safety, selfregulatory interactions, subjective and spiritual well-being, peacefulness, spaciousness, and a fascination with nature. Most of the participants anticipate losses in the face of future developments.

### 4. Main Theme Four: Social Connectedness

Different forms of social connectedness between peer group-, family- and community interactions were experienced. The context allows for meaningful social interactions between people and facilitates intimate and meaningful social interactions.

### 5. Main Theme Five: Suggestions for Future Developments

Suggestions mainly include the status quo of the area in terms of further development. Developments should not jeopardize the sense of place and should adhere to strict regulations. As a tourist attraction, it is recommended that people be educated; various zones of engagement be identified; the number of visitors and entry into the area be regulated and the type of recreational activities be monitored.

### 6. Main Theme Six: Non-Negotiables

The preservation of the socio-cultural heritage and the protection of the natural, mainly rural and untainted character of the area, are regarded as very important aspects to the participants. It is clear that the sense of place developed here is intertwined with what they regard as *place*.

### B. Quantitative Investigation

The following generalised findings (given here as trends) were compiled from the data obtained:

#### 1. General Profile of Respondents

Permanent residents (land owners) and employees in the study area respectively constitute 34.98% and 42.38% of the respondents. Most of the respondents are male (59.48%) and speak Afrikaans as their home language (41.11%). Altogether 43.3% of the respondents have lived in the study area for more than 11 years at the time of the survey and reflected a long and deep experience with the place due to their length of stay. Repeated visits or long-term habitation within environments contributes to the sense of place of an area [4], [8], [49]. The large number of retired residents (21.88% over 65 years) is important to note because older people in rural areas are vulnerable due to challenges in terms of financial resources, medical resources, crime and support services. The relocation of older persons for instance leads to a disruption in place attachment [50], referred to as *displacement*, and may cause feelings of the loss of place, grief, discontinuity of life

stories, xenophobic reactions, social phobia, rootlessness and homesickness [3].

## 2. Experience Profile

Meanings associated with the site were identified, in hierarchical order, as *peacefulness and quietness, free and unbound* and a feeling of *safety* where these were experienced as extremely strong on and around the hills and ridges as well as along the Vaal River banks. Venterskroon and Schoemansdrift were identified as spots that typical reflect the character of the built environment in the area. The buffer zone was indicated as a poor conveyor of character where no particular experience is evoked.

## 3. Visual Character of the Site

Visual characteristics that were reported to be the most prominent were, in order of significance, (1) *landmarks* (certain prominent hills were indicated as well as the Vaal River); (2) *routes* (gravel roads and foot paths); and (3) *edges/borders* (the tarred road separating the core and buffer zone); *Nodes* and *districts* were not high on the list of visual dominant features. Responses to a question relating to the visual identification of *insideness* versus *outsideness* (by means of entrance/exit points) revealed that there was a total lack of such an identification. Yet, the inside-outside relationship is one of the most fundamental aspects of place [10], [51]. It refers to the issue of boundaries and the way spaces are demarcated. Many manifestations of this division imply the significance of the threshold, for example as expressed by a door [52] or a gateway.

## 4. Attitudes of Respondents towards Development and Conservation

On the question regarding of the conservation of specific zones, 37.89% felt the whole area (the inner core and buffer zone) should be conserved, 21.05% felt only the core should be conserved, and 4.21% felt the buffer zone to be important for conservation – specific reference was made to the fear of development being allowed in this area because the area does not reflect the same environmental value and character as the core. 12.63% respondents indicated that only specific parts in the study area should be conserved. The most important micro areas indicated for conservation are the hills and ridges and the river banks 20% (most of them employees) saw conservation in general as not necessarily desirable. The most appropriate locations of new developments, if any is allowed, were indicated as towns outside the study area: Parys (chosen by 35% of the respondents) and Vredefort (chosen by 20%) were indicated as potential nodes for future development. Facilities identified as a need inside the study area were an information centre (21%), recreational facilities (17%), small scale commercial facilities (16%), and transport facilities (15%). Basic housing, estates, holiday accommodation, commercial facilities and public transport were regarded as necessary facilities, but to be located outside the study area.

## 5. Choices with regard to Architectural Design

Architectural styles and spatial characteristics viewed as appropriate for the character of the study area were tested and results indicated a preference for a security entrance in order to enable strict control of visitors. 53% of the respondents regarded this as important, but emphasised that it should still reflect the characteristics of the local natural environment. Respondents also preferred architectural style and density for nodes which are compatible with existing building structures in Venterskroon (67%), while private housing should be designed in the typical rural farmhouse style (44%) and the low residential densities currently evident throughout the area should be maintained. Routes were preferred to be either paved with cobblestones (21%) or left as gravel roads (16%), as these types of roads are compatible with the natural character. Edges (borders of properties) could, if applicable, be delineated by either fencing (46%) or walls (31%).

## V. SPATIAL GUIDELINES

The translation of the intangible aspects of the VDWHS into spatial planning guidelines was seen by the researchers as indispensable for the long-term sustainable management of the site. Consideration of the attitudes and opinions (e.g. future development perspectives) held by individuals affected by potential zonings was considered a prerequisite for the effective design and implementation of policy. This had implications for (1) the way the spatial environment is shaped (spatial guidelines) and (2) the design of man-made features (architectural features) in the site. Failure to consider these may result in policy that falls short of popular support and legitimacy [4]. Legitimacy is defined as the belief in and willingness to accept legislation as authoritative [53]. Following the in-depth analysis as described above, the following spatial principles (A, B and C), served as a guiding framework for formulating more specific spatial guidelines.

### A. Sense of Arrival

A sense of arrival refers to the clear identification of when one is inside the study area. It increases the visual legibility of the area, and contributes to the feeling of orientation and welcoming at a place. Ultimately enhances the accessibility for tourists. An appropriate way to identify this is to establish some kind of visible entrance point(s). The fact that this aspect was lacking at the time of the survey was indicated by the respondents' inability to distinguish clearly between being inside or outside the study area.

*Spatial planning* proposals must include the identification of the location for main entrance/exit point(s). A study of the patterns of flow of traffic to and from the VDWHS should form the basis for this. *Design implications* include the detail design of a gateway(s) to announce the transition from outside to inside. In this case, it should be informed by a typology study of what constitutes typical architectural forms, scales and building materials of the two provinces. In response to the sense of place of the site, the detail design should conform to the natural rural character of the area.

### B. Sense of Orientation

One of the prominent features proposed for this area is the degree to which people (locals and tourists) will be able to orientate themselves within the site. The quality of legibility is reflected in the particular spatial structure of a place [22]. Structure in this regard refers to the public structure of a place and includes all movement systems (roads, footpaths etc.) and public places (squares, social facilities, nodes etc) [23]. The creation of special places as focus points for community life (socialisation) is central to place-making [22].

*Spatial planning* proposals to strengthen the sense of orientation include consideration of the road network layout and the inclusion of nodes as special places. Gravel roads and footpaths inherently reflect the character of the area and are preferred by respondents above tarred roads. Eco-friendly methods to stabilise gravel roads must be further investigated. It is proposed that the internal main road (Venterskroon) be distinguished from secondary roads through surface design, for example by using cobblestones on certain places to emphasise the arrival at important places/areas in the site. Edges should be used to strengthen the visibility of the road, for instance by planting indigenous trees alongside this road and/or the use of stone curbs. Special public places identified as nodes in the area include Venterskroon and Schoemansdrift. Venterskroon is proposed as the *primary node* and treated as the only focus point for the integration of social, economic, educational, cultural and information-based functions/facilities. Schoemansdrift is proposed as suitable for the upgrading of existing facilities, but no further development is to be allowed. The character of nodes however, should never be urban or suburban – maintaining the rural farm-like character is essential.

Specific *design proposals* for the aforementioned include the architectural guidelines at the nodes, the design of custom-made signs and the identification of names for internal roads (currently without names) in order to increase accessibility and orientation. Names of roads should reflect the identity of the site as experienced by local inhabitants, which could also serve to strengthen local identity. The same design proposals are appropriate for major footpaths throughout the area, and based on existing pedestrian patterns.

### C. Sense of Experience

It is proposed that the sense of experience in the VDWHS be maximised through two principles: (1) maximum exposure to and emphasis of those natural features that constitute the sense of place of the site and (2) minimum negative human intervention in terms of planning and design actions.

The first principle include the identification *spots of excellence* - areas, viewpoints or focus points where the *spirit* of the VDWHS is experienced strongly. These spaces should in some way be linked, physically or through the architectural design concept, to form a public structure throughout the site. In this way a network of intimate, special public places is created to enhance orientation and maximise accessibility to experience the sense of place. A public-private partnership approach (where incentives, management responsibilities, rates and taxes etc. be negotiated between land owners and

authorities) is essential for the feasibility, implementation and management of this.

In terms of the second principle (minimising the negative impacts) two proposals are made: (1) the development of a detailed hills and ridges policy to protect the horizon line against development and (2) a zoning policy that guides development and conservation in the area. Three zones proposed for this include a *preservation zone* (core area), *enhancement zone* (river front and Kopjeskraal) and *supporting zone* (buffer zone) (Fig. 4) and are based on the findings of the surveys in terms of the experience of local inhabitants. It is proposed that no further developments (higher densities, additional accommodation etc) be allowed in the preservation zone, but low key day and night facilities and tourist accessibility be supported. The enhancement zone should be treated as an area where high quality developments be allowed but to adhere to strict design codes in order to enhance the sense of place. In the case of the supporting zone (buffer area), developments which include accommodation and tourist oriented facilities should be considered on merit application and adhere to appropriate development and architectural guidelines.

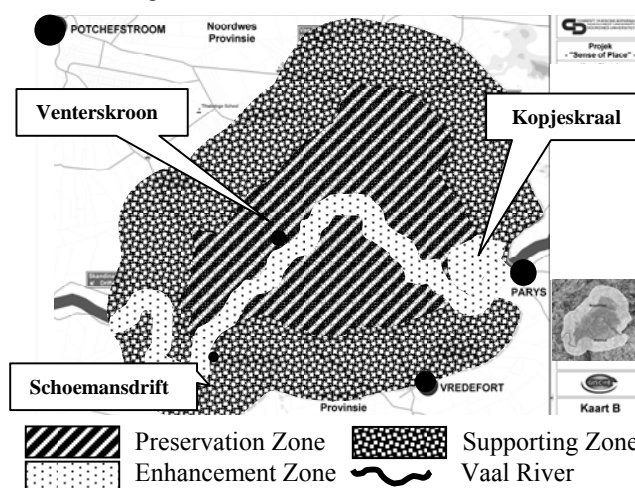


Fig. 4 Proposed Spatial Composite of Conservation Zones in the Vredefort Dome World Heritage Site

## VI. CONCLUSION

This research project illustrates a possible way to integrate physical environmental sciences, for example spatial planning, and psychological aspects, such as place identity and sense of place. Spatial planning and design should take cognisance of the affective experience of the environment by anchoring proposals in the unique identity of the place. A positive experience within an area contributes to quality of life by supporting individuals to achieve and sustain fulfilled lives [11], [19], [28], [54].

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