

A Hidden Dimension in Site Planning: Exploring Affective Experience as Part of Sense of Place on the Farm Kromdraai, Vredefort Dome World Heritage Site, South Africa

K. Puren, H. Coetzee and V. Roos

Abstract—Uniqueness and distinctiveness of localities (referred to as *genius loci* or sense of place) are important to ensure people's identification with their locality. Existing frameworks reveals that the affective dimension of environments is rarely mentioned or explored and limited public participation was used in constructing the frameworks. This research argues that the complexity of sense of place would be recognised and appropriate planning guidelines formulated by exploring and integrating the affective dimension of a site. Aims of the research therefore are to (i) explore relational dimensions between people and a natural rural landscape, (ii) to implement a participatory approach to obtain insight into different relational dimensions, and (iii) to concretise socio-affective relational dimensions into site planning guidelines. A qualitative, interdisciplinary research approach was followed and conducted on the farm Kromdraai, Vredefort Dome World Heritage Site. In essence the first phase of the study reveals various affective responses and projections of personal meanings. The findings in phase 1 informed the second phase, to involve people from various disciplines and different involvement with the area to make visual presentations of appropriate planning and design of the site in order to capture meanings of the interactions between people and their environment. Final site planning and design guidelines were formulated, based on these. This research contributed to provide planners with new possibilities of exploring the dimensions between people and places as well as to develop appropriate methods for participation to obtain insight into the underlying meanings of sites.

Keywords—Affective dimension, Sense of place, spatial planning, Vredefort Dome World Heritage Site.

I. INTRODUCTION AND CONCEPTUAL FOUNDATION

IN spatial disciplines such as city planning, urban design and architecture, the built environment is regarded as the most

prominent cultural expression of man. Recognising the uniqueness and distinctiveness of localities (whether urban or rural) is important to ensure people's identification with their locality [1]. The fundamental role of territorial identity in the sense of belonging is emphasised by authors such as [2]. Uniqueness and distinctiveness of localities are also referred to as the *genius loci* or sense of place, which have been described by authors such as [3], [4] and [5]. Sense of place is a well known expression, although an elusive and vague term. Derived from Roman mythology, it originated from the Latin term *genius loci*, where a locality (which refers to physical spaces and structures) were said to have intrinsic quality(s) due to presence or guardianship of a supernatural spirit. The concept was translated as the *genius of a place* – which refers to the influence of the locality and later transformed and generally referred to as the atmosphere or character of a locality – that which makes the space or structure unique and distinguishes it from other spaces. [6].

However, it seems as if there is an inherent risk that localities can lose its character due to spin-offs of globalisation (e.g. tourism development) and degradation of the biophysical natural rural landscapes. In developing countries such as South-Africa this creates a constant tension between developers, local inhabitants and planners. On the one hand there is pressure for development and on the other conservationist's battle to preserve the deep connections with natural rural sites. It seems then relevant to take note of the socio-affective patterns which are embedded in the relational dimensions between people and a physical environment.

This approach proposes a transition from a positivistic to post-positivistic theoretical understanding of space in planning. It implies a shift from the traditional rational scientific method where *space* is mainly described in fixed, concrete, absolute, three-dimensional and in physical terms. It is rather suggested that space be seen as a fluid, abstract, multi-dimensional, relational and socially constructed phenomenon. In adopting this approach, it is argued that the complexity of sense of place would be recognised and that appropriate planning guidelines could nurture the sense of place. The following research questions therefore guided this article: (i) what are the relational dimensions that emerge between people and a specific landscape (a site)?; (ii) How can these relational dimensions be elicited? and (iii) how can it be used to propose planning guidelines to strengthen the sense of place of the site? The aims of the research are

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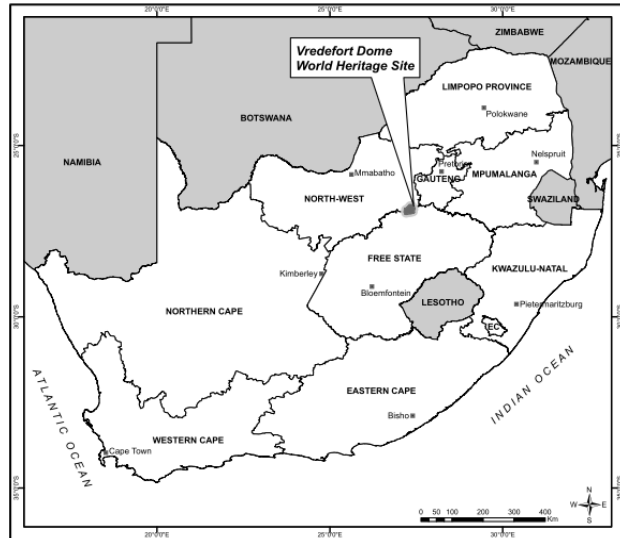
therefore to (i) explore the relational dimensions between people and a natural rural landscape, (ii) to use a participatory approach to obtain insight into the different relational dimensions, and (ii) to concretise the socio-affective relational dimensions into site planning guidelines so that the sense of place of the site could be preserved and/or promoted.

Traditional frameworks used for strengthening the sense of place of localities up until now mainly include those formulated by [3], [4], [7], [8] and [9]. An extensive analysis of the proposed frameworks revealed that very little reference is made to individual symbolic meanings of the environment; that the affective dimension of environments is rarely mentioned or explored; that there is limited participation in constructing the frameworks; and that design elements were derived at by experts (planners, urban designers, architects as designers) without communicative participation. Later illustrations of sense of place that was made by [10] and [11] related to urban design indicate the constructs to support the sense of place of localities as activities, physical (visual) aspects and meanings – although meanings are not further explored. It is thus clear from the existing frameworks that the affective dimension of sense of place is rarely mentioned and vaguely referred to. Contemporary theories of sense of place, by Doreen Massey [12], includes the idea of progressive sense of place or global sense of place – where place is characterised by porous boundaries and inter-connections rather than by fixed identities and borders, while [2] supports the idea in his viewpoint of the particularity of place, which becomes irrelevant through the continuous flows of information and the rise of the network society.

II. RESEARCH METHODOLOGY AND FINDINGS: A PROCESS DESCRIPTION

A qualitative research design was used in this research because qualitative research is an appropriate method to investigate research phenomenon to obtain insight in the subjective experiences of people and to access the meanings that they attach to the relational dimensions between them and the specific rural location [13]. Furthermore, a qualitative research approach is particularly useful as an inductive, naturalistic approach to investigate unfamiliar research topics [13]- [15].

The regional context for the research is Vredefort Dome World Heritage Site (VDWHS), South Africa, considered as the world's oldest (2,023 million years) and largest (190 kilometers) visible meteorite impact site [16]. It is a unique natural landscape filled with rolling hills, rocky outcrops and a unique composition of indigenous fauna and flora. At least 100 plant species, over 50 mammal species and 70 different butterfly species have been recorded in the area [17],[18]. The Vaal River, one of South Africa's largest and only perennial rivers, separates the Dome roughly into two halves that fall into two separate province (North West and the Free State Provinces) [17]. Due to its geological importance the Vredefort Dome was declared a World Heritage site in 2005. [16], [17].



(Source: Map compiled by GISCOE Potchefstroom, 2006)

Fig. 1 Location of VDWHS, South Africa



(a)

(b)

Fig. 2 Research context: Examples of prominent features of VDWHS - (a) hills and (b) the river

Although little development has occurred in the area, the untainted natural landscape of the VDWHS is, since its proclamation as a world heritage site, under immense pressure for development, especially from developers living outside the area. Farms in the VWHS are primarily owned by private property owners, which contribute to various complexities regarding future planning and management of the area.

The research was conducted on the farm Kromdraai, which comprises approximately 85 hectares of farmland with a 600 meter riverfront. It is classified as part of the conservation/livestock zone in the VDWHS [19], which implies the site is potentially ecologically sensitive with low arability and grazing capacity. Surrounding land uses include private game farms, tourist facilities and private residential. The farm Kromdraai was bought by private owners in 2002. Realising the potential of the land, they started to investigate opportunities for further development of the site.

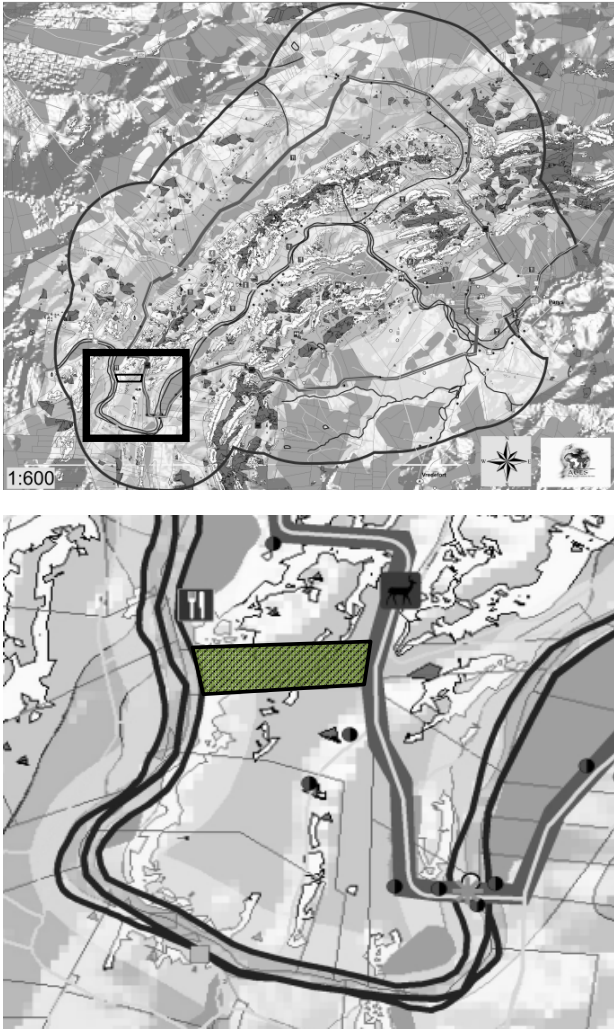


Fig. 3 Location of the farm Kromdraai, VDWHS [19]



Fig. 4 Photographs of the farm Kromdraai – (a) view from the entrance to the farm and (b) view from hill top

The research process started with establishing an interdisciplinary research network between psychology and urban and regional planning. Initial discussions between the two disciplines focused on the multi-dimensional nature of sense of place and the need to view it holistically. Complexities of sense of place with regards to the translation (decoding) of abstract phenomena such as human-environment interaction (emotions, perceptions etc.) as well

how to concretise these to eventually influence policymaking are mutual concerns. A discussion with the owner-developer of the site and proposal for a possible research project based on which site development guidelines were to be formulated, laid the foundation for interdisciplinary cooperation in order to integrate affective dimensions of sense of place in spatial planning.

Interdisciplinary research includes research that builds on theories and research from more than one discipline and uses methods for data collection and analysis which are compiled from more than one research tradition [20]. In short, it implies the bringing together of distinctive components of two or more disciplines [21]. Psychology deals readily with abstract concepts such as symbolic meanings and values and the interaction of people and their environment. Saunders [22] refers to psychologists as “experts in human behaviour and have provided numerous approaches for understanding cognitions, attitudes, motives, beliefs and values and have therefore much to offer in terms of understanding human-nature experiences” (as in the case of VDWHS). In this research the interdisciplinary collaboration provides authentic opportunities for the public to communicate the meanings that they attach to their sense of place [23].

The research was conducted in two phases.

Phase 1:

During phase 1, a group of post-graduate students were selected as a pilot group to refine the research procedure and the data gathering methods. This group consisted of 10 post graduate students (both male and female) from the Department of Psychology and the Department of Urban and Regional Planning from the North-West University's (NWU) Potchefstroom Campus. Each activity planned by the researchers for the first phase of the project were executed in as much detail as possible, after which the pilot participants were asked to reflect on each activity by for example making suggestions on how it could be further improved or refined.

The pilot study was followed by a selection of appropriate participants, based on a purposeful sample. Selection criteria includes (i) participants who indicated they would be interested in purchasing property in a natural rural site such as VDWHS, (ii) with no vested interest in the VDWHS at that stage, (iii) participants who sees themselves as having a close connection to nature, and (iv) individuals who are able to express and communicate their experiences in relation to the environment.

The final group of participants consists of 12 people between 28-71 years old, four females and eight males. The group of participants includes people not professionally linked to spatial disciplines (a nurse, artist, human resource manager, psychologists) and environmental consultants, planners and architects. Participants were formally invited to take part in the research, informed about the specific detail of the research project, what it entailed, their involvement and possible risks of walking in a rural location. They were ensured that all

information obtained will be treated with confidentiality and that they have the right to withdraw at any stage from the research without being penalised. After they have signed informed consent forms, they were then driven to the research site where they were first orientated by providing them with maps, cameras and color pens.

They were asked to hike on any part of the site and take photographs that according to them best represented their experience of the site. Two to three hours were given to explore the site, during which observations were made by the researchers and research assistants. People were observed in terms of the areas where they spent the most time and areas that they preferred. This field session was concluded with lunch and a focus group discussion based on their experience of the field trip.

After the development of the photographs, participants were contacted to arrange individual interviews about the photographs taken. The detail of the each of the data gathering methods will be discussed next.

A. Data Gathering

A. Photographs

Photographs were used because it created a medium that could reflect the interaction between people and their often taken-for-granted perceptions about the environment [24]. Self elicited photographs is regarded as a highly effective manner to obtain insights, knowledge and a richer understanding of the social, cultural and contextual aspects which are often difficult to obtain through direct questioning, because most people find it difficult to spontaneously talk about their emotions [25], [26].

B. Focus groups

Participants engaged in focus group discussions on site directly after the photographic activity. The participants were asked to discuss their experiences of the site. Focus groups are valuable since they capture real-life data in a social environment, have flexibility, high face validity, and timely results and are low in cost [27]. The value of having the focus group directly after participant's engagement with nature is that it allowed for the emergence of rich, textured descriptions while their experiences in still fresh in their minds. The focus group discussion was audio taped and transcribed verbatim.

C. In-depth individual interviews

Approximately two weeks later, the first phase was followed up and concluded with in-depth individual interviews in which the participants were asked a) why they took the photograph; and b) to tell the researchers more about their experiences of the site. These questions were aimed at collecting detailed information about the subjective experiences and personal feelings that emerged during the participants' experiences of the site by using the photographs to elicit their responses. The benefits of using an interview

method, especially in association with a projective method like the photographic method, is that it permits immediate follow-up questions, clarifications and can thus be regarded as a flexible mode of data collection that contribute to the credibility of the study [28]. The in-depth individual interviews were audio taped and transcribed verbatim.

D. Observations

Observations were used to collect additional information on how participants interact with the site. 40 postgraduate students from the Psychology Department at the NWU were placed at different locations on the study site, where in most cases they had a panoramic view of the surrounding areas and where they were in most cases unobservable to the participants. They were all instructed to observe how the participants interacted with nature and to map the movement of the participants through the area. This information was used to supplement other data, for example which areas were explored by the participants.

B. Data analysis

The photographs that were taken were treated as visual data and analysed by listing the constituents systematically and cataloguing the literal meaning of the material; asking questions about the listed elements; and allowing themes and statements to reveal themselves. This step in the analysis included reflecting on the aim of the study to create a context in which emerging themes and statements had meaning [29], [30]. All data were analyzed by all three researchers and the themes discussed and negotiated in great detail before a final theme was decided upon. The transcribed focus group discussion as well as individual interviews were regarded as textual data and were analysed according to the steps of Giorgi [31]. These steps included: reading the entire description; discriminating units from the descriptions from within a psychological perspective and with a focus on the phenomenon under study; expressing the psychological insight contained in each of the meaning units more directly; and synthesising the transformed meaning units into a consistent statement regarding experiences.

C. Findings of Phase 1:

The findings were organised into the following themes, with examples from the data to support each.

TABLE I RESULTS FROM PHASE ONE

AFFECTIVE EXPERIENCE OF THE SITE: THEMES THAT EMERGED
Contentment
Sense of escape
Curiosity
Hope
Spirituality
Emotionally and physical safety
Projections of personal meaning

A. Contentment

Contentment according to the participants refers to feelings of peacefulness, calmness and freedom. These feelings were most often experienced by the group of participants in response to open settings, or views from rocky outcrops, where participants had a panoramic view of the area. One participant expressed it vividly, and where able to verbally express it as: *Here I am fairly high, on a rocky outcrop, and I experienced a feeling of openness. It caused me to feel free. I specifically took this photograph because the air was very clean...and it was a place where I felt calm...tranquil*. Participants described feelings of peace, calm and freedom as a sense that 'nothing matters anymore' that allowed them to relax. They compared these feelings to experiences of pleasantness, relaxation, an assembly of good friends, a visit to their parents' homes, lying on their back and gazing at the stars, or even sitting around a camp fire.

B. Sense of escape

Participants described their feelings of being away as the carefree flight of an eagle, or a sense of '*detachment from the everyday constraints of normal life*'. Other participants described it as if they could '*breathe again*' and '*forget about the demands that modern society imposes upon him*'. One participant's comments summarises the group's feelings by saying that she could relax in such setting because she is not bombarded with daily challenges. She said: *Yes, I think this place got it right in the sense that it helped me to relax, without being constantly showered by information that you normally experience in an everyday work context...where the phone rings, people talk and your mind is all the time busy with deadlines you have to meet*.

C. Curiosity

Curiosity was described by the group as a fascination with nature, the site, and the need to explore it further. It was often described as a 'stop and pause effect.' It was described as different from what they encountered in everyday life, and it stimulated their curiosity and the desire to discover new things. One participant described it as *an adventure*, in which *anything can happen*. Another participant said that he gets curious. *When I see new things I get curious, then I want to go and investigate it further. I cannot just sit and wait. I often wonder how it looks on the other side*.

D. Hope

Hope was associated with a positive future perspective, and openness to new experiences. Participants felt optimistic about their future, opportunities that might come their way, and that they could potentially make a success of anything they put their minds to. *It gives me hope. I am always open to new possibilities*. This hopefulness energises people so that they feel capable of doing almost anything. One participant expressed it as follows: *I believe you can do anything and that it is never too late to do anything. You know, if you decide to*

do something and you really want to do it, anything is possible'.

E. Spirituality

Spirituality was described by the group of participants as a feeling of being isolated from outside input and the ability to focus on God. One participant response indicates the group's feelings when he said: *It is difficult to describe the positive feelings that I experienced underneath the tree...it gave a feeling of isolation. It is almost like it is quieter underneath the tree, as if the tree absorbs the surrounding noise and it cuts out some of the light. Here I experienced a strong spiritual feeling*. All participants experienced strong spiritual feelings in one way or another. For most of the participants nature reminded them of the power and mercy of God, while many others said that the peace and quiet help them to focus on God.

F. Emotional and physical safety

Safety was also described by the participants as a place where they can just sit and be themselves. A safe space is described as a *magical area*, an almost *fairy-tale like setting*, with *many places to hide*. One participant said it felt like *the vegetation protected me and found it comfortable, even homely*. Another said: *When I stood there I felt as if it could be my spot. I felt safe and as if nothing could harm me. It was a nice feeling*. Another participant said that feelings of safety are important; because in a manmade environment she always has to lock her doors and she always feels unsafe. At this site (and in nature in general) she always feels safe, because she feels that there is nothing that could harm her.

G. Projections of personal meanings

The diversity in the environment was associated with different experiences. The visual images elicited personal meanings and symbols. For example, trees were described as coming across an old friend whom they have not seen for many years. The participants compared their experiences of nature as reminiscent of their important relationships with people, places that they have visited as well as experiences they had. For example, one participant associated the protection, safety and security she felt in the bush with the shelter and protection she offers her friends when they experience difficulties. Open areas underneath trees gave one participant a Sunday afternoon feeling that calmed her and reminded her of interactions with her family members. It reminded her of togetherness... *to be peacefully together, to have a braai [barbeque]...We always braaied on a Sunday afternoon...and we still do. Basically... you know, that peaceful feeling, you feel the heat of the afternoon, a tired feeling (laugh) and sitting around doing nothing*'. Another participant was reminded of special moments during memorable movies that she had seen; others reported deep spiritual feelings, while others were reminded of their childhood when they had the freedom to sit and dream under trees.

Figure 1 consists of four photographs labeled (a) through (d). (a) shows a wide, open savanna landscape with scattered green bushes and trees under a clear blue sky. (b) shows a dense forest interior with a thick canopy of green leaves and a large, dark tree trunk in the foreground. (c) shows a savanna landscape with a large, prominent acacia tree in the center, surrounded by other vegetation. (d) shows a dense forest interior, similar to (b), with a thick canopy and sunlight filtering through the leaves.

Phase 2

Visual projections (photographs) obtained from phase I were projected on a screen to form a backdrop to remind participants of the site context. Participants were asked to make visual presentations (collages) of possible ways in which the site could be developed to capture meanings of the interactions between people and their environment (which were obtained in phase I). Each group of participants were

The second phase was structured around two activities in which participants were requested the following: to propose a two-dimensional layout for the farm, indicating entrances; areas suitable for development and the number of structures; appropriate land uses and the distribution; size; type of structures (if applicable) as well as ways to connect the different elements on the site. They were asked to make a collage on the poster with photographs presented, to indicate how they visualise the future built environment on this site that would enhance the character of the place and that could preserve human-environment interactions.

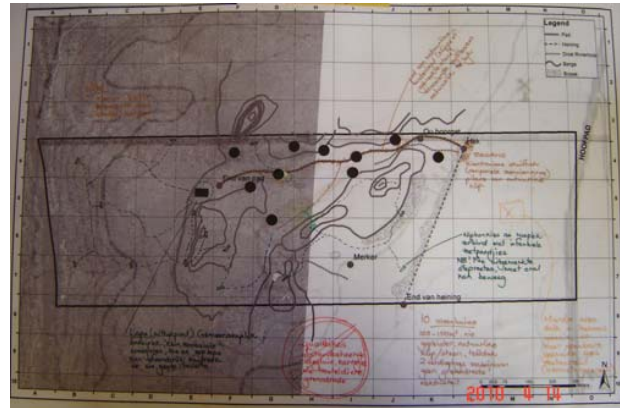


Fig. 6 Example of Proposals by Group – Layout of the site



Fig. 7 Example of Proposals by Group – Visual presentation (collage)

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emotional safety were felt most strongly when participants entered the areas with denser vegetation. Many participants for example also experienced strong feelings of spirituality in areas with dense vegetation, under or near large and impressive trees or in the open areas where they had a view of the surrounding area. Related to this, they also suggested that all new development should be as unobtrusive as possible and that it should only occur in the areas on the site that is already disturbed. The results from the first phase showed that many participants were intrigued by the flora and the landscape and wanted to explore it further. It was described as a '*stop and pause effect*,' and stimulated their curiosity and a desire to explore further.

Two of the groups suggested that a new entrance be build near the opposite corner of the property with a longer, winding road leading to proposed residential units. This is aimed at providing visitors or residents on the site to obtain feelings of calmness, peace and tranquility before they reach their residents and to perhaps experience a sense of escape from their everyday settings.

All four groups suggested a single road ending at a central point, from where footpaths should lead to proposed structures on the site. This could be linked to the participant's appreciation for the diversity and unity with nature on the site and aimed at preserving the untainted natural vegetation on the site. Between 4 and 11 (average 6,4) residential units were suggested for the site, which is aimed at not overcrowding the property and to ensure the few residents on the property get the maximum benefits that nature has to offer. It was also suggested that the units should be hidden among the pockets of natural vegetation next to the existing road to minimize visual disturbances. All participants felt that it is of the utmost importance to protect the natural environment. In addition, all groups (4/4) felt that the units should not be visible to each other, again to conserve feelings of contentment, a sense of escape, curiosity, hope and spirituality that emerged when the participants were encouraged to talk about their interactions during the first phase of the process.

The proposed materials could also be linked to the findings in phase 1. For example, rocks which are associated with unity or difficult times or stability in relationships, are suggested to be included in the structure. The rocks, should also come from the immediate area, are also indicative of the history of the area which invoked feelings of admiration and awe. Other facilities suggested by the participants included a central, communal area where the residence could interact and benches at strategic places where people could admire and for example appreciate the surrounding views from.

An analysis of the findings from the group participations seems to be directly related to their affective experiences on the site during the first phase. The following table provides site development proposals based on the affective experiences which should be considered in proposing planning guidelines for the development of the site:

Trustworthiness

In qualitative research the integrity of data is ensured by applying different trustworthy guidelines. Trustworthiness

was achieved through applying various types of triangulation which added truth value, applicability, consistency and neutrality to the research process and results [35]. Firstly, multiple data collection strategies [13] were used including a projective method, focus groups, individual interviews and observations to investigate the phenomena from different angles. Secondly, multiple researchers (interdisciplinary collaboration) and observers from diverse backgrounds and levels of education were involved in the whole research process [33], [36]. Member checking was also used because researchers confirmed the findings with the participants. Finally, all three researchers, again from different backgrounds and levels of training, engaged in the analyses and interpretation of the data for a prolonged period of time.

III. DISCUSSION

The research proposes that the socio-affective aspects, known as the intangible aspects of a location [37] are as important to acknowledge in the sense of place of a site, as the tangible visual and aesthetic aspects. The findings in phase 1 of this research clearly illustrated the shared properties of the environment and how people subjectively and idiosyncratically experienced it. This finding is also confirmed by [38]. It is accepted that human-environment interactions involve continuous, dynamic and relational interactions between human cognitions, emotions and behavior as well as the environment. The physical interactions between humans and their environments can be observed in behavior and actions [39], [40], which was noted in this research in the areas in which the people's spent more time or the places that they tended to avoid. The metaphysical experience (i.e. cognitions and emotions) are however, mostly unobservable and unconscious and often manifest itself in the form of physiological, as well as psychological, social and spiritual reactions [41]-[45]. It was therefore useful to obtain insight in these dimensions by applying a projective data eliciting technique. Furthermore, the way in which people perceive their environment includes the manner in which people think about their environments [46], [47]. This process does not happen automatically [47]-[49] and often emerge in the form of a physical description of a particular environment based on direct observations. Metaphysical processes related to environmental perception are less observable and difficult to access and manifest itself as personal meanings, attitudes and values [50]-[52].

To access this abstract and unconscious dimension of the relationship between people and the environment, therefore requires innovative methods and different research processes. It is therefore suggested that that the discipline of planning should take notice that tangibles could be projected through concrete maps, but intangibles should also be projected through language and words. In this regard this research illustrated the value of interdisciplinary collaboration. By involving experts in human behavior could create a new vocabulary and powerful communication strategies [22]. A combination of disciplines on place research may prove to be rewarding for planners in general. In the South African

context specifically (where this research is new), it can expand the planner's knowledge of sense of place in order to practice place-making. Interdisciplinary methods are helpful to enable researchers to study phenomena where too little is known about the phenomena to formulate proper hypotheses [53]. Further, interdisciplinary research may add value because this type of research is more creative; is more likely to lead to applicable results due to the fact that it is more oriented towards problem-solving approaches [54]; and research on sense of place is seen as more appropriate when informed by multiple research traditions.

This research also illustrated that places can neither be planned for nor designed from the outside only without recognising that there is always a social creation in which various contexts (physical, ecological, social, economic, cultural, political, institutional, technological and individual) are involved. Although planning is ultimately concerned with improving the quality of human life, it involves the creation and dissemination of meanings that constitute the sense of place of localities. From the literature, it is also evident that place was until now only envisioned in terms of physical qualities [55] and the socio-affective meanings attached to them were rarely considered. Planners may possibly come closer to their ultimate goal of improving living environment if they acknowledge also the socio-affective aspects embedded in sites. Unfortunately, as [55] rightfully acknowledge, the underlying intangibles has not yet been decoded by planners nor integrated in spatial planning. In this research it was attempted to illustrate that the meanings that people have about places are diverse and subjective. However, by involving participants in the planning process it could reveal affective dimensions underpinning the sense of place of localities, and these hidden dimensions could be included in proposing planning guidelines. This proposed shift could provide planners with new possibilities of exploring the dimensions between people and places as well as to develop appropriate methods for participation to obtain insight into the underlying meanings.

IV. INTEGRATING THE AFFECTIVE DIMENSION IN SITE PLANNING: THE WAY FORWARD

Planning should not only force top down identity onto space (locality) but rather acknowledge the intrinsic intangible aspects (the affective dimension) of sites to support sense of place. In terms of sense of place (with the renewed focus on place identity and thus sense of place, due to globalisation) the need exists to revisit theoretical frameworks used to plan/design for sense of place. The affective dimension, currently a hidden dimension in site planning needs to be taken cognisance of, especially where development is proposed for natural, rural areas. A movement towards more participatory and empowering decision-making processes forces planners to think more qualitatively than in terms of mere quantities and of micro scale complexities where society and community is made up of individuals with different emotions and preferences. For psychologists some of the major challenges may involve thinking towards concrete future states, policy implications and decision making systems

in which planners operate [56]. It is proposed that aspects from environmental psychology can help to bridge between larger scale future solutions for planning (and design) of the physical environment (e.g. site planning) and the micro level consisting of individual emotions, perceptions and preferences.

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TABLE II
INTEGRATED RESULTS FROM PHASE ONE AND PHASE TWO – TWO-DIMENSIONAL SITE LAYOUT GUIDELINES

INTEGRATION: FORMULATION OF CONCRETE SITE PLANNING GUIDELINES BASED ON AFFECTIVE EXPERIENCE OF THE FARM KROMDRAAI, VDWHS			
GUIDELINE	PROPOSAL	AFFECTIVE EMOTIONS (Based on interview analysis)	RELATIONAL CONNOTATION
1. Developmental zones	Locate development: (i) close to existing disturbed areas (near gravel roads/paths); (ii) within enclosed, hidden areas, not visible from the main road or surrounding area	Contentment; Sense of escape; Hope, Curiosity; Spirituality; Safety	Open, undisrupted panoramic views may strengthen the feeling of escape from pressures of everyday life, elicit feelings of hope (open horizons); Built environment within enclosed spaces may further protect and elicit feelings of safety, while bringing inhabitants closer to micro scale environment to create awareness and satisfy curiosity; dwellings enclosed by natural elements such as trees bring man closer to nature and spirituality.
2. Conservation zones	Do not allow development on the following areas: (i) hill tops, (ii) open areas where it would be visible or obstruct panoramas of the landscape	Contentment; Sense of escape; Hope, Curiosity; Spirituality; Safety	(same apply as previous)
3. Appropriate land uses	The following land uses are appropriate: (i) residential (permanent of non-permanent), (ii) recreational (hiking, bird-watching); (iii) business (restaurant/function venue for residents)	Contentment; Sense of escape;	Low key land uses that attract a limited number of people who are forced to spend some time at the site (e.g. whole day or weekends) represent calmness and peacefulness of the natural rural environment. It strengthens feelings of contentment and support the idea of escape from normal daily activities.
4. Sense of arrival	The provision of a particular space and structure to announce the arrival on the site by either (i) maintaining the existing entrance on the east or (ii) the provision of a new entrance in the north-eastern corner of the site. The entrance should be announced by a physical structure that is inviting and welcoming. It must be visible but not obtrusive.	Curiosity Hope; Safety;	The sense of arrival connotes a stop and pause effect where something is expected on 'the other side'. This triggers feelings of curiosity to explore further.
5. Density and spatial distribution	Very low density of a maximum of 12 dwelling units arranged in the following spatial patterns (i) in a longitudinal strip along the existing path, (ii) in a curved strip, south of the hill in the centre of the site to follow the curve of the hill. Distances between structures to ensure structures not visible from one another.	Spirituality; curiosity	Trees/tree clusters elicit feelings of spirituality and experiences of connectedness to God and nature. If built structures are hidden amongst tree clusters, (not visible from neighbours/surrounding sites or the road) and existing trees maintained as far as possible, spiritual connectedness to the landscaped may be supported. This cannot be accomplished by high densities or where structures are visible from one another/surrounding farms or the road. An organic spatial distribution pattern which follows lines of the natural environment (contours/hills etc) is subdued to the landscape and less obtrusive.
6. Paths	Mainly footpaths while structures to be connected (i) in an organic (curved) way to follow the natural landscape, (ii) gravel road (can be compacted) and natural stone for road materials	Sense of escape; curiosity	The idea of rural roads (not tarred) support the experience of been in a rural landscape and thus strengthen the idea of 'sense of escape'. Footpaths invite people to explore the site and satisfy curiosity.

(The above guidelines will obviously be influenced by the outcome of an Environmental Impact Assessment and if necessary, adapt accordingly. These also needs some refinement in terms of set quantitative standards to implement)

TABLE III
INTEGRATED RESULTS FROM PHASE ONE AND PHASE TWO – THREE-DIMENSIONAL ARCHITECTURAL GUIDELINES

INTEGRATION: FORMULATION OF CONCRETE ARCHITECTURAL DESIGN GUIDELINES BASED ON AFFECTIVE EXPERIENCE OF TH FARM KROMDRAAI, VDWHS			
GUIDELINE	PROPOSAL	AFFECTIVE EMOTIONS (Based on interview analysis)	RELATIONAL CONNOTATION
1. Architectural style	(i) Unity in style throughout the development is proposed but, differences in the detail design, to allow for diversity of individual sites. (ii) traditional farm houses (2 groups), modern (2 groups) or contemporary (1 group) is proposed as long as it reflects elements of the character of the VDWHS, (iii) verandas attached to units	Contentment; Sense of escape; Hope, Curiosity; Spirituality; Safety	Unity and harmony through the same architectural style, as well as units of limited size and building heights, conveys the idea that the man-made environment is subdued to the natural, rural landscape. These guidelines will therefore support the affective emotions elicited by the site.
2. Size of structures	Structures between 100-150 square meters are proposed		
3. Building heights	Preferably single level (ground) but a maximum of two (ground level + one)		
4. Building materials	Mostly natural materials: (i) stone, wood, raw bricks for walls; (ii) grass, tiles, corrugated iron or concrete slabs for roofs; (iii) glass with wooden frames for windows		The feelings of emotional contentment that emerged from spontaneous interaction with the site can be related to intra-psycho feelings of harmony. The proposed building material- and colour code prescribed for development on the site ensures that the built environment is subdued to the natural, rural character of the site. External guidelines are used in this way to compliment feelings of internal harmony.
5. Colours	Natural, neutral undertones that blend with natural environment: (i) mostly earth colours (browns); (ii) greens to reflect landscape; (iii) blues to reflect sky, (iv) subdued tones of grey,		
6.			