A COMPARATIVE ANALYSIS OF COMMUNITY PREFERENCES IN TOWNSHIP LAYOUTS

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Empirical research in environmental planning and design falls short of what is needed. Earlier research seems often to be ignored and too much planning practice is based on facile and superficial assumptions and reflects two influences: namely stereotyping and ethnocentrism. This together with a dearth of empirical data means that planning may well not be based on sufficient knowledge and understanding of the real needs of urban communities for whom it is intended.

Notwithstanding the range of highly sophisticated procedures and techniques, including a greater degree of consultation and public participation in the planning process, plans ultimately result in the building of roads, houses and all the other urban paraphernalia that forms the physical milieu in which people conduct their lives: it is at this level that people experience at first hand the end product of the planning process.

On the basis of a comparative analysis of the preferences of three population groups (whites, blacks and Coloureds - as classified under the old dispensation during which time the surveys were conducted) with respect to a variety street layout configurations, the study shows that there are fundamental differences between the groups.

Because of the dissimilarities in the preferences of these communities it is clear that no one approach will suit all and that there is a need for research regarding three main areas: firstly, towards gaining a closer understanding of the needs and preferences of established communities, to ascertain how environments are experienced; secondly, towards the study of the needs and preferences of those groups for whom one is currently planning; and thirdly, on follow-up studies of recently completed projects, to serve as feedback for future projects of a similar nature.

While criticism is levelled at the planning profession, the creation of living environments is not solely theirs. Other design professionals and social scientists also have a vital role to play in broadening our knowledge and understanding of man and his built environment.

Empiriese navorsing oor omgewingsbeplanning en -ontwerp skiet kort van wat benodig word. Vroeër navorsing blyk dikwels geïgnoreer te word en veels te veel beplanningspraktyk is gegrond op vereenvoudigde en oppervlakkige aannames wat twee invloede weerspieël: naamlik stereotipering en etnosentrisme. Hierdie tesame met 'n gebrek aan empiriese data bring mee dat beplanning nie op genoegsame kennis en begrip van die ware behoeftes van die stedelike gemeenskappe waarvoor beplan word, gegrond is nie.

Desnieteenstaande die omvang van hoog-gesofistikeerde prosedures en tegnieke, insluitend die hoër mate van beraadslaging en publieke deelname in die beplanningsproses, die finale produk is die bou van paaie, huise en al die ander stedelike uitrusting wat die fisiese milieu vorm en waarin mense hulle lewens deurbring: dit is juis op hierdie vlak waar stedelike inwoners die eindproduk van die beplanningsproses direk ervaar.

Volgens 'n vergelykende ontleding van die voorkeure van drie bevolkingsgroepe (blankes, swartes en Kleurlinge - soos geklassifiseerd onder die ou bedeling waartydens die opnames uitgevoer is) m.b.t. 'n verskeidenheid straat uitlegte, is bewys dat wesenlike verskille tussen die groepe bestaan.

Omrede hierdie verskille in die voorkeure van hierdie gemeenskappe is dit duidelik dat nie een enkele oplossing almal tevrede kan stel nie en derhalwe die behoefte aan navorsing oor drie hoofareas: eerstens, m.b.t. die verkryging van 'n duidelike beeld van hoe bestaande omgewings ervaar word; tweedens, m.b.t. die bestudering van die behoeftes en voorkeure van dié waarvoor daar tans beplan word; en derdens m.b.t. opvolg studies van voltooide projekte, wat as terugvoer vir soortgelyke toekomstige projekte kan dien.

Alhoewel kritiek teen die beplanningsprofessie gemik is, berus die skepping van woonomgewings nie uitsluitlik by beplanners nie. Aanverwante beroepslui en menswetenskaplikes het ook 'n belangrike rol om te vervul m.b.t. die verbreding van ons kennis en begrip oor die mens en sy beboude omgewing.

1 INTRODUCTION

Some fifty years ago Ernest Kump (1949:19) summed up the core issue in planning in the title of his paper presented at the conference commemorating Princeton's bicentennial celebrations: "When we know man, then we can plan". In a somewhat similar vein a delegate to the conference on Metropolitan Planning held in Toronto in the mid-sixties made the following comment: "The crisis does not lie in the city but in man's capacity to understand the problem" (as reported by Prof Wilfred Mallows). In a paper (Welch, 1970:477) presented at the Focus on Cities' conference in 1968, I

referred to the dilemma of "how we can best approach the study of the city which paradoxically is so familiar yet so little understood". The paper stressed the need for a concerted research/effort on the part of planners and social scientists to gain greater clarity of urban processes so as to "... ensure that what is given physical form is in fact socially significant": issues that were of concern to me then and remain so.

By and large, discussions on or about urban or even at a lesser scale township planning, give the impression that an awful lot is taken for granted and that in consequence planning approaches may be too glib, facile and superficial. There is good reason to believe that this stems from two sources: stereotyping, which "clumps" people together and acts as a substitute for knowledge and ethnocentrism, where the ways of doing things by, and the values and beliefs of one group are superimposed on another. In neither case do these offer the promise of clarifying, defining or meeting the real needs of urban communities.

Although a good deal more consultation between planners and those for whom they are planning than was previously the case, is evident, this may not adequately alleviate the problem, for as Shirvani (1985:54) notes:

> "Under many circumstances, the user's input can be widely accepted, but whether or not user information provides an unassailable "authoritative text" on the human dimension of a particular planning question is another issue entirely".

Notwithstanding beliefs to the contrary, planning is never value-free: this holds for all those participating in the planning process. In a society such as ours which can be characterised as being volatile and highly politicised it is difficult to ascertain whether the stated needs reflect those of the spokesmen, rather than those of the "recipients". If one wants to satisfy the conditions of "openness" and "transparency" then in addition to consultation with the spokesmen, studies to gauge directly the needs of the end user are necessary. It is in this area that empirical research is skimpy.

Having worked at the then National Building Research Institute of the CSIR and being conversant with the considerable body of research undertaken into low-cost housing which covered the whole gamut of factors from the socio-economic condition of the people through house design, detailed studies of structural and thermal factors, costs, materials, labour, construction methods, soils and geological conditions for foundations, to township siting and layout, one cannot help but be surprised by the reports in the media of serious structural cracking of houses, water penetration through walls, flooding and the like, and it would seem that the lessons learned years ago have faded into obscurity.

Assumptions that all that was previously done is wrong and that the new order *per se* will set it aright, may not in fact be true and in the process one may be guilty of throwing the baby out with the bathwater. One should distinguish between the value of the research on the one hand and the dubious housing policies that were being pursued on the other: the latter should not overshadow the value of the former.

It is clearly necessary to update our thinking commensurate with changing circumstances but one may query whether it is really necessary (productive) to keep re-inventing the wheel. Even though possibly somewhat outdated this early research may well reflect more closely what is needed in our local context than overseas studies of groups with sharply divergent socio-cultural backgrounds and traditions and where the only thing in common is some vague geographic relationship of similar lines of latitude yet being on different continents. While we can learn from others the emphasis on the application of overseas experience must be on "translation" not "transliteration" or adaptation before implementation.

The large scale housing programmes presently envisaged should be accompanied by ongoing research and the greatest drawback to effective long term planning and action could well hinge on a lack of empirical evidence concerning the real needs and preferences of the end users.

Although the planning process involves a wide range of highly sophisticated procedures and techniques, it is directed ultimately towards the improvement of the quality of life of all the members of society, both now and in the future and crystallises out in action: whilst not exclusively, the end stage generally entails change, to a greater or lesser extent in, or modification to the physical environment. The bottom line is that roads, houses and all the other urban paraphernalia get built and form the physical milieu in which people conduct their lives.

2 OBJECTIVES AND PROCEDURE

The purpose of this study was to gauge some of the responses of ordinary people to a number of basic elements in the urban environment. It follows the procedures of an earlier study (Welch, 1987 and 1988) conducted in Mbekweni, a black residential area between Paarl and Wellington, and compares the responses of this community to those of the white (Stellenbosch) and Coloured (Cloetesville) communities. The Mbekweni and Stellenbosch groups can be regarded as representing two extremities: the former poor with minimal education and all living in row-housing, the latter comparatively well-off, well educated and living in spacious single detached houses. Economically, the Cloetesville group lies somewhere between the two.

The Stellenbosch survey was carried out in 1989 and the Mbekweni and Cloetesville surveys in 1985 and 1987 respectively. In the Mbekweni study the perceptions of the respondents to street layout, house types and house image were examined. The Stellenbosch study has the section on street layout preferences in common but the sections on house type and image were replaced by an evaluation of preferences regarding township layout and open space configurations.

Although of slightly different composition the section on street layout preferences in Du Plessis' (1987) study of the Cloetesville community was used to compare and gauge the degree of similarity/dissimilarity of the responses in the three sample groups. As

Du Plessis included a number of additional street configurations his data were regrouped to conform to that used in the other two cases. The additional street layouts are discussed separately.

In all three cases a partially structured questionnaire was used which allowed for respondents to give, in their own words, reasons for their responses. Although other aspects were examined in the Mbekweni (Welch, 1987 and 1988) and Cloetesville (Du Plessis, 1987) studies only the responses to street layout preferences are discussed here. This also holds for the Stellenbosch study. However, preferences regarding township layout and public open space configurations which formed part of the latter study and which have not previously been published, are included.

The respondents include all those living in row-houses in Mbekweni (213) and random samples of 279 and 72, of the Stellenbosch and Cloetesville groups respectively.

To reduce difficulties in interpretation simple wooden blocks representing the houses were used in the Mbekweni and Cloetesville studies (Figures 1 and 2). In the Stellenbosch study the position of the houses were drawn on the plan layout. No apparent difficulties, with respect to interpretation of the examples, were experienced.

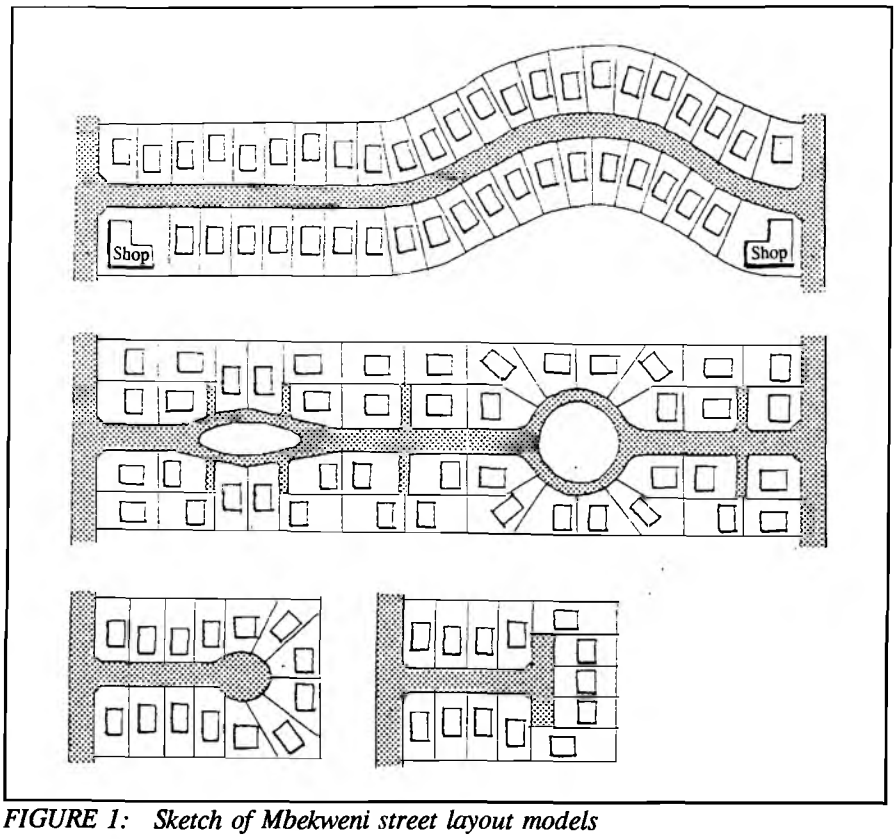

FIGURE 1: Sketch of Mbekweni street layout models

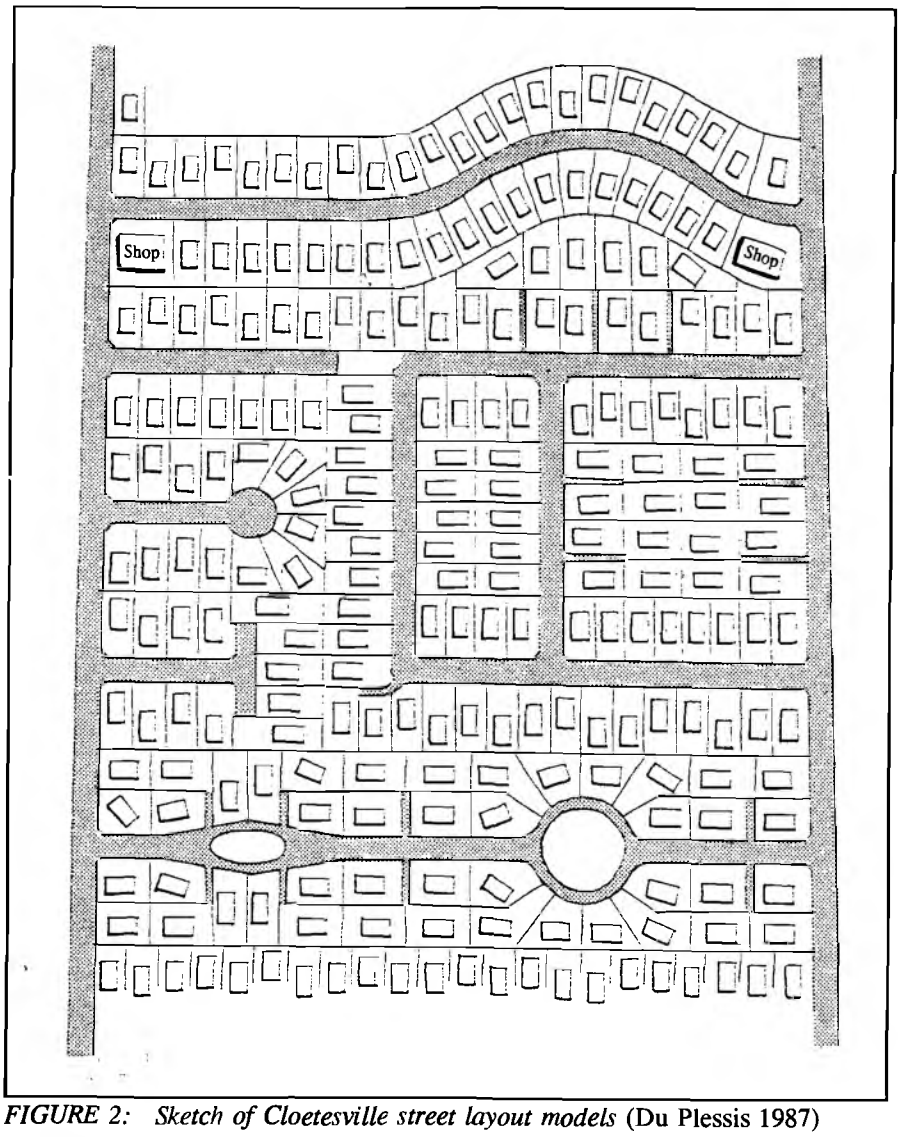

FIGURE 2: Sketch of Cloetesville street layout models (Du Plessis 1987)

3 DISCUSSION OF FINDINGS

3.1 Straight and curved street preferences: Layouts 1A and 1B

Details relating to specific preferences in the Stellenbosch study and the corresponding data for Mbekweni and Cloetesville are shown diagrammatically in Figures 3, 4 and 5. Tables 1, 2 and 3 summarise the data for the three studies under the following groupings: staggered house positions, uniform house positions, corner sites and sites next to shops.

In the Stellenbosch sample (Table 1) the most preferred sites (58,8%) are located towards the mid-point of the curved section and continue to approximately the mid-point of the straight

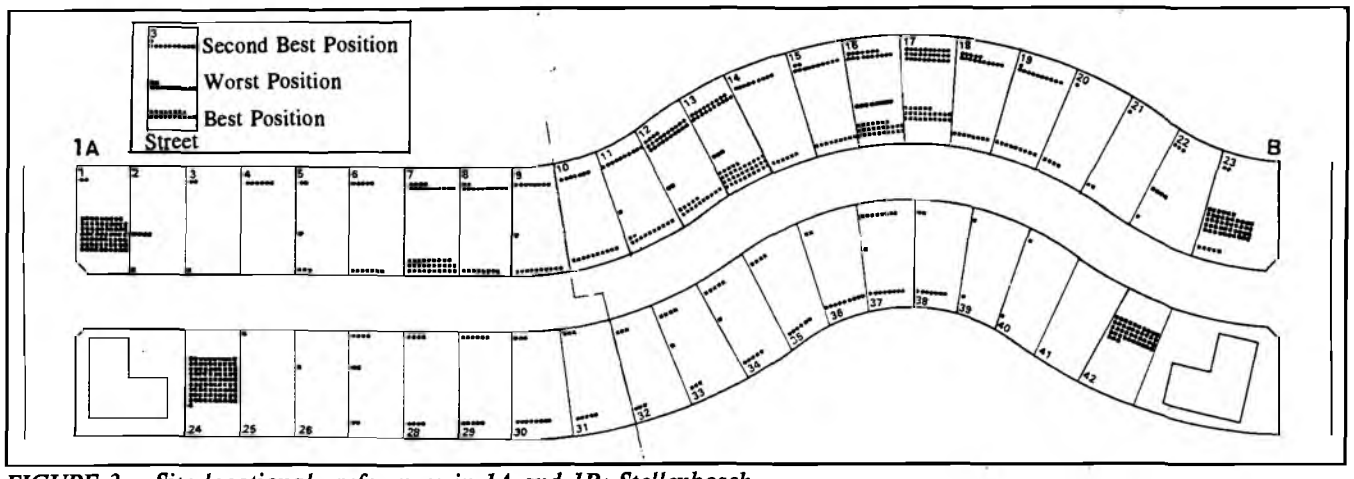

FIGURE 3: Site locational preferences in 1A and 1B: Stellenbosch

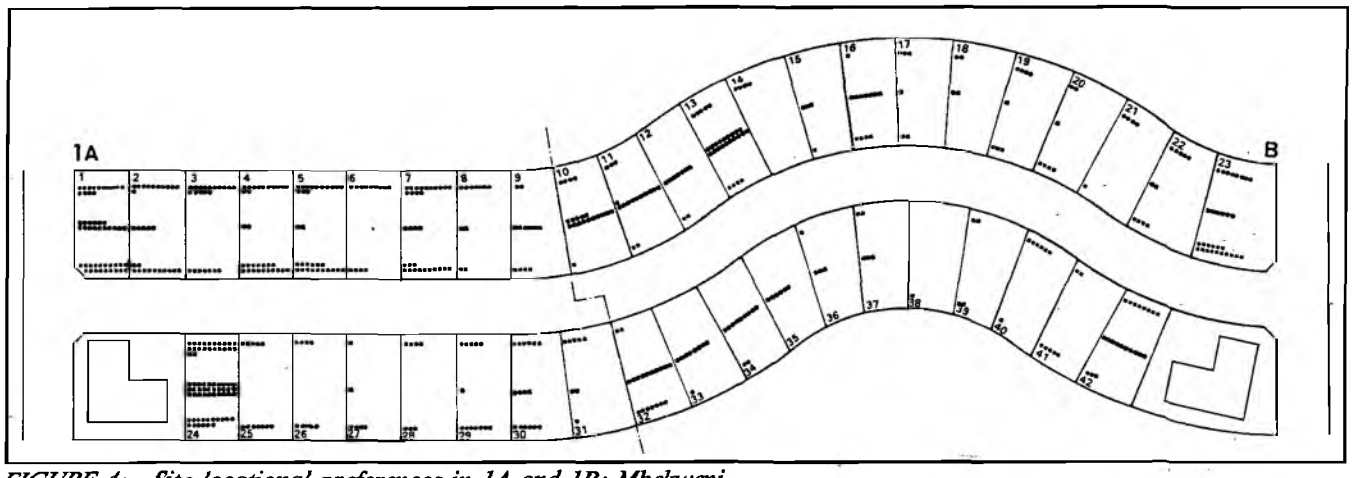

FIGURE 4: Site locational preferences in 1A and 1B: Mbekweni

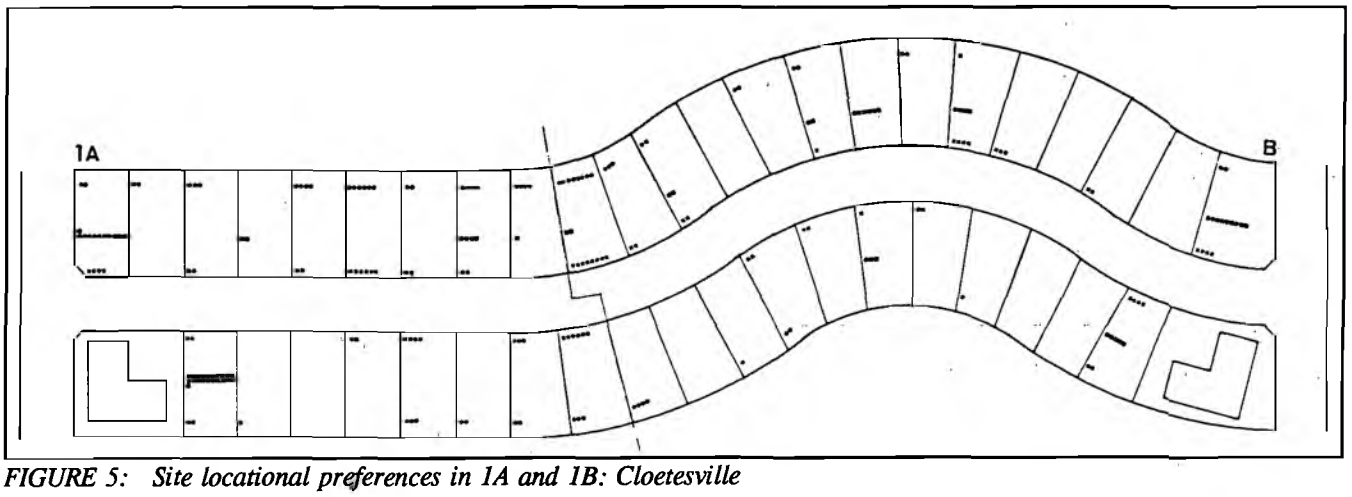

FIGURE 5: Site locational preferences in 1A and 1B: Cloetesville

section on the side of the road where the houses are staggered on the sites (Figures 1 and 3). To a considerably lesser extent this pattern is also reflected on the opposite side of the road where the houses are not staggered (10,8%). By and large the sites regarded as having the second best location reflect a similar distribution to those rated as having the best location. Only 28,6% preferred sites in 1A (the straight section of the road) as against 69,6% showing a preference for the curved section, 1B.

Preferences in the Mbekweni sample (Table 2) differ markedly with 49,3% preferring sites in 1A and only 20,1% in 1B. In the Cloetesville sample (Table 2) the overall preferences for 1A and 1B are similar (40% each).

In both the Mbekweni and Cloetesville samples 48,3% and 50% of the respondents favour the staggered arrangement of houses: this is nearly 80% in the Stellenbosch sample.

These data indicate a clear preference on the part of whites for the staggered configuration of houses on the curved section of street and of blacks for the same configuration on the straight

section of street. This is also reflected in the "worst site" positions with only 6,5% of whites noting the curved section as the worst, but 36,6% of blacks.

Although 30,6% of the Coloured sample favour the curved street this is also regarded by 22,2%, as the worst.

The sites regarded as the worst in the Stellenbosch sample are the corner sites and the two sites next to the shops. These four locations account for 89,3% of the "worst site" responses. In the case of the Mbekweni sample these account for 30,2%, and in the case of Cloetesville, 63,9% of the "worst site" responses. It would seem that blacks living in row-housing are far less negatively disposed to these sites than either the white or Coloured groups. However, it is of interest to note that of the 19 respondents living in detached houses in Mbekweni, 42,1% regarded these four sites as the worst (Welch, 1987 and 1988). The response of the row-housing respondents to these sites may be a reaction to their present circumstances in that the corner sites and those next to shops are perceived to be more "open": a reaction to their feeling of being "hemmed in".

3.2 Traffic island preferences: Layouts 2A and 2B

Details of preferences for the main locational choices are illustrated diagrammatically in Figures 6, 7 and 8 and are given in Tables 4, 5 and 6 for the Stellenbosch, Mbekweni and Cloetesville samples respectively.

With respect to both the Stellenbosch and Mbekweni samples a distinct pattern of preferences for the panhandle sites and a dislike of the island locations emerges: the percentages in each case are the same. Whilst a similar disliking for the island positions is evident in the Cloetesville sample this group also shows a marked preference (48,6%) for the island locations when compared to either of the other two cases: sites around the circle in 2B are in fact the most pre ferred by this group (31,9%). Preference for the panhandle sites is, however, in the Cloetesville sample considerably lower than in either of the

Table 1: Site location preferences in layouts 1A and 1B: Stellenbosch

N = 279		Best Position %	Second Best Position %	Worst Position %	Combined Layout		
					Best %	Second Best %	Worst %
Staggered	1A	21,1	17,6	2,2	79,9	64,6	8,7
	1B	58,8	57,0	6,5			
Uniform	1A	7,5	8,6	1,0	18,3	24,0	2,0
	1B	10,8	15,4	1,0			
Corner	1A	-	0,7	24,7	1,8	1,4	41,2
	1B	1,8	0,7	16,5			
Next to shop	1A	-	-	32,6	-	-	48,1
	1B	-	-	15,5			

Table 2: Site location preferences in layouts 1A and 1B: Mbekweni (Row-housing)

N = 213		Best Position %	Second Best Position %	Worst Position %	Combined Layout		
					Best %	Second Best %	Worst %
Staggered	1A	35,2	39,0	10,2	48,3	56,4	46,8
	1B	13,1	17,4	36,6			
Uniform	1A	14,1	15,5	4,0	21,1	24,5	23,0
	1B	7,0	9,0	19,0			
Corner	1A	9,0	6,5	7,8	16,5	10,2	10,7
	1B	7,5	3,7	2,9			
Next to shop	1A	10,3	7,5	14,6	14,1	8,9	19,5
	1B	3,8	1,4	4,9			

Table 3: Site location preferences in layouts 1A and 1B: Cloetesville

N = 72		Best Position %	Second Best Position %	Worst Position %	Combined Layout		
					Best %	Second Best %	Worst %
Staggered	1A	19,4	35,0	9,7	50,0	63,0	31,9
	1B	30,6	28,0	22,2			
Uniform	1A	20,8	15,2	-	30,5	26,2	4,2
	1B	9,7	11,0	4,2			
Corner	1A	5,6	2,7	15,2	11,2	5,4	27,7
	1B	5,6	2,7	12,5			
Next to shop	1A	2,7	2,7	29,2	8,3	5,4	36,2
	1B	5,6	2,7	7,0			

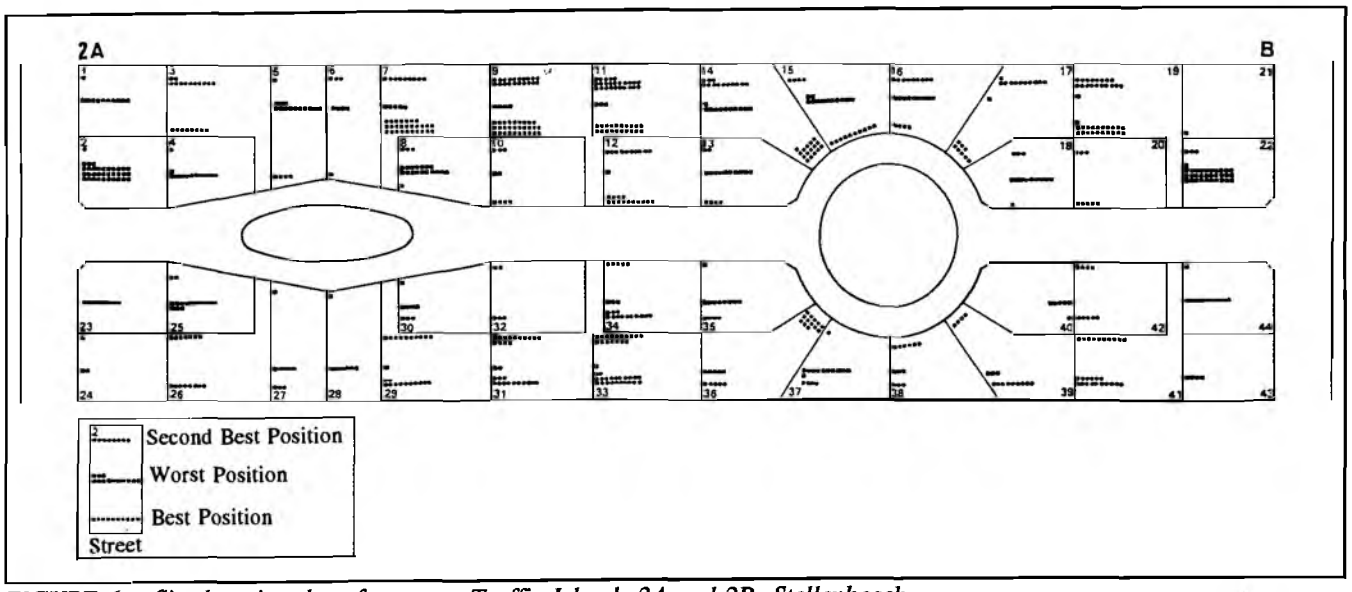

FIGURE 6: Site locational preferences - Traffic Islands 2A and 2B: Stellenbosch

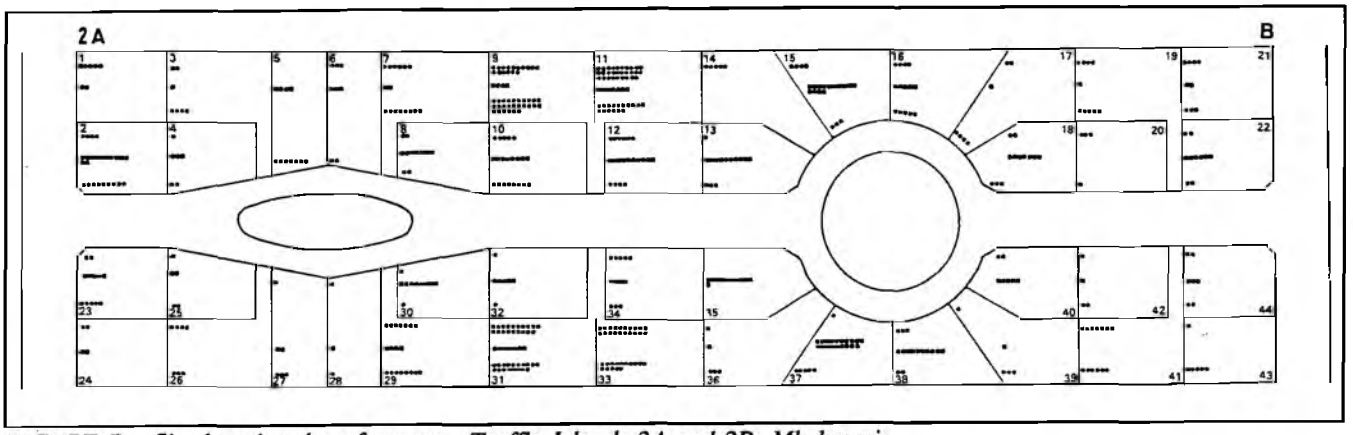

FIGURE 7: Site locational preferences - Traffic Islands 2A and 2B: Mbekweni

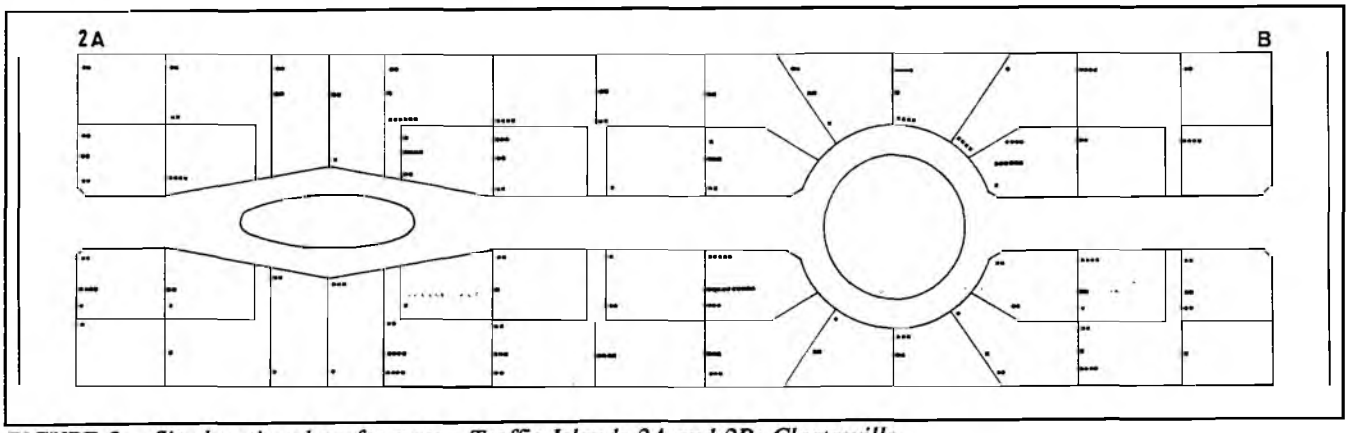

FIGURE 8: Site locational preferences - Traffic Islands 2A and 2B: Cloetesville

other two cases (27,8% as against 58,4%). The relative disliking of panhandle sites in the Cloetesville sample probably accounts for the higher distribution of best position choices with respect to the island location, particularly in light of the fact that in the other two cases, these latter locations are the most disliked (58,4%).

Of the site location choices possible within these configurations only 1 (0,4%) of the Stellenbosch sample indicated a preference for a corner site with 1,5% as second best and 29,0% indicating this as the worst location. In the Mbekweni sample these percentage responses differ considerably: 7,5% best and second best locations and 13,0% as the worst location. In the Cloetesville sample 8,4% give corner locations as the best, 15,2% as second best and 11,0% as the worst. By and large this latter group's positive responses are slightly higher than the Mbekweni group with a slightly lower negative response: both differing considerably to the Stellenbosch group.

It is of interest that the two sites (18 and 35) on the corners, when leaving the circle, have a high negative re-

Table 4: Site location preferences in layouts 2A and 2B: Stellenbosch

N = 279		Best Position %	Second Best Position %	Worst Position %	Combined Layout		
					Best %	Second Best %	Worst %
Panhandle	2A	40,1	34,4	4,7	58,4	55,5	6,1
	2B	18,3	21,1	1,4			
Corner	2A	0,0	0,4	14,7	0,4	1,5	29,0
	2B	0,4	1,1	14,3			
Ellipse	2A	3,9	5,0	26,2	28,3	29,4	57,0
Circle	2B	24,4	24,4	30,8			
Other	2A	4,3	7,2	6,1	12,9	13,6	7,9
	2B	8,6	6,4	1,8			

Table 5: Site location preferences in layouts 2A and 2B: Mbekweni (Row-housing)

N = 199		Best Position %	Second Best Position %	Worst Position %	Combined Layout		
					Best %	Second Best %	Worst %
Panhandle	2A	44,7	34,2	9,0	58,4	53,8	13,0
	2B	14,2	19,6	4,0			
Corner	2A	5,5	5,0	8,5	7,5	7,5	13,0
	2B	2,0	2,5	4,5			
Ellipse	2A	8,5	6,5	13,7	22,1	20,6	57,0
Circle	2B	13,6	14,1	43,3			
Other	2A	8,0	8,0	10,5	12,0	18,1	17,0
	2B	4,0	10,1	6,5			

Table 6: Site location preferences in layouts 2A and 2B: Cloetesville

N = 72		Best Position %	Second Best Position %	Worst Position %	Combined Layout		
					Best %	Second Best %	Worst %
Panhandle	2A	22,2	14,0	18,0	27,8	25,1	22,2
	2B	5,6	11,1	4.2			
Corner	2A	5,6	6,9	8,2	8,4	15,2	11,0
	2B	2,8	8,3	2,8			
Ellipse	2A	16,7	11,1	14,0	48,6	43,1	58,4
Circle	2B	31,9	32,0	44,4			
Other	2A	8,3	9,7	4,2	15,2	16,6	8,4
	2B	6,9	6,9	4,2			

sponse in all three cases and are by and large perceived as dangerous. To a lesser extent this is also reflected in the negative responses to sites 8 and 25 on the elliptical island, where houses are perceived as being too close to the road.

3.3 Cul-de-sac preferences: Layouts 3A and 3B

Summarised data pertaining to site preferences in the cul-de-sac layout 3A and 3B for the Stellenbosch and Mbekweni samples are presented in Tables 7 and 8 and illustrated diagrammatically in Figures 9 and 10.

Although two of the cul-de-sac layouts are identical in the Cloetesville study a third configuration representing a street closure was included and all three were presented at the same time. As a result these data are not directly comparable to the data of the other two studies.

As in the Stellenbosch and Mbekweni studies the preference responses are illustrated diagrammatically in Figure 11.

In the Stellenbosch sample there is a clear preference (66,9%) for those sites fronting onto the cul-de-sac (3A), with 28,9% indicating these as the worst position. Of these, site 7, which is in line with the oncoming traffic, accounts for 61,3% of these negative responses. Corner sites are not favoured and account for only 1,2% of the best position and 68,8% of the total worst position responses.

The six sites between the corner and the cul-de-sac account for approximately a third of the first and second choices with only 4,3% noting these as the worst location.

In the Mbekweni sample 54,4% regarded the cul-de-sac (3A) locations as the best and 40,1% as the worst. As in the Stellenbosch response there is a clear dislike for site 7 which accounts for 62,1% of these negative responses. Corner sites are more positively rated than those in the Stellenbosch sample and account for 11,2% of the best location choices. However, 40,1% regard these and cul-de-sac locations as the worst. Except for a consider-

ably higher worst position response (19,8%) to the six sites between the corner and the cul-de-sac in the Mbekweni sample, these are by and large similarly rated by both groups.

Reasons for disliking the cul-de-sac locations are similar in both samples: in the Stellenbosch sample the lights of oncoming cars is a more common reason than that of vehicles actually crashing through the property, as noted in the Mbekweni sample (Welch, 1987 and 1988).

The main reasons for the Stellenbosch sample disliking the corner sites are that they are noisy, more exposed, less private and dangerous. The latter is the main reason noted by the Mbekweni respondents for their dislike of these sites. Those in the Mbekweni sample who like these positions do so because the corners are open - not surrounded by other houses - and that one can see "all around". This seems to be a common reaction of those living in row-housing to their experiences of feeling "hemmed in".

The comparatively high negative response to the sites between the corner and the cul-de-sac in the Mbekweni sample, again reflects the feeling of being in the middle (surrounded by others) and that the houses are close to the street.

Sites five and nine at the ends of the "T" cul-de-sac (3B) account for 63,4% of the best and 57,3% of the second best positions in the Stellenbosch sample. The corresponding percentage for these two sites in the Mbekweni sample are 26,3% for both first and second choices.

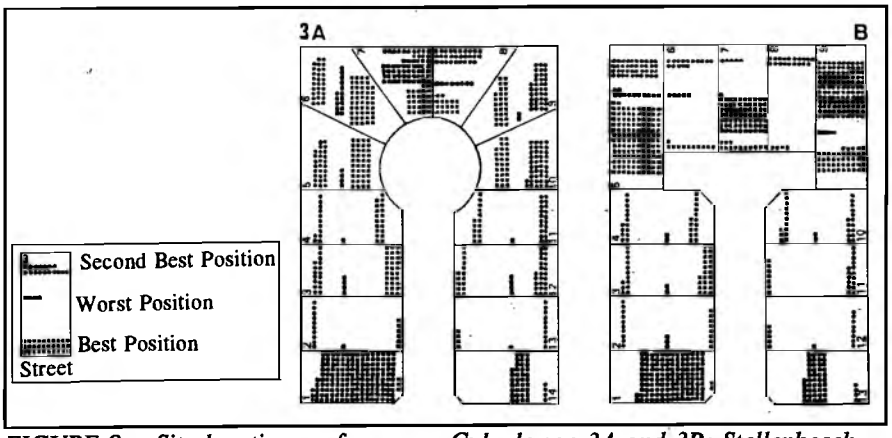

FIGURE 9: Site location preferences - Culs-de-sac 3A and 3B: Stellenbosch

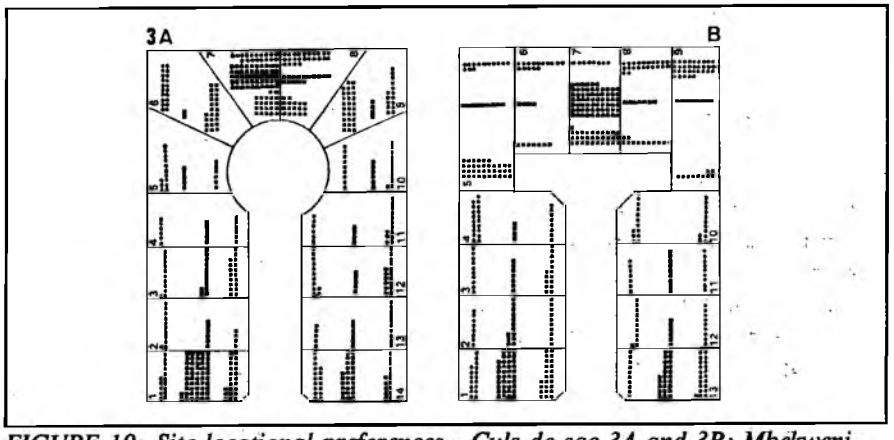

FIGURE 10: Site locational preferences - Culs-de-sac 3A and 3B: Mbekweni

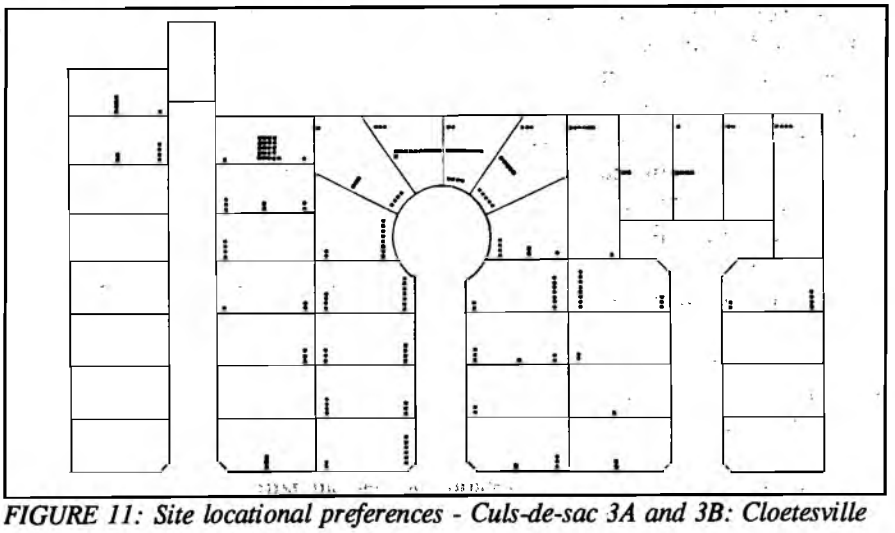

FIGURE 11: Site locational preferences - Culs-de-sac 3A and 3B: Cloetesville

Table 7: Site location preferences - Cul-de-sac layout 3A

		Best Pos. %	Second Best Pos. %	Worst Pos. %
Corner	Stellenbosch	1,2	2,5	68,8
	Mbekweni	11,2	14,8	40,1
Cul-de-sac	Stellenbosch	66,9	63,7	28,9
	Mbekweni	54,4	51,6	40,1
Other	Stellenbosch	31,9	33,7	4,3
	Mbekweni	26,4	33,6	19,8

Table 8: Site location preferences - Cul-de-sac layout 3B

		Best Pos. %	Second Best Pos. %	Worst Pos. %
Corner	Stellenbosch	0,7	1,4	63,5
	Mbekweni	16,1	18,0	34,1
Cul-de-sac	Stellenbosch	73,5	71,3	32,9
	Mbekweni	51,2	48,9	44,7
Other	Stellenbosch	25,8	27,3	3,6
	Mbekweni	32,7	33,1	21,2

Of the Stellenbosch respondents giving the cul-de-sac sites as the worst location (32,9%), 77,2% of these respondents regard site 7 as the worst; i.e. directly in line with the approach road. Of the 44,7% of the Mbekweni sample that regarded these sites as the worst 70% of the negative responses to these sites are focused on site 7. The lights from vehicles in the former and cars crashing into the houses in the latter, are the main reasons for disliking this particular location.

In the Stellenbosch sample the corner sites are clearly not favoured and account for 63,5% of the worst location ratings. In the Mbekweni sample on the other hand, the negative response to corner sites is considerably less (34,1%) with 16,1% favouring these locations. As noted under the comments relating to layout 3A, the more positive response to corner sites in the latter sample is largely due to these sites being more open and not surrounded by other sites.

In the case of the six sites between the corners and the cul-de-sac the percentages for both samples, as regards first and second choices, are similar. Between the two samples there is however, a marked difference in the percentages of those giving these as the worst position. In the case of the Mbekweni sample the 21,2% negative response is attributable to these sites giving a feeling of being "in the middle" or surrounded by others.

Preferences of 3A and 3B for both the Stellenbosch and Mbekweni samples are summarised in Table 9.

Table 9: Summary of Preferences

	3A %	3B %	Neither %	Both %
Stellenbosch	66,3	23,7	3,6	6,4
Mbekweni	45,1	33,7	6,0	15,2

Both groups favour the round cul-de-sac ending in 3A although the percentage is considerably greater in the Stellenbosch sample. Of those who favour the "T" cul-de-sac ending in 3B, the percentage is greater in the Mbekweni sample than that in the Stellenbosch sample, as too the percentage for "neither" and "both".

As regards the Cloetesville study, the following may be noted (Figure 11). In the "street closure" configuration 37,5% of respondents note the three end locations as the worst: particularly, the last site on the right where vehicles turning at the end of the street may drive into or over the property. As regards the last site on the left adjacent to the P.O.S., street access is noted as being too limited.

In the circle cul-de-sac layout, 34,7% regard the six end sites as the best locations. However, 40,3% regard these sites as having the worst location, particularly the end site in line with on-coming traffic: this is consistent with the responses in the Stellenbosch and Mbekweni studies. The six sites between the corner sites and the cul-de-sac account for 29,2% of the positive responses with only one negative response. Of the six corner sites in the total configuration only one corner site in the circle cul-de-sac layout enjoys a positive response: this may be due to the overall preference for this layout as a whole.

As in the other two studies the end site in the "T" cul-de-sac layout, in line with the approach road, is disliked. Contrary to the responses in the other two studies, the two sites at the ends of the bar to the "T" are not positively rated.

3.4 Panhandle sites

In both the Stellenbosch and Mbekweni samples the panhandle sites in 2A and 2B were rated as the best locations (58,4%). In the Cloetesville sample 27,8% rated these as the best and 22,2% rated these as the worst. Only 6,1% of the Stellenbosch sample and 13% of the Mbekweni sample, rated these as the worst.

In a separate layout of regular blocks (Figure 12) in which mid-block panhandle sites were incorporated, Du Plessis (1987) found that these sites were rated by 52,8% of the respondents as the worst locations. In addition the sites flanking the panhandle were rated by 26,4% as the worst locations. In all 79,2% of the Cloetesville sample disliked these two options. Only 4,2% and 5,6% respectively rated either the panhandle sites or those flanking the panhandle as the best. By comparison, conventional regular sites fronting onto straight streets accounted for 72,3%, and corner sites 11,1% of the best location responses.

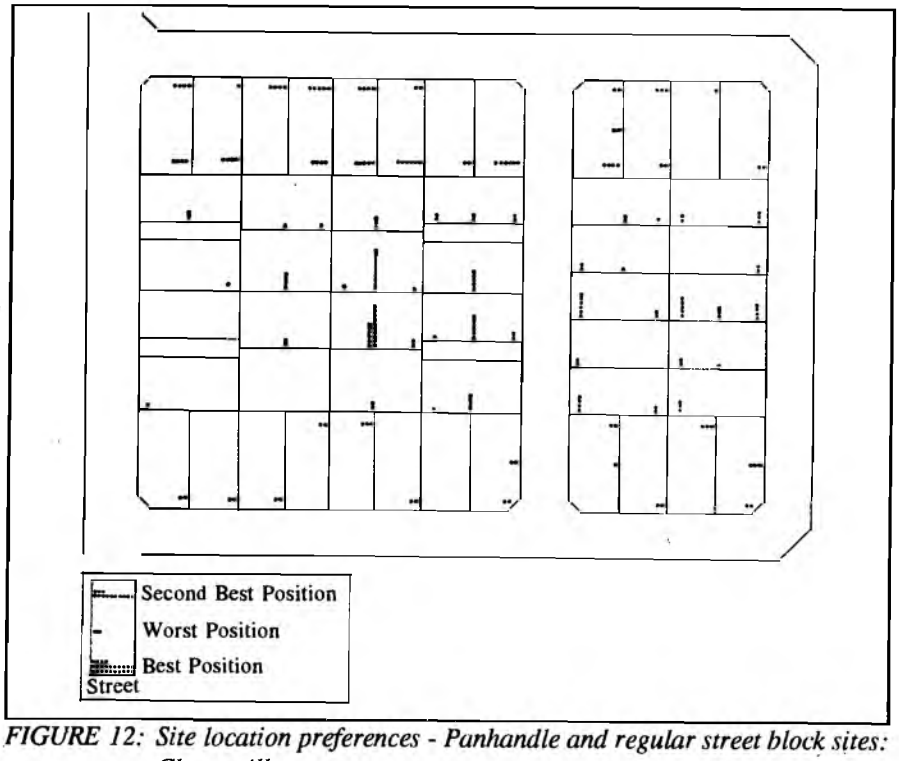

FIGURE 12: Site location preferences - Panhandle and regular street block sites: Cloetesville

Although the data on panhandle sites in the Stellenbosch and Mbekweni samples indicate a preference for these sites it should, as noted previously under the discussion of the traffic island configurations, - where it was suggested that the presence of panhandle sites may have confounded the responses to the island preferences in that the panhandle sites may have been seen as a way to avoid the islands *per se* - be borne in mind that the data on panhandle sites may therefore not reflect the actual preferences for these sites and that preferences may in fact be lower than the data indicate.

3.5 All street layout preferences

Data pertaining to preferences for all six layouts are given in Table 10.

In the Stellenbosch sample the most preferred layout in the cul-de-sac 3A with the turning circle, and the least preferred is the straight street in 1A. This latter configuration (1A) is however the most preferred in the Mbekweni sample, with the curved road, 1B, as the least preferred followed by 2B and 1A.

The reason for 2A being reasonably highly rated in both samples with respect to "most" preferred and "second most" preferred in the Mbekweni sample is probably due to the preference shown for panhandle locations, rather than the ellipse island configuration. On the other hand, based on reasons given by the Stellenbosch respondents for liking the traffic circle in 2B, its rating in the second most preferred category can be attributed to its form: in that sites are perceived as open, safe and fronting onto a park. With respect to 2B's ranking in the least preferred category in the Mbekweni sample, this is by and large due to the circle being perceived as dangerous with cars whizzing round and round and crashing into houses.

It appears that the data for both traffic island forms are confounded, to a greater extent in 2A than in 2B, by the panhandle sites; in any future study these should be eliminated from the island configurations and be included in a separate layout where preferences for panhandle sites as a specific type can be more accurately gauged.

Table 10: Street layout preferences: Stellenbosch and Mbekweni

		Best %	Second Best %	Worst %
Stellenbosch	1A	9,0	3,6	50,5
	1B	8,2	9,6	7,2
	2A	14,4	11,8	18,0
	2B	10,7	19,8	9,6
	3A	43,3	23,6	0,4
	3B	14,4	28,0	14,3
Mbekweni	1A	44,7	9,7	13,4
	1B	6,0	5,1	34,6
	2A	15,7	20,3	12,4
	2B	9,7	13,4	21,7
	3A	14,2	28,0	6,9
	3B	9,7	23,5	11,0

By and large traffic circles of either form are not favoured; straight streets are favoured by Mbekweni respondents and curved streets by the Stellenbosch respondents with the cul-de-sac having a round end as opposed to the "T" end, being preferred by both groups.

Because the Cloetesville study included the additional "street closure" cul-de-sac and the conventional street block layouts the responses to overall ratings are not directly comparable.

However, based on an analysis of the preference distribution in Table 11 the curved street and street closure cul-de-sac layouts are preferred by none. Preferred layouts appear to be the round end cul-de-sac (25%), the circle island (25%) and the straight street (16,5%). The least preferred is the curved street (33,3%) followed by the street closure cul-de-sac (19,4%).

Based on the data for the best location, the second best location and the worst location for all three samples as

Table 11: Street layout preferences: Cloetesville

	Best %	Second Best %	Worst %
Straight Street	16,5	-	4,3
Curved Street	-	12,5	33,3
Cul-de-sac (street closure)	-	2,8	19,4
Cul-de-sac (round end)	25,0	8,4	7,0
Cul-de-sac ('T' end)	7,0	9,7	16,5
Street block	7,0	12,5	9,7
Street Block (Panhandles)	12,5	9,7	-
Oval	7,0	25,0	7,0
Circle	25,0	19,4	2,8

a whole (Table 12) the Mbekweni sample shows a clear preference (44,7%) for the straight street (1A), half (50,5%) of the Stellenbosch sample regards this as the worst. Both the Mbekweni and Cloetesville samples regard the curved street (1B) as the worst.

The cul-de-sac with the round end is favoured by the Stellenbosch (43,3%) and Cloetesville (25,0%) samples, although in the latter case this is split between the cul-de-sac with the round end and the traffic circle (2B).

By and large these generalised data and the detailed data discussed previously indicate that one should be wary of assuming that what is acceptable to one group (based on ethnicity, income or whatever) will necessarily be acceptable to another and highlights the need to study the particular preferences of the target groups for whom the planning is intended.

The procedure of presenting the various layouts separately holds the advantage of limiting the range of choices and focuses attention on a limited number of preference options. It has the disadvantage that a wider range of choices is not included, as would be the case if combined in a single layout as in Du Plessis' study.

Whilst the latter approach appears to reflect "reality" closely the complexity of a combined layout tends to make choices at different levels of preference more difficult. In practice it appears that the more complex the subject matter the less likely respondents are, after making their first choice, to making finer distinctions or negative choices: response rates tend to fall off because respondents regard choices other than first choices as being less important or because they just tend to give up. The composite layout used by Du Plessis may be at the maximum level of complexity and should possibly be simplified by eliminating (through shading) those sites not specifically included in a study.

3.6 Parks and public open space preferences: Stellenbosch sample only

A series of public open space configurations ranging from a single large park area to a number of small parks arranged in a scattered configuration, was adopted. The series reflects the types of park arrangements found in Stellenbosch and therefore all types are not unknown to the respondents. However, so as to avoid "mechanical" responses, the layouts as presented to the respondents were arranged out of sequence, as illustrated in Figure 13. According to the numbers allocated to the various layouts in this figure, if arranged hierarchically according to size and configuration of park, these would be 3, 1, 2, 5 and 4.

In total 279 respondents were approached and asked to rate the various layouts according to the one they regarded as the best, and the one they regarded as the worst - in both instances they were asked to give their reasons. They were also asked to rate the remaining three layouts according to preference and to indicate as to whether they would choose to live near a park.

With regard to the latter, 76% indicated that they would like to live close to public open space. Those who did not, indicated poor maintenance; rubbish dumping place; litter or that public open spaces serve as a haven for undesirables, as the main reasons.

In this regard it is of interest to note, on the basis of a separate study of burglary in single detached residential areas in Stellenbosch (Welch, 1993), that the incidence of burgled properties was considerably higher, when connected to or overlooking a public open space, than those properties surrounded by houses. Concern regarding safety and security of properties is not unfounded and warrants closer scrutiny in township layout - although the respondents not wishing to live near public open space are in the minority they do not represent a "lunatic fringe".

Particulars regarding the ranking of the five layouts are given in Table 13.

The data presented in Table 13 were broken down according to the distribution of worst ratings for the remaining layouts and are summarized in Table 14.

Overall, layout 3 is the most preferred followed by layout 5, 2, 1 and 4: it should be noted that the latter accounts for 53% of all respondents listing this layout as the worst.

Table 12: Overall Comparison of Preferences

		Straight Street 1A	Curved Street 1B	Ellipse 2A	Circle 2B	Cul-de-sac Round End 3A	Cul-de-sac 'T' End 3B
Stellenbosch	Best					43,3%	
	2nd Best						31,6%
	Worst	50,5%					
Mbekweni	Best	44,7%					
	2nd Best					28,0%	
	Worst		34,6%				
Cloetesville	Best				25,0%	25,0%	
	2nd Best			25,0%			
	Worst		33,3%				

Comments on the distribution of preferences

Taking the five layouts as reflecting a continuum from a single large consolidated park space at the one end and articulated fragmented and fragmented at the other, the stronger the appeal at one extreme the stronger the dislike at the other; i.e. of those that rated layout 3 as the best 67% rated layout 4 as the worst (Table 14). Layout 2 can

be seen to hold the middle ground (Table 13) with 45,1% ranking this layout between the two extremes.

Twenty percent rank layout 4 as either their first or second choice with 72,5% ranking it as worst or second worst (Table 13). Although clearly layout 4 is not generally favoured, it may well meet the needs of specific groups i.e. small children and older folk: two important groups which tend to be overlooked and for whom special provision should be made.

In a separate analysis (not reflected in the tables) those who favoured layout 5, also favoured layout 4 as their second choice. Their preference for the smaller park configurations is consistent and is followed in order of preference with respect to second best choices by layouts 2, 3 and 1, i.e. progressively from small to large.

By and large one can distinguish two groups, each showing a clear preference for either the consolidated park layout (type 3: 42,7%) or the "fragmented" layouts (types 4 and 5: 34%) with layout 2 enjoying the middle ground (Table 13): rated by 45,1% as lying halfway along the five point scale. The distribution on either side of this point shows a moderately higher positive response but by and large, respondents do not feel strongly either in favour or otherwise about

Table 13: Ranking of each of the five park and POS layouts from best to worst

Layout	Best	◄----------			Worst
1	10,4%	27,6%	20,0%	25,5%	16,5%
2	12,9%	21,9%	45,1%	15,4%	4,7%
3	42,7%	19,7%	17,9%	9,0%	10,7%
4	7,8%	12,2%	7,5%	19,5%	53,0%
5	26,2%	18,6%	9,3%	30,8%	15,1%

Table 14: Distribution of "worst" ratings for each park and POS layout

Layout	Best	◄---------- Worst ----------►				
		1	2	3	4	5
1	29 10,4%		0 0%	1 3%	18 62%	10 35%
2	36 12,9%	9 11%		3 8%	24 67%	5 14%
3	119 42,7%	13 11%	5 4%		80 67%	21 18%
4	22 7,8%	6 27%	0 0%	10 46%		6 27%
5	73 26,2%	23 31%	8 11%	16 22%	26 36%	
	N = 279	46 16,5%	13 4,7%	30 10,7%	148 53%	42 15,1%

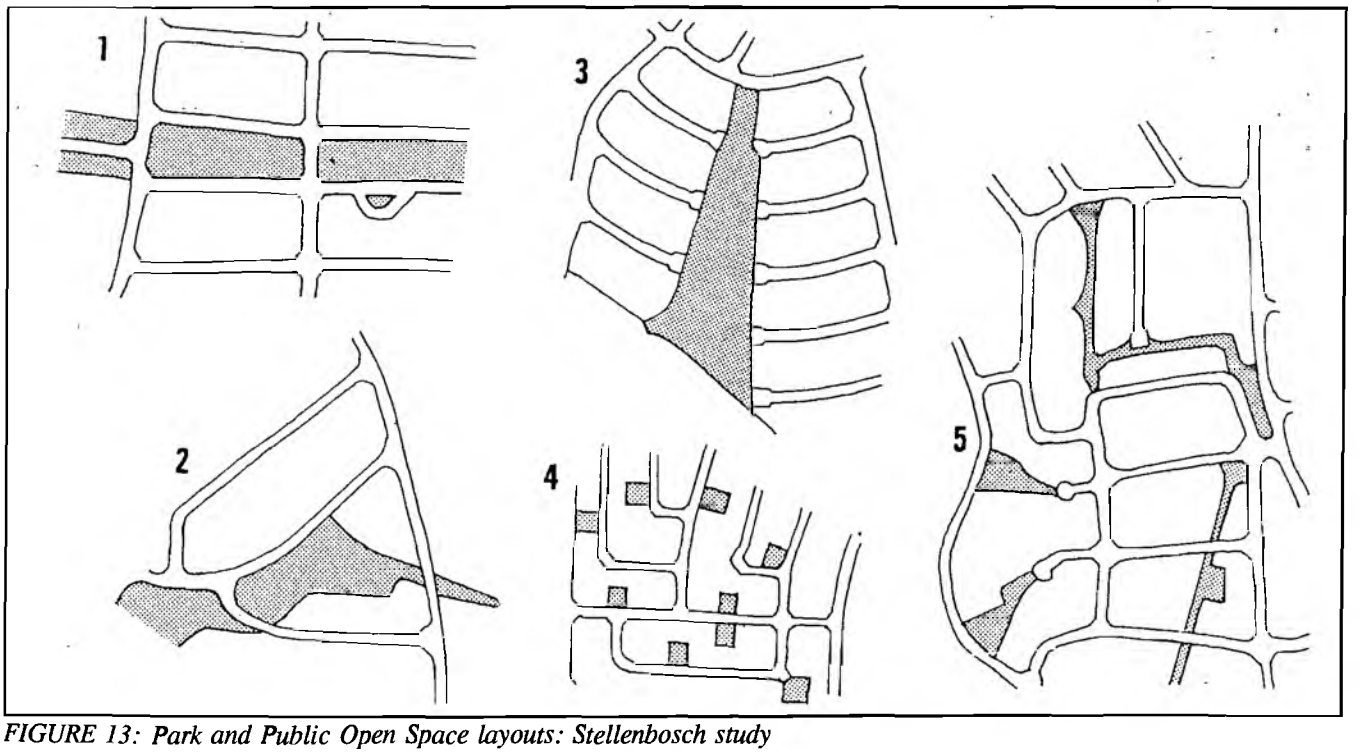

FIGURE 13: Park and Public Open Space layouts: Stellenbosch study

this layout. This may possibly be a bit disconcerting to planners as it tends to conflict with planning practice principles and while one may be tempted to see this as a good compromise this layout may also be seen as not really suiting the clear choices, one way or the other, of a relatively large number of respondents.

From the reasons given by respondents it appears that perceptions of not being able to identify with a clearly defined area is the main problem - in the sense of assuming "ownership" of the park or the feeling of its not "belonging" to the residents reduces the "control" which may be exercised over its use by vagrants or for the dumping of refuse. The lack of a sense of territoriality, in that public open space is not perceived to form an identifiable extension of the resident's home environment engenders a feeling of its being a kind of no man's land, over which little or no control can be exercised and hence layout 2's somewhat negative evaluation.

3.7 Township layout preferences: Stellenbosch sample only

A series of six road layouts as shown in Figure 14 were presented to the respondents to gauge their preferences. The layouts chosen for the study fell into three groups: comprising two possibilities in each group and ranged from a simple gridiron layout (1A) with minor variations (1B) to layouts comprising crescents and culs-de-sac as in (2A and 2B) and layouts (3A and 3B) featuring street layouts based on staggered "T" intersections.

In practice the layouts represent forms found in Stellenbosch and reflect patterns which range from the simplest layout to the most complex - a maze type configuration.

Details pertaining to preferences are given in Table 15.

Respondents showed a clear prefer ence for the type 2 layouts (61,3%) with 18,6% and 42,7% favouring 2A and 2B respectively. Type 1 configurations were favoured by 22,2% and type 3 by 16,5% of the respondents. Only 5% regarded type 2 layouts as the worst with 38,7% disliking type 1 and 56,3% type 3 layouts. With respect to the latter the maze type configuration (3B) is the most disliked (52%). By and large the more convoluted the layout the lower the rating.

Table 15: Township layout preferences

	Best Layout			Worst Layout	
Type 1	62 22,2%	1A	34 12,2%	99 35,5%	108 38,7%
		1B	28 10,0%	9 3,2%	
Type 2	171 61,3%	2A	52 18,6%	5 1,8%	14 5,0%
		2B	119 42,7%	9 3,2%	
Type 3	46 16,5%	3A	24 8,6%	12 4,3%	157 56,3%
		3B	22 7,9%	145 52%	
	N = 279 100%		100%	100%	100%

Planning principles which generally support and promote the use of staggered "T" intersections and "closure" of residential areas to extraneous through traffic do not appear to be supported in practice. This is primarily due to the resultant tortuous traffic routes and a lack of directional clarity.

4 CONCLUSION

Although this study only touches, so to speak, the tip of the iceberg, it does tend to support the contention that a number of accepted planning principles and ideas may be at variance with the preferences of those for whom one is planning and that one should be wary of accepting too glibly a number of quite widely held beliefs, which may result from stereotyping, ethnocentrism, faddism or whatever, without taking cognizance of the needs and preferences of those who will live there.

As this study shows for example: whites have a clear preference for curved roads and blacks and Coloureds straight roads. Blacks and Coloureds are not as negatively disposed to sites next to shops or corner sites as are the whites. Whilst whites and blacks show a preference for panhandle sites these are not favoured by Coloureds. Although the circle island configuration is reasonably acceptable to whites and Coloureds very few blacks favour this layout. Whites and to a lesser degree Coloureds and blacks, favour the round end cul-de-sac layout as opposed to the "T" end cul-de-sac. Furthermore, as regards the preferences of whites regarding public open space, there is a disquieting neutrality towards layout 2: where the latter is generally held by planners as fulfilling the criteria for current planning practice. The use of staggered "T" intersections, resulting in convoluted township layouts which also underlies current planning practice is also not supported by the findings of this study.

Accepting the limitations of this study and that its sole objective was to test, albeit tentatively, the responses of users to typical township layout elements, its findings are indicative of real shortcomings in the standard repertoire of planning practice and principles.

The scale of urban development with which we are confronted requires not only technological, economic and managerial expertise but knowledge and a thorough understanding of the

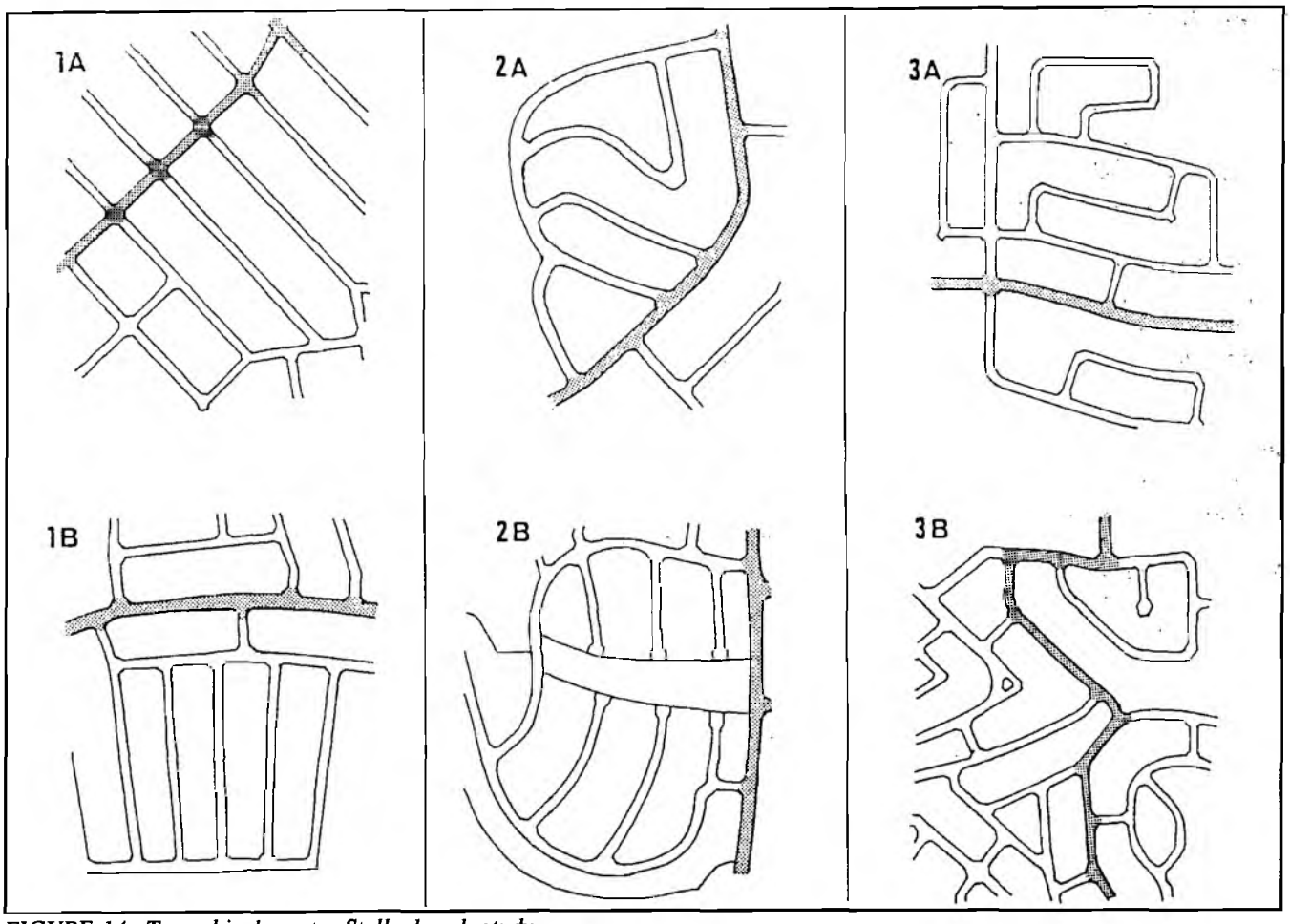

FIGURE 14: Township layouts: Stellenbosch study

human issues involved: we know how dehumanising housing can become when trammelled by political expediency and of multi-storey housing projects, lauded at one time for their innovative design and shortly after, being razed to the ground and branded as socially disastrous.

It seems that research is necessary at least with regard to the following:

- Firstly towards gaining a clearer understanding of the needs and preferences of established communities, to ascertain how environments are experienced;

- secondly, towards the study of the needs and preferences of specific or target groups, for whom one is currently planning; and

- thirdly on follow-up studies of recently completed projects, to serve as feedback for future projects of a similar nature.

Although criticism has been focused on the planning profession the task of creating appropriate living environments is by no means solely theirs. Others, including the other design professions, sociologists, environmental psychologists, anthropologists and other social scientists have a role to play and while studies of social pathologies are important knowledge of the broader spectrum of how "normal" people function and of their needs is central to effective environmental design.

In conclusion the statement of Ernest Kump (1949:22) is indeed apposite:

> "Unless and until we know man - know him in his wholeness and completeness - all of our planning will give him ashes for beauty, and make his last state worse than his first".

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