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Integrated Prototype Plan and Design in Residential Neighbourhood Development for Nigerian University Community

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Abstract

Physical Development in the built environment starts with many uncompromising procedures in which every professional in the allied professions has a part. The abysmal trend in residential quarter's development has been that developers failed to consider in most cases the existing class distinction in the society and physical locations as paramount factors to the design of residential neighbourhood. The process involves a large scale housing development – its land site choice and surveys, land subdivision into plots, buildings design and construction. The study considers the integration of both planning and design elements in a typical residential neighbourhood development for a sizeable population such as a University Community where the best practices or standard procedures are expected to be demonstrated for others to align with or improve upon. Methodogically, the planning, designing and development stages of the neighbourhood proposal were preceded by a purposively selected site of the three identified location possibilities within a proximate location. The technique of determining the site suitability and development potentials involves identification of site assets and constraints. This was established through the application of suitable and anticipatory criteria. The site analysis process consists of the interpretation, correlation and evaluation of a set of environmental factors, man-made features and visual elements with respect to their suitability for residential use. The combined results of these processes were synthesized and viewed simultaneously in order to determine the various levels of suitability or estimates for the residential neighbourhood land use activities and formation. Slopes on the site range accordingly: between 0% to 5% (covers 78.82% of the area); relatively steep slopes of between 5% and 10% (covers 15.45% of the site) and slopes gradient of over 10% (covers 6% of the site). Further findings through analysis revealed that the neighbourhood can accommodate an estimated population of 1, 261 within its 28.28 hectares (2,602 Sq.m) land area. Roads cover a total area of 4.41 hectares. The outcomes of these procedures are sustainable and durable layout designs that are capable of satisfying all classes concerned, with adequate facilities and security. The proposition of this new approach to achieving a qualitative Residential neighbourhood development, however, will requires vision, innovative and back-up of the local planning authorities at the local level.

Keywords: *Integrated Plan and Design, Residential Neighbourhood, Development University Community*

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Background to the Study

Housing development process in terms of needs, quality production and habitation generally is a global issue that transient's human eras. It has been a serious concern both for the past and contemporary generations. However, every nation and culture has devised method or policy backing in respect to providing housing products to its populace. For instance, in the early days before the advent of the colonial administration and their adventure living, many African settlements in particularly have lived coherently within the provision of their residential neighbourhood. The nostagia feeling of poor neighbourhood design, planning and development were probably not seen as a problem. But this was not so with the colonialists who introduced different reforms in housing environment to reflect a residential development that is closely related to the europeans' style of adequate physical planning and liveable habitation. Aside the introduction of seggregatory residential neighbourhood from where the acronym word "GRA' (Government Residential Area) emanated, the colonial officers have endeavoured to indirectly create class distinctions within those societies (stratified community) and among the people that had lived together in tight social relationship.

In the post independent time and oil boom – from the '80s to the new millennium, there was a rigorous approach by the Nigerian government to construct more residential housing (real estate) to meet the accommodation need of the urban dwellers, especially the working class(Agbola,2004). Most government's tertiary institutions that were established immediately after independence also planned good housing delivery for their workers. Prior to this time, emphasis was laid more on student's accommodation provision. For this reason the question of residential neighbourhood built up is being examined in this study within the development process as a whole. In effect this study is wholesomely related to the knowledge of the housing design and housing process that is currently being discussed in several fora. In time past several types of accommodation were provided with view to meeting workers' sheltering need, but the crucial question that resonates often in many minds is whether or not the present housing system in any particular country is meeting the real needs of the urban poor who form the majority. Again, it is pertinent to also ask if the intended goal of any residential provision is to satisfy the provider (whether government or private) or the consumers of the housing product itself. Design and planning process involved in the residential neighbourhood construction is considered very crucial in this study, as it promises to help reduce incidences of overcrowdings, poor physical planning and the fatality of building collapse. All these are examined within the context of the detail surveys and analysis carried out in this study.

It is understood according to International best practices that good quality housing development can enhance the quality of urban life and contributes to wider Government objectives such as improved health, more sustainable neighbourhood renewal and better community cohesion, especially in more deprived communities (Leitmann, 1998; Porterfield and Hall, 1995). Research and demonstration in all facets of housing development are most urgent in this twenty-first century paradigm shift if truly the government (as a major driver) and individuals (the end beneficiaries) are to realize their common dream of dynamic, long-lasting, and user-friendly neighbourhood construction. More often than not the constraints posed by land nature or sites are left for the poor to shoulder there by making them to dare the

consequences after development. This study, advertently has affirmed that it is not only possible to have well designed residential neighbourhoods but also possible to revitalize or redesign such physiographic constraint areas in a way that will satisfy the desire of residents.

Residential neighbourhood design process involves a large scale housing development – its land site choice and surveys, land subdivision into plots (layout process), buildings design, construction and disposal of the products.(Motloch, 2005; Porterfield and Hall, 1995). In all aspects of the built environment management, sustainability must be incorporated at various levels, from city wide planning to each plot construction site. The thrust of Nigeria housing planning policy is that new housing must use land both flexibly and efficiently but such must have a minimal environmental impact and high design quality. According to Drakakis-Smith (1981), Government policy in many nations including the third world countries, is committed to allowing appropriate housing development that protects both the urban and the rural environment. As parts of its planning system, government also ensure adequate provision of land for the purpose of residential accommodation for both the lower and middle class of the society while ensuring that those new housing units would much more energy-efficient and habitable than the experience of the past. The focus of government policy in relation to all these was to increase supply, increase affordable provision, make the planning system more responsive, improve design and sustainability and deliver new infrastructure.

To this end, the primary goal of the study is to plan for or design a typical residential neighbourhood that is sustainable and which can promote high degree of convenience, accessibility, functionality, and aesthetics capable of enhancing healthy living. This hopes to be achieved through some set objectives among which are: to examine the identify a suitable location at a proximate distance land area to be selected; to examine the systematic analysis involved to achieving a neighbourhood plan; determining the different residential densities of such area in physical dimension through physical planning mechanism or guidelines in order to birth the desired layout design of the residential neighbourhood. The abysmal trend in residential quarter's development has been that developers often failed to consider in most cases the existing class distinction in the society and physical locations as paramount factors to the physical design of residential neighbourhood (El-Din, et al., 2013; Obateru, 2005)

In this study, the residential neighbourhood design plan is profiled to address the existing class distinction in the contemporary Nigerian society as well as the density questions. The high density area in this proposal for example is strategically situated at a close distant to the neighbourhood centre for easy accessibility. Whilst the proposed security service post is suitably positioned at the enclave's main entrance for effective surveillance enablement, the centrality factor of the public facilities location in the area was intended to serve the residents at equidistant thereby preventing traffic congestions that is common to such design. Sites for proposed development can be encumbered with some constraints. In a simple description these are factors that may affect site development negatively by placing varying degrees of resistant or limitations on development.

Literature Review

Residential layout design and its development are increasingly expected to go beyond the fundamentals of social value to achieve more complex objectives. Primarily, a neighbourhood must answer the requirements of tenants, users, and community and government stakeholders. Achieving these essential aspirations will not only require good design, but also strong overall planning and financial modeling, and a clear understanding of the development plan, operational management and implementation. Such initiative elsewhere has often acted as a catalyst for the development of new and higher live ability among the stratified urban populate. From the body of literature (Blong, 1992; Zebrowski, 1997; Adetunji, 2006; UN-Habitat, 2007) it could be inferred that the society need environmental friendly house design suitable enough to ameliorate many risks arising from natural disasters. Wahab (2013), has emphasized that vulnerabilities are phenominal, and are usually heightened by the poor quality of housing, infrastructure, drainage and sea defences.

In general, the concept of development has been articulated well across all activities to which human beings engage themselves and in many others things that bring them comfort. It is desirable to see development' as a systematic use of scientific and technical knowledge to meet specific objectives or requirements. Some also has considered it as an extension of the theoretical or practical aspects of a concept, design, discovery, or an invention. While these definitions may not be pegged to a specific area of life, it suffices to suggest a land related meaning of the term. Therefore, development may be seen as the process of adding improvements to a parcel of land, which usually involve land grading, subdivisions, drainage construction, and road utilities provision to give a place some desirable face-lifts. The relative importance of this is the fact that it is able to capture man living domain, which one can consider as most important of all development aspirations. Residential neighbourhood planning and development has always appeared as a great priority for most governments across the globe since residential use itself constitutes more than half (area wise) of all built environment (Obateru, 2005). Land development from early time of man existence has often involved the conversion of the raw land into some forms of construction either for housing, commercial, or industrial purposes. Land development process entails improvements that have indefinite life, such as draining, dredging, excavating, filling, grading, paving, etc. Some considered this to be land improvement in reality (Greed, 2005)

Garden cities, new towns, and planned unit developments each were espoused in their time as exemplary patterns for new growth and development. Indeed, each contributed partial solutions to the problems inherently associated with growth, but they also contributed to the problem (Porterfield and Hall, 1995). From onset Sustainable Development Commission has also been on the creation of balanced and integrated communities, and that plan for housing growth to be 'focused very heavily on housing growth without due consideration for the environment, for what is also called "live ability" or for social needs' (Sustainable Development Commission, 2007). Subsequently, over the last fifty years when most universities were established in Nigeria, there was not only adequate provision for student's hostel accommodation there were at the same time some fairy housing units for a good percentage of the workers across all caders. Typical examples are found in some older generation Nigeria Federal Universities such as OAU, Ile-Ife, UI, Ibadan, ABU, Zaria, UNN,

Nsukka; Unimaid, Maiduguri, etc. Today, many of the existing private universities are toeing the same line of the housing provision as prescribed in the bench mark of the national university regulating body, the National University Commission.

The international best practice in the United Kingdom and United States ensure that a wide choice of high-quality residential units, both affordable and market housing (i.e. privately owned) is achieved, to address the requirements of the community (Western Australia, 1997). Consequently, these goes to widening opportunities for home ownership and ensure high-quality housing for those who cannot afford market housing, in particular the vulnerable or those in dare need of the commodity.

Materials and Methods

The method adopted in this practical oriented study involves series of surveys, evaluations and analyses such that can be described in the built environment field as development brief or procedure. In the planning, designing and development of the residential neighbourhood, three sites were purposively selected for the neighbourhood envisioned, and which is capable of being replicated elsewhere in any place with closely related topographical, climatic and perhaps socio-cultural affinity. Significantly, the selected sites include a location at Benja village at kilometre 9, along Idiroko road, Ota; the site at Obasanjo farm Ota, and another at Sokoto road, in Atan, Ota. The difference in three sites, aside their locations and physical attributes is the level of development around each including existing road network or circulation. Strength, weakness and threats (SWOT) analysis was employed as an instrument in the final selection of the best site. At the end of the evaluation a site located in Benja village, at kilometer 9, off Idiroko Ota, was selected.

In the evaluation of design options, a number of techniques were applied. Goals Achievement Matrix (GAM) system was used in evaluating the two alternative neighbourhood plans. In addition, professional judgment derived from past experience and basic reasoning was applied in arriving at the evaluative criteria and measures adopted, including the scoring of the alternative plans against identified goals and objectives. In arriving at the criteria adopted for the evaluation of generated options, a consideration of the goals and objectives, policies, general planning and design principles became relevant. The consideration identified six groups of evaluation criteria and allotted weights relative to their importance in terms of planning, design and the development of the site. Also different parameters were considered in judging each of the criteria employed.

Results and Discussions

The site analysis process consists of the interpretation, correlation and evaluation of a set of environmental factors, man-made features and visual elements with respect to their suitability for residential use and related activities. The process of determining site suitability and development potentials involves identification of site assets and constraints established through the application of suitable and pre-emptive criteria. The combined results of these processes is then synthesized and viewed simultaneously in order to determine the various levels of suitability for residential neighbourhood land use activities and form.

The four sets of environmental analysis or parameters used to describe the site include:

i. Physiographic analysis – slope, elevation, physiographic features;
ii. Landscape sensitivity: drainage, watersheds, runoff channels, ecological sensitivity of valley landscape;
iii. Visual analysis – views, enclosures, background relationship, variety and contrast;
iv. Analysis of site access points – suitability of possible access points;

Physiographic Analysis of Site - Slope, Elevation, Visual and Constraints

The analysis of the land gradient of the site is based on the parameters as shown in the Slope Analysis map in Figures 1-4. Within the limits of normal site development and building costs, the most suitable slopes for development are those ranging from 0 to 5 percent. Slopes under 5% are gentle flat and are suitable for all kinds of intensive activity. Slopes between 5% and 15% are considered developable when carefully planned. Slopes ranging from 15% above are considered severe, since any loss of ground cover may cause erosion, and sedimentation in low-lying areas. They pose severe limitations on development, except for selected areas of recreational uses and pedestrian linkages. Slopes on the site range mostly from 0% to 5% which covers about 78.82% of the site. The area covered by this range of gradient are considered suitable for most residential development activities on account of land gradient alone. This category of slope was found extensively on the site. Relatively steep slopes with between 5% and 10% gradient are generally found around the site and this covers about 15.45% of the site. Slopes of over 10% covers about 6% of the site and are found around north-eastern part of the site. From Table 1(slope analysis), it can be said that over 90% of the site do not in any way exposed to erosion threat, based on their slope gradient of less than 10% (See Fig. 1 and Table 1).

Table 1: Slope Analysis of the Site

Slope Value	Area of Land (Ha)	% of Land Area
0% - 5%	22.29	78.82
5% - 10%	4.37	15.45
10% - 15%	1.62	5.73
Total	28.28	100.00

Site Analysis Criteria, Elevations and Results

The analysis carried out on the site reveals details environmental features of the area using four basic criteria, including topographical nature (slope, elevation, physiographic features); landscape sensitivity (drainage, watersheds, runoff channels, ecological sensitivity of valley landscape); visual analysis (views, enclosures, background relationship, variety and contrast);Analysis of site access points (suitability of possible access points).Site elevation shows the height structure of the site. The highest established height is found almost at the southern portion with an elevation of 62m. The lowest established height is around the northern part of the site at about 34m. This shows a vertical height difference of 28 meters between the highest and lowest points. For ease of classification and analysis, the heights have been grouped into five (5) categories from height above 62 metres to those between 54m - 62m, 46m- 54m, 38m- 46m and below 38m (See Fig, 2).

Visual Analysis – Assets

The foremost amongst visual attraction of the vicinity is the nature of the area which comprises some mixed land uses (a distorted neighbourhood more or less) particularly at the northern and western end of the site. This situation may be linked to poor development control and the inadequate monitoring of rapid development of the area thereby leading to quick susceptibility of the area to continuous encroachment. The stage of the analysis involves the identification and mapping of perceptual assets and liabilities of the site. In contrast to the physiographic analysis, which is based on objective interpretation of the data from natural features and processes, the perceptual analysis is based on more subjective visual observations and judgments.

The site assets and constraints drawings show the dominant visual elements, the different views and their qualities. The opportunities for maximum viewing and orientation of the total landscape elements as occasioned by area relief were explored in the location on the site. In terms of site's promontory points and views, there are two relatively high points within the site. These are located at the southern end of the site and are at a height above 62mthus able to afford a panoramic view across the site towards the northern directions (See Fig. 3).

From an ecological point of view, the existing vegetation cover provides shelter for wildlife and special flora. The vegetation cover will restrict runoff and by so doing it helps to minimize flooding, erosion and sedimentation. It can also acts as shelterbelt against strong winds and provides shade from the sun and in some manners can influence positively the microclimate of the site.

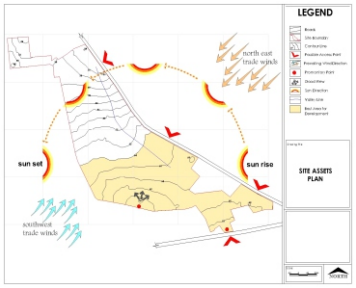

Fig 1: Site Environmental Analysis Map

Fig. 2: Slope Analysis Map

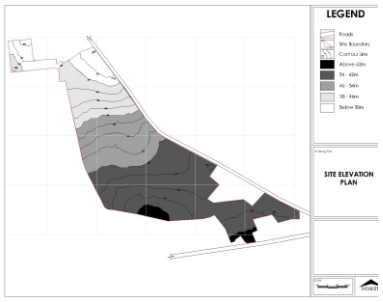

Fig. 3: Site Elevation Map

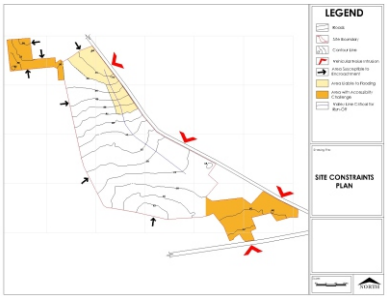

Fig. 4: Site Constraints Map

Site Liabilities

In this analysis two notable liabilities are conspicuous – the shape and the slope. The distorted trapezoid shaped configuration of the site tends to impose a challenge on the creation of a residential layout design. This is apparent at the northern and south ends of the site, exhibiting a bottle neck character which makes the areas prone to inaccessibility as shown in Figure4.The steep portion although covers a limited area nevertheless, it places certain land use restrictions on the area. The steep slopes only occupy less than 6% of the entire proposed site, thus the portions in question will need to be treated with some cautions so as not to impose additional cost or aggravate loss of vegetation cover and soil, through erosion by introduction of heavy human activities.

Design Concept of the Neighbourhood

The Neighbourhood principles or conceptual design was employed in generating the two proposed alternatives presented here. The proposed neighbourhood design is to be served by a Neighbourhood Center consisting of the following: a nursery/primary school; commercial centre; places of worship; neighbourhood center; and open recreational spaces. Plot sizes within the neighbourhood were distributed accordingly to take care of the existing class distinction and choices: the low density -1080m^2 (30m x 36m); the medium density - 864m^2 (24m x 36m) and the high density- 648m^2 (18m x 36m). It is envisaged that the plot types will be further distributed in a proportion of 15:35:50 for the low, the medium and the high density types respectively.

The road component of the neighbourhood is imperative. A well-defined hierarchy of roads is not only important because of aesthetics and order within the residential area but it is also relevant when discussing safety within a habited place. The plan recognizes 3 classes of roads with a total coverage area of 4.41 hectares have been provided to serve the neighbourhood: the distributor or primary road (15 metres right of way); access or secondary road (12 metres right of way) and cul-de-sac (9 metres right of way). It is envisaged that by design the road network will ensure a legible hierarchy where lower order roads will feed into the next higher order ones. These roads bring traffic from outside and also distribute traffic within the neighbourhood. It is envisaged that the road network will ensure a 'legible hierarchy' (Marshall, 2005) where lower order roads will feed into the next higher order one in order to create a balance transport situations and ensure efficient traffic flow. The total road length for the neighbourhood is estimated to be 3.5 kilometer and 4.41 hectares in area.

Generation of Alternative Conceptual Development Plans

Based on the aim, objectives, opportunities and constraints as described in previous sections, a two-stage process of plan generation and evaluation has been adopted. The first round of plan generation was undertaken at a fairly broad and conceptual level. The comparative evaluation of the alternative conceptual plans was carried out largely on the basis of opportunities, constraints, financial considerations, objectives and criteria. The main differences between the two alternatives centers basically on three physical design variables: first, the land utilization, that is, what parts of the site are used for what; second, the land uses nature in term of their location, intensity and form or shape; and third, the road network (circulation)–covering road configuration or hierarchy, external and internal links.

Characteristically, the observation of the two plan options shows that there are common locations for certain land use elements. The unity of the location of these features is not deliberate but resulted rather from the application of basic planning and design principles, pattern of existing structures, site suitability factors and appropriate land use location factors. The significant features that are unique to the two alternative designs include: existing road infrastructure, site characteristics such as the site terrain, which is relatively suitable for neighbourhood design and the site boundaries.

For alternative one (1), the road network is designed with a consideration for an existing one and that the redesigning of the roads to suit the plan purpose no doubt will encourage greater ease of accessibility. While the northern part of the alternative consists of low and medium residential densities serviced by an access road and few cur-de-sac roads, the central part lays the neighbourhood center with service industries at its eastern side. The high residential density is situated at the southern part of the site. See Figure 5.

Alternative Two (2)'s road circulation system is planned with a great consideration for the existing road network which radiates round the site. The northern part of this site consists of only medium residential density that is serviced by an access road and limited numbers of cur-de-sacs. At its Central location lies the Neighbourhood Center with service industry located at the western side of the site. The low residential density makes use of the entrance from the regional road to create a befitting landscape feature for the area. See Figure 6.

Fig. 5: Alternative One Plan

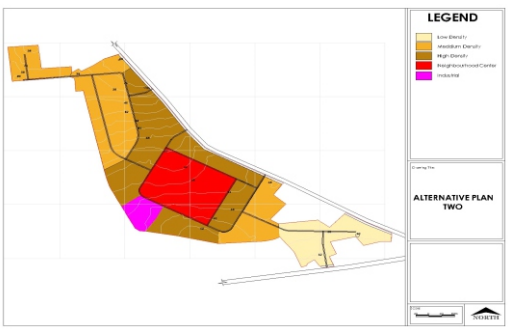

Fig. 6: Alternative Two Plan

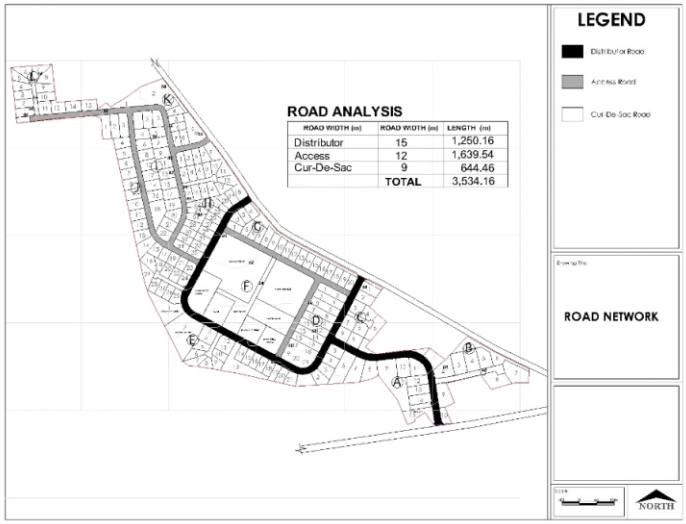

Fig. 7: The Proposed Circulation System Concept

Evaluation of Alternative Plans

The solution to any problem is varied but much depends on the problem and its nature. In development planning, generation of design options is one of the stages of a planning process. This stage is subsequently followed by evaluation of options generated, after which preferred choice is made.

The consideration identified six groups of evaluation criteria and allotted weights relative to their importance in terms of planning, design and the development of the site. Also different parameters were considered in judging each criterion. The six criteria with their weighting scores are as follow: Planning and Design Goals (25); Infrastructural Facilities (20); Land Use Goals (15); Social and Environmental Impact (15); Costs (15) and Project Aim and Objectives (10).

Quantification of Plan Performance

The performance scores are ranked from 1 to 3 in order of their regression from or progression towards achieving a specified criterion. When a criterion scores 1, it means least level of achievement, 2 implies moderate level, while 3 connotes high level of achievement of performance objective (See Tables 2).

Table 2: Evaluation of the Two Alternative Conceptual Plans

		Weight	Alt. One		Alt. Two	
			Score	Weighted Score	Score	Weighted Score
1	**PRROJECT AIM AND OBJECTIVES**					
	Adequate land for different land uses	3	3	9	3	9
	Value for extensive community use	2	2	4	3	6
	Conformity to present and future programs	2	2	4	2	4
	Compliance with planning briefs specification	3	3	9	3	9
	Sub-total	**10**		**26**		**28**
2	**LAND USE GOALS**					
	Accomplish optimum land use within suitable part of site	5	3	15	3	15
	Compatibility of land use components	7	2	14	3	21
	Compatibility of the site land uses to immediate environment	3	2	6	2	6
	Sub-total	**15**		**35**		**42**
3	**PLANNING AND DESIGN GOALS**					
	Flexibility of land use plan	5	2	10	3	15
	Relate land capability to use	6	2	12	2	12
	Conservation of natural features and landmarks	2	2	4	2	4
	Balance compactness with openness in design	4	2	8	3	12
	Minimise impact of site constraints	3	2	6	2	6
	Minimise interaction distance and cost within major land uses	5	2	10	3	15
	Sub-total	**25**		**50**		**64**
4	**SOCIAL AND ENVIRONMENTAL IMPACT**					
	Enhance security within the premises	5.5	2	11	3	16.5
	Minimise environmental hazard/nuisance potential	4.5	2	9	2	9.0
	Enhance visual image of the development	5	2	10	3	15.0
	Sub-total	**15**		**30**		**40.5**
5	**INFRASTRUCTURAL FACILITIES**					
	Provide interesting road network and safe approaches	4	2	8	3	12
	Ensure accessibility within and linkages to external network	4	2	8	2	8
	Establish appropriate road hierarchy	2	3	6	3	6
	Provide adequate drainage system within the site	2	2	4	2	4
	Ensure adequate water supply system	3	2	6	2	6
	Ensure cheap and functional sewage system	1	2	2	2	2
	Provide for adequate steady power supply	2	2	4	2	4
	Provide for adequate telecommunication system	1	2	2	2	2
	Ensure proper solid waste management	1	2	2	2	2
	Subtotal	**20**		**42**		**46**
6	**COSTS**					
	Minimize optimum development cost	7	3	21	3	14
	Minimize cost of new improvements and future expansion	3	2	6	3	9
	Minimize operation and maintenance cost	5	2	10	2	10
	Subtotal	**15**		**37**		**33**

Table 3: Summary of Scores of Alternative Conceptual Plans

	Criteria	Maximum Mark Obtainable	Points Obtained	
			Alternative 1	Alternative 2
1	Aim and objectives	30	26	28
2	Land Use Goals	45	35	42
3	Planning and Design Goals	75	50	64
4	Social and Environmental Impact	45	30	40.5
5	Infrastructural Facilities	60	42	46
6	Costs	45	37	33
	Total	**300**	**220**	**253.5**
	Percentage (%)	**100%**	**73.3**	**84.5**
	Rank		**2nd**	**1st**

The Preferred Option

From Table 3, Alternative 2 scores the highest of 253.5 out of a possible maximum of 300 (i.e. 84.5%). This shows a high level of achievement of the performance objectives. This is the only option that has scored highly in each of the six categories (goals) of like elements (objectives). Alternative 2 is therefore recommended as the Preferred Option.

Table 4: Block and Plot Subdivision and Distribution

Density of Use	No. of Plots	Area (Ha)	Percentage (%)	House Hold Size	Estimated Population
Low	16	2.42	15.33	4	819
Medium	63	5.68	35.97	6	378
High	117	7.69	48.70	7	64
Total	196	15.79	100.00		**1,261**

The total estimated population in the neighbourhood = **1,261**

Detailed Plan: Design Block, Plot and Population Distribution

The total land area of the design was divided into 11 blocks by networks of proposed roads labeled block A - L. Each of the entire blocks was further subdivided into different plots of high density residential plot - covers 48.70% (7.69 Ha.); medium residential plot covers 35.97% (5.68 Ha.) and low residential plot covers 15.33% (2.42 Ha.). There are total of 545 plots. Majority of the plots in each block are rectangular in shape and the number of non-regular blocks are kept to the barest minimum. Desirable operative plot sizes standards for high density residential plot (18m x 36m), medium density residential plot (24m x 36m), and low density residential plot (36m x 36m) were adopted in the plan design. The detailed summary of these land subdivisions are shown in Table 4.

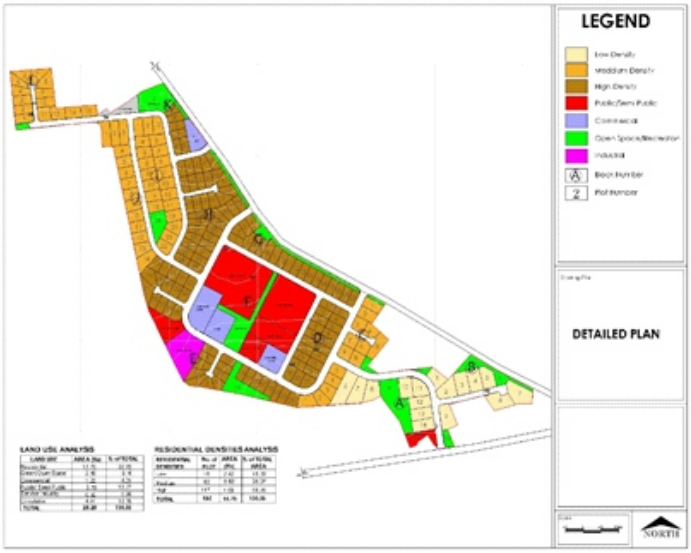

Fig. 8: Detailed Plan of the Neighbourhood

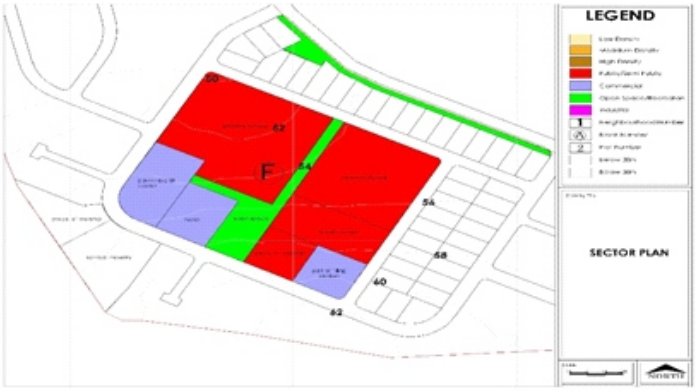

Fig. 9: The Neighbourhood Centre design

Plan Implementation and Control

Just as the whole success of every development plan anchors on accurate implementation and ability to manage the financial implication, in the same vein the cost of executing this type of planned scheme usually goes with budgeting. By definition, budgeting is an act of estimating in a comprehensive manner, details of the cost of financing a project or work scheme. Due to fluctuations in price and market, the actual cost of execution cannot be stated in the overall term. The project to be executed will require a project proposal which will include costing or budgeting. The neighbourhood design plan as a document prepared to guide the physical development should be respected as much as possible with a view to achieving its goals and objectives. Thus, it is expected to leave room for easy and closer interpretation as well as amendments in circumstances adjudged expedient to do so. This is however, not to suggest that the flexibility and adaptability nature of the plan would permit deviation from the basic principles and fundamental concepts of the original plan. As in other climes the creation of an

advisory body for plan implementation, monitoring and review becomes imperative in all laudable schemes such as this plan proposal. In the light of this the advisory body which may be called 'Neighbourhood Plan Implementation Committee' should include some nominees of the local Development Planners within the local area jurisdiction under the purview of the local planning authority. Essentially it is believed their roles should include the followings: plan implementation monitoring which is very beneficial for various reasons including helping to check the assumption upon which planning is proceeding; it helps in assessing implementation efficiency; it aids a prompt flow of vital information to all the stakeholders in the development process and by so doing helps to monitor the impact of land use and activities in the adjoining areas to the neighbourhood development.

Conclusion and Recommendation

In concluding this study, it is imperative to emphasis the prompt action to secure a strong establishment of development frameworks and residential development guidelines which is capable of encouraging numerous designs and accommodating a range of development interests. The developer and his designers under this directive may prepare the scheme's programme of land use; quantify all floor space requirements together with a workable concept for development.

The proposition of this new approach in achieving quality of new residential neighbourhood development, however, also requires vision and innovative back-up of the local authorities at the local level. Conventional approaches to development control may need to be reconsidered in the light of the need to discuss, negotiate and agree between landowner and developer on one hand and on the other hand between the developer and local authority. From such discuses, realistic project goals based on sound financial planning can be formulated as a basis for innovative development.

In all it is always pertinent to submit plan details of sitting of the proposals and means of access on to the highway. This allows the local planning authority to consider the safety of the access and relationship of the proposed development to the adjoining ones. Apparently, the smaller the site to be developed, the greater the potential for concern regarding the impact of the development on the adjoining residents Site liabilities in terms of poor physiographic features and visuals, must be treated with all innovative measures including surface leveling and other complimentary efforts ahead of construction activities schedules.

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