

## **The Redesigning of Saiban City, Lahore**

**Arif Hasan – Architect and Planning Consultant**  
37-D, Muhammad Ali Society, Karachi – 75350

Tel: (92.21) 3452 2361, Fax: (92.21) 3438 4580  
Email: [arifhasan@cyber.net.pk](mailto:arifhasan@cyber.net.pk)

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## **Abbreviations**

HBFC	House Building Finance Corporation
IIED	International Institute for Environment and Development
KBCA	Karachi Building Control Authority
KKB	Khuda-ki-Basti
SM	Square Metres
SY	Square Yards

## **Preface**

Saiban, a well-known Pakistan NGO, working for providing land and supporting incremental housing, has prepared a plan for its new project, Saiban City Lahore. I offered to redesign this plan on the basis of the guidelines developed by me and my colleagues (Architects Asiya Sadiq and Suneela Ahmed) through an IIED supported research project in 2009-2010. However, this simple objective turned into an exploration of looking at various planning alternatives for Saiban City. This exploration has raised a number of issues related to designing housing for low income settlements. These issues are discussed in Section 4 of the Study.

I would like to thank the IIED for its support in making this study possible. I would also like to acknowledge the three months' hard work and the dedication that Architect Durreshahwar Alvi has put into the design, drafting and various calculations for this study, without which it could not have been completed.

**Arif Hasan**  
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# The redesigning of Saiban City, Lahore

by  
Arif Hasan

## 1. Background

In 2008-2009, the author and his colleagues were involved in a study of density-related issues in low- and lower middle-income settlements in Karachi. This study, which focused on three settlements and one apartment complex, was supported by the International Institute for Environment and Development (IIED), UK. The settlements and complex selected for the study were very different from each other in physical and sociological terms, as can be seen from the brief descriptions below.<sup>1</sup>

1. **Khuda-ki-Basti-3 (KKB-3)** is a recently developed suburban settlement with a density of 501 persons per hectare. It is estimated that in another 10 years, it will have a density of at least 1300 persons per hectare.
2. **Nawalane** is one of Karachi's oldest settlements. Its population density has increased over time, and now stands at 3376 persons per hectare. This high and unplanned density has created many social problems in certain parts of the settlement.
3. **Paposh Nagar** was built as a government scheme to provide single-storey core housing, with a planned density of 240 persons per hectare. Today it has a density of 1181 persons per hectare, and includes housing from two to five storeys high.
4. **Fahad Square** is a 10-year old apartment complex in a planned government sector. As such, it makes use of planned social and commercial facilities in the sector that are not found in the other examples. Its current density is 942 persons per hectare.

The number of persons per family and per housing unit varies from 5.7 persons per family in Fahad Square to 13.56 persons in Nawalane, and 6.7 persons per housing unit in KKB-3 to 36.8 persons in Nawalane. An additional study was also made of a 35-year old apartment complex Labour Square, in order to produce a comparative analysis of Fahad Square.

These settlements were hypothetically remodelled to explore several issues. Firstly, to see if the densities and land use prescribed by the Karachi Building Control Authority (KBCA) for apartment blocks for low-income groups could be achieved by developing individual houses on small plots in these settlements and in Fahad Square. Secondly, to identify and understand residents' preferred types of accommodation; and thirdly, to see the extent to which existing densities in these settlements and apartment blocks could be achieved by catering to residents'

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11. Arif Hasan, Asiya Sadiq and Suneela Ahmed. *Planning for high density in low-income settlements, four case studies from Karachi*. Urbanization and Emerging Population Issues Series Working Paper 3, IIED, UK, March 2010.

preferences and replacing apartments and ad-hoc densification with planned densification on small plots. The results of this remodelling and comparisons with the existing situation are given in Appendix 1: Physical comparisons between the existing situation and the remodelling of KKB-3, Nawalane, Paposh Nagar and Fahad Square.

The high densities shown in the remodelling are due to a number of factors, most notably the widespread practice of housing an average of two families in each residential unit. Case studies indicate that this is common in Pakistan; and our study showed that apartments in Labour Square that housed one family 35 years ago are now home to two or more families. The high density in Nawalane is due to the large average family size of 13.5 persons, which gives an average of 27 persons on each plot. The matrix in Appendix 1 shows the other factors that contribute to the high population densities.

The main conclusions of this study are summarised below:

1. Higher densities could be achieved through planned clusters rather than gridiron-type developments.
2. The number of units could be substantially increased and infrastructure costs reduced by increasing the width-to-depth ratio of plots or housing units from 1:2 to 1:3.
3. Cluster planning can reduce the amount of space needed for roads and thereby increase public space for social activities.

Residents expressed a preference for houses on small plots rather than apartments, for the following reasons:

1. They can start by building a small house and enlarge it over time, making construction affordable.
2. Residents can carry out any kind of economic activity in a house as long as it does not create pollution in the neighbourhood. This is not possible in an apartment.
3. By building upwards on their plot families can provide accommodation for at least one married son, and thus save on rent or investment in a new housing unit.
4. Plot settlements create a sense of neighbourhood, while families in apartment blocks tend to feel more isolated.

The authors of the Karachi study also designed housing units for the remodelled settlements, bearing in mind the fact that residents' needs will be compromised above a certain density. Houses with more than three floors above ground level tend to be uncomfortable, with poor lighting and ventilation in the lower floors and less space for amenities and social facilities, which adversely affects residents' social and environmental conditions. Therefore, the designs developed in the re-planning exercises included a central courtyard to provide light, air and an open space for families to get together. They did not include houses with more than three floors above ground level, and avoided cutting back on amenities and social facilities.

## 1. Saiban City, Lahore

Saiban is a non-governmental organisation (NGO) based in Karachi that develops plot settlements. It sells unserviced plots to residents who can pay for the land over five years, allowing them build their homes at their own pace. They are expected to develop neighbourhood water and sewage infrastructures, while Saiban uses their repayments to develop the trunk infrastructure, and gets other NGOs to develop the schools, health clinics, parks and community centres that make up the social infrastructure. It also uses its links with government organisations and transporters to help in establish transport facilities for the settlement.

Saiban is planning to develop a 6.87 hectare site (17.18 acres) in Lahore on this basis, and has developed a concept plan for its 'Saiban City Lahore' project. When the author offered to re-plan the settlement following the principles developed for the Karachi study, Saiban agreed, with the following provisos:

1. The minimum plot size should be 62.6m<sup>2</sup> (75 square yards), rather than the 47m<sup>2</sup> in the study;
2. Saiban intends to have 40 larger, more expensive plots of 209m<sup>2</sup> (240 square yards) to subsidise the smaller plots and enable different income groups to live together;
3. About 50 per cent of the site area should be residential, in accordance with the zoning regulations in Lahore;
4. Space should be provided for a graveyard, and about 4 per cent of the area set aside for commercial facilities.

Developing the site according to these requirements would result in very low densities, so it was decided to look at various options in order to understand the impact they would have on density. Plans for three options were accordingly prepared and delivered to Saiban.

## 2. The options

The three options are outlined below, and the issues that they raised and lessons learned from them are discussed in subsequent sections.

### A. All plots to measure 62.7m<sup>2</sup> (75 square yards) or 209m<sup>2</sup> (240 square yards), as per Saiban's requirements

1. Plot width-to-depth ratio: 1:3 for 62.7m<sup>2</sup> plots  
Plot width-to-depth ratio: 1:2 for 209m<sup>2</sup> plots  
Cluster plan



2. Plot width-to-depth ratio: 1:2 for 62.7m<sup>2</sup> plots  
Plot width-to-depth ratio: 1:2 for 209 m<sup>2</sup> plots  
Cluster plan
3. Plot width-to-depth ratio: 1:2 for 62.7m<sup>2</sup> plots  
Plot width-to-depth ratio: 1:3 for 209m<sup>2</sup> plots  
Gridiron plan
4. Plot width-to-depth ratio: 1:2 for 62.7m<sup>2</sup> plots  
Plot width-to-depth ratio: 1:2 for 209m<sup>2</sup> plots  
Gridiron plan

**B. Options tested with plots of 62.7m<sup>2</sup> and 60.5m<sup>2</sup> (75 and 72 square yards)**

1. Plot width-to-depth ratio: 1:3 for both sizes  
Cluster plan
2. Plot width-to-depth ratio: 1:3 for both sizes  
Gridiron plan
3. Plot width-to-depth ratio: 1:2 for both sizes  
Cluster plan

**C. Options tested for plots of 47.1m<sup>2</sup> and 47.6m<sup>2</sup> (56.3 and 56.9 square yards)**

1. Plot width-to-depth ratio: 1:3 for both sizes  
Cluster plan
2. Plot width-to-depth ratio: 1:3 for both sizes  
Gridiron plan
3. Plot width-to-depth ratio: 1:2 for both sizes  
Cluster plan

Detailed information on the issues raised by these options can be found in the following appendices:

**Appendix 2:** Density and land use matrix. This compares the different proposals for density and land use with each other and with Saiban's original proposals. The comparison also includes the results of the study on density in Bangkok conducted in 2011 with support from IIED.<sup>2</sup>

**Appendix 3:** Planning options. This appendix presents the layout plans used to develop the matrix in Appendix 2, along with detailed land use and cost calculations for each option and

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22. Nattawut Usavagovitwong *et al.* *Housing density preference study for low and lower middle-income settlements in Thailand*. Asian Coalition for Housing Rights, Bangkok, April 2011.

separate colour-coded land use layouts. When redesigning the Saiban City options, care was taken to respect the bylaws and Saiban's desire to use only 50 per cent of the site for residential purposes. The commercial area was reduced from the 4 per cent proposed by Saiban to between 1.8 per cent and 2 per cent, in view of the author's observation that commercial areas tend to remain unoccupied for long periods and be used for speculation. Residents usually use home-based businesses to meet their needs.

**Appendix 4:** House plans. This appendix shows the house plans for different sized plots, with the possible stages, surface areas and costs of incremental development.

**Appendix 5:** Construction and land costs for different house plan options.

**Appendix 6:** What the poorer poor can afford as housing loans.

**Appendix 7:** The impact of Saiban's proposed cross-subsidy for land costs.

**Appendix 8:** Findings of the 2011 Bangkok density study.

**Appendix 9:** Quantities and costs of different house plans.

### 3. Planning-related issues

#### 3.1 Research questions

The redesign options for Saiban City raise a number of research questions. Some of them can be answered intuitively with considerable accuracy; others need a better understanding of the issues explored below in order to develop a more appropriate design for Saiban City and similar settlements and complexes.

#### 3.2 Population mix

In order to accommodate a mixed population, Saiban wants 40 large plots of 209m<sup>2</sup> (240 square yards), with the remaining plots no smaller than 62.7m<sup>2</sup> (75 square yards). It also wishes to subsidise the smaller plots by making the larger ones cost 20 per cent more per square metre than the smaller plots. The possible effects of this strategy are outlined below:

##### **40 larger plots will reduce density:**

- Scheme 1: with larger plots included in the mix density will peak at 859 persons per hectare
- Scheme 5: without large plots but with Saiban's minimum plot size of 62.7m<sup>2</sup>, high density will be 1018 persons per hectare
- Scheme 8: with plots of 41.7m<sup>2</sup> (as in the Karachi study), the highest density will be 1277 persons per hectare
- Scheme 1 would result in the lowest density (159 fewer persons per hectare than Scheme 5, and 418 fewer persons per hectare than Scheme 8).

##### **Subsidising the cost of the plots:**

The effect of subsidising the cost of the plots costs is shown in the table below. Detailed calculations are given in Appendix 7.

**Table 1: Impact of subsidising the cost of land (cost in rupees per plot)**

	Scheme 4 Saiban requirements	Scheme 5 with Saiban minimum plot size	Scheme 8 as per 2009-2010 Karachi study
	40 x 209m <sup>2</sup> plots and 466 x 60.5m <sup>2</sup> plots	590 x 60.5m <sup>2</sup> and 62.7m <sup>2</sup> plots	740 x 47.1m <sup>2</sup> plots
Cost of land without subsidy	58,608 rupees (for 60.5m <sup>2</sup> plots)	56,497 rupees	44,449 rupees
Cost of land with 20 per cent subsidy from commercial areas	58,021 rupees	56,452 rupees	44,051 rupees
Cost of land with subsidy from large plots	54,786 rupees	-	
Cost of land with subsidies from both	54,198 rupees	-	

(138 Rupees = 1 Pound Sterling)

This table shows that the 40 large plots in Scheme 4 would reduce the cost of the small plots by 6.2 per cent. If all the plots measure 62.7m<sup>2</sup> (as per Saiban's minimum requirements), they would cost 6.25 per cent more than the subsidised plots in Scheme 4. With Scheme 8, where the plots are smaller (47.1m<sup>2</sup>) and more numerous, each plot costs 18.86 per cent less than the smaller plots in Scheme 4.

We can see that this cross subsidy does not significantly reduce the cost of the smaller plots, and that far more bigger plots would be needed to make a substantial difference. It is normal practice in Malaysia (as it used to be in Karachi) to set aside fewer plots for low-income groups (15 to 30 per cent)<sup>3</sup>. This certainly lowers the cost of smaller plots, but also further reduces density. The most effective way of reducing the cost of land is to have a larger number of much smaller plots, as in Scheme 8, which shows an 18.86 per cent reduction in the cost of land – although it is worth noting that this percentage will increase substantially once Saiban's overheads and development expenditure have been factored in.

### 3.3 Accommodating mixed population groups

In mixed developments where most of the housing is for lower-income groups, it has been observed that the larger units tend to be bought for speculative purposes. The people who purchase them do not wish to live in poor neighbourhoods, and if they are obliged to build on their land, will aim to accommodate several low-income families or rent out the buildings. Where most of the units are for higher-income groups, they tend to end up purchasing the smaller units as well. The location of the site is also critical. If a site or apartment complex is in an area where real estate prices are high, middle- and higher-income groups will buy the smaller and larger units or plots.<sup>4</sup> The population mix and related issue of subsidies raise three questions: i)

33. For details see E.G. Pryor, *Housing in Hong Kong*. Oxford University Press, Hong Kong, 1993.

44. Authors' observations. See also Arif Hasan, *Housing for the Poor* (City Press Karachi, 2000) and Chapter 1 of *Comparing Cities*, edited by Adnan Asdar and Martina Rieker (OUP Karachi, 2009).

Should population mix be promoted? ii) If yes, then how can mixed settlements or apartments be promoted? and iii) Should the mix be determined by subsidy or sustainability?

### **3.3 Width-to-depth ratio**

To facilitate cluster planning, it is helpful for the depth of the plot or unit to be a multiple of its width. The remodelling of settlements in Karachi for the IIED study in March 2010 showed that a width-to-depth ratio of 1:3 (as in Scheme 9, where the density is 1277) resulted in higher density and lower infrastructure and land costs than a ratio of 1:2 (as in Scheme 10, where the density is 1155). However, the plans developed in Appendix 4 show that a ratio of 1:2 allows for more flexible planning and the possibility of developing an additional independent unit with separate access on the floor above, which can be rented out. This observation poses a new research question: whether it is fair to deny this flexibility to low-income groups for the sake of increasing the density by 122 persons per hectare.

### **3.4 Plot size and related environmental conditions**

The size of the plot makes a considerable difference to the built density per capita, which works out at between 8.775/m<sup>2</sup> and 9.6/m<sup>2</sup> for plots of 62.7m<sup>2</sup>, and 6.85/m<sup>2</sup> for plots of 47.1m<sup>2</sup>. The house plans for these two plot sizes show that the 62.7m<sup>2</sup> plot has larger rooms, better ventilation, more than one toilet and much more roof space, which people in Lahore use for various social activities and as a sleeping area in summer. The costs of land and construction differ considerably between the two options (see Appendices 4 and 5 for details), but not enough to make larger plots unaffordable for the better-off poor. Should they be denied this option? If not, there could be a mix of the two smaller plot sizes within clusters or around the lanes of gridiron developments.

### **3.5 Gridiron versus cluster planning**

The IIED study conducted in March 2010 established that a gridiron plan gives lower densities than cluster planning in large settlements; although cluster planning can help decentralise the management, operation and maintenance of infrastructures to the cluster level. However, for a 17.18 acre scheme such as Saiban City, the same densities can be achieved with cluster and gridiron planning.

Scheme 8 shows seven clusters of approximately 100 houses that can manage, operate and maintain their infrastructure and tax collection independently of a central, settlement-level management committee. This would force 100 or so house owners to work together to look after their area.

The gridiron plan in Scheme 9 would achieve the same densities as the clusters in Scheme 8. Scheme 9 has about 18 lanes, with an average of 39 units per lane. These lanes would have to be represented in the settlement's central management committee, which would need to be stronger to coordinate 18 groups rather than the 7 involved in Scheme 8. Experience with the Orangi pilot project has shown that the best coordination and management occurs when the unit of

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organisation involves 20 to 40 households, as there is a greater level of trust between individuals in a smaller unit than in a larger one. The lanes can also be designed so that they do not carry thorough traffic, and can therefore be used as public spaces. The question here is at what point (site size) cluster planning becomes necessary. Should this decision be left to the designers, or should the communities concerned decide? If it is the latter, the community should pre-date the design exercise, which means that this option is only possible for redevelopment projects and cannot be considered for new developments.

### **3.6 Built density per capita**

The per capita built density is related to family size, as this determines the size of the housing unit. When the planning options for Saiban City were reviewed, it was assumed that there would be 12 persons per housing unit, working on the basis that the average family size in Pakistan is 6.7, and that there will be two families on each plot. We also assumed that families have become smaller since the last census in 1998, and accordingly developed house plans covering between 82.2m<sup>2</sup> (for plots of 47m<sup>2</sup>) and 115.2m<sup>2</sup> (for plots of 62.7m<sup>2</sup>). In the first stage of incremental growth, the built-up area is between 32.5m<sup>2</sup> for plots of 47m<sup>2</sup>, and 49.7m<sup>2</sup> for plots of 62.7m<sup>2</sup> (further details can be found in Appendices 4 and 5). This makes the situation very different from Bangkok, where the average family size is 4.33 and there is only one family per unit, giving an average built-up area of 39.32m<sup>2</sup> (see Appendix 8 for details of the Bangkok findings).

It is interesting to note that the built densities per capita in the Bangkok study and the redesigned options for Saiban City are not dissimilar, standing at 8.79m<sup>2</sup> in Bangkok and 8.04m<sup>2</sup> in Saiban. Compare this with 3.20m<sup>2</sup> in Hong Kong,<sup>5</sup> where living conditions in apartment complexes have been widely criticised. The remodelling for Nawalane (for the IIED study in March 2010) worked out at 3.87m<sup>2</sup>, which is an improvement on existing conditions but still insufficient for the number of people living in each space.

The Bangkok study and re-planning options for Saiban City suggest that the built density per capita should not be less than 6.5m<sup>2</sup>; however, high land prices, construction costs and existing lending arrangements make such a high built density per capita unaffordable for the poor (see Appendix 6). The question is whether the design and size of housing units should be determined solely by their affordability (which can result in sub-standard conditions), or whether it is more appropriate to focus on environmental and social concerns and find ways of making them affordable.

While it is difficult to set adequate housing standards for the poor because of their poverty, this does not excuse the promotion of what is essentially sub-standard housing by the United Nations, national governments, developers and housing projects funded by international financial institutions, which has also been justified by a number of professionals in the field.

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55. Nattawut Usavagovitwong *et al.* *Housing density preference study for low and lower-middle income settlements in Thailand*. Asian Coalition for Housing Rights, Bangkok. August 2010.

### **3.7 Residential footprint**

There is a difference between planning for new settlements and for blocks of land in a sector of the city that is already covered by formal plans. The former will require new amenities and commercial areas, road systems and related public spaces; while in the latter case, provision will already have been made for these facilities in the sector plan.

The remodelling exercise to design individual houses on 47m<sup>2</sup> and 30.72m<sup>2</sup> plots in Paposh Nagar and Fahad Square (IIED study, March 2010) suggests that up to 58 to 60 per cent of the site can be used for residential purposes in a new settlement plan, and 77 to 80 per cent in an officially planned sector. In Bangkok, there are schemes where only 8 per cent of the plot is left as open space (see matrix in Appendix 2).

### **3.8 Density achieved with individual houses and apartments**

A comparison of the remodelling case studies from Bangkok, Karachi and Saiban City clearly shows that building small apartments of 32m<sup>2</sup> to 35.75m<sup>2</sup> can achieve much higher densities of between 2275 and 4184 persons per hectare. On the other hand, building individual houses on small plots can produce higher densities than the 1225 persons per hectare prescribed by KBCA regulations (up to 1300 persons per hectare).<sup>6</sup> The question here is the extent to which peoples' preferences and what they can afford should be prioritised over higher densities. Ideally, we need to establish the optimum relationship between immediate needs, human and financial resources and standards, while understanding and accommodating the fact that they may all change over time.

### **3.9 Social relations: individual houses versus apartments**

The Bangkok density study clearly establishes that social relations in low-income housing settlements are better than in apartment complexes, especially in terms of security, community activities, and entrusting neighbours to look after houses and children (see Appendix 8 for details). The study on three settlements and an apartment complex in Karachi (IIED, March 2010) also indicates that social conditions in the settlements are better than in the apartment complex, even though all of the settlements were informally planned and at least one had a number of social problems. Given the high land and construction prices associated with formally developed housing, to what extent should the issue of social relations determine whether apartments or individual houses are built on a particular site?

### **3.10 Affordability**

Critics of the Saiban concept complain that the houses in such self-build schemes are shabby and create an unattractive environment. They argue that the street facades should be properly built, and there have been proposals to make homeowners responsible for completing the frontage, structure of the house and internal finishes at their own cost. These proposals negate the concept of incremental building that is affordable for low-income households.

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67. See Appendix 8 and IIED study of March 2010.

They also raise the question of what the poor can afford to pay for formal housing. The figures for a 15-year loan in Appendix 6 show that the poor cannot borrow enough to complete the building process, although they may manage to finish the first stage of construction and repay their loan within 15 years.

There are various ways of resolving this issue: i) by subsidising about 50 per cent of the construction costs; ii) extending the loan period to 20 years, which the House Building Finance Corporation (HBFC) is unwilling to do for persons over 40 years of age;<sup>7</sup> and iii) offering owners who build their houses incrementally small loans for large items such as roofs (which represent about 20 per cent of the cost of construction<sup>8</sup>) and utilities. Any solution should include design, technical and management advice to help plot owners create a pleasant social and physical environment. The question is, who will provide these design and technical services, and how can they best be delivered?

## 4. Conclusions

### 4.1 General conclusion

The issues raised in this study are important for a number of reasons. In many Asian cities state-subsidised public housing solely consists of schemes to redevelop so-called ‘squatter’ settlements, which mainly involve replacing them with apartment blocks. The evidence suggests that residents are unhappy with these schemes because they cannot run businesses out of their homes, and are burdened by loans they have to take out for apartments that destroy existing community networks and create social problems.<sup>9</sup> It is true that some more sensitive alternatives have been developed, but none are on a sufficient scale to properly address the problem.<sup>10</sup> In the meantime it has become difficult, if not impossible, to create the kind of informal settlements that were common before the 1990s.

The resulting gap in supply and demand for low-cost housing is increasingly met by real estate developers, who can often obtain market-based subsidies and long-term housing loans to support their enterprises. Housing units are becoming smaller in order to make them affordable, sometimes shrinking to as little as 15m<sup>2</sup> to 18m<sup>2</sup>.<sup>11</sup> These trends are creating a degraded physical and social environment that will further deteriorate due to densification and maintenance-related

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78. HBFC website: [www.homespakistan.com/Home-Finance/House-Building-Finance](http://www.homespakistan.com/Home-Finance/House-Building-Finance)

89. See Appendix 9: Quantity and costs for house plans.

910. Han Verschure *et al.* *Evaluation and recommendations for Tan Hoa-Lo Gom Canal sanitation and urban upgrading*, 28 April 2006; and *Mission to Istanbul, Republic of Turkey, June 08-11, 2009*, UN Advisory Group on Forced Evictions.

1011. See, for example, the work done by SPARC in Bombay and by CODI in Thailand.

1112. Author’s observations and conversations with residents, developers and professionals in Bangkok, Delhi and Karachi.

problems. What will they look like 10 years from today? Self- or community-built incremental housing would seem to be the only affordable way of improving living conditions for low-income groups, provided there is sufficient guidance and the issues raised in this paper are taken into consideration.

This study clearly shows that subsidies are required to provide 'adequate' housing for the poor. Such subsidies are not in place because planning in Pakistan has traditionally catered to the economic interests of the elite, and now also serves the economic interests of the upwardly mobile middle class. The situation is exacerbated by a very strong and deeply-rooted bias against the poor, and lack of funding for urban development that can be largely ascribed to a taxation system that refuses to tax the rich in proportion to their wealth. The institutions responsible for planning and implementation lack the technical capabilities and capacities to fulfil their functions, and politicians, bureaucrats and professionals have little interest in ensuring that they can do so. There are various laws, policies and constitutional provisions that support the promotion of justice and equity in development processes, especially with regard to shelter, but most remain ineffective concepts as there are no rules, regulations, procedures or back-up institutions to enforce them.

#### **4.2 Conclusions regarding Saiban City**

A number of specific conclusions regarding the future design of Saiban City are presented below. These mainly relate to the issues raised in Sections 3 and 4.

1. Plot sizes in settlements should be mixed, ranging from a minimum of 47m<sup>2</sup> to a maximum of 62.7m<sup>2</sup>, and width-to-depth ratios should vary between 1:2 and 1:3. Plots of different sizes and ratios should not be segregated from each other, but woven together in clusters or along gridiron roads. The cost of a square metre of land should remain the same for all plots to enable residents to choose what they can afford or what they prefer.
2. Commercial plots should not cover more than 1.5 per cent of the site, and should cost 50 per cent more per square metre than residential plots. This is because commercial plots are seldom occupied or used for the residents' benefit; their needs are served by shops operating out of houses along the lanes in these settlements. The provision of small plots for commercial activities within clusters should be explored, as in Schemes 5 and 7.
3. The residential footprint should expand to 65 to 68 per cent of the residential area. This will increase the number of plots and considerably reduce their sale price. The results of the remodelling for the Karachi study show that increasing the residential footprint does not have an adverse effect on the physical and social environment.
4. Critics of the Saiban initiative argue that housing should be partly built by contractors. This would not be affordable and could not be incremental, and should therefore not be considered. People should build their own houses, with support from a design and construction supervision unit. The best way of organising, financing and sustaining such a unit needs to be determined.



5. Separate loan packages should be developed for roof elements and materials such as cement, bricks, utility connections and tiling for wet areas to make them hygienic. The tiling option should have a low or zero interest rate, and owners should be able to choose the package they prefer.
6. The possibility of a loan package for solar-powered DC fan and light appliances should be developed. Various companies in Pakistan charge 16,000 rupees for a package consisting of a fan, two lights, dry batteries and a solar panel to fire them. The long-term benefits of this type of initiative have been shown in numerous reports and news items.<sup>12</sup>

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1213. Arif Hasan, Mansoor Raza. *A Study into the acceptability of alternative energy sources for Urdu Bazaar Karachi*. Unpublished draft report, January 26, 2011.

APPENDIX – 1- PHYSICAL COMPARISONS WITH NEW PROPOSAL

Appendix 1- Physical Comparisons with New Proposal

	<b>Khuda Ki Basti</b>		<b>Nawalane</b>		<b>Paposh Nagar</b>		<b>Fahad Square</b>	
	<b>Existing</b>	<b>Proposed</b>	<b>Existing</b>	<b>Proposed</b>	<b>Existing</b>	<b>Proposed</b>	<b>Existing</b>	<b>Proposed</b>
<b>Total Area</b>	40.8 acres (16.51 hectares)		20.9 acres (8.4 hectares)		15 acres (6.07 hectares)		1.50 acres (0.607 hectares)	
<b>Total no. of plots</b>	1237	2112	769	1000	714	777	248	171
<b>Average Family Size</b>	6.7 persons	6.7 persons	13.56 persons	13.56 persons	6.7 persons	6.7 persons	5.7 persons	5.7 persons
<b>Number of families per plot</b>	01	02	2.72	02	1.5	02	01	01
<b>Average number of people per plot</b>	6.7 persons	13.4	36.8 persons	27.0 persons	10.05 persons	13.4 persons	5.7 persons	5.7 persons
<b>Total Population (Residential)</b>	8287 persons	28300 persons	28299 people	27000 persons	7175 persons	10411 persons	1414 persons	975 persons
<b>Population Density (total population / total area)</b>	203 ppl per acre 501 ppl per hectare	693 ppl per acre 1712 ppl per hectare	1356 ppl per acre 3349 ppl per hectare	1291 ppl per acre 3189 ppl per hectare	478 ppl per acre 1181 ppl per hectare	694 ppl per acre 1715 ppl per hectare	942 ppl per acre 2327 ppl per hectare	650 ppl per acre 1606 ppl per hectare

APPENDIX – 1- PHYSICAL COMPARISONS WITH NEW PROPOSAL

<b>Average residential plot size</b>	80 sq. yards (67 sq. meters)	56 sq. yards (47.0 sq. meters)	120 sq. yards (100 sq. meters)	56 sq. yards (47.0 sq. meters)	81.6 sq. yards (68.2 sq. meters)	56 sq. yards (47.0 sq. meters)	66.6 sq. yards (55.7 sq. meters)	
<b>Cost of Land per sq. yds.</b>	PKR 5000 (\$ 61) per sq. yards for an average 80 sq. yds. (67 sq. meter) house of G+1.	PKR 5000 (\$ 61) per sq. yards for an average 56 sq. yds. (47 sq. meter) house of G+2.	PKR 7352 (\$ 90) per sq. yards for an average 120 sq. yds. (100 sq. meter) house of G+2.	PKR 7352 (\$ 90) per sq. yards for an average 56 sq. yds. (47 sq. meter) house of G+2.	PKR 10,000 (\$ 123) per sq. yards for an average 66.16 sq. yds. (55.73 sq. meter) house of G+2.	PKR 10,000 (\$ 123) per sq. yards for an average 56 sq. yds. (47 sq. meter) house of G+2.	PKR 9752 (\$ 120) per sq. yards for an average 81.6 sq. yds. (68 sq. meter) house of G+2.	
<b>Cost of Unit</b>	Overall covered areas = 160 sq. yds (134 sq. meter). Overall cost = RKR 800,000 (\$ 9,876)	Overall covered areas = 168 sq. yds (141 sq. meter). Overall cost = RKR 840,000 (\$ 10,370)	Overall covered areas = 360 sq. yds (302 sq. meter). Overall cost = RKR 26,46,720 (\$ 32,675)	Overall covered areas = 168 sq. yds (141 sq. meter). Overall cost = RKR 12,35,136 (\$ 15,248)	Overall covered areas = 200 sq. yds (168 sq. meter). Overall cost = RKR 1,998,000 (\$ 24,666)	Overall covered areas = 168 sq. yds (141 sq. meter). Overall cost = RKR 16,80,000 (\$ 20,740)	Overall covered areas = 81.6 sq. yds (68 sq. meter). Overall cost = RKR 7,95,763 (\$ 9,824)	
<b>LANDUSE</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	
<b>Residential</b>	<b>40.27</b>	<b>55</b>	<b>60.5</b>	55	<b>60.5</b>	55	<b>70.6</b>	
<b>Residential cum Commercial</b>	<b>7.14</b>		<b>10.65</b>		<b>6.66</b>		<b>0</b>	
<b>Commercial</b>	<b>1.85</b>	<b>5</b>	<b>0.02</b>	5	<b>4</b>	5	<b>0</b>	
<b>Parks (area level, neighborhood parks)</b>	<b>7.24</b>	<b>8</b>	<b>0.12</b>	10	<b>4</b>	10	<b>0</b>	
<b>Amenities</b>	<b>2.86</b>	<b>4</b>	<b>1.81</b>	4	<b>2.85</b>	4	<b>0</b>	
<b>Educational</b>	<b>3.19</b>	<b>4.5</b>	<b>2.32</b>	4	<b>2.60</b>	4	<b>0</b>	
<b>Empty Plots</b>	<b>1.85</b>	<b>0</b>	<b>4.98</b>	0	<b>3.36</b>	0	<b>0</b>	

APPENDIX – 1- PHYSICAL COMPARISONS WITH NEW PROPOSAL

<b>Total Circulation (Roads &amp; Streets)</b>	<b>35.60</b>	<b>23.5</b>	<b>19.6</b>	22	<b>16.03</b>	22	<b>29.4</b>	
<b>BUILT / OPEN</b>								
<b>Total Builtup Area</b>	<b>55.62</b>	<b>68.5</b>	<b>75.68</b>	68	<b>76.61</b>	<b>68</b>	<b>70.6</b>	
<b>Total Open Area</b>	<b>44.6</b>	<b>31.5</b>	<b>24.32</b>	32	<b>23.39</b>	<b>32</b>	<b>29.4</b>	
<b>Total Road Length (In Rft.)/rm</b>	<b>14000ft/ 4267.2m</b>	<b>12600ft/ 3840.48m</b>	<b>15120ft/ 4608.57m</b>	11278ft/ 3437.53m	<b>12000ft// 36576m</b>	7985ft/ 2433.82m	<b>2747ft/ 837.28m</b>	
<b>Total Sewerage Line Length (In Rft.)/rm</b>	<b>16,200ft/ 4937.76m</b>	<b>13600ft/ 4145.28m</b>	<b>17000ft/ 5181.6m</b>	12,400ft/ 3779.52m	<b>13,400ft/ 5913.12m</b>	8950ft/ 2727.96m	<b>3075ft/ 937.26m</b>	
<b>Total Water Lines Length (In Rft.)/rm</b>	<b>15800ft/ 4815.84m</b>	<b>13000ft/ 3962.4m</b>	<b>16800ft/ 5120.64m</b>	12000ft/ 36576m	<b>13200ft/ 4023.36m</b>	8620ft/ 2627.376m	<b>2900ft/ 883.92m</b>	
<b>Cost of Roads Per Rft.</b>	<b>6790</b>	<b>3575</b>	<b>11790</b>	6766	<b>10100</b>	6166	<b>7491</b>	
<b>Cost of Sewerage and water supply Per plot (Rs) Rft</b>	<b>6500ft/ 1981.2m</b>	<b>3750ft/ 1143m</b>	<b>10988ft/ 3349.14m</b>	7320ft/ 2231.13m	<b>9313ft/ 2838.6m</b>	6783ft/ 2067.45m	<b>6789ft/ 2069.28m</b>	
<b>Cost of roads per plot (Rs)</b>	<b>6790</b>	<b>3575</b>	<b>11790</b>	6766	<b>10100</b>	6166	<b>7491</b>	

APPENDIX – 1- PHYSICAL COMPARISONS WITH NEW PROPOSAL

DENSITY & LANDUSE MATRIX																						
PROPOSALS FOR IIED DENSITY STUDY (2010)					KKB, LAHORE PROPOSALS (2011)											Thailand Density Study (2011)						
	KKB	NAWALANE	P. NAGAR	F. SQUARE	SCHEME 1	SCHEME 2	SCHEME 3	SCHEME 4	SCHEME 5	SCHEME 6	SCHEME 7	SCHEME 8	SCHEME 9	SCHEME 10	SCHEME 11	BK(NHA)	BMBK (CODI)	BUSP (NHA)	BMSP (CODI)	WP(NS)	BMWP (CODI)	
Settlement Area : ha	16.32	8.4	6.07	0.67	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.08	0.8808	1.36	1.0762	1.48	0.24	
Total No. of plots	1910	982	749	152	498	447	442	466	590	542	510	740	704	669	412	3272	202	1120	249	56	80	
Size of plots : sq.m	47	47	47	30.72	209	209	209	209	62.7	62.7	60.5	47.1	47.1	47.6	NA	32	35	35.75	61.25	32.63	60.995	
					62.7	60.5	62.7	60.5														
Number of families per plot	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	
Plot width to depth ratio	1:3	1:3	1:3	NA	1:2	1:2	1:2	1:2	1:3	1:3	1:2	1:3	1:3	1:2	NA	NA	NA	NA	NA	NA	NA	
					1:3	1:2	1:3	1:2														
Average No. of persons per plot	15	27	13.4	9	12	12	12	12	12	12	12	12	12	12	12	4.19	5	4.31	4.71	4.8	3	
Built-up Area per Capita : sq.m	6.96	3.87	7.79	8.26					8.775	8.775	9.6	6.85	6.85	7.42	N.A	7.64	7	8.29	13	6.8	17	
Gross Density: ha	1755	3157	1653	2280	859.8	771.8	763	804.6	1018.7	935.8	880.6	1277.7	1215.5	1155	711.4	4184.1	2257.3	3558.7	1089.3	506.1	1000	
LANDUSE in percentages of settlements area																						
Residential	55	55	58	77	54	48	48.5	48.9	53.2	48.9	44.2	50.1	47.7	45.7	51.9							
Commercial	5	5	4	0	2	2	3	1.8	1.6	3	2.5	2.2	3.1	2.1	4.17							
Ameneties	4.5	4.5	4	0	5.6	6.1	4.6	4.2	5.2	3.95	5	4.6	3.9	3.8	2.77							
Open Spaces	8	8	8	5.35	17	20	13	13.2	18.8	11.35	17.9	16.3	11.1	19.6	8.64	27	20	32	20	8	18	
Educational	4.5	4.5	4	0	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	1.26							
Vehicular circulation	23	23	22	17.65	19	21.5	28.5	29.5	18.8	30.4	27.9	24.4	31.8	26.4	30.67							

No.	Plot Size	width/depth ratio	Type
A	As per Saiban requirements		
scheme 1	33'-6" x 67' (10.21m x 20.42m) & 15' x 45' (4.57m x 13.72m)	1:2, 1:3	Cluster
scheme 2	33'-6" x 67' (10.21m x 20.42m) & 18' x 36' (5.5m x 11m)	1:2, 1:2	Cluster
scheme 3	33'-6" x 67' (10.21m x 20.42m) & 15' x 45' (4.57m x 13.72m)	1:2, 1:3	Grid-iron
scheme 4	33'-6" x 67' (10.21m x 20.42m) & 18' x 36' (5.5m x 11m)	1:2, 1:2	Grid-iron
B	Options tested - 60.5 sq.m & 62.7 sq.m (72 sq.yds & 75 sq.yds)		
scheme 5	15' x 45' (4.57m x 13.72m)	1:3	Cluster
scheme 6	15' x 45' (4.57m x 13.72m).	1:3	Grid-iron
scheme 7	18' x 36' (5.5m x 11m)	1:2	Cluster
C	Options tested - 47.1 sq.m & 47.6 sq.m ( 56.3 sq.yds & 56.9 sq.yds)		
scheme 8	13' x 39' (3.96m x 11.89m)	1:3	Cluster
scheme 9	13' x 39' (3.96m x 11.89m)	1:3	Grid-iron
scheme 10	16' x 32' (4.88m x 9.75m)	1:2	Cluster
D	KKB Scheme		
scheme 11	Scheme prepared by KKB team, having plots of many sizes.	NA	NA

NHA- Bon Kai : 14, 4-8 storey apartment buildings

CODI-Baan Mankong Bon Kai : 2 and 2.5 story row houses

NHA- Baan Uea-arthorn Suan Plu: 14 , 5 storey apartment buildings

CODI- Baan Mankong Suan Plu: 2, 2.5, 3 & 4 storey row houses and apartment building

Watphrayakrai Community : 2, four storey ,low-rise condominium scheme

CODI - Baan Mankong Watphrayakrai : 2, four storey, low-rise condominium scheme





**SCHEME 1**

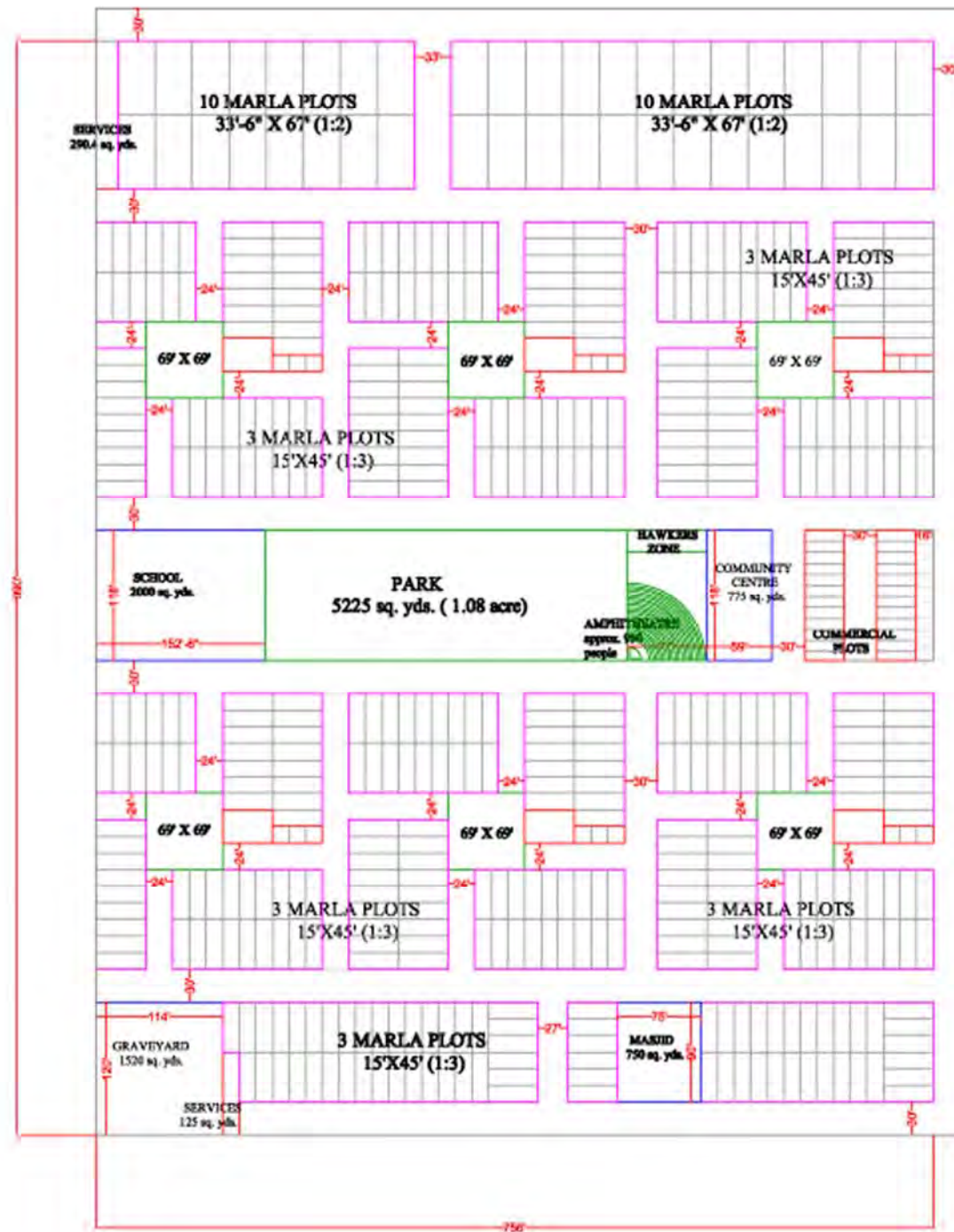
**APPENDIX 3 - PLANNING OPTIONS**

**LANDUSE CODING**

COLOUR CODE	TYPE OF PLOT	AREA (PERCENTAGE)
	RESIDENTIAL	54.0
	10 marla plots	
	3 marla plots	
	COMMERCIAL	2.0
	AMENITIES	8.0
	Schools	
	Mosque	
	Community centres	
	Services	
	Graveyard	
	PUBLIC OPEN SPACES	17.0
	Park	
	Community open spaces	
	Pedestrian Circulation	
	VEHICULAR CIRCULATION	19.0

Project : SAIBAN CITY LAHORE	SCHEME 1	
Drawing Title: LANDUSE CODING		
Architect / Planner: ARIF HASAN		<b>A-01-01</b>
Date : 07-09-2011	Scale : 1/200" = 1'-0"	





**SCHEME 1**

LANDUSE DETAILS				
Type of Plots	No. of plots	Area of each plot (sq. yds.)	Total Area of plots. (sq. yds.)	%
<b>1. RESIDENTIAL PLOTS</b>				<b>54</b>
10 marla plots	42	250	10500	
3 marla plots(1:3) = 15' x 45'	456	75	34200	
<b>2. COMMERCIAL PLOTS</b>				<b>2</b>
1.5 marla plots	22	39	858	
1.2 marla plots	2	31	62	
1 marla plots	18	25	450	
<b>3. AMENITIES</b>				<b>8</b>
<b>3.1 Community Centres</b>				
At cluster level	6	150	900	
Main Center	1	775	775	
<b>3.2 School</b>				
	1	2000	2000	
<b>3.3 Mosque</b>				
	1	750	750	
<b>3.4 Graveyard</b>				
	1	1520	1520	
<b>3.5 Services and Utilities</b>				
	2	varies	415	
<b>4. Public Open Spaces</b>				<b>17</b>
<b>4.1 Park</b>				
	1	5225	5225	
<b>4.2 Community Open Spaces</b>				
At cluster level	6	529	3174	
Pedestrian Walkways			5441	
<b>5. Roads for Vehicular Traffic</b>				<b>19</b>

LANDUSE COSTING	
Total Area of PLOT = 83,160 sq. yds.	
Total Area of PLOT = 17.1818 acres	
Cost @ Rs. 2,000,000/- per acre = Rs. 34,363,600/-	
Sale-able area = 10,500 sq. yds.	10 marla residential
34,200 sq. yds.	3 marla residential
858 sq. yds.	1.5 marla commercial
62 sq. yds.	1.2 marla commercial
450 sq. yds.	1 marla commercial
Total sale-able area = 46,070 sq. yds	
Total Cost of Plot = Rs. 34,363,600/-	
Per sq.yd of sale-able area = Rs. 34,363,600 / 46,070 = Rs 746/sq.yd	
Percentage of sq. yds. COST of sale-able areas	
10 marla residential =	Rs. 7,833,000 /- for 42 plots
	Rs. 188,500 /- per plot
3 marla residential =	Rs. 25,513,200 /- for 456 plots
	Rs. 55,950 /- per plot
1.5 marla commercial =	Rs. 840,068 /- for 22 plots
	Rs. 29,094 /- per plot
1.2 marla commercial =	Rs. 46,252 /- for 2 plots
	Rs. 23,126 /- per plot
1 marla commercial =	Rs. 335,700 /- for 18 plots
	Rs. 18,650 /- per plot

Note: 1 marla = 25 sq. yarda

Project : SAIBAN CITY LAHORE	SCHEME 1	
Drawing Title: LANDUSE DETAILS		
Architect / Planner: ARIF HASAN		A-01-02
Date : 07-09-2011	Scale : 1/128" = 1'-0"	

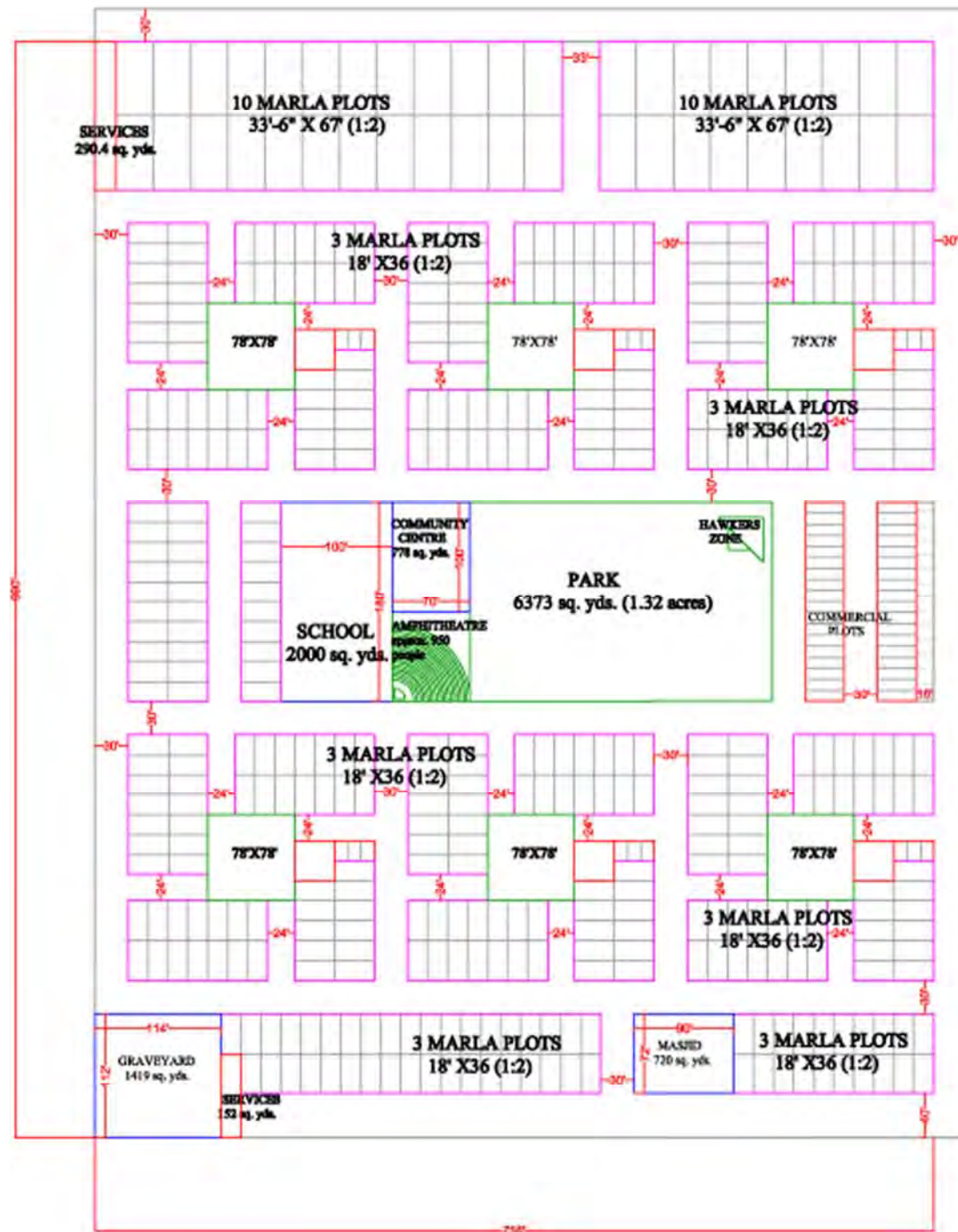


**SCHEME 2**

LANDUSE CODING		
COLOUR CODE	TYPE OF PLOT	AREA (PERCENTAGE)
	RESIDENTIAL	48.0
	10 marla plots	
	3 marla plots	
	COMMERCIAL	2.0
	AMENITIES	8.5
	Schools	
	Mosque	
	Community centres	
	Services	
	Graveyard	
	PUBLIC OPEN SPACES	20.0
	Park	
	Community open spaces	
	Pedestrian Circulation	
	VEHICULAR CIRCULATION	21.5

Project : SAIBAN CITY LAHORE	SCHEME 2	
Drawing Title: LANDUSE CODING		
Architect / Planner: ARIF HASAN		A-02-01
Date : 07-09-2011	Scale : 1/200" = 1'-0"	





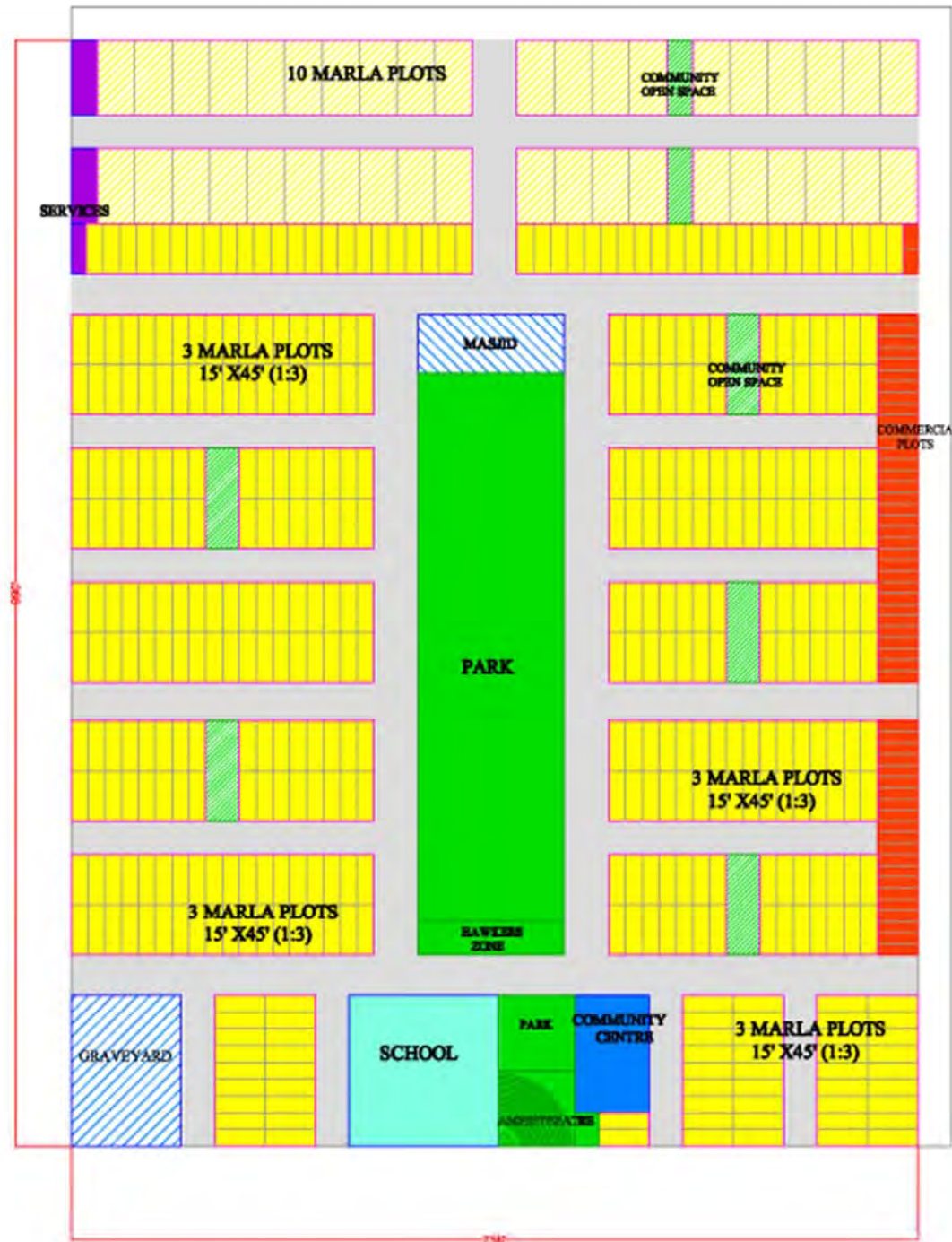
**SCHEME 2**

LANDUSE DETAILS				
Type of Plots	No. of plots	Area of each plot (sq. yds.)	Total Area of plots. (sq. yds.)	%
<b>1. RESIDENTIAL PLOTS</b>				
10 marla plots	42	250	10500	48
3 marla plots(1:2) = 18' x 36'	405	72	29160	
<b>2. COMMERCIAL PLOTS</b>				
1.5 marla plots	36	39	1404	2.0
1 marla plots	18	24	432	
<b>3. AMENITIES</b>				
<b>3.1 Community Centre</b>				
At cluster level	8	144	864	
Main Center	1	778	778	
<b>3.2 School</b>	1	2000	2000	
<b>3.3 Mosque</b>	1	720	720	
<b>3.4 Graveyard</b>	1	1419	1419	
<b>3.5 Services and Utilities</b>	2	varios	442	
<b>4. Public Open Spaces</b>				
<b>4.1 Park</b>	1	6062	6062	20.0
<b>4.2 Community Open Spaces</b>				
At cluster level	8	676	4056	
Pedestrian Walkways			6688	
<b>5. Roads for Vehicular Traffic</b>				
			17745	21.5

LANDUSE COSTING	
Total Area of PLOT = 83160 sq. yds.	
Total Area of PLOT = 17.1818 acres	
Cost @ Rs: 2,000,000/- per acre = Rs: 34,363,600/-	
Sale-able area = 10,500 sq. yds.	10 marla residential
29,160 sq. yds.	3 marla residential
1404 sq. yds.	1.5 marla commercial
432 sq. yds.	1 marla commercial
Total sale-able area = 41,496 sq. yds	
Total Cost of Plot = Rs. 34,363,600/-	
Per sq.yd of sale-able area = Rs. 34,363,600 / 41,496 = Rs 828/sq.yd	
Percentage of sq. yds. COST of sale-able areas	
10 marla residential =	Rs. 8,694,000 /- for 42 plots
	Rs. 207,000 /- per plot
3 marla residential =	Rs. 24,144,480 /- for 405 plots
	Rs. 59,616 /- per plot
1.5 marla commercial =	Rs. 1,162,512 /- for 36 plots
	Rs. 32,292 /- per plot
1 marla commercial =	Rs. 357,696 /- for 18 plots
	Rs. 19,872 /- per plot

Note: 1 Marla = 25 sq.yards

Project : SAIBAH CITY LAHORE	SCHEME 2	
Drawing Title: LANDUSE DETAILS		
Architect / Planner: ARIF HASAN		A-02-02
Date : 07-09-2011	Scale : 1/200" = 1'-0"	

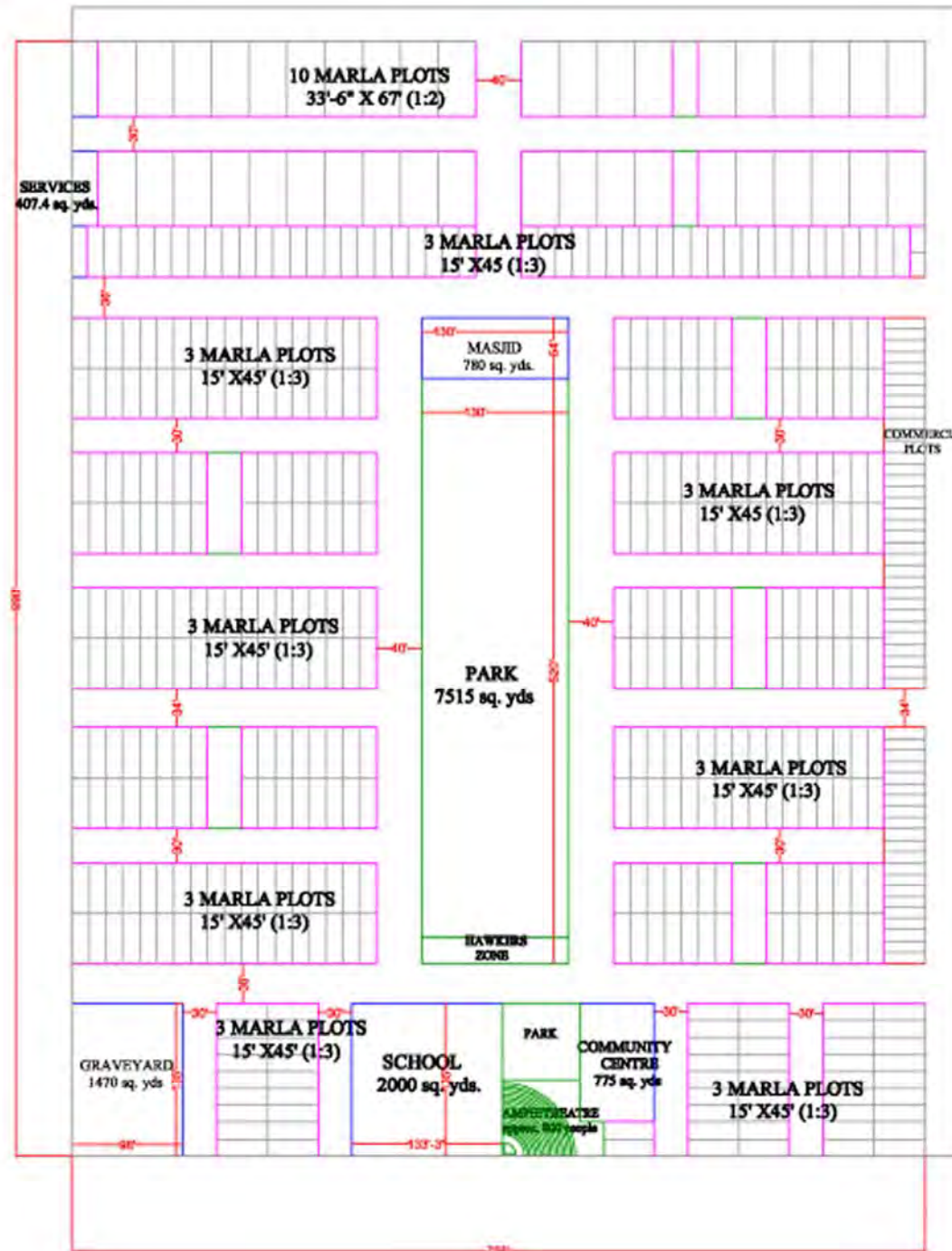


**SCHEME 3**

LANDUSE CODING		
COLOUR CODE	TYPE OF PLOT	AREA (PERCENTAGE)
	RESIDENTIAL	48.5
	10 marla plots	
	3 marla plots	
	COMMERCIAL	3.0
	AMENITIES	7.0
	Schools	
	Mosque	
	Community centres	
	Services	
	Graveyard	
	PUBLIC OPEN SPACES	13.0
	Park	
	Community open spaces	
	Pedestrian Circulation	
	VEHICULAR CIRCULATION	28.5

Project : SAIBAN CITY LAHORE	SCHEME 3	
Drawing Title: LANDUSE CODING		
Architect / Planner: ARIF HASAN		A-03-01
Date : 07-09-2011	Scale : $\frac{1}{128}'' = 1'-0''$	





**SCHEME 3**

LANDUSE DETAILS				
Type of Plots	No. of plots	Area of each plot (sq. yds.)	Total Area of plots. (sq. yds.)	%
<b>1. RESIDENTIAL PLOTS</b>				<b>48.5</b>
10 marla plots	40	250	10000	
3 marla plots(1:3) = 15' x 45'	402	75	30150	
<b>2. COMMERCIAL PLOTS</b>				<b>3.0</b>
1.8 marla plots	54	40	2160	
1.3 marla plots	2	32.5	85	
<b>3. AMENITIES</b>				<b>7.0</b>
3.1 Community Centres	1	774	774	
3.2 School	1	2000	2000	
3.3 Mosque	1	780	780	
3.4 Graveyard	1	1470	1470	
3.5 Services and Utilities	2	varies	407.4	
<b>4. PUBLIC OPEN SPACE</b>				<b>13.0</b>
4.1 Park		8550	8612	
4.2 Community Open Spaces				
In 10 marla block	2	171.2	342.4	
In 3 marla block	5	300	1500	
<b>5. ROADS FOR VEHICULAR TRAFFIC</b>				<b>28.5</b>

LANDUSE COSTING	
Total Area of PLOT = 83160 sq. yds.	
Total Area of PLOT = 17.1818 acres	
Cost @ Rs: 2,000,000/- per acre = Rs: 34,363,600/-	
Sale-able area = 10,000 sq. yds.	10 marla residential
30,150 sq. yds.	3 marla residential
2,160 sq. yds.	1.8 marla commercial
85 sq. yds.	1.3 marla commercial
Total sale-able area = 42,375 sq. yds	
Total Cost of Plot = Rs. 34,363,600/-	
Per sq.yd of sale-able area = Rs. 34,363,600 / 42,375 = Rs 811/sq.yd	
Percentage of sq. yds. COST of sale-able areas	
10 marla residential =	Rs. 8,110,000 /- for 40 plots
	Rs. 202,750 /- per plot
3 marla residential =	Rs. 24,451,650 /- for 402 plots
	Rs. 60,825 /- per plot
1.8 marla commercial =	Rs. 1,751,760 /- for 54 plots
	Rs. 32,440 /- per plot
1.3 marla commercial =	Rs. 52,715 /- for 2 plots
	Rs. 26,357.5 /- per plot

Note: 1 Marla = 25 sq.yards

Project : SAIBAN CITY LAHORE	SCHEME 3	
Drawing Title: LANDUSE DETAILS		
Architect / Planner: ARIF HASAN		A-03-02
Date : 07-09-2011	Scale : 1/250" = 1'-0"	

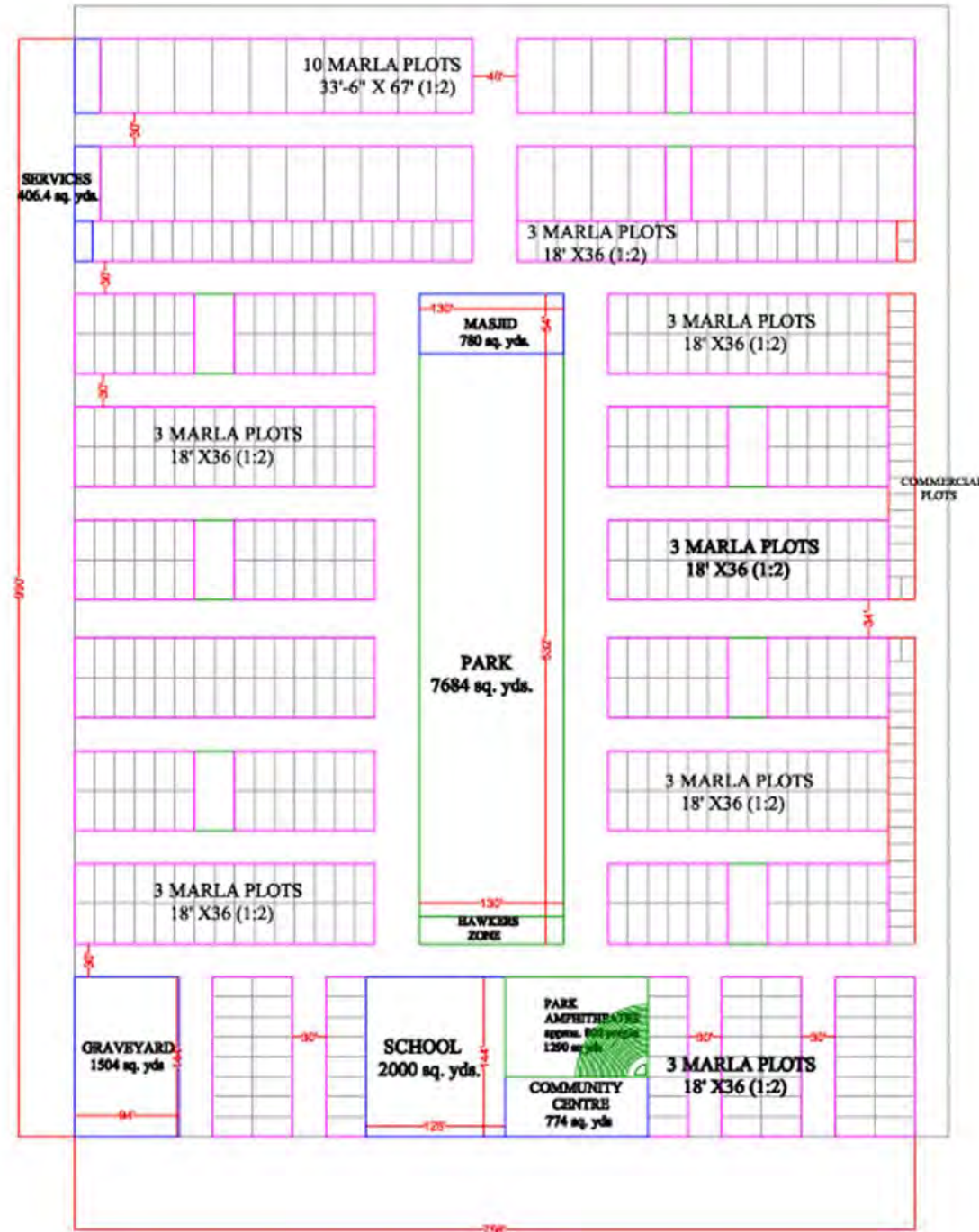


LANDUSE CODING		
COLOUR CODE	TYPE OF PLOT	AREA (PERCENTAGE)
	RESIDENTIAL	48.0
	10 marla plots	
	3 marla plots	
	COMMERCIAL	2.0
	AMENITIES	7.0
	Schools	
	Mosque	
	Community centres	
	Services	
	Graveyard	
	PUBLIC OPEN SPACES	13.5
	Park	
	Community open spaces	
	Pedestrian Circulation	
	VEHICULAR CIRCULATION	29.5

SCHEME 4

Project : SAIBAN CITY LAHORE	SCHEME 4	
Drawing Title: LANDUSE CODING		
Architect / Planner: ARIF HASAN		A-04-01
Date : 07-09-2011	Scale : 1/20" = 1'-0"	





**SCHEME 4**

LANDUSE DETAILS				
Type of Plots	No. of plots	Area of each plot (sq. yds.)	Total Area of plots (sq. yds.)	%
<b>1. RESIDENTIAL PLOTS</b>				<b>48.9</b>
10 marla plots	40	250	10000	
3 marla plots(1:2) = 18' x 36'	426	72	30672	
<b>2. COMMERCIAL PLOTS</b>				<b>1.8</b>
1.6 marla plots	34	40	1380	
1.28 marla plots	2	32	64	
1.12 marla plots	4	28	112	
<b>3. AMENITIES</b>				<b>6.8</b>
3.1 Community Centres	1	774	774	
3.2 School	1	2000	2000	
3.3 Mosque	1	780	780	
3.4 Graveyard	1	1504	1504	
3.5 Services and Utilities	2	varies	406.4	
<b>4. PUBLIC OPEN SPACE</b>				<b>13.2</b>
4.1 Park	2	varies	8974	
4.2 Community Open Spaces				
In 10 marla block	2	171.2	342.4	
In 3 marla block	6	288	1728	
<b>5. ROADS FOR VEHICULAR TRAFFIC</b>				<b>29.5</b>
			24467	

LANDUSE COSTING	
Total Area of PLOT = 83,160 sq. yds.	
Total Area of PLOT = 17.1818 acres	
Cost @ Rs: 2,000,000/- per acre = Rs: 34,363,600/-	
Sale-able area = 10,000 sq. yds.	10 marla residential
30,672 sq. yds.	3 marla residential
1,380 sq. yds.	1.6 marla commercial
64 sq. yds.	1.28 marla commercial
112 sq. yds.	1.12 marla commercial
Total sale-able area = 42,208 sq. yds	
Total Cost of Plot = Rs. 34,363,600/-	
Per sq.yd of sale-able area = Rs. 34,363,600 / 42,208 = Rs 814 /sq.yd	
Percentage of sq. yds. COST of sale-able areas	
10 marla residential =	Rs. 8,140,000 /- for 40 plots
	Rs. 203,500 /- per plot
3 marla residential =	Rs. 24,967,008 /- for 426 plots
	Rs. 58,608 /- per plot
1.6 marla commercial =	Rs. 1,107,040 /- for 34 plots
	Rs. 32,560 /- per plot
1.28 marla commercial =	Rs. 52,096 /- for 2 plots
	Rs. 26,048 /- per plot
1.12 marla commercial =	Rs. 91,168 /- for 4 plots
	Rs. 22,792 /- per plot

Note: 1 Marla = 25 sq.yards

Project : SAIBAN CITY LAHORE	SCHEME 4	
Drawing Title: LANDUSE DETAILS		
Architect / Planner: ARIF HASAN		A-04-02
Date : 07-09-2011	Scale : 1/2500 = 1'-0"	

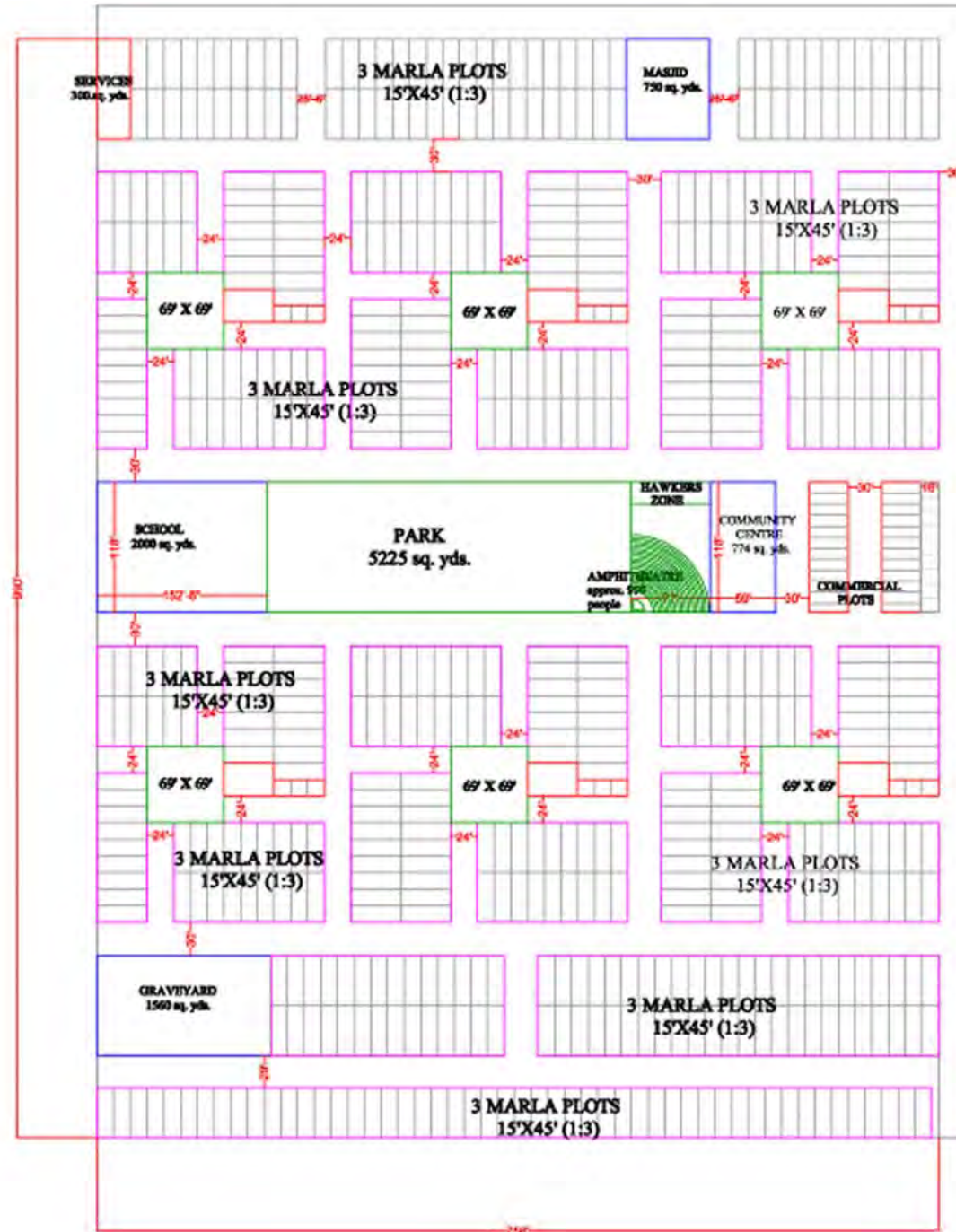


**SCHEME 5**

LANDUSE CODING		
COLOUR CODE	TYPE OF PLOT	AREA (PERCENTAGE)
	RESIDENTIAL	53.2
Yellow	3 marla plots	
Orange	COMMERCIAL	1.6
	AMENITIES	7.6
Cyan	Schools	
Blue hatched	Mosque	
Blue	Community centres	
Purple	Services	
Blue hatched	Graveyard	
	PUBLIC OPEN SPACES	16.8
Green	Park	
Green hatched	Community open spaces	
Grey	Pedestrian Circulation	
Light Grey	VEHICULAR CIRCULATION	16.8

Project : SAIBAN CITY LAHORE	SCHEME 5	
Drawing Title: LANDUSE CODING		
Architect / Planner: ARIF HASAN		A-05-01
Date : 07-09 2011	Scale : 1/200 = 1'-0"	





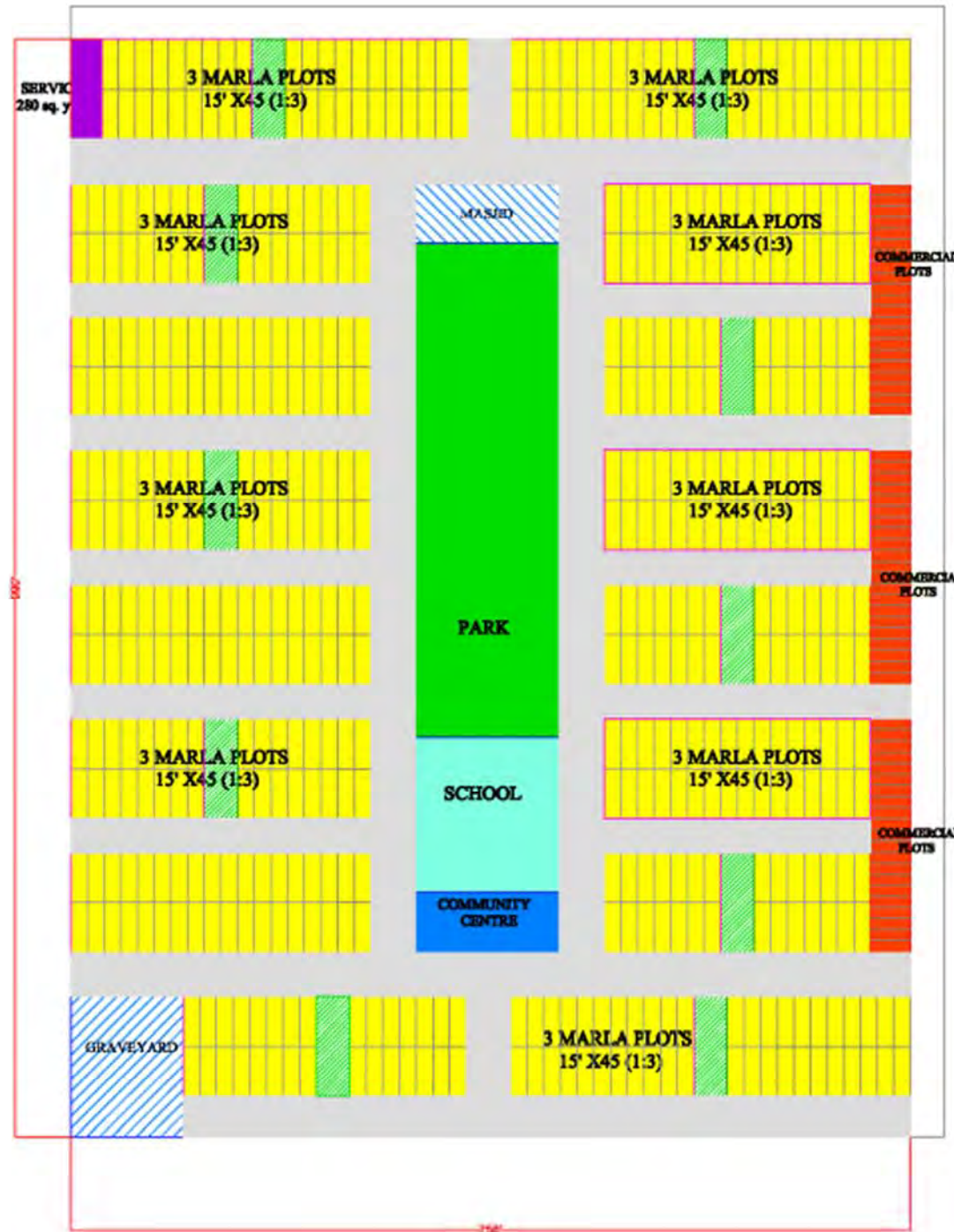
**SCHEME 5**

LANDUSE DETAILS				
Type of Plots	No. of plots	Area of each plot (sq. yds.)	Total Area of plots. (sq. yds.)	%
<b>1. RESIDENTIAL PLOTS</b>				
3 marla plots(1:3) = 15' x 45'	590	75	44250	63.2
<b>2. COMMERCIAL PLOTS</b>				
1.6 marla plots	22	39	858	1.8
1.2 marla plots	2	31	62	
1 marla plots	18	25	450	
<b>3. AMENITIES</b>				<b>7.8</b>
<b>3.1 Community Centres</b>				
At cluster level	6	150	900	
Main Center	1	775	775	
<b>3.2 School</b>	1	2000	2000	
<b>3.3 Mosque</b>	1	750	750	
<b>3.4 Graveyard</b>	1	1560	1560	
<b>3.5 Services and Utilities</b>			300	
<b>4. PUBLIC OPEN SPACES</b>				<b>18.8</b>
<b>4.1 Park</b>	1	5225	5225	
<b>4.2 Community Open Spaces</b>				
At cluster level	6	529	3174	
Pedestrian Walkways			7241	
<b>5. ROADS FOR VEHICULAR TRAFFIC</b>			15819	<b>18.8</b>

LANDUSE COSTING	
Total Area of PLOT = 83160 sq. yds.	
Total Area of PLOT = 17.1818 acres	
Cost @ Rs: 20,00,000/- per acre = Rs: 34,363,600/-	
Sale-able area = 44250 sq. yds.	3 marla residential
858 sq. yds.	1.6 marla commercial
62 sq. yds.	1.2 marla commercial
450 sq. yds.	1 marla commercial
Total sale-able area = 45620 sq. yds	
Total Cost of Plot = Rs. 34,363,600/-	
Per sq.yd of sale-able area = Rs. 34,363,600 / 45620 = Rs 753.3/sq.yd	
Percentage of sq. yds. COST of sale-able areas	
3 marla residential =	Rs. 33,333,525 /- for 590 plots
	Rs. 56,497.5 /- per plot
1.5 marla commercial =	Rs. 846,331.4 /- for 22 plots
	Rs. 29,378.7 /- per plot
1.2 marla commercial =	Rs. 46,704.6 /- for 2 plots
	Rs. 23,352.3/- per plot
1 marla commercial =	Rs. 338,985 /- for 18 plots
	Rs. 18,832.5 /- per plot

Note: 1 Marla = 25 sq.yards

Project : SAIBAN CITY LAHORE	SCHEME 5	
Drawing Title: LANDUSE DETAILS		
Architect / Planner: ARIF HASAN		A-05-02
Date : 07-09-2011	Scale : 1/200" = 1'-0"	

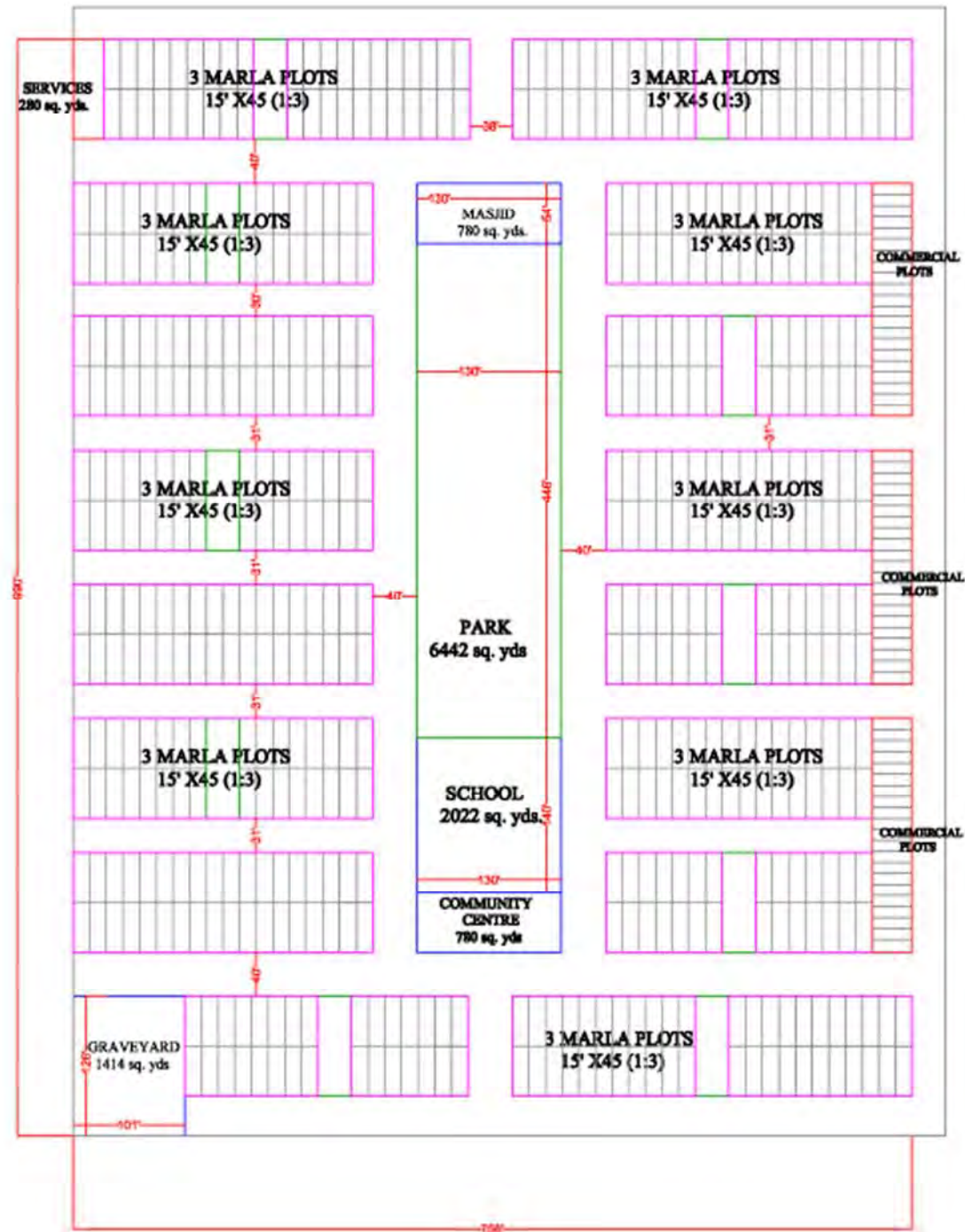


**SCHEME 6**

LANDUSE CODING		
COLOUR CODE	TYPE OF PLOT	AREA (PERCENTAGE)
	RESIDENTIAL	48.5
	10 marla plots	
	3 marla plots	
	COMMERCIAL	3.0
	AMENITIES	7.5
	Schools	
	Mosque	
	Community centres	
	Services	
	Graveyard	
	PUBLIC OPEN SPACES	12.5
	Park	
	Community open spaces	
	Pedestrian Circulation	
	VEHICULAR CIRCULATION	28.5

Project : SAIBAN CITY LAHORE	SCHEME 6	
Drawing Title: LANDUSE CODING		
Architect / Planner: ARIF HASAN		A-06-01
Date : 07-09-2011	Scale : 1/128" = 1'-0"	





**SCHEME 6**

LANDUSE DETAILS				
Type of Plots	No. of plots	Area of each plot (sq. yds.)	Total Area of plots. (sq. yds.)	%
<b>1. RESIDENTIAL PLOTS</b>				<b>48.9</b>
3 marla plots(1:3) = 15' x 45'	542	75	40650	
<b>2. COMMERCIAL PLOTS</b>				<b>3.0</b>
1.6 marla plots	63	40	2520	
<b>3. AMENITIES</b>				<b>6.35</b>
3.1 Community Centres	1	780	780	
3.2 School	1	2022	2022	
3.3 Moeque	1	780	780	
3.4 Graveyard	1	1414	1414	
3.5 Services and Utilities	1		280	
<b>4. PUBLIC OPEN SPACE</b>				<b>11.35</b>
4.1 Park			8550	
4.2 Community Open Spaces				
in 3 marla block	10	300	3000	
<b>5. ROADS FOR VEHICULAR TRAFFIC</b>				<b>30.4</b>

LANDUSE COSTING	
Total Area of PLOT = 83,160 sq. yds.	
Total Area of PLOT = 17.1818 acres	
Cost @ Rs: 2,000,000/- per acre = Rs: 34,363,600/-	
Sale-able area = 40,850 sq. yds.	3 marla residential
	2,520 sq. yds. 1.6 marla commercial
Total sale-able area = 43,170 sq. yds	
Total Cost of Plot = Rs. 34,363,600/-	
Per sq.yd of sale-able area = Rs. 34,363,600 / 43,170 = Rs796/sq.yd	
Percentage of sq. yds. COST of sale-able areas	
3 marla residential =	Rs. 32,357,400 /- for 542 plots
	Rs. 59,700 /- per plot
1.6 marla commercial =	Rs. 2,005,920 /- for 63 plots
	Rs. 31,840 /- per plot

Note: 1 Marla = 25 sq.yards

Project : SAIBAN CITY LAHORE	SCHEME 6	
Drawing Title: LANDUSE DETAILS	Architect / Planner: ARIF HASAN	
Date : 07-09-2011	Scale : 1/128" = 1'-0"	<b>A-06-02</b>

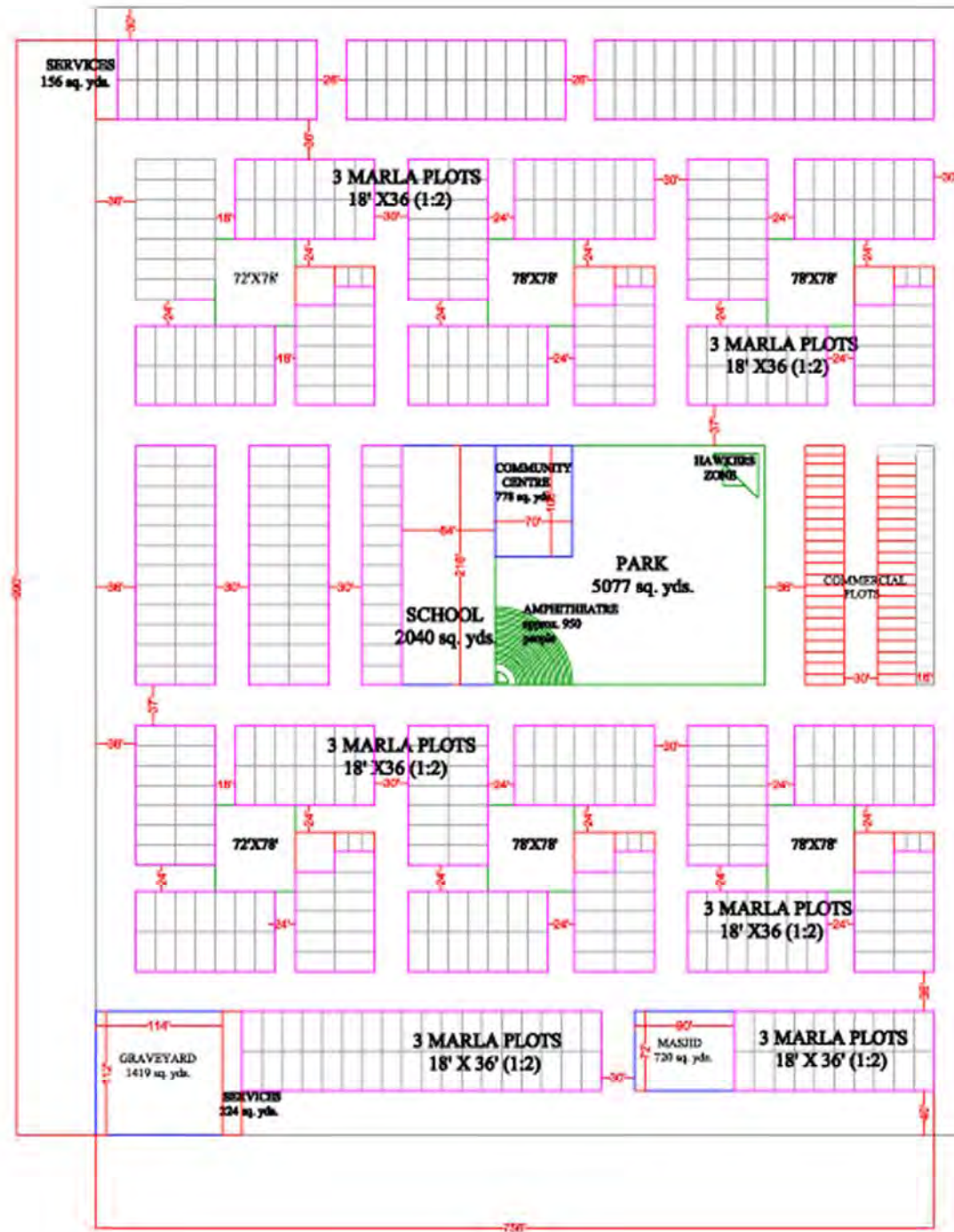


**SCHEME 7**

LANDUSE CODING		
COLOUR CODE	TYPE OF PLOT	AREA (PERCENTAGE)
	RESIDENTIAL	44.2
	10 marla plots	
	3 marla plots	
	COMMERCIAL	2.5
	AMENITIES	7.4
	Schools	
	Mosque	
	Community centres	
	Services	
	Graveyard	
	PUBLIC OPEN SPACES	18.0
	Park	
	Community open spaces	
	Pedestrian Circulation	
	VEHICULAR CIRCULATION	27.9

Project : SAIBAN CITY LAHORE	SCHEME 7	
Drawing Title: LANDUSE CODING		
Architect / Planner: ARIF HASAN		A-07-01
Date : 07-09-2011	Scale : 1/20" = 1'-0"	





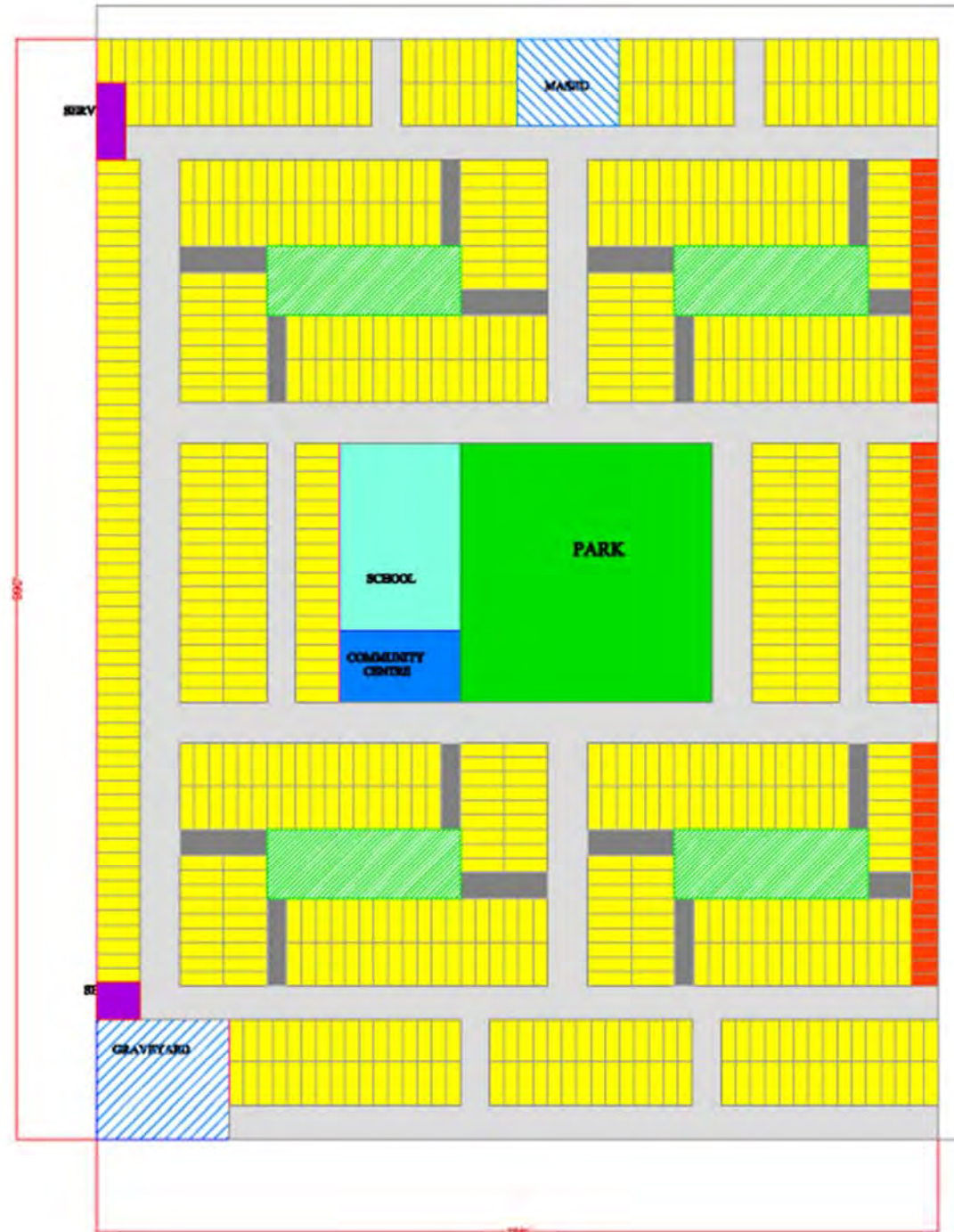
**SCHEME 7**

LANDUSE DETAILS				
Type of Plots	No. of plots	Area of each plot (sq. yds.)	Total Area of plots. (sq. yds.)	%
<b>1. RESIDENTIAL PLOTS</b>				<b>44.2</b>
3 marla plots(1:2) = 18' x 36'	510	72	36720	
<b>2. COMMERCIAL PLOTS</b>				
1.6 marla plots	40	38.9	1556	2.5
1.28 marla plots	4	31.1	124.4	
1.12 marla plots	18	24	432	
<b>3. AMENITIES</b>				<b>7.4</b>
<b>3.1 Community Centre</b>				
Main Centre	1	778	778	
Centre at cluster level	6	144	864	
<b>3.2 School</b>	1	2040	2040	
<b>3.3 Mosque</b>	1	720	720	
<b>3.4 Graveyard</b>	1	1419	1419	
<b>3.5 Services and Utilities</b>	2	varies	380	
<b>4. PUBLIC OPEN SPACE</b>				<b>18</b>
4.1 Park	1		5077	
<b>4.2 Community Open Spaces</b>				
At cluster level	6	varies	3952	
Pedestrian walkways			5896	
<b>5. ROADS FOR VEHICULAR TRAFFIC</b>			23226	<b>27.9</b>

LANDUSE COSTING	
Total Area of PLOT = 83,160 sq. yds.	
Total Area of PLOT = 17.1818 acres	
Cost @ Rs: 2,000,000/- per acre = Rs: 34,363,600/-	
Sale-able area = 36,720 sq. yds.	3 marla residential
1,556 sq. yds.	1.6 marla commercial
124.4 sq. yds.	1.24 marla commercial
432 sq. yds.	0.96 marla commercial
Total sale-able area = 38,832.4 sq. yds	
Total Cost of Plot = Rs. 34,363,600/-	
Per sq.yd of sale-able area = Rs. 34,363,600 / 38,832.4 = Rs 885 /sq.yd	
Percentage of sq. yds. COST of sale-able areas	
3 marla residential =	Rs. 32,497,200 /- for 510 plots
	Rs. 63,720 /- per plot
1.6 marla commercial =	Rs. 1,377,080 /- for 40 plots
	Rs. 34,426.5 /- per plot
1.24 marla commercial =	Rs. 110,094 /- for 4 plots
	Rs. 27,523.5 /- per plot
0.96 marla commercial =	Rs. 382,320 /- for 18 plots
	Rs. 21,240 /- per plot

Note: 1 Marla = 25 sq.yards

Project : SAIBAN CITY LAHORE	SCHEME 7	
Drawing Title: LANDUSE DETAILS		
Architect / Planner: ARIF HASAN		A-07-02
Date : 07-09-2011	Scale : 1/125" = 1'-0"	

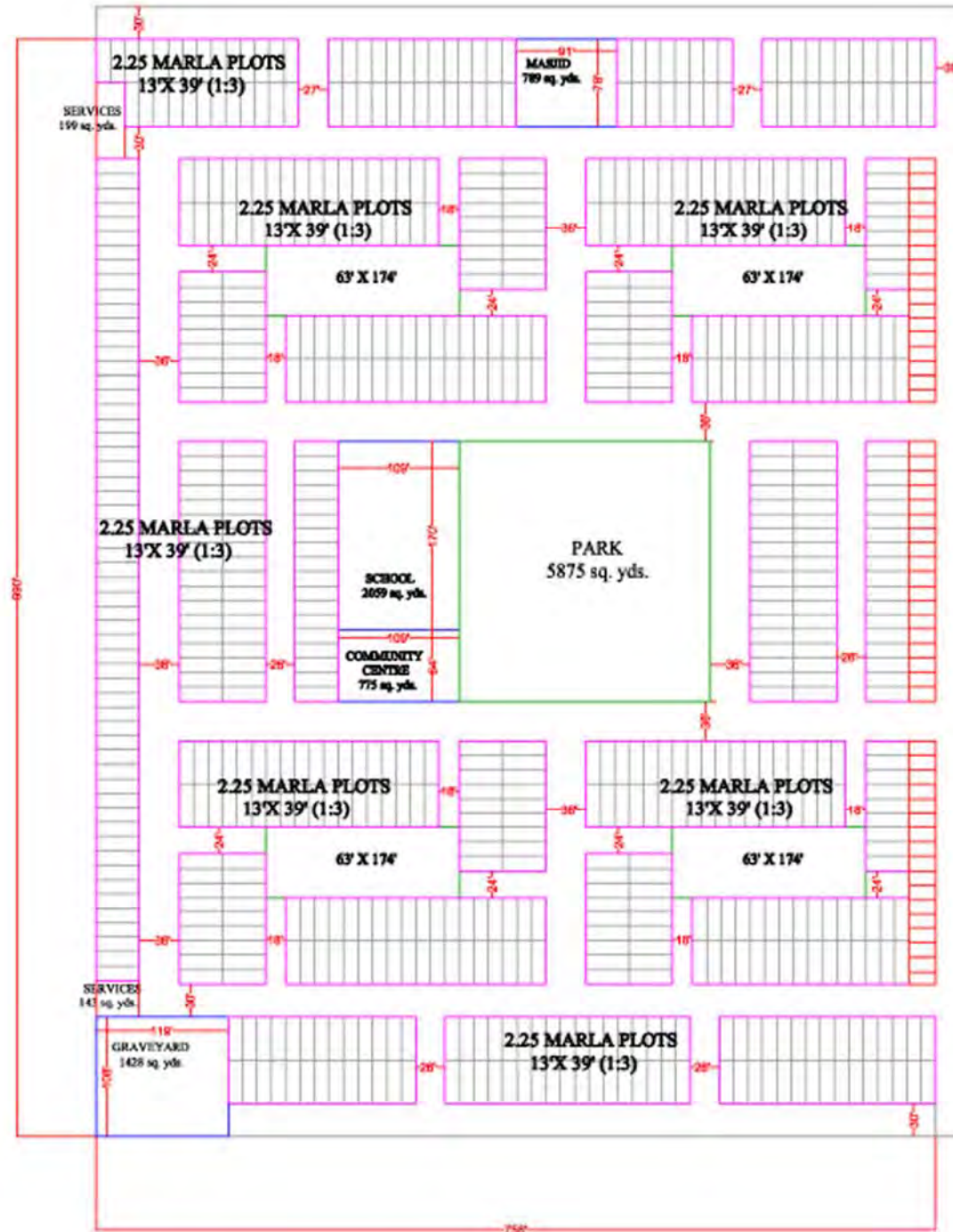


**SCHEME 8**

LANDUSE CODING		
COLOUR CODE	TYPE OF PLOT	AREA (PERCENTAGE)
	RESIDENTIAL	54.0
	10 marla plots	
	3 marla plots	
	COMMERCIAL	2.0
	AMENITIES	8.0
	Schools	
	Mosque	
	Community centres	
	Services	
	Graveyard	
	PUBLIC OPEN SPACES	17.0
	Park	
	Community open spaces	
	Pedestrian Circulation	
	VEHICULAR CIRCULATION	19.0

Project : SAIBAN CITY LAHORE	SCHEME 8	
Drawing Title: LANDUSE CODING		
Architect / Planner: ARIF HASAN		A-08-01
Date : 07-09-2011	Scale : 1/128" = 1'-0"	





**SCHEME 8**

LANDUSE DETAILS				
Type of Plots	No. of plots	Area of each plot (sq. yds.)	Total Area of plots. (sq. yds.)	%
<b>1. RESIDENTIAL PLOTS</b>				<b>50.1</b>
2.25 marla plots(1:3)= 13' x 39'	740	56.3	41662	
<b>2. COMMERCIAL PLOTS</b>				<b>2.2</b>
1.39 marla plots	52	34.7	1804.4	
1.17 marla plots	2	29.3	58.6	
<b>3. AMENITIES</b>				<b>7</b>
<b>3.1 Community Centres</b>				
At cluster level	0	0	0	
Main Center	1	775	775	
<b>3.2 School</b>	1	2058	2058	
<b>3.3 Mosque</b>	1	780	780	
<b>3.4 Graveyard</b>	1	1428	1428	
<b>3.5 Services and Utilities</b>	2	varies	342	
<b>4. Public Open Spaces</b>				<b>16.3</b>
<b>4.1 Park</b>	1	5875	5875	
<b>4.2 Community Open Spaces</b>				
At cluster level	4	1218	4872	
Pedestrian Walkways			2704	
<b>5. Roads for Vehicular Traffic</b>			20330	<b>24.4</b>

LANDUSE COSTING	
Total Area of PLOT = 63,160 sq. yds.	
Total Area of PLOT = 17.1818 acres	
Cost @ Rs: 2,000,000/- per acre = Rs: 34,363,600/-	
Sale-able area = 41,662 sq. yds.	2.25 marla residential
1,804.4 sq. yds.	1.39 marla commercial
58.6 sq. yds.	1.17 marla commercial
Total sale-able area = 43,525 sq. yds	
Total Cost of Plot = Rs. 34,363,600/-	
Per sq.yd of sale-able area = Rs. 34,363,600 / 43,525 = Rs 789.5/sq.yd	
Percentage of sq. yds. COST of sale-able areas	
2.25 marla residential = Rs. 32,892,149 /-	for 740 plots
	Rs. 44,449 /- per plot
1.39 marla commercial = Rs. 1,424,573.8 /-	for 52 plots
	Rs. 27,395.6 /- per plot
1.17 marla commercial = Rs. 46,264.7 /-	for 2 plots
	Rs. 23,132.4 /- per plot

Note: 1 Marla = 25 sq.yards

Project : SAIBAN CITY LAHORE	SCHEME 8	
Drawing Title: LANDUSE DETAILS		
Architect / Planner: ARIF HASAN		A-08-02
Date : 07-09-2011	Scale : 1/128" = 1'-0"	

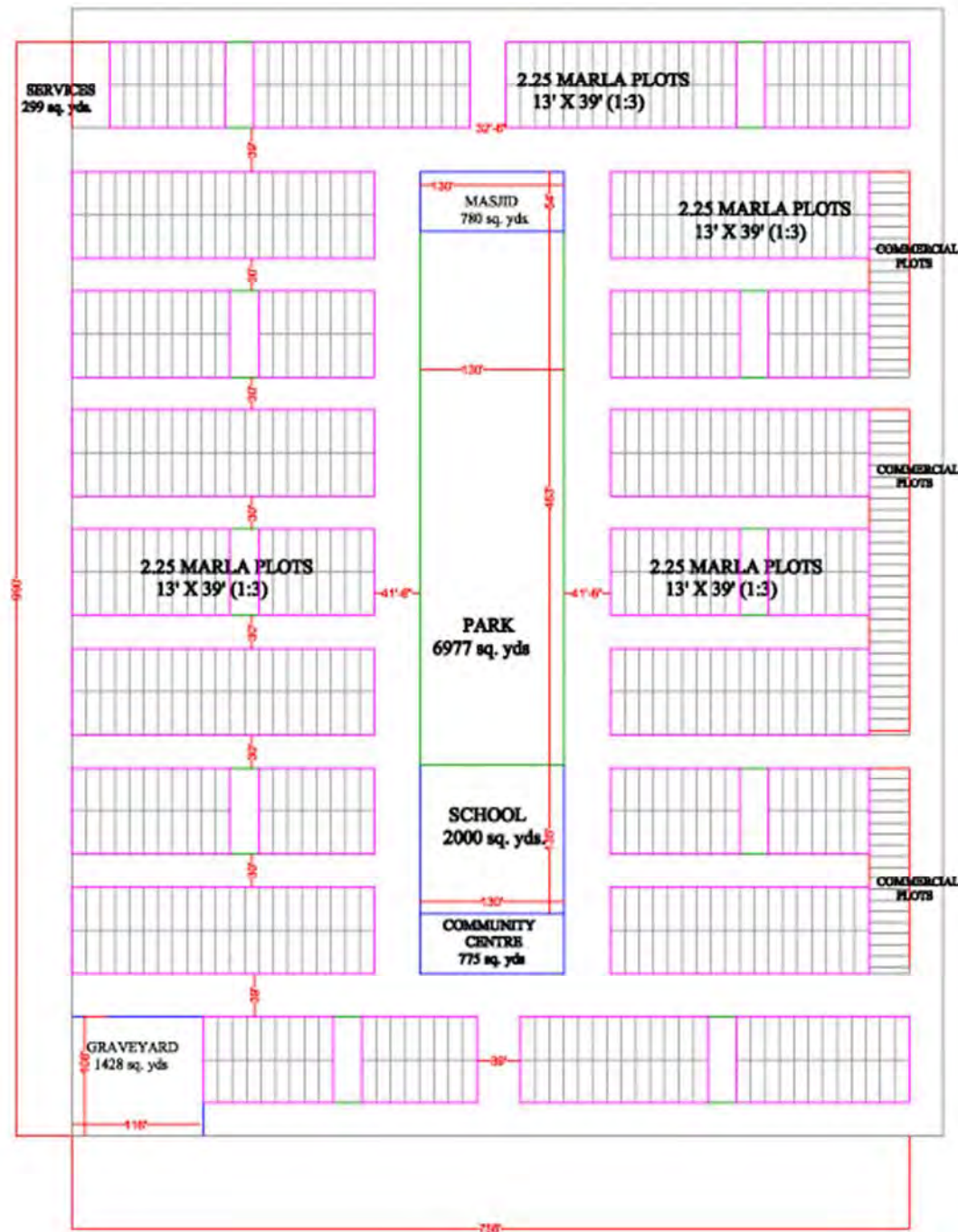


**SCHEME 9**

LANDUSE CODING		
COLOUR CODE	TYPE OF PLOT	AREA (PERCENTAGE)
	RESIDENTIAL	48.5
	10 marla plots	
	3 marla plots	
	COMMERCIAL	3.0
	AMENITIES	7.5
	Schools	
	Mosque	
	Community centres	
	Services	
	Graveyard	
	PUBLIC OPEN SPACES	12.5
	Park	
	Community open spaces	
	Pedestrian Circulation	
	VEHICULAR CIRCULATION	28.5

Project : SAIBAN CITY LAHORE	SCHEME 9	
Drawing Title: LANDUSE CODING Architect / Planner: ARIF HASAN Date : 07-09-2011   Scale : 1/128" = 1'-0"		
		<b>A-09-01</b>





**SCHEME 9**

LANDUSE DETAILS				
Type of Plots	No. of plots	Area of each plot (sq. yds.)	Total Area of plots. (sq. yds.)	%
<b>1. RESIDENTIAL PLOTS</b>				<b>47.7</b>
2.25 marla plots(1:3)=13' x 39'	704	56.3	39635	
<b>2. COMMERCIAL PLOTS</b>				<b>3.1</b>
1.6 marla plots	65	40	2600	
<b>3. AMENITIES</b>				<b>6.3</b>
3.1 Community Centres	1	780	780	
3.2 School	1	1950	1950	
3.3 Mosque	1	780	780	
3.4 Graveyard	1	1428	1428	
3.5 Services and Utilities	1	299	299	
<b>4. PUBLIC OPEN SPACE</b>				<b>11.1</b>
4.1 Park		6977	6977	
4.2 Community Open Spaces In 2.25 marla block	10	225.3	2253	
<b>5. ROADS FOR VEHICULAR TRAFFIC</b>				<b>31.8</b>
			26431	

LANDUSE COSTING	
Total Area of PLOT = 83,160 sq. yds.	
Total Area of PLOT = 17.1818 acres	
Cost @ Rs 2,000,000/- per acre = Rs: 34,363,600/-	
Sale-able area = 39,635 sq. yds.	2.25 marla residential
2,600 sq. yds.	1.6 marla commercial
Total sale-able area = 42,235 sq. yds	
Total Cost of Plot = Rs. 34,363,600/-	
Per sq.yd of sale-able area = Rs. 34,363,600 / 42,235 = Rs 813/sq.yd	
Percentage of sq. yds. COST of sale-able areas	
2.25 marla residential =	Rs. 32,223,255 /- for 704 plots
	Rs. 45,771 /- per plot
1.6 marla commercial =	Rs. 2,113,800 /- for 65 plots
	Rs. 32,520 /- per plot

Note: 1 Marla = 25 sq.yards

Project : SAIBAN CITY LAHORE	SCHEME 9	
Drawing Title: LANDUSE DETAILS		
Architect / Planner: ARIF HASAN		A-09-02
Date : 07-09-2011	Scale : 1/128" = 1'-0"	

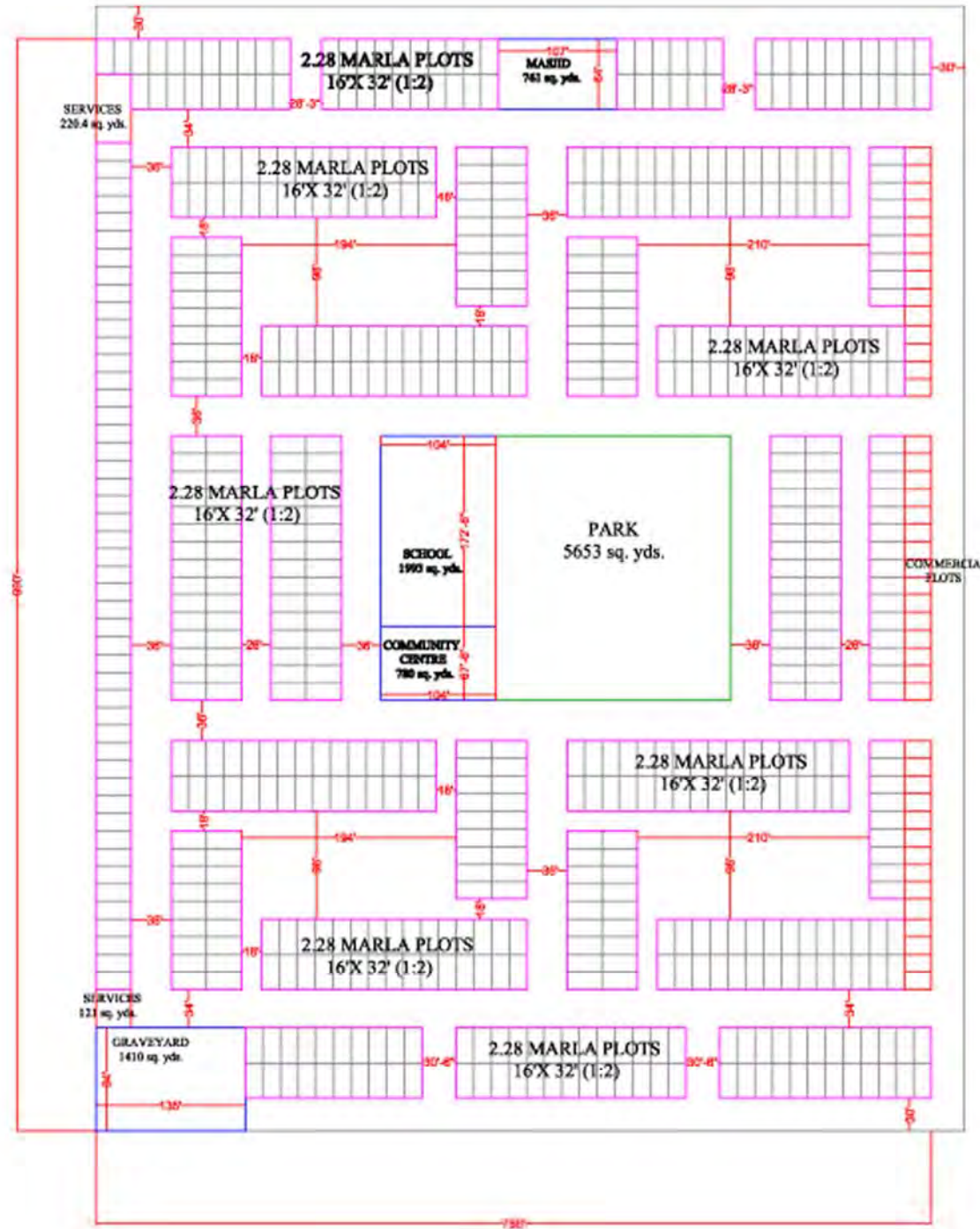


**SCHEME 10**

LANDUSE CODING		
COLOUR CODE	TYPE OF PLOT	AREA (PERCENTAGE)
	RESIDENTIAL	45.7
Yellow	2.28 marla plots	
Red	COMMERCIAL	2.1
	AMENITIES	6.2
Cyan	Schools	
Blue-hatched	Mosque	
Blue	Community centres	
Purple	Services	
Blue-hatched	Graveyard	
	PUBLIC OPEN SPACES	19.6
Green	Park	
Green-hatched	Community open spaces	
Grey	Pedestrian Circulation	
Light Grey	VEHICULAR CIRCULATION	26.4

Project : SAIBAN CITY LAHORE	SCHEME 10	
Drawing Title: LANDUSE CODING		
Architect / Planner: ARIF HASAN		A-10-01
Date : 07-09-2011	Scale : 1/128" = 1'-0"	





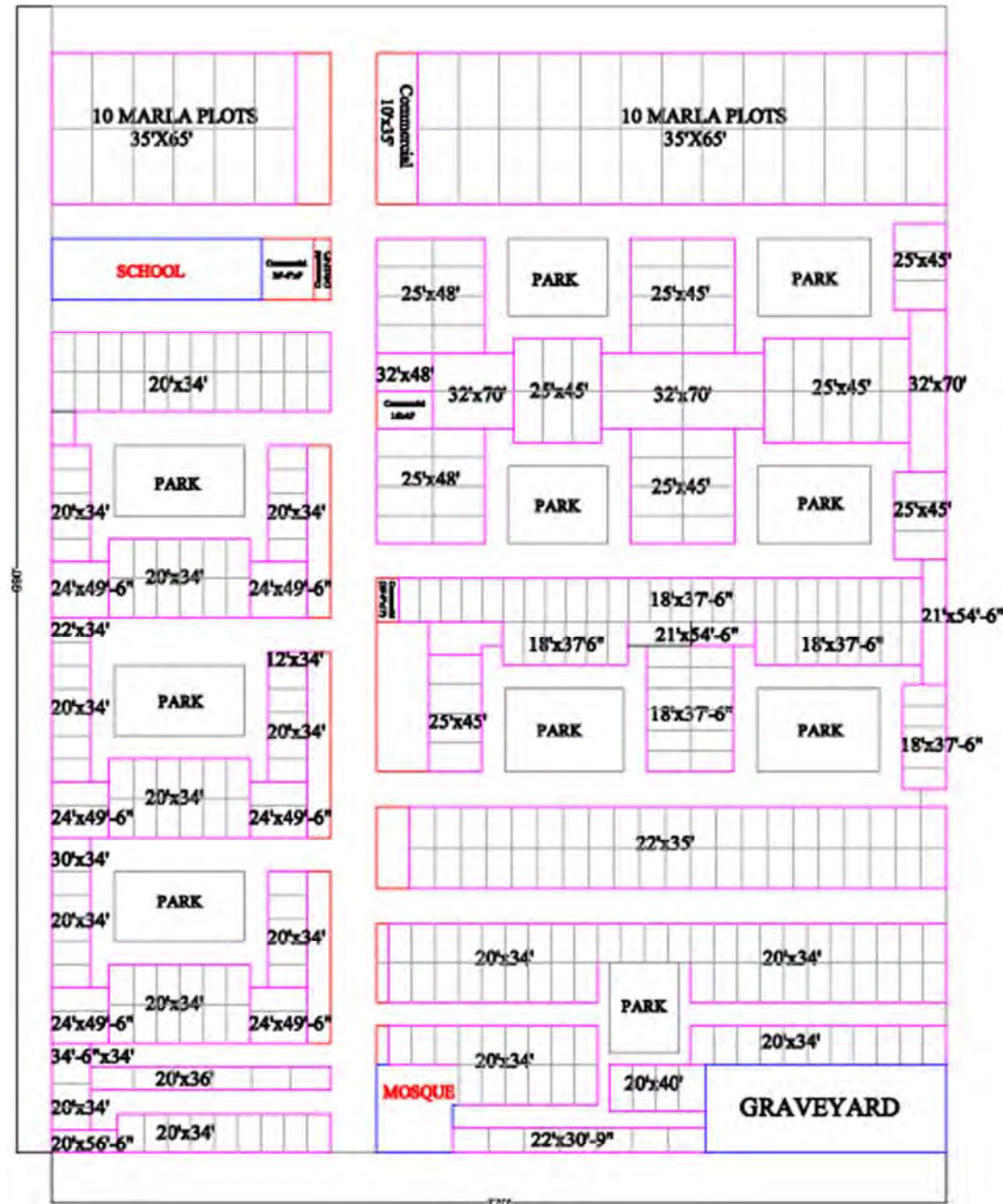
**SCHEME 10**

LANDUSE DETAILS				
Type of Plots	No. of plots	Area of each plot (sq. yds.)	Total Area of plots. (sq. yds.)	%
<b>1. RESIDENTIAL PLOTS</b>				<b>45.7</b>
2.28 marla plots(1:2)= 16' x 32'	669	56.9	38066	
<b>2. COMMERCIAL PLOTS</b>				<b>2.1</b>
1.9 marla plots	2	48	96	
1.7 marla plots	41	42.7	1750.7	
<b>3. AMENITIES</b>				<b>6.2</b>
3.1 Community Centres	1	780	780	
3.2 School	1	1993	1993	
3.3 Mosque	1	761	761	
3.4 Graveyard	1	1410	1410	
3.5 Services and Utilities	2	varies	341.4	
<b>4. PUBLIC OPEN SPACE</b>				<b>19.6</b>
4.1 Park	1	5653	5653	
4.2 Community Open Spaces				
Cluster level - open spaces	4	varies	8798	
Pedestrian walkways			1920	
<b>5. ROADS FOR VEHICULAR TRAFFIC</b>			<b>22054</b>	<b>26.4</b>

LANDUSE COSTING	
Total Area of PLOT = 83,160 sq. yds.	
Total Area of PLOT = 17.1818 acres	
Cost @ Rs: 2,000,000/- per acre = Rs: 34,363,600/-	
Sale-able area = 38,066 sq. yds.	2.28 marla residential
96 sq. yds.	1.9 marla commercial
1,750.7 sq. yds.	1.7 marla commercial
Total sale-able area = 39,912.7 sq. yds	
Total Cost of Plot = Rs. 34,363,600/-	
Per sq.yd of sale-able area = Rs. 34,363,600 / 39,912.7 = Rs 861 /sq.yd	
Percentage of sq. yds. COST of sale-able areas	
2.28 marla residential =	Rs. 32,774,826 /- for 669 plots
	Rs. 48,991 /- per plot
1.9 marla commercial =	Rs. 82,656 /- for 2 plots
	Rs. 41,328 /- per plot
1.7 marla commercial =	Rs. 1,507,353 /- for 41 plots
	Rs. 36,785 /- per plot

Note: 1 Marla = 25 sq.yards

Project : SAIBAN CITY LAHORE	SCHEME 10	
Drawing Title: LANDUSE DETAILS		
Architect / Planner: ARIF HASAN		A-10-02
Date : 07-09-2011	Scale : 1/250" = 1'-0"	



**SCHEME 11**

LANDUSE DETAILS				
Type of Plots	No. of plots	Area of each plot (sq. yds.)	Total Area of plots. (sq. yds.)	%
<b>1. RESIDENTIAL PLOTS</b>				
10 marla plots	38	252.78		
9.9 marla plots	08	248.89		
7.5 marla plots	01	186.98		
6.8 marla plots	01	170.67		
5.3 marla plots	28	133.33		
5.1 marla plots	04	127.17		
5 marla plots	43	125		
3.8 marla plots	04	88.89		
3.4 marla plots	42	85.56		
3.2 marla plots	06	80		
3 marla plots	238	75.56		
1.8 marla plots	01	45.33		
<b>2. COMMERCIAL PLOTS</b>				
1.5 marla plots	90	3530.21		

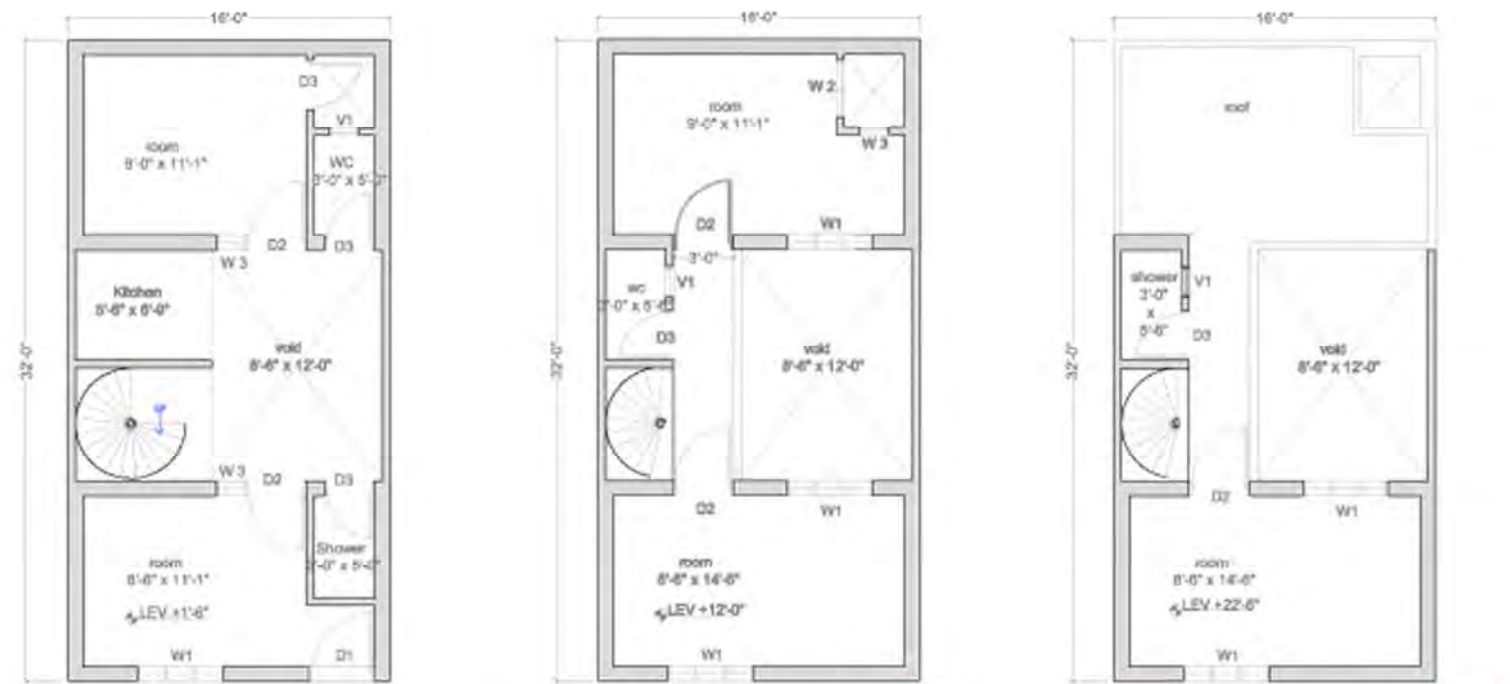
Total Area of SITE = 84,700 sq.yards  
 Total Circulation Area = 25,928 sq.yards  
 Total Infrastructure Length = 9497'-3" or 3165 yards  
 Infrastructure Length per plot = 19'

Note: 1 Marla = 25 sq.yards

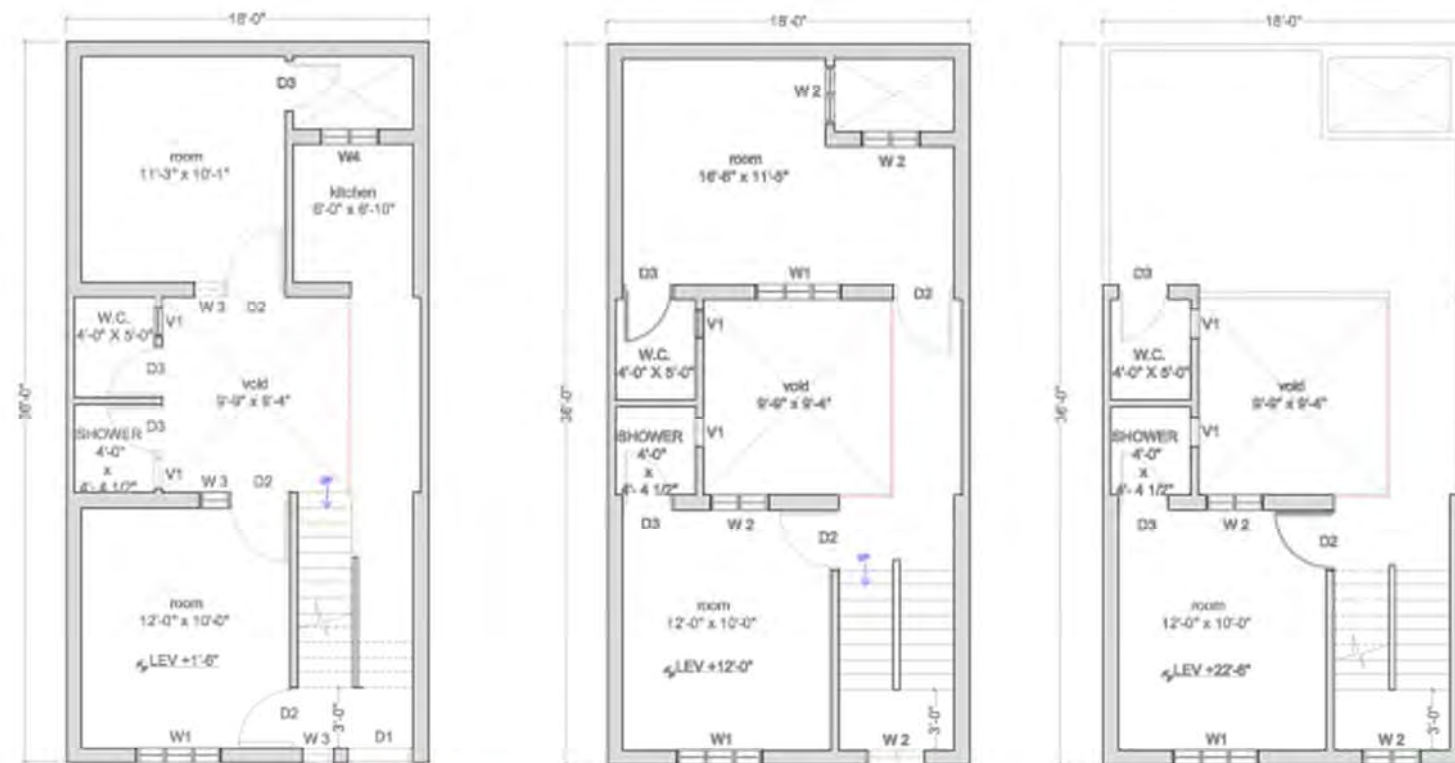
Project : SAIBAN CITY LAHORE	SCHEME 11	
Drawing Title: LANDUSE DETAILS		
Architect / Planner: ARIF HASAN		
Date : 07-09-2011	Scale : 1/128" = 1'-0"	
		<b>A-11-02</b>







Ground Floor - 48.3 sq.yds (40.4sq.m) First Floor - 42.9 sq.yds (35.9 sq.m) Second Floor - 15.2 sq.yds (12.7sq.m)  
 (A) PLOT SIZE: 16' X 32' - 56.9 sq.yds (47.6sq.m) BUILT-UP AREA PER CAPITA: 8.9 sq.yds (7.42 sq.m)



Ground Floor - 59.4sq.yds (49.7sq.m) First Floor - 55.8 sq.yd (46.5sq.m) Second Floor - 22.7sq.yds (19 sq.m)  
 (B) PLOT SIZE: 16' X 36' - 72 sq.yds (60.5 sq.m) BUILT-UP AREA PER CAPITA: 11.5 sq.yds (9.6 sq.m)

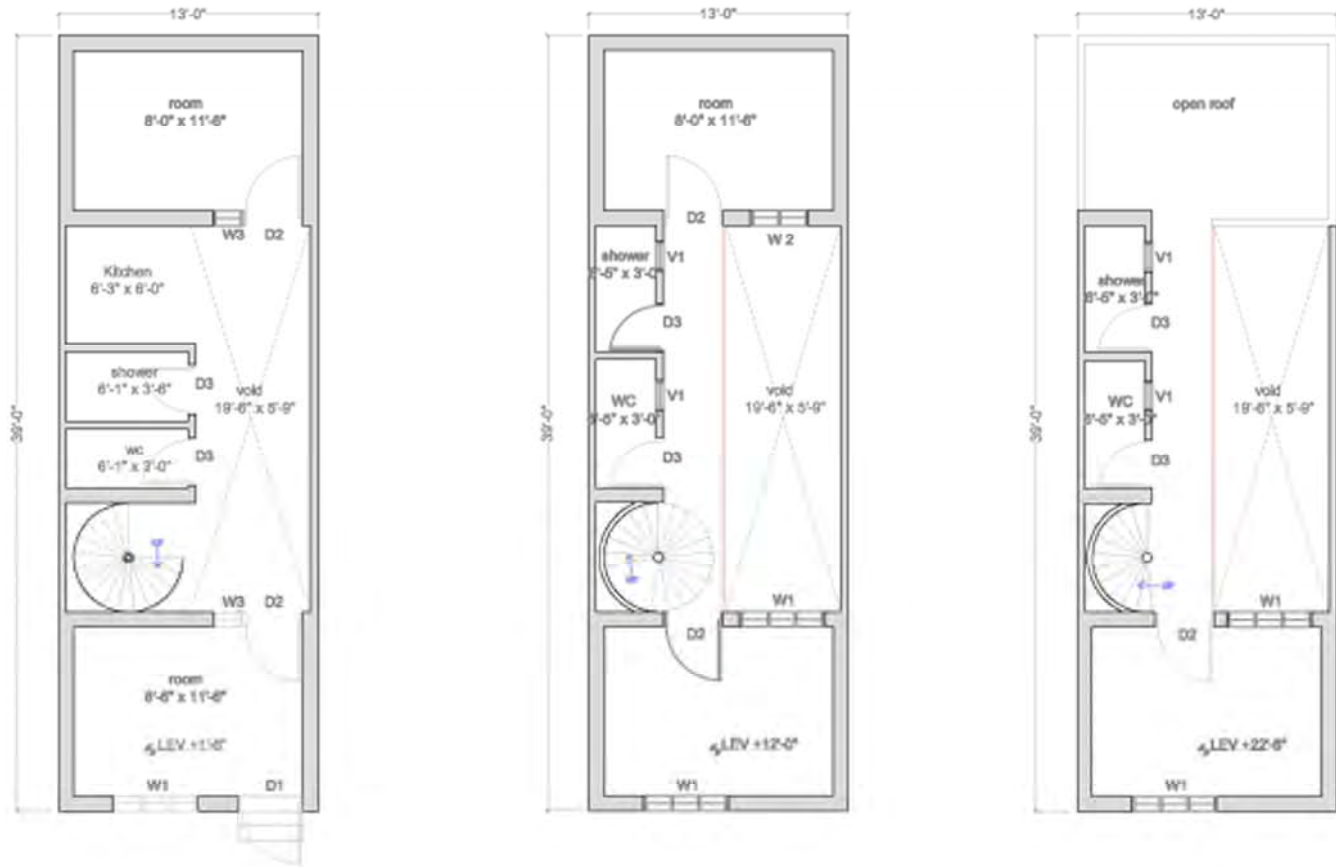
APPENDIX - 4 - House Plans

(A) CONSTRUCTION COST					
STAGE ONE (GROUND FLOOR)					
Width : Depth Ratio	Plot size	Covered Area	Contractor's cost	Owner's cost	Total cost
1:2	16' x 32' 56.9 sq.yds (47.6 sq.m)	48.3sq.yds (40.4sq.m)	Rs 503,581	Rs 87,532	Rs 591,113
STAGE TWO (FIRST FLOOR)					
Width : Depth Ratio	Plot size	Covered Area	Contractor's cost	Owner's cost	Total cost
1:2	16' x 32' 56.9 sq.yds (47.6 sq.m)	42.9sq.yds (35.9sq.m)	Rs 249,105	Rs 124,020	Rs 373,125
STAGE THREE (SECOND FLOOR)					
Width : Depth Ratio	Plot size	Covered Area	Contractor's cost	Owner's cost	Total cost
1:2	16' x 32' 56.9 sq.yds (47.6 sq.m)	15.2sq.yds (12.7sq.m)	Rs 171,358	Rs 88,284	Rs 259,642
Total covered area		105.4sq.yds (89 sq.m)	Total contractor's cost Rs 924,044	Total owner's cost Rs 299,836	Total cost of unit Rs 1,223,880
Built-up Area per capita		8.9sq.yds (7.42 sq.m)			

(B) CONSTRUCTION COST					
STAGE ONE (GROUND FLOOR)					
Width : Depth Ratio	Plot size	Covered Area	Contractor's cost	Owner's cost	Total cost
1:2	18' x 36' 72 sq.yds (60.5 sq.m)	59.4 sq.yds (49.7sq.m)	Rs 540,873	Rs 99,253	Rs 640,126
STAGE TWO (FIRST FLOOR)					
Width : Depth Ratio	Plot size	Covered Area	Contractor's cost	Owner's cost	Total cost
1:2	18' x 36' 72 sq.yds (60.5 sq.m)	55.6 sq.yds (46.5 sq.m)	Rs 327,743	Rs 147,943	Rs 475,686
STAGE THREE (SECOND FLOOR)					
Width : Depth Ratio	Plot size	Covered Area	Contractor's cost	Owner's cost	Total cost
1:2	18' x 36' 72 sq.yds (60.5 sq.m)	22.7 sq.yds (19 sq.m)	Rs 241,685	Rs 95,328	Rs 337,013
Total covered area		137.7 sq.yds (115.2 sq.m)	Total contractor's cost Rs 1,110,301	Total owner's cost Rs 342,524	Total cost of unit Rs 1,452,825
Built-up Area per capita		11.5 sq.yds (9.6 sq.m)			

SCHEDULE OF DOORS & WINDOWS			
NO.	SIZE	DESCRIPTION	
	WIDTH (FT)	HEIGHT (FT)	
D1	3'-3"	7'-0"	Steel: 1, side hinged
D2	3'-0"	7'-0"	Steel: 1, side hinged
D3	2'-6"	7'-0"	Steel: 1, side hinged
W1	4'-3"	5'-6"	Steel: 3, Glass panel, side hinged
W2	2'-10 1/2"	5'-6"	Steel: 2, Glass panels side hinged
W3	1'-6"	5'-6"	Steel: 1, Glass panels side hinged
W4	2'-10 1/2"	3'-6"	Steel: 2, Glass panels side hinged
V1	1'-6"	2'-0"	Steel: 1, Glass panels side hinged

Project : SAIBAN CITY LAHORE	SCHEME: 2,4,7 & 10	<b>A-12-01</b>
Drawing Title: HOUSING UNITS - RATIO - 1:2 - PLAN/COST		
Architect / Planner: ARIF HASAN		
Date : 07-09-2011	Scale : 1/8" = 1'-0"	



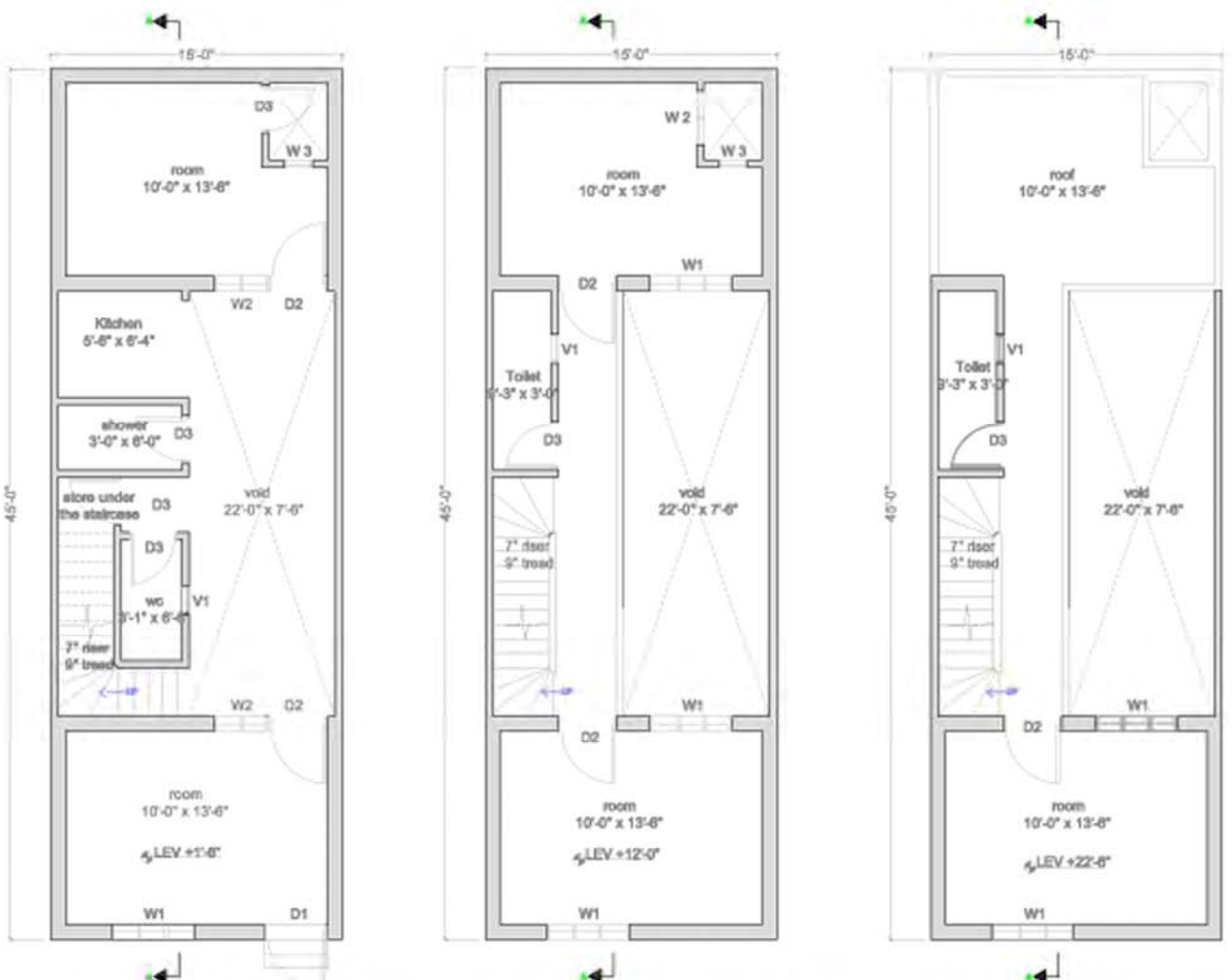
Ground Floor - 38.9 sq.yds (32.5 sq.m)      First Floor - 38.9 sq.yds (32.5 sq.m)      Second Floor - 20.8 sq.yds (17.2sq.m)

(C) PLOT SIZE: 13' X 39' - 53.6 sq.yds (47.1 sq.m)      BUILT-UP AREA PER CAPITA: 8.2 sq.yds (6.85 sq.m)

(C) CONSTRUCTION COST					
STAGE ONE (GROUND FLOOR)					
Width : Depth Ratio	Plot size	Covered Area	Contractor's cost	Owner's cost	Total cost
1:3	13' x 39' 56.3 sq.yds (47.1 sq.m)	38.9 sq.yds (32.5 sq.m)	Rs 509,975	Rs 94,760	Rs 604,735
STAGE TWO (FIRST FLOOR)					
Width : Depth Ratio	Plot size	Covered Area	Contractor's cost	Owner's cost	Total cost
1:3	13' x 39' 56.3 sq.yds (47.1 sq.m)	38.9 sq.yds (32.5 sq.m)	Rs 266,488	Rs 114,070	Rs 380,558
STAGE THREE (SECOND FLOOR)					
Width : Depth Ratio	Plot size	Covered Area	Contractor's cost	Owner's cost	Total cost
1:3	13' x 39' 56.3 sq.yds (47.1 sq.m)	20.8 sq.yds (17.2 sq.m)	Rs 178,247	Rs 87,589	Rs 265,836
Total covered area		98.4 sq.yds (82.2 sq.m)	Total contractor's cost Rs 954,710	Total owner's cost Rs 296,419	Total cost of unit Rs 1,251,129
Built-up Area per capita		8.2 sq.yds (6.85 sq.m)			

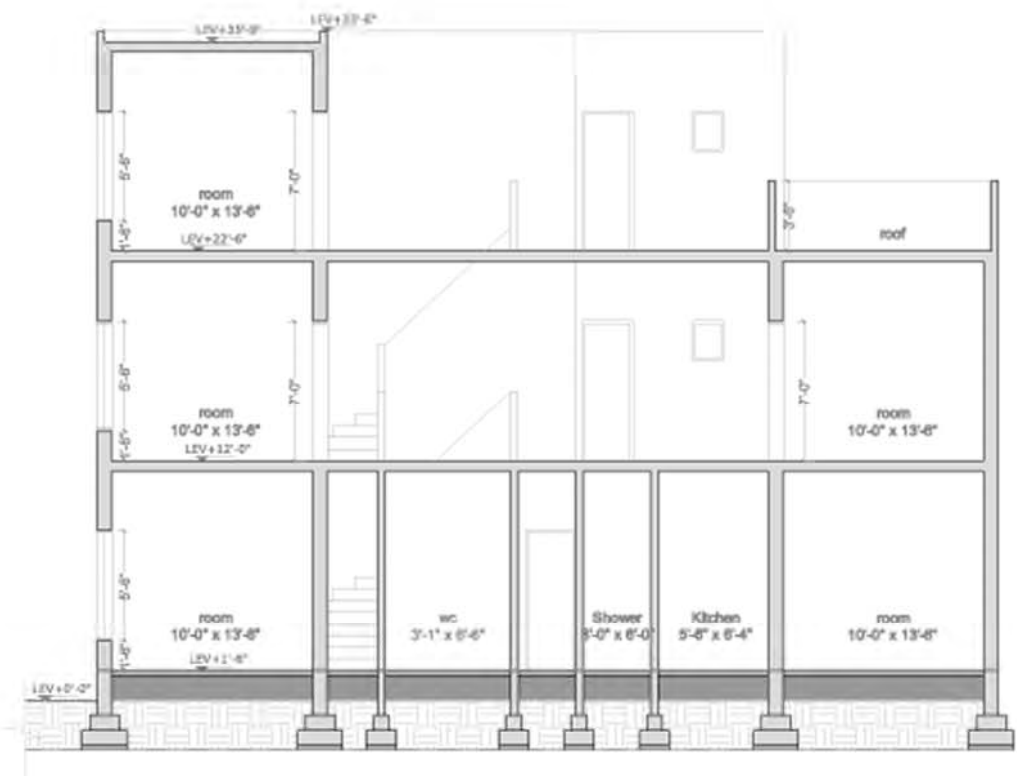
Project : SAIBAN CITY LAHORE	SCHEME: 8 & 9	<b>A-12-02</b>
Drawing Title: HOUSING UNITS - RATIO - 1:3 - PLAN/COST		
Architect / Planner: ARIF HASAN		
Date : 07-09-2011	Scale : 1/8" = 1'-0"	





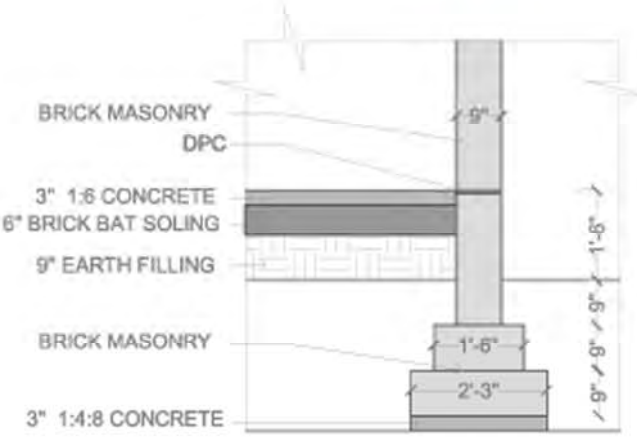
Ground Floor - 53.7 sq.yds (45 sq.m) First Floor - 48.7 sq.yds (40.7 sq.m) Second Floor - 23.4 sq.yds (19.6 sq.m)

(D) PLOT SIZE: 15' X 45' -75 sq.yds (62.7sq.m) BUILT-UP AREA PER CAPITA: 10.5 sq.yds (8.775 sq.m)

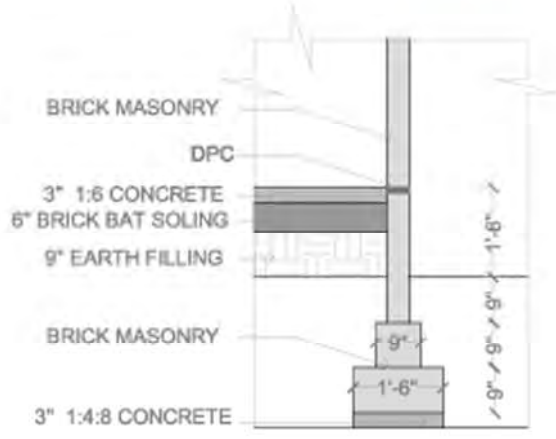


Section AA

(D) CONSTRUCTION COST					
STAGE ONE (GROUND FLOOR)					
Width : Depth Ratio	Plot size	Covered Area	Contractor's cost	Owner's cost	Total cost
1:3	15' x 45' 75 sq.yds (62.7 sq.m)	53.7 sq.yds (45 sq.m)	Rs 526,876	Rs 89,952	Rs 616,828
STAGE TWO (FIRST FLOOR)					
Width : Depth Ratio	Plot size	Covered Area	Contractor's cost	Owner's cost	Total cost
1:3	15' x 45' 75 sq.yds (62.7 sq.m)	48.7 sq.yds (40.7 sq.m)	Rs 296,196	Rs 143,366	Rs 439,562
STAGE THREE (SECOND FLOOR)					
Width : Depth Ratio	Plot size	Covered Area	Contractor's cost	Owner's cost	Total cost
1:3	15' x 45' 75 sq.yds (62.7 sq.m)	23.4 sq.yds (19.6 sq.m)	Rs 204,248	Rs 101,711	Rs 305,959
Total covered area		125.8 sq.yds (105.3 sq.m)	Total contractor's cost Rs 1,027,320	Total owner's cost Rs 335,029	Total cost of unit Rs 1,362,349
Built-up Area per capita		10.5 sq.yds (8.775 sq.m)			



9" WALL DETAIL SCALE: 3/8" = 1'



4-1/2" WALL DETAIL SCALE: 3/8" = 1'

Project : SAIBAN CITY LAHORE	SCHEME: 1,3,5 & 6
Drawing Title: HOUSING UNITS - RATIO - 1:3 - PLAN/COST	
Architect / Planner: ARIF HASAN	
Date : 07-09-2011	Scale : 1/8" = 1'-0" or As shown
<b>A-12-03</b>	



APPENDIX – 5 – CONSTRUCTION AND LAND COST OF DIFFERENT HOUSE PLAN OPTIONS

APPENDIX – 5- CONSTRUCTION AND LAND COST FOR DIFFERENT HOUSE PLAN OPTIONS								
Scheme	Ratio	Plot size (sq.m)	Type of settlement	Plot Price (Rs)	Plot price with susidy (Rs)	Cost of Construction - Stage - 1 (Rs)		
						Contractor's cost	Owner's cost	Total
<b>A</b>	<b>As per Saiban requirements</b>							
1	1:2	209	cluster	186,500		NA	NA	NA
	1:3	62.7		55,950		526,876	89,952	616,828
2	1:2	209	cluster	207,000		NA	NA	NA
	1:2	60.5		59,616		540,873	99,253	640,126
3	1:2	209	grid-iron	202,750		NA	NA	NA
	1:3	62.7		60,825		526,876	89,952	616,828
4	1:2	209	grid-iron	203,500		NA	NA	NA
	1:2	60.5		58,608	54,198	540,873	99,253	640,126
<b>B</b>	<b>Options tested - 62.7sq.m &amp; 60.5 sq.m (75 sq.yd &amp; 72 sq.yd)</b>							
5	1:3	62.7	cluster	56,497.50	56,452	526,876	89,952	616,828
6	1:3	62.7	grid-iron	59,700		526,876	89,952	616,828
7	1:2	60.5	cluster	63,720		540,873	99,253	640,126
<b>C</b>	<b>Options tested - 47.1 sq.m &amp; 47.6 sq.m (56.3 sq.yd &amp; 56.9 sq.yd)</b>							
8	1:3	47.1	cluster	44,449	44,051	509,975	94,760	604,735
9	1:3	47.1	grid-iron	45,771		509,975	94,760	604,735
10	1:2	47.6	cluster	48,991		503,581	87,532	591,113
<b>D</b>	<b>Scheme prepared by KKB team, having plots of various sizes</b>							
11	NA	varies	NA	varies		NA	NA	NA

### What the Poorer Poor Can Afford as Housing Loans

1. KKB-3 residents (March 2010 IIED Study) in 2009 had an average income of Rs 8,000 per month. Since the daily minimum wage has increased since then by 20 percent, it is assumed for the calculations below that the average per month earning of the future Saiban City residents will be Rs 10,000 and that they will be able to initially pay 20 percent of it for servicing a housing loan. After every three years the instalment can be increased by 25 percent.
2. Affordability in Rupees:

Down Payment	Ist 3 Years at Rs 2,000 per month	Next 3 years at Rs 2,500 per month	Next 3 years at Rs 3,000 per month	Next 3 years at Rs 3,500 per month	Next 3 years at Rs 4,000 per month	Total Amount
20,000	72,000	90,000	108,000	126,000	144,000	540,000

3. Costs of Construction (from Appendix 4 and 5):

	62.7 SM plot (in Rupees)	47.1 SM plot (in Rupees)
Total house cost	1,452,825	1,223,880
Contractor's share	1,110,301	924,044
Owner's share	342,524	299,836
Phase – 1 Cost	616,828	604,735
Contractor's share	526,876	509,975
Owner's share	89,952	94,760

4. Repayment at 4% compound interest in 15 years for design proposals in Appendix 4 is unaffordable.
5. Repayment at 12% compound interest in 15 years for design proposals in Appendix 4 is unaffordable.



**The Impact of Saiban Proposed Cross Subsidy on Land Costs**

	<b>Scheme – 4</b>	<b>Scheme – 5</b>	<b>Scheme – 8</b>
Total land cost	Rs 34,363,600	Rs 34,363,600	Rs 34,363,600
Land cost per square yard of sellable area (per square yard)	814	753.3	789.5
Land cost for commercial area	Rs 1,250,304	Rs 1,032,021	Rs 1,471,770
Land cost for commercial area plus 20%	Rs 1,500,365 (20% = Rs 250,061)	Rs 1,238,425 (20% = Rs 206,404)	Rs 1,766,124 (20% = Rs 294,354)
Land cost for larger plots	Rs 8,140,000	Nil	Nil
Land cost for larger plots plus 20%	Rs 9,768,000 (20% = Rs 1,628,000)	Nil	Nil
Land cost for small plots minus	Rs 24,967,008	Rs 33,333,525	Rs 32,892,149
• Commercial area subsidy	Rs 24,716,947	Rs 33,307,121	Rs 32,597,795
• Large plot subsidy	Rs 23,339,000	Rs 00,000,000	Rs 00,000,000
• Both commercial and large plot	Rs 23,088,497	Rs 33,307,121	Rs 32,597,795
Number of small plots	426	590	740

## **FINDINGS OF THE BANGKOK DENSITY STUDY**

### Brief description of Communities surveyed

1. Baan Mankong Bon Kai Community  
 Baan Mankong Bon Kai Community is one of Baan Mankong’s pilot projects since 2003. The community is comprised of 70 households that are paying rent on the Crown Property Bureau’s land. The majority of the dwellers generate their income from informal businesses- they work as street vendors, hawkers, taxi drivers etc.
2. Bon Kai NHA Community  
 Bon Kai NHA community is one of the oldest communities initiated by the NHA. It was built in 1975 and comprises of fourteen, four-story apartment buildings that house 3,200 dwelling units. Each unit covers an area of 32.75sqm.
3. Baan Uea-Arthorn Suan Plu Community (NHA)  
 Baan Uea- Arthorn Suan Plu is a part of the Suan Plu Community that was completely destroyed by a fire in 2004. To alleviate the housing shortage that followed in the community, the cabinet assigned it to the National Housing Authority (NHA) which took measures under the Baan Uea-Arthorn Program. As a result, 1024 housing units in the form of apartment blocks were built to accommodate the people who were affected. Each unit covers an area of 37.4sq.m.
4. Baan Mankong Suan Plu Community (CODI)  
 Baan Mankong Suan Plu is a part of the Suan Plu Community. Some members of this community joined the Baan Mankong Program that was offering a long tenure from the Treasury Department on 1.08 hectares of land. These members decided to build four different housing types to accommodate 330 households on 278 plots of land. They adopted the two stories row house, two and a half stories row house, three stories row house and apartment blocks.
5. Baan Mankong Wat Phrayakrai Community and Wat Phrayakrai Community (CODI)  
 Baan Mankong Wat Phrayakrai Community was originally a part of the Wat Phrayakrai Community. In 2005, 0.24 hectares of the Wat Phrayakrai community land were destroyed by a fire that left 80 families temporarily homeless. These families joined the Baan Mankong Program under the thirty years land tenure on the Crown Property Bureau land. The dwellers opted for a low-rise condominium scheme and built two buildings, four stories each. Each dwelling covers an area of 41.25sq.m.

6. Wat Phrayakrai Community (Slum)

The Wat Phrayakrai Community has existed since the time of King Rama V. It covers an area of 17.62 hectares of Crown Property Bureau land and has been registered as a community since 1983. At that time it was not very densely populated but as development projects and urban infrastructure were introduced to the area the vacant lands were occupied turning it into a very crowded community.

Table 1 Comparison of open spaces among the case studies

Spatial analysis	Cases											
	Suan Plu (NHA)		Suan Plu (CODI)		Bon Kai (NHA)		Bon Kai (CODI)		Phraya-krai (Slum)		Phraya-krai (CODI)	
Plot size	13,600 sq,m	1,120 units	10,762 sq,m	249 units	60,800 sq,m	3,272 units	8,808 sq,m	202 units	14,800 sq,m	156 units	2,400 sq,m	80 units
Plot density (cap/hect)	3,558.7		1,089.3		4,184.1		2,257.3		506.1		1,000	
Percentage of open space	32%		20%		27%		20%		8%		18%	
Open space density (cap/hect)	11,111.1		5,464.5		15,384.6		11,236		6,329.1		5,555.6	

Table 2 Comparison of living density from various cases and aspects

Spatial analysis	Cases											
	Suan Plu (NHA)		Suan Plu (CODI)		Bon Kai (NHA)		Bon Kai (CODI)		Phraya-krai (Slum)		Phraya-krai (CODI)	
	Unit size	Size of hh	Unit size	Size of hh	Unit size	Size of hh	Unit size	Size of hh	Unit size	Size of hh	Unit size	Size of hh
	35.75	4.31	61.25	4.71	32.00	4.19	35.00	5.00	32.63	4.80	51.0	3.00
Living unit's density (sqm./cap)	8.29		13.00		7.64		7.00		6.80		17.0	
Plot size	13,600 sq,m	1,120 units	10,762 sq,m	249 units	60,800 sq,m	3,272 units	8,808 sq,m	202 units	14,800 sq,m	156 units	2,400 sq,m	80 units
Plot density (cap/hect)	3,558.7		1,089.3		4,184.1		2,257.3		506.1		1,000	
Percentage of open space	32%		20%		27%		20%		8%		18%	
Open space density (cap/hect)	11,111.1		5,464.5		15,384.6		11,236		6,329.1		5,555.6	

Source: Literatures and survey, 2010

Remarks: Generally, some units of residence contain more than one family which causes the number of households higher than the number of units.

Table 3 Level of neighborliness

Relation	average					
	NHA: Bon Kai	CODI: BonKai	NHA: Suan Plu	CODI: Suan Plu	Watprayakrai Community	CODI: Watprayakrai
1) Neighborhood relation	3.8	4.1	3.6	4.0	4.0	3.9
2) security	3.3	4.1	3.2	3.4	3.0	3.7
3) Community activity	3.0	4.1	3.0	3.8	2.7	3.5
4) Neighbor visiting	3.2	3.9	3.4	3.7	3.2	3.0
5) Entrust house to neighbors	2.4	3.7	2.4	3.1	2.6	2.2
6) Entrust children with neighbors	1.7	3.3	2.0	2.8	1.9	1.9
7) Lend various utensils	2.1	3.1	1.9	2.3	2.2	1.8
8) Borrow various utensils	2.1	3.0	1.8	2.2	1.9	1.5
9) Lend money (no interest)	1.9	2.7	1.6	1.8	1.9	1.6
10) Borrow money (no interest)	1.6	2.5	1.6	1.6	1.6	2.0
11) Overall satisfaction as a resident	3.7	4.3	3.8	4.0	3.4	4.1

Level of relationship





Table 4. The comparison of living satisfaction in six neighborhoods

Items	Average satisfaction					
	Bon Kai NHA	Baan Mankokng Bon Kai	Baan Uea- arthorrn Suan Plu	Baan Mankong Suan Plu	Wat Phrayakrai	Baan Mankong Wat Phrayakrai
Satisfaction with neighbors	3.9	4.2	3.7	4.1	4.0	4.1
Satisfaction with local environments and neighborliness	3.7	3.9	3.6	3.9	3.7	4.2
Satisfaction to safety	3.5	4.0	3.3	3.6	3.1	4.2
Satisfaction to children environment	3.4	4.0	3.3	3.7	3.2	4.3
Satisfaction to work and job opportunities	4.2	4.3	4.0	4.4	4.0	4.3

	Low	Fairly	Much	Most
Scale of satisfaction	1.0- 2.0	2.1- 3.0	3.1- 4.0	4.1- 5.0



**SAIBAN CITY - BILL OF QUANTITIES****Unit size : 13' x 39' - 56.3 sq yards - 47.1 sq.m (1:3 width to depth ratio)****Part (A) - Items to be Taken care of by the Contractor****(1) Till Plinth Level - Stage 1**

Serial No	Description	Unit	Rate (Rs)	Quantity	Amount (Rs)
1	Excavation	CF	12	580	6,960
2	1:4:8 Foundation base	CF	200	75	15,000
3	Brick-work with cement mortar in foundation	CF	150	572	85,800
4	Earth filling	CF	8	322	2,576
5	Brick-bat soling in plinth	SF	30	435	13,050
6	3 inches , 1:6 concrete under floor (excluding courtyard floor)	SF	140	303	42,420
7	1:6 DPC with Pudlo mix	RF	30	157	4,710
					170,516

**(2) Ground Floor - Stage 1**

Serial No	Description	Unit	Rate (Rs)	Quantity	Amount (Rs)
1	9" brick wall in mud mortar	SF	90	868	78,120
2	4-1/2" brick wall in mud mortar	SF	60	649	38,940
3	Girder and tile roof	SF	200	455	91,000
4	Staircase	SF	300	115	34,500
5	Plaster on wall surfaces in bathrooms, toilets and kitchen	SF	45	160	7,200
6	Ceramic tiles in bathroom and kitchen	SF	80	310	24,800
7	Plumbing	job	x	1	20,000
8	Electrification	job	x	1	20,000
9	Service Connections	job	x	1	10,000
10	Main Door	SF	200	22.72	4,544
11	Steel Window on street	SF	150	23.37	3,355
					332,459

<b>(3) First Floor - Stage 2</b>					
Serial No	Description	Unit	Rate (Rs)	Quantity	Amount (Rs)
1	9" brick wall in mud mortar	SF	90	1026	92,340
2	4-1/2" brick wall in mud mortar	SF	60	263	15,780
3	Girder and tile roof	SF	200	455	91,000
4	Staircase	SF	300	115	34,500
5	Plaster on wall surfaces in bathrooms and toilets	SF	45	290	13,050
6	Ceramic tiles in bathroom and toilets	SF	80	204	16,320
7	Plumbing	job	x	1	12,000
8	Electrification	job	x	1	8,000
9	Steel window on street	SF	150	23.27	3,490
					266,488
<b>(4) Second Floor - Stage 3</b>					
Serial No	Description	Unit	Rate (Rs)	Quantity	Amount (Rs)
1	9" brick wall in mud mortar	SF	90	404.75	36,427.50
2	4-1/2" brick wall in mud mortar	SF	60	604.75	36,285
3	Girder and tile roof	SF	200	314	62,800
4	Plaster on wall surfaces in bathrooms and toilets	SF	45	290	13,050
5	Ceramic tiles in bathroom and toilets	SF	80	204	9,600
6	Plumbing	job	x	1	3,500
7	Electrification	job	x	1	3,000
8	Steel window on street	SF	150	23.37	3,505
9	Parapet - 4-1/2" brick work	SF	60	168	10,080
					178,247

<b>Part (B) - Items to be done through Self-help by the Owner</b>					
<b><u>(1) Ground Floor - Stage 1</u></b>					
Serial No	Description	Unit	Rate (Rs)	Quantity	Amount (Rs)
1	Floor finish in rooms and courtyard	SF	70	203	14,210
2	Internal plaster on wall surfaces	SF	38	1100	41,800
3	Distemper on wall surfaces	SF	8	1100	8,800
4	Doors (inclusive of paint)	SF	200	100	20,000
5	Windows (inclusive of paint)	SF	125	42	5,250
6	Light fittings and fans	number	200	11	2,200
7	Sanitary fittings	number	500	3	1,500
8	Paint on roof steel girders and T- sections		x	job	1,000
					94,760
<b><u>(2) First Floor - Stage 2</u></b>					
Serial No	Description	Unit	Rate (Rs)	Quantity	Amount (Rs)
1	Floor finish in rooms	SF	70	250	17,500
2	Internal plaster on wall surfaces	SF	38	795	30,210
3	Distemper on wall surfaces	SF	8	795	6,360
4	Doors (inclusive of paint)	SF	200	77	15,400
5	Windows (inclusive of paint)	SF	125	70	8,750
6	Light fittings and fans	number	200	10	2,000
7	Sanitary fittings	number	500	2	1,000
8	Paint on roof steel girders and T- sections	SF	x	job	1,000
9	2 inches , 1:6 , concrete on ground floor roof	SF	70	455	31,850
					114,070

<b>(3) Second Floor - Stage 3</b>					
Serial No	Description	Unit	Rate (Rs)	Quantity	Amount (Rs)
1	Floor Finish in rooms	SF	70	156	10,920
2	Internal plaster on wall surfaces	SF	38	514	19,532
3	Distemper on wall surfaces	SF	8	514	4,112
4	Doors (inclusive of paint)	SF	200	77	15,400
5	Windows (inclusive of paint)	SF	125	53	6,625
6	Light fittings and fans	number	200	7	1,400
7	Sanitary fittings	number	500	3	1,500
8	Paint on roof steel girders and T- sections		x	job	800
9	Insulation tiles on floor exposed to sunlight	SF	60	455	27,300
					87,589

<b>COST OF LAND (Rs)</b>	44,477
<b>ESTIMATES FOR CONTRACTOR'S ITEMS (Rs)</b>	
STAGE 1	509,975
STAGE 2	266,488
STAGE 3	178,247
<b>Total</b>	<b>954,710</b>
<b>SELF HELP ESTIMATES (Rs)</b>	
STAGE 1	94,760
STAGE 2	114,070

**Unit size : 16' x 32' - 56.9 sq yards - 47.6 sq.m (1:2 width to depth ratio)****Part (A) - Items to be Taken care of by the Contractor****(1) Till Plinth Level - Stage 1**

Serial No	Description	Unit	Rate (Rs)	Quantity	Amount (Rs)
1	Excavation	CF	12	485	5,820
2	1:4:8 Foundation base	CF	200	60	12,000
3	Brick-work in cement mortar in foundation	CF	150	490	73,500
4	Earth filling	CF	8	368	2,944
5	Brick-bat soling in plinth	SF	30	480	14,400
6	3 inches , 1:6 concrete under floor (excluding courtyard floor)	SF	140	394	55,160
7	1:6 DPC with Pudlo mix	RF	30	135	4,050
					167,874

**(2) Ground Floor - Stage 1**

Serial No	Description	Unit	Rate (Rs)	Quantity	Amount (Rs)
1	9" brick wall in mud mortar	SF	90	693.24	62,391.60
2	4 -1/2" brick wall in mud mortar	SF	60	564.87	33,892.20
3	Girder and tile roof	SF	200	416	83,200
4	Staircase	SF	300	115	34,500
5	Plaster on wall surfaces in bathrooms, toilets and kitchen	SF	45	255	11,475
6	Ceramic tiles in bathroom and kitchen	SF	80	320	25,600
7	Plumbing	job	x	1	20,000
8	Electrification	job	x	1	20,000
9	Service Connections	job	x	1	10,000
10	Main Door	SF	200	22.72	4,544
11	Steel Window on street	SF	150	23.37	3,505
					335,707

<b>(3) First Floor - Stage 2</b>					
Serial No	Description	Unit	Rate (Rs)	Quantity	Amount (Rs)
1	9 " brick wall in mud mortar	SF	90	792.56	71,330.40
2	4 -1/2 " brick wall in mud mortar	SF	60	431.24	25,874.40
3	Girder and tile roof	SF	200	416	83,200
4	Staircase	SF	300	115	34,500
5	Plaster on wall surfaces in bathrooms and toilets	SF	45	80	3,600
6	Ceramic tiles in bathroom and toilets	SF	80	96	7,680
7	Plumbing	job	x	1	12,000
8	Electrification	job	x	1	8,000
9	Steel window on street	SF	125	23.37	2,921
					249,105
<b>(4) Second Floor - Stage 3</b>					
Serial No	Description	Unit	Rate (Rs)	Quantity	Amount (Rs)
1	9 " brick wall in mud mortar	SF	90	446.76	40,208.40
2	4 -1/2 " brick wall in mud mortar	SF	60	341.76	20,505.60
3	Girder and tile roof	SF	200	376	75,200
4	Plaster on wall surfaces in bathrooms and toilets	SF	45	80	3,600
5	Ceramic tiles in bathroom and toilets	SF	80	96	7,680
6	Plumbing	job	x	1	3,500
7	Electrification	job	x	1	3,000
8	Steel window on street	SF	150	23.37	3,505
9	Parapet - 4-1/2" brick work	SF	60	236	14,160
					171,358



<b>Part (B) - Items to be done through Self-help by the Owner</b>					
<b><u>(1) Ground Floor - Stage 1</u></b>					
Serial No	Description	Unit	Rate (Rs)	Quantity	Amount (Rs)
1	Floor finish in rooms and courtyard	SF	70	336	23,520
2	Internal plaster on wall surfaces	SF	38	751	28,538
3	Distemper on wall surfaces	SF	8	751	6,008
4	Doors (inclusive of paint)	SF	200	96.27	19,254
5	Windows (inclusive of paint)	SF	125	42.5	5,312
6	Light fittings and fans	number	200	12	2,400
7	Sanitary fittings	number	500	3	1,500
8	Paint on roof steel girders and T- sections	job	x	job	1,000
					87,532
<b><u>(2) First Floor - Stage 2</u></b>					
Serial No	Description	Unit	Rate (Rs)	Quantity	Amount (Rs)
1	Floor finish in rooms	SF	70	278	19,460
2	Internal plaster on wall surfaces	SF	38	1050	39,900
3	Distemper on wall surfaces	SF	8	1050	8,400
4	Doors (inclusive of paint)	SF	200	59.5	11,900
5	Windows (inclusive of paint)	SF	125	96	12,000
6	Light fittings and fans	number	200	9	1,800
7	Sanitary fittings	number	500	1	500
8	Paint on roof steel girders and T- sections		x	job	1,000
9	2 inches , 1:6 , concrete on ground floor roof	SF	70	416	29,120
					124,020

<b>(3) Second Floor - Stage 3</b>					
Serial No	Description	Unit	Rate (Rs)	Quantity	Amount (Rs)
1	Floor Finish in rooms	SF	70	175	12,250
2	Internal plaster on wall surfaces	SF	38	747	28,386
3	Distemper on wall surfaces	SF	8	747	5,976
4	Doors (inclusive of paint)	SF	200	38.5	7,700
5	Windows (inclusive of paint)	SF	125	50.5	6,312
6	Light fittings and fans	number	200	7	1,400
7	Sanitary fittings	number	500	1	500
8	Paint on roof steel girders and T- sections	SF	x	job	800
9	Insulation tiles on floor exposed to sunlight	SF	60	416	24,960
					88,284
<b>COST OF LAND (Rs)</b>		48,991			
<b>ESTIMATES FOR CONTRACTOR'S ITEMS (Rs)</b>					
STAGE 1		503,581			
STAGE 2		249,105			
STAGE 3		171,358			
<b>Total</b>		<b>924,044</b>			
<b>SELF HELP ESTIMATES (Rs)</b>					
STAGE 1		87,532			
STAGE 2		124,020			
STAGE 3		88,284			
<b>Total</b>		<b>299,836</b>			
<b>TOTAL COST</b>		<b>1,223,880</b>			

**Unit size : 15' x 45' - 75 sq yards - 62.7sq.m ( 1:3 width to depth ratio)****Part (A) - Items to be Taken care of by the Contractor****(1) Till Plinth Level - Stage 1**

Serial No	Description	Unit	Rate (Rs)	Quantity	Amount (Rs)
1	Excavation	CF	12	743.03	8,916.36
2	1:4:8 Foundation base	CF	200	93	18,600
3	Brick-work with cement mortar in foundation	CF	150	616	92,400
4	Earth filling	CF	8	458	3,664
5	Brick-bat soling in plinth	SF	30	611	18,330
6	3 inches , 1:6 concrete under floor (excluding courtyard floor)	SF	140	340	47,600
7	1:6 DPC with Pudlo mix	RF	30	128	3,840
					193,352

**(2) Ground Floor - Stage 1**

Serial No	Description	Unit	Rate (Rs)	Quantity	Amount (Rs)
1	9 " brick wall in mud mortar	SF	90	890.5	80,145
2	4 -1/2 " brick wall in mud mortar	SF	60	320.68	19,240.80
3	Girder and tile roof	SF	200	510	102,000
4	Staircase	SF	300	115	34,500
5	Plaster on wall surfaces in bathrooms, toilets and kitchen	SF	45	270	12,150
6	Ceramic tiles in bathroom and kitchen	SF	80	343	27,440
7	Plumbing	job	x	1	20,000
8	Electrification	job	x	1	20,000
9	Service Connections	job	x	1	10,000
10	Main Door	SF	200	22.72	4,544
11	Steel Window on street	SF	150	23.37	3,505
					333,524

<b>(3) First Floor - Stage 2</b>					
Serial No	Description	Unit	Rate (Rs)	Quantity	Amount (Rs)
1	9 " brick wall in mud mortar	SF	90	874.88	78,739.20
2	4 -1/2 " brick wall in mud mortar	SF	60	627.87	37,672.20
3	Girder and tile roof	SF	200	510	102,000
4	Staircase	SF	300	115	34,500
5	Plaster on wall surfaces in bathrooms and toilets	SF	45	120	5,400
6	Ceramic tiles in bathroom and toilets	SF	80	95	7,600
7	Plumbing	job	x	1	12,000
8	Electrification	job	x	1	8,000
9	Steel window on street	SF	150	23.37	3,505
10	Parapet - 4-1/2" brick work	SF	60	113	6,780
					296,196
<b>(4) Second Floor - Stage 3</b>					
Serial No	Description	Unit	Rate (Rs)	Quantity	Amount (Rs)
1	9 " brick wall in mud mortar	SF	90	480.63	43,256.70
2	4 -1/2 " brick wall in mud mortar	SF	60	633.12	37,987.20
3	Girder and tile roof	SF	200	430	86,000
4	Plaster on wall surfaces in bathrooms and toilets	SF	45	120	5,400
5	Ceramic tiles in bathroom and toilets	SF	80	95	7,600
6	Plumbing	job	x	1	3,500
7	Electrification	job	x	1	3,000
8	Steel window on street	SF	150	23.37	3,505
9	Parapet - 4-1/2" brick work	SF	60	200	12,000
					204,248

**Part (B) - Items to be done through Self-help by the Owner****(1) Ground Floor - Stage 1**

Serial No	Description	Unit	Rate (Rs)	Quantity	Amount (Rs)
1	Floor finish in rooms and courtyard	SF	70	427	29,890
2	Internal plaster on wall surfaces	SF	38	597	22,686
3	Distemper on wall surfaces	SF	8	597	4,776
4	Doors (inclusive of paint)	SF	200	112	22,400
5	Windows (inclusive of paint)	SF	125	44	5,500
6	Light fittings and fans	number	200	11	2,200
7	Sanitary fittings	number	500	3	1,500
8	Paint on roof steel girders and T- sections		x	job	1,000
					89,952

**(2) First Floor - Stage 2**

Serial No	Description	Unit	Rate (Rs)	Quantity	Amount (Rs)
1	Floor finish in rooms	SF	70	338	23,360
2	Internal plaster on wall surfaces	SF	38	1286	48,868
3	Distemper on wall surfaces	SF	8	1286	10,288
4	Doors (inclusive of paint)	SF	200	59	11,800
5	Windows (inclusive of paint)	SF	125	74	9,250
6	Light fittings and fans	number	200	9	1,800
7	Sanitary fittings	number	500	2	1,000
8	Paint on roof steel girders and T- sections	SF	x	job	1,000
9	2 inches , 1:6 , concrete on ground floor roof	SF	70	510	35,700
					143,366

<b>(3) Second Floor - Stage 3</b>					
Serial No	Description	Unit	Rate (Rs)	Quantity	Amount (Rs)
1	Floor Finish in rooms	SF	70	202	14,140
2	Internal plaster on wall surfaces	SF	38	926	35,188
3	Distemper on wall surfaces	SF	8	926	7,408
4	Doors (inclusive of paint)	SF	200	39	7,800
5	Windows (inclusive of paint)	SF	125	27	3,375
6	Light fittings and fans	number	200	7	1,400
7	Sanitary fittings	number	500	2	1,000
8	Paint on roof steel girders and T- sections	SF	x	job	800
9	Insulation tiles on floor exposed to sunlight	SF	60	510	30,600
					101,711
<b>COST OF LAND (Rs)</b>		56,497.50			
<b>ESTIMATES FOR CONTRACTOR'S ITEMS</b>					
STAGE 1		526,876.00			
STAGE 2		296,196			
STAGE 3		204,248			
<b>Total</b>		1,027,320			
<b>SELF HELP ESTIMATES</b>					
STAGE 1		89,952			
STAGE 2		143,366			
STAGE 3		101,711			
<b>Total</b>		335,029			
<b>TOTAL COST</b>		1,362,349			

**Unit size : 18' x 36' - 72 sq yards - 60.5 sq.m ( 1:2 width to depth ratio)**

**Part (A) - Items to be Taken care of by the Contractor**

**(1) Till Plinth Level - Stage 1**

Serial No	Description	Unit	Rate (Rs)	Quantity	Amount (Rs)
1	Excavation	CF	12	487.68	5,852.16
2	1:4:8 Foundation base	CF	200	54	10,800
3	Brick-work with cement mortar in foundation	CF	150	402	60,300
4	Earth filling	CF	8	438	3,504
5	Brick-bat soling in plinth	SF	30	586	17,580
6	3 inches , 1:6 concrete under floor (excluding courtyard floor)	SF	140	496	69,440
7	1:6 DPC with Pudlo mix	RF	30	110.66	3,319
					170,795

**(2) Ground Floor - Stage 1**

Serial No	Description	Unit	Rate (Rs)	Quantity	Amount (Rs)
1	9 " brick wall in mud mortar	SF	90	1039.16	93,524.40
2	4 -1/2 " brick wall in mud mortar	SF	60	497.66	29,859.60
3	Girder and tile roof	SF	200	558	111,600
4	Staircase	SF	300	115	34,500
5	Plaster on wall surfaces in bathrooms, toilets and kitchen	SF	45	300	13,500
6	Ceramic tiles in bathroom and kitchen	SF	80	373	29,840
7	Plumbing	job	x	1	20,000
8	Electrification	job	x	1	20,000
9	Service Connections	job	x	1	10,000
10	Main Door	SF	200	22.75	4,550
11	Steel Window on street	SF	150	23.37	3,505
					370,078

<b>(3) First Floor - Stage 2</b>					
Serial No	Description	Unit	Rate (Rs)	Quantity	Amount (Rs)
1	9 " brick wall in mud mortar	SF	90	1106.87	99,618.30
2	4 -1/2 " brick wall in mud mortar	SF	60	582	34,920
3	Girder and tile roof	SF	200	558	111,600
4	Staircase	SF	300	115	34,500
5	Plaster on wall surfaces in bathrooms and toilets	SF	45	160	7,200
6	Ceramic tiles in bathroom and toilets	SF	80	205	16,400
7	Plumbing	job	x	1	12,000
8	Electrification	job	x	1	8,000
9	Steel window on street	SF	150	23.37	3,505
					327,743
<b>(4) Second Floor - Stage 3</b>					
Serial No	Description	Unit	Rate (Rs)	Quantity	Amount (Rs)
1	9 " brick wall in mud mortar	SF	90	530	47,700
2	4 -1/2 " brick wall in mud mortar	SF	60	561	33,660
3	Girder and tile roof	SF	200	558	111,600
4	Plaster on wall surfaces in bathrooms and toilets	SF	45	160	7,200
5	Ceramic tiles in bathroom and toilets	SF	80	205	16,400
6	Plumbing	job	x	1	3,500
7	Electrification	job	x	1	3,000
8	Steel window on street	SF	150	23.37	3,505
9	Parapet - 4-1/2" brick work	SF	60	252	15,120
					241,685



**Part (B) - Items to be done through Self-help by the Owner****(1) Ground Floor - Stage 1**

Serial No	Description	Unit	Rate (Rs)	Quantity	Amount (Rs)
1	Floor finish in rooms and courtyard	SF	70	390	27,300
2	Internal plaster on wall surfaces	SF	38	943	35,834
3	Distemper on wall surfaces	SF	8	943	7,544
4	Doors (inclusive of paint)	SF	200	94	18,800
5	Windows (inclusive of paint)	SF	125	39	4,875
6	Light fittings and fans	number	200	12	2,400
7	Sanitary fittings	number	500	3	1,500
8	Paint on roof steel girders and T- sections		x	job	1,000
					99,253

**(2) First Floor - Stage 2**

Serial No	Description	Unit	Rate (Rs)	Quantity	Amount (Rs)
1	Floor finish in rooms	SF	70	300	21,000
2	Internal plaster on wall surfaces	SF	38	1323	50,274
3	Distemper on wall surfaces	SF	8	1323	10,584
4	Doors (inclusive of paint)	SF	200	77	15,400
5	Windows (inclusive of paint)	SF	125	61	7,625
6	Light fittings and fans	number	200	10	2,000
7	Sanitary fittings	number	500	2	1,000
8	Paint on roof steel girders and T- sections	SF	x	job	1,000
9	2 inches , 1:6 , concrete on ground floor roof	SF	70	558	39,060

<b>(3) Second Floor - Stage 3</b>					
Serial No	Description	Unit	Rate (Rs)	Quantity	Amount (Rs)
1	Floor Finish in rooms	SF	70	140	9,800
2	Internal plaster on wall surfaces	SF	38	763	28,994
3	Distemper on wall surfaces	SF	8	763	6,104
4	Doors (inclusive of paint)	SF	200	56	11,200
5	Windows (inclusive of paint)	SF	125	22	2,750
6	Light fittings and fans	number	200	6	1,200
7	Sanitary fittings	number	500	2	1,000
8	Paint on roof steel girders and T- sections	SF	x	job	800
9	Insulation tiles on floor exposed to sunlight	SF	60	558	33,480
					95,328
<b>COST OF LAND (Rs)</b>					
					63,720
<b>ESTIMATES FOR CONTRACTOR'S ITEMS (Rs)</b>					
	STAGE 1				540,873
	STAGE 2				327,743
	STAGE 3				241,685
	<b>Total</b>				<b>1,110,301</b>
<b>SELF HELP ESTIMATES (Rs)</b>					
	STAGE 1				99,253
	STAGE 2				147,943
	STAGE 3				95,328
	<b>Total</b>				<b>342,524</b>