

Concepts, Strategies and Proposals for the development of Urban Communities*

The Anjuman Mimaran Urban Project

A recent discussion conducted by the Anjuman Mimaran¹ has generated a concept for urban development that has immediate relevance to Pakistan. It is based on high-density, low-rise, low-tech development that integrates housing employment and social infrastructure, with a balanced mix of income and occupational groups. This concept includes a location strategy that results in

- Affordable housing for all income levels;
- Release of pressure on existing urban centers
- Injection of economic activity into rural areas; and
- Sustainable “green” urban communities;

The following extract from the discussion describes the central argument, supported by a physical layout and analysis of the proposed model.

We would welcome any initiatives to take these proposals further towards practical implementation.

Concept

There is a huge and growing demand for housing in Pakistan. The natural population increase alone adds more than three million persons a year. Add to this the attrition of existing housing stock, and you have a demand for three good sized cities a year to be accommodated.

The supply side is abysmally low, particularly in the public sector. The performance of the Lahore Development Authority, for instance, over the last decade or so has practically been at a standstill. The gap has been

* The paper is a summary of discussions of a seminar on the subject held at The Lahore School of Economics in March, 2000.

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met by private sector development: authorised schemes in the case of upper and middle-income groups; and mostly un-authorised informal sector development in the case of lower income groups.

Thus in purely market terms, the project is certainly “do-able” and “sellable” as a private venture. As a government policy the model could be adopted at the regional (provincial or national) level as a strategy for the development of new towns, and adapted to the expansion or renewal of existing urban centers.

We contend that the modern city, characterised by function specific land-use zones, segregation of income and occupational groups, high-rise, high tech buildings, dependent on motorised transportation, and sprawling low density suburbs is economically, culturally and environmentally unsustainable. The traditional city, on the other hand, characterised by an integrated community, low-rise, low-tech, high density structures, a network of pedestrian streets, and bounded by a green girdle, provides a more sustainable and appropriate urban model.

Integrated community

- Not a “dormitory” housing scheme but a complete community
- Integrates the whole range of land uses including residential, industry, commerce, services, public administration, social infrastructure, recreation etc.
- Integrates the whole range of income and occupational groups;

Low-rise, low-tech, high density results in

- Smaller urban footprint on the landscape
- Energy conservation and reduced costs of transport and heating/cooling
- Lower construction costs
- Lower cost of infrastructure
- Human scale built environment
- More green/public open spaces

Walkable city provides

- Safer pedestrian circulation
- Less noise and air pollution
- Encourages social inter-action
- Cul-de-sacs provide more privacy

Green girdle

- Urban gardens producing fresh fruits and vegetables, dairy and poultry
- Recreational parks for sports and leisure

Strategy

A. Physical Planning

The walking city should be limited to not more than one kilometer² across.

A community to which an individual can relate should not be more than 25,000 persons; i.e. the number you can collect in one place and recognise every face³.

One advantage of a complete, integrated community, as opposed to the usual “housing” scheme, is that it does not have to be located within the direct catchment area of an existing city. Thus the difference between the cost price of raw agricultural land and marketable price of residential plots can be as high as 1,000 per cent or more. This margin can be used (a) to cover management and professional costs and other overheads; (b) to secure a large green girdle around the proposed urban area; (c) to subsidise utility services and social infrastructure development; or (d) to rake in huge profits.

Physical infrastructure development will be “incremental”, keeping pace with the sales of plots and occupation in stages, of *kootchas*, *galis*, *mohallas* and bazaar.

² May be extended to two kilometers in the case of larger metropolitan centers.

³ May be extended to 25,000 households in the case of larger metropolis, considering that on average one person per household may be the maximum expected to attend a public gathering. Thus the maximum population may be extended to about 200,000 persons.

B. Building

Buildings may be constructed by the owners themselves or by the project entity or by other developers, for their own use, for rent or for sale.

Questions of building design, materials and technologies have not yet been addressed by the present discussion. However, it may be presumed that the group will favour strategies based on traditional design typologies, that are appropriate to the local climate and culture, and use indigenous materials and technologies.

C. Economic Activity

The key to our whole concept is employment. The following programme should be initiated immediately, and should run as a parallel project to the physical planning and development.

A finance and trade group should be formed to include a bank or other financing institution, and a team of marketing professionals, designers and materials technologies.

Small liaison offices or centers should be established in three or four existing urban centers.

Data should be collected on skills available, and the market demand for products in each existing urban center. This information should be fed into a common data bank accessible to all the centers.

The centers should provide design inputs, technical advice, quality control, marketing services and credit facilities to the individual artisans and small-scale producers.

As and when the physical development of our new community comes on stream, the centers should become our marketing points to “sell” the new town to prospective residents, workers and employers etc.

The new town will offer opportunities for a range of economic activities: (a) urban farming, dairy, poultry, orchards, forestry, country club and sports activities in the green girdle. (b) Small scale, manufacturing and home based industries and workshops. (c) Retail and wholesale commercial activities. (d) Urban management and utility services. (e) Construction. (f) Transport. (g) Service industries. (h) Social infrastructure services. (i) Performing and visual arts. (j) Professional services etc.

The green girdle land will be owned by the “project” and leased or rented to urban farmers and other users.

Finance to manufacturing and business enterprises and building finance will be provided by the centers in some form of equity participation.

Proposal

In the following iteration of our urban project, with a rough working sketch-plan (*see attached*), we have used the Govt. of Pakistan, Ministry of Housing’s “National Reference Manual on Planning and Infrastructure Standards” (NRM) as our reference for plot sizes, occupancy, land use, density and affordability. The tabulated analysis is attached.

Composition of Plots

Our largest plots, 312 to 500 sq. meters, form 3 per cent of the total number of plots compared with 5 per cent in the NRM. Our medium sized plots, 160 to 250 sq. meters, form 8 per cent of the total compared with 20 per cent in NRM. Our smallest plots, 72 to 105 sq. meters, form 89 per cent of the total compared with 75 per cent in NRM.

Dwelling Units

NRM gives average household sizes ranging from 5 to 8 persons in upper income communities and 6 to 10 in low-income communities. We have taken household sizes of 8 and occupancy of 1.5 households per dwelling unit. Thus for an ultimate population of 25,000 the number of dwelling units would be about 2,083.

Land Use

Our allocation for residential land use, 65.48 per cent, is much higher than the NRM standard of 45 to 52 per cent. This is a direct consequence of our use of narrow pedestrian streets, which take up less than 12 per cent of the land compared with 25 to 30 per cent in NRM.

Our allocation for open public spaces within the built up area, 1.91 per cent, appears less than the NRM standards of 5 to 7.5 per cent. But this is more than compensated for by the provision of the very large green girdle which will include public open spaces in addition to urban gardens and other green uses.

We have a larger percentage of land allocated for “other” uses, 8.73 per cent, compared with 2 to 5 per cent in NRM. This may be used for a variety of possible employment generating activities.

Density

NRM gives a range of residential densities in which the highest is 690 persons per hectare in zones comprising “mainly small plots”. With our ultimate population of 25,000 and our built-up urban area of 33.5 hectares we will have a density of 746.27 persons per hectare.

Financial Analysis

On the expenditures side we have allowed for a basic cost of land at Rs. 125,000 per acre⁴, Professional services at Rs. 100,000 per acre; infrastructure development at Rs. 500,000 per acre; Administrative overheads at 10 per cent of project cost; and money cost at 15 per cent of capital investments. Thus the total project cost would be Rs. 93.46 million, or less than two million dollars.

On the revenue side we have taken sale of plots and development charges based on the current prices of the lowest cost housing schemes available in the peripheral areas of Lahore. At these prices we should be able to recover all our costs and end up with an asset in terms of some 60 hectares of agricultural land and a fully developed infrastructure of utility services. These can yield continuing annual revenue for the city in terms of land rents, leases and utility charges.

Affordability

We have checked the affordability of each category of residential plot against the household incomes, using the NRM standard of 3.5 times

⁴ One community based organisation has recently provided residential plots of 62.7 sq. m (3 marlas), in a peripheral area near Lahore, at the rate of Rs. 18,000 per plot. To this is to be added another Rs. 7,000 for physical infrastructure services and other costs. At this rate the basic cost of the average plot of 105.6 sq.m. in our project would be Rs. 30,316 without infrastructure development, and Rs. 42,105 for a serviced plot. In another subsidised government scheme for low income housing comparable plots are being sold (illegally) for Rs. 100,000 and more. In private sector developments similar plots can fetch up to Rs. 500,00.

At the lowest price quoted above, the cost of land works out at Rs. 2,323,680 per hectare, or Rs. 801,269 per acre. This is within the range of agricultural land prices in some peripheral areas around Lahore, e.g. off Bedian Road. Beyond the sphere of influence of the major cities agricultural land prices are naturally much lower, Rs. 100,000 per acre in Kallar Kahar, and even less in the border areas towards Kasur.

the annual income of the household. We have assumed a building area equal to the NRM recommended maximum ground coverage for various plot sizes, and minimum building costs compatible with each income group. Thus a house of 573 sq. feet (53 sq. meters) on a plot of 3.4 marlas (72 sq. meters) in our scheme would cost Rs. 210,000 (\$4286) and would be affordable by a family with an income of Rs. 5,000 (\$102) per month⁵. Similarly, a house of 2,183 sq. feet (203 sq. meters) on a plot of 15 marlas (313 sq. meters) would cost Rs. 1,211,499 (\$24724) and would be affordable by a family earning Rs. 30,000 (\$612) per month.

Analysis Tables

Sheet-1:	Composition of Plots Dwelling Units Land Use Density
Sheet-2:	Financial Analysis
Sheet-3:	Affordability

⁵ A serviced plot with a very basic shelter will be affordable by still lower income groups – see Category “F” (1).

Composition of Plots

Category	Plot Area Sq. M	Allocation Percentage	Total Area Sq. M	NRM Percentage
A	500.00	0.00	0.00	5.00
A1	420.00	1.00	420.00	
B	312.00	2.00	624.00	
C	250.00	2.00	500.00	20.00
D	160.00	6.00	960.00	
E	105.00	49.00	5145.00	75.00
F	72.00	40.00	2880.00	
Total		100.00	10529.00	
Average	105.29			
Dwelling Units				
Population	25000.00			
Occupancy	12.00	persons per DU		
Number of DUs	2083.33			
Res. Area	21.94	Hectares		
Land Use				
Category	Area Hectars	Allocation Percent		NRM Percentage
Residential	21.94	65.48		45 – 52
Commerce	1.00	2.99		2 – 3
Edu. & Com.	3.00	8.96		7.5 – 10
Streets	4.00	11.94		25 – 30
Open	0.64	1.91		5 – 7.5
Others	2.92	8.73		2 – 5
Total	33.50	100.00		
Density	746.27	Persons per hectare		

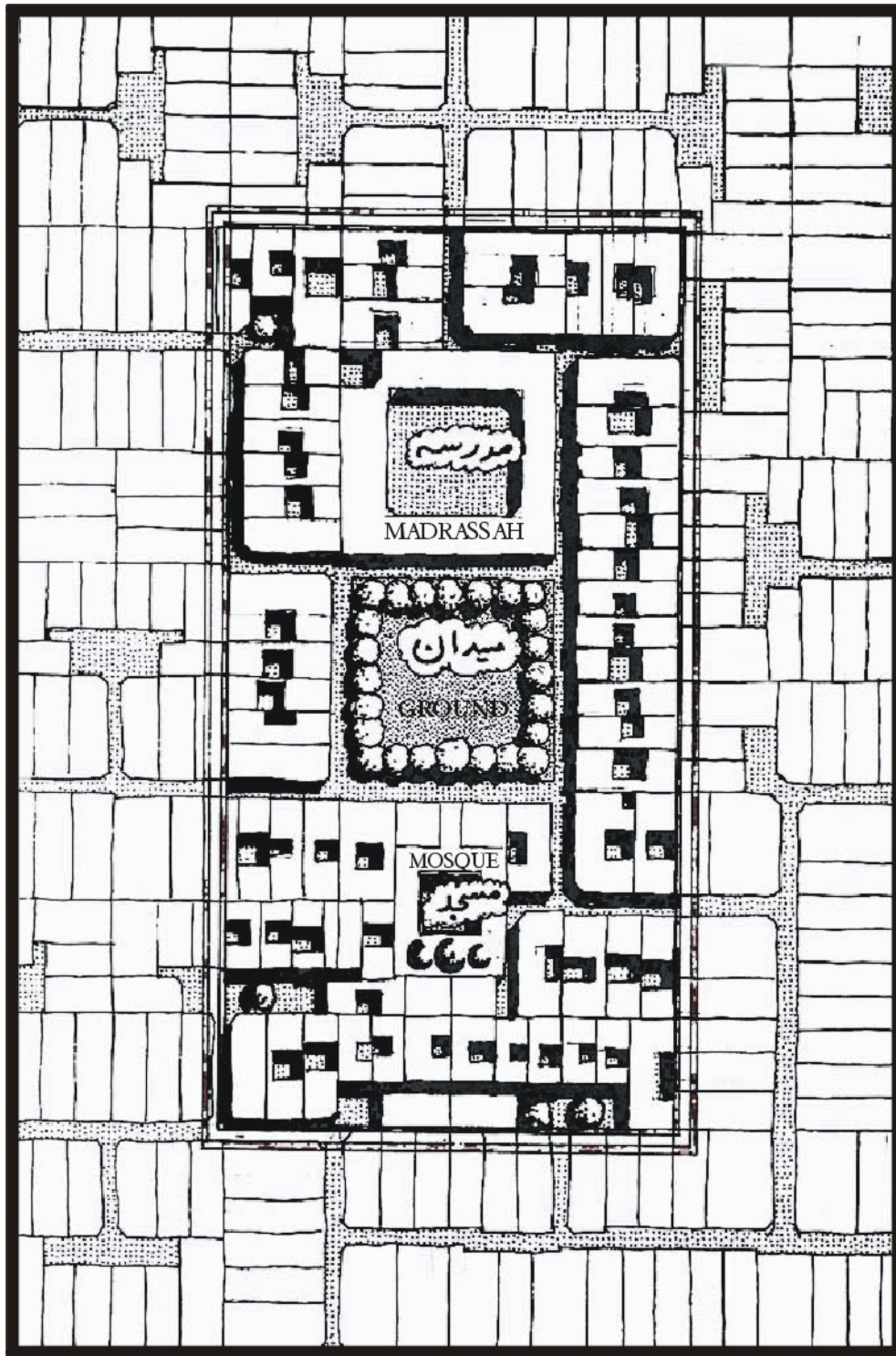
Sheet-2

Financial Analysis

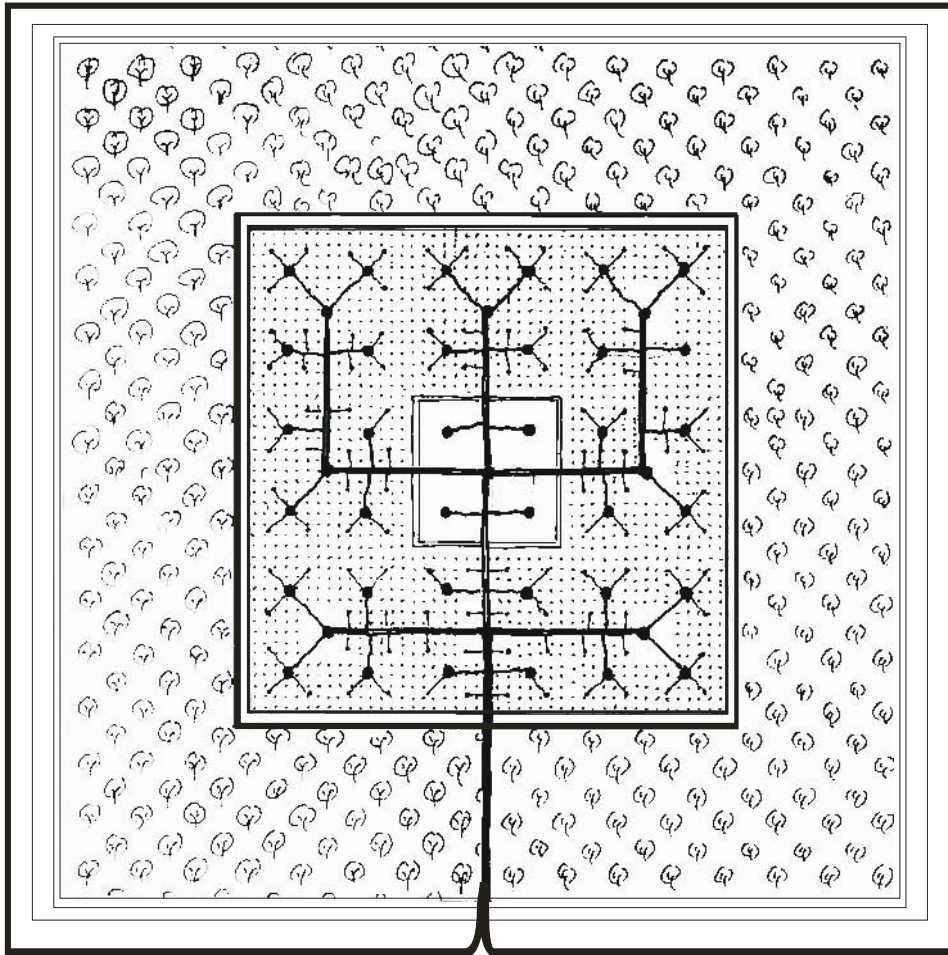
Expenditures	Quantity	Unit	Rate Pak. Rs.	Amount Mil. Rs.	US\$ @ 49.00 Pak. Rs.
Land for urban dev.	30	Hectares	362500	10.88	221938.78
Land for green belt	60	Hectares	362500	21.75	443877.55
Professional services	30	Hectares	290000	8.70	177551.02
Infrastructure development	30	Hectares	1450000	43.50	887755.10
Admin. Overheads	84825000	Rupees	10%	8.48	173112.24
Money cost	1015000	Rupees	15%	0.15	3107.14
Total Cost				93.46	1907341.84
Number of Plots	30	Hectares	75	2250.00	
Cost/plot marla (20.89sq.m)			8034	0.00	
Revenue					
Sale of plots	2250	Plots	31020	69.80	1424387.76
Development charge	2250	Plots	12063	27.14	553913.27
Total				96.94	1978301.02
Annual Revenue					
Green belt	70	Hectares	34800	2.44	49714.29
Utility Services	2472	Plots	1000.00	2.47	50448.98
Total				4.91	100163.27

Affordability

Category "F"	Quantity	Unit	Rate Pak. Rs.	Amount Pak. Rs.
Income	12	Months	5000	60000.00
Building	573.75	sft.	325	186468.80
Land & development	3.4	Marlas(~21s.m.)	8034	27316.84
Total				210000.00
Affordable @ NRM Std.	60000	Rs./year	3.5	210000
Category "F"(1)				
Income	12	Months	2000	24000.00
Building	250	sft.	225	56250.00
Land & development	3.4	Marlas(~21s.m.)	8034	27316.84
Total				83566.00
Affordable @ NRM Std.	24000	Rs./year	3.5	84000.00
Category "E"				
Income	12	Months	8000	96000.00
Building	872.4375	sft.	340	296628.80
Land & development	5.17	Marlas(~21s.m.)	8034	41537.67
Total				338166.40
Affordable @ NRM Std.	96000	Rs./year	3.5	336000.00
Category "D"				
Income	12	Months	11000	132000.00
Building	1206.45	sft.	340	410193.00
Land & development	7.66	Marlas(~21s.m.)	8034	61543.24
Total				471736.20
Affordable @ NRM Std.	132000	Rs./year	3.5	462000.00
Category "C"				
Income	12	Months	19000	228000.00
Building	1749.306	sft.	400	699722.50
Land & development	11.96107	Marlas(~21s.m.)	8034	96099.58
Total				795822
Affordable @ NRM Std.	228000	Rs./year	3.5	798000.00
Category "B"				
Income	12	Months	30000	360000.00
Building	2183.134	sft.	500	1091567.00
Land & development	14.92741	Marlas(~21s.m.)	8034	119932.30
Total				1211499.00
Affordable @ NRM Std.	360000	Rs./year	3.5	1260000.00

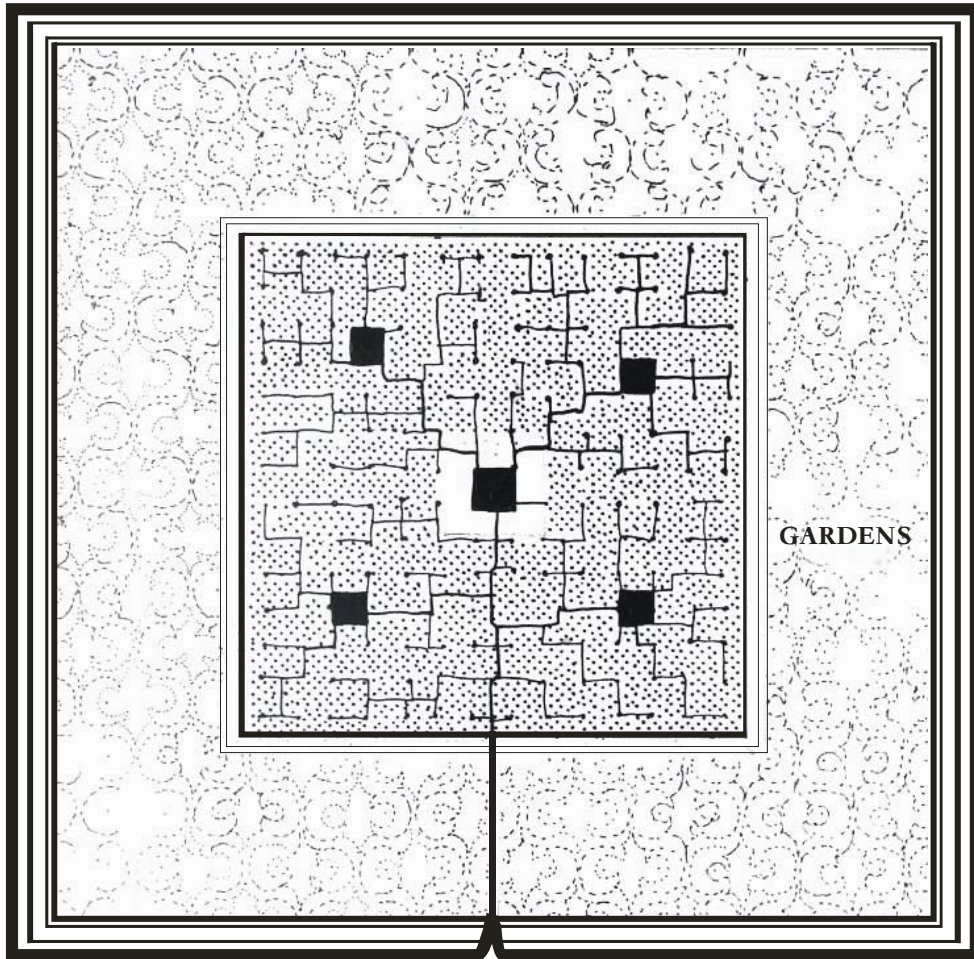


Scale: 1cm = 7.82 m



Scale: 1cm=290 m

City Population: 2 Lakh



Scale: 1 cm = 144 m

Town Population: 2000