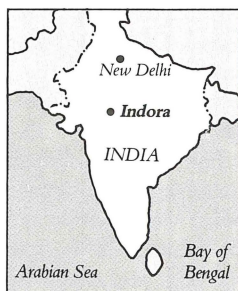


Aranya Township, Indore



Project Data

Site: 6 kilometres north of Indore city.
 Client: Indore Development Authority, Indore, India
 Architects: Vastu-Shilpa Foundation.
 B.V. Doshi, architect/planner;
 Himanshu, H. Parikh, engineer; Muktirajsinhji Chauhan, associate architect
 Consultant Engineers: V.D. Joshi, S.L. Shah, Deepak Kantawala, Dinesh Panchal
 Land area: 220 acres (total)
 Phase I: 100 hectares
 Number of plots: 6500
 Population (projected):
 40,000 (initial) persons
 65,000 (final)
 Planning: 1982

The Indore housing in India, designed at B.V. Doshi's Vastu-Shilpa, represents in many ways a 'classic' architectural approach to large-scale, low-cost dwellings for the poor: the professional designer responded to the public client (IDA) with a concrete project, thoroughly researched and conceived. What is different, however, is that a "sites and services" approach has been refined (while remaining flexible, attentive to individual resources and spontaneity) to include 'models' for future dwellers, house-types, suggested materials, steps for implementation. This proposal searches a middle ground, between a house 'with no

rooms' (i.e. sites-services) and totally non-participatory, public housing schemes by architects alone.

Vastu-Shilpa in conjunction with the Centre for Minimum Cost Housing of McGill University in Canada, has also produced an excellent Human Settlements Training Package for use by persons or groups interested by their present approach. Slides, with individual written comments as well as cassette recordings recount the cultural parameters of domestic spaces and how to discern these in the process of conceiving new shelter.

— Editors

"The low-cost housing project at Indore presents a unique opportunity to bring together the lessons learnt from several research programmes of the Vastu-Shilpa Foundation and implement the findings in a 'live' project. Comprising about 7,000 housing units in various income categories, but predominantly EWS (economically weaker sectors), and all the necessary social, welfare, economic and infrastructure amenities, the project virtually amounts to setting up a new township for a population of 40,000.

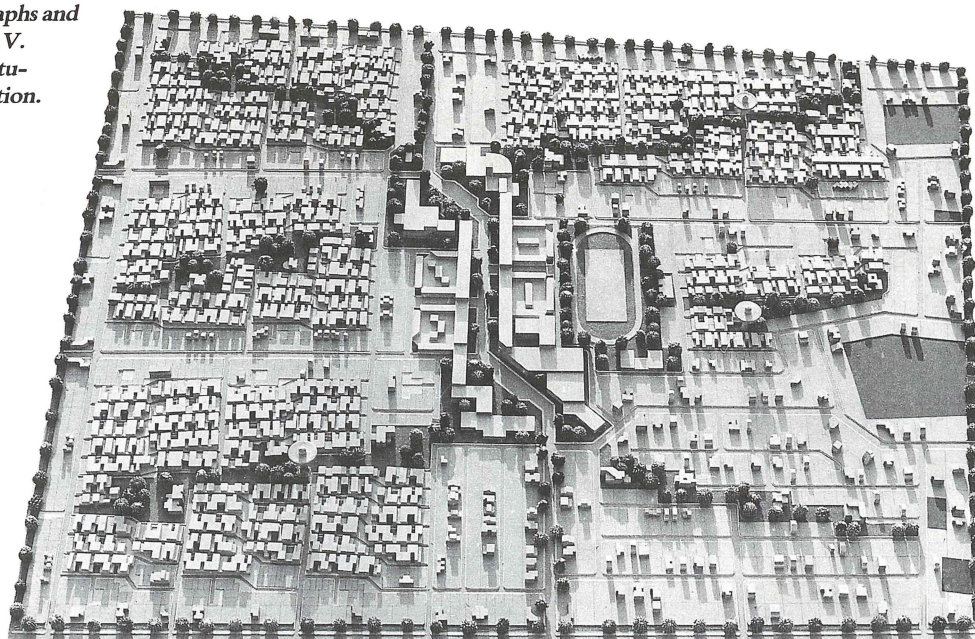
Through various studies the Foundation has come to believe that the mere provision of well designed and well built habitat does not necessarily generate a stable and active community with the capacity and the means to grow. Beyond the provisions of the habitat, many governmental and private agencies have to contribute to provide an environment of

financial security which motivates the project population to take root.

Training centres need to be established to teach industrial, constructional and other technical skills. Material banks have to be set up to feed the fervent building activities in the early stages. Easy construction techniques and assembly methods have to be demonstrated. In essence, the self-help spirit has to be encouraged in such a way that the internal economy of the settlement is boosted. Particular care has to be taken to ensure that once the initial constructional activities are over, the workshops and the light industrial units can evolve to embrace a wider range of trades on a permanent basis. With this in mind, a full spectrum

A model seen from above of the entire township, its town centre along a spine, playground, and high-density building by sectors.

Text, photographs and drawings by B.V. Doshi and Vastu-Shilpa Foundation.



of spaces and built-forms has to be provided to accommodate these activities.”
— B.V. Doshi.

Indore Development Authority has embarked on an imaginative project of a new township to meet the acute shortage of housing and ancillary facilities for the economically weaker section (EWS) of the society as well as the higher income groups. Upper income plots are integrated into the scheme, to be sold at a profit, to raise surplus capital. A part of this surplus is planned to be used to cross-subsidise the EWS plots to bring them within the loan repayment capacity of the recipients. The residue can go into a revolving fund to assist the EWS construction, set up material banks and seed future developments of similar nature. In agreement with Vastu-Shilpa Foundation (VSF) proposals, the World Bank has sanctioned the initial capital outlay on the project until the revenue flows in from the sale of plots. In long term, however, the project is designed to be self-viable.

The site, largely rectangular in plan, is located on the Bombay-Agra highway, 6 kilometres north of Indore city centre. Out of the net area of 220 acres, over 6 acres have been set aside to absorb the pockets of existing light industry. Around 6,500 plots are provided ranging in size from 35 square metres for EWS housing to 457 square metres for high income groups, as well as larger plots for multi-storey flats. Of the 6,500 plots, 65% are allocated to the EWS category.

The ‘site and service’ approach is adopted in the design of houses for the EWS category in the proposed township. A fully serviced plot is allocated to each EWS household together with the basic building core (i.e. w.c., wash and one room) which can be extended by the occupants at their own pace and with their own resources. The concept of ‘site and service’ is gaining popularity as it helps to stretch the scarce resources of developing nations to a maximum as well as stimulates the ‘self-help’ element within the community.

Objectives

The objective of the scheme is to provide housing, community and commercial facilities, primarily for the economically weaker sections (EWS) but within a socially balanced matrix of middle and higher income groups. Bearing in mind the low level of affordability of the EWS families, the project assumes challenging dimensions in terms of providing an adequate environment at nominal cost.

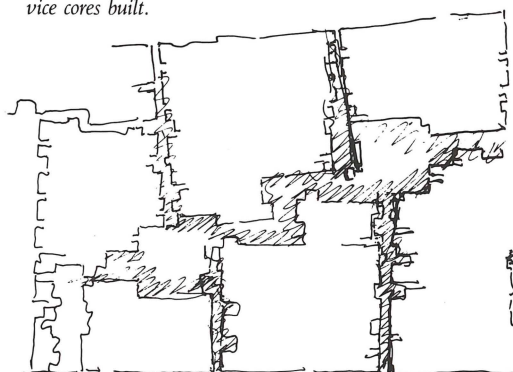
Over the years, Vastu-Shilpa Foundation (VSF) has observed that much of the present urban low-cost housing has generated unpleasant and unbalanced environments resulting from the disregard for the traditional lifestyle of the people, uncomfortable and ill-thought out use of spaces, uneconomical and disorganised use of land, costly or inadequate infrastructure, poorly designed housing and the lack of community, recreational and

commercial support. Apart from this, there is rarely any provision for flexibility and elasticity of spaces, particularly in the EWS pockets where the dwelling densities tend to be high. Consequently, the subsequent addition of homes merely creates cramped slums of the future.

The research conducted by VSF attempts to tackle the above problems as well as make substantial progress towards the reduction of costs of such developments, without sacrificing the standards. The Indore project serves as a backdrop against which the solutions evolved can be evaluated, further sharpened and disseminated to reputable national and international research bodies with whom rapport has been established.

Below: Sketch by B.V. Doshi showing built-up areas and open spaces and the variety of urban forms obtainable. This differs from the rigidity of conventional plans.

Bottom: Overall view of the Aranya site with service cores built.



Planning of the Service Core

In any 'site and service' scheme the service cores (w.c., wash, kitchen/room) form nuclei around which the houses grow and the communities eventually develop. Insensitivity to the social and physical needs of the people in this respect can condemn the whole community to an unpleasant future. Water supply and sanitation constitute the largest cost components of such developments and thus become prime targets for efficient design. *Hence the service core and the supporting infrastructure become the critical elements of design.*

Planning of the EWS Dwelling

In the planning of a new township, the work often commences at the master plan level and proceeds down to individual dwelling. The clusters and the dwellings are thus locked into the format as residues. To avoid this, dwelling plans and elevations have been prepared alongside the master plan to be fused into the

whole. The emphasis has been on the creation of *inviting comfortable homes in harmony with the surroundings.*

Planning at the Street/Cluster Level

A well designed street can forge a collection of individual households into an interactive group. To achieve this the *street must assume a unique identity on human scale with spaces for group activities.*

Planning at the Sector Level

The impact of the motor-car has yet to be felt on a large scale. People continue to live, work and play within easy walking distances. In essence, an Indian city is no more than a collection of self-contained 'villages'. Therefore, in planning a new town, *intertwined 'villages' or sectors have to be designed to gel as viable, almost autonomous, sub-communities.*

Planning at the Township Level

The mere assemblage of various elements covered in the previous section does not

make a township. There has to be a higher theme and an overall order within which the components have a meaning. *A township needs a focus and a well ordered hierarchy of all amenities in a balanced and cohesive environment.*

Population Density

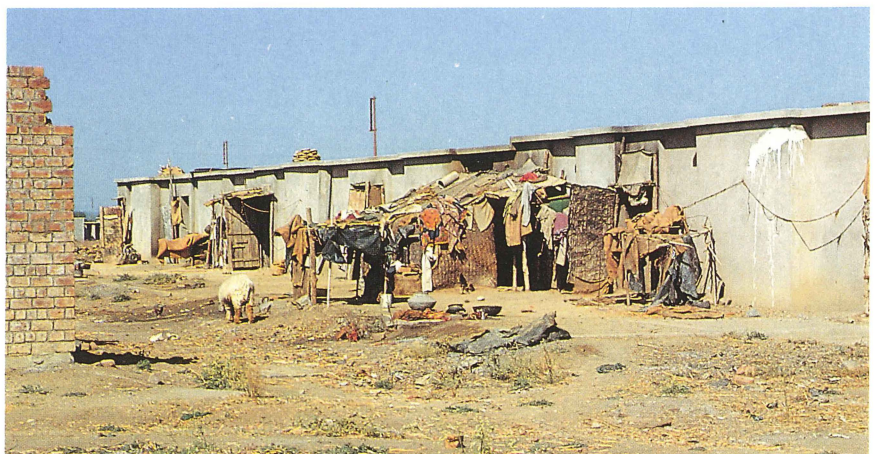
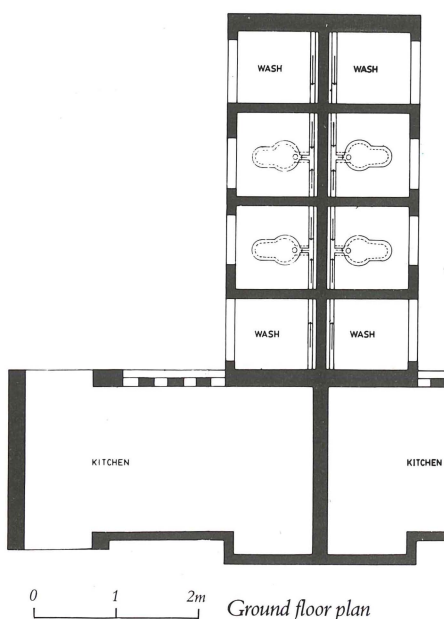
The gross township area of about 100 hectares, inclusive of the open spaces and the peripheral roads, is designed for an initial population of about 40,000 people which is anticipated to rise to 65,000 eventually. The gross density is, therefore, 400 persons per hectare rising with time to 650 persons per hectare. This compares favourably with densities in the inner cities of India of over 1,000 persons per hectare which are obviously too congested. Studies have shown that housing and infrastructure costs optimise at densities of between 300 to 600 persons per hectare. The desire to reduce further the density of the Indore project is tampered by the scarcity of urban land combined with the acute shortage of housing.

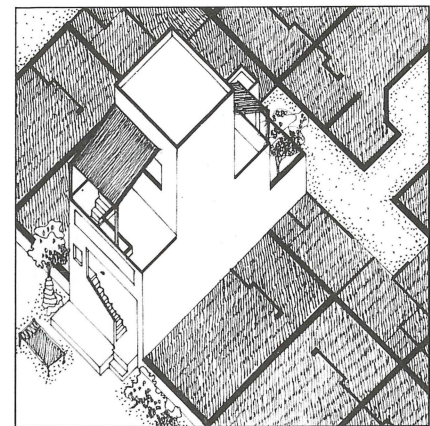
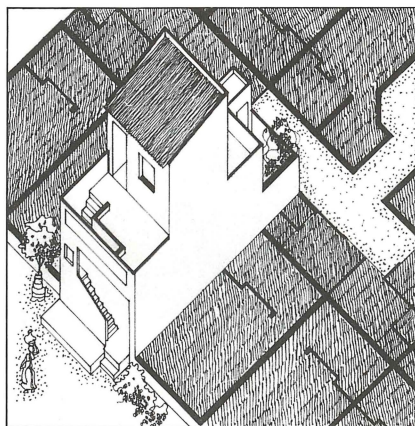
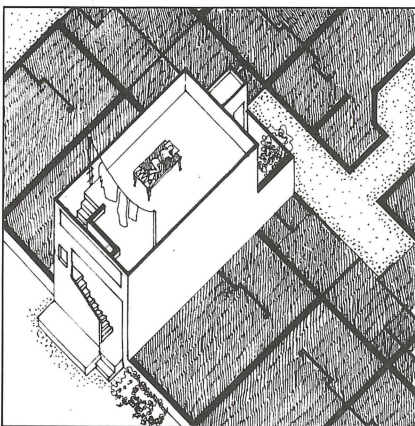
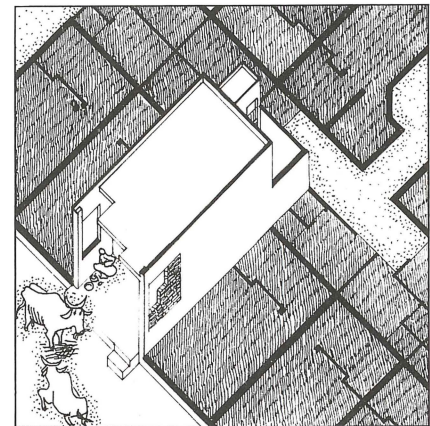
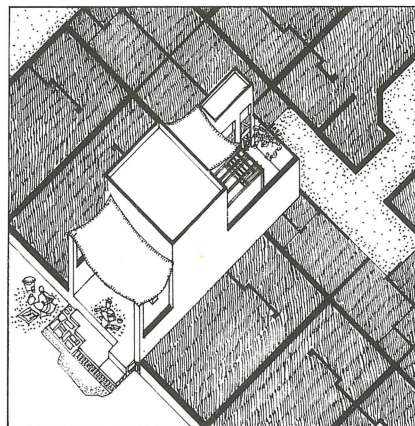
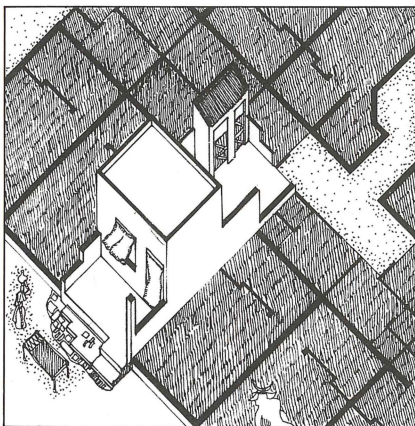
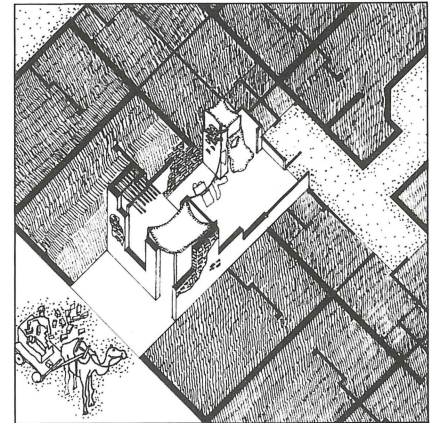
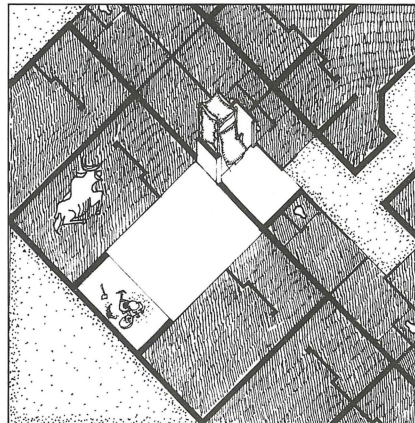
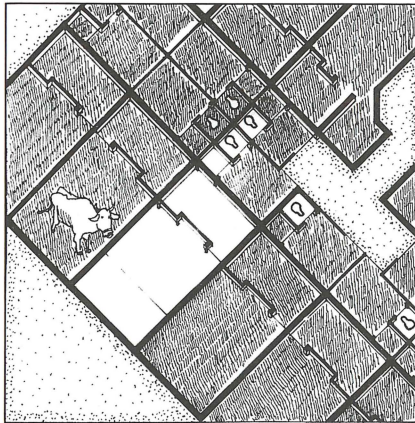
Right: Photograph of core units under construction. Photograph: Vikram Bhatt.

Right, below: Inhabitants begin to appropriate the service core.

Below: Plan of the service core containing toilets, wash area and kitchens back-to-back on plots.

Far right: Sequence of drawings showing the progressive growth of dwellings starting with the site core unit (and one cow) and evolving into habitable spaces.





Landuse

The road area of about 21% together with pedestrian walkways and square amounting to a further 1.5% of the net planning area, compares very favourably with the target set by the World Bank. Considering that in the EWS areas, high road areas are consumed because of the small plot sizes, the overall efficiency of the road patterns adopted is clearly demonstrated.

The open spaces add up to about 8% of the planning area which falls within the planning norms in India of between 8% to 10%. By linking the open spaces together, the feeling of spaciousness will

be greater than that suggested by the measured percentages.

In Indian towns, commercial areas of between 2% to 4% can be sustained, against which the Indore scheme measures well with an area of about 3.5% distributed along a wide spectrum of economic activity.

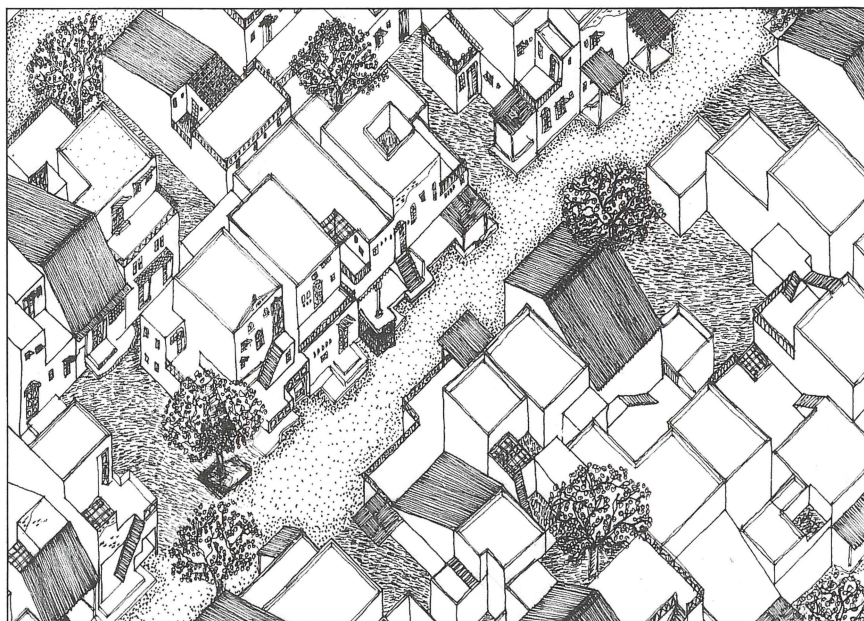
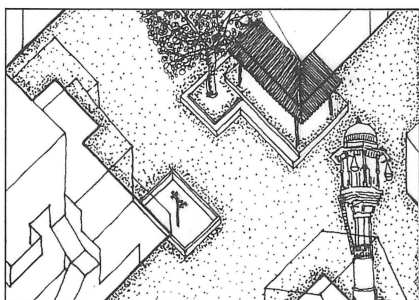
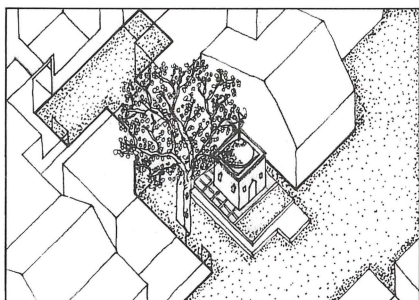
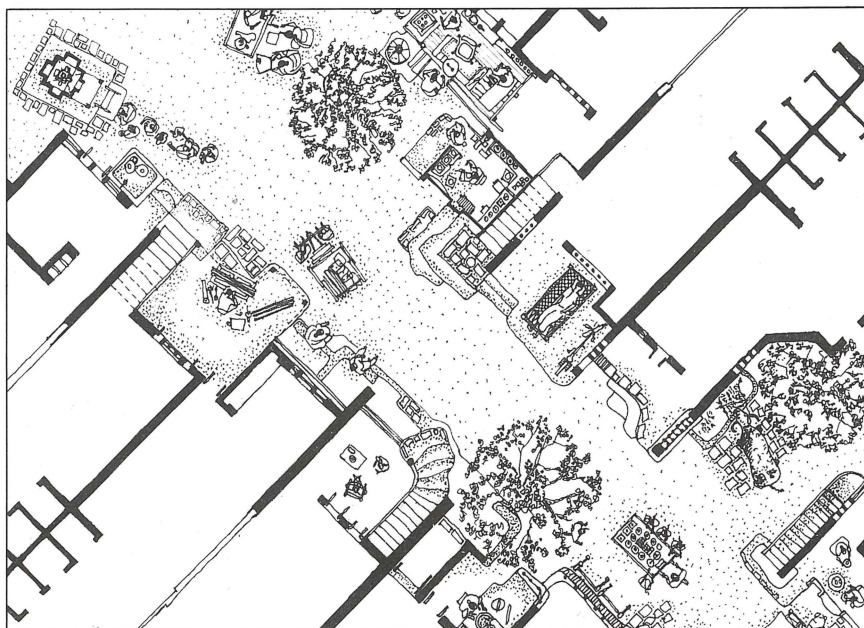
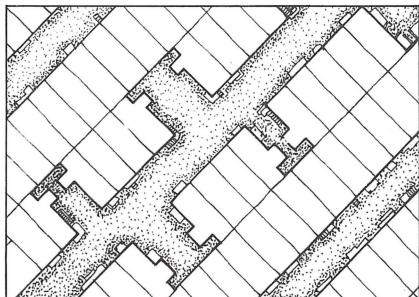
The overall marketable area is over 68%. It is normally difficult to increase the marketable land beyond 60%. In the VSF scheme this efficiency has been achieved by optimising the road networks and encouraging multiple uses of the open spaces.

Costs, Revenue and Surplus

A surplus of 11.7 million rupees has been generated against the investment of 57.2 million rupees based on the 1982 prices. This has been achieved by judiciously locating the upper income plots and the commercial facilities in the areas which would fetch the maximum sale prices. The surplus could provide seed capital for further EWS schemes in the future.

In addition, the EWS sale price is subsidised to the tune of about 35% on average, again from the profits of the sale of upper income plots. The revenue in terms of the investment is, therefore, quite substantial.

Drawing of a typical future street showing the use of service slots, which double up as convenient play areas for the young, provide space for temples or platforms for small gatherings.



As the infrastructure constitutes the major component of the total cost, the methods developed for streamlining the services assume importance. If this efficiency is repeated throughout India, the impact on the national budget allocated to low-cost housing could be significant.

Affordability by the People

The costs of the EWS plots are pitched so as to achieve monthly loan repayments of Rs. 25 for the families earning Rs. 200 per month rising to Rs. 87 for the family incomes of Rs. 400 per month. (13 rupees = 1 US dollar).

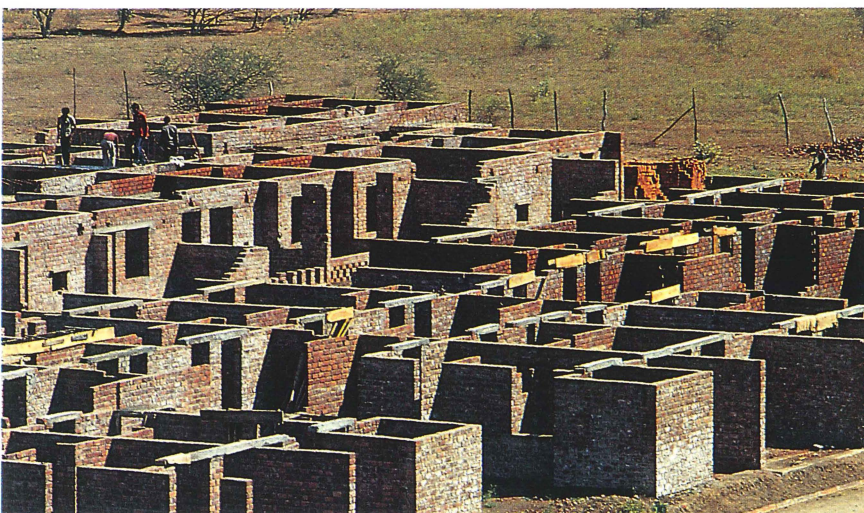
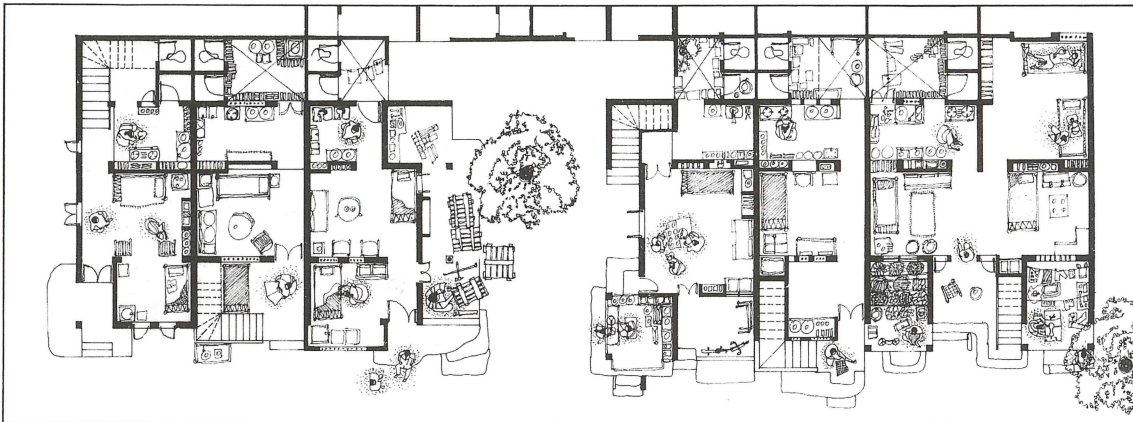
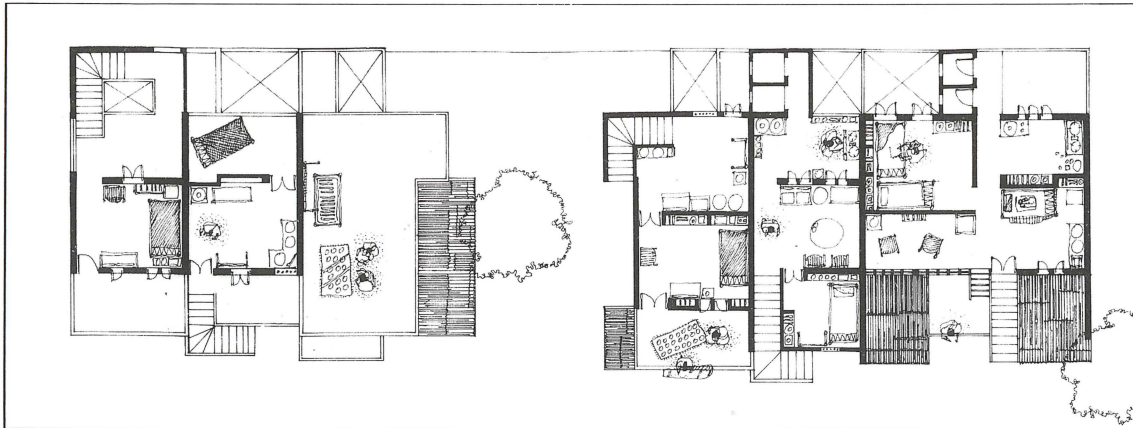
VSF research at the grass-roots suggests that the monthly incomes of the EWS groups are underestimated in the

national statistics as they do not take into account the incomes from the informal sector. The practice of subletting dwellings again augments the incomes. These factors all combine to generate the surplus finance which can expedite the growth of the dwellings from the basic cores to the final built form.

Conclusion

An attempt has been made to come close to the social, physical and aesthetical goals as laid down by VSF within the framework of severe financial constraints of low-cost housing. It is not the intention of the Foundation to produce a rigid scheme which is incapable of evolving with changing circumstances of the fu-

ture. The stress laid on flexibility and elasticity at all levels of planning should ensure that the proposals put forward can respond dynamically to any feed-back received during the remaining detailing stages, during construction and even after the eventual occupation. It is hoped that the township, when completed and occupied, will be well received by the people of Indore. We feel that this township, a model experiment by the Indore Development Authority, will set a replicable pattern of balanced and harmonious environment which can be emulated and subsequently improved upon by other organisations engaged in the field of low-cost housing.



Above: A typical future street is illustrated in elevation, ground floor and first floor plans. One can easily see the original core (toilets, wash, kitchen) in the house plans which served as the point of departure.

Left: View of 80 demonstration houses built of brick, to provide housing and a clear idea of what the final urban fabric of a sector could be like.