THE QUALITY OF THE BUILT ENVIRONMENT OF POPULAR HOUSING PROJECTS IN BRAZIL.

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Many studies have been made of the quality of the buildings in popular housing projects financed by the now extinct B N H. - Banco Nacional de Habitacao (1964-1986) and later by the C.E.F.- Caixa Economica Federal. These invariably focus on the bad quality of the buildings which results in early deterioration and inadequate standards of thermal and acoustic comfort, safety in use, salubrity and structural integrity. (1)

The 14,000 cases brought by buyers against the companies responsible for the construction of the buildings, although significant, are far from reflecting the real dimension of ‘pathological’ problems which are prevalent in the housing projects in the whole country, as shown in the studies. The most frequent problems encountered in the I.P.T. (Institute of Technological Research of the State of Sao Paulo) and Castro (1985) surveys were: cracks in the walls, infiltration of water through the roof slabs and walls and faults in the electrical and sanitary installations.

Many of the studies which revealed this frequent lack of quality of housing units built through public promotion, were financed by the B.N.H. itself, (see for example, several surveys and analyses made by the I.P.T).

In spite of the accumulation of information on the subject, no really effective measures have been taken by the federal financing agents to change this state of affairs decisively. (2)

There has been a gradual improvement in the establishment of technical standards and the requirements for the introduction of new constructive systems; however, the political measures (legal and administrative) necessary for their enforcement have yet to be introduced, with the result that the defects continue to reappear in each new housing project built under the auspices of the B.N.H. from 1964 to 1986 and by the Caixa Economica Federal (C.E.F.) from 1986 onwards. (3)

During these years, on the other hand, there have been some gains in productivity through labour intensification, the adoption of Taylorist methods and new productive processes and equipment (Tavares 1988). This “modernisation” occurred especially between 1976 and 1982 when government policy was in favour of mass production of popular housing units. The changes in productive processes, however, did nothing to improve the low quality of the units delivered throughout all these years (Tavares 1988, Castro 1985). The purpose of this paper is to show that there is another universe of pathologies which has not been given due attention by investigators of the production of the built environment, namely that of the surroundings in which the buildings are situated: the placement of the buildings in the landscape and the urban infrastructure of the neighbourhood.

I have chosen as a case study that of the Santa EVELVINA housing complex, located in the eastern sector of the city of Sao Paulo. This is not an isolated case, nor is it an exception, but the size of the project and the unfavourable soil conditions make it especially noteworthy. (4)

THE SANTA ETELVINA HOUSING PROJECT

Santa Etelevisiona was the name of a farm in the rural zone of the municipality of Sao Paulo, about 40 km from the city centre. At the end of the seventies, the property of about 48 km2 was bought by the Companhia Metropolitana de Habitacao de Sao Paulo (COHAB-SP) for the purpose of building an enormous housing project. At the time the area had no paved access and was about 10 km from the nearest public transport.

The terrain in Santa Etelevisiona was very hilly, with slopes exceeding 30%, but covered
by exuberant vegetation. The vegetation grew on a superficial layer of humus and clayey soil which covered and protected the deep underlying layers of residual silty sand, which offer little or no resistance to erosion caused by precipitation.

The occupation of such an area should obviously avoid exposing the subsoil to the erosive action of rainfall. This type of land should have been used for the construction of buildings in a high density configuration and adequate infrastructure should have been foreseen.

Nevertheless these precautions, which are commonsense rather than technical, were not taken. A 40,000-unit housing project was planned for the area; partly in the form of 40-m² flats in 4-story buildings without lifts (16 flats per building) and partly in 24-m² on 60-m² plots, with provision for future enlargement by the owners.

The project practically ignored the topography of the land and a continuous series of plateaux was conceived which required the total removal of the vegetation and the topsoil. A gigantic earth-moving operation involved the transportation of 10m³ of earth for obtaining each square metre of levelled land. The cost of earthmoving was four times the cost of the land. The logic of acquiring the cheapest land could not be defended, in view of the characteristics of the project.

The earthmoving was initiated at various points at the same time, with no provision for the effects of precipitation during the rain season, which in Sao Paulo lasts from November to March. In some parts of the great project, the buildings were erected before the necessary ground facilities had been provided, that is to say, there was no surface drainage system for rainwater in large areas of the land during the months of heavy rainfall.

Erosion played havoc with the silty subsoil, large quantities of which were transported by rainwater to the lowlands already occupied by buildings, and to the streams and whatever culverts had already been installed, causing blockage and subsequent flooding.

Several attempts to recover the damage in Santa Etelvina were initiated in two successive governments during the years in which it was being constructed (1983-1989). In spite of this, the productive process was not modified and the same errors continued to be made, which would inevitably require further investment for recovery in the future.

As mentioned earlier, the same grave errors which were committed in Santa Etelvina can be found in housing projects built all over Brazil, since the foundation of the B.N.H. in 1964.

THE LOGIC OF WASTE.

What then were the main causes of these errors? First, the more general determinants for the existence of waste and misuse of public funds must be recalled. In a country such as Brazil, in which the lack of housing is so great, if the governments lacked the political will to improve the situation, it was because the correlation of social forces had not advanced to the point of forcing upon them such action. Both the relations of production and the patterns of use of housing depend on the state of the class struggle and the historical development of capitalism (Ball 1977).

The absence of combative construction workers' unions adds to the lack of a strong vindicative movement demanding better quality in public housing. An informal agreement between construction capital and state administrators did not include the
requirements of better quality or increased productivity.

From a technical viewpoint it is possible to point to two critical aspects: the engineering project itself and the management of the constructive process.

The project is maladapted to the physical environment, incomplete and indefinite. It prescribes generalised and excessively standardised rules. The buildings have a standard plan, independent of the terrain. The designers, contracted by COHAB-SP, did not supervise the construction. The project did not take productive processes into account and was completely independent of the constructive system to be used by the contractors.

Three contractors took part in each phase of the construction of the project: one for earthmoving, one for the infrastructure and one for the buildings. These mutually independent contractors frequently subcontracted other firms. As several jobs were in progress in different parts of the project at the same time, a well coordinated management of all the parts would have been fundamental. But COHAB was organised for strict auditing of cost and financial timetables and not for technical control of production. In other words, it was well prepared for the bureaucratic accompaniment of a project, but not sufficiently for the management of constructive processes themselves.

The cost of recovery of the Santa Etervina project is estimated at US$40,000. This enormous waste of resources is in contrast with the economic crisis and the lack of funds for public investment in the country since 1982.

In a general analysis of the construction sector in Brazil, Vargas calls attention to the fact that publicly funded jobs establish the level of organisation to which the whole sector is geared. By his reasoning, this is not a consequence of capitalist efficiency, but that of an alliance between the contractors and state bureaucracy, which unites the interests of both: fat, illicit profits and political prestige (as well as kick backs) (Vargas 1988).

The military regime (1964-1984) only deepened an association which had its origin in protectionist laws introduced in the fifties, when the national construction companies were founded, many of which have now reached enormous dimensions.

Civil engineering was a reserve area for local capital and the evolution of productivity in the sector varied in a very different way from that of the rest of industry which followed the developed countries more closely.

On the other hand, the highest priority is given to the electoral or financial calendar whatever the cost. In this context, the value of a project is only relative and so, in the case of popular housing, is the quality of the product. The low-income market is not exacting, and the lack of housing is so acute, that access even to a low quality unit is considered a great privilege. The design of the project is not geared to production and does not have to be well developed or detailed.

The organisational problems of production of the built environment in Brazil are based on this relation and, in counterpart, utilise the abundant and cheap labour force which is replenished by internal migratory currents.

In some subsectors of the construction industry, modern technology has made advances in design (large projects for economic infrastructure and industrial complexes) and in constructive processes (ditto and residential buildings), but advances in organisation and management of construction have lagged behind.

It should be emphasised that productivity of the heavy construction sector is
considerably greater than that of residential buildings. There is also a notable difference in the quality of residential buildings produced by private enterprise and that of the big popular housing projects promoted by the state; it is in the latter category that the lowest quality housing is produced.

The photographs which accompany this paper are witness to the facts described above.

FUTURE TENDENCIES

Vargas describes recent tendencies of change in the organisation of production in civil engineering work, impelled by growing political participation of society, by the economic crisis (the public debt forced the government to cut expenditure, profoundly affecting the volume of public works), by the new institutional framework and by the new profile of the work force.

In a previous paper, I describe the beginning of the exhaustion of the pattern of peripheric urban growth, which involves the expansion of capitalist relations into an environment which was formerly produced by pirate or illegal means (Maricato 1988). Today (1989) these tendencies are conspicuous and evident.

The labour and popular movements are increasing the pressure on the administration for the proper application of the funds of the Financial Housing System. The Central Trade Union (C U.T.), is preparing a lawsuit against the C.E.F. which controls the Fundo de Garantia por Tempo de Serviço, a sort of unemployment fund, the resources of which are to be used for financing popular housing. C.U.T. demands a majority participation of the trade unions in the management of the fund. 42 busloads of participants in popular movements from all over the country drove to the distant capital, Brasilia, to form a caravan to demand the proper application of the Fund in popular housing.

Finally, in the last municipal elections, which gave the Workers’ Party victories in some of the largest Brazilian cities, including Sao Paulo, promise a new era in the relation between the state and the contractors, at least at the municipal level.

These are some of the facts which clearly indicate the tendencies towards change in the production of the built environment in Brazil and in particular in housing and urban policy.
REFERENCES


