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THE FUTURE OF URBAN DWELLING DESIGN

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ABSTRACT

Megacities are a nightmare for both their residents and planners. The sheer size, density, traffic jams, social problems, vulnerability of energy, food, and water supplies, waste disposal, and overall safety problems are features that are hardly controlled or not controlled at all. Nevertheless, a large city is a strong magnet, and large-scale immigration raises the question of housing. Although uncontrolled settlers and squatters must be dealt with by urban and social planners, the scope of this paper is the narrow but significant segment of urban dwelling design. This can be considered a further development of twentieth-century mass housing, but under different conditions. These include higher density, higher land costs, changes in social structure (smaller and nonstandard families), the globalization of living patterns, and dwelling culture in general. The old rules, norms, and algorithms are no longer appropriate. Several case-study examples show that changes are implemented in architects' traditional attitude to dwelling design. In urban-planning zoning, a well-established method but a superposition of functions remains desired to achieve a proper urban life pattern. In the dwelling design as well, the principle of "one room, one function" is in opposition to the trend toward the "open plan" of multipurpose spaces.

Key words: Urban Dwelling, Mass Housing, Functionalism, Zoning, Open Plan.

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Standards in Mass Housing

From the very beginning, a town was a concentration of people, goods, information opportunities—and power. Towns have always attracted increasingly more people from the surrounding region. The increasing population raised the question of housing, which was solved in only two possible ways: the authorities could turn a blind eye and let immigrants settle in any pragmatic form, usually uncontrolled and illegally.

However, if the authorities had any interest in acquiring or even encouraging numbers of new immigrants, they established sets of rules. There were always several reasons to concentrate the population, from large ancient Egyptian projects or colonial settlements in America and Asia to the most important event in the history of settlement: the industrial revolution. In all these cases, the need for concentrating manpower was in the interest of the authorities, political power, and money. On the other hand, even greater concentration of people happened in an unplanned and undesired manner due to the population explosion and, of course, following the natural (if not anthropological) urge to group together.

In any case, the majority of people in question here were newcomers. So the authorities that owned the land and money put forward a set of rules and conditions under which the immigrants were allowed to settle. Social planning was applied to allocate the housing areas, and urban planning to regulate land use. In the end, the investment money had to be spent economically and the "product" had to meet the minimal needs of users. Although industrial workers were still accommodated in uniform substandard units of one room plus kitchen per family in the nineteenth century, social movements have forced authorities and governments to establish standards in social (mass) housing that were to assure that each family received an appropriate dwelling. As in any activity that deals with large numbers, statistics also appeared to help here. The statistically determined (although virtually non-existent) standard family led to the philosophy of equal needs, equal rights, and, consequently, equal apartments.

Sooner or later, every country established a housing policy. An important part of this is always a set of housing standards. These act in two ways. First, they regulate the economical use of investment money by determining the maximum apartment area and encouraging efficient production technologies (usually based on repetition of equal building types, building elements, and also apartment types). Second, they also define the minimum apartment area and determine all the essential parts and equipment of an apartment in order to meet the "standard" needs of a family (Fig. 1).

Figure 1: Examples from standard apartment layout catalogues (second half of the twentieth century; Sweden, Slovenia)

All of these standards were the result of extensive research, starting with the Bauhaus ergonomic approach and Modern movement ("a house is a machine for living"), pursued later all over the developed countries (Germany, Sweden, the Netherlands, etc.). During the second half of the twentieth century, mass housing was realized under such standards regardless of political or economic backgrounds.

However, after decades of field experience it became obvious that there is no such thing as a standard family and that life forms, living patterns, and the ways of using an apartment were as different as anything in human experience. Fortunately, man is "the most adaptable animal" and a number of studies in this area have shown how people really use their apartments—far from the schemes foreseen by architects.

Concentration and Its Consequences

In the twentieth century, the growth of cities basically became too big to be manageable. The best-known cities of the world, such as Paris, London, and New York, where everybody wanted to be, have turned into the opposite. Pollution, traffic jams, ghettoization, and lack of safety have caused the quality of urban life to deteriorate. Although all of these cities have somehow succeeded in controlling the situation, new large cities appeared in the underdeveloped and overpopulated countries of Africa, Asia, and South America. These megacities represent such a large

concentration (tens of millions of people) that they can be described as countries in their own right. They cover large land areas and have become extremely complex. They contain a set of smaller entities with quite different characters, shown in ethnic, cultural, religious, and other features as well as in their spatial, organizational, and architectural properties. Thus a megacity is never a uniform organism or network. There are also great differences between one megacity and another. A comparison between Los Angeles and Khartoum is practically impossible. However, there are a number of phenomena common to them all as a result of concentration.

Space is limited ("they aren't making it any more," as they say) globally, regionally, and locally. The resulting density has its limits in the context of the whole: more people need more parking, more parks, more schools, more public transport facilities, more communal infrastructure, and, finally, more energy—and, on a wider scale, more fields to grow enough food.

Social structure is changing. The gap between the rich and poor is increasing. Global migration is highlighting racial, cultural, and religious diversity. Dwelling culture is no longer "standard." The size of the family is radically decreasing. The single-parent family in developed countries represents a substantial part of the whole. Other kinds of families and partnerships are also increasing.

The population is getting older. This is resulting in a shift of peoples' needs: they are suffering physical and mental decline, they are having problems with accessibility and food supply, and they are becoming socially deprived, therefore presenting an increasingly greater social, economic, and even political problem.

The general shift from production to consumption in dwelling areas, which is a well-known process in history, has reached its final stage: the function of a dwelling is being reduced to the activity called "to dwell." If there is still some professional activity taking place, it is just sitting in front of a computer.

The Reduction of Everything

The situation described above resulted in a very simple fact: everything is hard to get and costs more. There is only one way to cope with it: people have to reduce their needs and comfort to a reasonable minimum.

Learning from countries with the highest population density, such as the Netherlands, Japan, and even the U.K., indicates the following:

- Reduce the floor area of a dwelling or apartment; this is the central part of this paper's discussion.

- Reduce the bulk of "things" that everybody owns and keeps during their entire lives. They accumulate in decades and consist of dozens, even hundreds, of items; everything has to be stored somewhere and this takes several m^2.

- Use the available space in several ways; combined functions in every room must be possible.

- Use services in the building or in the vicinity (catering, cooking, washing, cleaning, etc.)

- Change the daily living pattern: simply spend less time at home and transfer activities to other places (e.g., eating out).

- Consider the actual dwelling as only temporary. A need to move elsewhere for any reason (a new job, a change of income, change of family status, etc.) will arise sooner or later.

It all starts at the urban-planning level: by reducing the plot area (smaller distances between buildings), by choosing dense building types (terraced houses, narrow spans), by developing vertical urbanization (blocks of apartments, tower blocks), and by introducing new building types such as "mixed development," which combine several functions and represent a self-contained, nearly autarchic entity like a safe island in an otherwise not-too-friendly urban environment.

A significant change has appeared at the level of dwelling design. The prevalent standards and rules that regulated mass housing in the twentieth century have been abandoned in many countries that used to be a model of doing things properly (e.g. Parker Morris in England, and also standards in Sweden and the Netherlands). The reasons for it were several: the general criticism of uniformity, the end of large government housing projects, and the rise of the open market. In all cases, the result was rather astonishing: dwellings became smaller and some usual rules were neglected.

The Separation of Functions

The separation of functions is intrinsic to all living creatures. A body is a set of organs specialized for their role and interconnected to form a whole. The human mind can understand and organize space and time, and also manage its activities by distinguishing separate elements of the environment and combining them upon certain layouts, algorithms, or networks. Based on astronomical features, time is organized by calendars and timetables. Space is divided into specialized areas or zones: living, production, administration, leisure, and so on.

A standard dwelling also has different parts (rooms) to separate certain functions. This separation can be easily described in pairs. The daytime and nighttime part of the dwelling, dirty and clean, work and leisure, adults and children, public and intimate, warm and cold, outside and inside, wet and dry, noisy and quiet, and even male and female (Islamic) or master and servants (historically). In addition, two main questions remain to be considered: the size and shape of a room to accommodate the foreseen function, and the accessibility and connection to other rooms. Based on extensive research, there are a large number of rules and standards to regulate these requirements. Because the ideal floor plan must meet real-life demands of structural, technological, and economic conditions, designing a dwelling or an apartment is a never-ending job. It is a well-known framework in which twentieth-century mass housing has been designed and realized (Fig. 2).

Figure 2: Twentieth-century mass housing

Primeval forms of dwelling had only slightly expressed zones for separate functions. A hut, igloo, tent, and so on had only special corners, not necessarily separated by a partition screen or wall; only a special meaning or status of the space was determined (for the master of the family, for the fireplace, etc.). There are many historical examples in which the shift from one multipurpose living space to one of separate rooms for each number of the family is clearly visible. The reasons may be economical (the rich have bigger houses), cultural (modesty and privacy), and others. The Japanese in their traditional houses used to spread a tatami for the night in any (otherwise practically empty) room. A Renaissance palace or a Viennese urban palace had a set of rooms big enough to accommodate any function needed; they were also interconnected and accessible from a corridor.

The philosophy of neutral spaces is well established in the traditional (and modern) concept of a city. A grid of streets forms a number of blocks (insulae), which initially have no rigid function. They may be built up for housing, commerce, administration, or any other function, but can also be left as a square or a park.

Similarly, a dwelling layout as a set of equal rooms can be considered a flexible design that can meet any function in each room. Long-term applicability is an advantage, but its cost is higher because a neutral room must be large enough for things not yet known to be accommodated in the future.

At both the urban and dwelling level, some rigid constants and obstacles cannot be avoided for technical reasons: the air-circulation network, water supply and sewage, ventilation, chimneys, load-bearing structural elements, and so on.

Existing and Future Urban Housing

As already stated above, a megacity is a complex structure of many different units or areas. Theoretically it has a concentric layout with the central downtown with the highest density and the highest buildings. The peripheral belt of squatters, industry, brownfields, and so on is presumably the same in any big city. In reality, the megacity does not follow such an ideal and uniform picture. So very different situations and conditions are to be expected in different parts, and housing problems do differ; they also dictate a different approach.

The problem of squatters is always a major task for the authorities. Apart from providing jobs, the authorities may organize decent housing projects that offer a rather modest living environment, although still far lower than standard. Without regard to the family size, a room, kitchen, lavatory, door, and window must be provided (successful examples can be found in South Africa). This is the first kind of housing where established traditional standards for dwelling design are not followed (Fig. 3).

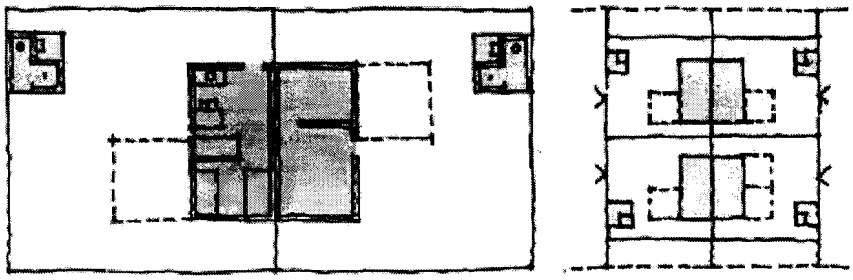

Figure 3: The authorities offer squatters a piece of land, power, water, and an initial building shell to be extended later by self-help

The next case has a kind of continuity with the mass housing standards described. It is realized under the control of government or other authorities. It does not take the shape of enormous residential districts, but is instead smaller and diversified in order to accommodate special social groups: large families, elderly people, and some ethnic and cultural communities. A disciplined functional approach is followed and the design of buildings and the urban landscape is important. It takes the shape of well-known "satellite towns" (e.g., Stockholm or Paris).

Housing development in the inner cities and downtowns is the most interesting case. This is presumably left to private enterprise. It seeks a narrow market of rich people or people that must live there for professional reasons. There too, the standard rules and algorithms will be more or less left aside. Rich clients need apartments of the highest comfort, large rooms and balconies, and even yards, with nice views, technically perfect, and with high security (Fig. 4). They form high-rise buildings, designed by "starchitects" to obtain status. "Penthouse society" is a good example of this category.

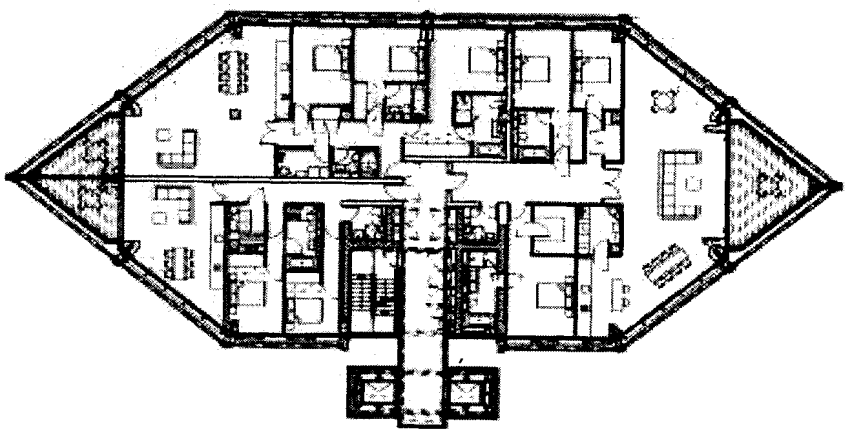

Figure 4: The top comfort (large rooms, every bedroom with its own bathroom, utility, large balcony, etc.) in the center of London (R. Rogers, Neo Bankside)

For the other part of the market, which consists of (young) urban professionals, dwellings are reduced to the comfortable minimum. Because large families out of the question, here the standard differentiation of functions and interconnections is also left aside. In any case, the apartments are expensive, so their floor area is reduced by omitting partition walls and corridors. A multipurpose room containing living, dining, and kitchen facilities is rather large, but it helps reduce the area by some 10 m^2 in comparison to a standard apartment layout. The small bedroom does not allow adding a baby cot. The wardrobe space is minimal (Fig. 5). There is no storeroom in the house, but parking facilities are compulsory.

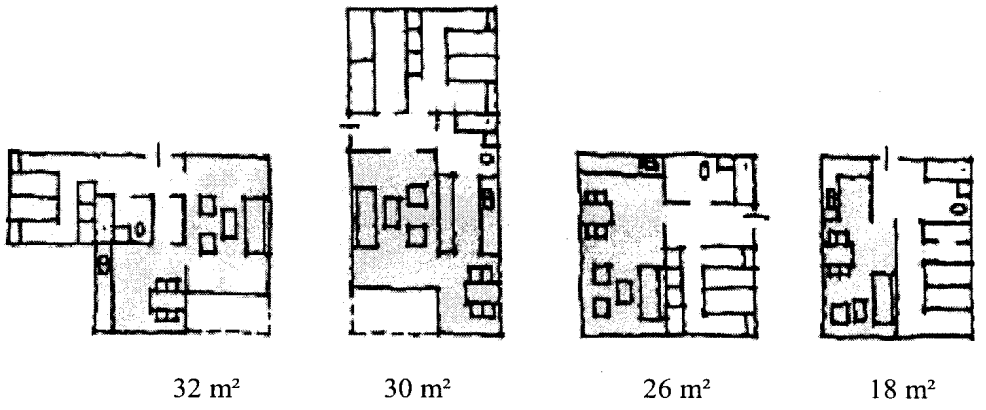

Figure 5: A brief history of reducing the daytime part of an apartment (living + dining + kitchen)

Conclusions

It is well known that architects have felt restricted by mass housing design guides and standards in their design ambitions. The ideal of an open layout, transparency, and fluid spaces as realized in some houses by Mies van der Rohe or Frank Lloyd Wright is not appropriate and attainable in mass housing. Thus the urban apartment described above that combines all daily functions into one big room is in fact just a fake, a reduction. To talk to a friend, to watch TV, to listen to the music, to read, and so on cannot be compatible with a running dishwasher or a humming refrigerator. It is just a solution under strict circumstances, it may be considered lower standard, perhaps bordering on speculation. It can be ameliorated by modern high-tech devices. The entire inner environment can be computer-controlled (heating, cooling, ventilation, sound control, light and solar control, security control, audio and video, internet, etc.) and even remote-controlled.

The site (the vicinity of services, jobs, transportation, etc.) is more important than the apartment layout. The social environment is more important than the architecture, but nevertheless a good design will be looked for.

The increasing social stratification in large cities is inevitable. It is expressed at three social levels and also in three possible ways of solving their housing needs.

1. The level of poor immigrants and squatters, who look for the opportunity for any job or business (also illegally) to survive and take advantage of being anonymous. They are simply not welcome and the authorities bear the burden of sheltering them in as economical a way as possible (i.e., substandard);

2. The middle class, which remains welcome and their housing needs are met by affordable systems of financing, selling, or renting, by thoroughly planned residential districts, and by a dwelling design that follows established, sometimes changed and ameliorated, standards,

3. The rich, who can afford the best places to live and the highest level of quality and comfort, luxury standards. It is left to private investors and the authorities not to interfere, except for urban planning regulations.

An interesting side effect can be observed all over the world. Global information and trends (fashion?) have made even the smallest communities follow examples from the "big wide world." In his own country of Slovenia, the author finds the same phenomena: a speculative, substandard reduction in dwelling design and the marketing of above-standard, luxury apartments that ultimately remain unsold.

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