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AN APPROACH TO PARTICIPATION IN HOUSING

by

GEORG WOLFGANG REINBERG

Erste Staatsprüfung, Technische Universität Wien, 1973

ABSTRACT OF THESIS

Submitted in partial fulfillment of the requirements for
the degree of Master of Architecture in Architecture
in the Graduate School of Syracuse University
June 1977

Approved

Kenneth J. Lee, Jr.

Date

June 17, 1977

In our increasingly complex society a growing centralism tends to bring more and more decisions out of the control of the user. This is too often not to the advantage of the citizens whose desires are bypassed. This results in breakdowns in the processing involved in planning and an increasing demand for participatory democracy.

In this thesis a design process for housing is proposed which allows the users to participate and to deal with the existing power structure in so far as it puts constraints on their homes (4). This design process is then translated into a game which could serve as a means for learning about and from such a design process. Elements of the game could serve for an actual design process, too (5).

We may approach this end by focusing on three issues: on the socio-political power structure by discussing participation at a theoretical, argumentative level (1); by focusing on the technological and organizational means by discussing case studies (2); and on the problem of communication by researching the qualities of games as a means for participation (3).

My discussion of participation indicates that the user has high abilities for contributing to a better design; moreover, that the individual household priorities are beyond the practical grasp of any central institution or organization (cp Turner 1976). Even behavioral studies find their limits in evaluating the user's needs.

However, that does not mean that if we let the users participate, then this solves the problem: participation is not just a new kind

of design within the existing social-political system, rather it is a "categorical term for citizen power" (S. Arnstein 1975), and requires, therefore, a change in the status quo. Although this change might not always be achieved directly, the socialization process and new kind of social structures created by participation offers a chance for real change (cp Gronemeyer 1973).

My comparison and evaluation of nine housing developments designed in conjunction with user participation indicated that no specific building technology for participation in housing exists. Rather, participation is dependent on the means for planning and organization. Furthermore, it is found that the level of participation depends less on a high flexibility than on the actual control and power of the users. A horizontal form of communication (between the users) is one of the most important things for participation.

My investigation into games shows that they have a high quality that enables the user to learn to participate and for actual participation.

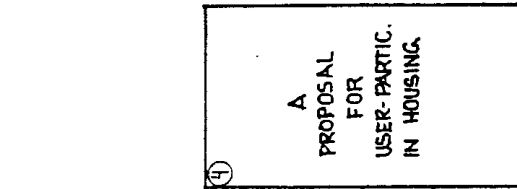
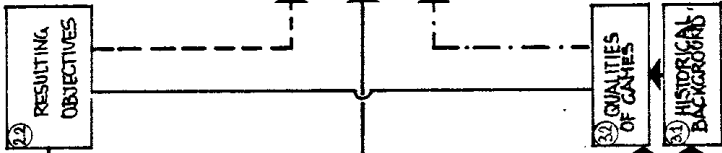
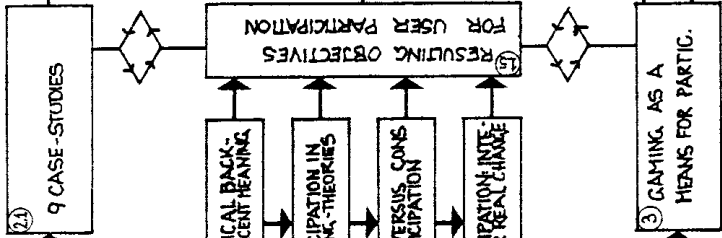
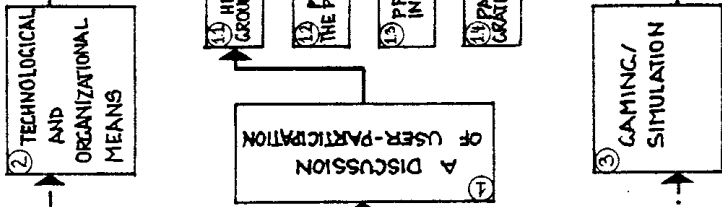
As a result, the proposed participatory design process focuses on the expression of desires on a specific language, on the enlightenment of cause and effect relations in housing, and on the change in existing power structures. Such a design process should also make the dwellers acquainted with each other and make possible a design of a support structure which is based on the specific needs of the housing community.

The basic objectives of the game proposal are to stimulate an awareness of participation itself and in relation to existing power structures; in addition, to teach the requisite knowledge and skill. No less of importance is the excitement produced by architectural gaming.

AN APPROACH TO PARTICIPATION IN HOUSING

TECHNOLOGY POWER (SOCIO-POLITICAL QUESTIONS) COMMUNICATION

PRELIMINARY STUDIES



FOCUS OF THIS PROJECT

5 SPECIFIC OBJECTIVES FOR A DESIGN-PROCESS FOR A GAME

13 A PROPOSAL FOR A DESIGN-PROCESS

6 A PROPOSAL FOR A GAME
PROBLEM AREA TO BE SIMULATED
PEOPLE INVOLVED
MOTIVES AND PURPOSES OF THE PLAYER
INTERACTIONS / RULES / SEQUENCE OF EVENTS
RESOURCES AND DEVICES

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PREFACE

My desire to think out an "Approach to Participation in Housing" is not only based on professional interests, but also on personal experiences.

When I came from Austria to the United States, I saw more clearly the advantages of mass housing for cities in Europe; but, at the same time the advantages of the high level of self-reliance in American homes. In addition to this, I was impressed by the quality of self-designed squatter homes (i.e. in relation to their professional counterparts) which I had seen previously in various developing countries. A short time before I started this thesis, I had also experienced the high interest and enthusiasm of children with whom I had worked on programs which were intended to sensitize them for architectural and connected social problems.

Consequently, the idea grew to link together, on the one hand, the advantages of the European mass housing projects, the American sense of self-reliance, and the self-design of the squatters, and, on the other hand, the desires of the users for participation: A participatory design process seemed to be an appropriate approach. However, in my opinion, participation must also include a consideration of

socio-political questions, especially since I see the major reason for the existing misery in housing to be a function of the recent socio-political situation.

The studies which I have undertaken, then, and the design and game proposal which I have developed for this thesis could hardly have been brought to an end if I had not received generous help from many persons. I want to express my thanks to all of them. Especially to my professors and advisors: John A. Agnew, Kermit J. Lee, Michael M. Pollack, Daniel Rubenstein, and Edward Steinfeld. To Roderick Stewart for his help with my language problems and, finally, to Stefanie and Nikolaus Reinberg without whose love and support none of this would have been possible.

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1. A discussion of user participation

All too often the users of the city are regarded by those who make the decisions as essentially being outside the circle of planning and design decision-making. They are "anonymous" dwellers, and powerless vis-a-vis the "professional-enterpreneurial-bureaucratic machines".¹⁾

"Professional-enterpreneurial-bureaucratic machines" are part of an increasingly complex society²⁾, where their structures become more and more a barrier for the citizen to control his own environment. This concerns especially those who have little economic and political power.

The growing centralism, going hand in hand with the increasing complexity of society, means often waste^{3) 4) 5)} and the implementation of a rationality neglecting the citizen's values.⁶⁾

1) see: J.P. Weber (1976,p.9). He discusses this fact for the case of mass housing.

2) This refers to an enormous number of participants, an increasing amount of information and numbers of decisions and bureaucraties. (see: Gronemayer, 1973,p.29)

3) The evidence of cases like Pruitt-Igoe and Co-op City shows how much material waste and human alienation can be produced by centrally administered systems. Instead of generating wealth, heteronomy often produces poverty even among those it supplies." (Turner, 1976,p. XVI)

4) How planners and developers act as vandals is described in: Ward, 1974; especially pp 173 - 214

5) For a description and critique of the implementation of inappropriate technology see: Schumacher, 1975.

6) "The point is simple: residential site planning has thus far had more to do with proscribed helio-biological factors, methods of production, compositional aesthetics, evident functionalism, economic optimization and logistical packing problems, than with dwelling. The results in environs ignoring socio-cultural values have been predictably dismal." (Weber, Hanno, 1974,p.136)

This often leads to an alienation between the users and the environment¹⁾ which means: a diminishing participation of the citizens in all socio-political decisions, increasing problems to achieve the loyalty of the population for those who are in power, and an increasing demand for power of those who are disenfranchised.²⁾

Although participation can be seen as the cornerstone of democracy, serious arguments are being raised against it. Many different points of view how to realize participation are taken and it seems sometimes very unclear what participation really means.

In the following we discuss what participation could mean, which arguments are speaking against it and which for it, and finally if participation can really bring more power to those who are the "have-nots" at the moment. This discussion should provide us with objectives for a proposal for a design process in housing.

1) Examples where this alienation is very obvious are slums, polluted cities, the destruction of the natural environment and so on.

2) This was expressed for example in the civil rights movement or more recently by civil rights groups who are moving from tactics of protest towards neighborhood community organization and political action. For further description of the development of the social conditions and related community organization see: Cox and Garvin (1977 pp 39 - 58).

1.1. Historical background and recent meaning of participation

"Participation" as we understand it today was not an issue in architecture until the point in history, where the architect or planner gained the role in society he now holds. He reached this pinnacle after the divorce of the working place from the home in the aftermath of the Industrial Revolution. From this time on the percentage of the professionally planned buildings started to increase.

Until well into the 18th century, the architectural tasks concerned the needs of the aristocrate only (exceptions are technical constructions or infrequently town halls or similar objects) and the architects only built for very well defined employees and desires - therefore for a very small minority. So, for a very long time in Western culture, anonymous building of/by the people, for their own needs went a separate way from the building of the "artists - architects" who built for the ruling class.

But since the time of the Industrial Revolution, with the consequences described, the architecture of the people disappeared.¹⁾ Now, the way to build is no longer based on collectively evolved patterns and housing types, rather often the rationality of ongoing industrialization dominates the building process.

The social and political conditions in which the process of industrialization developed brought overcrowding, unhealthy living conditions

1) This refers to the industrially developed countries. In the so-called Third World there is still much architecture produced by people (e.g. squatters, rural buildings).

and other bad conditions from the very beginning. Quite soon these conditions were recognized by responsible architects, and they developed different strategies to overcome them. The different approaches were based on widely different kinds of planning theories (see: 1.2.).

From the "intern theory of planning" emerged utopian projects (see: 1.3.1.). The architects/planners started to teach people how to live a better kind of life in a new architecture; or self help programs were developed. Most of these concepts did not really change the rationality of the ongoing building process.

The increasing alienation from the environment most persons experience today and the fact that architectural planning, city planning, and advanced building technology do not benefit the entire population have been at the root of current resistance and opposition to the typical building process. People have demanded to influence and take part in decisions concerning their environment.^{1) 2)}

For the architects, that meant that participation in the building process became more and more discussed.³⁾ Citizen participation projects spread (In the USA these projects had to do with city develop-

1) People did this in the Civil Rights Movement, in the Grass-root movement or, in Europe, in the so-called "Bürgerinitiativen" (these are group initiatives against certain planning projects by people who will be affected).

2) Sean Damer and Cliff Hague contend their descriptions of the evolution of public participation: "That two of these factors interrelate to provide a sufficient explanation of the rise of public participation to its present form: the trend towards participatory rather than representative democracy, and the break down in the processing of plans." (Damer and Hague 1971, p.222)

3) cp Robinson 1975, p.80

So participation has very different meanings ranging from "citizen-involvement" - which shifts the responsibility for unsolved problems from those who have created the problems to those who are affected by them - or forms of participation which have the purpose of keeping people away from power¹⁾ on the one hand, to participation meaning that the individual should have "absolute control" (which no single individual can really have) on the other hand.

Sherry R. Arnstein has developed a "ladder of citizen participation" which is very useful for conceptualizing different kinds of participation. Here, the different levels of citizen participation are related to the "maximum feasible participation".²⁾ The eight types of citizen participation in Arnstein's ladder range from the empty ritual of participation on the bottom to real power at the top:

1) This is the case when participation is used for publically legitimizing all kinds of interventions, for collecting information used for social control and for the reaffirming of political planning contents and planning steps. Martin Kuenzlen gives as example for this the Community Action Program (CAP) (Kuenzlen 1972, p.28) S. Arnstein cites for illusory forms of participation the CACs (Citizen Advisory Committees) and the CAAs (Community Action Agencies) (Arnstein 1975)

2) The question: "What is citizen participation and what is its relationship to the social imperatives of our time?" is answered by Sherry R. Arnstein as: "My answer to the critical what-question is simply that citizen participation is a categorical term for citizen power. It is the redistribution of power that enable the have-not citizens, presently excluded from the political and economical processes, to be deliberately included in the future." (Arnstein 1975, p. 137)

8) Citizen Control	have-not citizen: majority for decision or full managerial power
7) Delegated Power	
6) Partnership	to negotiate and engage
5) Placation	higher level of tokenism (powerholders: right to decide)
4) Consultation	tokenism (allows to "hear" and to "have a voice")
3) Informing	
2) Therapy	non-participation (to "educate" or to "cure" the people)
1) Manipulation	

1.2. Participation in the planning theories

In the discussion about participation we can find that different planning theories give participation different meanings.

For some theorists the expression "participatory planning" itself does not make sense. They define planning as "planning is what planners do (or should do)" and the participants are those who do the planning. These planners have to qualify themselves by certain qualities (as proven in professional examinations).

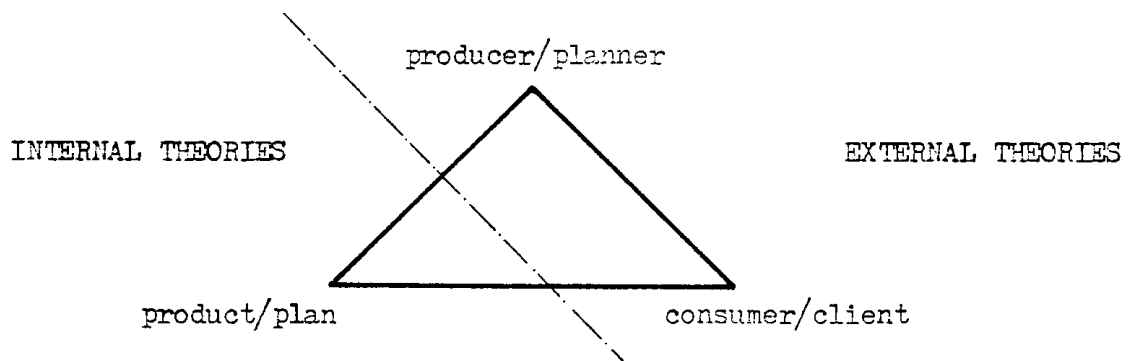
In contrast to that point of view, other theorists have developed deep aspirations for "participatory planning". For them the participation of those who will be affected by the "planning process" gives hope to overcome the degradation of persons planned away by anonymous apparatus serving inhuman interests. They hope to generate interrelating, argumentative processes, in which the most affected groups will gain the most influence.

Concerning the former point of view, one argues that the problem with this kind of thinking revolves around the notion that the qualifications to judge and to control planning are not derived from professional knowledge anyway. (see: 1.3.1.). Rather, those who are actually the users are those whom the planning has to serve, and these users, therefore, have the most qualifications to judge and to control what is good for them (the problem then is how they can do this).

The other theoretical point of view described before ("great aspirations in participatory planning") finds different approaches to how participation should be seen (this corresponds to the different criteria about "good planning").

Here the distinction Bernward Joerges (1972) makes concerning the theories of planning, is applied. He distinguishes between internal and external oriented theories ("interne und externe Theorien"). The external oriented theories are then split into those oriented towards the planner/producer and those oriented toward the consumer/client.

Those typical theoretical planning approaches are then described by a triangle which sets the relation between the producer, the product and the client:



B. Joerges 1972, p.13 (modified)

The internal theories limit themselves to the concern of instruments for the production of plans (e.g. research tools). In their view, better benefits for the concerned people are achieved by better methods of planning. This means that no direct participation of the users is seen as necessary. Within the internal theory planning, a simulation of the real and change is just a simulation, thus making those who are affected abstract inputs for planning. This position easily leads to professionalism and to technocratic approaches (see: 1.3.2.)

The external oriented theories take to account the external factors of planning. These are the initial forces and the consequences of planning. For this kind of thinking the plan is an instrument for communication.

If the planner/producer is seen as the most important part, then his social conditions, his identity and so on are at stake. In this sense the "good planner" stands for those who are living in bad conditions and he is advocating for a more just distribution of the social goods (which brings the planner often into conflict between the client/owner and the users). In this kind of thinking, participation becomes possible when the affected people acquire influence in the planning process and get benefits from the planning via the planner.

If it is focused on the consumer/client, then "good planning" is judged by the consequences and effects of planning. The "vision" of this

kind of thinking would be to solve the divorce of those who initiate the planning and those who are the users. Therefore, socio-political conflicts come into discussion and it becomes hard to set any limits for any special task.

The external theories become important if one tries to discuss the relevance of a participation project in its context.

Bernward Joerges ends his discussion about participatory planning by stating a dilemma which appears when the planning process is opened for all affected groups because:

"Participation means dialogue with a group, but planning presupposes the predictability of a system" (Joerges 1972, p. 42)¹⁾

This dilemma could be solved if we would have an identity between the planner and those who are affected by the plan, and by making the argumentative process possible.

But this does not indicate a pragmatic working method: An argumentative process is very often a fight for power, making the conflict a stronger and more obvious one instead of ending in harmony necessary to get to the basis for planning. To shut out the argumentative process, and just to give those who are affected more access to planning does not as a matter of course improve the situation for the affected people. Goodman has described this as follows:

"But within the economic structure of our society, simply giving the poor more access to planning expertise doesn't basically change their chances of getting the same goods and services as wealthier citizens. What is given them is more power to compete among themselves for the government's welfare products." (Goodman 1972, p. 214)

1) "Partizipation bedeutet Dialog mit einer Gruppe, Planung setzt voraus Prognostizierbarkeit eines Systems" (own translation)

But that must not lead to inactive contemplation of "the dilemma". It also could be concluded that the argumentative process, which is in fact the struggle for power, has to be made in all areas where it is possible with the ultimate goal being a more just distribution of power (mainly a political, economic question). But participation in housing, as a subsystem of the entire system, seems to give possibilities for participation, and may influence the complex system as it provides a "learning process" for those who participate.

If we shift from seeing just the planner or just the effect of planning on the affected to also include the socio-structural and psychosocial influences (e.g. the building up of opposing groups to the detriment of those who are in power or the learning of alternative behavior)¹⁾, the participatory planning process can also have a meaning within a limited connection.

At the low level of complexity and social conflicts that exist within single housing projects and neighborhoods, we can find a chance for "real participation" even in the form of identity of initiator, planner and affected people, and including the argumentative process. However, special means to make this process possible have to be found. The purpose of this thesis is to demonstrate such a means and method. But before going on to the actual design we must discuss participation not only from the theoretical point of view shown here, but also from the practical point of view, in terms of implementation. Comparisons with other practical strategies for "better living conditions" can help to identify the most worthwhile approaches.

1) see also 1.4. (p. 34)

1.3. Pros versus cons in participation

1.3.1. The "expert" versus the "layman"

1.3.1.1. General arguments against participation.

One of the most frequently stated arguments against participation is that for most tasks the "expert" could do a better job. It is said that he possesses the skills and qualifications and he even knows better what is best for people. The "laymen" would just make fools of themselves, they slow things down because they do not understand the technical language, they insist on unreasonable humility on part of the professionals, and they just introduce biases and political influence into planning which could be accomplished simply and rationally. And the experts lament that the laymen block rapid actions and even confidentiality gets violated.

Superficially these arguments could be countered by their own functional-economical rationales. Wolf Wolfensberger¹⁾ gives in this sense the following "technical-empirical" rationales for participation:

Long term social process benefits:

Participation educates the public, and service quality will be improved.

Intermediate term service system benefits:

increased likelihood of innovation, consumer can act as a sounding board to policy evolution and development, less and less costly confrontation, breaks barriers by bringing people together, therapeutic, status etc., reduces the likelihood of client abuse.

Economic benefits:

People are willing to work (to an extent we could never pay for).

1) Wolf Wolfensberger, Consumer Participation in Human Services, (unpublished paper)

But these arguments don't hold as arguments for participation if we scrutinize their rationalities: they are, in the same way as arguments against participation of a "functional-economic rationality" oriented on economic benefits, benefits which are not always for the best of the people concerned.¹⁾

Whereas the arguments used against participation show their "inhuman rationality", obviously the aforementioned argumentation for participation by Wolfensberger could promote just a better way to come to the same goal through manipulation and quasi-participation. Participation experts (as planning managers) are then necessary to bring about this way of excluding the "layman" with a kind of participation which has no real intention of sharing power. There, the interest is to make people willing to work, to avoid confrontation, in summary to make the planning run more smoothly.

If the intention of planning is not in question, if the participant cannot have a say in the overall goal, if people do not get real power, this kind of participation may rank in Arnstein's "Ladder of Citizen Participation" (see: 1.1.) at the level of maintaining the status quo (empty ritual) by manipulation or therapy - "non-participation" (to "educate" or to "cure" people).

That means that participation is not just another technique for all purposes, but also includes the question in whose interest it is undertaken: there is no "value-free" technique of participation possible -

1) A participation which, for example, increases the likelihood of innovation can bear a very "inhuman reality" if interests other than these of the affected are imposed (e.g. urban renewal in business interests, some cases of slum clearing, new houses which are in actuality worse than the replaced ones for the inhabitants, new city highways etc.). Or, when the participation should allow less and less costly confrontation this could mean that those who are affected have no more chance to fight for their rights.

a point we have to take into consideration if we ask if the expert stands for or against the concerned people.

1.3.1.2. Arguments against expertise

Wolfensberger gives these arguments:

- + narrowing of view
- + sacrifices insight of common sense to intensity of experience
- + relates all other facts to own center of preoccupation
- + ascribes exaggerated importance to own speciality area
- + reluctant to accept even valid new views
- + confuses need to be consulted with claim to be decision maker
- + confuses importance of his facts with importance of proposed action¹⁾

As true and important these arguments are, they miss the point of participation if they promote nothing more than a more effective planning and intervention within the status quo. The critique of expertism has to go further.

There are not only facts which speak against the expert -dominated planning concerning effectiveness of planning, but the expert himself can be a factor working against the interest of the affected. Not as a matter of course do the "pure experts" work in the interest of the people, even if they consider themselves as working with "value free" methods - their research method and their implementation already contain certain built-in social values.^{2) 3)} The expert's "pure scientific" innovations and planning could therefore stand against the interest of the affected people even if the planner is

1) Wolf Wolfensberger, *ibid.*

2) "... goals for which scientific methods are developed, along with the choice of objects under research and the ways in which they are applied, are more influential and determining the effects of a method on society than the method itself." (Kuenzlen, 1972, p.11)

3) So it comes that different experts are spending a lot of energy arguing against each other. For the example of the lawyer experts versus the planner experts, who each have their own sets of values and beliefs, see: J.B.W.B. McAuslan (1971, pp 247-275). Here, the very different influence of these two expert groups on the planning system (the British planning in this case) is described.

full of "good will". So the expert can be used in the function of obscuring the initial interests of planning shutting out the affected people by disqualifying them for putting "scientific necessities" in question as unqualified laymen.

The possibility for the expert (who is needed anyway) not to work against those who are affected would be to see himself in a subjective role (in his self-perception) instead of seeing himself as an expert authority, and to take part in the decision making in a transparent way. This could be done in a participatory process, where the process is under the control of those who are affected. This control could be gained if the experts are forced to explicate and discuss their planning intentions and the objective of planning. This would mean an argumentative process of planning.

This argumentative process, allowing a "real participation" of the affected needs the search for suitable "language" between the experts and the laymen. A "language" allowing argumentation, persuasion, enlightenment and finally direct effects (in contrast to the secret language of the experts used in design today).

1.3.1.3. The architectural expertise¹⁾

One of the special problems of the "architectural expert" is the sacrifice to isolated solutions (for the aged people: the retirement

1) In the following argumentation I follow partially Burghardt and Förderer (1972, pp 14ff)

home; for education: the school; for the art producer: the museum and so on) produced by his professional interests and the education in most schools of architecture. This separation of all human needs does not have the possibility of seeing the overlapping and interrelation of different areas. The architect is used as the welcome expert decision maker to sharply reduce problems. For the architect, there is no scope left between the given program and the building regulations besides the architectural design. In the following,

"the aesthetic dimension reaches far out above itself; by creating formal conditions it fixes itself in the layman's world of imagination and does not allow itself to be discussed any longer."¹⁾
(Burkhard, Förderer 1972, p. 16)

So the problem gets shifted to the formal by the architect and the user is confronted by the defined designs. This too often results in architecture bypassing the human needs in many cases even minimizing the possibility for further conversion. A new role of the architect with a new role for the users (allowing more influence and further adaptation) will be the only possibility to overcome this situation.^{2) 3)}

1) "Die Ästhetische Dimension greift über sich selbst hinaus; indem sie Gestalt schafft, setzt sie sich in der Vorstellungswelt des Laien fest und lässt sich nicht mehr diskutieren." (own translation)

2) Dries van Wagenbach characterizes the role of the architect in the transition to participation in a similar way when he writes: "The role of the architect in this process is also a totally new one; rather than making all decisions alone, architects now have to create conditions under which the occupants can design and plan their own homes. In that sense, the architect plays the role of the 'enlightened emancipator' rather than the 'enlightened expert'." (Dries van Wagenbach 1976, p. 46)

3) Andreade and Zamudio, who gave an example of a new role of the architect in the case of the "Colonia Guerrero", Mexico, write in their report: "We believe that we should act as specialized workers, at the service of the community and each of its individual members, each of whom should be able to participate in such a way as to satisfy his or her requirements in cooperation with the larger community. Thus, the professional ceases to enter the housing process as an outside expert but acts mainly as a professional facilitator for the community and the individual. This is his new role." (Andreade and Zamudio 1976, p. 40)

1.3.1.4. The layman's abilities

The discussion whether or not the expert or the layman (or both together) can come to better results has to include the question "which special resources can they contribute?". Whereas the expert can contribute his special skills and knowledge (which have to be controlled by the users as shown above), the layman's specific resources are qualities such as imagination, specific skills, initiative, co-operation, determination and so on, resulting from their better knowledge of local resources, of their specific needs, of their specific facilities, and their existing social organization etc.

An illustration to point to the end to which experts' domination over the users' interest can lead would be the Pruitt Igoe Project, the architectural-award-winning public housing project in St Louis.

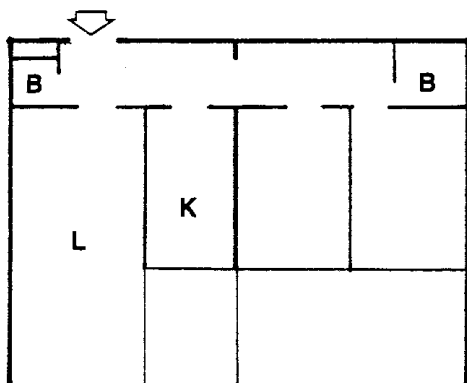
An indication of the potential the participation of users may have, might be a project at Les Marelles, France (see the example in the following). Anne Vernez-Moudon writes about this project which excluded the architect from the design of the incremental setting¹⁾ until the dwellers were sure that their design was final.

"The differences between these dwelling units and the ones built conventionally are evident, and the contrast between the two types are alarming ... Les Marelles shows that, given a chance for self-expression, the urban dweller is as imaginative and as personal in his formulation of space as his rural or pre-industrial counterparts. The lesson then for professionals and others who are presently controlling the housing process is to realize that there are limitations to their expertise and predictive capabilities." (Vernez-Moudon 1976)

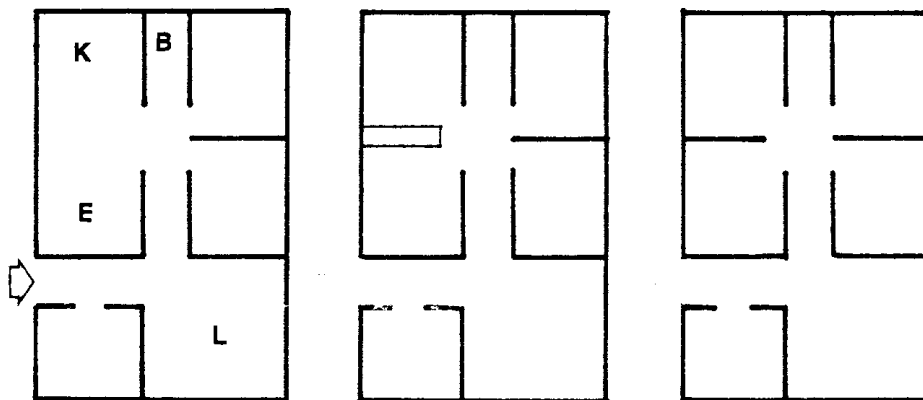
1) but there was no further participation (see 2.1.)

EXPERT OR USER DESIGN: A COMPARISON OF LAY-OUTS

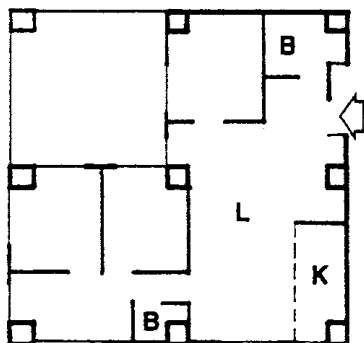
1. Typical layout of an European mass housing project¹⁾:



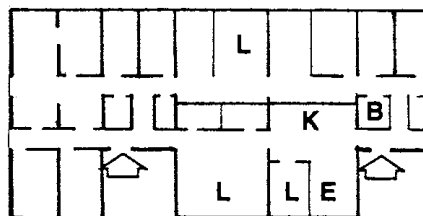
2) Kitchen/Dining options in a floor plan game²⁾:



3) lay-out of a unit
designed by the dwellers³⁾



4) lay-out of units
where all users together
designed their units^{4) 5)}



1) Built in Vienna 1970

2) This "floor plan game" was used in several evaluations of residents' lay-out preferences. It is an example for participation of the users through attitude survey (see: 1.3.3.) (Zeisel and Griffin 1975, p.92)

4) Spille 1973, West Germany (see also: 2.1.)

3) Mauris 1975, France (see also: 2.1.)

5) note that 1) and 4) are both subsidized housing projects

1.3.2. The "technocratic approach" versus "real change"¹⁾

Within this chapter I will confront planning which is based on the intern planning theory (see 1.2.) with participation, because that approach is used again and again by architects who want to improve man's living conditions. They prefer to speak just about architecture, ignoring whether the buildings really accomodate the complexity and diversity of human activities they intend to serve.

This ends either in a pure "look-at" architecture or, if the science and technology is stressed in the "new utopians".²⁾ Kuenzlen characterizes the basic idea of the "new utopians" as

"... to liberate society from material and physical restrictions through the implementation of an open, flexible, continually changing and transparent, balanced, non-exploited environment which is supposed to stimulate society to change and in turn be changed through society." (Kuenzlen 1972, pp 7f).

In both cases ("look-at" architecture and "scientific turned-on" architecture) the change concerns just the formal environment, but is closed to social change. Therefore, accepting the present social structure as "given", they suggest not more than means for the extension and reproduction of the system, which creates the misery they thought to fight: the suggested changed architecture does not convert people:

1) The term "real. change" means a change that pertains to a redistribution of power; a redistribution of power that enables the have-not citizens, who are presently excluded from the political and economic process, to be included deliberately in the future (see: Arnstein 1975, pp137); this requires a change in the "status quo" of our social system.

2) An example is Archigram's Walking City

"People will still be dominated by the system's social patterns. Neither the new environments nor the new scientific methods are the 'problem warrior' and the 'problem solver'. These are the people and the planners with human rational political consciousness who are willing to solve the social problems by exploring real needs and by breaking through the given implication with all available means." (Kuenzlen 1972, p.99)

Besides the described inadequacy to bring "real change" planning oriented only to technical science bears the danger that the people are seen as functions only and then forced to adapt to whatever structures are established. We encounter the danger that the "input: people" become functionalized by easily quantifiable but limited aspects. 1) 2)

John F.C. Turner discredits quantitative methods, because:

"Quantitative methods cannot describe the relationship between things, people and nature - which is just where the experience and human values lie... quantitative methods can only indicate, not measure, non-quantifiable components - the human realities of housing... Real values are those that lie in the relationship between the elements of housing action - between the actors, their activities and their achievements." (Turner 1976, p.66)

So the architects and planners do not have to search for "optimal technocratic solutions", but to try to come to "subjective optimal solutions" according to the needs of the users. To try to come to a housing process where critical, non-alienated democratic participation takes control and where human use values can be substituted for material values, this would need involvement, action, and control of the needs of the affected. Why this has to be done by the affected people and applying external theories of planning and not by pure

1) This refers to the fact that intersubjective knowledge in social matters is very limited (e.g. the present and future collective and individual needs given by the social reality)

2) examples for the fatal consequences of ignored qualitative needs are quantitatively necessary highways which have had very bad qualitative inputs on people by pollution, space destruction of the urban environment etc, or urban renewal, declared as economically necessary but destroying the living qualities of cities especially for the former dwellers.

empirical "research" (referring to internal theories) will be discussed in the following chapter.

1.3.3. "User programming studies"¹⁾ versus "self-design"

If we have said that technocratic values should be substituted by human values, there still exists the question how to best measure or scale human values. To suppose that human values can be better represented by the interests of those who will be affected by planning than by pure technocratic approaches does not lead as a matter of course to the best way to have the users, and, thereby their human needs and values, participate in planning.

The question how to evaluate human needs and values relevant for architecture is answered in different ways. The empirical sociologists attempt to extract human values from their user analysis²⁾ and to give inputs for the technocratic planners. On the other hand those engaged in the "self-builder-movement" think that the individual has to participate in the design for his needs in a very direct way.

Traditional studies that evaluate human requirements for the environment are (1) observations of preferences that are expressed as behavior or by physical traces and cues (e.g. market and consumer survey or mathematical simulation methods) or (2) the survey of attitudes through interviewing and using non-verbal aids or questionnaires.

The weakness of the observation of preferences (1) lies in its inappropriateness to express any unfulfilled preferences. Therefore,

1) "User programming studies have two parts: analysis of a user group like that which will inhabit the eventual building or place; and formulation of guidelines for the behavioral part of the design program." (Zeisel 1975, p.21)

2) "User analysis, ..., generally includes research and analysis of a specific type of user group in a specific type of setting." (Zeisel 1975, p.21)

this method, if used as a means for planning, can only serve as a rearrangement of the status quo¹⁾; the latter is quite often oriented on non-human values.

The "attitude survey" approach (2) allows the expression of wishes, but only within the framework that is set by the items asked about in the survey²⁾. In addition:

"It is now acknowledged that what people want is in part governed by what they think they can get and what sacrifices they make to get it." (Robinson et al. 1975)

Therefore, we must make a distinction between needs and wants; furthermore, more sophisticated research methods are employed today³⁾ (e.g. Triangulation of methods⁴⁾ or methods for identifying the trade-off preferences of the test-people⁵⁾).

But even these sophisticated research methods have fundamental pitfalls:

+ They are based on quantifiable data collection. Therefore, they tend to shut out immeasurable data or data which are hard to evaluate. These data are often concerned with human values, e.g. human relation and things of this sort.

1) "People often behave in certain predictable ways because they are constraint by their social and physical environment from behaving otherwise... " (Goodman 1972, pp 180f)

2) In addition to this it should be mentioned that: "Social psychological evidence has demonstrated the very nebulous relationship between opinions and attitudes as measured by interviews and questionnaires, and subsequent behavior with respect to the objects of those opinions and attitudes." (Rothman and English 1974, p.185)

3) "From existing user-programming research we know that two major issues arise in data collection: (a) The distinction between user needs and wants; and (b) the necessity to use several research methods simultaneously." (Zeisel 1975, p.23)

4) These methods employ several of the above mentioned research methods. For further description see: Zeisel 1975, pp 24ff)

5) Examples are: "The University of California Trade Off Game" (Robinson et al 1975) or combination process for housing by Alexander (1969)

+ They have to make limitations regarding their data-collection. By making these limitations and by using specific methods, values are introduced. However, these values might be opposed to those people who are affected later on. It is hard to the people affected by research to object its results since any values will be hidden behind statistics and other research data which have the appearance to be value-free.

+ They are closed to implementation which would break with the status quo, since they are only concerned with data that is collected within the existing socio-political system, without putting the socio-political system itself (power structure) into question. Therefore, this kind of research tends to mirror fixed forms of social power distribution.¹⁾

+ The application of the research results are often out of the control of the users. The users themselves could become "research-objects", especially if the results are employed in planning models used within an "internal theory of planning".

+ Their basical intention is not to help the users by clarifying the reasons for constraints under which they are acting, but to help the designers and service personal who deal with user groups.²⁾ This could strengthen the existing power structures, rather than contributing to a change of the status quo.

1) e.g. in the University of Southern California Trade Off Game (Robinson et al. 1975), there are profit and economic values built-in, as the trade-off can only be done with the existing kind of rationality (e.g. you can trade-off between air quality and access to a school)

2) Zeisel writes concerning the Man-Environment Relations (MER) research (an overall term for the research concerned here):
"by describing MER research in terms of user groups, studies become more useful to administrators, designers and service personal who deal with these groups."

+ They are often fixed to research which employs communication between the researcher and individuals; and their results lead to the implementation of solutions by an expert. Thus, values can be lost which are created and manifested in the horizontal communication that is present in the social groups that are composed of those who are affected.

+ They neglect human desires for active participation¹⁾ (which would be more appropriate for satisfying an individual's or small group's desires) by generalising the results of their studies.²⁾

If we are to overcome these pitfalls, it will be necessary for us to employ a critical form of social research: Such research is not only concerned with data evaluation, but also with social power questions. Its highest interest is to serve the users by researching the reasons for their behavior, to show the constraints and their backgrounds, and to develop strategies which concern not only the adaptation of the environment (and of men) to the existing socio-political system, but also strategies concerning the change of the given socio-political conditions. The user could be major participants in this kind of research and undergo important learning processes.³⁾

1) How great the willingness of people to participate is if a realistic chance for participation is given (power) can be shown by a housing project (Hollabrunn, Austria) where the participants designed their layouts: "It is truly remarkable that almost none of the participants gave up their right to determine the layout of their own dwelling, except those who planned to rent their dwelling to someone else. Only in very few cases was participation seen as a burden or an unpleasant duty" (Dirisamer et al. 1976, p. 15)

2) "MER studies often focus on one particular group of people." Thereby the group definition is out of the user's control; this can lead to the imposition of the values of the researchers.

3) "With each passing day, its members are becoming more conscious of their responsibility and power as a group, which has been demonstrated by the fact that they have managed to establish an active cooperative savings account which has already been used to finance the acquisition of the site." (Andreade and Zamudio 1976, p. 40; about the "Colonia Guerrero", Mexico) see 2.1.

One may argue that the reason why the pure self-design process is not an appropriate way to develop full participation, is, that the self-building movement is closed to any sociological approach limiting itself to a "small scale". Their demand for very direct participation limits them to a small scale and makes them forget to look beyond their single small community. Then they have no hope for success in conflicts with the complex society: "Drop-out cities" which are limited to their own problems would strengthen the rest of the existing society which thereby loses the "problem maker", creating more and more problems which these limited self-builders wanted to attack.

What we can draw from this discussion is that neither the most sophisticated user and environmental research, nor the most direct participation in design gives us the best chance for human-oriented architecture and planning. The best chance for such an architecture and planning would be through participation as a socio-political learning process and as an experimental instrument providing users and experts with human-rational insights into the society as a whole.¹⁾ For the individual, such a process would become a medium for self-representation, communication and aesthetical articulation. For the expert, isolation from the users could be avoided, and he could work in the sense of external theories of planning (see: 1.2.).

1) Kuenzlen (1972) describes a similar concept as "Revolutionary Planning".

1.3.4. Centralism versus autonomy

"In historical fact, good housing like plentiful food, is more common where it is locally produced through network structures and decentralizing technologies." (John F.C. Turner 1976, p.5)

An increasing rationalization, necessary for a competitive housing industry, has led to a high degree of centralization in most decisions concerning housing. We find less and less local builders and more and more standardized and mass produced housing components; moreover, the control has shifted more and more to the control of government programs or large corporations.

In contrast to this development, John F.C. Turner in his books "Freedom to Build" (1972) and "Housing By People" (1976) demonstrates that where dwellers are in control, their homes are better and cheaper than those provided through government programs or large corporations. He argues that:

"The complexity and variability of individual household priorities and consequent housing behavior are beyond the practical grasp of any central institution or organization." (Turner 1976, p.106)

This leads to material diseconomies and social dysfunctions using high energy to substitute the excluded possible inputs of the users.

In addition, centralization of planning (overall planning), also cause misunderstanding between the planner and the "planned-for" - with the latter frequently disappointed. They have no insight into how "they are planned". The central planning is done on a quite

different level and according to a quite different rationality than their own.

Theoretically speaking, this means that the superiority of the technical productivity within hierarchical structures is reduced, if the hierarchy is only able to achieve partial control of all parts.¹⁾

This loss of control occurs mainly at the social and temporal-rational dimension (dimensions which are very important in housing). Thus, the growing complexity of all tasks and structures itself requires decentralization in order to avoid increasing dysfunctions.²⁾

In architectural planning, the locally self-governing housing system based on network structures seems superior to a centrally administered housing system within a pyramidal structure. This leads to the necessity of new strategies in view of the situation we have described. Goodman suggests the following:³⁾

"A system of community socialism (as opposed to either private enterprise or centralised socialism), in which the economic institutions would grow from smaller governing units in a society, is a model which would allow social outputs to be determined by the people most immediately affected by them." (Goodman 1972, p.217)

1) this contrasts Weber's thesis of the superiority of hierarchic organizations. (see Gronemeyer 1973, pp 15)

2) John F.C. Turner writes that: "...the bureaucratic heteronomous system produces things of high standard, but at great cost, and of dubious value, while the autonomous system produces things of extremely varied standard, but at low cost, and of high use-value. In the longer run, the productivity of centrally administered systems diminishes as it consumes capital resources, while the productivity of locally self-governing systems increases as it generates capital through the investment of income." (Turner 1976, p. 87) and "The larger the organization that builds and manages housing, the tighter the fit, the greater the mis-match of housing and households, the lower the effective demand. The higher the energy required and the greater the capital costs, the shorter the lives of the buildings and the greater the cost-in-use." (Turner 1976, p. 92)

3) A similar proposal like this one is made by E.F. Schumacher (1975)

For him the decision and programs going beyond local boundaries should be balanced with local control by examining in each case "... the repressive effects of 'central-tending' organizational forms." (Goodman 1972, p.219).

John F. C. Turner suggests that the control of dwellings and neighborhoods must be in individual and local hands, a control which includes the use of local resources. The central authorities have to ensure access to essential resources. Where larger scale effort is required (greater degree of standardization of infrastructure), there is a greater need for central planning.

Other suggestions that industry should take the initiative would seem to allow control by the user, such that a local variety results. This would make the "detachable" unit an industrial product like any other durable consumer goods that have been combined with the support structures in the public sphere by the users through a methodology based on conceptualization and definition.¹⁾ But in this case the production of the detachable unit tends to take place in a centralized system with all the disadvantages produced by centralization.

If we take that aspect of Goodman's concept that the effect on the community have to be final standard, and if we use Turner's concept (namely, that the local level should be directed by the people them-

1) These suggestions are layed out for the use of the S.A.R. principles and methods. ("Stichting Architecten Research", Eindhoven, The Netherlands; see: Habraken, N.J. et al. n.d., and Habraken, N.J. et al. 1977)

see also: 2.1.

selves and that central authorities should be charged with providing any large scale requirements) and using a coordination methodology (as S.A.R. for example), we can construct the following concept: "real participation" at a local level, that is done with the intention of achieving control of the required centralized planning.

1.4. Participation: "integration" or "real change"?

In the chapters above we encountered again and again different kinds of "quasi-participation". This raises the general question, whether any participation can bring about a "real change" (of the status quo) or whether any participation undertaken in our society has the character of being simply a more sophisticated instrument for maintaining the status quo.

It is necessary for the established social structure to encourage more and more participation: The ever-growing complexities of a technological society brings more and more problems of integration:

"The model of Weber - growing hierarchisation equals growing rationality - does not fit in many areas any more. Under the demands for cooperation, the hierarchy runs into an aggravating crisis of functions." (Gronemeyer 1973, p. 16) 1)

Consequently, participation is used by those who are in power as an instrument of conflict-management (this is done most effectively when there is no loss due to "friction") and to maintain the status quo. (i.e. to conserve the existing power structures). Attempts have been made to achieve this by providing those qualities of participation like feedbacks which are better than feedbacks in hierarchical structures; moreover, attempts have been made to get the necessary cooperation from those who are concerned.²⁾

1) "Das Webersche Modell - zunehmende Hierarchisierung gleich zunehmende Rationalität - stimmt in vielen Teilbereichen nicht mehr. Unter Kooperationserfordernissen gerät die Hierarchie in gravierende Funktionskrisen." (own translation)

2) "...and ironically enough, it can turn out to be a new Mickey Mouse game for the have-nots by allowing them to gain control but not allowing them sufficient dollar resources to succeed." (Arnstein 1975, p. 145)

Furthermore, such participation can be used as ^{an} "early-warning-system".

In this sense, the trend toward participation is initiated by the wish for a better integration of the affected people with the existing conditions: i.e. adapting needs in a more sophisticated way to the existing frame, or legitimizing all kind of intervention.

That this kind of participation cannot effect real change is based on the argument that the existing society cannot allow "real change" per se:

"Since participation contradicts both the general concepts of voted representation and of capitalistic free private investment-decision, there is small hope for its realization" (Kuenzlen 1972, p.101)

Thus, if participation is to allow a real democratization, especially of the citizen's political influence, then this would require as a prerequisite the overcoming of the private property system as the means for production (this is particularly important if one views the main contradictions of the society to be economic ones), and a different kind of society.¹⁾

Does participation become an instrument for better functioning of the same old system (where power is in the hands of the few) and thereby an instrument for avoiding real change?

1) In this sense Hans Blumenfeld argues: "The popular demands raised by citizen participation have made it evident that the problems of human settlements are social rather than physical. Unemployment, poverty, unsatisfactory housing, alienation of the worker from both the process and the product of his work, poor physical and mental health, crime and delinquency certainly are problems in the city. They are not correlated either with the size or the form of the human settlement. Instead, they are products of the basic structure of North American society." (Blumenfeld 1976, p.65)

We need to examine more than just these direct effects that participation has on the system. We also have to focus on those influences of participatory structures on the affected people: namely, the new perceptions of their individual roles, the enhanced communications, the better insights in and perception of their circumstances, a politizing of their day-to-day life and so forth. These influences on the socialization of the individual may result in an increasing democratic self-reliance as the basis for more participation and self-determination and ultimately the ability to produce "real change". Gronemeyer concludes in his book on "Integration through Participation" (1973) that, although participation is used for the purpose of maintaining the status quo, nevertheless it might become a "Trojan horse" of the have-nots, which is drawn in to the "walls" of traditional power positions:

"socio-structurally speaking, integration through participation is at the very least ambivalently....The building up of opposing positions in plain view of and to the detriment of those who occupy positions of power, is unavoidable. In the end there can only result conflict bearing integration. Psycho-structurally speaking, the consequences for socialization of participation are no less ambivalent: it is difficult to tie down autonomy as the motive that is intended to be built without excluding alternative behaviors. We can expand the old paradigm: "When one reaches out the little finger he is likely to lose the whole hand'." (Gronemeyer 1973, p. 209)1)

Consequently, any attempt at stabilizing the status quo through participation contains a contradiction - not necessarily benefitting the traditional power. This chance should also be used as far as

1) "Soziostrukturell ist Integration durch Partizipation zumindest ambivalent... der Aufbau von Gegenmachtpositionen vor den Augen... und mit Billigung der Inhaber von Machtpositionen ist unvermeidbar... Am Ende kann konflikträchtige Integration stehen. Psychostrukturell sind die Sozialisationsfolgen von Partizipation nicht minder ambivalent: Autonomie als intendierte Motivbildung ist schwerlich so an die Kette zu legen, dass Verhaltensalternativen ausgeschlossen sind: Ausweitungen nach dem Muster: wem man den kleinen Finger reicht, der will bald die ganze Hand." (own translation)

possible in architectural planning. Strategies which would optimize the use of the opportunities we have mentioned should be developed. The model developed in the following sections (4. and 5.) should serve this end.

1.5. Resulting objectives for user participation in housing

- + The "ordinary" man should contribute to the richness of human existence and to "better" design solutions. The layman's specific resources are imagination, specific skills, initiative, co-operation, determination and so on. (see: 1.3.1.4.). The reason why "laymen" could achieve better design is that the individual household priorities and housing behaviors are beyond the grasp of any central institution or organization (1.3.)
- + Participation should be intended to achieve an interrelating, argumentative process, in which the most affected groups will gain the most influence (1.2.)
- + On the low order of complexity and social and political conflicts that exist within a single housing project or neighborhood project, we can find a chance for "real participation" even in the form of identity of initiator, planner and affected people. There, an argumentative process" can take place (1.2.).
- + The possibility for the expert not to work against the user would be to see himself in a subjective role and to take part in the decision making in a transparent way (1.3.1.1.).
- + Control of the affected people could be gained if the experts have to explicate and discuss their planning intention and the objective of planning (1.3.1.)
- + Generation of "subjective optimal solutions" according to the needs of the users (1.3.2.).

- + Allow an argumentative process (necessary for real participation) a suitable "language" between the experts and the laymen is necessary. A "language" allowing argumentation, persuasion, enlightening and finally direct effects (1.3.1.)
- + The participatory process based on critical social and technical science should serve, for all participants, as a socio-political learning process and as an experimental instrument providing them with human-rational insights into society as a whole (1.3.3.).
- + Horizontal communication (within the social group of those who are affected), in contrast to vertical communication (between the expert and the user or client only), to allow socio-political learning which is inherent in cooperative actions. Horizontal communication is therefore a crucial point for "real participation" (1.3.3.).
- + An experience of participation that encourages: new perceptions of the participants' individual roles, enhanced communication, better insights in and perception of their circumstances, politicizing of their day-to-day life through stimulation of awareness of the connection between housing and politics.
- + Participation should be, for the individual, a medium for self-representation, self-expression, communication and aesthetic articulation with the outcome of being personalization and humanization of the environment.
- + Participation at a local level should have the intention of achieving more and more control over the whole environment, and to arriving at a more just distribution of power (1.3.4.).

+ Participation should stimulate an equal distribution of power by the building up of opposing positions against those who presently occupy positions of power and by the consequences the socialization of participation has on the individual (1.4.).

2. Technological and organizational means

"But the opportunity we have today, given the unique industrial potential of this country and other industrial 'giants', is the ability to produce the kind of building products which would make the manipulation of the environment more easily managed by large numbers of non-professionals." (Goodman 1972)

After we have discussed participation on a more theoretical, argumentative level, we will now examine the technological and organizational means used in existing projects.

Generally speaking, there are two different approaches for achieving participation of the "non-professionals" in architectural planning:

- + the creation of new technological systems that would facilitate every adaptation of the environment by the user.
- + The attempt to bring more power to the participants by new socio-political concepts.

All too often there is a gap between the "technological systems" and the "socio-political concepts" concerning user participation.

This part of the thesis will deal with the linking of these two main approaches: different technological, organizational systems should be evaluated in respect to their possible application for socio-political concepts.

Since the focus of this thesis is on housing, and since a number of studies on realized citizen participation at the city or district level have been made, this evaluation will concern participation in housing. I have selected typical projects for this purpose.

2.1. A comparison and evaluation of nine housing developments designed in conjunction with user participation.

This comparison and evaluation is primarily concerned with the organization of the participatory design process itself and with the potential diversity and responsiveness of the system to life style, needs, social arrangements and political goals.

Thus, there are limitations on the evaluation given: namely, user satisfaction over the long run, technological success, final costs and things of this sort have not been considered in extensive detail. The reasons for these limitations are that all projects have been designed within the last few years, and no comparable evaluation studies concerning all those facts are available; moreover the scope of this thesis limits our focus to specific issues only.

The nine selected projects have been developed to a level where a prototype has been designed.

These projects are:

- + "PSSHAK" Primary Support Structure and Housing Assembly Kits, London
- + "COLONIA GUERRERO", Mexico City, Mexico
- + "PROYECTO EXPERIMENTAL DE VIVIENDA", Peru
- + "CASCO", Shell Housing and Housing Environment Project, Delft, Netherlands
- + "PROJEKT STEILSHOP", Hamburg, West Germany
- + "DWELLING OF TOMORROW", Hollabrunn, Austria
- + "SOCIAL SECTOR - CATHOLIC UNIVERSITY OF LOUVAIN", Brussels, Belgium
- + "PROJECT AT LES MARELLES", near Paris, France
- + "TOWNLAND SYSTEM", built in Operation Breakthrough, Seattle, USA

Methodology:

The sequence of descriptions follows the degree of "theoretical flexibility"¹⁾ of the load bearing structures.

Aspects or critiques which are in common to more than one project are only once fully described (where that aspect is most outstanding).

This paper does not claim to show an objective, scientific comparison and evaluation: final evaluations would only be possible for specific purposes (taking in account partial aspects or a specific goal for project realization).

Therefore the attempt has been made to discuss the technical and organizational concepts in relation to the question of user participation.²⁾ The judgement, for the participatory concept, is based on my own point of view as outlined in "A discussion of participation" (1.).

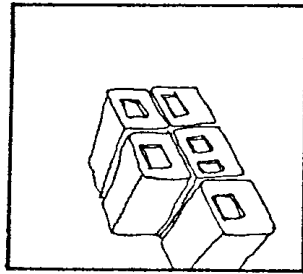
Conclusions are drawn under 2.2.

1) "Theoretical flexibility" refers to a flexibility which is, theoretically speaking, possible but not necessarily realized.

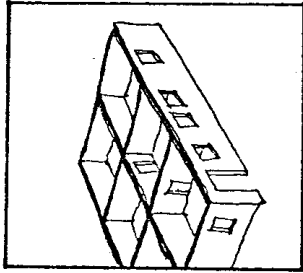
2) How important it is to take this into consideration was underlined by the results described in this paper: we can see more differentiated solutions in less flexible structures of different participatory concepts are applied (compare: "Project at Les Marelles" and "Steilshop").

DETERMINANTS FOR "THEORETICAL FLEXIBILITY"
WITHIN THE STRUCTURAL FRAMEWORK

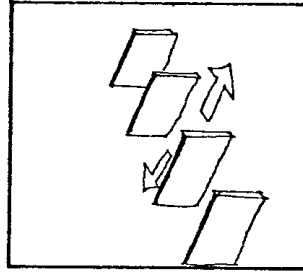
SELF SUPPORTING
CELLS



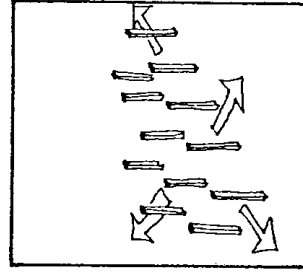
CROSS AND LONGI-
TUDINAL FRAMEWORK



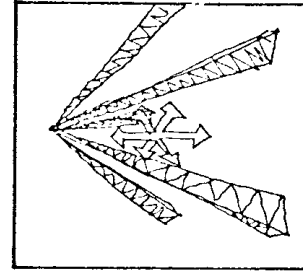
CROSS OR LONGI-
TUDINAL FRAMEWORK



COLUMNS AS
STRUCTURAL FRAMEW.



MEGA STRUCTURES



LOW FLEXIBILITY

LOW CONSTRUCTION COST

HIGH FLEXIBILITY

HIGH CONSTRUCTION COST

PSSHAKI

COLONIA CUERRERO

EXR. DE VIVIENDA

CASCO

STEILSHOP

HOLLABRUNN

LOUVAIN

LES MARELLES

TOWNLAND

To make the projects comparable, the descriptions follow a standardized outline shown here:

1. Short description: + context
 - + participatory process
 - + special technical aspects
2. Construction:
 - + primary structure (load bearing)
 - + secondary structure (partitions, claddings etc)
 - + tertiary structure (service systems)
 - + a typical solution
 - + the coordination system (e.g. modular coord.)
 - + material(s) used
3. Critique:
 - + positive aspects
 - + negative aspects

Finally, I shall compare below the building process with respect to participation. I provide a diagram which compares the constructional and social aspects.

Illustrations which are taken from the secondary literature are indicated by numbers:

Alexander, G. et al. 1969 : 4,5,6,7.
 Andreade, J. and Zamudio, J. 1976 : 2,3,
 Bender, R. and Parman, J. 1976 : 17, 18.
 Dirisamer, R. et al. 1975 : 11
 Dirisamer, R. et al. 1976 : 12. 13.
 Froyen, H.P. 1976 : 1,8,9,14,15.
 Operation Breakthrough, n.d. : 19
 Vernez- Moudon, A. 1976 : 16
 Wagenbach, D.v. 1976 : 10

"PSSHAK" Primary Support Structure and Housing Assembly Kits
 GLC (Greater London Council), Department of Architecture and Civic
 Design, London, Great Britain; Architects: Nabs Hamdi and N. Wilkinson

1. Short description

This method was used in two projects: Stanford Hill (12 apartments) and Adelaide Road (44 dwellings). This description is based on the latter one.

In this method there is a difference between the "shell" (support) and the "assembly kit" (detachables). The kit, made up of independent factory produced components is installed in a second stage in the already finished "shell".

While the shells go up, a participation program with the prospective tenants is intended to go into operation. Information is given through the use of a brochure and the use of a model to assist them in deciding the lay-out of their flats. A questionnaire is used to establish the size of each family.

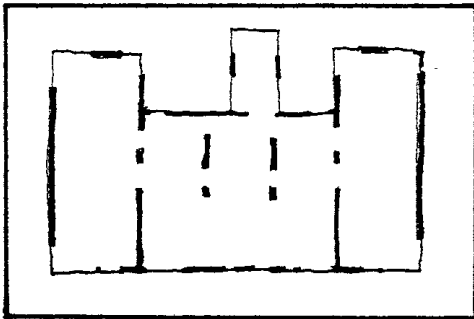
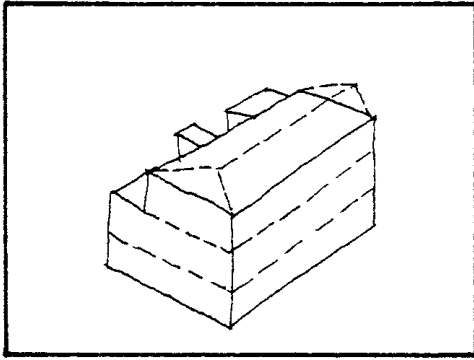
The project is based on the S.A.R.¹⁾ principles.

1) S.A.R. stands for "Stichting Architecten Research", Eindhoven, the Netherlands; it is supported by the Dutch architects such that resources are available for research in housing.

"SAR put forward the concept of Support Structures and Detachable Units. This is basically a distinction of two separate systems of which a dwelling is made. The detachable units are by definition - all units about which the user can make decisions. The units that he can choose and change. The Support Structure is the building in which the detachable units are placed. It offers the space to be completed by the user into a dwelling by means of detachable units" (Habraken et al. n.d., p.1). The SAR methodology is based on two sets of rules which have to do with the position and dimension of material (modular coordination) and with the position and dimension of space.

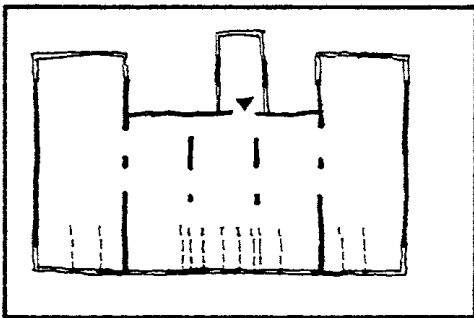
The SAR methodology can be used as a means for systematic design and as a means for communication by the different participants during the design process. For an extensive description see: Habraken 1977. See also: Hollabrunn, p. 69

2. construction



(THE "SHELL" INCLUDES ALSO
PRIMARY ELECTR.+MECH.ELEMENTS)

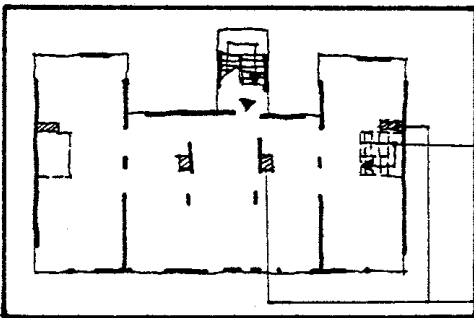
primary
structure



BUILD WITH THE "ASSEMBLY KIT"

POSSIBLE POSITION
OF PARTITIONS

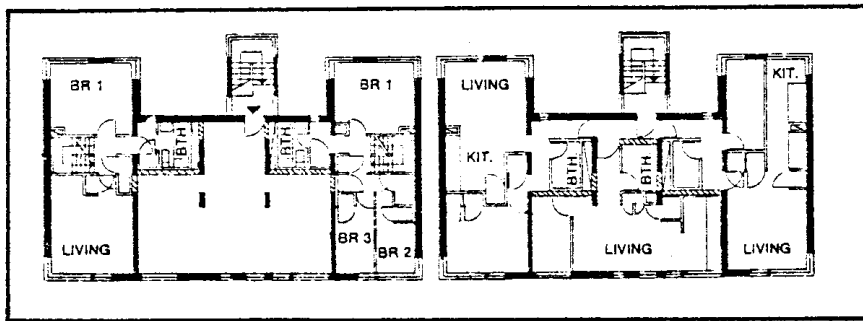
secondary
structure



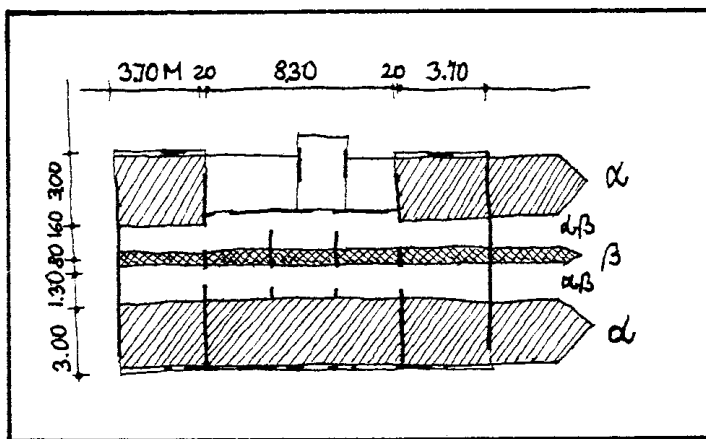
THE "ASSEMBLY KITS"
INCLUDES: • VERTICAL DUCTS
• PARTITIONS
• DOORS
• CUPBOARDS
• BATHROOMS
• WC's

OPTIONAL STAIRCASE
UTILITIES

tertiary
structure



typical solution



S.A.R.
PRINCIPLES

coordination

α - ZONE : INSIDE SPACE FOR PRIVATE USE WITH RELATION TO OUTSIDE
 β - ZONE : INSIDE SPACE FOR PRIVATE USE WITHOUT RELATION TO OUTSIDE SPACE

PARTITIONS

16MM PANELS ON
SOFTWOOD FRAMING
READY TO DECORATE

STRUCTURAL SHELL

LOADBEARING BRICK WALLS,
WALLS AND FLOORS
(CAST IN-PLACE CONCRETE)
ARE PIERCED WITH
OPENINGS AT STRATEGIC
POINTS.

material

3. Critique

The advantages of this project: low cost, no conflict with building regulations, and variability of the unit size - are also the basis for a critique:

Because the flexibility has to happen inside the given space, any extension of a unit is only possible in conflict with the neighbors. But there are no built-in means to deal with this conflict.

The existing bureaucratic framework for this project brings Rabeneck to the statement:

"It is hard to imagine GLC tenants being permitted to make 'bad' or quirky plans, as they have been able to do in France and Sweden, even if they wanted to" (Rabeneck 1975, p. 631) and

"In fact, examination of sample lay-out,..., issued by the GLC suggests that the range of choice in lay-out is distinctly limited to very conventional arrangements." (Rabeneck 1975, p. 632)

This also illustrates how little "power" the tenants have. So this project ranks, concerning citizen participation, on a very low level.

(See: Arnstein's ladder of citizen participation, 1.1.)

In the words of Rabeneck:

"But one wonders whether the whole PSSHAK notion has not become little more than human libertarian's answer to constraints, an elegant loophole through which housing committees and managers are only too happy to slip." (Rabeneck 1975, p. 632)

The limitation of variations in the building goes back to the fact that "we have the paradox of a loose-fit shell tightly designed to suit current mandatory space and amenity standards." (Rabeneck 1975, p. 632).

There are also socio-political objections concerning the industrialisation of the entire building process (to make the dwelling a commodity of the consumer market).

"COLONIA GUERRERO", Mexico City, Mexico

COPEVI (Centro Operacional de Vivienda y Poblamiento A.C.)

1. Short description

This is a housing renewal project for people who are concerned by the economic and social disequilibria. The involved architects write:

"It is in this context that we wish to define the specific meaning of participation, in which a possibility is again provided for individual expression, and beyond that, means are developed for using group organization and community power, for the equitable acquisition of services and goods for a better life." (Andreade and Zamudio 1976, p.33)

The development process consisted of three levels:

- 1) the level of the overall project
- 2) the level of the "vecindades" (group units)
- 3) the level of the individual dwellings

The project is based on an analysis of former homes of the users.

Concurrent with this analysis, the dwellers were contacted and the general ideas were explained to them. They also were advised to organize themselves into housing cooperatives, and the situation was documented.

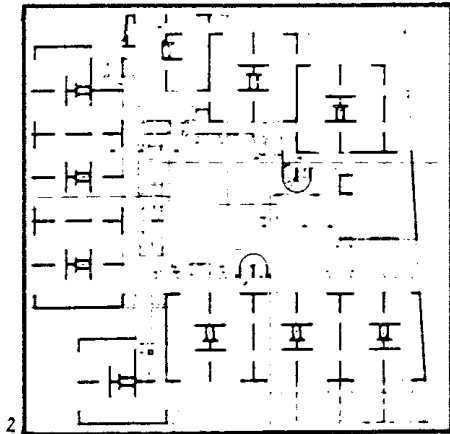
The analysis was commented on and criticized by the assembled "colonia", and in consultation with the users, there was a prototype housing unit developed. This was approved by the general assembly and by all dwellers.

Besides the Architects, two Sociologists and two so-called "Social

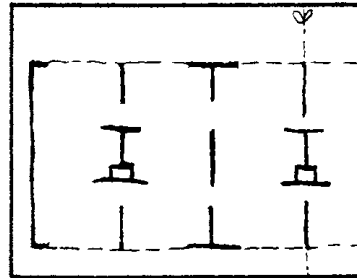
Facilitators" participated in this project. Lawyers and specialists in the field of cooperativism worked with them.

The construction is based on the S.A.R. system¹⁾ and includes flexibility, simple prefabrication and the use of own labor.

1) "The method was used primarily as a communication tool to facilitate cooperation between public and private institutions and users, and to coordinate the process of design and production on the basis of decisions made during the process of participation by the users." (Andrade and Zamudio 1976, p. 34)



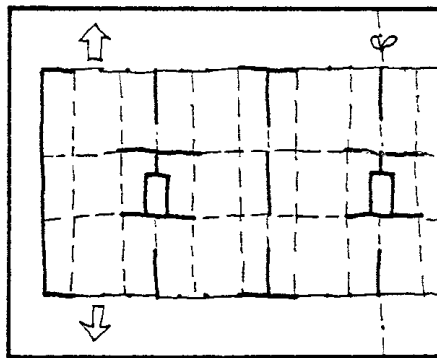
2 GROUND FLOOR PLAN OF VECINDAD



GENERAL PLAN OF UNITS

2. construction

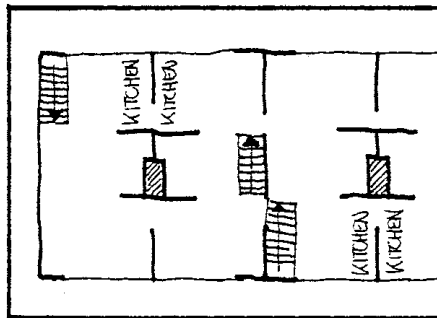
primary structure



POSSIBLE POSITIONS FOR PARTITIONS

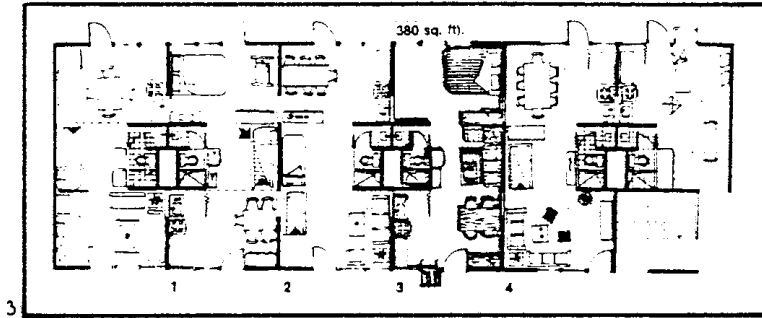
- FACADES AND PARTITIONS ARE AT USERS' OPTION
- EXTENSIONS ARE POSSIBLE
- OPTIONAL SLEEPING PLATFORMS

secondary structure

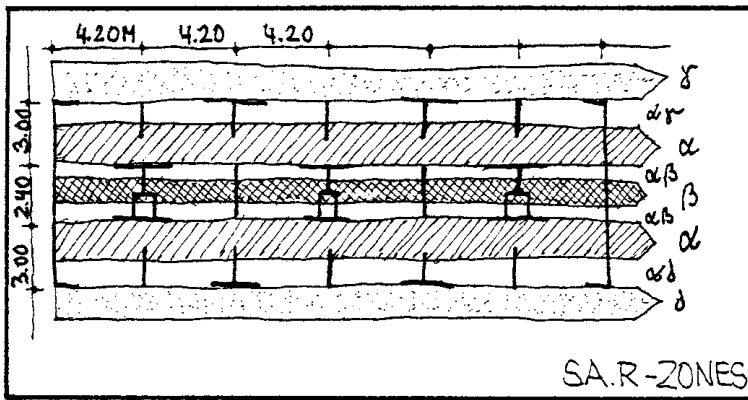


ADDITIONAL UTILITIES (AS A PRIVATE TOILET) ARE POSSIBLE

tertiary structure



typical solution



coordination

SIMPLE PREFABRICATION

material

3. Critique

The most outstanding point of this project is that the social and community aspects are recognized. This is facilitated by the fact that it was an urban renewal project.

Here, the potentials inherent in group processes (neglected in most other projects) are used. A means to this is horizontal form of communication process, which can facilitate a socio-political learning and which can facilitate the cognition inherent in cooperative actions. Therefore:

"...with each passing day, its members are becoming more conscious of their responsibility and power as a group..." (Andreade and Zamudio 1976, p. 40)

To build this learning process into the participation process means that the results of participation are not only better dwellings than usual, but it means to allow better living conditions in the dwellings by improving interaction patterns for all concerned. This is described in the "Colonia Guerrero" project as follows:

"Throughout the whole period of participation, the team was able to evaluate its contribution and the contribution of all other parties, while everybody has learned invaluable lessons in the process of interaction and participation." (Andreade and Zamudio 1976, p. 39)

In this sense the participation project includes not the technical aspect only but in the same way the human, social, and political aspects. this means that this project reaches also out over problems

inside a spacial structure (e.g. acquisition of a site, recognition of the cooperation by public and private institutions etc.).

It seems that the systematic design and communication methodology for the planning and design of the habitable spaces has hepled the participatory process much. The architects of the project write:

"The S.A.R. methodology proved adequate for all these tasks, i.e. it served as a means of graphic and technical communication, modular coordination and facilitated the design for maximum flexibility and adaptability by its system of interrelated tools for analysis and evaluation, such as the concept of zones and margins, sector analysis, variant generation etc." (Andreade and Zamudio 1976, p. 40)

"PROYECTO EXPERIMENTAL DE VIVIENDA", Peru

Center for Environmental Structure, C. Alexander et al.

1. Short description

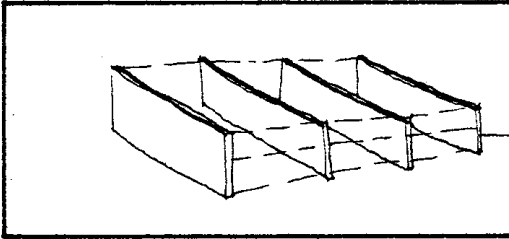
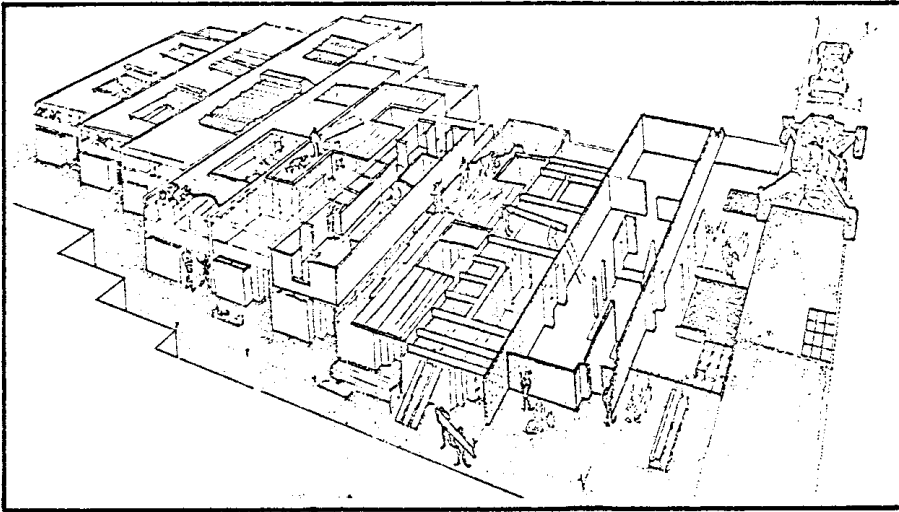
This project was developed for housing poor people in Peru.

In this project, the user is asked, through mechanical rules of a combination process, to show preferences concerning where to live and how to shape the unit within the given possibilities (money to spend, offered parts of the house, given zoning etc).

The design itself is built from sixty-seven patterns¹⁾ whereby each pattern defines the condition (context), the needs in the context (problem), and shows a spatial arrangement of parts in the given context in order to solve the problem (solution).

1) Pattern language in architecture is derived from operational research. With the intention to free the architect from prejudices and habits, a given problem is broken down into its smallest parts ("decomposition"). Each of these smallest parts represents a misfit (a problem) and should find a form that will fit it (a solution). In the case of the "Proyecto Experimental de Vivienda" there are: Community Patterns, House Patterns and Construction Patterns. For example the Community Patterns are: cells, road system, pedestrian network, community spine and cell interior.

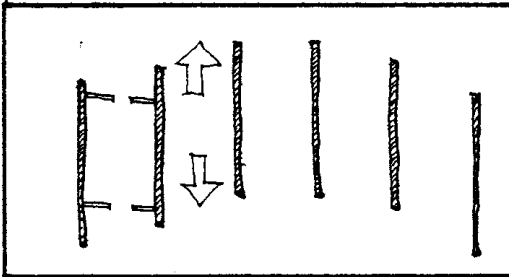
2. construction



ADAPTABLE LONGITUDINAL SECTIONS

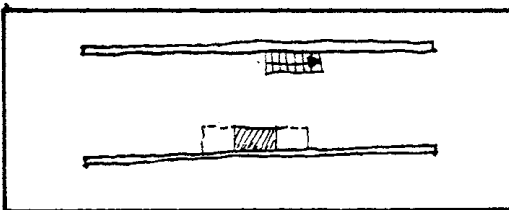
PERIMETER WALL

primary structure



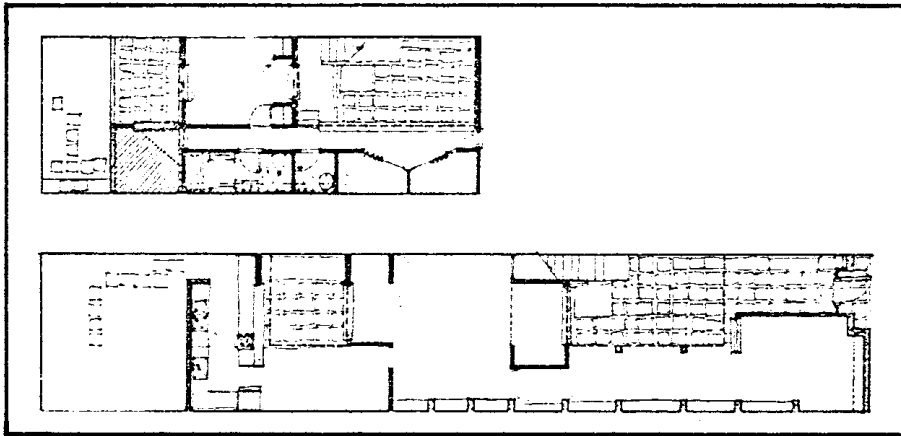
PARTITIONS, FRONT AND BACKSIDE AT USER'S OPTION

secondary structure



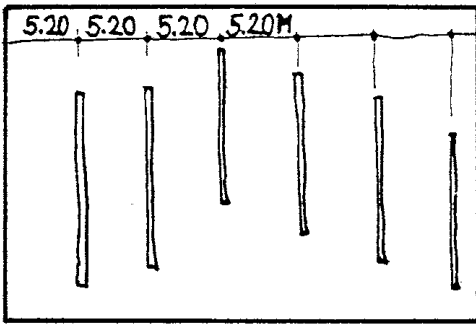
DIFFERENT SIZED SANITARY CELLS AT THE 1ST FLOOR

tertiary structure

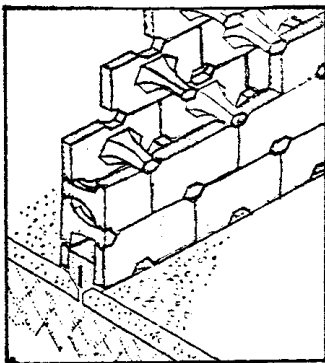


LARGE HOUSE - 1ST FLOOR SMALL HOUSE - 2ND FLOOR

typical solution

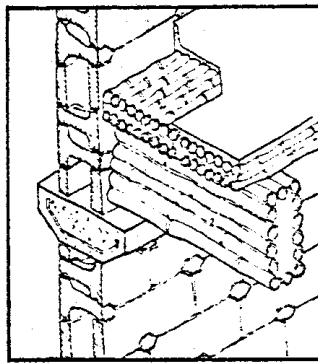


coordination



6.7

MORTARLESS BLOCK WALL



COMPOSITE BAMBOO
FOAM BEAMS AND PLANKS

material

3. Critique

The variety which can be achieved through the combination process from a small number of basic elements offers a much better adaptation of the dwellings to actual user needs.

But in this kind of user participation, communication only happens vertically (user - architect). Thus, all those values and potentials which are created and manifested in horizontal communication within the social groups of those affected are shut out. Socio-political learning and the recognition which is inherent in cooperative actions is thus sharply reduced. (see: 1.3.3.)

Although the offered solutions are mostly based on behavioral research results, and although the actual design is based on questionnaires, the users' needs are not fully respected. This critique goes especially for all design which goes beyond the single family unit. Here the far reaching neglect of social structures within existing communities leads to obviously unsatisfied high aspirations (after a very poor "social planning"):

"Families choose the cell they want to be in, according to its relative 'quietness', and according to the community facilities nearby. As a result, the families in any one cell will probably share attitudes and interests; we hope that each cell will develop a unique 'character', different from the others." (Alexander, C., p 56)

This is a far too optimistic hope if we take into account how the families are put into their clusters:

"If they want to be in a busy area, place them along the paseo. If they want to be in a quiet area, place them far from the paseo. Location along the length of the site is determined by the community facility they want to be near." (Alexander, C., p. 40) ¹⁾

It hardly can be expected that the placement of the user in a cluster will bring the hoped result that the families will share "attitudes and interests". But for the authors:

"Each cell is intended, in the long run, to sustain a different way of life, a subculture" (Alexander, C., p. 57)

Whereby the authors' own definition of subculture disqualifies their own means to establish clusters:

"A subculture is defined as a group of people (not necessarily friends) who share certain attitudes, beliefs, habits and needs not shared by others, and who may require special environments, local organizations, or services, to support these special needs." (Alexander, C., p. 57)

Therefore, the suggested planning process concerning participation can be considered as manipulation²⁾ (especially concerning all design which goes beyond the single family unit). Although the "patterns" may show some appropriate solutions, the users are without any control over what is imposed on them. ³⁾ The "combination process" through which they go just allows an arrangement inside their homes of the given elements.

1) Thereby the wishes of the users are based on their answers to the following questions on their "choice sheet":
"14. Quiet area - busy area: Choose one: many people going past your house. Few people going past your house."
"15. Nearby community facility - Choose one which you would most like to be near: Church, market, park...." (and others)

2) See: "A ladder of Citizen Participation" by Sherry R. Arnstein (1.1.)

3) For a more general critique of this approach see: 1.3.3.

"CASCO", Shell Housing Environment Project, Delft, Netherlands
Architects: Sjirk Haaksma

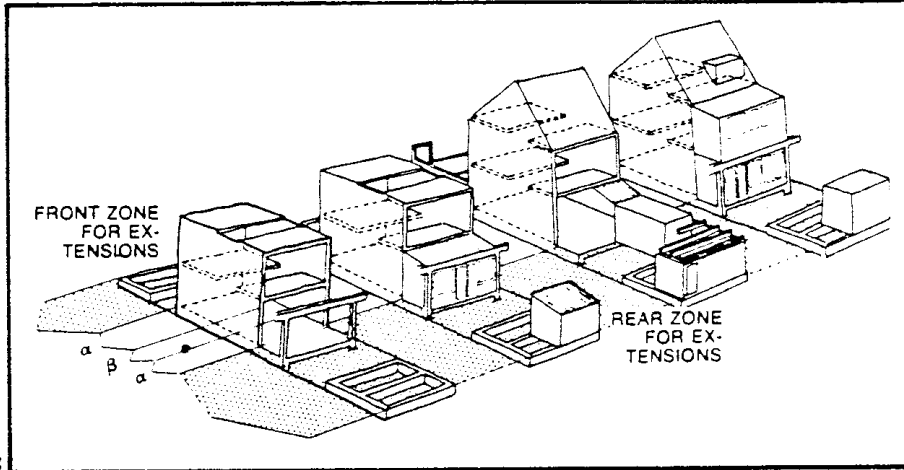
1. Short description

About 120 "shell" units will be built from 1978 onwards. Two experimental "shell" units built previously, will function as a testing ground.

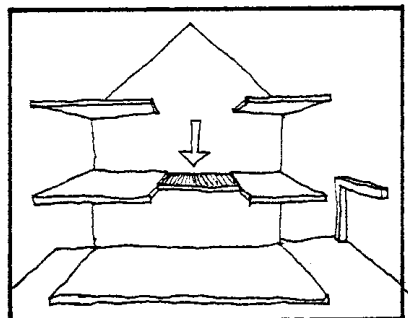
The project was initiated by a provincial government. Different studies led to the suggested system. The "shell" will be immediately habitable since all essential features and utilities are provided. The user has the choice within the offered "assembly kit". There-with he can build different variations and enlargements of the house. Elements of the "surplus assembly kit" may be sold to the following occupier or to the owner (or taken away).

Besides the basic construction the "shell" includes also the facade, bathroom, toilet, staircase, heating system, electricity, water supply, and finished roof. The "basic assembly kit" (movable partitions, doors, closets, kitchen elements etc.) is included in the house's price. A "surplus assembly kit" may be purchased (consists of a second toilet, attic windows, bay windows, extra partition elements and closets, a second staircase and other elements).

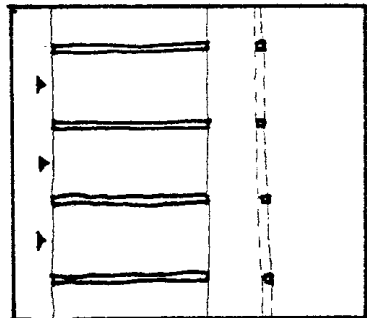
2. construction



8 BASIC IDEA WITH POSSIBLE EVOLUTION AND VARIATIONS

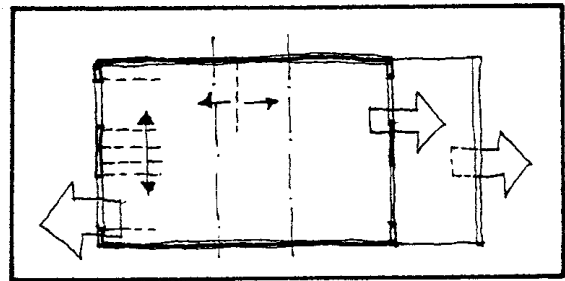


DROP-IN FLOOR



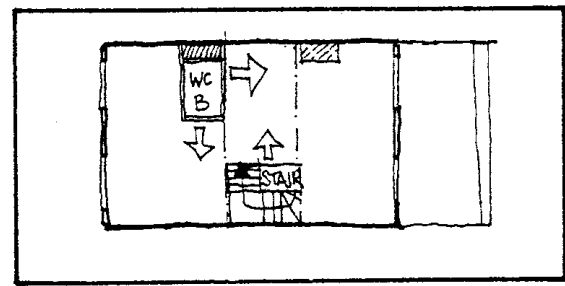
CROSS WALLS

primary structure



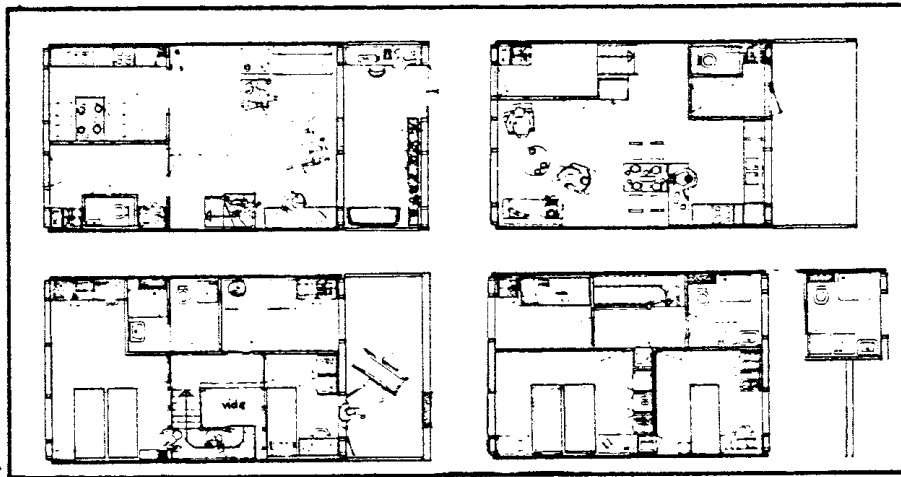
FREE PLACEMENT OF PARTITIONS

secondary structure

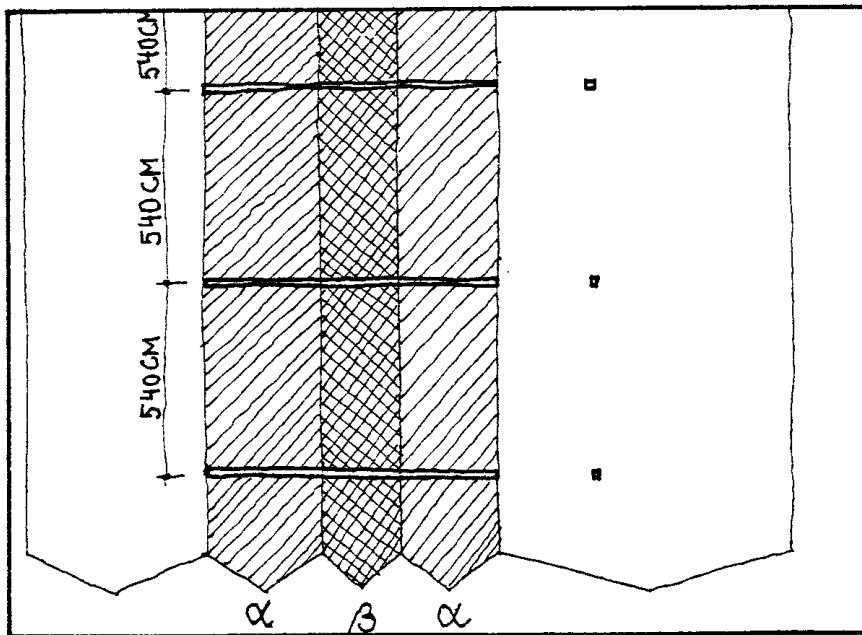


STAIRCASE, TOILET, HEATING ETC. ARE INCLUDED IN THE "SHELL". FURTHER EQUIPMENT IS PURCHASED THROUGH "ASSEMBLY KIT"

tertiary structure



typical solution



FRONT ZONE (EXTENSION) FRONT (240) BACK (230 + 10) cm REAR ZONE (EXTENSION)
(270 + 10 or 330 + 10 cm)

coordination

3. Critique

The possibility of evaluation is limited to theoretical considerations, since this project has not yet been realized with its participatory process.

The concept enables the occupant to assemble the parts into a complete house with ease and at low cost. The flexibility is not limited to an enclosed area; rather vertical variations are also possible. The individual has input on the immediate surroundings of the dwelling and the transition area between interior and exterior. A great variety of solutions within the conceptual framework can be expected.

The planners hope that the personal inputs of the dwellers will involve them also in the neighborhoods. But the project has no special concept for communication between the neighbors and the design concept is sized for the traditional family life style. This, and the fact that the "assembly kit" is produced and standardized might fertilize the development that also partitions etc become more and more consumer values.

"PROJEKT STEILSHOP", Hamburg, WestGermany

Architects: Rolf Spille and Dietrich Bartels

1. Short description

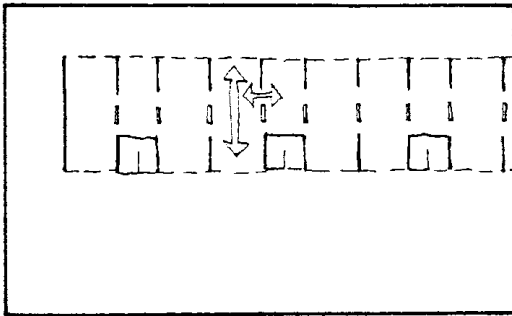
This project is part of a large conventional project in Hamburg. Since 1973 about 200 people have lived there.

The initiation came from the architects. There was a bulletin published in the press and after support from a political party, and a contract with one of the big housing cooperatives, the project was again published by announcing an opening meeting. A group of future tenants was formed and divided into subgroups (corresponding to the specific districts in which the members lived).

After a time of discussion which ended with the agreement on a concept, based on the idea of "communal dwelling units", a large general meeting was held. Once again subgroups were formed (based on the individual's preference of life style or on his decision to join this or that group). The general assembly also elected a few individuals with special skills to deal with special matters (like finance, development, public relation etc). The subgroups designed their dwellings based on the support structure designed by the architect. During this stage it was also decided that "problem families" (unmarried mothers etc) be included in this project.

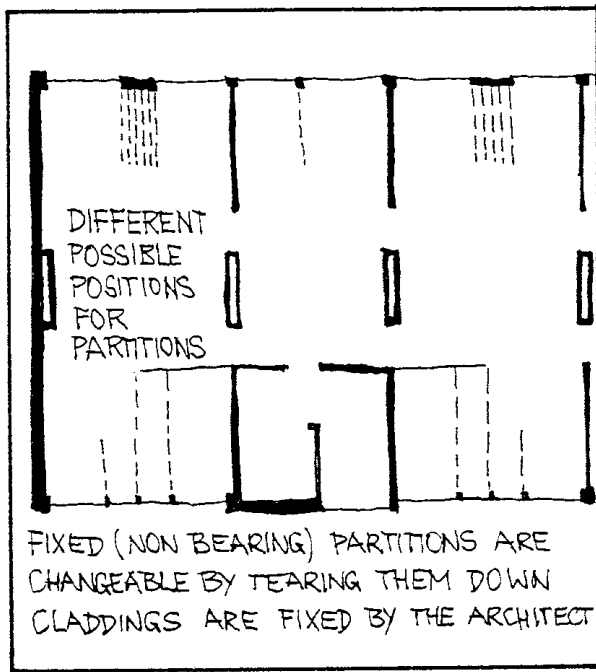
The participants founded their own cooperative society, which then rented the building. This society now manages the building collectively. This includes the communal spaces (meeting room, a pub, a roof terrace etc). Meetings are held every week and small groups work on special tasks (finance, social affairs etc).

In this project the S.A.R. method is applied in high congruence with the outlines in the S.A.R. theory.

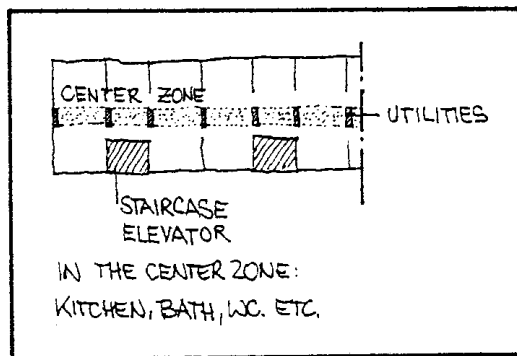


2. construction

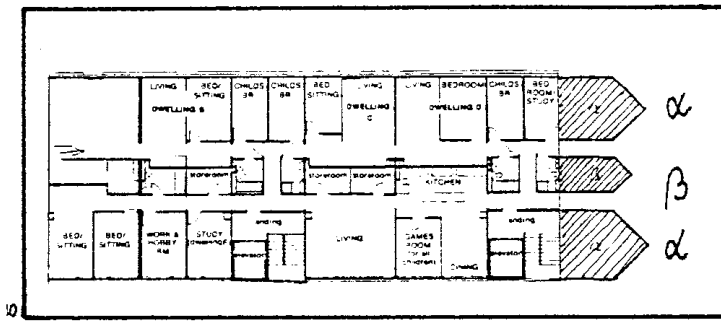
primary structure



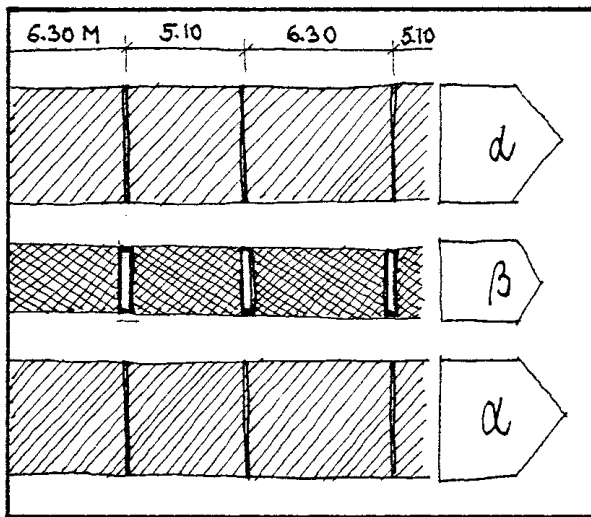
secondary structure



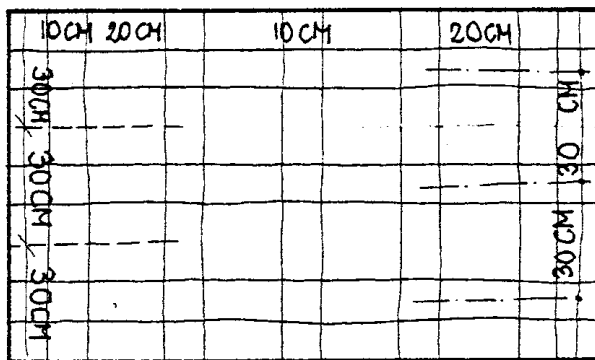
tertiary structure



typical solution



coordination



TARTAN GRID (MODULAR COORDINATION SYSTEM)

10/20CM BANDS

3. Critique

Above all this project was successful from a social and political point of view: people of different education, income and social background have come to live and work together on the basis of self-determination and participation. This might be also the reason that units have been developed which exceed the traditional forms of family living. This creation of a new kind of living together is also based on a specific kind of communication. In contrast to projects like "Projecto Experimental De Viviendo" or "PSSHAK" or "Project at Les Marelles" there was much "horizontal" communication between the users through all the different meetings. Thus, the participation facilitated learning processes for democratic decision making and human cooperation on all levels of daily existence.

A new role for the architect was created: He became more the "enlightened emancipator" rather than the "enlightened expert".

But the architect made all the decisions on the level of the support (which could be very important in determining the "detachable" unit). The housing structure and the neighborhood were existing facts, which the users were not able to influence at all.

This leads us to the critical point of this kind of projects: The user can determine the quantity and quality of all the elements which have to be fixed for short-range (as the user can determine the car, the TV, the refrigerator and so on), but not the basic elements (as the support). The fact that the user had the possibility to make more decisions than usual is without a doubt a very positive

element; but at the same time partitions, built-in cupboards and elements of the facade, and so on, are becoming elements of the consumer market similar to the refrigerator, furniture etc: the dwelling becomes a consum-commodity.

Therefore the question becomes important: who brings what to the consumer to choose from? Does this participation just facilitate that the dwelling becomes a consumer commodity at the consumer market (with pre-packaged obsolescence and carefully manipulated taste and fashion through advertising)?

Despite this danger this project allows more self-determination and new kinds of communication which do not change an existing status quo in the concrete situation, but the whole process is highly ambivalent toward the existing power structure. (see: 1.4.)

The fact that this project has a very "realistic" concept is on the one hand the reason that it has come into existence (which is a very high value) but it is also one of its main weaknesses: it is not possible to enlarge units without taking space from the neighbors.

The fixed partitions save any "lost energy" because there is no unused construction, but it also limits the flexibility (which can only be produced by destroying existing elements and within the given structural elements).

The self-expression through participation in this project is limited to the interior but not possible toward the exterior (claddings are fixed by the architect).

PROJECT "DWELLING OF TOMORROW", Hollabrunn, Austria

Architects: Joseph P. Weber, Ottokar Uhl

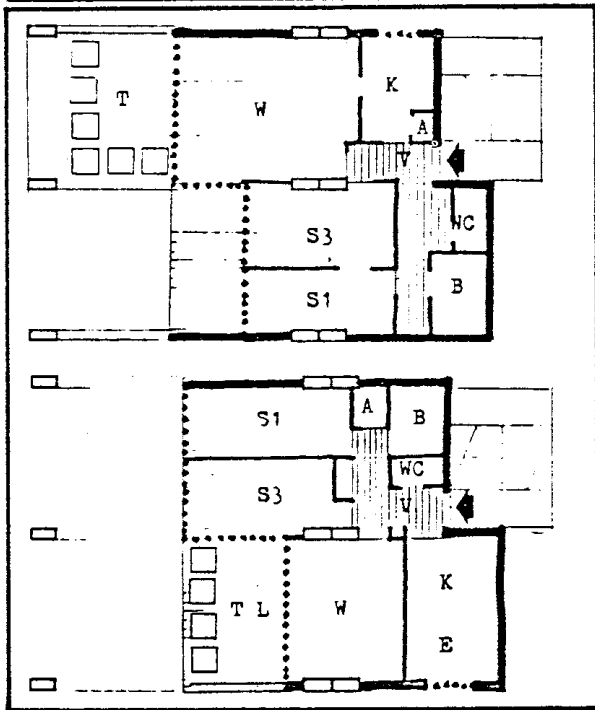
1. Short description

This project was developed through a competition in connection with housing research.

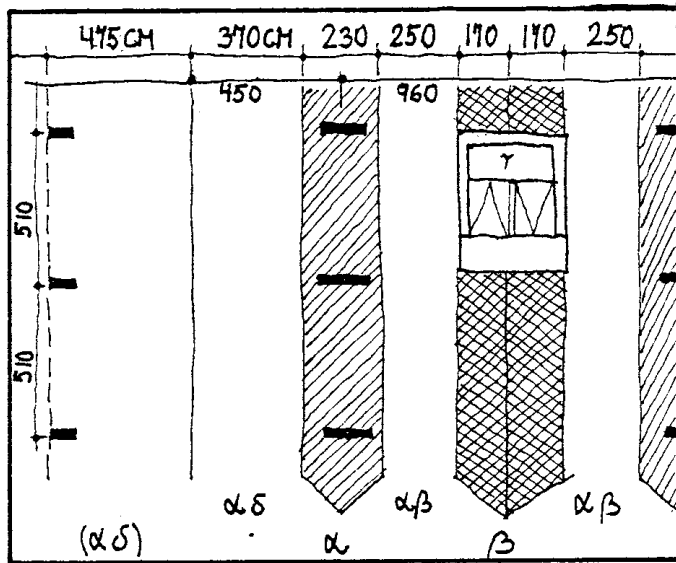
Before the construction began, several meetings for information and discussion were held. With the beginning of construction the actual participation was started: regular meetings were held which were attended by the users, the architects and representatives from the housing cooperative. Detailed information was given (such as documents concerning the dwelling size, dwelling type, layout possibilities, costs, construction schedules etc.) and "blank" floor plans were given out to take home (examples of actual floor plans were given on request only). A 1 : 200 scale model of the project was put on display and kept "up to date" to show construction and occupancy progress. The number of contacts between users and architects was 35 as an average, Also, after the realization of the project, the users have the possibility to participate in the management organization.

The project applied the S.A.R. methodology by:

- + separating the supports (i.e. the primary structure) from the infill (i.e. the secondary elements)
- + tartan grid (modular coordination system 10/20 cm bands)
- + concept of zones, margins, sectors etc.



typical solutions



(αβ): THIS AREA IS ONLY USEABLE IF UNIT BELOW OCCUPIES THIS SPACE IN AN ENCLOSED MANNER.

coordination

PRE-CAST CONCRETE ELEMENTS

material

3. Critique

This project resulted in a great variety of solutions (although the variety did not exceed the traditional family life-style): all units are designed differently and all units vary from the design the architects had originally suggested for law requirements (e.g. only 15% of the users have kitchens without natural light as suggested by the architect).

During the construction nearly all participants made modifications of their original decisions about the design of their units. This can be seen in connection with an ongoing learning process: people participated more and more as the building process was going on, and with time they demanded more and more control over their wishes (some decisions made by the planners had therefore to be changed as: the handles of the windows, the door hinge or the level of the yards).

The users seem to be satisfied to a high degree: 85% of them decided, in a following poll, that they would prefer homes built through participation to homes built conventionally.

There exists also a high degree of further adaptation: 70% of the units allow a later extension without impairing the neighboring units.

As in many other projects discussed in this paper, it might be possible to criticize this from a sociological point of view, as Pawelka (a Sociologist involved in this project) has done. He thinks that the project was planned for the wrong target population. He states:

"More simply said, the demands for more and different kinds of communication were accepted first of all by marginal social groups. In Hollabrunn,... there was a group of people who felt a duty toward strong traditional forms of family-isolated communication. In addition to this, the prerequisites and expectations of the participants were in opposition to the characteristics of the classes of population for whom the set goals may have been meaningful." (Kneisel et al. 1975, p.28)¹⁾

A problem in this project was also the communication between the different experts (like architects and sociologists). On the other hand, the interdisciplinary team had communication problems with the users. This team had an extraordinary expert-position. Therefore it was viewed by the users (who had been conceived as partners) as somebody superior: who has the knowledge and the ability to make better decisions than the user can. But these problems have been identified through very carefully done evaluation research which did not take place in most of the other projects described in this paper.

Concerning the construction, one could criticize that the primary structure was too big: the dimensions seem to meet the S.A.R. better than the static requirements²⁾. In addition, some parts of the construction are not used at the moment. Also, the staircases and their positions do not seem to be in an optimal way, e.g. they are constructed with very expensive sound isolation, yet each staircase serves just one or two units in each floor. Also, there is no self-help possible.

2) The dimensions of the spaces have been seen of more interest than thickness of materials derived from structural principles.

1) "Vereinfacht gesagt wird die Forderung nach mehr und anderer Art der Kommunikation in erster Linie von gesellschaftlichen Randgruppen akzeptiert. In Hollabrunn hatte man es...mit einem Personenkreis zu tun, der sich stark traditionellen Formen der familienisolierten Kommunikation verpflichtet fühlt. Damit standen Voraussetzungen und Erwartungen von seiten der Partizipanten im Widerspruch zu den Merkmalen von Bevölkerungsschichten, für die die gesetzten Ziele sinnvoll gewesen sein mögen."

SOCIAL SECTOR - CATHOLIC UNIVERSITY OF LOUVAIN, Brussels, Belgium

Designers: The Lucien Kroll Office of Architecture and Urbanism

"The participation does not happen against the building, but with it!" (Kroll 1974, p.31) ¹⁾

1. Short description

This is a project for the social sector of the Faculty of Medicine. It includes 210 residents (students), a restaurant and a primary school.

90 of the students choose a regular and egalitarian form of building, whereas 120 of them opted for a modifiable, varied building.

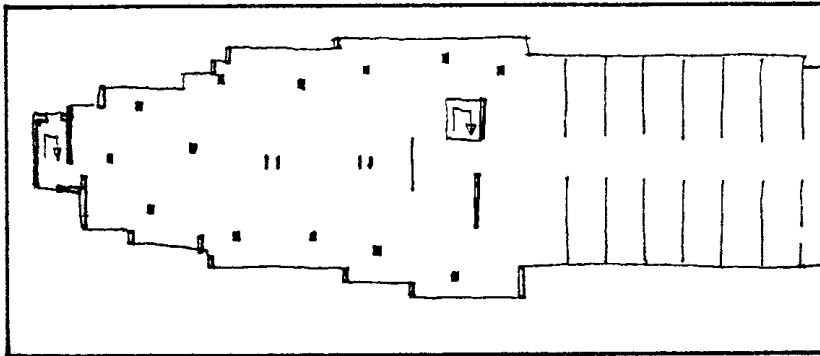
The "participatory, pluralistic process, in which each partner of the dialogue has worth as a person and not only as a function" (Kroll 1974, p. 30)²⁾ was made through spontaneous meetings, informal and well organized meetings, participation teams etc.

The building embodied the S.A.R. principles.

1) "Die Partizipation geschieht nicht gegen das Gebäude, sondern mit ihm!" (own translation)

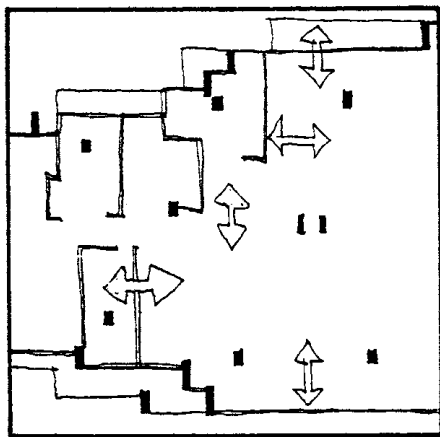
2) "... partizipative, pluralistische Vorgangsweise, bei der jeder Gesprächspartner als Person gilt und nicht nur als eine Funktion..." (own translation)

2. construction



primary structure

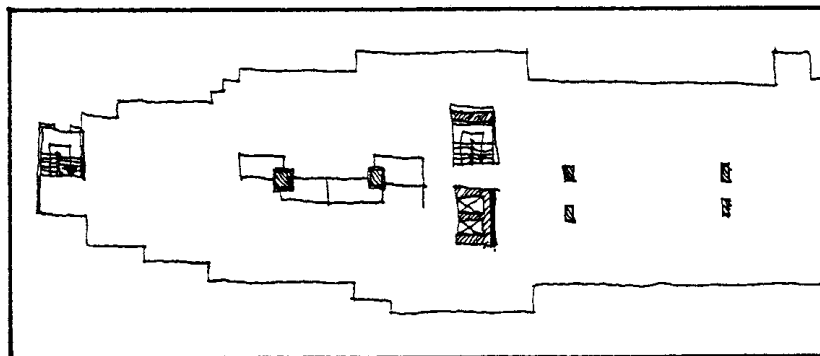
"LA MÈME" AND "LES FACHISTES"
 THE COLUMNS FORM A "MOSAIC" OF SQUARE OR RECTANGULAR
 "MUSHROOMS" WHICH TOUCH EACH OTHER AND CANTILEVER OUT TO
 THE PERIMETER OF THE BUILDING" (FROYEN, 1976)



PARTITIONS ARE
 IN THE 10 CM BAND OF
 THE TARTAN (SAR) GRID.

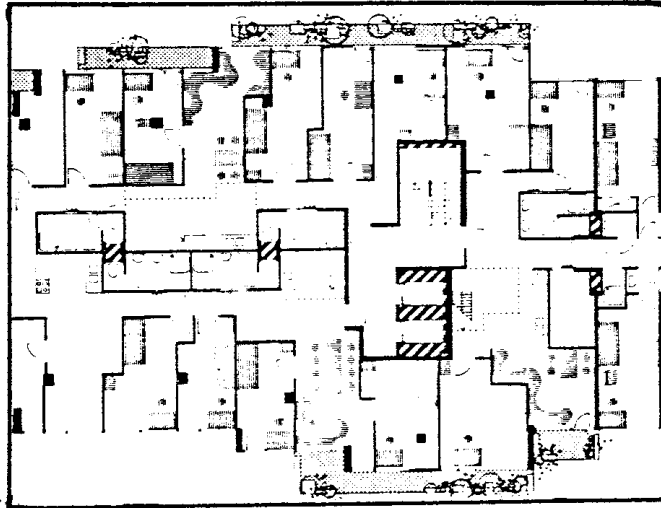
PARTITIONS CAN BE
 ERECTED AND
 DISMANTLED RAPIDLY
 BY "AMATEURS"

secondary structure

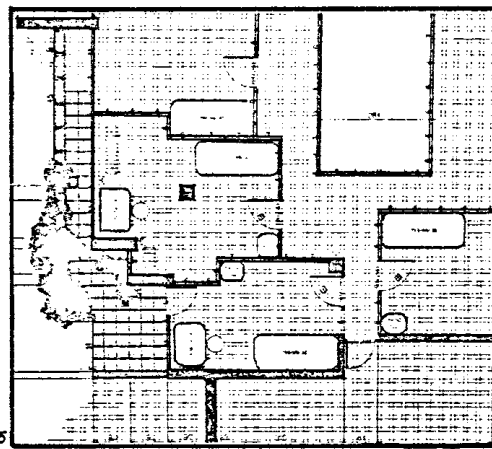


tertiary structure

SANITARY EQUIPMENT AND KITCHENS ARE
 GROUPED AND FIXED

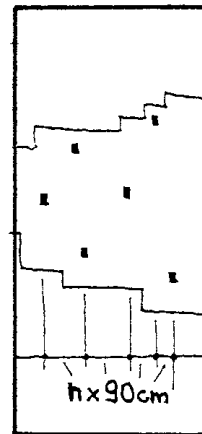


typical solutions



SAR GRID APPLIED TO STUDENT BEDROOMS

COLUMNS :



COLUMNS ARE NOT RANDOMLY LOCATED, BUT ARE CENTERED ON MULTIPLES OF 90CM

coordination

IT IS IRRATIONAL TO FORCE THE SAME BUILDING-ELEMENTS UPON DIFFERENT PEOPLE" (KROLL, 1979)

STRUCTURE: IS BASED ON THE USE OF FLAT SLAB CONSTRUCTION, THE CEILING IS FLAT SO THAT THE PARTITIONS CAN BE LOCATED FREELY.

MOVABLE PARTITIONS: ARE FORMED OF GYPSUM BOARDS, GLUED TO A CORE OF BAKELITED MINERAL WOOL; THEY ARE SELF-SUPPORTING, WITHOUT THE NEED FOR POSTS. JACKES HOLD THE PANELS AGAINST THE CEILING.

material

3. Critique

In this project (through exceptional circumstances), the students were able to choose their architect themselves and commission him to build their dwellings. This allowed a high level of participation from the beginning (although, by far, not all students had actively participated). The affected had not only the possibility to choose within a given structure, but determined also which kind of building was constructed (in this case: two different buildings).

In addition to the participation in planning, there was also much participation in the process of using the building. The students with the architects planted 1000 trees, the slabs between the floors were cut away, walls were torn down etc.

It is of great importance that the focus was not only on the building process, but that insights, education, the change of responsibility, and the role division were taken under consideration, too.

The architect himself took a very subjective, creative role.

Because this building was built for a very specific group of the population (students), its generalization for housing would not be without problems: Projects for housing would require a clearer and more systematisized (easier comprehensible) process of planning.

PROJECT AT LES MARELLES, near Paris, France

Architect: Georges Maurios

1. Short description

This project was built by a developer for sale. There are a maximum of 116 dwellings possible in the three buildings.

In this project, a clear distinction is made between professional and dweller decisions: the professional essentially provides the support structure and a kit of parts and a few rules as to how these parts fit together.

In consequence the construction takes place in two stages:

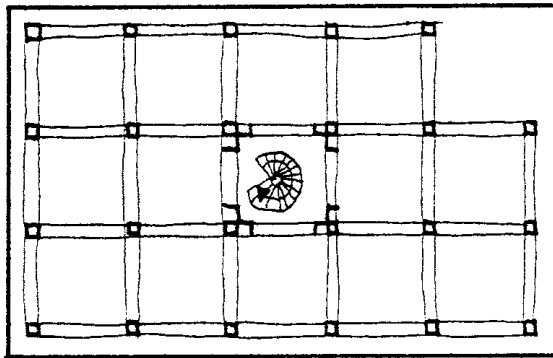
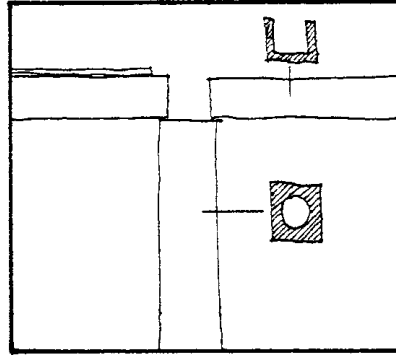
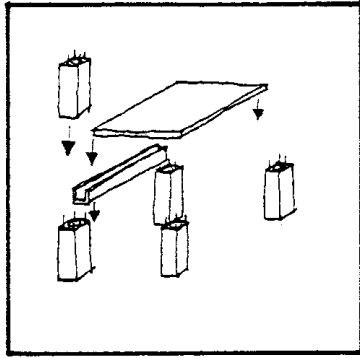
- 1) the professionals build, prior to any dweller's involvement, the framework (it includes: foundations, structure, cladding, heating, public spaces, outside storage, infrastructure and landscaping).
- 2) the dwellers' design process is built into the promotion and sales process: the dwellings are advertised for sale, the prospective dweller can visit the "raw" interior space and can put an option on a part of the building (as a piece of land). He designs the actual dwelling layout and determines the types of finishes. The participants' planning tools are:
 - + informations about the "rules of the game"
 - + large scale base plans
 - + a 1 : 10 model
 - + a video tape system
 - + a price information package which allows instantaneous "trade-offs"

Further, the dweller is assisted by psychologists and sociologists (using non-directive interview techniques) and by an architect (who checks the technical feasibility of the finished design).

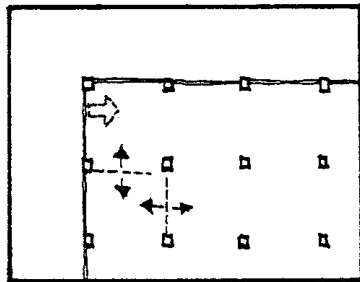
After the sale is completed the dweller receives a user's manual, which explains all technical aspects for decoration or alteration. The planning tools are set up in an actual apartment where the dwellers have their planning sessions.

All construction elements are equipped with built-in utilities. The construction forms are multiples of squares.

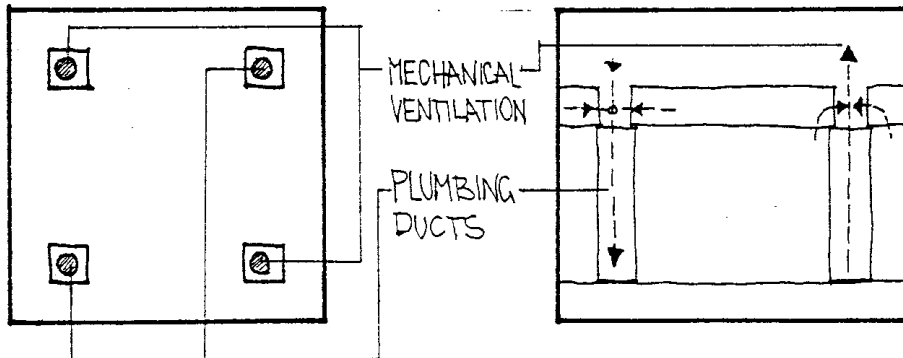
2. construction



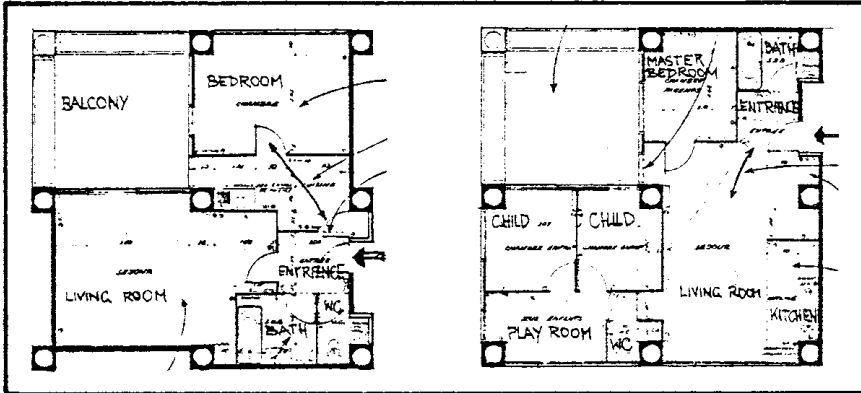
primary structure



secondary structure



tertiary structure

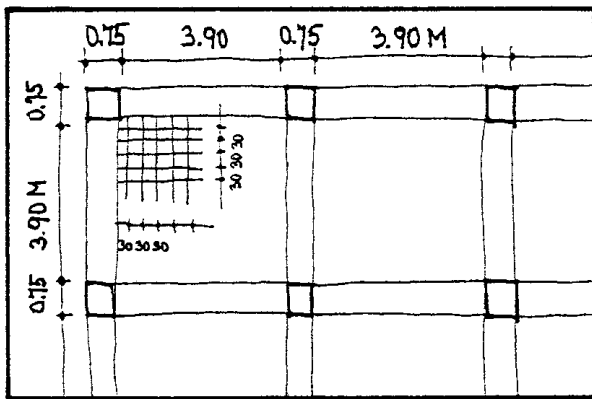


16

DWELLING FOR A YOUNG COUPLE

FOR A COUPLE WITH 2 CHILDREN

typical solutions



coordination

THREE TYPES OF PRECAST CONCRETE COMPONENTS WEIGHING ROUGHLY THE SAME AMOUNT AND EASY TRANSPORTABLE:
CHANNEL BEAMS
COLUMNS
FLOOR

material

3. Critique

In this project the most highly developed technical means for participation (information plus planning tools) was used, which resulted - together with the obvious "overdesign" of the service system - in widely differing arrangements, leading one to query the conventional reliance on standards and norms.¹⁾

Besides the imaginative techniques used to involve occupants, this project is important for the "purity" of the technical expression of flexibility in the system of construction.

But this purity brings about some of the major difficulties of this project: the oversized service system exceeds by far the actual need for flexibility and creates relatively large structural beams occupying a percentage of otherwise usable space (which resulted also in high prices paid by the individuals).

As in many other projects, the participation is conducted within a vertical communication framework only, although the "conflict between the different sides of flexible walls" would be of very high importance in such a project. This means that the technical aspects are highly overstressed in relation to social aspects of user participation.

Although participation in this project may offer a high degree of

1) see: 1.3.1.4. (p. 18) the quotation from Vernez-Moudon

freedom for designing the units, this freedom existed within the limited frame only (consisting of the given support structure and the given cladding). All larger issues of the housing process are not in the control of the dwellers, making the participation in the housing process a limited one.

As in all other projects where the support and the infill are very strictly separated, this principle might also have the tendency to make the dwelling more and more a commodity changing its use value into a market value.

"TOWNLAND SYSTEM", "Operation Breakthrough" Program, Seattle, USA
architectural firm: Warner, Burns, Toan, Lunde.

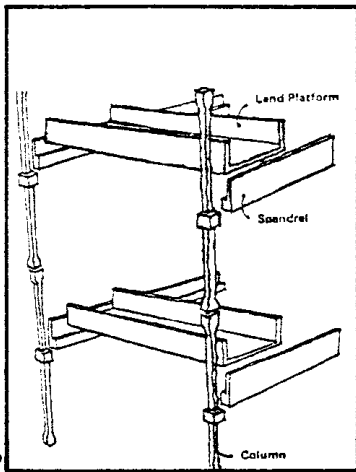
1. Short description

Only a small prototype of this system was actually built (a low rise development with 58 units at Seattle). The housing infill produced there was mainly "instant" housing, sold in its final form with very little input by the users.

This system separates the support/mechanical framework ("Public system, which forms the "supported land") and the housing infill (private realm of individuals and families - who could act at any time) in a very clear way.

The prototype built for "Operation Breakthrough" focused on production and production cost, rather than on flexibility and participation. It can be assumed that this system could allow a high degree of participation as the user takes acquisition of a "raw" piece of land. This leaves a lot of decisions open to the dweller (about the "sub-system", the "infill" support structure, materials etc).

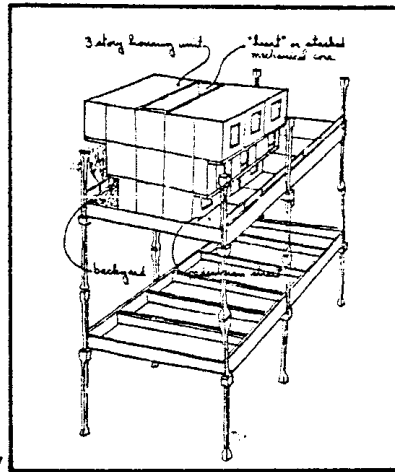
With appropriate means for social processes, a high degree of participation might be possible.



PRIMARY STRUCTURE: COLUMNS

SPANDRELS
DECK ELEMENTS

SUPERFRAME OR "SUPPORT LAND SYSTEM"

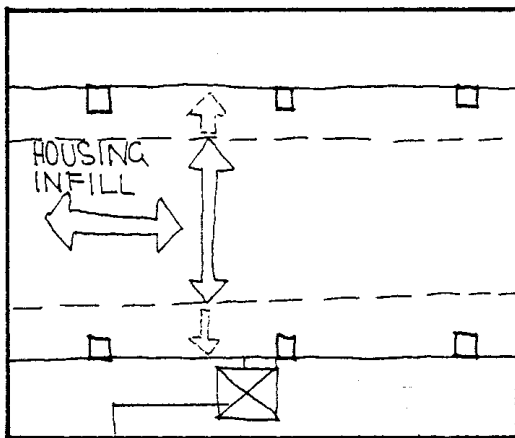


BASIC IDEA

2. construction

primary structure

INFILL

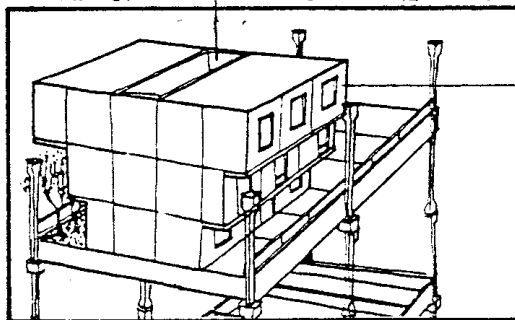


"HEART" OR STACKED MECHANICAL CORE

A BROAD VARIETY OF HOUSING INFILL CAN BE ACCOMODATED WITHIN THE FRAMEWORK; IT CAN PRESENT ITS OWN "SYSTEM"

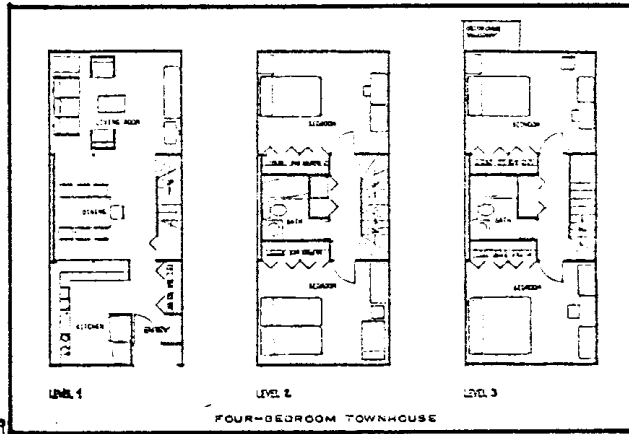
3 STORY HOUSING UNIT

secondary structure

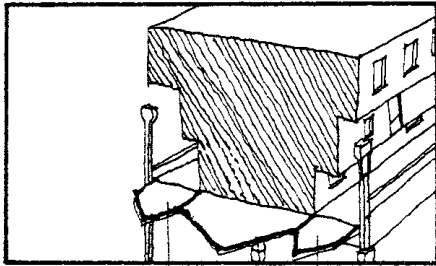


FRAMEWORK INCLUDES:
 • A SERVICE SYSTEM
 • AN ACCESS SYSTEM CONSISTING OF: STREETS AND STAIRS AND ELEVATORS

tertiary structure



typical solution



BACKYARDS PEDESTRIAN STREET (PUBLIC)

coordination

SUPERFRAME: "SUPPORT LAND SYSTEM"(SLS)
 NORMAL BAY SPACING 30 BY 60 FEET

INFILL: SPECIFICALLY MATCHED TO THE LOAD -
 - CARRYING CAPABILITIES OF THE SUPERFRAME

UTILITY: UTILITY DISTRIBUTION MODULE (UDM) -
 = SUBSYSTEM

SUPERFRAME:
 CONCRETE (PRE -
 CAST OR CAST
 IN PLACE)

INFILL:
 WOOD OR METAL
 SEATTLE: STEEL
 PANEL SYSTEM; RE -
 PLACING THE USUAL
 STUDS, HEADERS ETC.
 WITH LOAD-BEARING
 STEEL PANELS

material

3. Critique

This system is by far the most consequent concerning the separation of framework and infill of all systems presented in this paper. Townland treats the framework as a partly open space (rather than as an enclosure) which must be completely filled: the entire dwelling can change and not just the interior.

It is hard to evaluate this project (concerning participation) because there is a gap between the intention of the project and its actually built type: the intention is that the infill should develop as a process ("infinite" alteration of the infill), whereas the homes of the prototype were sold as more or less finished products.

This system is in a very early stage of development which is certainly due to the fact that it cuts most sharply across traditional roles in the housing process, and encounters therefore a lot of legal, management and cost problems.

The framework can be described as "very open" toward the infill (use of columns) which leads to an "overdesign" of the structural system and the utility distribution system (much just a potential but actually unused energy is put into this system). This counts more, if we consider that more flexibility does not necessarily equal better housing conditions (it makes additional technological problems).

Although the project was undertaken in a very limited frame and nearly without any user-participation, the high importance of horizontal

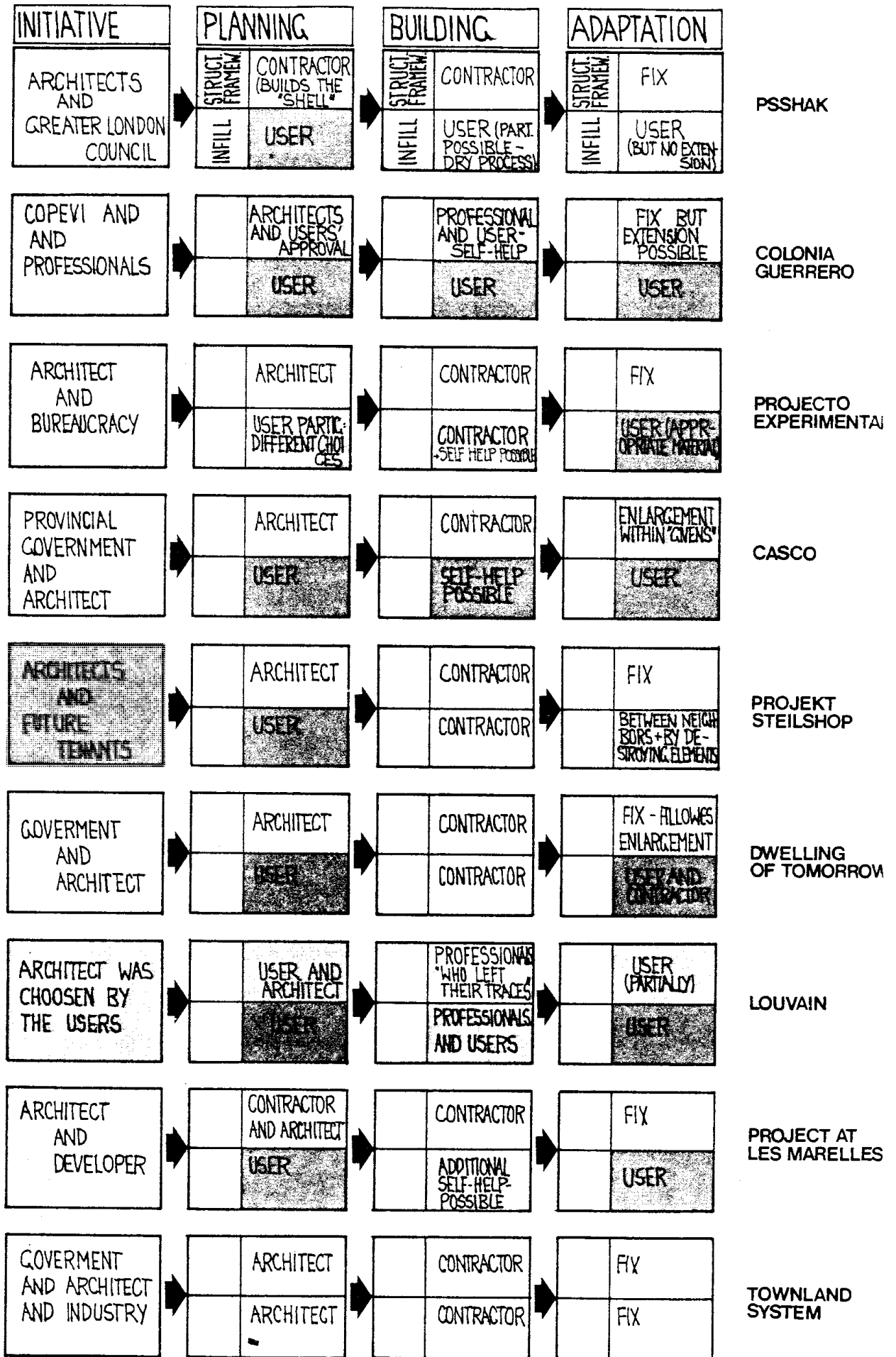
communication, conflict-solution potential of the dwellers (social problems), and political considerations were exemplified.

It means that these systems would have as a prerequisite new methods of planning and participation and ways to live together.¹⁾

Thus this project might offer a high degree of participation but seems unrealistic to be implemented under existing conditions. It has also a lot of unsolved technical problems.

1) "The framework puts on its management the necessity of acting more like a local government than a caretaker, overseeing a much more fluid situation than it is usually the case in conventional residential developments." (Bender and Parman 1976, p.32)

SCHEME OF BUILDING PROCESS IN RESPECT TO PARTICIPATION



SOME ASPECTS OF PARTICIPATION IN COMPARISON

		PSSHAK	COL. GUERRERO	EXP. DE VIVIENDA	GASCO	STELISHOP	HOLLABRUNN	LOUVAIN	LES MARILLIES
construction	support: planning		◐					◐	
	building		◐						
	adaptation		◐		◐			◐	
	infill: planning	●	●	◐	●	●	●	●	●
	building	◐	●	◐	●			◐	◐
	adaptation	◐	●	●	●	◐	●	●	●
	vertical flexibility	◐		◐	●				
	extension possible		●	●	●		●		
	no "surplus"energy	●	●	●		●		●	●
social aspects	participation in initiative		◐			●		◐	
	group process considered		●			●		●	
	more than question. for part.		●		?	●	●	●	●
	variety of life-styles				?	●		●	◐
	part. in management		●		?	●	●	●	
	indep. from centr. organis.		●	◐					
	horizontal communication		●			●		●	

2.2. Resulting objectives for a project on participation in housing

It is not possible to classify the projects we have compared by means of a clear hierarchy that ranges between "good" and "bad".¹⁾ The diversity of the external conditions in the different projects is too broad. In addition, to provide such a hierarchy, it would be necessary - in the sense outlined in our "discussion of participation" (1.) - that the long range effects be studied (as socio-political and psycho-structural influences).

However, we can draw lessons from this comparison and evaluation which are important for future projects on participation in housing. The most important findings are listed below:

- + There is no specific technology that is best suited for participation: the degree of "theoretical flexibility" has no direct relation to the actual user participation.²⁾
- + The degree of participation and the variety of solutions have a close relation to the organizational means that are employed, and to the forms of communication between all the participants.³⁾
- + From the two points above, we may conclude that only a small amount of "surplus energy" should be invested in structural and service

1) Even although there are projects which have very different qualities concerning participation (see: some aspects of participation in comparison, p. 89)

2) Rather, projects with relatively low levels of "theoretical flexibility" had very high degrees of user participation (Colonia Guerrero, Steilshop).

3) A great variety of solutions may be found in Les Marelles, Louvain and Steilshop.

systems, but, on the other hand, much attention should be given to the participatory process itself.¹⁾

- + Since the physical structure can put constraints on dwellers (especially as representative of an existing power structure), the dwellers' specific desires should determine the framework and the in-fill; moreover, the dweller should have control over those constraints.²⁾
- + A participatory housing process has to confront the socio-political power question: otherwise, it will be used to "manipulate" or to "educate" the citizens (cp S. Arnstein). See: PSSHAK.
- + A horizontal form of communication is one of the most important features in participation (compare also: 1.3.3.): It stimulates the potentials inherent in groups and facilitates:
 - new forms of living (Steilshop, Louvain)
 - a challenge of the status quo (Colonia Guerrero)
 - a learning process which is required to participation in its full sense (Colonia Guerrero, Steilshop)
 - better living conditions in the dwellings by improving interaction patterns for all concerned (Steilshop, Colonia Guerrero).

1) This result corresponds to the conclusions of Rabeneck et al. who evaluated a number of "flexible housing" projects (most of them earlier ones than the ones evaluated here): "The adaptable approach is our own proposal... in contrast to the flexible, it emphasizes planning and layout rather than constructional technique and service distribution" (Rabeneck et al., 1974, p. 90)
 This result contradicts Rabeneck et al. when they conclude: "Our slogan for the design of adaptable homes is occupant choice through ambiguity" (ibid., p. 86) and later "Space remains the best buy in the long term." (ibid., p. 90). It might be argued here, however, that the specific user needs are beyond the grasp of anybody besides the dweller himself, and that the ambiguity necessary for satisfying the specific user needs would be too space consuming. In addition, the participation itself has its own value.

2) Compare PSSHAK and Proyecto Experimental de Vivienda. According to the latter work, all social structure of the neighborhood should be determined (or destroyed?) by the power holders' decisions concerning the physical layout. In contrast to this project, the project Colonia Guerrero has planned in the feature of socio-political confrontation.

- + Participation in housing is first of all meaningful for marginal social groups.¹⁾
- + The S.A.R. methodology²⁾ (modular coordination, dimensioning, zones and margins) is an excellent means for communication between all the different participants.³⁾
- + The meaning of the S.A.R. principles (separation of the building into the publicly controlled support and into the user-controlled detachables) is ambivalent: It can, together with the S.A.R. Methodology,

"... make transparent the inequality and inadequacy of the present decision-making process in housing, by bringing the conflict out into the open in a clear and explicit way." (Weber 1976, p. 10)

However, it can also be a means for adjusting the user's values and attitudes (within the limited detachable unit) to those of the larger society (represented by the framework and site etc).⁴⁾

Thus, there is a strengthening of the status quo, rather than change of it. The S.A.R. principles can also mean that the dwelling becomes more and more a consumer good.

1) see: Hollabrunn, Colonia Guerrero and Steilshop

2) see footnote p. 44

3) cp all projects discussed previously which employ the S.A.R. methodology.

4) This would be ranked according to Arnstein's ladder of citizen participation under therapy (see: 1.1.).

3. Gaming as a means of participation

3.1. Historical background of Gaming

It can be assumed that man has "gamed" since the beginning of his existence; and today " more than three out of five adult Americans - close to 90 million people - are at least occasional gamblers."¹⁾ This highlights the fact that games²⁾ are inherently attractive to man.

Both facts described above refer to games without explicit and carefully thought-out educational purpose. But the quality inherent in those games - to allow entertainment and amusement - is one of the basic qualities of every game, also of the more sophisticated ones.

Historically speaking, "serious games"³⁾ - games which have an explicit and carefully thought-out educational purpose⁴⁾ - have a relatively short history: Military games, which can be traced back to chess, were developed through the 18th and 19th century. In the 20th century, game

1) The Washington Post, October 18, 1976, p.1

2) "Games are activities with goals and rules" (Livingston and Stoll 1973)
 "Reduced to its formal essence, a game is an activity among two or more independent decision-makers seeking to achieve their objectives in some limited context." (Abt, C.C. 1970)

3) "The term 'serious' is also used in the sense of study, related to matters of great interest and importance, raising questions not easily solved, and having important possible consequences. None of these aspects of serious games need be associated with their customarily heavy baggage of piousness and solemnity." (Abt, C.C. 1970)
 The term "games" in the following text will refer to this kind of games.

4) Richard D. Duke defines: "A game is an environment for learning, a communication device designed to establish a vernacular, to permit a particular audience to address a particular problem." (Duke, R.D. 1974)

theory¹⁾ and later the development of computers allowed the development of highly sophisticated war games. In 1956, the first widely known management training game was conceived²⁾. It was followed by other games on how to run companies. Then, in the early 1960's, "Gaming" for social science came into its own right and aside from the influential and wide-spread diffusion of games for business and political purposes, games were used in many other fields.^{3) 4)}

Before we can judge the use of games, we will raise the question whom games served.

The historical development shows them as a means for war and more effective expropriation of people serving those who are in power.⁵⁾

But is this use inherent in games per se? Certainly not, since a series of qualities inherent in games could allow an emancipation process of those who are disadvantaged in the existing society. Games could serve as a learning and information instrument not limited to those with special intellectual skills.⁶⁾

1) The modern mathematical approach to interest - conflict - game theory - is generally attributed to van Neumann in his papers of 1928 and 1937.

2) The game was put together by the American Management Association and was called AMA Top Management Decision Simulation Game (for further description see: Kalman 1961, p.131 - 166 or Boockock 1968, p.18.8)

3) For an extensive overview about the different areas for which games are developed see: Zuckermann and Horn(1973).

4) For a formal overview of the genesis of gaming-simulation see: Taylor(1971, p.22 - 32).

5) Games were used for the development of military strategies and tactic models or as training for entrepreneurs and similar persons ("think tanks" as the Rand Corporation - which had also developed the game "Cold War" in the early 1950's - hold gaming sessions for the dominating technocrats).

6) "There are not strong or consistent relationships between performance in a game and in other academic tasks. These games may be especially valuable for the under-achiever, the non-verbal, the culturally deprived, and other 'problem'-students." (Boockock 1968 b), p.18.10)

Games are a means for good or bad, and therefore the context in which they are used is important: the intention of the designer who gets a chance to play it and the specific problem it concerns. This means that games can serve different groups of people due to their accessibility and specific design.

If we add to the question "for whom?" the question "what specific qualities", we can find a great deal of specific "game qualities" inherent in games.

In literature, certain qualities are stressed for different kinds of games. Some games emphasize "simulation".¹⁾ This means that those games are also simulations and are intended to represent some other situations. Their purpose has to be seen in connection with the situation they intend to represent. Instead of trying to represent the "real world" ("SIMULATION"), games can also focus on the behavior of certain persons in certain roles ("DRAMA"). Also, the excitement and the fun of surprise, competition, risk, etc. could be the major interest ("GAME").

Some authors emphasize communication through games²⁾ or human experience in certain environments (environmental simulation)³⁾. Finally, if games are devised to teach diverse skills, they can be "instructional games".⁴⁾

1) "A simulation is a working model of an object or situation." (Livingston and Stoll 1973)

2) The communication purpose of games is especially stressed by Richard D. Duke in his book: "Gaming: The Future Language". He defines Gaming/Simulation as: "A gestalt communication mode which contains a game-specific language, appropriate communication technologies, and the multilogue interaction pattern." (Duke, R.D. 1974, p.205)

3) "Environmental simulation: it is the selection, manipulation and/or modification of any number and combination of human channel inputs and /or outputs to create an experience which simulates an environment - real or imaginary." (Silber, Ewig 1971, p. 4)

4) "An instructional game is any game intended for teaching a subject or a skill." (Livingston and Stoll 1973)

3.2. Qualities of games

The game developed in the following has a special task: participation in housing. The general positive qualities a game can offer are listed below:

- + Games are fun: Games offer elements of surprise because the outcome of strategies cannot be predicted for sure; they give rise to joking and banter among the players and elements of competition can be exciting. Since they represent the challenge of confronting difficult or confusing or risky situations, the mastering of those problems may have positive emotional effects. Generally speaking, in addition to rational and analytic ways of looking, games offer also emotional, creative and dramatic outlets.
- + Games allow experimentation without risk: This can be said from the participant's point of view as from a general economic point of view. From the participant's point of view, "the game role is sometimes a mask behind which the players feel free to act out deep seated fears, desires and ambitions." (Glazier 1969, p.5). In addition, errors are not "really" penalized. This special sort of limited responsibility allows the experience of the consequences of decisions, without carrying the penalties over into real life. But the experience the player gains can be carried over.
- + Games are an excellent means for learning: In contrast to learning through pure mental actions (where the learner is an observer only), the active learning through game implies also participation (in contrast to workbooks, lectures, and audio-visual presentations games require an active response from each student and response to

the student's actions). This gives the unique opportunity to integrate cognitive, affective and psychomotoric aspects of learning.

Players can acquire knowledge of terms and concepts, specific facts, structures and relationships, intellectual and social skills, new attitudes or even technical skills.

Regarding behavioral learning, the specific quality of a game is that experience gives a better chance to change attitudes (and the following actions) than pure theoretical learning.

For Richard D. Duke, the basis for learning through games is derived from two basic characteristics of games:

"(1) the game is an environment for self-instruction, permitting N-dimensional entry (and, therefore, simultaneous multiple sensing from different perspectives in a safe environment), and conveying heuristics (general and structural learning) in a responsive environment; and (2) the iterative character of games permits enlarged perception and logical mental closure with each iteration, permitting an emphasis on gestalt or overview, the establishment of context as perceived to be relevant to the player, and reality testing through formal critiques." (Duke, R. D. 1974, p. 151)

+ Games have the ability to motivate: "perhaps the key characteristic of games for teaching is their ability to motivate students."

(Livingston and Stoll 1973, p.7). Richard D. Duke writes:

"One of the extraordinary things about games is the ability of even the worst games to motivate the most recalcitrant and most unlikely audiences to 'play' through a game which seemingly has little relevance." (Duke, R.D. 1974, p. 80f)

Duke has a hunch about what makes a gaming a good motivational tool:

"the more or less leaderless environment for learning; the rapid feedback mechanism; the opportunity to perform in roles which are normally denied in typical life situations; the relative freedom to experiment with ideas or situations which would be dangerous in the real world; the inherent childlike characteristic in all

adults that let us play games with glee and in playing be doubly pleased that we may be learning something. The fact that games are an innovative tool, and as such frequently a new experience, may be one of the motivational factors involved. The outstanding reason for motivation provided by a game is active participation in the communication process; virtually all other forms of communication require a passive receiver for extended periods of time. Games become live experiences, and it seems to be universally acknowledged that when they are properly achieved, motivation is an inevitable result." (Duke, R.D. 1974, p. 81)

+ Games offer special qualities for communication: The language achieved through games has advantages from two points of view:

First it allows a display of gestalt¹⁾ because it is a more complex mode of communication than the usual ones (e.g. telephone or professional maps). This means that games can be usefully employed for gaining perspective on complex circumstances.

Second, the communication through gaming cannot only give better project information, but also increases the communication between expert and expert, professional and layman or layman and layman.

This can be achieved because games employ a game specific (unique) language.²⁾

1) "Games are successful for conveying gestalt because they employ a deliberate system of information pulses through an organized gestalt." (Duke, R.D. 1974, p. 147)

2) "The game specific language will have three components: the basis for symbolic structure, the vocabulary of symbols, and the rules governing the use of all symbols." (Duke, R.D. 1974, p. 118)

4. A proposal for participation in housing

4.1. Focus of this project and justifications for selection and limitation.

Housing cannot be seen on its own, as an isolated process or object: The dependencies and interrelations with external conditions are multivariant. To deal with participation in housing would require dealing with all determinants for participation.

However, it was necessary to set limits for this thesis.

There are several reasons for selecting and limiting the specific topics and for focusing within this project on participation in the design of dwellings.¹⁾

+ Limited time, limited resources, etc.: the limitations set by the frame of the thesis urge a focus on a limited topic.

+ Natural area of concern: the author is an architect and feels himself most devoted to the architectural design and planning tasks.

+ The topic is concerned with developing a process and game in housing design and with seeing the concerned social and political problems that are inherent in housing design, since, to the best of my knowledge, no such game has yet been developed.²⁾

1) For a full description of what is referred to in this thesis see: 5.1. (Problem area to be simulated)

2) Most of the existing games in our field concern the city or the neighborhood on a more general level (for a description of a large number of such games see: Coppard and Goodman 1977), or they are concerned with the selection of and/or trade-off between given architectural elements (e.g. Sanoff 1974, Robinson et al. 1975); however, no one has been concerned with the design process itself and its relation to socio-political problems.

- + A study of how participation can function on a small scale (housing design) can hopefully provide a better understanding of participation which can bring about real change at a societal level.
- + It might be meaningful from a pragmatical point of view to initiate design participation (and the necessary learning process) in those spacial areas that people can perceive best and to which they feel most strongly attached - particularly if relations to general political contradictions can be experienced and illuminated.
- + Although usual planning processes go from "the large" to "the detailed"¹⁾ the users' perception goes the opposite way: the citizen's understanding and judgement of his environment (representing the overall politics) is based on his personal experience. To start off here could produce a link to further participation.
- + Participation in planning requires, theoretically, an identity of those who are the "planned for" and the planners (see: 1.2.). This can be experimented - with relatively easy organizational means - in the design of houses and condominiums.
- + With the increasing importance of "indirect wages" (social services, public facilities), and with the increasing importance of "collective consumption" in the area of services, the importance of housing for "change of power" (participation) increases, too.

1) Usual planning processes are run in the following way:
- national planning - regional planning - city planning - district plans - zoning - planning for architecture; without control the opposite way.

Not accepted were limitations which would result in the involvement of the user to adapt himself to the constraints set by the political situation and represented by a non-controllable environment, including the framework (e.g. bad bearing structure). These constraints are one of the objects of this project.

The proposed design process (and the representing game proposal) is, because of these limitations, "participation" and "architecture".

Although limitations have been made, it should be stimulated to deal with the entire complexity of housing processes. Relevant strategies¹⁾ should be developed in the future.²⁾

Pragmatic prerequisites that would make the proposed design process (or the game) work efficiently are:

+ means for the sensitization for the existing problems in housing dealing with the user's closest environment.³⁾

+ means to stimulate environmental and general architectural awareness.⁴⁾

1) This would also include strategies for community organization.

2) Tropman and Erlich indicate four substantive problems in the development of a successful community intervention strategy: resources, resistance, class, complexity; which seem for them, although they are not the only important factors, "... significant in that they cut across any functional area of community action and are common to most social change situations." (Tropman, J.E. and Erlich, J.L. 1974, p. 168)

3) Simple role games, basic information on architectural problems, consumer information etc. could serve this purpose. (The author is proposing a set of those means in: "Wohnen Lernen", Diplomarbeit an der TU Wien, 1977)



4) Quite a few projects have been developed for this purpose: for example by: Sanoff 1975 and 1976, Silber and Ewig 1971 or an exhibition in the High Museum of Art, Atlanta, Ga; "Discover the City", Sept. 1974 - May 1978.

+ means to make for awareness of the problems and conditions in neighborhoods and cities.¹⁾

+ means for dealing with problems concerning the neighborhood, the city, etc. and which should be run besides the proposed design program.

+ means of additional social and political education and information.

AREA TO BE DEALT WITH

ENVIRONMENT	SOCIAL STRUCTURES	CORRELATING PERSONAL REQUIREMENTS	FOCUS OF THE THESIS
ROOM HOME HOUSE	SELF DETERMINATION FAMILY OR GROUP HOUSE-COMMUNITY	IDENTITY  LOW LEVEL OF SOCIAL, ¹⁾ SKILL REQUIRED	
NEIGHBORHOOD CITY DISTRICT COUNTRY WORLD	NEIGHBORHOOD CITIZEN	HIGH LEVEL 	

1) such as ability for conflict solution, solidarity, social awareness, organised action and so on.

4.2. Specific objectives

"Often it is naively assumed that participation will develop spontaneously if given free rein; however, in reality, it turns out that dwellers tend to participate only if given help and stimulation within a well thought out program, based on some commonly agreed upon principles and roles of interaction." (Dries van Wagenberg 1976, p. 41)

The aim of this project is to develop a means for participation in housing.

Therefore: 1) a special kind of design process is developed
2) a game representing this process is outlined.

4.2.1. Objectives for developing a design process based on user-participation in housing.

Through this design process the user should have the possibility:

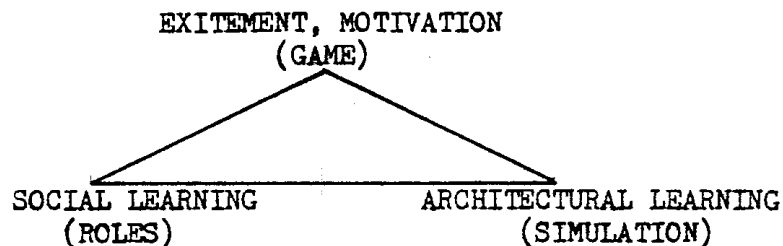
- + to express his desires (and his rationale), to act on his own behalf, and to keep control during the entire design process;
- + to use a design instrument where he can use "his own language" (because a communicable decision making "vocabulary" for discourse in design is offered);
- + to see constraints the individual and the groups experience in its cause-effect relationship and to have a device for reflecting on one's own steps during the design;
- + to clarify decisions and power structures;
- + to deal not only with physical-structural questions in the design, but also with socio-structural questions.

- + to become acquainted with other dwellers and to plan with them a way of living together;
- + to use the same means as used for the design for the maintenance of a housing project;
- + to promote the creation of alternative environmental forms and a form of multivariant buildings (based on the different specific demands of users);
- + to determine the structural housing frameworks by the desires manifested in private spaces and units; to have control over the constraints the structural framework¹⁾ and external factors (law, finance, etc.) put on the private rooms and units.

4.2.2. Objectives for developing a game for user-participation in housing

It is intended for three overall objectives:

- 1) understanding and experience of a participatory housing process;
- 2) social learning;
- 3) excitement and motivation by gaming



1) Dries van Wageningen mentions in a conclusion of an evaluation of participation in two European mass housing projects: "It is very important to always keep in mind that any decision taken on the level of the support which does not take into account the consequences it may have on the detachable unit level, can lead to the failure of the whole concept - or, at least, to the creation of difficulties during the design process." (Dries van Wageningen 1976, p. 46).

These three objectives are fairly overlapping. So it becomes a major objective to bring the social behavior and the architectural form into congruence and to show the relation between social behavior and architecture. This relation, as well as social learning, and fun, and architecture, and creativity, and their relations, are conceptualized so they can be learned.

Following is a list of objectives and sub-goals of the game:

- + to provide the participants with means to learn about housing by means of their own experience, knowledge and intuition;
- + to create an understanding and awareness of a participatory housing process and of relating conflicts, constraints and advantages;
- + to stimulate reflections about past dwelling experiences and to make new experiences concerning housing possible; to create further expectations; this should lead to the realization of new housing demands and the demand for change;
- + to make the user acquainted with basic architectural skills (as signs, dimension reading, organization, etc.), skills necessary for participation in housing;
- + to sensitize the participants' own thinking so that he can resist an imposed functionalism not oriented toward the human: against oppression by "technocratic rationality";
- + to give insight into the cause-and-effect relationship of particular strategies of actions when facing social, economic or political conflicts resulting from architectural design and/or architectural innovation;

- + to make the user acquainted with his own expertise, desires, and behavior concerning architecture (to create a knowledge "about living in architecture" in addition to the existing knowledge "how to live in architecture"¹⁾);
- + to combine the "architectural planning" and "social planning", both done by the users; this could allow optimal interrelated social and architectural structures;
- + to learn new attitudes toward different forms of housing and to learn new kinds of behavior and new potential for conflict solutions together with other dwellers;²⁾
- + to experiment the building of "housing communities", such creating cooperative groups;
- + to train the participants' judgement, knowledge and intuitions in particular housing situations;
- + to experiment group processes (their advantages and disadvantages) and to experience the power of organized groups challenging external constraints;
- + to stimulate creativity, inventiveness, self-expression, spontaneity, and fun with and within architecture.

1) In a similar way as we can speak in languages about different knowledges: the knowledge how to speak a language and the knowledge about a language (e.g. grammar) in architecture we may differentiate between a knowledge how to live in architecture and a knowledge about living in architecture. The latter becomes especially important for new learning, for change and control.

2) As the "getting acquainted with each other" is an important effect - Dries van Wagenberg reports concerning a project where users were involved into the design (Wohnungsmodell Deutschlandsberg, Austria): "While ideas and knowledge about the project were developed, future neighbors came to know each other better during the meetings, which - in turn - helped to create a deeper understanding of the problem in general and also informed the participants of each other's concerns." (Dries van Wagenberg 1976, p. 44).

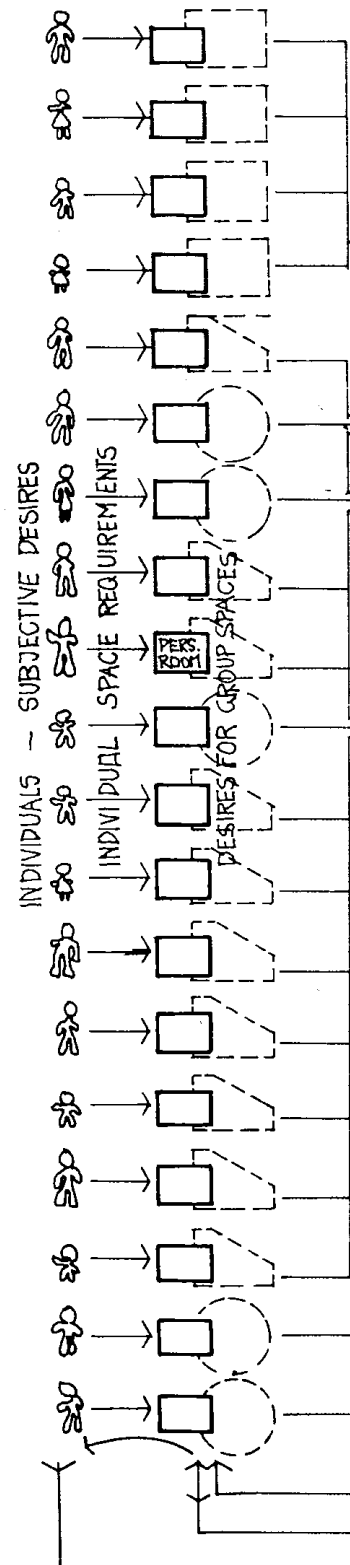
4.3. A proposal for a design process for participation in housing

COMPARE TO 4.5.4.

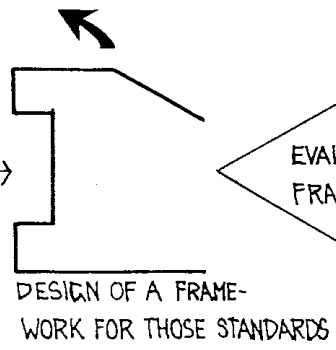
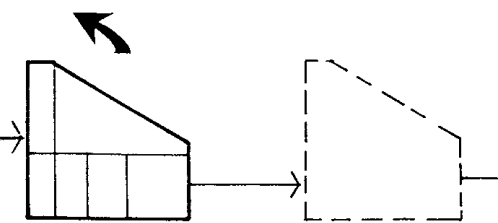
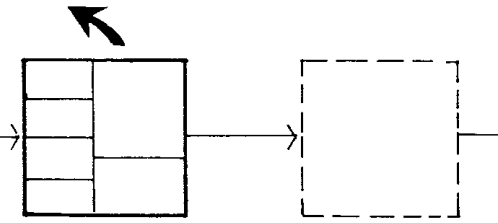
SENSITIZATION PROGRAM

ENVIRONMENT-AWARNESS PROGRAMS

PARALLEL NEIGHBORHOOD CITY ETC PROGRAMS



GROUP-DESIRIES



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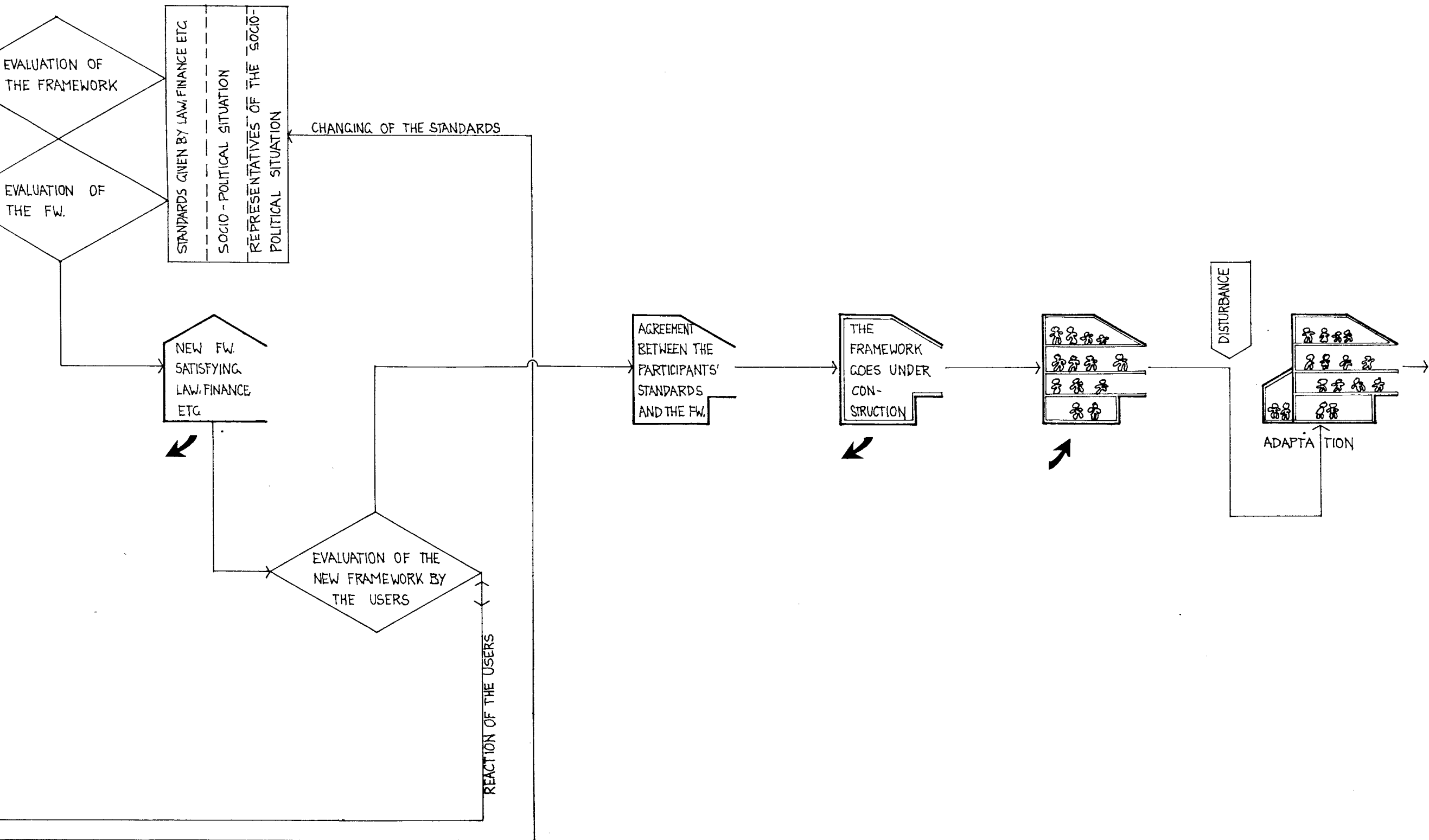
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D1

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5. A proposal for a game

5.1. Problem area to be simulated

"Housing must, . . . , be used as a verb rather than as a noun - as a process that subsumes products. Real values are those that lie in the relationship between the elements of housing action - between the actors, their activities and their achievement." (Turner, J.F.C. 1976, p.66)

This game has as its objective: the housing process and the actors in this process. This concerns:

at the social level:	at the level of products:
the individual groups of individuals (or families) the housing community the socio-political situation	the single private space the units the support structure external factors with influence on the housing project

Since these elements cannot be seen on their own, this game focusses on the relationship between those elements of housing.

In this game no straight translation of the existing conditions is made, but rather a new kind of housing process - which includes the participation of the user - is simulated. This housing process will be contrasted with the existing social and political structures.

The actual game is structured for a condominium.¹⁾ The structure of the game could also - if some assumptions were changed - be adapted to other types of housing.²⁾

The game starts with an existing group of people interested in new houses.

The game could be seen as a kind of component game of the entire housing problem, whereby additional and parallel means have to be used (see: 4.1.).

All external factors represented are taken in abstraction. This is done to allow modifications for specific situations (e.g. a special building plot³⁾). Unique constraints should be indicated for every specific project.⁴⁾

As the interrelation between the framework and the individual's unit is simulated by a model, the social interrelations concerning the single user within the community is simulated by the participants (by their roles). Confrontations and solutions between the private and the community interest are gamed.

1) This seems to be a housing form which allows best the exemplification of conflicts between user and community or infill and support (here the concept of "social housing" - as it is customary in Europe - and the advantages of the suburban houses - individual aspects -, could be represented).

2) Those could be: town houses, row-houses, zero-lot-line-houses, detached or semi-detached houses or others, including also old houses, if proposed for renewal.

3) "Categorical programs and housing schemes destroy local communities, and their own potential for providing economic solutions to their own real problems." (Turner, J.F.C. 1976, p. 130)

4) e.g. land conditions, neighborhood factors, etc. have to be indicated for every special case, insofar as they concern the layout of rooms, units, or common spaces.

We start with the individual's desires, then these desires are confronted with those of the community, and then possible new individual and community solutions can be experienced. The starting point (the individual's desires) and the end (final solution for the individual within the community) are one major matter for evaluation.

The game represents a method which allows the users' participation in design. The method is capable of providing means for technical implementation, without being tied to a particular construction system or to any particular material.¹⁾

A housing project, after being designed and built, undergoes modifications and adaptations, and therefore the model and the roles allow the gaming of these processes: single stages of the "housing process"²⁾ can be simulated. This is done by new role descriptions (e.g.: ten years later...) or game cards indicating specific situations (see: 5.4. - C 2 and D 1).

The game covers a simulated period of about half a year for design and another half a year for the construction of the support and the final design of the units. Of course, this is an "ideal time", and the time can be prolonged for one or two years if problems appear.

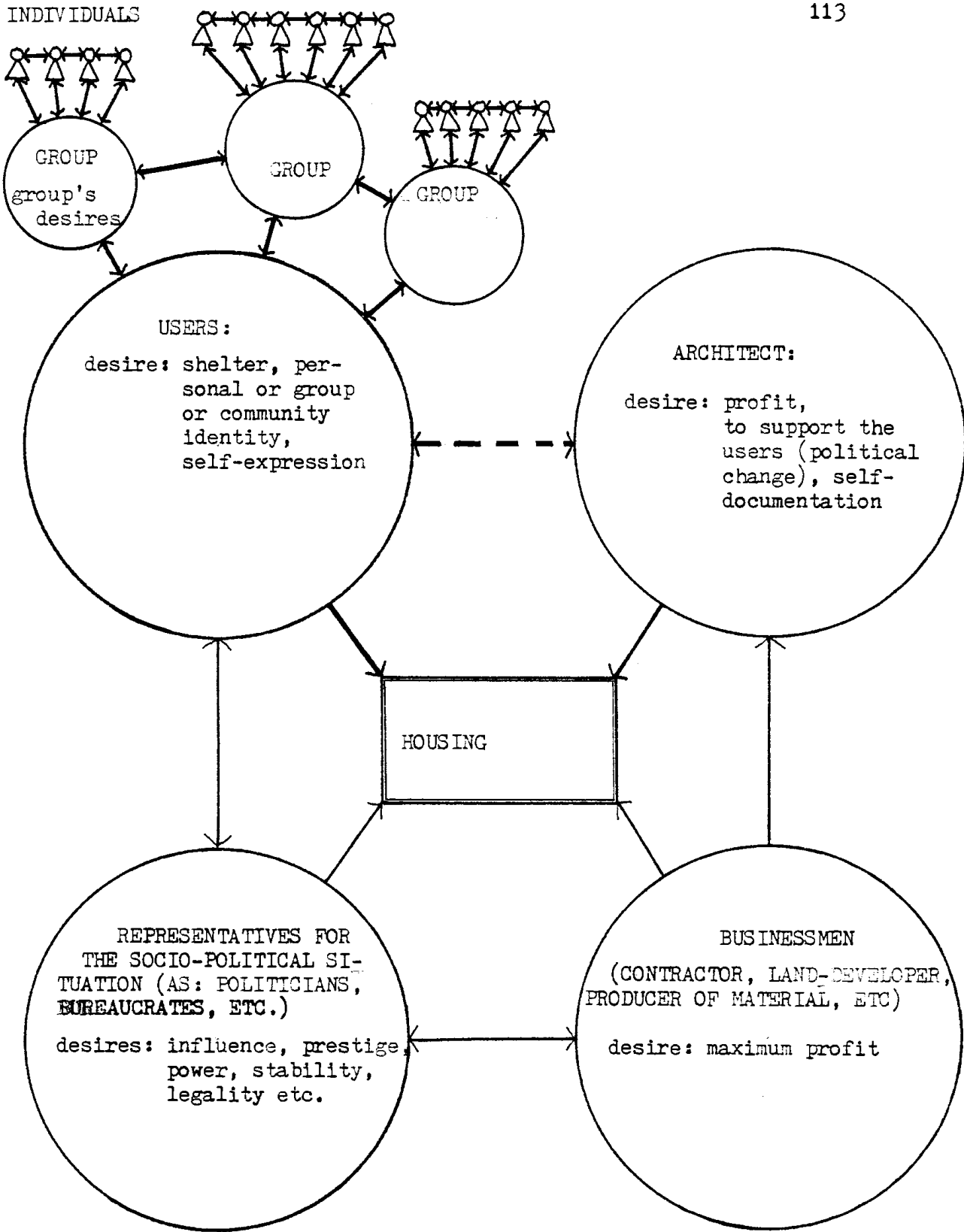
The simulation of adaptation and modification, adding or subtracting, can happen over the lifetime of the support structure (about 120 years).

1) If the selection of the framework is simulated by evaluating which framework best fits the user-created standards, then the method is bound to the corresponding construction system.

2) as changed user-needs, newcomers, growing groups, etc.

The S.A.R. method is applied as a means of communication and coordination.

The following chart shows the roles of people who have important influence on the building process and their functional interrelations.



_____ Interrelation represented in the game proposal
 - - - - - Interrelation partly represented in the game proposal
 _____ Interrelations not yet represented in the game proposal

5.2. People involved

Concerning the "gamed roles"¹⁾ there are two different ways in which the proposed game can be played:

- a) As a game where the participants play their own role ("self-determined roles")

Above all, this is required if the game is used to come to an actual design (previous games are suggested). In this case the participants have to produce their own role description (see: Outline to be followed for self-determined roles").

- b) As a game with given roles ("designer determined roles")

If we take into consideration the fact that "people with power" have better possibilities of having choice, then the target population for the suggested kind of participatory planning and gaming should be limited to the have-not-citizens²⁾ or those whose wishes exceed the established offerings in housing.

It is also assumed that - given the existing situation - the people who are most willing to experiment with new forms of living are those who are most disadvantaged within the existing situation, or who are unsatisfied with it because of intellectual considerations.

1) Gamed roles are roles by persons who interact, are personally present and whose decisions are processed and returned.

2) I want to focus on those people additionally because the have-nots or culturally deprived people - the "problem-people" - have the most need for special communication instruments (as games) since they have problems with the existing mode of communication. The potential of games for this group is evaluated by S. Boockock as follows: "There are no strong or consistent relationships between performance in a game and in other academic tasks. Thus games may be especially valuable for the under-achiever, the non-verbal, the culturally deprived and other "problem"-students." Boockock, S.S. 1968, p. 18.10).

5.3. Motives and purposes of the players (actors' objectives)

5.3.1. Self determined roles:

Under the heading "resources available to the player" I have developed a scheme for role description, which is to be followed if someone plays his "self-determined role". This scheme should lead to a general outline of the Gamer's own position and should help to order the information someone has about himself. It should also help the Gamer to reflect on his own function in society in general and in this game, in particular, and with this to gain "distance to his own role".¹⁾

5.3.2. Designer determined roles:

For this kind of game it is necessary to develop full role descriptions: These could include different families, students, unmarried mothers, unemployed singles, a disabled person, an architect (who could take the role of a game advisor - like the one who plays the cashier in Monopoly), and similar persons.²⁾

From this we can get two main population groups for whom we can suggest roles in the game:

- 1) lower middle class and lower class people: people who are in disagreement with the existing norms or who are disabled by the given standards;

1) Gaining "distance to one's own role" can help each person emancipate himself: As a result of this, reflection about one's own role becomes possible, and this is crucial for one's ability to break through the fixed structures of traditional roles.

2) These roles are not established yet in this proposal.

- 2) intellectuals who have gained critical insights or people who are politically involved in opposition to standard policies.

Taken from an educational point of view, roles representing these two kinds of people give the best chance for learning new forms of living together.

In addition to these roles, "pseudo-roles"¹⁾ or "simulated roles"²⁾ represent external factors.³⁾

The actors are not fixed to their role description, rather they are encouraged to "game" new insights. It is important that the player be able to identify which shifts from the original role he has undertaken.

1) Pseudo-roles are "gamed" by special participants with skills of special relevance. Their decisions are not processed formally through the accounting system, but they may have a real impact on the game.

2) Simulated roles are not represented by a human player but by the mechanics of a game or by other forms of operator-manipulation, which are generally fulfilled by an expert in order to increase "gaminess". (cp Duke 1974, p.121)

3) These roles are not fully established yet in this proposal. (see also: further necessary resources under 5.5.).

5.4. Interactions to be simulated and sequences of events (steps)¹⁾

The overall macrocycle of the game:



A The introduction includes:

- 1) to **produce** game elements
- 2) to become familiar with the game
- 3) to get acquainted with roles and desires

B the game consists of the following steps

- 1) Establish individual space requirements
- 2) group-building
- 3) group-definition/ group desires
- 4) establish unit (group)
- 5) a) documentation of the adapted personal space
 - b) contact other groups and other group members
 - c) design of a framework for the units (support, infrastructure, common used spaces)
- 6) evaluation of the framework by the users
- 7) reaction to the framework

1) compare to 4.3. a proposal for a design process for participation in housing.

- 8) changing of the standards¹⁾
- 9) agreement between the participants' standards and the framework's standards
- 10) evaluation of the framework in relation to the socio-political situation and adaptation of the framework if necessary
- 11) evaluation of the new framework by the users
- 12) reactions to the new framework
- 13) changing of the standards (II)
- 14) agreement between the participants' standards and the standards given by the socio-political situation
- 15) after agreement: the framework goes "into" construction

C Post-play critique

- 1) evaluation of the design process
- 2) discussion and selection of disturbances

D Game continuation

- 1) simulation of disturbances
- 2) reevaluation
- 3) final game review and critique

The following chart will show each stage:

what to do/ which means to use/ time.

This chart should be used as a guideline through the game. It is a part of the user's manual.²⁾

1) Standards are design data regarding elements and their relations within the housing project, e.g. given by the breadth and depth of a room, the numbers of doors, the relations of different spaces to each other and so on. Those standards are set by the users when they design their spaces.

2) At the stage of game development within this proposal it consists of all means indicated in the steps A 1 to B 5b

5.4.2.

TIME

STEP

WHAT TO DO

MEANS

	STEP	WHAT TO DO	MEANS	TIME
A 1	PRODUCTION OF GAME ELEMENTS	cut out and glue the elements of the elements of the model.	model description, cut-outs, scissors, glue etc.	
2.	TO BECOME FAMILIAR WITH THE GAME	1)try to get an overview 2)listen to the game-advisor	User's manual	
3.	TO GET ACQUAINTED WITH ROLES AND DESIRES	1)fill out your own role description, or study your given role 2)get your money coins 3)fill in the behavioral setting identification sheet 4)brainstorming to get a check-list of necessary spaces	outline for self-determ. roles or role description for designer determ. role user's manual: "money" & money coins evaluation sheet behavioral setting identification sheet rules for brainstorming	

STEP	WHAT TO DO	MEANS	TIME
B 1	ESTABLISH YOUR INDIVIDUAL SPACE REQUIREMENTS	<ol style="list-style-type: none"> 1) list your personal desires concerning your private space 2) list your personal desires for group spaces 3) design your space in the model 4) document your space 5) indicate the relation of your space to other spaces 	<p>space requirement sheet I</p> <p>space requirement sheet II</p> <p>model description, model</p> <p>documentation sheet I</p> <p>documentation sheet I</p>
2	GROUP BUILDING	<ol style="list-style-type: none"> 1) show your room and your desires concerning other spaces and the resources you have left 2) try to find people with similar desires 3) join a group or build your own (if you are in a family, cooperate with your family) 	<p>free discussion and interaction</p> <p>"</p> <p>"</p>

STEP WHAT TO DO MEANS TIME

3 GROUP DEFINITION/ GROUP DESIRES

- 1) discussion of the different personal desires within your group
- 2) list the group's common desires
- 3) rearrange the relation of your space to other spaces according to the group's desires
- 4) these solutions are compiled to a common solution for the "final relations"

free discussion supported by all sheets you have filled in

space requirement sheet III

evaluation sheet I (transparent)

evaluation sheet I

4 ESTABLISH YOUR UNIT (GROUP)

- 1) translate these relations into a design.
- 2) document your unit
- 3) relate your unit to other units
- 4) list desires of facilities outside the unit

model

documentation sheet II

documentation sheet II

space requirement sheet IV

STEP	WHAT TO DO	MEANS	TIME
5	<p>a) DOCUMENTATION OF THE ADAPTED PERSONAL SPACE</p>	<p>documentation sheet I (transparent)</p>	
	<p>b) CONTACT OTHER GROUPS AND OTHER GROUP MEMBERS</p>	<p>1) get acquainted with other groups and their desires, and make your group known to others. Try to find common interests or points of disinterest</p> <p>2) If you have desires concerning spaces outside the unit, then try to find people who are also interested in those spaces, and try to document those desires (write, sketch)</p>	<p>free discussion and inter-action</p> <p>space requirement sheet IV</p> <p>blank sheets</p>
	<p>c) DEVELOPMENT OF A FRAMEWORK FOR THE UNITS (SUPPORT, INFRASTRUCTURE, COMMONLY USED SPACES ETC)</p>	<p>Either: an architect analyses the standards given by the users (in the documentation sheets I and II and the results from the space requirement sheet IV) and designs a framework.</p> <p>or: a simulator analyses these standards and selects then a framework</p>	<p>space requirement sheet IV</p> <p>blank sheets</p>

My game-proposal is playable up to this point

all documentation sheets

results from space requirement sheets IV

pseudo-roles (consultant architect) or simulated roles (use of a computer and/or simulation game)

S.A.R. method used for this process.

STEP	WHAT TO DO	MEANS	TIME
6	<p>EVALUATION OF THE FRAME- WORK BY THE USERS</p>	<p>1) rearrangement of the original so- lutions so that they fit into the framework. 2) documentation of the rearrangement 3) think about and discuss how you like this rearrangement</p>	<p>model documentation sheets (transparents) free discussion and inter- action</p>
7	<p>REACTION TO THE FRAME- WORK</p>	<p>every group has the possibility of deciding one of the following points: 1) accepting of the framework and adaptation of the unit --- continue at B 9 2) adapt your design to make it clo- ser to the framework and demand a new design of the framework 3) adapt your unit in cooperation with other groups and ask for a new design of the framework 4) refuse the framework and demand a new design of the framework</p>	<p>model documentation sheets (space requirement sheets if changes have to be made) pseudo- or simulated roles ----- " ----- discussion and voting</p>

STEP	WHAT TO DO	MEANS	TIME
8	CHANGING OF THE STANDARDS	if B 7.2. or 3.: repetition of B 3.4. until agreement is achieved (7.1.) if B 7.4.: repetition of 5.c. until agreement is achieved	see: B 3.4. - 7 see: B 5.c.
9	AGREEMENT BETWEEN THE USERS' STANDARDS AND THE FRAMEWORK'S STANDARDS	documentation of new units and the new personal space	model documentation sheets (space requirement sheets if changes have to be simulated)
10	EVALUATION OF THE FRAMEWORK IN RELATION TO THE SOCIO-POLITICAL SITUATION AND ADAPTATION OF THE FRAMEWORK IF NECESSARY	agreement with law, finance, or other constraints is evaluated alteration of the framework	pseudo- or simulated roles
11	EVALUATION OF THE NEW FRAMEWORK BY THE USERS	see: B 6	see: B 6

STEP	WHAT TO DO	MEANS	TIME
12	<p>REACTION TO THE NEW FRAME- WORK</p> <p>Every group has the possibility of deciding one of the following points:</p> <ol style="list-style-type: none"> 1) acceptance of the framework and adaptation of the units - continue at B 14 2) try to change the standards set by the socio-political situation 3) adapt the unit to make it closer to the standards (and cooperate with other groups) and demand a new design of the framework 	<p>discussion and interaction</p> <p>model and documentation sheets (discussion and interaction)</p>	
13	<p>CHANGING OF THE STANDARDS</p> <p>if B 12.2.: develop strategies and challenge the representatives of the socio-political situation until agreement is achieved.</p> <p>if B 12.3.: repetition of B 3.4. - B 12 until agreement is achieved</p>	<p>simulated roles or pseudo-roles representing the representatives of the socio-political situation (as: politicians, bureaucrats, etc.)</p> <p>see: B 3.4. - B 12</p>	

STEP	WHAT TO DO	MEANS	TIME
14	<p>AGREEMENT BETWEEN THE PARTICIPANTS' STANDARDS AND STANDARDS GIVEN BY THE SOCIO-POLITICAL SITUATION</p>	<p>documentation of the new units and personal spaces</p>	<p>model and documentation sheets (and space requirement sheets, if changes have to be simulated)</p>
15	<p>AFTER AGREEMENT: THE FRAMEWORK GOES "INTO" CONSTRUCTION</p>	<p>1) watch the stages of the growing framework (and/or participate) 2) check all your sheets (especially the first and last ones) 3) make the final design a) of your private space b) of your unit c) of common spaces 4) place the units into the framework</p>	<p>model of the framework all your sheets model and documentation sheets models</p>

	STEP	WHAT TO DO	MEANS	TIME	
C	1	EVALUATION OF THE DESIGN PROCESS	1) each group member of the unit reports to the group (experience, satisfaction, dissatisfaction, suggestions for further steps etc) 2) each group reports to all others	discussion and interaction	
	2	DISCUSSION AND SELECTION OF DISTURBANCES	1) discuss the whole project 2) select one of the following disturbances: + new dwellers + exodus of some dwellers + additional equipment for the building + ten years later + others (to be created)	new role descriptions and further new means (to be developed)	
D	1	SIMULATION OF DISTURBANCES			
	2	REEVALUATION			
	3	FINAL GAME REVIEW AND CRITIQUE			

5.5. Resources and devices available to the player

5.5.1. There are four different kinds of resources¹⁾ available to the players:

	represented by:
1) elements of the home (that are originally provided or additional)	the model
2. money	money coins
3. time	time coins
4. social acknowledgement	social coins

5.5.2. Devices facilitating the housing-design-process

- 1) Outline to be followed for "self-determined roles" or role descriptions for "designer-determined roles"
- 2) Money coins evaluation sheet
- 3) Behavioral setting analysis sheet
- 4) Rules for a brainstorming
- 5) Space Requirement Sheet I
- 6) Space Requirement Sheet II
- 7) Model Description
- 8) Documentation Sheet I
- 9) Space Requirement Sheet III
- 10) Evaluation Sheet I
- 11) Documentation Sheet II
- 12) Space Requirement Sheet IV

1) At this stage of the game design, I only provide the elements for the model (and additional elements) and the money coins. In the further design of the game, the quantities of and the rules about the other resources will have to be developed. The "trade-off" with those different resources will be an important element of the game.

5.5.1.1. Elements of the home

You get a certain number of elements for your new home free: a floor area, walls, windows, partitions, furniture and equipment. Those "elements of the home that are originally provided" are assumed to be subsidized by public money and/or are already paid for or it is assumed that you already own some of them (e.g. furniture and equipment).

You have the possibility of getting:

- + additional quantities
- + better style
- + additional quality

You can purchase these items with your money coins.

On the other hand, you can also give back some elements and get some money coins for them (you get the same amount of money that it would cost to buy them).

You will find the "elements of the home that are originally provided" in the model description (5.5.2.7.). For additional elements pay the price as indicated below:

You have four different choices:	price to pay:
1) normal ¹⁾ style + normal quality	normal cost ²⁾ (1 n)
2) normal style + extra quality ³⁾	$n + n \times 0,5$
3) extra style + normal quality	$n + n \times 0,5$
4) extra style + extra quality	2 n

1) normal means here: as provided originally (same style and quality as you find in moderately priced housing projects).

2) normal cost = cost as indicated in the "model description" (5.5.2.7.)

3) this extra quality could mean: better sound proofing, better durability etc. - up to your choice.

5.5.1.2. Money

This is a public housing project which is subsidized.¹⁾ Therefore, the rent depends on your personal income. If you have "surplus money"²⁾ you want to invest in your home, you can either buy more space or "extras" (higher quality, or more fashionable elements). You can also trade off money coins with time coins.

Amount of money you can spend for this housing project:

Check income in the "outline for self-determined roles" which you have filled out:

If you do not earn more than \$250 monthly, then you keep all this money for your own private expenses, and you need not pay anything for housing (i.e. rent or down payment) because \$250 is considered "minimum expenses".

For every one in your household who has none of his own income, you can add an additional \$ 50 to your "minimum expenses".

If you earn more than the amount of these "minimum expenses", then you have to pay for your home. Your payment is about 20% of your additional income.

The money which is left over from the "minimum expenses" and the money you have to spend for housing, you can invest in additional space or in qualitative improvement or in special design features for your home.

1) This concerns the construction as well as rents.

2) income exceeding minimal expenses.

You can spend additional money if you have mentioned in your "outline to be followed for self-determined roles" that you are expecting more income in the future: you may take some credit. If you have some property to sell, you can do so and get additional money.

If you have long-range monthly payments, then you have to subtract this money from the money you could spend on housing.

Fill in the chart "money coins evaluation sheet, . 5.5.2.2.) to find out how many money coins you get for this game. Take the data from your "outline to be followed for self determined roles".

5.5.1.3. Time: Since this is a "participatory housing process", time is an important resource. The amount of time coins equals the amount of free time you have (depending on your work etc) and the time you are willing to invest.

Quantities and rules:¹⁾

5.5.1.4. Social acknowledgement: This is a resource often linked with the time you are investing in the project . But it also depends on the opinions of the other participants; e.g. if you find a group and are accepted, you get these points--you then have to give back those points if you are excluded from a group; you get some points if you are elected the representative of a group-- but you have to pay some points if you cannot come through with the issues you represent; and so on.

Quantities and rules:¹⁾

1) not yet established

5.5.2.1. OUTLINE TO BE FOLLOWED FOR "SELF-DETERMINED ROLES"¹⁾

This is just a memory list, read through and take notes (these notes are important for your evaluation at the end of the game).

NAME:

AGE: think also about your previous life, especially where you have lived? which kind of environments have been important for you? what your further exspectations are?

INCOME: what is your monthly income? where does it come from? do you own some property? do you have regular payments for long-term mortgages? note other financial matters which might be important for your new home.

POLITICAL PERSPECTIVES: what is your general perspective concerning the social and political situation ; how would you describe yourself if you were asked about your political views (e.g. Conservative, Democratic, Republican, Progressive etc), what is your opinion concerning work? how do you see the relation between work and home? what do you exspect in your near future? what in the long run?

What do you consider to be the most necessary social changes in the future? what do you consider the most urgent urban problems? How would you describe the "way of living in the future? Which kind of housing do you consider as "very social", which as "a-social"? Make notes of further personal views that you think are important for housing, community, living together, etc.

1) Here, I have intentionally used no standardized questionnaires, since those questionnaires force the person who uses them to adapt to the communication form (and specific descriptions, terms etc) of the designer of the questionnaire. Here the user's own way of expression should be stimulated. (see also: 1.3.3.)

ATTITUDES: how do you like your work, how important is it for you (especially in relation to your home), would you like to have more or less responsibility (at your work/ at home)? Where do you spend your time besides at work and at home? Do you have any habits which you consider important for the design of your home; do you have special belongings that you have had problems in using or in storing in your former or recent homes? What are your experiences with your neighbors, what would you like to do with your neighbors, which kind of neighbors would you like? How do you like the other members of your family (if you have them) - where do you think they have too much/too little in relation to you? List things or events which "highlight" your being at home or which are "the worst part" of being at home, or things you would like to do in your new home, but you have not done before.

OBJECTIVES FOR A DWELLING: Write down which things are most urgent for you: special room requirements, special functions etc. (you could explore those things by thinking about your daily life) Don't try to make a complete list (this comes later on), state only the most important things. Also, list objects or design features you dislike most. Sketch or note important features of your recent dwelling. Indicate extraordinary events which will or could occur in your new dwelling (like birth, marriage, retirement etc).

NOTE: This is your private sheet, for your very own use. It should help you develop your ideas on how to live. You don't have to use it public, but you could use it later on in discussion with other participants, or to introduce yourself, or simply to have a memory list of what you originally wanted.

5.5.2.2. Money coins evaluation sheet

YOUR MONTHLY INCOME		+ \$
YOUR MINIMUM EXPENSES	+ \$250	
ADDITIONAL HOUSEHOLD MEMBERS WITHOUT INCOME.. x 50\$ ¹⁾	+ \$.....	
	<u>\$.....</u>	→ - \$
INCOME EXCEEDING MINIMAL EXPENSES		+ \$ → $\frac{\dots \times 2}{10}$
MONEY WHICH MUST BE SPENT FOR THE HOUSING		- \$ ←
SURPLUS MONEY		<u>\$</u> → $\dots \times 10$
		+ \$ ←
INCOME FROM CREDITS <u>future income x 5</u>		+ \$
INCOME FROM PROPERTY <u>\$.....</u> 2		+ \$
		<u>+</u> \$
LONG RANGE MORTGAGE COSTS/MONTHLY		- \$
MONEY YOU COULD SPEND		\$ → $\frac{\dots \dots}{10}$
MONEY COINS YOU EARN		←

1) If several household members work, this amount is only to be subtracted by one of them.

AFTER YOU HAVE MADE YOURSELF ACQUAINTED WITH "YOUR ROLE" (OR AFTER YOU HAVE DESCRIBED YOUR OWN ROLE) STUDY AND/OR FILL IN THE FOLLOWING TABLES:

LIST ACTIVITIES YOU (WILL) PERFORM IN YOUR HOME	INDICATE FREQUENCY (eg. DAILY,...)	TIME INDICATE THE TIME PERIOD OF ACTIVITIES IN YOUR RECENT HOME WITH A STRAIGHT LINE _____ OF ACTIVITIES NOT YET PERFORMED BUT WANTED WITH THIS LINE <i>~~~~~</i> (RELATE THICKNESS OF THE LINES TO THE IMPORTANCE OF THE ACTIVITY)																								INDICATE SPECIAL REQUIREMENTS AND COMMENTS		
		5AM	6	7	8	9	10	11AM	12 ^{NOON}	1PM	2	3	4	5	6	7	8	9	10	11PM	12	1AM	2	3	4		5	6
DURING MORNING																												
DURING AFTERNOON																												
DURING EVENING																												
DURING NIGHT																												
SPECIAL ACTIVITIES, NOT MENTIONED YET:																												

NOTE: THIS SHEET SERVES FOR YOUR PERSONAL USE - YOU CAN KEEP IT FOR YOUR OWN USE (FOR EVALUATION OF YOUR GAMING) AND YOU DO NOT HAVE TO SHOW IT TO ANYBODY

BEHAVIOR SETTING ANALYSIS SHEET

5.5.2.4. Rules for Brainstorming:

Brainstorming to get a check list of different spaces:

After everybody has studied or filled in his role description, the first common session takes place.

Rules: Everybody tries to name as many spaces important for the design of a house as he can imagine.

Someone (the game advisor, if there is one) writes every mentioned space on the board.

No criticism or discussion is allowed during this procedure

The produced list of spaces serves then as a check list of completeness of the personal or group requirements.

Time: ten minutes

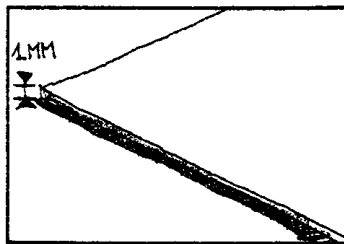
.5.5.2.7. Model description

The elements of the model you get are:

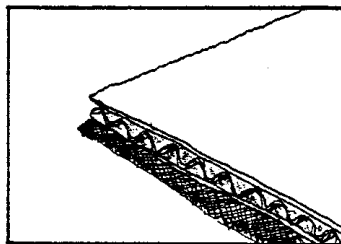
- + floor area
- + wall elements
- + window elements
- + partitions
- + doors
- + furniture
- + kitchen and sanitary equipment

The amount of "elements of the home that are originally provided" (which you get free) equals the amount of elements given in the cut-outs.¹⁾

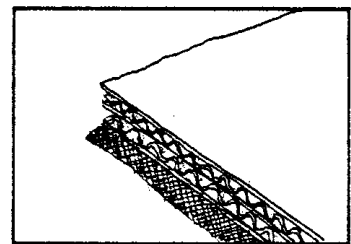
material you need:



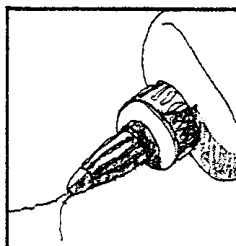
cardboard



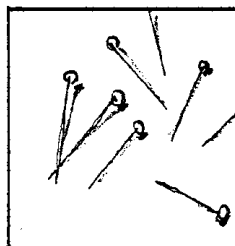
corrugated cardboard



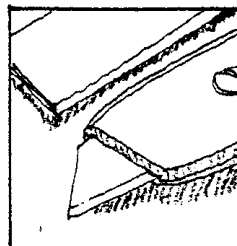
double corrugated cardboard



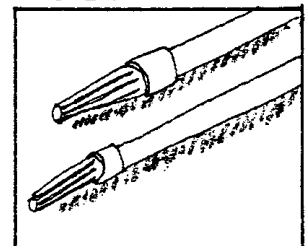
glue



pins



ruler and knife



felt-tip pens

1) The prices indicated are only important if you want to buy additional items or if you want to give some back.

If you have produced your model elements and reached step B 1.3., then design your space in the model. Build your personal space on the floor area with the provided elements.

With your elements you must also contribute to the building of the unit (i.e. you reach step B 4.). Therefore, save elements when you build your personal space. You can also use left-over elements and add them to common spaces (i.e. those that are outside the unit, but within the housing project).

Rules: + You can size your floor area however you want. But you have only $26m^2$ at your disposal (which you can use for private space, for your unit and as your contribution to the common spaces). That means in terms of the model, that you have for your choice 289 squares (30cm x 30cm) of the grid drawn on your floor area.

As a device for controlling how many you have used and how much you have left, you will find below a "floor area check-list". This check-list equals the amount of squares you own, and for every square you have occupied in the model you should check off one in this check-list. (The space used for the position of elements is to be included)

- + Locate the wall- and window-elements between the lines and the partitions on the lines.
- + The position of furniture and equipment can be independent of the grid-structure.

CUT OUTS:

FLOOR AREA:

- Production:
- 1) Glue the following grid-sheet (for your personal space) on a double corrugated piece of cardboard and build your unit on it.

 - 2) Glue the larger grid (grid for your unit) on a piece of double corrugated cardboard and then build your unit there (this only needs to be done by one member of each group)

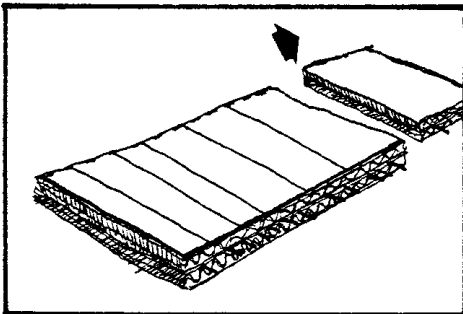
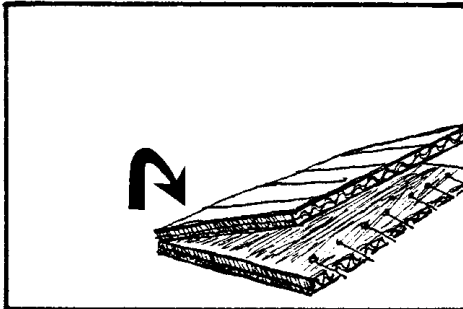
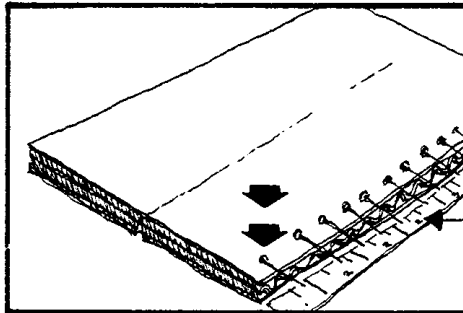
WALLS:

These elements symbolize:

- + outside walls
- + walls separating one unit from another
- + load bearing walls (which you do not have to locate before step B 6
- and then they will be placed according to the design of the framework)

Place the walls always between the lines of the grid.

Production:



- 1) Cut out the "price-and-pins-indication-strip"
- 2) Glue the remaining wall cut-out on corrugated cardboard
- 3) Cut the full thick lines and score the dotted line
- 4) Turn over the whole piece so that the white cut-out faces the table
- 5) Place the "price-and-pins-indication-strip" at the edge of the piece
- 6) Place the pins as indicated on the strip
- 7) Press the heads of the pins into the cardboard with a hard edge
- 8) Cover the pins and the whole area with glue
- 9) Fold the piece together
- 10) Keep under pressure until it is fixed
- 11) Cut along the (thin) full lines and you have your wall elements

For purchasing additional items make the same with a copy of the wall cut-outs and pay according to the "price-and-pins-indication-strip" (see also under 5.5.1.1.)



price-and-pins-indication-strip:
indicates the position of the pins
and the money-coins to be paid

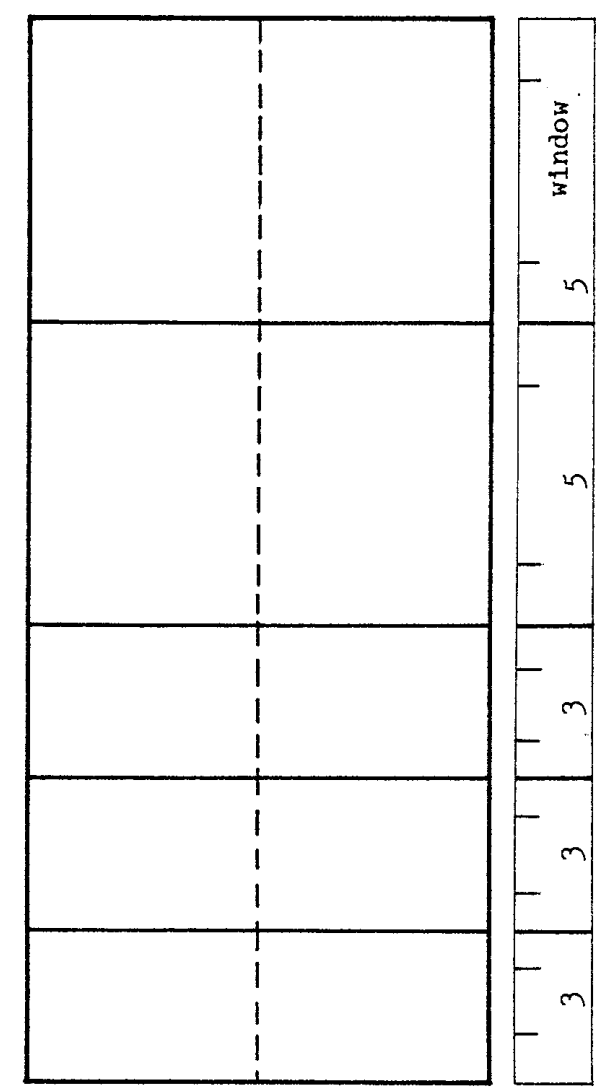


WINDOWS:

They are parts of the outside wall.
Place them allways between the lines.

Production: see: walls, production.

WINDOWS -CUT -OUT



PARTITIONS:

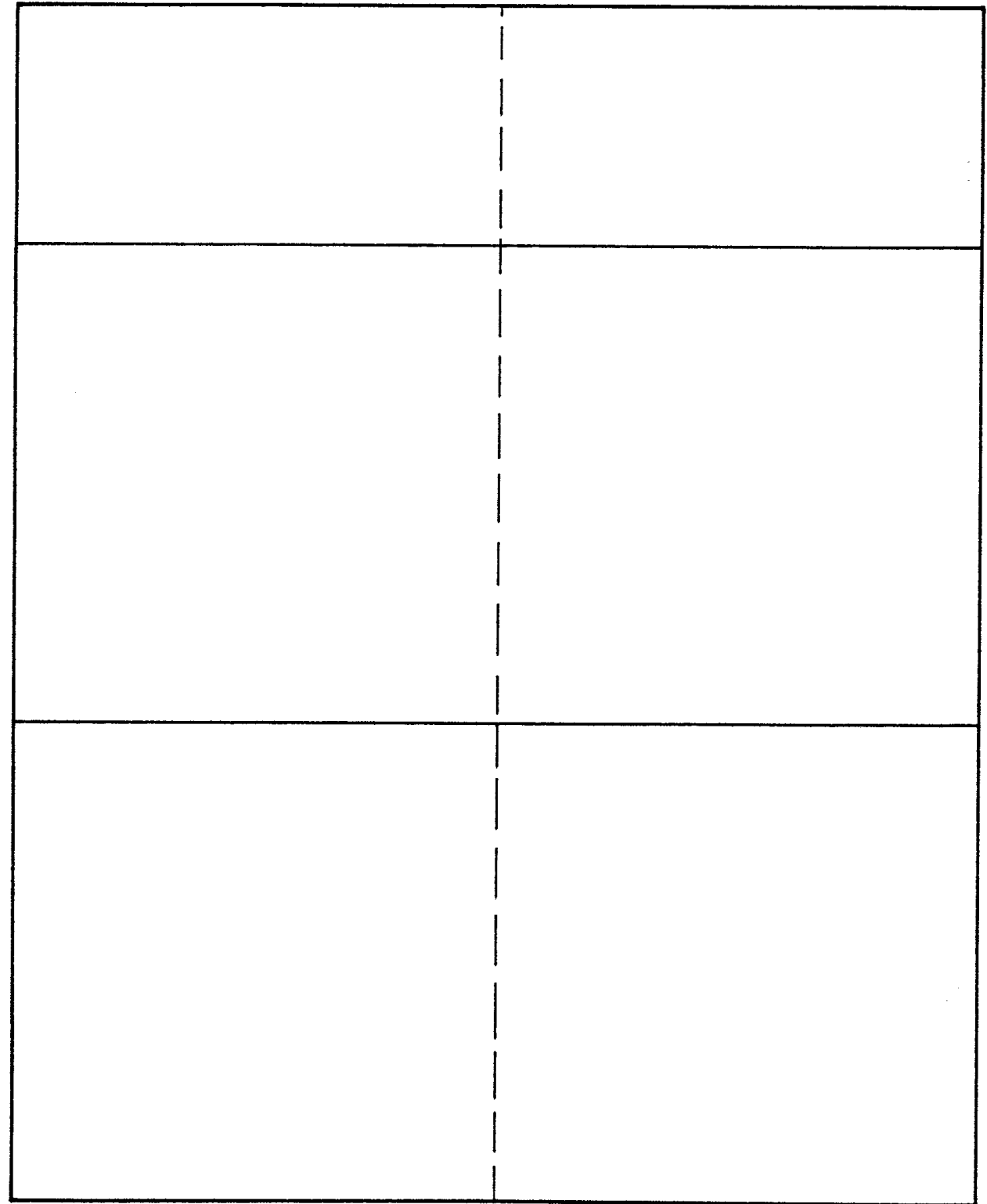
With these elements you can separate rooms or build storage space or wall closets. Place them always on the lines.

Production: same as the production of the walls, but glue all the partitions cut-outs on a normal piece of cardboard.

PARTITIONS CUT-OUT

21
22
23
24

PARTITIONS CUT-OUT



2 | partitions

3

3

PARTITIONS CUT-OUT

partitions
2
2
1
1
1
1

FURNITURE AND EQUIPMENT:

This furniture just symbolizes special items.

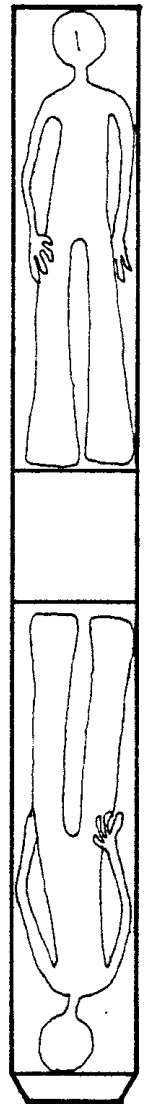
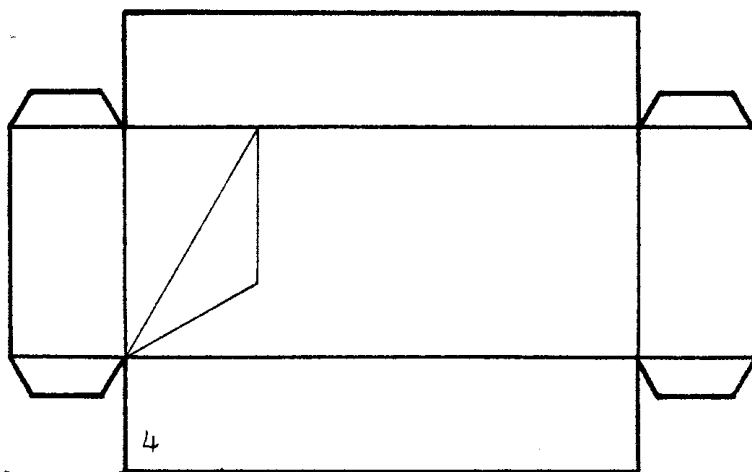
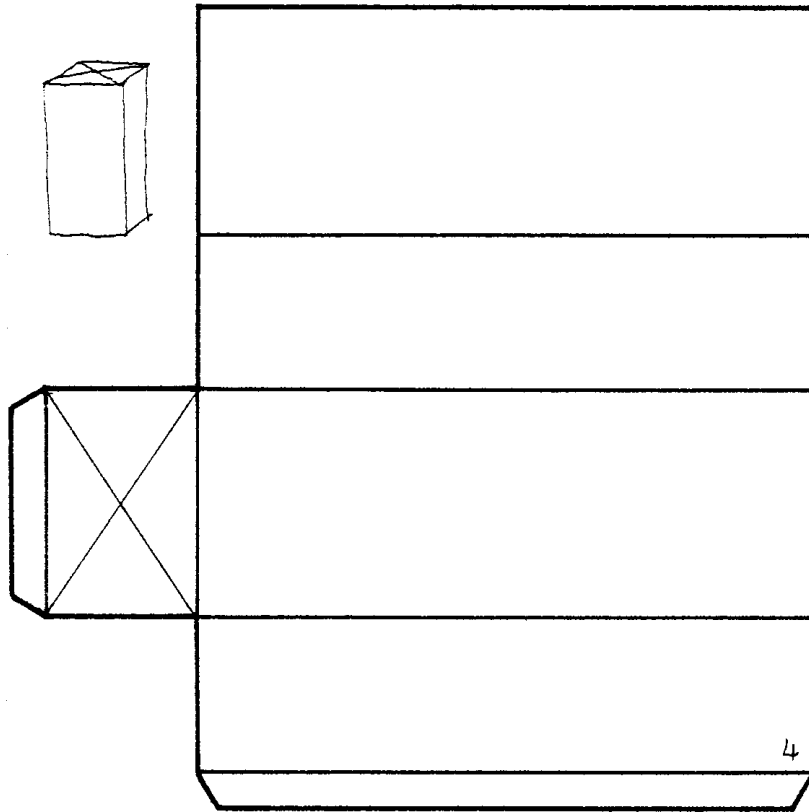
Use the "multi-purpose" furniture for furniture not given here.

Invention of new things is encouraged (they have to be exchanged for given elements)

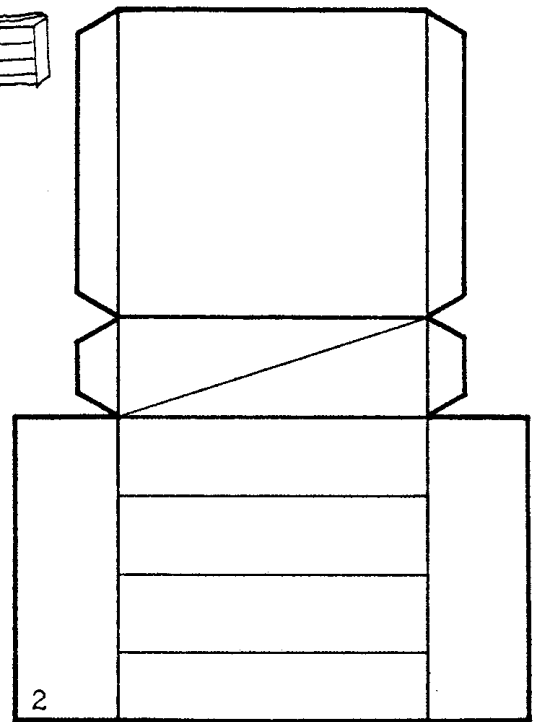
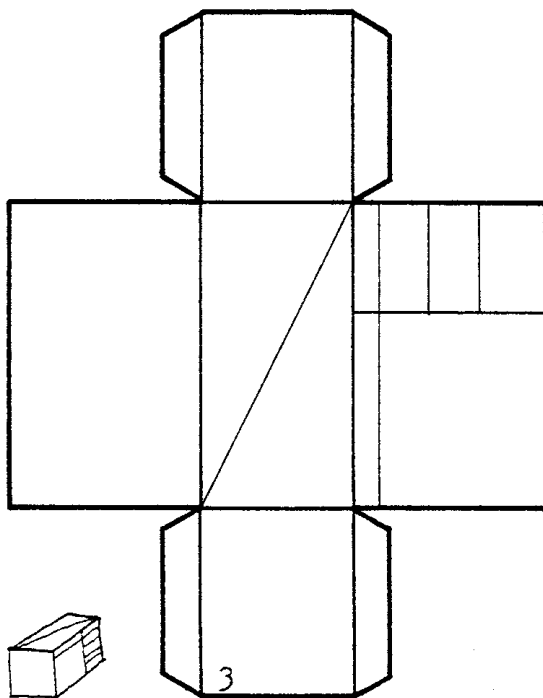
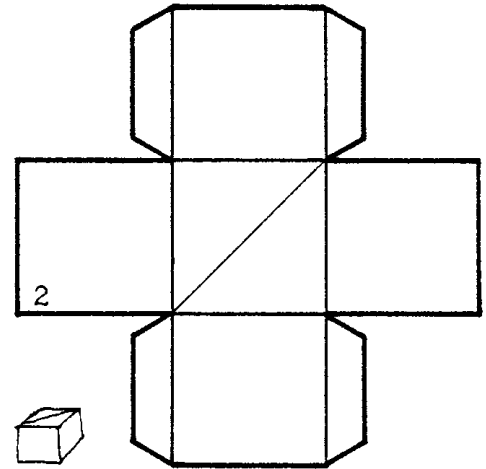
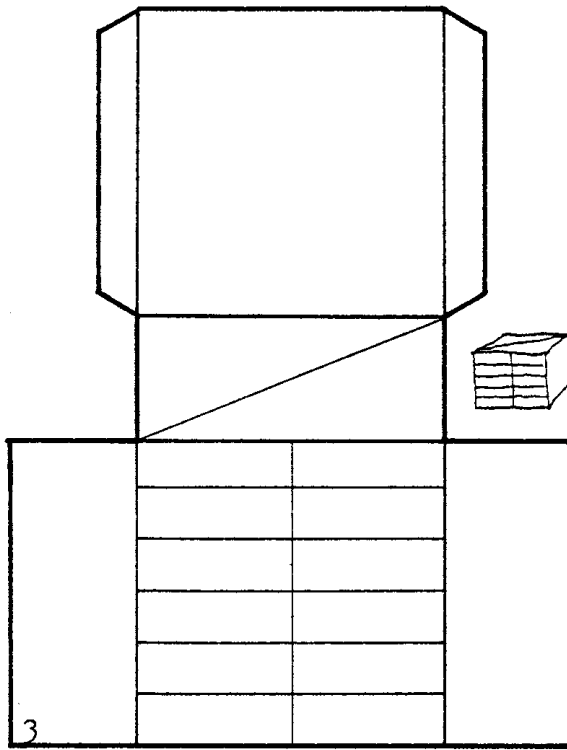
Production: Cut along the full lines, score all dotted lines, fold according to the arrows and then glue where appropriate.

A xerox-copy on heavier paper is suggested.

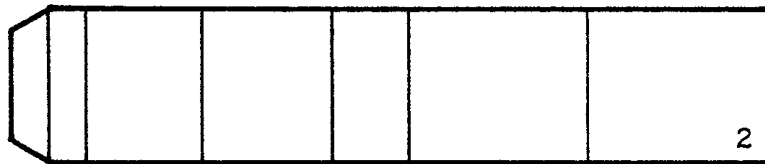
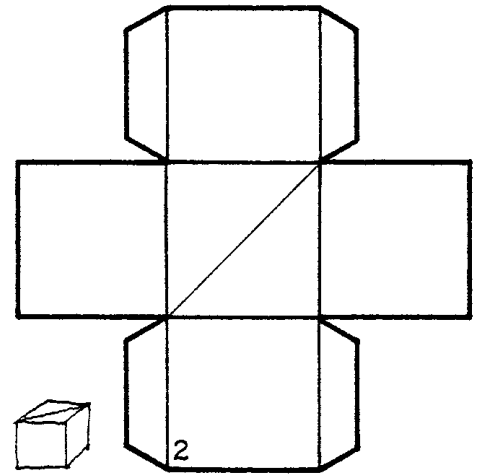
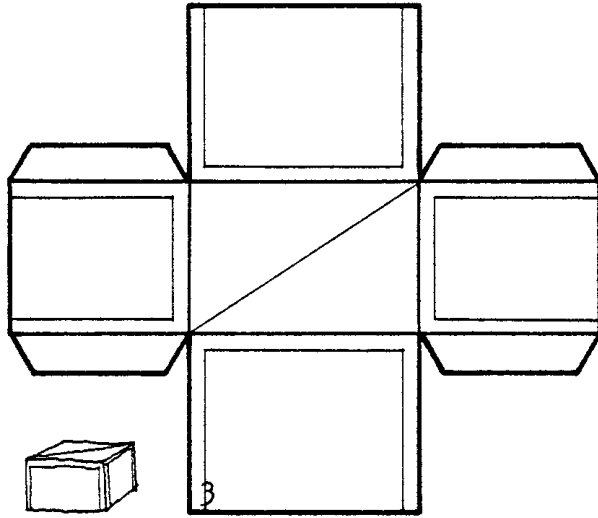
FURNITURE CUT-OUT



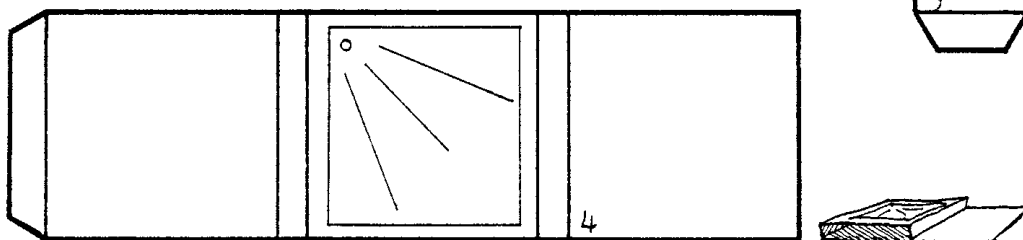
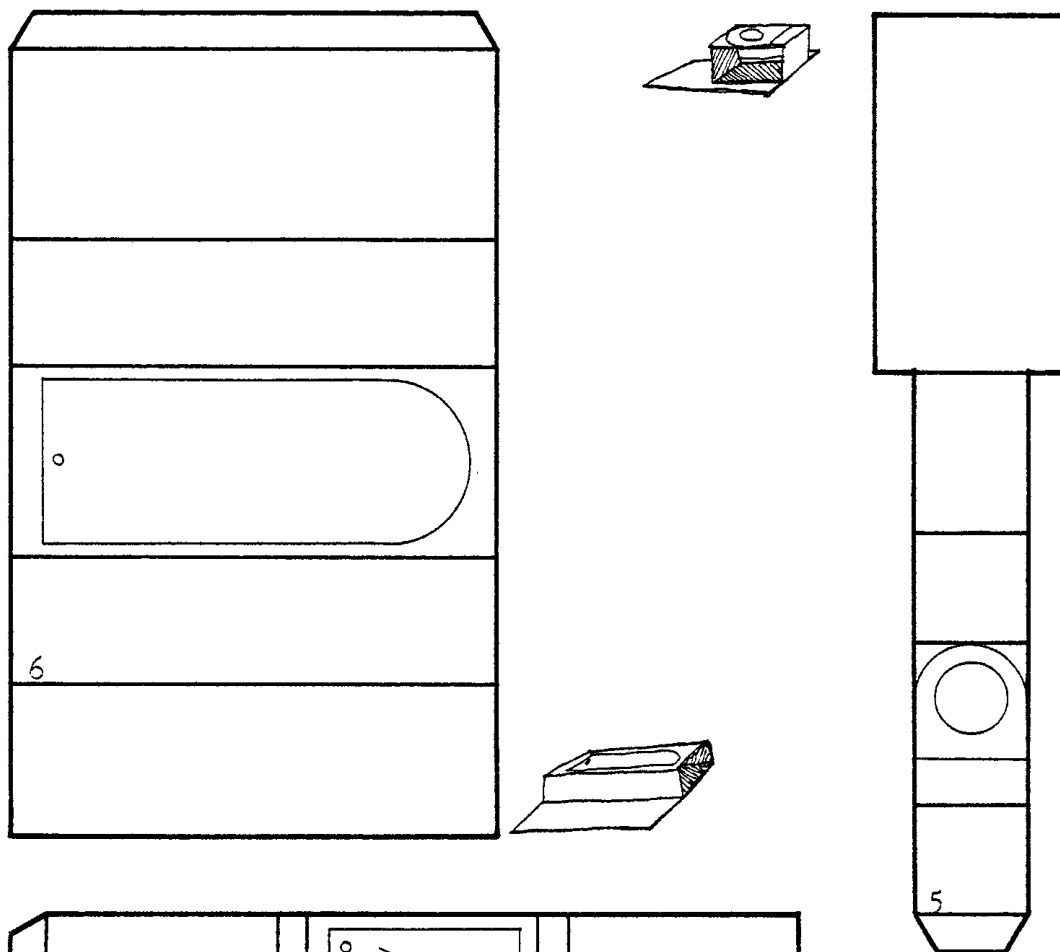
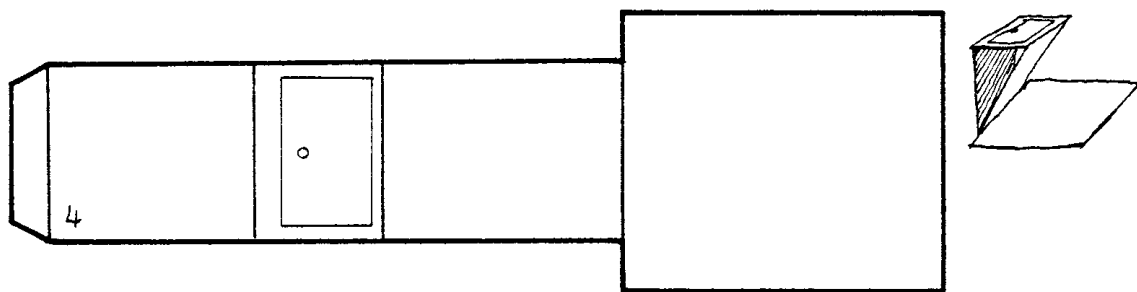
FURNITURE CUT-OUT



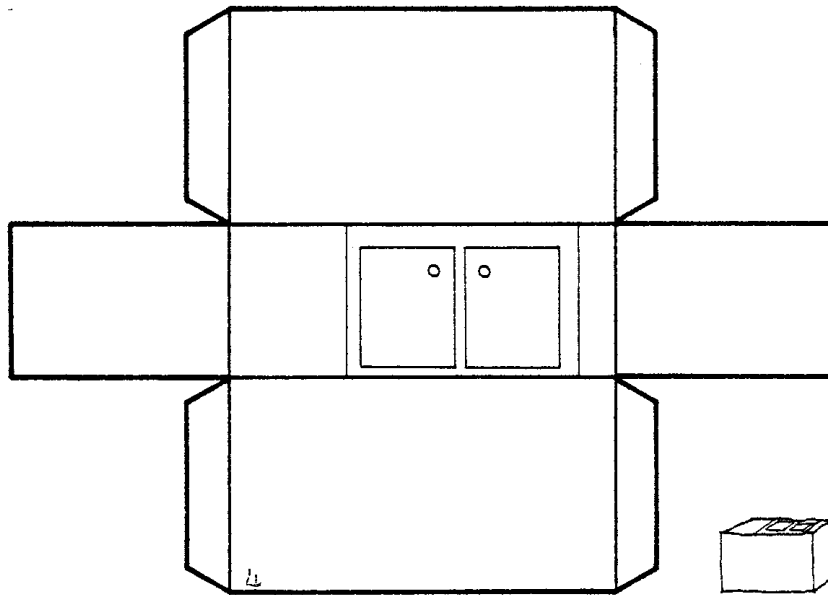
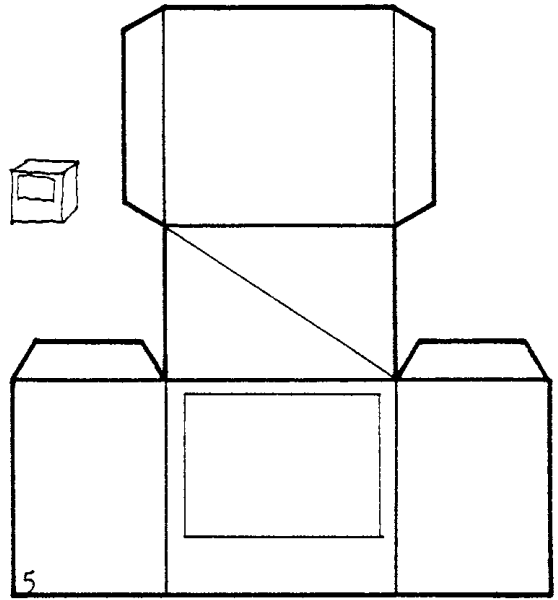
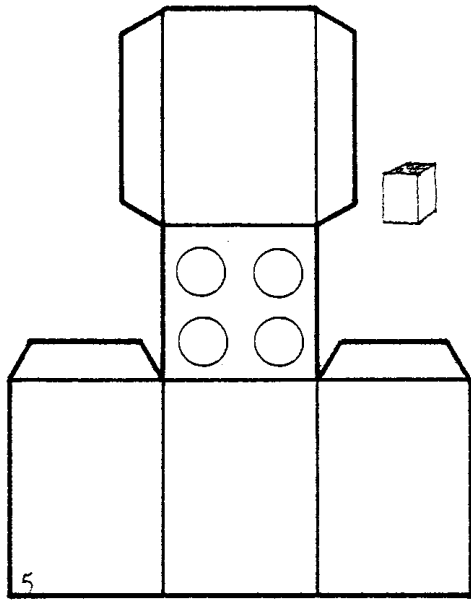
FURNITURE-CUT-OUT

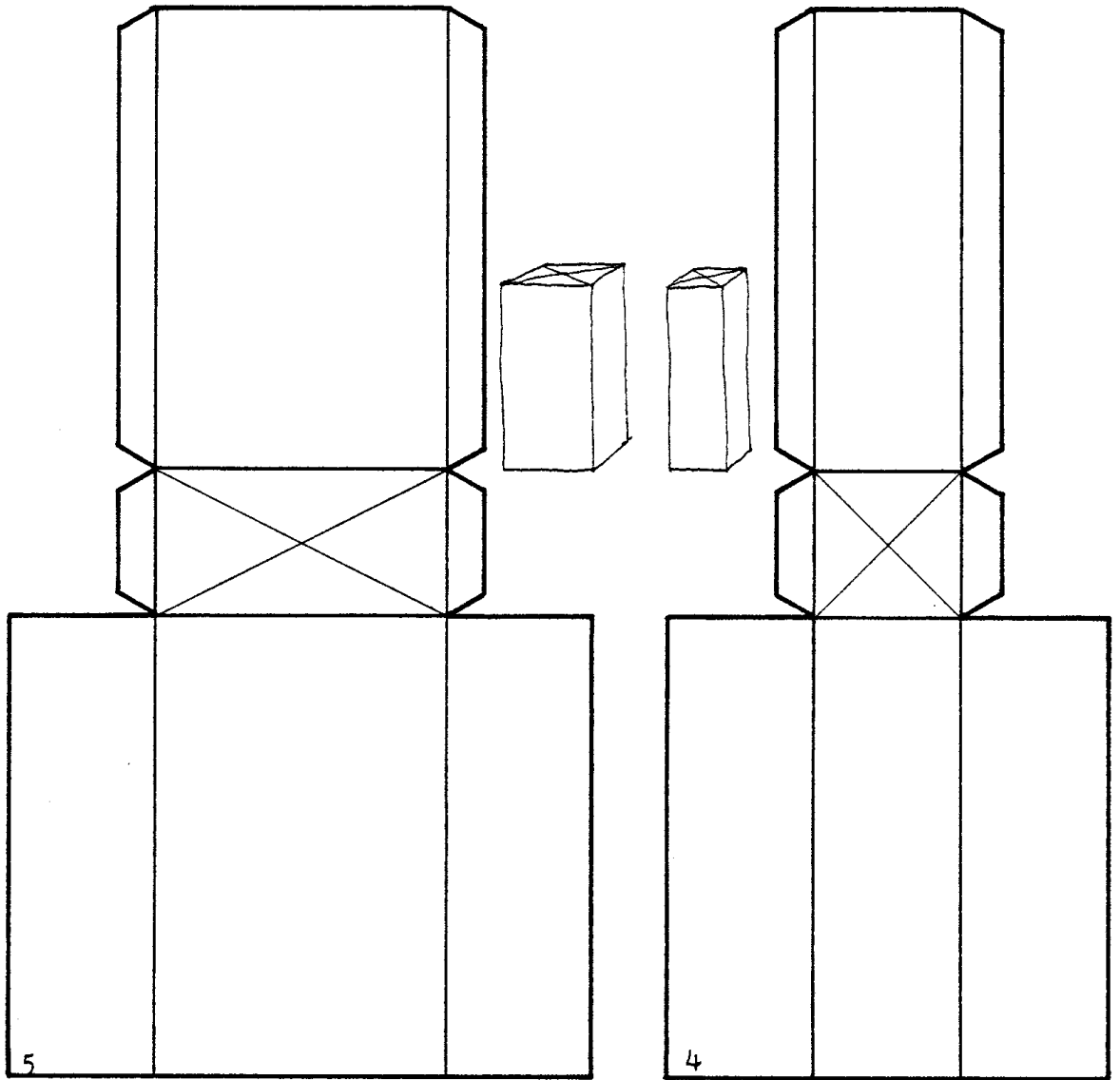
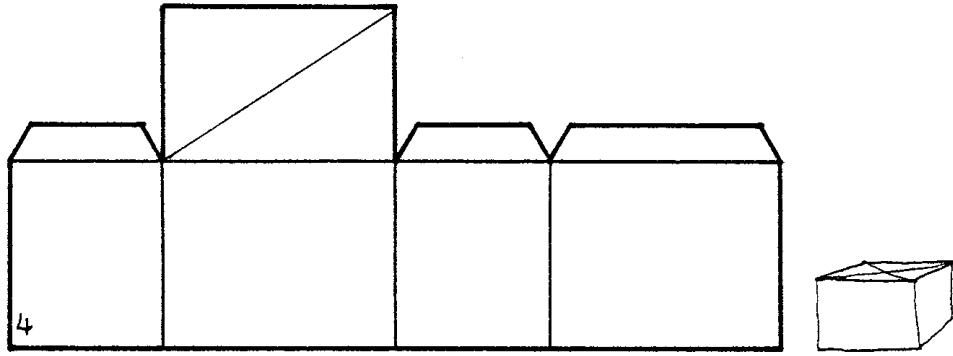


SANITARY EQUIPMENT CUT-OUT



KITCHEN EQUIPMENT CUT-OUT





4.5.5.2.9. SPACE REQUIREMENT SHEET III

You are part of a group now. You have discussed and compared your different personal desires (Space requirement Sheet I, Space requirement sheet II, Documentation sheet II and your model).

Supposedly you have found in your Space Requirement Sheet II, which concerns your personal desires for the group spaces:

- * some overlapping
- * some disparities
- * some independent items.

The following list should show your common desires, and be filled by the group.

Rules: Elect one group representative ¹⁾ who fills in the list for the group (in addition the single participants can make their own copies).

You are not allowed to use more time than given. ²⁾

After having established your list--check it with the list which was produced in the brain-storming, so that no important space will be forgotten.

If a single player was not able to come through with something he still wants, then he should indicate those desires in the "Space Requirement Sheet IV" and try to find an additional group to build those things.

-
- 1) In a final game design this will be honored by social coins
 - 2) In a final game design "overtime" will be penalized with the refund of time-, social-, and money-coins, according to the amount of overtime.

He will then have to withdraw some of his "resources" from the group to establish the additional things.

Note: Keep informed about the desires in the other groups and their space requirement. Coalitions for special spaces are encouraged.

4.5.5.2.10 EVALUATION SHEET I

After you have got acquainted with the different desires of the group members and after the group has listed the group's common requirements, the arrangement of those common requirements has to be done.

To see what your original idea for the unit was, go back to the "Documentation Sheet I". You should now rearrange your original ideas according to the knowledge you have about your group.

Draw the relations of your room to the other rooms and the relations of the other rooms to each other, too. Use therefore the "Space requirement Sheet III" where the group's common requirements are indicated.

You have to regard the rating in this sheet and all information you have about the group (e.g. it is important that you regard the group's resources).

Rule: After every individual has made his suggestion for a common solution, the sheets are overlapped and one who is elected draws the "final relations". Later, these "final relations" will be the basis for the design in the model.

Time:

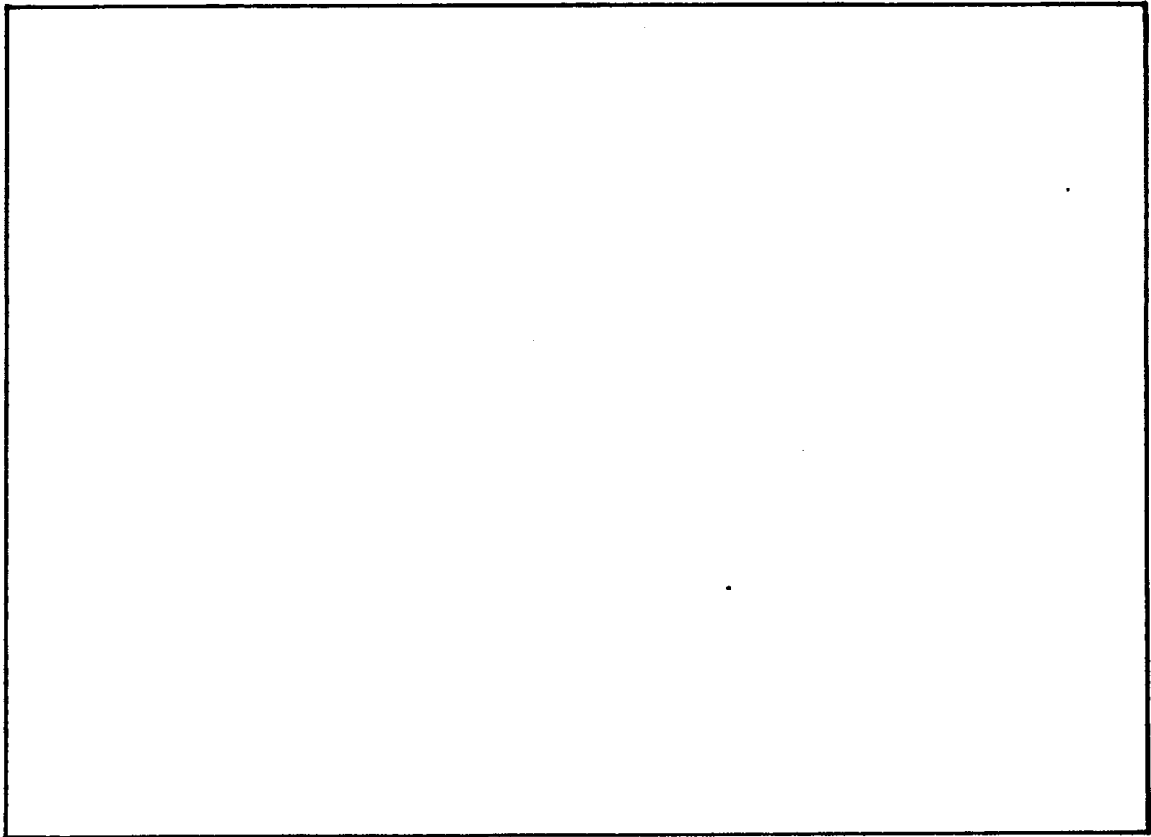
step
B3.3.

step
B3.4.

EVALUATION SHEET I (continued)

Your personal suggestion for the relation of spaces in a common solution

This sheet should indicate just the relation of the different spaces, not the actual size. Therefore, symbols are used for the different spaces.



Use the following symbols:



bathroom



kitchen



storage

ETC.



your space
(use marker)



common area



corridor
(used by all)



units of other
dwellers



entrance

5.5.2.11. DOCUMENTATION SHEET II

After you have shaped your unit in the model, your design should be documented. This documentation sheet will be used by the architect to design the support structure.

Use the same symbols as you have used for the documentation of the private room.

One of the group's documentation sheet has to be handed in to the architect.

Emphasize your own space by writing your name into it. Stripe those rooms which need utilities (as water and waste water or soil waste)

There should be indicated:

- * Your unit as designed in the model
- * The relation to other units--you can do this by writing comments or making small sketches.
(discuss with other groups--if there is cooperation the chance to come through with your ideas increases.)
- * Indicate all special requirements.
- * Give any special purpose room the letter sign of its function according to the following list¹⁾ (if you have purposes not listed, write the full term).

1) This list uses the codes for different functions as used by N.J. Habraken (1976, p.109) :

L : living room	B : bedroom	K : kitchen
L1: L without dining function	B1 : one person B	K1 : K for cooking only
L2: L with dining function	B2 : two person B	K2 : eat-in K
L3: second living room	B3 : three person B	S : sitting room
Sd: study	P : playroom	b : bathroom
St: storage	E : entrance	

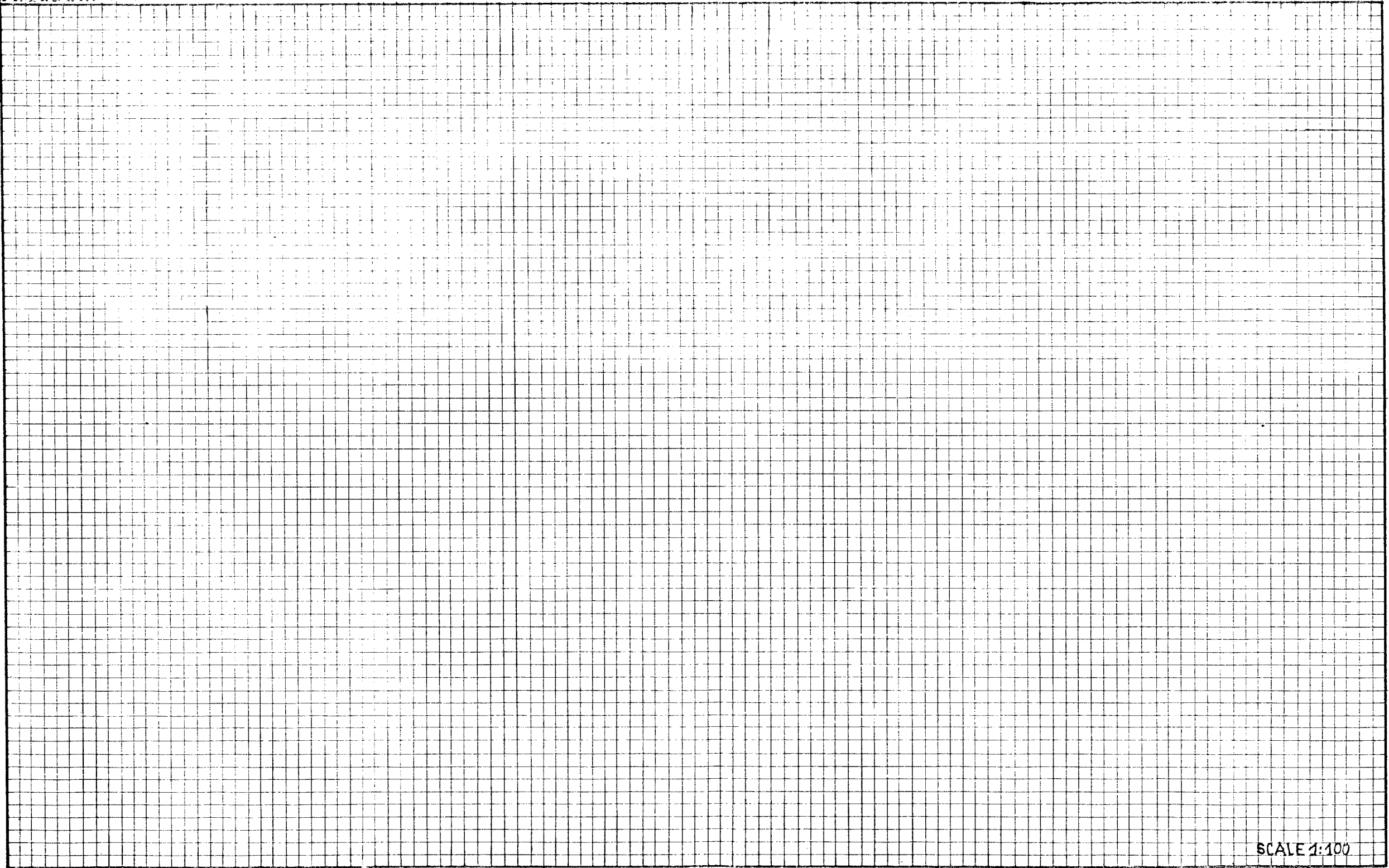
step
B4

step
B5

DOCUMENT YOUR UNIT

30 30 30 30 30 30 30 30 CM

CM 30 30 30 30 30 30 30 30



SCALE 1:100

THE GRID ABOVE CORRESPONDS TO THE GRID IN YOUR MODEL.

IF YOU HAVE SPECIAL COMMENTS CONCERNING YOUR UNIT NOTE HERE:

FURTHER NECESSARY RESOURCES AND DEVICES

Besides the material described in this game proposal, there are additional means necessary to play the game in all its steps.

Those means are:

- + concerning the social process: Time coins and coins representing social acknowledgement and the rules for using or trading them off.
- + concerning the socio-political situation: means to simulate these conditions and to simulate how the representatives of the socio-political situation would react. ("simulated roles" or "pseudo-roles" are to be developed)
- + Concerning external factors: means to simulate facts which are unpredictable, or very specific for certain situations (chance cards and/or special requirement rules could be employed).
- + concerning alternative frameworks: if no architect can be employed (to play a "pseudo-role"), then some means to process the standards (given by the users) would be necessary if we are to select from several given frameworks¹⁾.

Further means which could support the play of the game would be as follows:

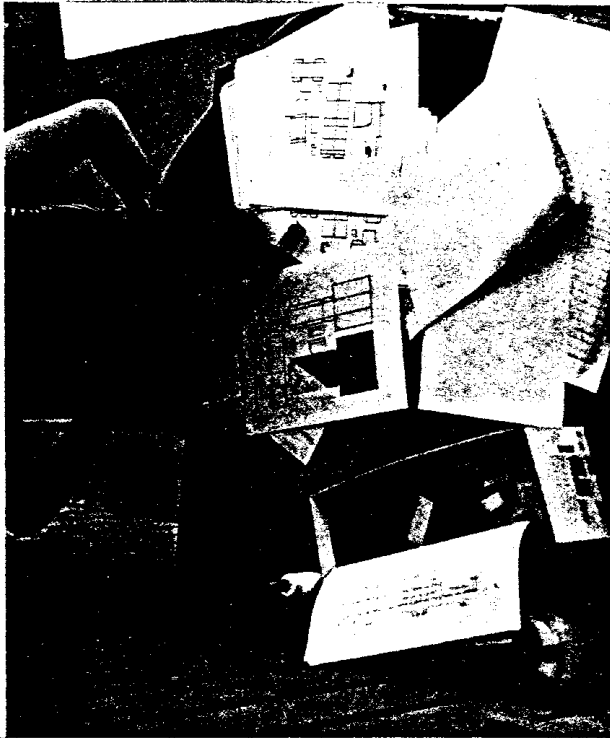
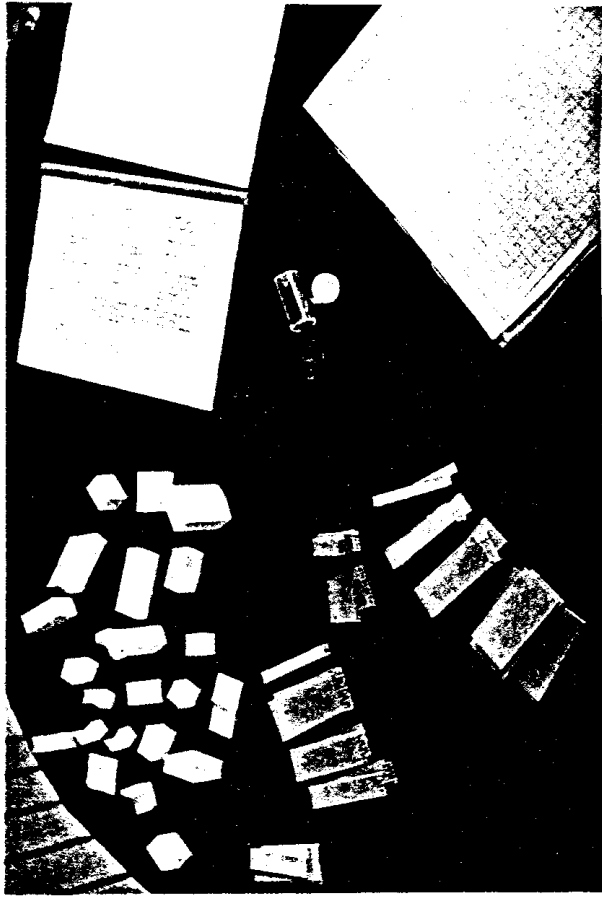
Information films/ videotapes/ 1-to-1 demonstration models (or large-size models which allow you to "move in" (at least with the head) in order to get a more realistic impression)/ field trips to different

1) The S.A.R. method could be used for this process. (For further descriptions of how to evaluate several given frameworks or how to design a framework from given standards see: Habraken, 1977). The game proposal is designed so that the S.A.R. method can be employed.

kinds of dwellings/ different kinds of awareness programs (as an extension of similar programs that should have taken place before this game)/ Computer games¹⁾ as an advisory aid for decisions.

Since this game proposal should only be understood as a proposal for a game design, much additional study concerning a new design for a "players' manual" and concerning additional major modifications would be necessary. Interdisciplinary work would be a basic requirement, if one is to develop this proposal to "a game".

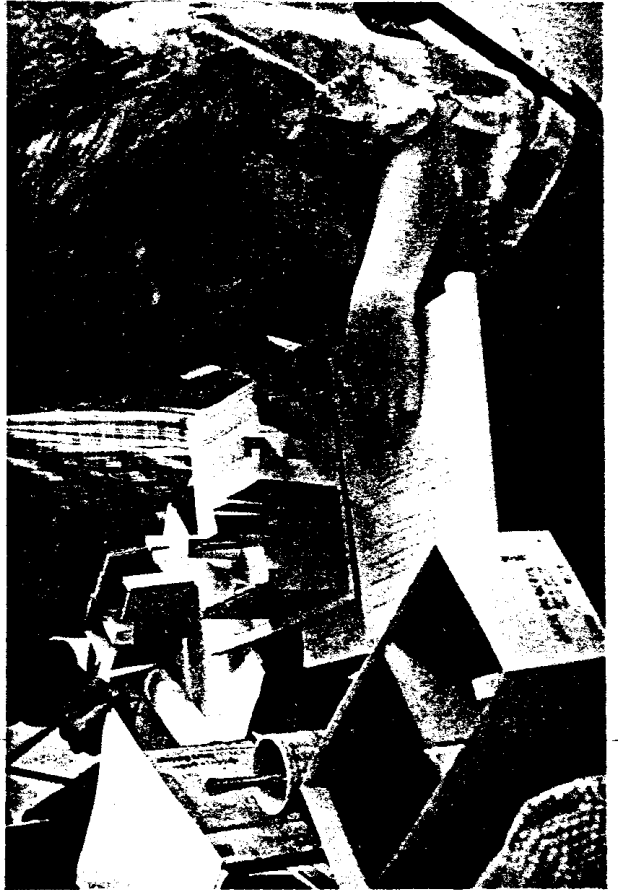
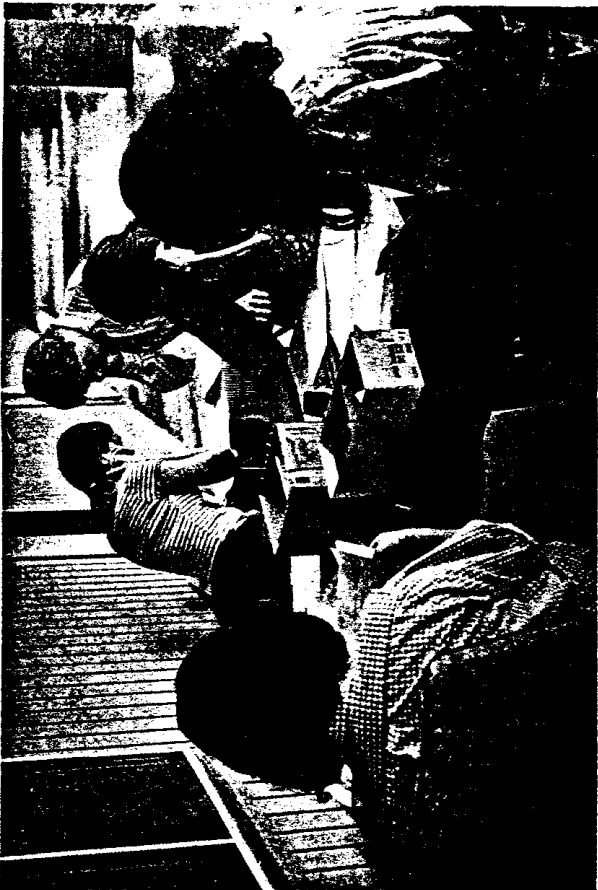
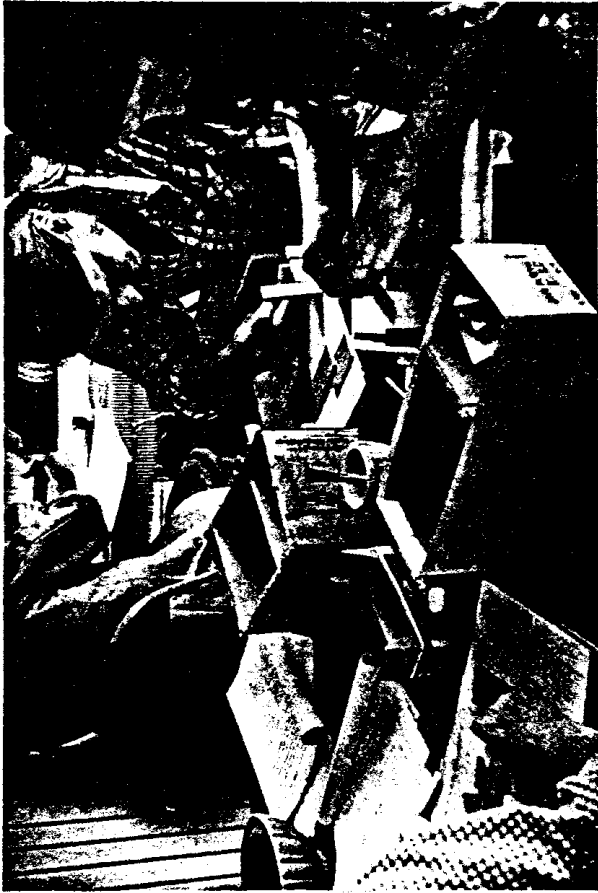
1) An example of computer games which could be used is CUPID: a game where players -- each with a set of objectives generated by the computer try in turn to manipulate geometrical shapes on a visual display screen in such a way as to satisfy not only their own objectives but also a meta-objective of minimum conflict between players. (for further description see: Krishna Mathur, 1974)



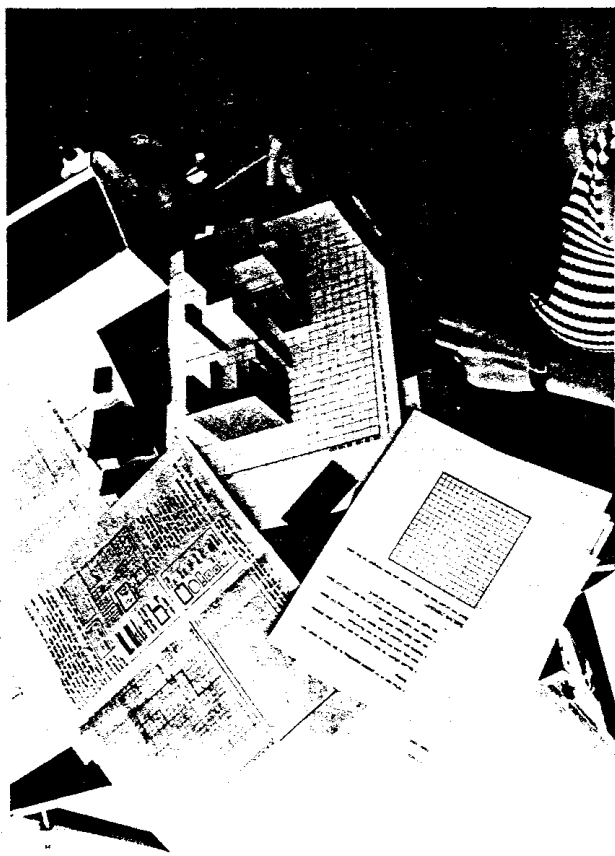
A 1 Production of Game Elements

A 2 to become familiar with the game

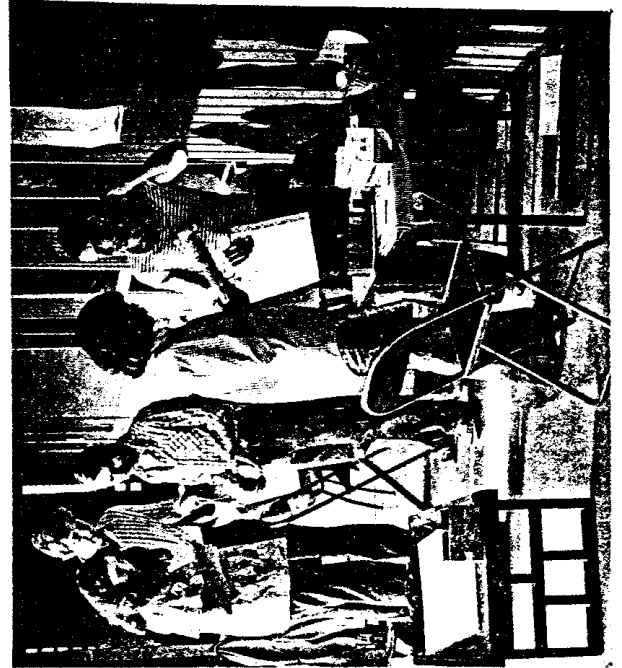
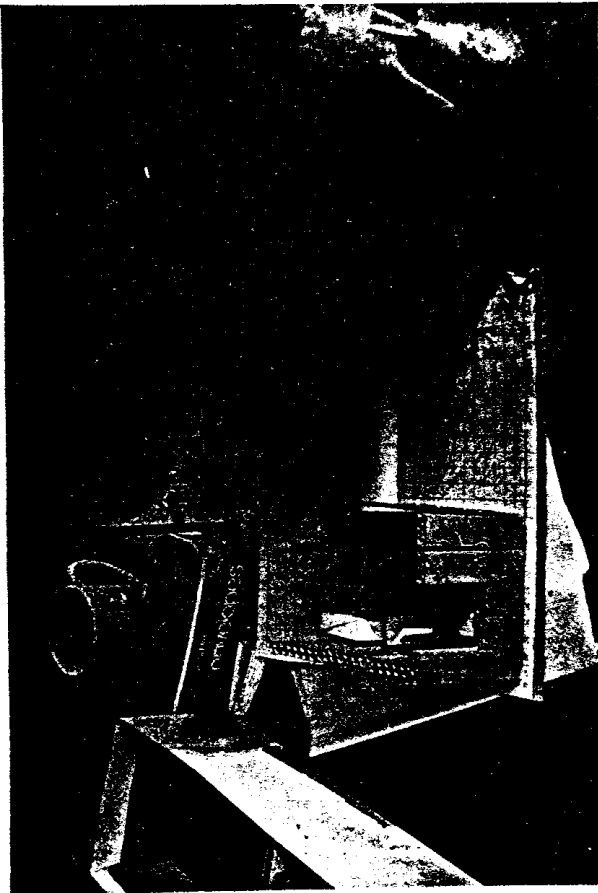
A 3 to get acquainted with roles and desires



B 1 Establish your individual space requirements



B 1 Establish your individual space requirements



B 1

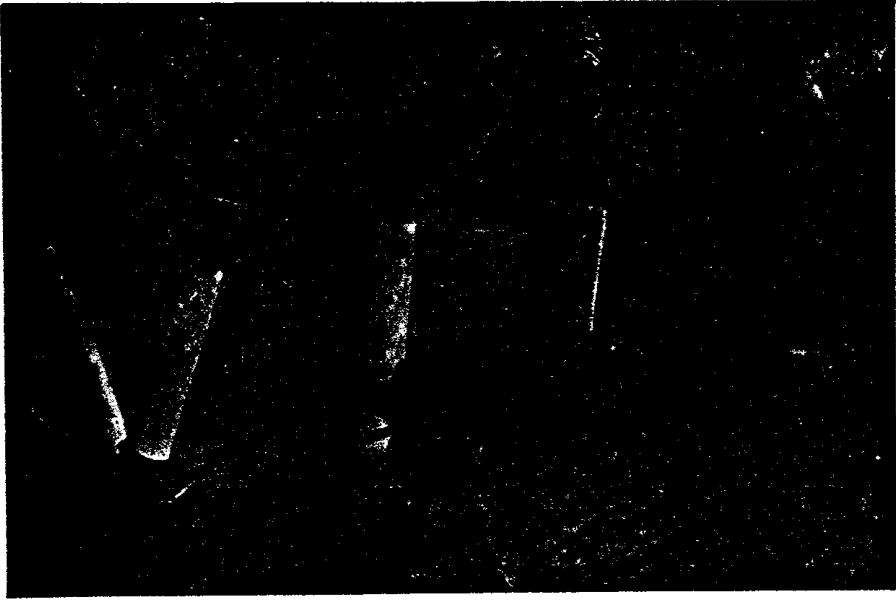
B 2 Group building

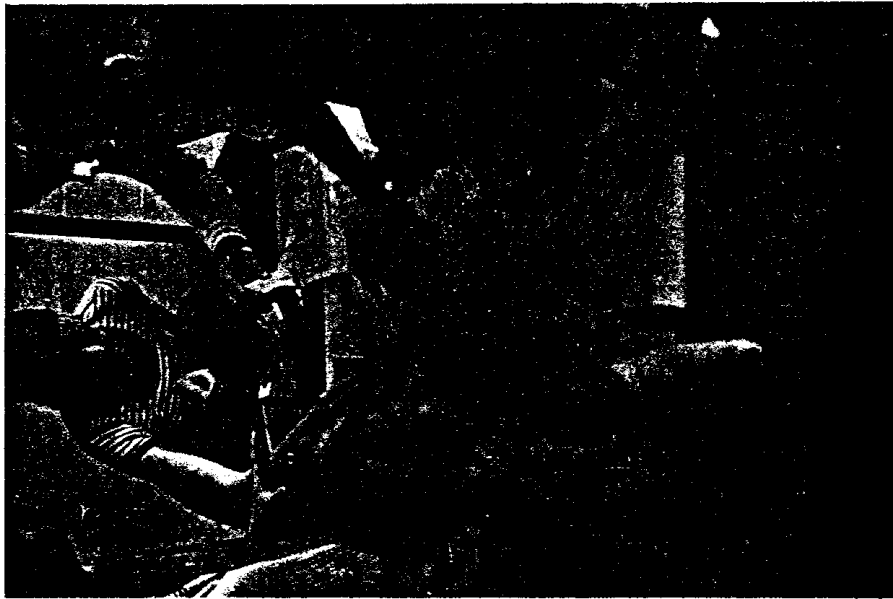


B 3 Group definition/ group desires

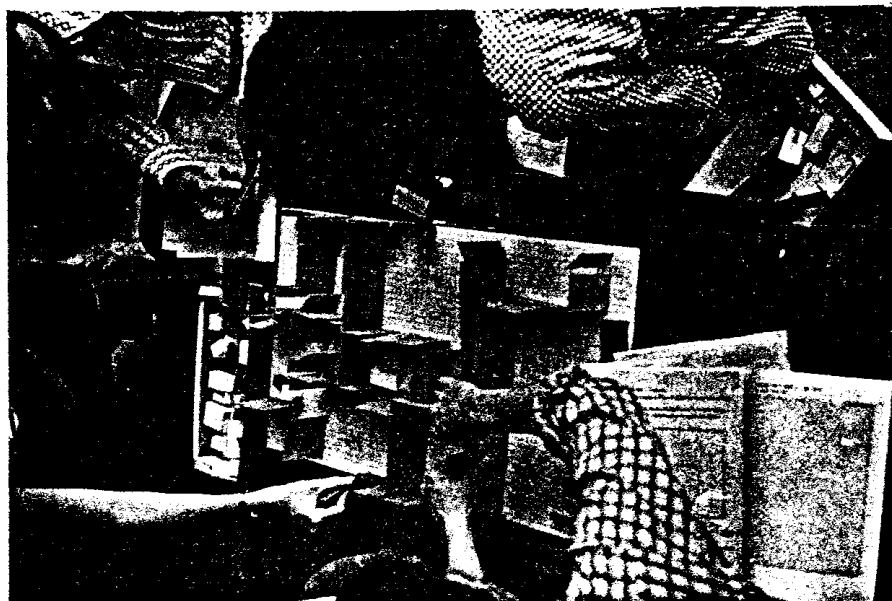


B 3 Group definition/ group desires



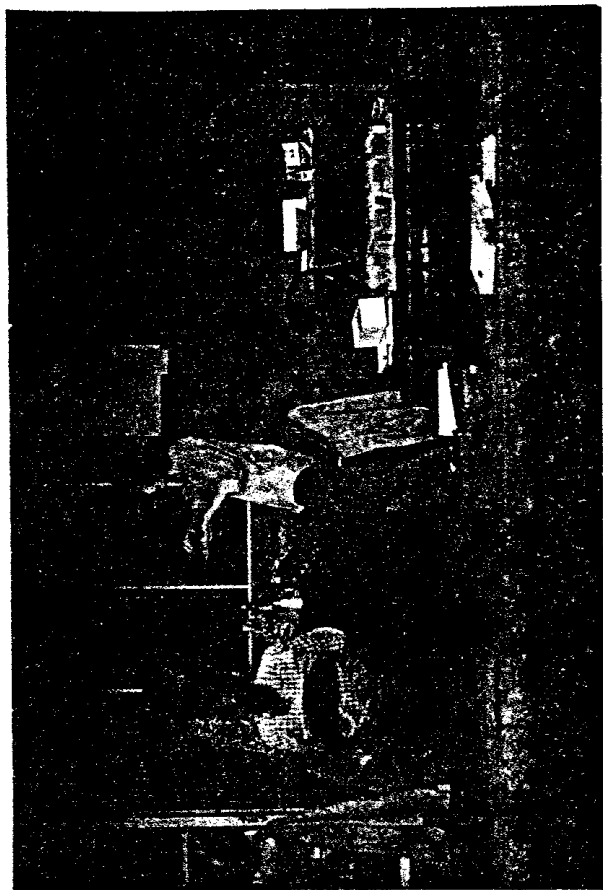
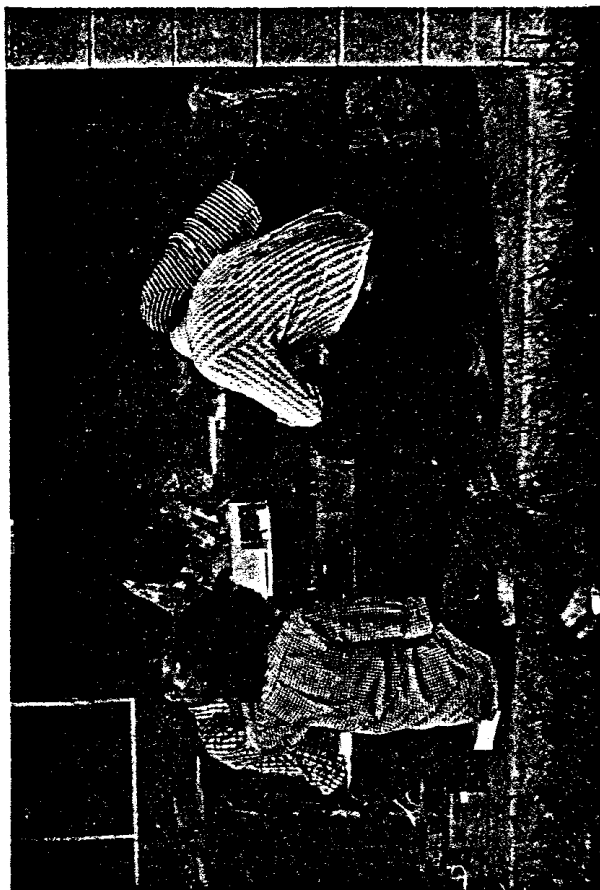


B 4 Establish your unit (group)



B 4 Establish yourunit (group)





B 4 Establish your unit (group)

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