

ELEMENTS FOR ADAPTATION AND CHANGE-DESIGN FOR CREATIVE CONFLICT

by
JÜRGEN J. K. ENGEL
Diplom Ingenieur (Architektur)
Rheinisch-Westfälische Technische Hochschule Aachen, West Germany
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Signature of Author _____ Department of Architecture
May 7, 1982

Certified by _____
Dr. Eric Dluhosch
Associate Professor
Thesis Supervisor

Accepted by _____ N. John Habraken

Rotch Chairman, Departmental Committee on Graduate Students

MASSACHUSETTS INSTITUTE
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ABSTRACT

The starting point of this thesis is a strong critique of the conventional design of housing. The thesis suggests a new approach to the perception of environments and the act of "dwelling." Inhabitants are not assumed to act as passive consumers of "set facts" or of a "potential variety," but as instigators in the design of their living environments.

Through conflict, inherent or built into the design, people are stimulated to appropriate their surroundings according to their needs. Environments have to be designed such that they can be interpreted and contain the "clues" (the elements for adaptation and change) for people to intervene. Inhabitants control the design by means of social interaction as well as physical intervention.

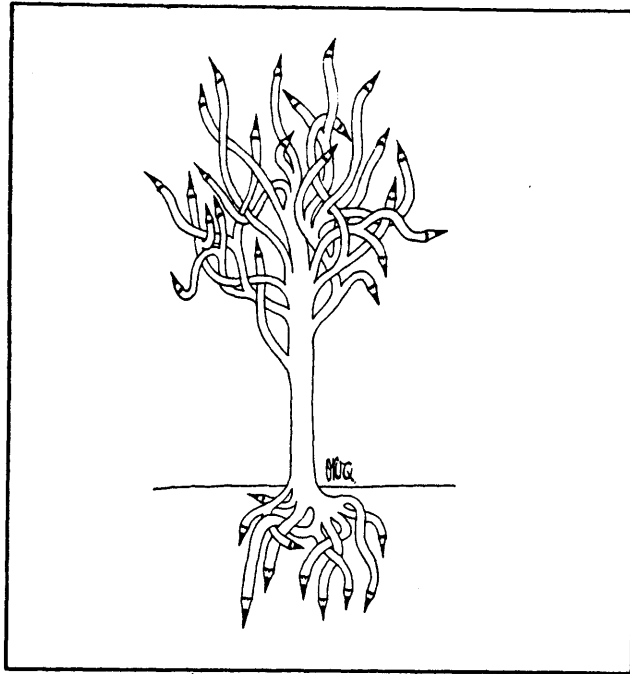
Four theoretical concepts are discussed which shall assist designers in understanding environments more completely in terms of potential use and sympatric relations, and in finding new innovative solutions in design. The concepts deal with (1) the complexity of environments, (2) the importance of community, (3) privacy and territoriality, and (4) form.

Two case studies are presented as evidence to document the importance of the theoretical concepts by means of a detailed analysis of the selected environments, and to demonstrate how two very different participatory processes are translated into the "sympatric" design of physical environments.

Thesis Supervisor: Dr. E. Dluhosch

Title: Associate Professor

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I. Introduction

L'Art nait de contraintes
vit de luttres
et meurt de liberté
(André Malraux)

1. INTRODUCTION

Uncertainties and constraints are the prerequisites for a vivid social life and exchange. Conflict is a generator for social interaction and for active involvement of people. Environments are the stage where conflicts are resolved and reestablished because of permanent change. Conflict is inevitably tied to control. Participation will generate conflict, as it tends to collide with established control mechanisms and policies, that are often clearly designed to avoid conflict or to sublimate it with a system of regulations and punishment.

The lack of control and the alienation in unresponsive environments are two factors which characterize the situation of inhabitants in many recently designed housing projects. A strong critique of such housing designs will be attempted in the next chapter.

The failures of the planning strategies of the Modern Movement have become obvious today, as evidenced by the many examples of so called "mute" environments. The reasons for this failure are not merely a question of

style. Contemporary architects, as reflected in the pages of most current professional magazines, still ruminate about form, as such, and style. The present scene demonstrates how "fashionable" architecture moves ever closer to where it seems to belong, namely, into the museum which has become the substitute for a real site. The real social issues get lost or are ignored in this kind of architecture.

This thesis will try to meet this challenge and propose an opposing position by a severe criticism of prevalent design approaches to housing and by approaching the questions: How can we design environments that are more habitable? How can architecture respond to human needs more perfectly? This thesis suggests a way of thinking in design that is "open," and that enables the designer to deal with unpredictables. The case of the argument made is that we have to learn to work with conflict without strangling people in a physical "noose" and rigid sets of "official" regulations. There is no easy recipe, but an attempt will be made to develop a basis for such an approach, and to continue with experiments in direction of new projects, as well as in suggesting improvements for existing "mute" housing stock. This being an architectural thesis, we will try to deal with strategies which have a direct impact on design. The essential point of departure is participation and its ultimate reflection in built form.

It should be emphasized that the author does not believe that problems of society, the symptoms of which we recognize in built environments, can be solved through architecture alone. However, architects have the responsibility to provide more tractable settings, and work on models which will help people to control more directly their living environments, and which supports voluntary (or spontaneous) social interaction. As a minimum, people should be able to choose if "wohnen" (dwelling) is an activity which would allow a measure of self-fulfillment, or whether we produce more "housing" as a consumer good. Architecture has to be capable of interpretation, and decisions have to be kept open, which includes conflict and mechanisms to incorporate conflict resolution mechanisms and forms in the design. Hence an architecture cannot be considered as "perfect" or unchangeable - as a piece of "art." In that sense conflict is the principle by which it becomes possible to analyze environments. The assumption permeates all aspects of the whole thesis. The study of projects presented in this work is focused on relationships and control mechanisms, which includes a careful study of the "in-between" or transitions between territories. The notion of conflict is considered as non-violent, one that generates creativity and is not interpreted as a destructive force which is the characteristic of many "mute" environments (a kind of violent "reverse" creativity).

The structure and methods applied are derived from a preceding study and a collection of many projects, either studied in published documents or by personal visit. These were chosen according to the quality of their social life, the symbiosis achieved between the public and private realms and on the basis of given options for adaptation and change. The examples chosen can be classified as projects that have proved their appropriateness through actual change and which have been positively evaluated by their inhabitants for these reasons; or projects done by architectural offices which oppose the prevalent "stereotyped" design of housing and the "official" institutional role of architects; or utopian projects representing an extreme case. In the latter the relationship between a particular vision of social life (the social "matrix"), can be studied in their most extreme embodiment leading to interesting innovations in design. As a basic structure for comparison, these projects were chosen to extract theoretical concepts, which will be discussed in detail after the description of the two cases studied. The case studies serve as a means to show the importance of theoretical concepts, to characterize the differences in their designs, and to demonstrate the translation of the participatory process in terms of built form. Beyond that, as a conflict-resolution process, the cases represent polar extremes in terms of attacking the problem of participation as a conflict resolution

process to define the full spectrum of strategies for participatory design.

One of the results of this study is the urgent need for further research and especially of two aspects which seem to be of special importance: a further study of the elements for adaptation and change in relation to their social and physical context, and field studies of the actual use of space and satisfaction of inhabitants in "alternative" projects.

It is essential to evaluate the theoretical assumptions and general approach to design in objectively measuring the success of the strategies used.

II. Critique of Housing



1 Pruitt Igoe, St, Louis

2.1 Socio Psychological Critique of Housing

2.1.1. Description of a "Mute"* Environment.

Blowing up a modern housing project might be the strongest critique one can imagine of a planning strategy gone wrong. Thus, one may look at Pruitt-Igoe in St. Louis as an example which represents all the general failures in the design of modern housing projects. Transposed to European circumstances, this example might still be somewhat too extreme, but if social conditions should become worse, new satellite towns or projects, such as the Maerkische Viertel in Berlin, might suffer one day a similar fate.

* environments which don't support - or even inhibit - intervention of inhabitants and social interaction

Pruitt-Igoe was built in 1954 in the inner city of St. Louis. In this project, 12,000 low income people were relocated in 43 buildings 11 stories high, containing 2,762 apartments, and covering 57 acres. The buildings were of apartment/corridor type and contained narrow hallways, with no semi-private areas for people to congregate - a design that was praised in Architectural Forum (April 1951) for having no "wasted space." The project was expensive to build but conventionally institutional in nature, containing such "features" as institutional wall tile (from which graffiti could be easily removed), unattractive (but indestructable) light fixtures, and other "secure" features such as vandal-resistant radiators and elevators. In spite of the way Pruitt-Igoe was built, within a few years it was in shambles. After some years the signs of destruction, as a result of users' alienation, could be observed. First, there was evidence of broken glass, tin cans, and abandoned cars covering the parking lots and play areas. Some of the windows were broken where others had to be boarded up with plywood. Inside one could smell the stench of urine, trash, and garbage. The elevators were in disrepair, and the presence of feces indicated that they had been used as toilets. Next, one could notice that the plumbing and electrical fixtures had been pulled out of the apartments and hallway walls. Anyone speaking to a resident and asking him/her about Pruitt-Igoe, would hear him/her say that vicious

gangs have formed and that rape, vandalism, and robbery are common throughout the project. Since crime frequently took place in elevators and stairwells, the upper floors were abandoned. These conditions destroyed Pruitt-Igoe, and by 1970, 27 of the 43 buildings were vacant; they have now been totally demolished.

2.1.2. Qualities of Mute Environments.

What are the qualities of Mute environments? There are many theories which try to explain the failures of the project, and critics such as Yancey (1972) state the poor design of sociable space - the failure of the architects to imagine social-life, the missing design of sequences of territories and the design of form as a provocation to destroy. Some examples: The street slices through the buildings without interruption nor transitions to the entrance of the dwellings. There is no hierarchy of spaces trying to accommodate various degrees of privacy. Space in the building is mainly sociofugal; circulation space and floor plans are "optimized" in terms of money saved and floor area economy; there are no "niches" for personalization, and no place where change can occur. The lack of semi-private space to claim in the public areas and of shared facilities that can promote the formation of social order, inhibit informal social networks found in lower class neighborhoods. There are no territories which "belong" to people to

promote surveillance and control of public space, this helps to reduce crime (Newman, 1972).

2.1.3. The Built Structure.

The design of individual buildings and especially of the public spaces between them is poor. There are no exterior details that refer to the human scale. The exterior is "left over" space between the deadly rows of high-rises. The monofunctional infrastructure reinforces the feeling of monotony. Between dwellings and the street, there is no perceptible relationship which tends to exacerbate the anonymity of life in the housing structure. The buildings have eleven floors and children are out of the reach of their parents. The design provides many hidden areas, such as stairwells and elevators, in which children may cause mischief. Form, as used by H. Hertzberger, a tool to provoke people into creative action - turns into the reverse in Pruitt-Igoe. Features such as vandal-proof radiators and wall may convey a self-threatening message of inferiority to the residents, and may actually entice or provoke them in their frustration to destroy these objects. The situation is thus rendered even more absurd when so called "improvements" in the physical environment result in stimulating behavior in the direction of further destruction rather than security. It seems then that social changes, protection from the outside or formation of neighborhood groups, may help to

restore security to such an environment. As one observes in many American cities, neighborhoods are beginning to protect themselves (Cambridgeport; Guardian Angels, N.Y.). Finally an additional important reason for the failure of Pruitt-Igoe, one could mention, is the poor administration by the housing authority which functioned as an isolated bureaucracy, superimposed on the community.

As one could observe from the example of Pruitt-Igoe, conflict turned into a destructive force. The environment failed to function as a catalyst for a balanced public life. Thus, one could summarize the general symptoms of social deterioration related to the "muteness" of the environment:

- missing opportunities for intervention and social interaction and the physical and environmental monotony of the living environment, lead to impoverishment of mental life;
- people escape in television, alcohol, drugs and consumption;
- the tendency is high for aggression, crime and vandalism;
- the living environment becomes a "good" that can be consumed and passively experienced;
- anonymity becomes the only mode of living.

2.1.4. A Vivid Social Place.

To oppose this alienating process, one has to investigate and think of

how to design active environments which would allow various modes of exchange, social interaction and control, as described by Hall as a quality of environments. He writes that there is a need for "principles of designing spaces that will maintain a healthy density, a healthy interaction rate, and a proper amount of involvement and a confining sense of ethnic identification," (1966, Hall, p. 168). To achieve a vivid social place, unease and tension are a prerequisite, according to R. Sennett (1970a, Sennett). To describe his vision of social life he imagines a utopia where people would create their own pattern of life. The utopian environment is characterized by social and functional mixture and in order to organize life, people of different camps would be obliged to deal with each other to work out some sort of truce. "The act of participating in establishing some sort of truce would force people to look at each other to find areas in which bonds could be forged," (1970a Sennett). In the medieval city, the special sociability of the street is partly the result of open houses and of a varied and stable network of relationships within the whole system.

As conflict in Sennett's utopia is an innovative force, the examples of "mute" environments show that withdrawal from conflicts may presumably generate a tendency toward destructiveness and alienation. Instead of creating order through isolation, designers have to observe how to deal with and use

conflict. They have to overcome the fear of including imponderabilities in their designs.

Control and the role of authorities have another important influence on the use of environments. Authorities are important to guarantee the existence and coherence of the urban infrastructure, but they should not control the environment to such an extent that people lose influence and turn into anonymity and envy of each other. "The whole repressing system of the established order is an institution for avoidance of conflicts; protecting citizens from each others' singularities, but acting over their heads. This is why there is a dominating fear of disorder, mess, and the unexpected, and why distance is preferred to interaction. Everything seems to have to be regimented and quantifiable so that it can be completely and constantly under control, the oppression exercised by orderliness that makes us the lessees instead of the owners; subordinates instead of shareholders. Thus the system itself creates alienation, and claiming to represent the people, starves out the conditions that would lead to a more habitable world," (1977a, Hertzberger, p. 136).

This thesis is an attempt to focus on non violent-conflicts as an important concept for the design of urban neighborhoods, as well as for the

"support and infill."* A dictionary defines conflicts as, "to show variance, incompatibility, irreconcilability or opposition; evidence variance of disharmony calling for adjustment, harmonizing, bringing into accord." Conflict in this study evolves out of a problem in the environment concerning the use of objects and territories. To solve the problem a balance between individuals or individual/public has to be sought, perhaps leading to rules of behavior, or an intervention in the physical world. Social interaction and communication are basic means for the design and maintenance of active environments. In social science literature, conflict is seen as one of the central forms of interaction. Simmel writes (1955, Simmel), "If every interaction among men is a sociation, conflict...must certainly be considered as sociation...conflict is...designed to resolve divergent dualism, it is a way to achieve some kind of unity, even if it be through the annihilation of one of the conflicting parties." The ability to deal with conflict is an essential part of the human being. In mastering conflict, the individual establishes himself. Thus, conflict is understood in this thesis in terms of creative and not destructive force and we have to distinguish it as social

* Definition used by John Habraken and SAR: "support is that part in a habitable structure over which the resident has no individual control. Infill are the components over which the resident has individual control."

science literature does from competition, which is imprinted on the business world. Conflict as opposed to competition is always conscious and involves direct communication. In this sense also, conflict may be used as a generator to start or to maintain the participatory process. Participation is a means to gain control over ones way of living, ones body, and free consciousness.

2.1.5. Levels of Participation.

Aside from social interaction, people also react directly (physiologically) to their physical surroundings. Thus, there are different levels of participation depending on whether the emphasis is on social processes in design - environment as a social catalyst - or more on direct physiological or sensory interaction with objects, in which form acts as stimulator. It will be shown in an example of a project in Munich by R & D Thut, how architects may be partners in a collective enterprise or where people are allowed to merely choose on the basis of a given set of options, according to their family needs (S.A.R.). Other architects like H. Hertzberger, deal with the qualities of form as such or directly as a stimulator for intervention. They focus on provisions for adaptation and change ("late participation"), that will make environments fit human needs more perfectly.

2.1.6. Alternative Approach.

In the participatory process people have to make decisions, and the architect has to provide design support or to give a helping hand. A physical and organizational framework is needed that will channel individual expression and stimulate "active" experiences without destroying the image a community holds of itself. Complexity and ambiguity, necessary qualities of active environments, however, do not mean chaos where individualism would rule without respect for broader, legitimate communal concerns.

In this kind of approach in design, the isolation of functions and social groups, as well as a set procedure or a catalogue of ready-made solutions, cannot be the answer. The field is full of juxtapositions such as the wish for privacy versus social interaction, the need for personal freedom (with anonymity) versus social control, familiarity with place versus ambiguity in the general environment. In every case we have to look for a balance between these extremes, and we have to study the appropriate control mechanisms and their impact on the physical environment. The designer has to learn to analyze environments in view of the above criteria, and to see their potential for individual appropriation and multiple use. Some theoretical concepts which will be described in Chapter 4, can help to find new solutions for active environments. The goal of any design strategy for dense

urban cities is to create a balance between interaction and involvement of people and their need for personal privacy. This work is not conceived as a sociological analysis, but as an architectural attempt - focusing on some interesting examples of built form, where conflict is translated into user-interactive design solutions.

2.2 Economical and Social Impacts

After mentioning some social and psychological aspects of the critique of housing, some important concomitant symptoms and arguments concerning the present state of development in building activities, using West Germany as an example, will be discussed in the following paragraphs.

2.2.1. Urban Development.

People are again moving back into the cities, as life there becomes more desirable. Part of this syndrome is the awareness on the part of European societies, to prevent urban spread and to protect the scarce landscape. Regulations of Environmental Protection (Landschaftschutz) are designed to prevent cities from continuing to grow and to merge into huge urban areas, where individual city limits can no longer be recognized. Due to the decrease of available real estate outside the cities, future activities will have to mainly occur inside clearly confined or defined city limits, as there will also be programs for the improvement of "new" towns created since 1950. The

commuting distance between work and living areas will have to be decreased as transportation costs tend to go up continuously (30% of oil imports of West Germany are used for transportation out of which 43% are for driving from the place of residence to work, or shopping). Potential improvements to the road system are limited because of the economical recession and people in Europe are no longer willing to sacrifice their surroundings for the individual transportation system as evidenced, for example, by numerous citizens' movements against highway planning. It is more economical to use the existing infrastructure and other resources of the city more efficiently, e.g., vacant lots or using the air-right over existing railroad tracks, old buildings can be re-used. A strategy which re-combines housing and business space again might help to finance housing for low-income people. Through new building activities, urban space can be re-defined, and the city will be slowly repaired. If densities and functional mixture are kept within a healthy margin and ecological considerations are obeyed, living conditions can be vastly improved.

The challenge of more complicated tasks might induce innovations and better design. More complex structures must provide a "stage" for settling conflicts, clearly thought out elbow space where people have an opportunity to interfere within specifically defined margins. If, for example, people

today try to change the area in front of their house, they soon will collide with the authorities which have control over what happens to the sidewalk. Instead of supporting efforts of citizens to improve their intermediate environment, the authorities more often than not, choke off innovations by means of a rigid system of building regulations and inflexible administrative procedures. Stringent requirements for funding public housing projects interfere with and often determine specific living patterns. A new approach in design will remain only theory, without creating a responsive "back up" system, which would stimulate and support civic innovations. The architects R & D Thut, who built an experimental housing project, write the following about their experience:

"It is of (utmost) importance for the creation of an alternative housing project to establish the significance for the determination of use-functions and the utilization of the site by the authorities: the use is determined by the zoning (Flaechennutzungsplan), urban development plan (Bebauungsplan) which to some degree fixes the shape of the building and the floor area ratio (Geschossflaechenzahl), which limits the density in a given lot. The result of the procedure is that changes in content which require a new building type or settlement pattern can be realized only with great difficulties." (1980, Thut).

2.2.2. The Steady Loss of Cheap Housing.

There are strong signs of growing discontent of citizens with the present housing situation and building speculation in West European cities. Politicians realize that they soon have to react to stop acceleration of this

trend. First in Amsterdam, where the Kraker movement was born, and later in Berlin, citizens organized and fought very violently against authorities who try to protect the status quo. There is a growing shortage of apartments in the cities especially for low-income groups, while many buildings are kept empty because of speculation. Out of a sense of emergency, citizens started to occupy these houses and protect them from further deterioration. Through their actions, which they call "Instandbesetzung" (occupation for preservation), they show the irrationality of existing housing policies while at the same time demonstrating by their actions that cheap housing is possible. With some efforts they make these buildings habitable again and show that they can, in fact, be used without heavy investments. In addition, there is no lobby for cheap housing, because it does not generate high profits.

The loss of inexpensive housing will probably continue as a result of demolition, reconstruction (Sanierung), and modernization. Because of the current economic recession, incentives for public housing can hardly be increased to stimulate building activities. There is even the fear of keeping up the standards because costs have increased steadily since 1955. Building costs have risen about ten times in West Germany during that same period. In order to generate innovation, we have to ask ourselves what can be changed without decreasing the quality of housing. The regulations for the design

of public housing, definitely leads us to an impasse. They impose such severe constraints, that any initiative or change is strangled. Some architects try to react against unnecessarily high technical building standards. The Metron group in Switzerland as well as D & R Thut in Munich experimented with the reduction of building standards gaining, at the same time, a high quality of the environment and spatial character. In Munich a 40-50% reduction of building costs was achieved first, by defining new standards, and second by introducing self-help. Conventionally, standards and norms are defined by the industry (DIN = Deutsche Industrie Norm). A given housing budget in general is related to these standards, rather than to effective demands as indicated by comparative alternative projects. Through user participation and various provisions for adaptation and change in housing, costs could be better related and worked out according to the specific needs and economical capabilities of the inhabitants. Change has become a very important issue in housing as the life cycle of families, life style, social structure, and space requirements are subject to constant limitations and change. Historic buildings especially, have experienced the need for major modifications and re-use which gives them a special character. In contrast, many recent housing projects, built after World War II, are almost impossible to adapt to such changing needs, instead they remain rigid inflexible

and functionally specialized.

2.2.3. Participation.

As leisure time further increases, the involvement of people in the design of their living environment will presumably become even more important. Aside from passive entertainment that can be "consumed" like television..., there will always be the need for an opportunity for personal action and devotion. People may learn to appreciate a work process that is different from alienated and divided labor in the old industrial production process. Participation may return some control over the intermediate surroundings and give the feeling to inhabitants of doing something worthwhile; it, however, will not make housing cheaper on a pay per hour basis. This does not mean that everybody should be forced to participate, especially if there are inadequate resources. New educational and consulting means which would provide a forum for discussing these issues have to be developed. Existing adult education facilities like Volkshochschulen could play an important role to induce people to think about their living environments and to teach them new skills. Obviously, people can only participate according to the limit of their own abilities, e.g., in cooperatives the work could be divided according to special interests and skills of each individual to take on administrative or construction jobs. Aside from the above, cooperatives

provide legitimate access to the money market to people who may be otherwise excluded.

To support the participatory process, the open market should be entitled to provide building elements of different producers, which should be easy to combine and handle. For example, D & R Thut used building materials which were unfinished and in the size of wholesalers. Material had to be easy to cut and light for assembly. A precise estimation of materials prevented surplus and waste. The parts had to be changed, which required a flexible and simple building technique. If the market system for small components would work, which depends on demand and broad implication, building costs could be finally reduced through industrialization.

2.2.4. New Tenure Models.

Aside from the reduction of costs, one of the other main issues of this discussion is the question of ownership. If one accepts the premise that by improving their living environment themselves, people are assuming a de facto investment. Then this investment has to be "secured," especially if they have to borrow money for such improvement activities. Thus, new tenure models need to be found, i.e., ways to give more control to dwellers, especially to those who are unable to get financial resources because their income is too low. If people complete their unfinished apartment, or if they modernize an old

house, tax incentives should be given directly to the dweller, and they should be able to get mortgages or use money generated by housing bank accounts, independent of direct ownership. The laws of tenancy should favor lease contracts which include the right to live in an apartment on a long-term basis and the right to sell the infill provided by the tenant as part of his or her own investment and/or self-help efforts.

Ownership implies social responsibility. This principle can be used to give ownership to tenants only if certain requirements are fulfilled, e.g., homesteading as an American model, which is currently used to renew deteriorated neighborhoods. In this model, people themselves have control over how old buildings or dwellings are to be renewed.

In Great Britain we find three general models: (1) cooperative, (2) staircasing, and (3) leasehold schemes. In the cooperative model, people get control from the housing authorities without direct ownership of their dwellings. Three different cooperative schemes may be applied: In so called "management cooperatives" dwellers get money to maintain their buildings themselves and are able to make a "surplus" which they may use at their own discretion. "Par value cooperative" means that the cooperative has shares in the building. In "equity value cooperatives" every individual has shares.

Staircasing means that people increase their ownership of the apartment

through time; they can own and rent at the same time and thus they increase direct control from the beginning.

Leasehold schemes are used mainly in housing for the elderly. There, shares are distributed to occupants. By the means of these "social loans" responsibility is transferred to the occupants, and administration and maintenance costs are reduced.

These new models in financing and organizing housing should contribute to the evolution and support new architectural as well as new social, solutions. In addition, such alternative models will be powerful in modifying the traditional approach to housing.

III. Case Studies

3. CASE STUDIES

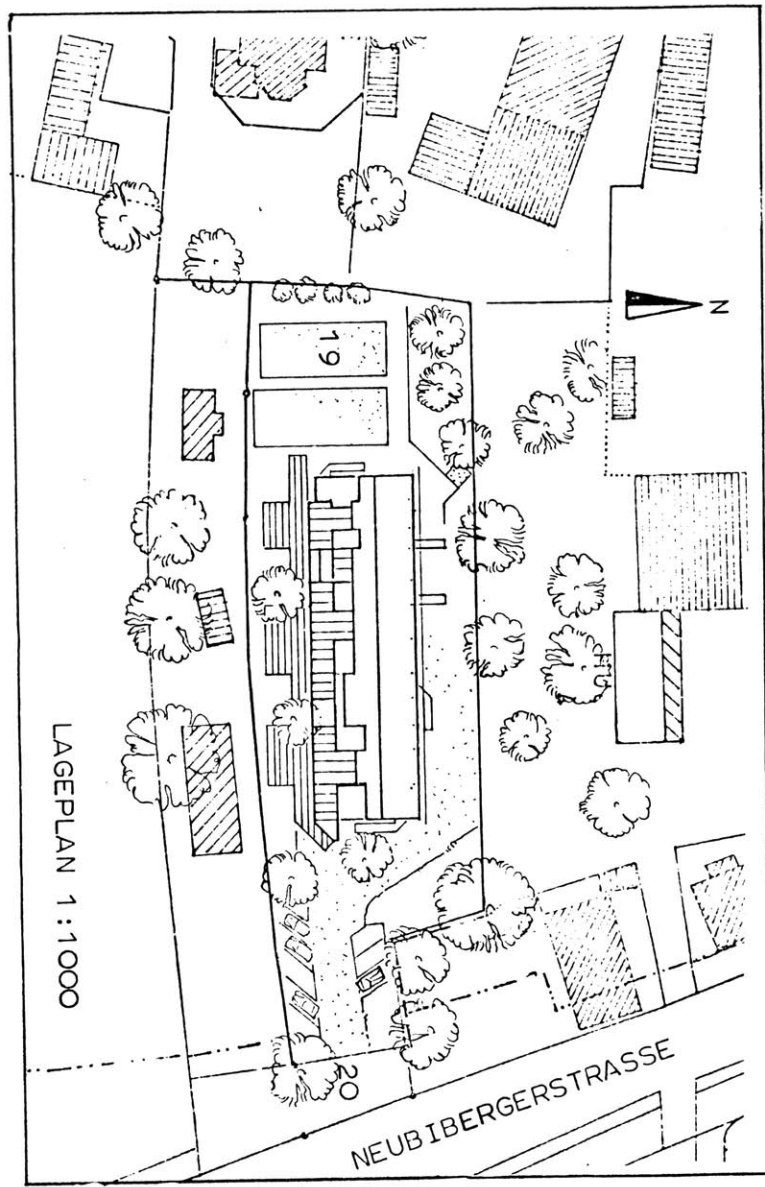
In this chapter two projects will be described and analyzed: the Diagoon Houses in Delft by Hermann Hertzberger (1971), and An Experimental Housing Project in Munich by R & D Thut (1977). These case studies represent two extreme positions in the history of new approaches to housing. The sources of the following investigation are based on personal conversations with architects, articles, photographs, plans, and comments. An investigation of the actual behavioral patterns of the occupants and use of space should be a further step.

H. Hertzberger and D & R Thut wrote about the general goals and reasons for their experiments:

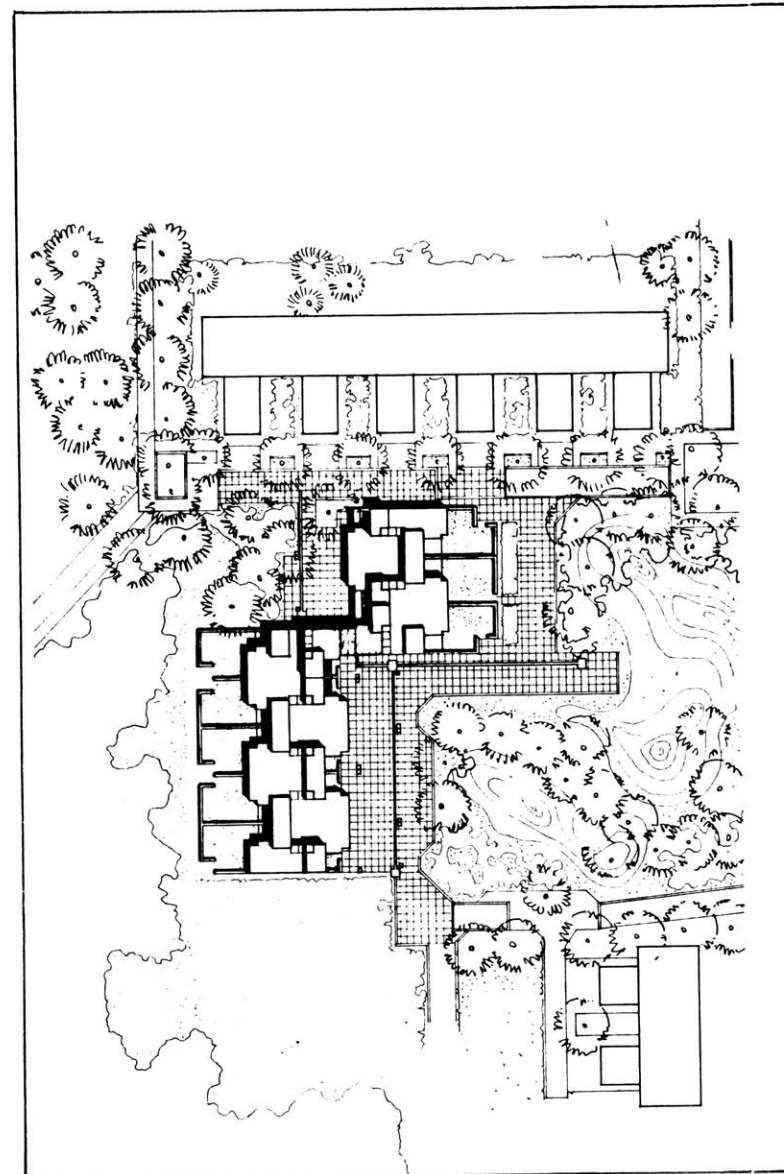
"The project is based on the understanding that the isolation and escape into consumption has to be overcome. We need opportunities to solve common problems mutually, and we need for our individual development a larger accepted elbow space." (1980a, Thut)

"(The Houses) are meant as prototypes to show what should be possible today as an answer to the sort of housing demands we suspect many people have. It is an attempt to get away from a number of persistent stereotypes which still dominate housing. Architects must not just show what is possible, they must also, and especially show what should be possible." (1977a, Hertzberger, p. 92)

As pilot projects they will not furnish a general answer but they are meant to provide an impetus to thinking. Conflicts and uncertainties cannot be avoided in the design process - they are even appreciated. Architecture is



2 Munich, Neubibergerstrasse, R & D Thut



3 Delft, Diagoon Houses, H. Hertzberger

(here) considered as an open framework and the environment is a stage to balance conflict as well as to intervene in the physical world. The design of public space and of boundaries between territories, used by different individuals, are major interests of these architects in order to find a setting for their vision of social life. Still, the character of the task implies a certain inconsistency: The alternative does not give an answer to urban problems like the functional separation of urban districts or time-segregated use of environments (death of the inner city after work hours). The cases are strictly bound geographically and there is no communication with the greater urban structure. No shops, public facilities or important thoroughfares serve the surrounding districts. The project in Munich is located on a back lot, separated from the public street. Thus, we may look at these examples as closed systems for comparative purposes only. Still, the projects have a number of similarities:

- the number of houses is limited to six or eight,
- the houses have no more than three floors,
- they are clearly separated from each other,
- there is a definite relation between the house and public space; every unit has an entrance door "in the street,"
- the arrangement of the houses define a public or group space, and

- the inhabitants are willing to experiment new living arrangements.

The variable focused on is the difference in the participatory processes: The purpose of the comparison is to investigate how different participatory processes are translated in terms of their design approach and what this means in terms of what can be "read out" of the physical environment itself.

3.1 The Experimental Diagoon Houses in Delft

Architect: Herman Hertzberger, 1971

Eight one-family houses are arranged as an L-shaped cluster with a public street in front. There is no through traffic as the street is a cul-de-sac. The design of the public area has been particularly emphasized in the descriptions of Hertzberger. The project may be seen as a fragment, i.e., as a part of a larger scheme that could not be realized. The project has no appreciable impact on the surrounding urban structures, it is merely a dwelling project without shops or any other public facilities.

3.1.1. The Participatory Process.

Hertzberger suggests a "carcase"* that can be adapted and changed by its inhabitants. In his writing he never mentions if people are involved in the design of the "carcase" or not. The "carcase" is the same for all the Diagoon

*skeleton - a structure modeled by its essential parts.

Houses and could be interpreted as the "minimal" design that everybody may agree with, representing common patterns of behavior, and from which people can start individually to adjust the structure to their own needs.

In this example, the involvement of people starts only after the house has already been built. One may call this "after-the-fact" or "late" participation. The "carcase" is a partly finished structure, leaving the subdivision of floor areas to the inhabitants themselves. The structure is designed to be adaptable to the changing needs of the inhabitants and it can be extended. Important spatial definitions are missing and conflict is obviously built in and social interaction is provoked. In order to help people to organize their house, Hertzberger suggests a number of floor plan designs. The drawn set of options is a communicative device which is intended to stimulate and to develop alternative or improved solutions. As a second means to start and support intervention, he uses the design of form.

The following description of the project will try to address the issues of how much freedom the design actually provides, where does Hertzberger work with conflict, and what are the means by which he regulates this process.

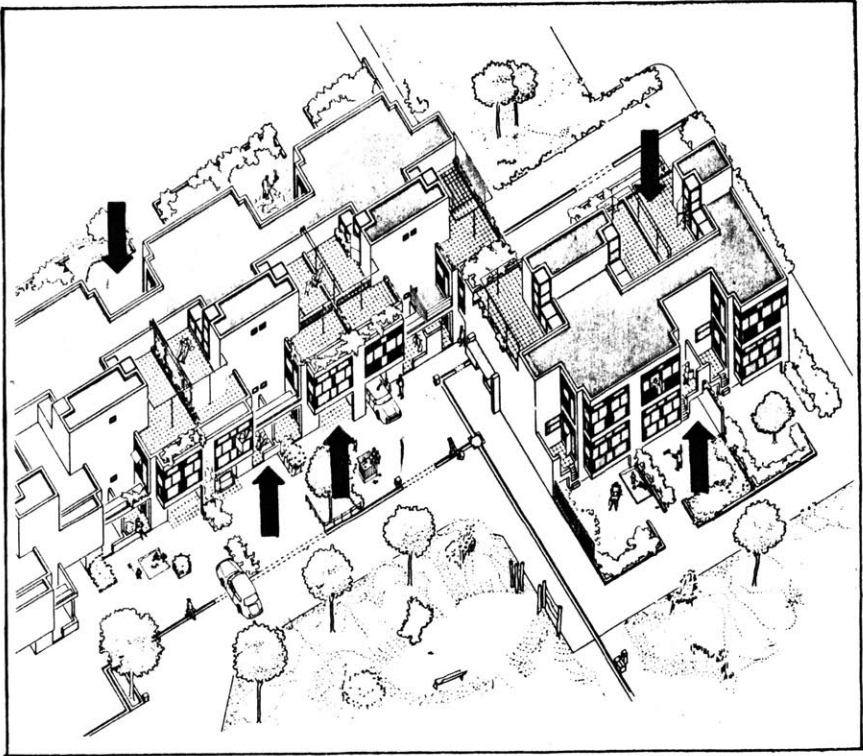
3.1.2. The design of the "Carcase."

House plans consist of two fixed cores with a central hall separating

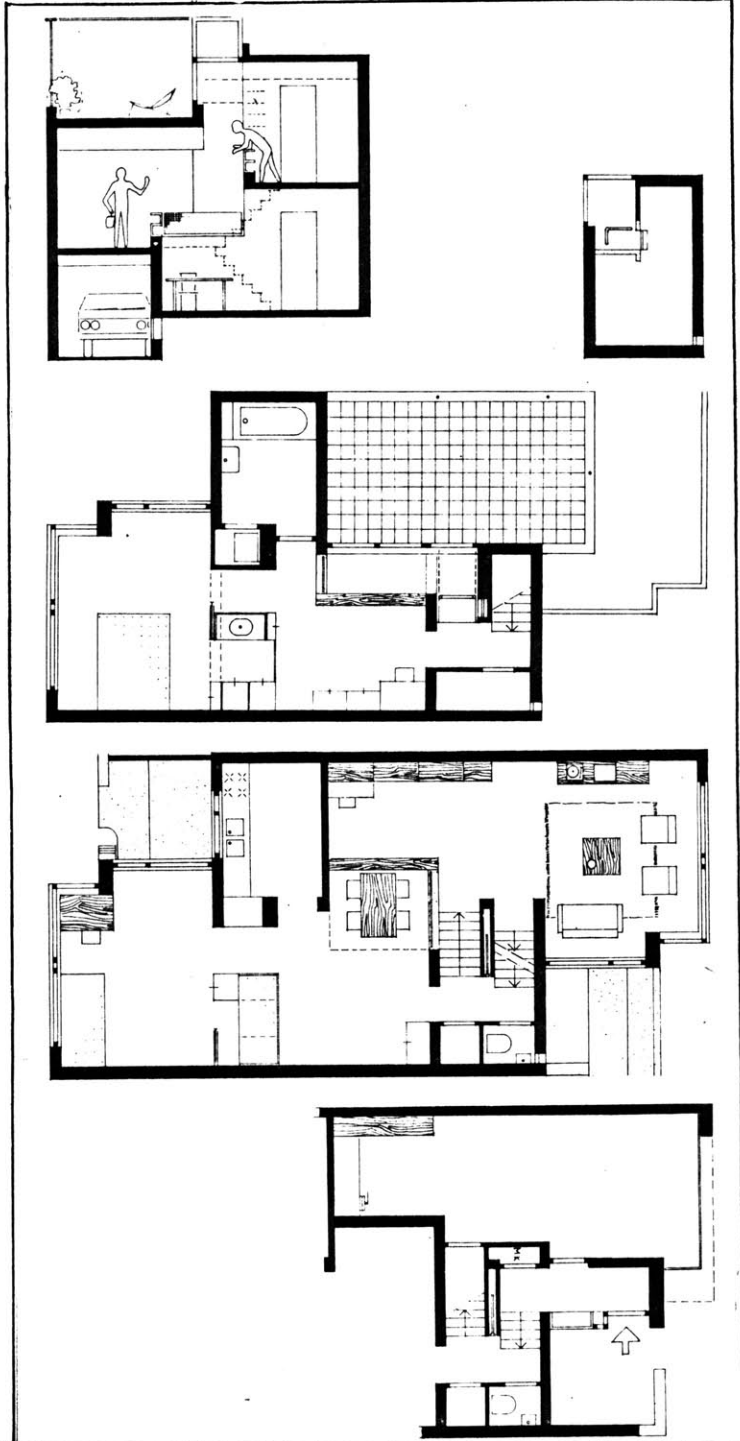
the living units. These areas are large enough to contain any use: living, sleeping, study, play, sitting, or working. Each unit may be subdivided to create one or two closed spaces, while the remaining part is an indoor balcony, looking into the living hall. This hall, which runs the full height of the house, is an architectural device for enhancing the feeling of space.

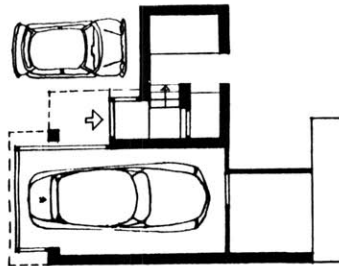
The use and the division of spaces is in the hands of the dwellers, while the "carcase" sets certain strict limits. The general arrangement of the cores and the central hall imposes a center-space-floor-plan and thus a certain kind of life style; a more community oriented attitude is a prerequisite for the occupants. The organization of the house is more or less determined by the placement of the kitchen on the first floor, the bathroom in one core above, and the stairs in the second core. Thus the choice of the use of the living areas is limited. Because the kitchen is squeezed into the core and enclosed, a "live-in kitchen" or "Wohnkuchen" concept which emphasizes the kitchen as the center of activities in the dwelling, is made impossible. Thus the kitchen is designed primarily as a service room and not as a generic living space as such. Furthermore, the kitchen is oriented toward the garden and cannot serve as an observation point toward the street.

Section and floorplans

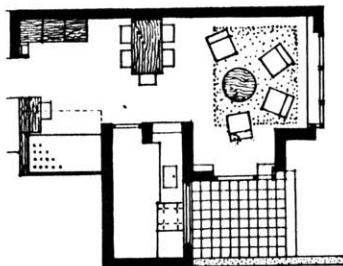


- 4 Zones for adaptation and change
- porch
 - open groundfloor
 - roof-terrace
 - open corners

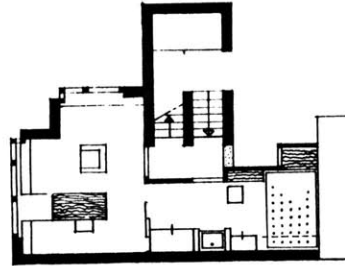




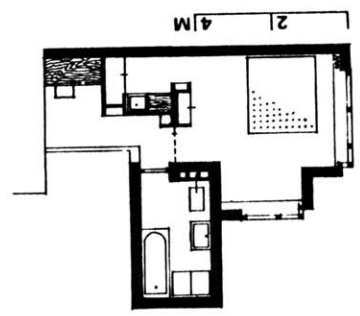
garage



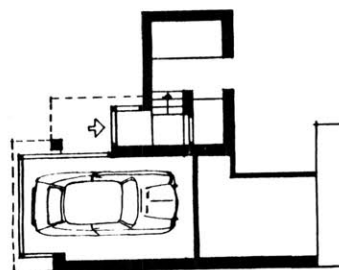
living space



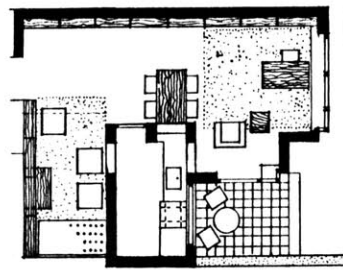
parents' room



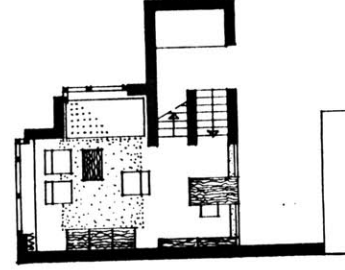
bedroom/living space



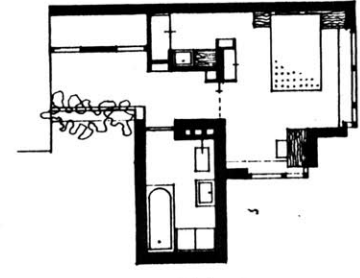
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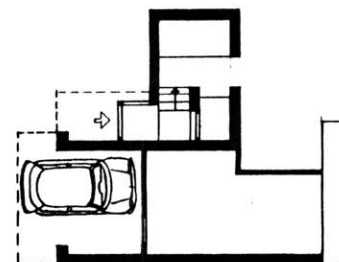
living space



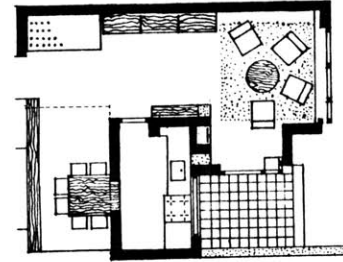
living space



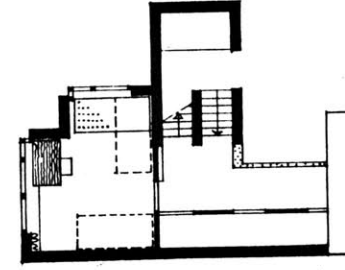
bedroom/living space



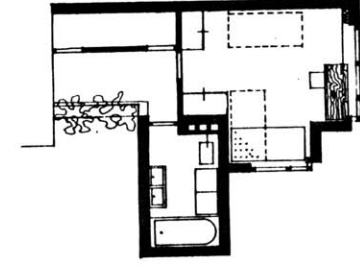
carport



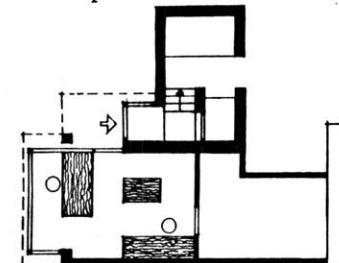
living space



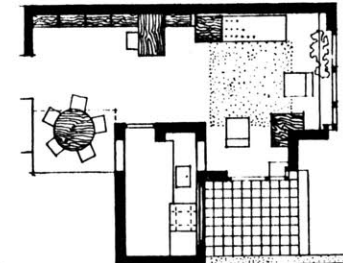
bedroom



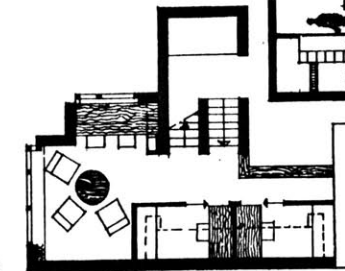
bedroom/living space



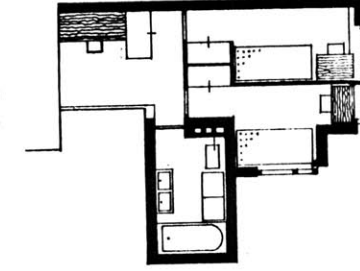
atelier/studio



living space



children's space



bedroom/living space

6 Variations of room units 1 Diagoon houses.



7 Variations of room units 2 Diagoon houses,

3.1.3. The Definition of Interior and Exterior Boundaries.

The center space concept is one main characteristic in the design of the Diagoon houses: how can community consciousness be expressed and enforced, and how can people regulate their privacy needs to cope with unavoidable conflict situations? The minimum standard solution, a closed wall with a door (which may become disturbing if left open) cannot be the right solution for this complex task! The living units can be divided into one or two closed rooms and a balcony, or the space can remain open with two sleep-in alcoves. (Sol. 9) In that sense, private functions are extended into the public realm.

Hertzberger writes about the hall as a family room:

"These balconies, which could be furnished individually by separate members of the family, form together the living area for the family as community. There is no longer a strict division between living area and sleeping area (with its forced "going upstairs"). Each member of the family has his own part of the house: the big communal living room." (1977, Hertzberger, p. 92)

In this example, the influence of all the family members is to be expressed by means of decoration and use; the center of the house is not the "salon" for representative display any more.

Nevertheless there may be occasions when individuals want to withdraw into total privacy into a room or an alcove. The balcony is an interface

between individual and family and thus, people can define space according to their needs. It is a regulatory tool that allows them to participate in family activities or withdraw with ease. The boundaries of the living units are defined by the difference in height of half a story between the living units and the balcony sill for which Herman Hertzberger suggests different designs, e.g., it might be left entirely open, with the only protection provided by the sill (No. 13) or, there might be a board to sit on or work on (No. 9), or a planting box (Nos. 14 and 15), or a curtain, or it might be closed by a wall with windows in it (No. 12), if used as a bedroom.

The next transitional zone is found on the ground floor between the house and the public. Aside from the option to intervene in front of the house, Hertzberger uses the idea of the "open" ground floor. A similar principle can be found in some contemporary Dutch housing projects as a stimulus to fill in a "missing" element of the street design, in contrast to the ideas of the modern movement where the design of the so-called "open" ground floor areas was the result of ideas related to purely aesthetical concepts. In the example shown, the ground floor area is designed to stimulate, to a large extent, free exchange of information among neighbors and with the greater public. Hence, Piet Bloom in Hengelo wanted people to build in shops - "shared" spaces available for activities - to create a stage for interaction.

His idea failed, perhaps because the physical definition of the open ground floor was too weak, while in the case of the Diagoon Houses, the ground floor areas are carefully subdivided and fairly well defined spatially. An L-shaped pillar facing the entrance, divided the opening to the street. This pillar is a "support" to close this space. Herman Hertzberger offers some suggestions for using this area, e.g., to be used as an open, multi-use area to park the car in, or a place for playing table tennis, or as a closed room, an atelier, or work or hobby space. In the open corner of the house, people are allowed to define their entrance individually, either by means of a little courtyard or porch.

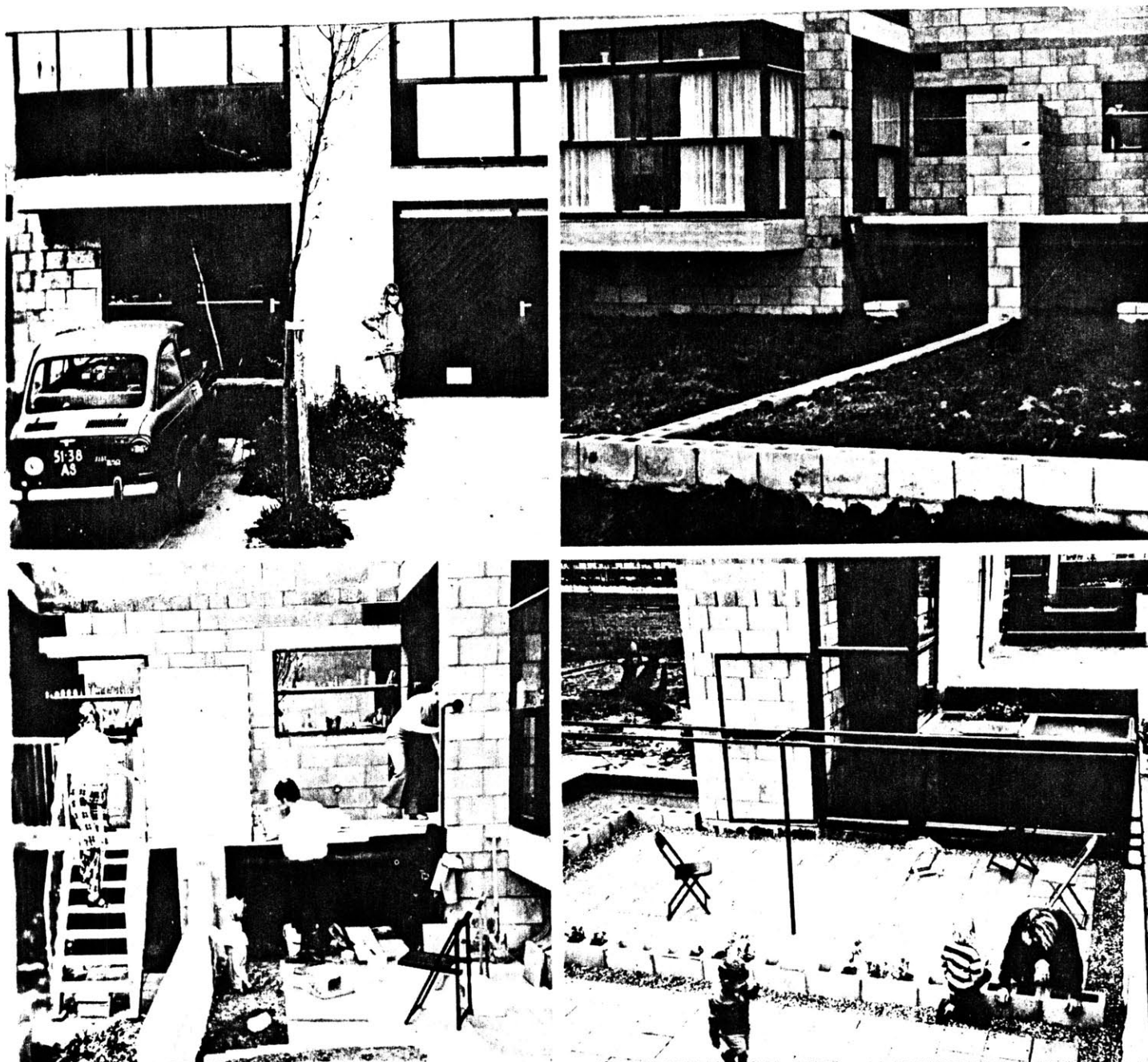
3.1.4. Form as a Tool.

Another means of supporting the strategy to involve people in the design of their surroundings is Hertzberger's definition and use of form: Form should be capable of interpretation by users as well as being a tool to provoke or stimulate intervention. Hertzberger uses the principle of the "carcase." He provides a basic framework and certain rules as provocative incentives to solve conflict within the given context of both "carcase" and the "rules" (provocations). At the same time the freedom to intervene is definitely limited. For example, Herman Hertzberger writes about the design of the facades:

"The facades are defined as a wooden framework that can be filled in truly by the occupants with either glass or closed panels. The framework is a constant, and represents one might say - the core within, where everybody's individual freedom can be acted out and contained. The framework is devised for all infills conceivable, within the set regulations in the sense that the sum of the various infills together will always amount to a coherent whole." (1977a, Hertzberger, p. 92).

This argument reflects an aesthetic pretension and the point of view of a professional designer, i.e., avoid chaos, but design a pleasant visual structure that gives a neighborhood a homogenous image while at the same time allowing variations to occur in a controlled manner by the intervention of the user.

Options for later change and growth, such as closing the porch or the garden terrace, or building a greenhouse on the roof give the occupant additional freedom to intervene. A construction of bars on the roof terrace invites people to hang up or fix things, such as a sailcloth or reed matting. Hertzberger does not only choose elements that suggest certain options for use, he deliberately provokes change and intervention. The porch is conceived as an important link between the public and private spheres, where people can give the house a personal mark that distinguishes their house from others. The wall opposite the entrance door is, in Hertzberger's opinion, so grey and "ugly" that people have no other choice but "to do something" with it. The design of the garden terraces and of the boundaries between the gardens by



8 Diagoon Houses
"Boundaries"

its very nature demands conflict resolution, i.e., agreement between neighbors. This is another example where Hertzberger created a situation for conflict. The open boundary between lots as offered by Hertzberger is obviously an incomplete statement of the relationship between the neighbors. It is merely a low line of perforated blocks, a mere minimal proviso in the social contract. If people feel disturbed and overlooked, as he assumes, they will decide to act and eventually design some kind of "protection." Hertzberger hopes that this will lead to a decision between the parties to resolve this "built in" conflict and agree on a course of action in which the emphasis is less on confrontational separation and more on joint use. The important issue is to stimulate social processes, i.e., decision-making by resolving potential conflict creatively and by this defining common territory and thus, by extension, privacy.

The design of the street is another "provocation." In designing a cul-de-sac, through traffic is avoided and the street can be taken over by the inhabitants. In the first stage, all the surfaces were paved and the boundaries between the lots were left unidentified. The design appeared blank and boring. In order to define their territories on a scale they could cope with, people first removed loose paving stones to plant greenery, or to form a pathway to their entrance, and also to define or claim a place for their car

as well as leaving areas for public use. In this connection, Hertzberger writes:

"The prime concern in the street is to offer provocation and at the same time tools to stimulate communal decisions and actions for resolving conflicts." (1977a, Hertzberger, p. 136)

He suggested that the residents form a neighborhood group to decide on mutual activities and facilities, such as street lighting, furniture, greenery, water, storage facilities and places for garbage, provisions for children to play, etc. Perhaps they could find a set of rules for the design of their street to fix group identity. It was expected that conflicts will arise which would have to be resolved (an essential function of society) and here "the decision falls to what the individual and the society have to offer each other." (1977a, Hertzberger, p. 119) Naturally, the neighborhood group should work in partnership with the authorities. However, in this case this idea failed because of the inflexibility of authorities who were unable to respond positively to the new role of citizens as active designers.

3.2 A Wooden House for Six Households, Munich

Architect: D & R Thut, 1977-78

The building discussed includes six dwellings of 100-140 m², which are connected by a communal space. The experimental housing was built in an island of the urban fabric of Munich, on a back lot which is connected to the public street only or minimally by a narrow strip of land. As in Delft, the project does not address the question of conflict on the level of the urban context. It does, however, lend itself well in terms of a critical comment on traditional housing policies in Germany and Europe.

The experiment goes far beyond the intentions of those of Hertzberger given its strong emphasis on social interaction and mutual decision making in its design. Here, the actual influence of the dwellers in the design of their houses is direct and more complete. Not only is this a scheme that favors group activities like the center-space floorplan, but, moreover, the whole project is the result of collective user participation and engagement. From its inception, a strong commitment toward the community was part of the program, and the project also gained from the exceptional fact that a group of open-minded architects actually belonged to the group of dwellers.

From 1974 to 1978 the architects spent thinking about the organizational structure of the project as a group project and developed a concept for its

construction and choice of materials. Using industrial elements seemed to be for them a good strategy for decreasing costs, including work on the appropriate definition of the "intrinsic value" (Gebrauchswertstandard), concerning new technical standards in housing. In this connection the architects wrote about their goals:

"The starting point of this project was the question, to what extent the needs of dwellers can influence the planning process, and if the freedom for interpretation in the formal design might be obtained using industrialized elements." (1980, Thut)

3.2.1. The Participatory Process.

In this project the participatory process started before the actual planning of the house, and was divided into two stages: Social interaction and direct intervention in the physical environment, such as self-help and provisions for later adaptation. How were these difficult processes to be realized?

As a basis for discussion, the architects compiled relevant facts and information in a "Standard Book." They assumed that a flexible and simple concept of construction would provide the necessary framework for individual design of the dwellings. The "Standard Book" described the concept, including illustrations of construction, possible choice of materials, and a cost analysis. Furthermore, they suggested some ideas for the organization of individual family and group living.

In order to become conscious of their own needs and wishes, and to start an engaged exploration about living together, it was suggested to every dweller to keep a so-called "Scrap-Book" (Regiebuch). Aside from developing the quantitative, abstract spatial requirements they could present images of the desired ambience of lifestyle and form. These books were a collage of text, drawings, and photographs from many possible sources such as newspapers, architectural magazines, advertisements, books, holiday photos, etc. It was a good tool to help each participating part to articulate and communicate their expectations, which, in turn, caused contradiction, insecurity, and conflict in the group. The architects report:

"From here on an intense struggle in the community was necessary to ameliorate the various, partially euphorical, and often contradictory ideas about living and the personal expectations toward the co-dwellers." (1980a, Thut)

After some general discussions, the dwellers could work out for themselves what was possible within the financial budget, concerning size of the dwelling, interior organization and technical standards. The architects then were able to coordinate these ideas, determine construction, and divide the space.

The second stage in the participatory process was self-help by the users in the actual construction. The process was enhanced by the flexibility of the constructive system, the "Standard Book," and design provisions for later adaptation, which would allow easy changes even during construction and in

the future, as a response to changing needs.

"We don't want to make a strict distinction between the planning and building process, pretending that the planners think more, while the workers do their work using their hands only, without being permitted to think." (1980a, Thut)

3.2.2. Form as a Reflector of the Collective.

In contrast to Hertzberger's use of form for the process of participation as a stimulator for social interaction, form here plays a minor importance in the process itself. In fact, the process of social interaction has taken place from the very beginning and, thus, form reflects the value system of the occupants. The question can be asked, how does the basic enclosure provide an image of the community and how is individualism expressed? After all the dwellings are unified under one roof and the grid structure of the facades embraces or contains all the individual facade designs. The answer is that the grid structure and the limitation of the choice of materials may be seen as an appropriate aesthetic means of giving a number of individual designs a harmonious and homogeneous character. The overall form thus suggests and allows further changes. The south side of the house which is dominated by a greenhouse visualizes the idea of community. The greenhouse underlines the simple structure of the building, serving as a link to the individual units. The culmination point of the design is the group space.

3.2.3. General Organization of the House.

The house includes six two-story dwellings connected by a greenhouse. The building is organized in such a way that the private rooms and a private out-door space are on the upper floors, while all the family spaces are on the ground floor. The occupants chose a "live-in Kitchen" (Wohnkuechen) floorplan, where the kitchen is the center of family activities and part of the living room. This area is used for working, cooking, playing, receiving guests, and is connected to the group space on the south side. The adjacent greenhouse provides a high potential for use. It can be considered as the living room for the whole community, or as an interior garden. It also serves as an extension of the family rooms, and as a window to the exterior. In addition it is used as a circulation space, i.e., like a roofed street. It is cultivated and cared for from the inside of the houses, and due to the attraction of its location on the most favored south side, stimulates intensive and frequent use. Potentially it can be used privately as well. The occupants furnish the space with chairs, plants, and flowers. There are two courtyards which are shared by two households each. In one "Scrap Book" an occupant wrote: "In a community space you could put in what you like about old pubs: a billard table, a pinball machine, bar with mirrors, a piano, a music box or a poker table..." He imagined people doing their

homework here, watched and helped by a neighbor, communal dinners or large parties.

From the greenhouse stairs lead to the shared spaces in the basement. There is a workshop, a guest room and storage. In front of these rooms, there is a covered exterior space that can be used as a work or play area. The front of the greenhouse is extended by a large terrace. The basement courtyards, which cut into the terrace indicate a subdivision. The garden is used collectively, that is, to grow vegetables.

3.2.4. Means for Privacy-Regulation.

All occupants have certain agreed upon Commitments toward the community. To begin with, all decided to live "closely" together instead of living anonymously and separately. Succeeding in communalism (Wohngemeinschaftsbewegune) they oppose the isolation and limitations produced by the traditional nuclear-family structure. They chose to live in a more complex life-style with components of social experience added. Many responsibilities are shared and decisions are made mutually as, for example, how to maintain common or shared facilities. Aside from the "internal" communal life of the group, the dwellers also have to maintain outside relationships and the house has to work in a "traditional" way as well. Complexity is thus related to conflict and ambiguity. Differences in ideas and expectations cannot be avoided, and the

by its location on a back lot. There are stairs to the upper floors, which create a vertical buffer, and a long deck in front of each entrance serves as a stoop.

Even more interesting is the design of the transition between the greenhouse and the dwellings, between family- and group-space. The relations here are much closer than the usual transition between public and private. The example of a "mute" environment shows the function of the transitional zone merely as a separating device, a protector of privacy neglecting the public space. In the Munich project it was understood that the quality and the use of the public space depends on the "radiation" (emanation) from the inside of the houses into the public space. The privacy of the family and the collective life are connected in the greenhouse requiring a border for changing permeability responding to the desire to communicate. In order to define the territories, a difference in the height of the floors has been introduced. The occupants have two tools to regulate privacy. Each dwelling has an entrance door with a little stoop. Sliding doors allow the regulation of the width of the opening, i.e., a fully open door can't be in one's way. Large sliding windows terminate the family room and give sound protection if closed. Shutters or curtains provide the means for total privacy. In the front of the windows there is a long board on which one might sit down or pu plants,

design has to provide a stage for settling conflicts in terms of applying privacy-regulating mechanisms. To design for creative conflict the architects invented an intricate circulation system and they used extreme sensitivity in the design of the transitional zones.

The circulation system defines the capacities of use of the support and the potential for interpretation of the environment. Specifically, there are three ways to enter the dwellings, two directly from the outside and one through the greenhouse. Thus each of the different private areas has an entry/egress possibility for people to withdraw, and they have a choice as well as how to enter the public spaces. The dwellings have interior and exterior stairs. A great advantage lies in the fact that the most private rooms upstairs have a direct exit to the outside, which gives the opportunity for non-controlled movement. Furthermore, it acts as an element for adaptation and change, as it also facilitates a further desirable subdivision of the house so that parts of the house could be either sublet to outsiders, without disturbing the collective life, or used privately for a specific alternative purpose.

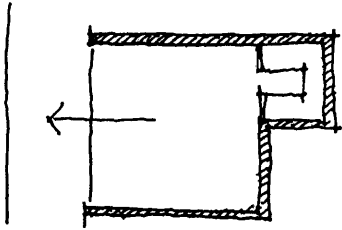
The transitional zones are another means for privacy regulation. On the north side the transitional zones are very simply executed. Unlike in the Diagoon project, the house is fairly well protected from a busy public street

green curtains, and personal items. The design responds to the suggestion of one inhabitant expressed in his "Scrap Book": "Cooking and eating, I do like everybody and everybody might watch or help me."

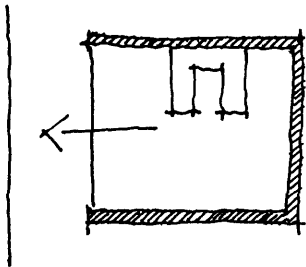
3.2.5. The Design of the Floorplans.

After focusing on the design of the more public spaces, these paragraphs will deal with the interior organization, i.e., the floorplans themselves. In contrast to the "carcase" concept, here only a skeleton is provided which determines the position of the party walls, this defining the overall organizational patterns. These constraints are the same for all the dwellings, and nearly all are of the same size. It should be interesting to compare the floorplans with each other and with so-called "standard" solutions. How do they differ? What is gained out of the tradeoff between "functionally pure" (corridor floorplan) solutions and more complex, "conflicting" ones? What is the "center" of the house? Should privacy among family members be considered as one of total separation, static or dynamic?

The ground floor in all dwellings contains the family rooms which are oriented toward the greenhouse. Apart from dwelling six all the others have, in addition, a separate room that allows for a spatial distinction between living and working areas. In the scrap books, occupants expressed the need to be able to close off the working area. The floorplan of dwelling six



Conventional
living room



Live-in kitchen
concept

seems to be the most conventional. Similar to dwelling four, the entrance situation reflects a standard functional pattern: entrance - small, wind-break with a wardrobe-toilet and entrance door to the living area. The living room is very large (representation) and the kitchen is kept aside.

In all the other examples the kitchen is part of or enters into the family room. Here the concept of a live-in kitchen has been applied and the house is thus centered on the "real" focus of activities. In dwelling five, the house is entered through the kitchen, a common pattern in worker settlements; while one enters directly into a room in dwellings two and three, which requires a special arrangement of the furniture.

The upper floor is considered to be the private domain of each user consisting of three bedrooms and a bathroom. The rooms are similar in size and large enough to contain almost any function (16m^2). Aside from their multi-use character, a combination or grouping of rooms around a center space is employed. Here too, dwelling six shows a very conventional disposition, a corridor floorplan. Three rooms, connected by a landing, are grouped around the stairs, with minimum circulation space. The stairs in dwellings one and five lead to a large south-facing room through which the two other rooms are entered. Combinations of rooms are possible in dwellings one to four, using large openings and sliding walls. Each house has a private outdoor space on

the second floor to replace a private garden. Only between dwellings two and three is there a connection, and they share the exterior stairs. They form a sub-configuration in the group.

An analysis of the floorplans shows that the occupants used the opportunity to question conventional housing patterns seeking new arrangements. The project shows that innovations and unconventional solutions are feasible and affordable. This was possible because the inhabitants agreed on going through the participatory process facing and serving contradictions and conflicts together. It was through the design with creative conflict that the space provided was made to function.

IV. Theoretical Concepts

4.1 Latency in the Environment

The Design of the Support

The projects in the previous chapters presented an approach to design that is unusual in many ways. From these examples, it may be possible to extract new strategies and innovations in design to make environments fit human needs more perfectly. The projects do not represent "clean" or "finished" solutions. They do not present an "architecture with a tendency for perfection." Instead, the architects consciously include conflicting cues and imponderability in the planning process. Certain decisions were kept open and in some aspects only a provisional solution was provided. At the same time, suggestions of alternative solutions are offered as a helping device for occupants themselves to gain control, to influence identification with the physical environment. Thus, the planning process is determined by social interaction, in the form of mutual decision-making, and direct intervention by the occupants in the surrounding world. In this process the occupants are constantly confronted with certain (provocative) "obstacles," yet only at a level they will be able to cope with by conflict resolution and agreements.

According to the definitions in Chapter 2.1, the process can be described using the "principle of conflict": A contradiction, misfunction is neutralized

by balancing different interests, with the means of communication.

For example, one design approach may be to create order through the isolation of functions, thus avoiding conflict. Another strategy to be discussed includes conflict as a motivating force. Conflict in this sense is not to be construed as a destructive force, as in the example in Chapter 2.1, but as a creative power, a tool to stimulate and provoke. Architects of today try to avert conflict perhaps because they do not know enough about how to deal with the participatory process or what are the keys in the environment to get people involved. They are usually educated to keep control over form as imbedded through the notion of architecture as art. Within the scope of this thesis we emphasized on housing, while, to some extent, excluding neighborhood planning and urban design. The case studies presented here center on four issues: latency in the environment, attitude toward community, boundary control processes, and the idea of interpretable form.

4.1.1. Complex Environments.

Designing with conflict and the creation of an interpretable world assumes a certain degree of complexity in the environment. One has to know more about the total potential for use and ask: what are the unexplored clues in existing environments? To understand physical environments more completely, in a study of the street, S. Anderson applies an ecological

approach, "in context of multiple interactive conditions which give rise to the complexities and ambiguities," (1976, Anderson, p. 5). He suggests an exploration of the constraints imposed by motivation, overt behavior, cultural norms, and physical characteristics influencing use and meaning, where the constraints given might inhibit or sustain certain solutions. In focusing on the process of change, we may get more information about the necessary qualities of active environments. The environment is the matrix of social relations and every definition or model, especially if one deals with public space, includes certain assumptions about social life. Anderson focuses on inclusive, sympatric relationships of people in environments.

"...One requires a model that will accommodate a loose fit among form, activity, and significance, while also moving toward greater specificity in such notions as range of use, environmental support or inhibition and limits of coexistent or symbiotic use." (1976, Anderson, p. 19).

In a study of group spaces such as the greenhouse in Munich, coexistent and symbiotic uses are made possible through the sensitive design of boundaries. The greenhouse has no clearly defined purpose, it offers many opportunities and can be considered as the general living room of the community. It also acts as a circulation space which facilitates frequent use and contact, while at the same time certain constraints are implied relating to disturbance of privacy. Analyzing environments in terms of conflict does not mean looking

only at separate spaces, but implies the holistic understanding of relationships between territories and mechanisms for exchange. Thus the symbiosis of public and private realms must be seen as the central issue of this investigation.

4.1.2. A Model of Environments for Analysis.

In order to analyze and compare and to deal with the hidden opportunities in environments, we need a model. Gans argues, using a park as an example:

"...it is not the park alone but the functions and meanings which the park has for the people who are exposed to it that affect the achievement or non-achievement of the planner's aims. The park proposed by the planner is only a potential environment. The social system and culture of the people who will use it determine to what extent the park becomes an effective environment. Without the park, the emotional and aesthetical benefits predicated by the planner cannot be made available, but without use of the park by the people for whom it is planned, these benefits cannot be achieved either." (1963, Gans, p. 6).

Hence, he implies the existence of a potential not yet realized. S. Anderson distinguishes between influential and latent environments, which constitute together the potential environment. The potential environment is the "arena" for potential actions and interpretations. He calls the degree of this potential "robustness," the influential part is realized while the latent part is unrealized potential in the environment. The degree of latency he calls "resilience," (1976, Anderson, p. 24).

Latency is a very important quality of active environments. Its "resilience" determines the response to the occupant's needs. In analyzing historical urban structures and buildings, we are astonished by their ability to contain many different uses over a long period of time. The special characteristic and liveliness of these neighborhoods is highly valued by people - even if they do not work perfectly in a functional sense. Social change here may occur without a change in the physical surroundings. Old urban centers are ultimately the product of human action and not of "design." How can we learn something about the latent environment? If we observe what other people do with their surroundings, it may teach us what is latent for us. This explains why the case studies were chosen. They represent unusual strategies in housing and they show a hidden potential, i.e., latent opportunity for the whole society. In looking at extremes, we can question our own solutions, especially in a period of rapid and radical changes in social relations, and they "can teach us about opportunities that may result in new relations," (1976, Anderson, p. 26).

4.1.3. Change.

Latency in the environment is a prerequisite for change without the destruction of existing structures. After an analysis of a large number of projects, several reasons for adaptation can be listed: Change of the

urban structure, life style, family structure, use of social and technical standards, and need for personalization and better adaptation to user's needs. In many cases the reasons for change became transformed into alterations in the housing structure, by reorganizing the layout of apartments, subdivision of rooms, extensions; increase of the capacity of the support, using high ceiling heights or deep floors more effectively, upgrading in equipment, and decoration. It could be argued that the market is theoretically capable to provide any kind of apartment, for people to choose according to their wishes. This argument subordinates housing to the mechanisms of the consumer market and reflects current general cultural criticism.

"Eine Epoche erweist sich an jedem beliebigen Querschnitt, den man durch sie legen mag, als nicht einseitig sondern vielseitig. Die Raketen die gebaut werden, sind Vorlaefer eines historischen Morgen, die Autos und Rasieraparate, der Supermarkt sind von heute; die Eigentumsdiktatur auf dem Wohnungsmarkt ist tiefstes Vorgestern, in seinen Kapitalistisch Wonnetraeumen ungestoertes 19. Jahrhundert. Was hier gebaut und vermietet wird, und zu welchen Preisen, und mit welcher Lieblosigkeit, das spiegelt in groteskem Trauerspiel die Stoerung im Verhaeltnis von Angebot und Nachfrage," (1965, Mitscherlich, p. 127).¹

There is a disturbance in the relationship of supply and demand for dwellings not only in economical terms but those actually offered are nothing else but standard replicas of similar units, arrangements which can hardly be adapted to individual idiosyncracies or changing needs. Furthermore, the attitude behind the argument that appropriate housing can be "consumed" collides with

the concept of design with conflict. Housing has to be determined, to a large extent, by the inhabitants themselves, and it cannot be considered as other consumable "goods." "Wohnen ist die Weise, wie wir Menschen auf der Erde sind," (The dwelling reveals the being of man on earth.)

defines Heidegger. Only through devotion will people develop affectionate ties with their environments which is possible only on a long term basis. Housing in Germany is different than in the U.S., where the culture is very much affected by the pressure of population mobility (caravan cities). In Germany housing is still considered to give social security on a long term basis. A prerequisite for the design of housing is a complex structure that will stimulate innovation and which will contrast highly specialized environments with strictly prescribed use and meaning, like expressways, which can hardly turn into other uses. Anderson defines the design principles that we ought to produce environments "that meet, but are not constrained by the initial purpose," and "contributive, perhaps necessary factors are complexity and articulation that allow for multiple and changing uses and meanings while also having the specificity to encourage and sustain them. It is such environments that can support the multiple and overlapping patterns of ecological sympatry."

4.1.4. Perception of Environments.

The evaluation of environments is primarily a function of the visual experience. Complexity in the visual world is ordered and limited to ensure the identity of form and the clarity of position. "Imageability," a term used by K. Lynch (1960, Lynch, p. 10) is the quality of environments to evoke strong images in a given observer. As other basic properties of "beautiful" environments he states: "meaning or expressiveness, sensuous delight, rhythm, stimulus, choice," (1960, Lynch, p. 10). We will focus on a more specific aspect underlying "choice." It is assumed that after the basic needs of the individual are fulfilled, he or she then may seek novelty and ambiguity (personal communication with Dr. S. Howell, M.I.T., 1981). In his book, "Conflict, Arousal and Curiosity," D. E. Berlyne argues that novelty, uncertainty, conflict, and ambiguity are important characteristics of complex environments. Complex environments make a strong impression on the perceptors and a perceiving organism has to decide on those stimuli which to respond to. The force of exploration competes with the wish for security and familiarity. Even if novelty means contradiction to learned associations, novel stimuli have positive effects on organisms. Berlyne writes:

"A novel stimulus is likely to fall midway between two classes of

stimuli, that have figured in a piece of discrimination learning, so that it will arouse both excitation and generalized inhibition of the response, which means conflict," (1960, Berlyne, p. 21).

Variables of novelty are, besides change, surprise - implying the existence of an expectation with which the stimulus disagrees, and an incongruity - stimulus inducing an expectation which is apt to become to be disappointed by the accompanying stimuli. Uncertainty relates directly to degree of conflict. As the case studies show, uncertainty is used as a tool in their design, especially by Hertzberger. He initiates the participatory process through form. Thus, people have a chance to express themselves within a basic architectural framework, while the amount of variety or diversity in the stimulus pattern will increase as people take up the challenge of the spatial and material clues offered for conflict resolution.

4.2 Concept of Community - The Design of Public Space

4.2.1. Image of Man in Relation to Community.

If one looks through the social science literature, one can observe certain concepts of and assumptions about the image of man in Western societies. Through this research a certain way of thinking is revealed, enforced, and finally reflected in planning policies. Contemporary Western society tends to protect privacy over community. "We pursue the very things that keep us away from each other," Key argues, and he emphasizes mobility, privacy,

and convenience as the very sources of our lack of community. The longing for privacy is generated by the drastic conditions that the longing for privacy produces; it is simply the reaction to our loss of community and the concomitant inability to take control of our environment (Slatter). In metropolitan areas anonymity has become a form of privacy; behaviors which exclude others implicitly or explicitly are "recognized" and territorial appropriation or exclusion by signs such as "Keep Out" are the only substitutes for the loss of primary social bonds. Privacy has increasingly become associated with and has produced the image of a possessive individualism (1978, Esser).

Anderson puts a different emphasis on the definition of human life in his research on streets. Trying to analyze the public realm, he is confronted with the phenomenon of urban life which leads him to the study of human relationships and exchange. He imagines that "however true it may be that one of the needs of the city-dweller is to be whole and to participate in a genuine and shared humanity, it is also a uniquely human quality that we have been able to differentiate ourselves, forming intricate, contributive and challenging structures of society and culture," (1976, Anderson, p. 14). In order to analyze he applies the concept of ecological sympatry, which is defined as the sharing of the same region by different kinds of

organisms (territoriality). This concept will help to assist in moving" architects and social scientists from a static, defensive description of people in the city to a description that accounts for intersecting networks of relationships within the structured field of the physical city," (1976, Anderson, p. 33).

Given these theoretical considerations, the case studies show how the concept of community is applied as an essential planning instrument to make a demonstrable contribution toward the improvement of living conditions. D & R Thut underline the need for a larger accepted "elbow space" for the individual and for means to solve common problems through mutual decisions. With the increasing emphasis on community, the design of the public realm and of the transition between public and private has to be much more carefully considered, as evidenced by the case studies. The accent is shifted from convenience and accoutrements within an apartment, (as emphasized in condominium advertisements) to qualities which determine the context of "dwelling" like the quality of public space and the idea of living in a community. In contrast to the conventional modern images of man, a world is created which evolves through community, where even the most private person will experience some unavoidable but community-enhancing contact. The preferred image of a dweller thus can be envisioned as that of a sociable

person, who moves into a neighborhood expecting warm and friendly contact and who expects to become active in forming or transforming his surroundings. Conflict and interaction, not convenience and anonymity, are the forces to create such a world.

4.2.2. Opinions of Occupants.

To demonstrate the attitudes of dwellers in a project similar to those examined in this work, I quote some opinions of dwellers in Switzerland. They live in settlements designed by the Metron Group, architects who have experimented with new approaches to housing. Their strategy resembles that used in the design of the project in Munich, except that they planned for a larger and less "closed" group of dwellers. Being an exceptional case, three of their settlements (in Clepfes, Haberacher, Reuss) were the subject of a research project to investigate the actual response of inhabitants to their environment. Thus the architects got feedback to evaluate their design strategy, as evidenced by the following quotes:

"People moved here fully expecting to live together with others closely. There is a readiness to have contact with others. People who did not consider this a desirable quality, presumably quit before joining the experiment."

"The community (Gemeinschaft) is something we emphasized here. We are a large family." (1981, Meyrat-Schlee/Henz, p. 265)

People openly express commitment to and pride in their community. They possess

a strong sense of identification with the settlement.

However, living closely together implies unavoidable difficulties. The investigators state that in this kind of living arrangement each individual has to make a strong contribution to work out conflicts. When experiencing new patterns of co-habitation and communal living, people can rarely refer to known patterns of behavior. Their children also grow up differently than children in conventional environments and learn new ways of behaving in public. Three opinions of dwellers which reflect the difficulties and experiences in this arrangement are quoted here:

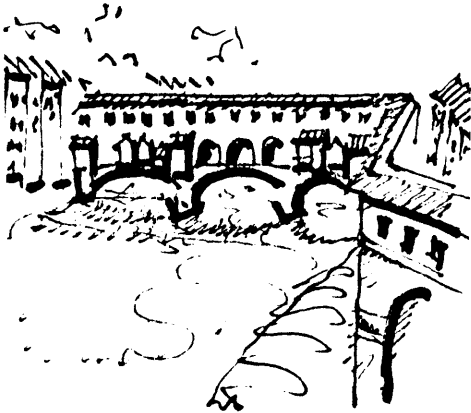
"You have to take pains in order to live with each other, if you live so closely together. There is no obligation, but there are differences as well."

"I think you need a lot of tolerance and if you can't develop it you have to think over if you want to live like that."

"Choosing a living arrangement which makes such high demands on the community (Gemeinschaftsanspruch) - considering the architecture - means it will be a difficult and life-long task to define one's intimate surroundings. This task cannot be solved by architecture alone, but has to be solved mainly in human and individual terms." (1981, Meyrat-Schlee/Henz, p. 266).

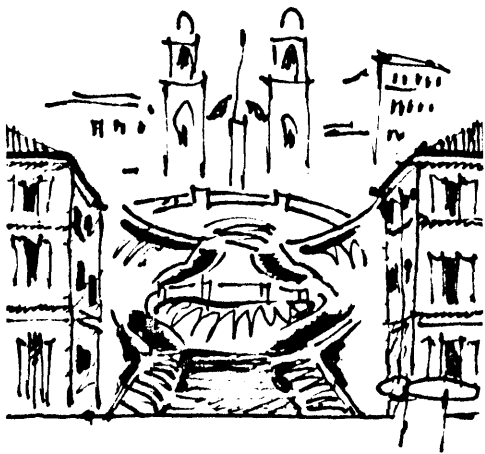
Tolerance and commitment are strongly judged as a prerequisite criteria for participation on the part of the occupants. The perception of closeness in the second quotation might be the result of insufficient privacy protection. Dwellers in this kind of project call for a means for clear separation of

the private sphere. But at the same time they do not want to shut themselves off from the community entirely. A key issue in the design that places emphasis on community, seems to be finding a dynamic equilibrium between private and public space, which will have the ability to change according to differing uses. To gain more knowledge we have to advocate and implement experiments where conflict is embedded in the designs as a creative force, thus to help to define and invent means for equilibrium between privacy and community regulation.



4.2.3. Public Space as a Stage.

Public spaces in these projects are designed mainly as stages for interaction and community life. "Streets are integral parts of our movement and communication networks; they are the places where many of our conflicts or resolutions between public and private claims are assessed or actually played out; they are the arenas where the boundaries of conventional and aberrant behavior are frequently redrawn," (1976, Anderson, p. 2). Circulation spaces channel the movement of people, and thus provide "natural," not forced potentials for contact. Many historical examples, such as the Ponte Vecchio or the Scalinata Spagna, show that circulation is a means for supplementing and animating other functions, and, in addition, creating overlapping patterns of use. Circulation plays an important role in complex environments.



In the essay of A & D Smithsons, the idea of the street is closely tied to the design of group spaces, "It is the idea of the street, not the reality of the street, that is important - the creation of effective group-spaces, fulfilling the vital functions of identification and enclosure, making the socially vital life-of-the-street possible," (1968, Smithson, p. 80). This vital life-of-the-street is a function of communication, and is dependent on many circumstances. Communication needs a certain medium of social stability, e.g., the dwellers should remain long enough in a community to establish meaningful contact. The size and design of a neighborhood should facilitate identification with and induce the formation of a specific group image, using group forms - defined urban spaces instead of a loose composition of built objects. Professional and lifestyle coherence as well as mutual experiences and concerns make it easier to find subjects to talk about. Festivities or mutual problems may unify the inhabitants to act together or with authorities. The appropriate design of transitional zones between public and private will allow for protected communication, giving the individual freedom of choice to participate or to withdraw. Provisions for activities like sports, play, hobbies, and other shared facilities (such as communal kitchens, dining spaces, laundries, day care centers) ease the chores of everyday life and bring people together. Complex environments in general are places where

many things are allowed to happen, which means that there are many "bridges" for casual conversations.

4.2.4. The Symbiosis of Public and Private Realm.

The vital life-of-the-street is defined by the functions of the buildings it connects and by how much of their use is radiated into the public realm; there is a symbiosis between circulation and the interior life of buildings.

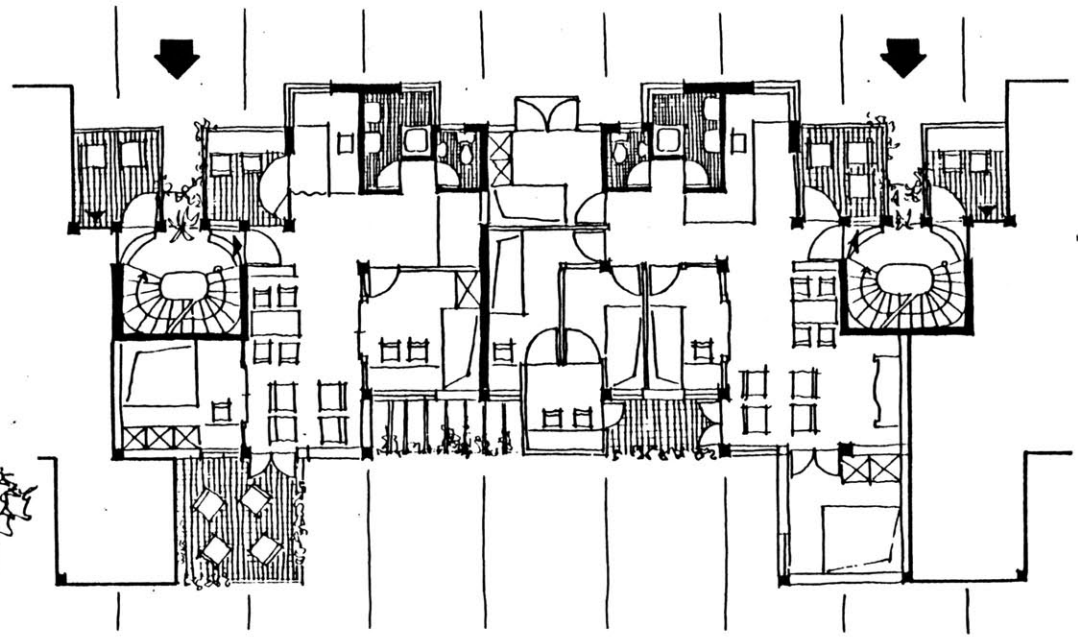
"The street is an extension of the house, in it, children learn for the first time of the world outside the family, a microcosmic world in which the street games change with the seasons and hours are reflected in the cycle of the street activities," (1968, Smithsons, p. 80).

This quotation states an important design principle for circulation spaces - connection to the outside world; season, sunlight, sounds, views, etc. This principle has often been neglected in designs like the "Unité d'Habitation" by Le Corbusier, where the "rue intérieure" is reduced to nothing more than a dim corridor - rather than a lively street.

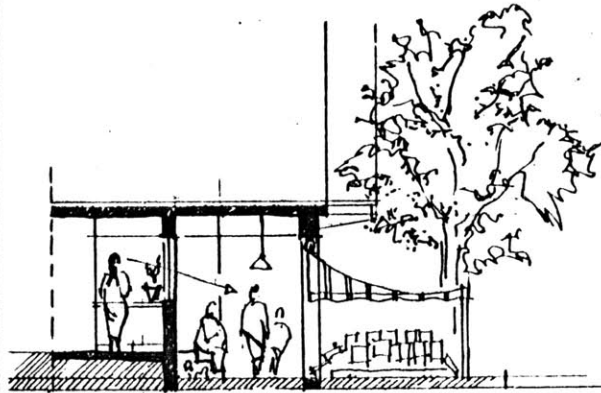
Another issue is exchange between territories, the amount of "radiation" from the private into the public realm. This might be caused by territorial markers or made more vigorous by extending force private functions into the public realm. The shift of the boundary of the private zone toward community indicates a change in social relationships; people develop new forms of

The "Growing House"
Proposal for low-income
housing, Rio de Janeiro
arch.: Juergen Engel

-Circulation and Public
Space-



Floorplan



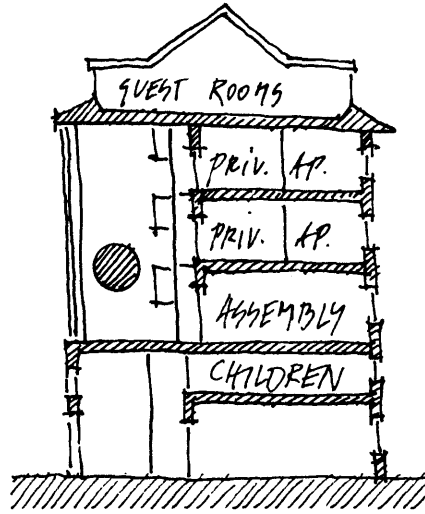
The arcade



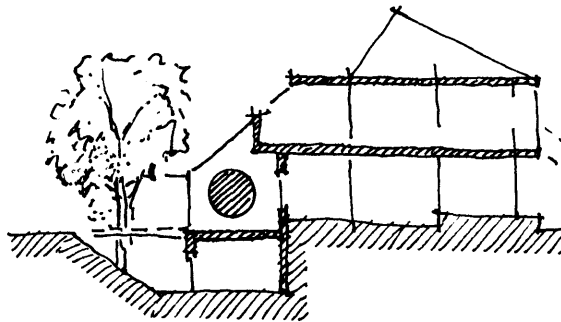
Street
elevation

privacy to use in public.

4.2.5. Group Form.



Fourier, Phalanstère



Munich, Neubibergerstrasse

To study the spatial consequences of such change, a look at some extreme examples, where the principle of community is clearly stressed, may be of some use; specifically, the architectural ideas of the social utopians of the 19th and 20th centuries. In analyzing Godin's Familistère (1859) and Fourier's Phalanstère (1822), we note the special importance given to the public space, which is covered with a glass roof, while the private core is reduced to a small cell. The circulation space is considered to be the "living room" of the community and is located directly in front of the apartments. In some designs of communal buildings in Russia (1920-1930) the private cells have a large opening directed toward an interior street. It is interesting that transitional zones are neglected, which implies that the individual in these projects is defined primarily as a social being (rather than individual). The group space is conceived as the symbol of the "new society," while the circulation pattern defines a group form embodied in the interior court or the "rue intérieure." While Le Corbusier, in his later utopia, used a revolutionary architecture reflecting and designed for an industrial society, the social utopians of the 19th century accepted the formal language of the ruling class - an inherited language for a new kind of society. Their utopias

were a symbolic promise of a better life for the working classes. The rue interieure, very much like the representative gallery of mirrors in the palace of Versailles, is the social and architectural culmination of Fourier's design. Here the new community, consisting of separate groups of children, parents, and old people are re-united; and the gallery is also conceived as the social center to be used for exhibitions, festivities, and large dinners. Similarities to the design of the greenhouse in Munich, which also serves as an interior street, are obvious.

4.2.6. Shared Facilities and Space.

The utopian examples show another architectural aspect which must be considered important after a change of social relationships: The private "living cells" do not have kitchens and the children are separated from the parents. Accommodations for child-care, schools, adult education, kitchen, dining space, laundry, work shops, and sports are provided for the community as a whole. The shared spaces are not necessarily part of the circulation space but they are well connected to it physically and visually. For example, the laundry in the Karl Marx Hof (in Vienna, 1923-26) is designed as a distinct building in the center of the court and still works well as a place for social exchange. New architectural solutions and building types, like the collective houses in Sweden, and the one-kitchen houses in Graz and Berlin follow such utopian

designs. The concept of living together has been diluted by the "live-in" hotel approach as exemplified by the new John Hancock Tower in Chicago or Schwablon in Munich. Here only the "luxury" leisure facilities, like swimming pools attract people and become meeting places. The inhabitants don't interact as a group. They do not have to share responsibilities and a commitment to community or change in lifestyle is not necessary in this kind of luxury accommodation.

4.2.7. Intervention in Shared Spaces.

The last important aspect to be considered is the role of the community in the process of the intervention by inhabitants in their surrounding environment, especially if it occurs outside their local boundaries. Hertzberger used a strategy whereby a sense of community is induced through (necessary) changes in public realm or by the definition of boundaries which are shared by different parties. He deliberately provokes intervention and mutual decision-making through form. He describes the process as follows:

"With every intervention on the outside, you will have something to do with your neighbor, and to avoid your taking advantage of your freedom at the cost of his, a mutual decision will always be necessary. This state of affairs can give rise to conflict situations, and this means that people no longer sit safely within the walls of their own little castle, protected from each other by the authorities, but are interdependent on each other, and this is what society really means," (1977a; Hertzberger, p. 133).

4.3 Privacy and Territoriality

Threshold.

The examples discussed in Section 3 show how the concept of community has been applied in different ways, more or less pronounced. Planners cannot predict if in a neighborhood the spirit of community will be instituted. Since social life is unpredictable, architects tend to neglect the design of public spaces as active environments - often even the slightest suggestion for intervention in the public space is rejected: "There is no stoop in an apartment building of 500 inhabitants," (R. Meier, December 1981). Even if the designers do not know the inhabitants, they should help people to define their relationship toward privacy and community by themselves. They should help to build "bridges" which could allow for a greater choice of "modes of exchange." This is the basis for providing varied social patterns and with the loveless repetition of fixed "standard units" and "optimal" public space,

4.3.1. The Concept of Privacy in Western Society.

Every society and culture defines the individual's relationship with the community in a different manner. For example, social openness is characteristic of the Dutch. In old Dutch towns, the view from the street into the "Gute Stube" (front-palor) is a very common and accepted pattern. People expose part of their private world to the passers-by with pride, without

anxiety or being disturbed by others "looking in." Here behavioral patterns and social rules are matched by the design of an appropriate spatial response in the physical environment. Privacy does not mean the isolation of the individual but a chosen balance between the individual, the community and the outside world. Altman uses a good metaphor:

"Privacy is an interpersonal boundary control process, designed to pace and regulate interactions with others. Privacy regulation is analogous to the shifting permeability of a cell membrane, sometimes more accessible to outside inputs and sometimes closing off the outside environment." (1980, Altman).

Privacy is a dialectic process of both restriction and the seeking of interaction. A closed wall or an entrance in a minimum staircase (economical use of space) underlines rejection and inhibits exchange (even if not desired by inhabitants). Instead, environments should sustain functions of privacy as limited and protected communication (interpersonal functions of privacy), self-evaluation and self-relation to others (interface of the self and the social world), and self-identity. Privacy mechanisms (verbal, nonverbal, environmental, and cultural) help to define the individual.

In neighborhoods where people have a certain freedom to intervene in the environment, individual care and mutual responsibility for exterior territories are usually clearly visible. In many of the public housing projects the "public" space in front of the entrances is neglected and ill used.

Territoriality is used in the first case as an important privacy control mechanism:

"Privacy serves to maximize freedom of choice and behavioral options of individuals and thereby permits control over a person's or group's social activities. A key vehicle of the maintenance of behavioral options is to control space, i.e., territory, and to determine what will and will not transpire territories." (Prohansky).

Territoriality is a means for a person to increase the range of options open to him and maximize his freedom of choice in a given situation.

4.3.2. Territoriality and the Design of Public Space.

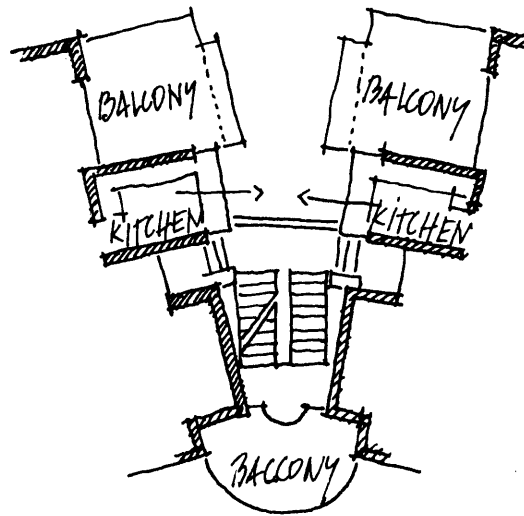
In general there are two extreme types of territories or "niche specificity." One is spacial separations which result in a mosaic of deferred and closed areas. In the other case, users are not offered behavioral mechanisms which would fix them in place, with the result that they cross each others patterns, thus generating "a complex fit of overlapping and variously defined networks and areas," (1976, Anderson, p. 11). Research deals mainly with the exclusionary role of territories. As discussed earlier, the importance of an exchange between public and private means that the emphasis of such studies has to be shifted, and that "along with defensive territoriality (which operates primarily intra-species), we must also emphasize the analogy with a complementary, interactive, even symbiotic territoriality (which operates with patterns of conflict and competition as well as cooper-

ation, among various kinds)" (1976, Anderson, p. 14). If the environment is expected to reflect the vital "life-of-the-street," and act as a stage for social interaction, we have to focus on the dynamic relationships between territories and the design characteristics of the boundaries. The questions to be asked are: What supports the symbiosis between public/private and especially how does the interior life of the houses "radiate" into the public realm? Thus we have to concentrate on the organization of spaces and on the design of the territories themselves: the role of patterns - interior exterior relationships, which help to control territories (4.3.3.) and interior patterns in terms of privacy regulation (4.3.4), and subsequently, the concept of used space, and the design of sequences of territories with transitional margins (4.3.5)

4.3.3. Patterns Supporting the Symbiosis Public/Private.

Exchange between public-private and control of public space will be supported mainly by using patterns: interior - exterior relationships that are reflected in the floorplan of a house. In a housing design many functions of public life are usually missing, such as shops, work spaces public facilities. Thus we have to try to relate those functions of living that possess a communicative character which "radiates" into the public space, i.e., attach spaces such as the kitchen, work space, family living

room, etc., near the circulation areas. The kitchen could thus be considered as an "observatory" of the street (as applied in the Kassel project of). Steidle & Partner). In the design of an apartment building in Kassel, H. Hertzberger applies other patterns by introducing groupings; by facing the entrances and the windows of the kitchens towards each other, easy contact between neighbors is possible. Furthermore, the windows are rectangular



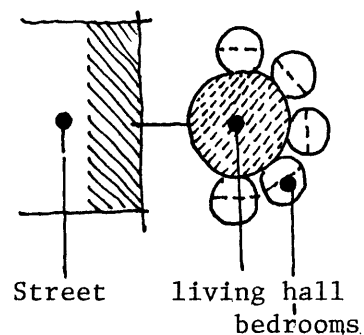
Apartment house, Kassel
H. Hertzberger, 1981

and one part of the window allows a direct view into the stair-case where children circulate or play. Thus he binds together sets of two apartments with a visually integrated circulation network. The grouping of entrances and children's play areas are both connected to a defined territory with a bench which invites people to sit, rest, and watch the street. Similarly the "parlor" used in South America is a heightened seat along the street which belongs to the interior of the house, but where people may sit and communicate if they want to.

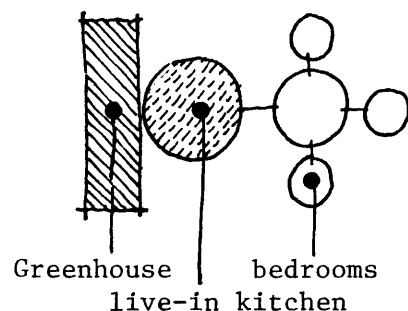
4.3.4. The Concept of Community Reflected in Floorplan Design.

Interior organizational patterns have a strong impact on the solutions for the regulation of privacy. The most "conflictless" and boring example is the "corridor floorplan" where designers divide the apartment into a sleeping and a living area while at the same time trying to minimize the circulation space, which thus becomes a wasted, unused area. Grouping arrangements and group spaces are not provided for, and the living area is considered as a more or less "representative" front parlor, the "Gute Stube" in Germany. The aim of such designs is an "optimized" floor-plan in terms of maximum economy of space use, where organization of life is "cemented" into the plan. The case studies shown here possess more open arrangements like the "center space" (Delft) or "live in kitchen" concepts. A third solution could

Diagoon houses, Delft



Neubibergerstrasse, Munich



be in the exploration of the loft concept, i.e., a large space that could be subdivided by three dimensional elements. Here the boundaries between family and private are not too abrupt, and an overlapping use of space is favored. Private functions are extended into a more public realm. In the Diagoon Houses, the floor areas are divided into a private core and a balcony leading toward the center space. In the project in Munich, various groupings and combinations of private spaces are possible. In both cases people are left to define the boundaries for themselves. There are almost no closed walls which permits more sophisticated and dynamic solutions such as using sliding walls and windows as sound protection, and curtains, shutters or greenery as protection against glare and view of private scenes.

4.3.5. Hierarchy of Territories and Concept of Used Space.

Focusing on two of Hertzberger's projects, the Diagoon Houses and De Drie Hoven building for the elderly, we will describe the concept of used space and design of sequences of territories. A design that incorporates occupation and use of space by inhabitants is a strategy against alienation from our surroundings. O. Newman writes in his book Defensible Space, Crime Prevention Through Urban Design: (p. 52)

"At present, most families in an apartment building experience the space outside their apartment unit doors as distinctly public; in effect they delegate responsibility for all activity outside the immediate confines of their apartment to public authority. The

question is whether there are physical mechanisms which can be employed to extend the boundaries of these private realms; to subdivide the public space outside the private apartment unit so that larger dominions come under the sphere of influence and responsibility of the apartment dweller."

As the introductory example shows, the public space flows uninterrupted from the bordering street into the project grounds and from the lobby and corridors of a high rise building right up to the door of an individual apartment unit. The social breakdown of many of these settlements might be ascribed to the missing territorial behavior and a lack of appreciation of somebody else's realm. Hertzberger designs a variety of spaces that are clearly dedicated to certain users. However, the user has to claim the space and define the boundaries himself. Even the public space is similarly divided and only loosely related to specific user groups. The observation of selective use and negotiated occupation of space in his projects leads to a concept of spatial sequences that can be defined by users themselves according to different levels of privacy. Before entering private territories used by individuals, a family, or group of residents, Hertzberger always provides a transitional zone:

		<u>Diagoon Houses</u>	<u>Housing for the Elderly</u>
private realm	margin	room (1, 2 pers.)	
		balcony	
	margin	living hall (family)	room (1, 2 pers.)
		porch/entrance	porch/entrance

public realm	community activity	front yard (family)	interior street (15 res.)
		play area (8 families)	village green
	border	border	entrance
		neighborhood	neighborhood

The border between core and transitional zone is fairly closed in De Drie Hoven by a wall with windows and a door. The connection between transitory and public zones is more open consisting of low walls and some columns (De Drie Hoven). This connection is represented by a balcony sill in the Diagoon Houses.

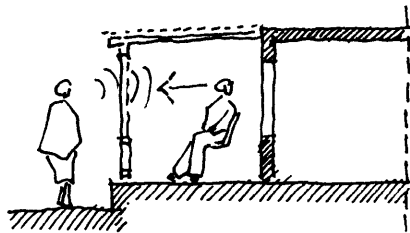
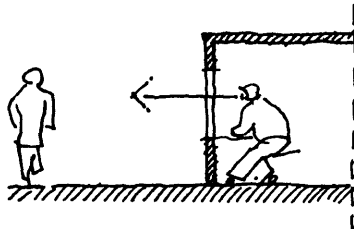
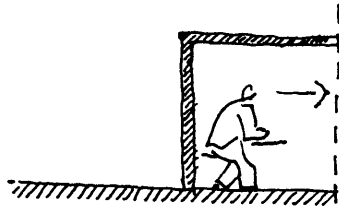
Hertzberger deals not only with the intimate surroundings of the dwelling, but he has a detailed idea of how the public space is graded (hierarchy of territories) and who will take care of the different use areas. The space in front of the Diagoon Houses is "cultivated" by the residents individually, while another portion belongs to the whole community. The street gallery in De Drie Hoven is controlled by a limited number of residents, while the Village Green has become the activity space for the whole community. Even the ground outside De Drie Hoven is divided into small allotments for gardening. It seems that the more public the territory becomes, the more important it is to generate active social interaction in the decision making process. To resolve conflicts, Hertzberger suggests neighborhood

organizations to deal with problems of the "greater" public and the authorities.

4.3.6. The Design of Transitional Zones.

The projects of Hertzberger analyzed here show the consistent application of transitional zones. In A Pattern Language, C. Alexander defines "entrance transition" as the sense of separation from the street; "Place the entrance so that the path between the street and the inside of the house passes through a transitional zone, including change of direction, change of view, change of light, change of level, change of sound made by your feet, and change of surface." (1977, Alexander, p. 552). In this pattern certain assumptions about public life are implied such as an emphasis of protection from the street. If we look for the design of active public spaces, we must focus on the role of transitional margins for creating a symbiosis between the public and private realms. The public sphere offers the potential for contact and the house is the threshold for protected communication where part of the personality of the inhabitants is transmitted from the interior of the houses.

The transitional zones define the permeability or the amount of information and concession given over to the public. In physical terms we can distinguish between elements used for separation, such as a solid wall, or



Boundaries

transmitting elements which make barriers penetrable, such as windows, vitrines, painting on the wall, and "radiated" territory or porches. From the interior, the private sphere may "radiate" into the public space by circumscribing an ambivalent territory. In order to make claims on the public domain people can put "personal" markers in front of the entrances on the sidewalk, like a flower box, a bench, or a bike rack. More supporting in spatial terms are a front yard or a porch which allows the possibility of physical separation from street life, while still giving the opportunity to participate easily. The front door to the street provides a "threshold" and thus security for communication.

The decoration of the porches - their "personality" - demonstrates that territory "involves psychological identification with a place, symbolized by attitudes of possessiveness and arrangement of objects in an area." (Prohansky). Hertzberger expresses that "only through action and devotion can affectionate ties to things arise." (1977a**, Hertzberger, p. 137). To start or stimulate such personalization, a recess or niche is very efficient, as evidenced by the porches in the interior streets in De Drie Hoven. People can start personalizing their porch without the need to totally expose themselves to the public. For example, a row of entrance doors stuck in a wall (student housing, Amsterdam, Hertzberger, 1959 - 1966) induces less intervention.

In the same project he suggests a lighting fixture shaped like a block next to the entrance to define the territory that "radiates" into the corridors: "the patch of light and the items on the block, characteristic of the occupant both trace an area that, as it were, makes a private claim on the public domain outside the door." (1977a, Hertzberger, p. 89).

We have now come to the question of how the architectural framework and form may sustain or inhibit adaptation and change, which relates to identification with a place and the values we may attach to it.

4.4 Definition of Form

Provocation in Design

4.4.1. General Definitions.

A simple definition in the Encyclopaedia Britannica says about form: "the shape and structure of something as distinguished from the material of which it is composed." For artists and architects a definition of form must emphasize meaning since, in addition to have a purpose, form is also used as a medium of communication. Objects serve a certain purpose and in a definition by Hugo Häring he focuses on the dialectic of use and form, creating the term "Leistungsform." He argues that form is aesthetically only satisfying if it serves its purpose perceptibly. "Form ist eine Funktion der Funktion und unser aesthetisches Vermoegen ist nichts anderes als die

unterbewusste Bestaetigung der Tatsachen, dass das Ding, das wir vor uns sehen seinem Zweck sichtbar angemessen ist."² In addition the meaning of form is defined by its context and its relationships to other objects. In Gestalt psychology form is understood as a complex system of parts set in relation to the image of a whole composition. "In a Gestalt, the nature of the parts is required by the characteristics of the whole and the parts are fused and interacting in a specific structural manner." (Encyclopaedia Britannica). This specific structural manner might be along the lines of Vitruvius' definition, in the Ten Books of Architecture, i.e., the idea of harmony and proportions of architectural elements in a composition - in other words, the definition of a formal language.

Dealing with resilience in environments and the consequences of change, form cannot be considered as static, as the concept of harmony presumes. We permanently contemplate the difference between original purpose and actual use of objects. Form put into new contexts may, on the other hand, help to find new or innovative solutions in design. In the participatory process form can play an active role by supporting or inhibiting certain interventions. That is why Hertzberger uses the definition above, giving it a different emphasis: "Not only is the image evoked by the whole defined by the signification of the parts taken together, but to an equal (or perhaps even a greater)

degree, the signification of each compiling part of the composition is defined by the image of the whole." (1973a, Hertzberger, point 1.1). As a result of the above, we have to know how the image of an environment is formed by a perceiver. What are the prerequisites of choosing elements in an active environment, and what is the role of the actor in their choice?

4.4.2 Perception of Form.

Environmental images are the result of a two-way process between an observer and his surroundings: The environment suggests distinctions and relations and the observer - with great adaptability and in the light of his purposes - selects, organizes, and endows with meaning what he sees. "Not only do we interpret form, but form interprets us." (1977a, Hertzberger, p. 140), since it is the result of personal choice.

In focusing on the relationship between user and form, K. Lynch underlines three components: identity, structure, and meaning. In his opinion, an image requires, first, the identification of an object, which implies its distinction from other things, which in turn limits complexity, i.e., its recognition as a separable entity. The image must include both spatial and/or pattern relations of objects to the observer and to other objects. As a minimum condition for good perception, at least the object must have some meaning for the observer, be it practical or emotional (1968, Lynch, p. 10).

In his book, The Image of the City, he discusses the visual qualities of environments, which mainly relate to attributes of identity and structure. He defines "imageability" as a quality in a physical object to evoke a strong image in an observer. Ambiguity and uncertainty are additional qualities of environments, and he names interpretation of form as a basic aspect of active environments and suggests that "the image should preferably be open-ended, adaptable to change, allowing the individual to continue to investigate and organize reality; there should be blank spaces where he can extend the drawing for himself." (1968, Lynch, p. 9).

4.4.3. Form as a Means for Communication.

As the case studies show, architects try to communicate and manipulate space or place through form. In doing so they have to find a linkage to past experience and knowledge. Even if individuals create their own images, substantial agreement among members of the same group seems to include elements of individual images as a part of a collective pattern. These are patterns, which Hall defines as "those implicit cultural rules by means of which sets are arranged so that they take on meaning which will be shared (by a group)." (1973, Hall, p. 119). People do refer to systems of significations, and there is a close relationship between a person and the overall patterns in which he or she participates. After Hall patterns are bound to

the laws of order, selection, or congruence. The laws of order are those regularities governing changes in meaning, when order is altered, as by analogy: e.g., changing positions of words in a sentence. Selection controls the combination of sets that can be used together which - in turn - deal with the relations between "words." Many avant-garde artists violated these laws in the 20's in order to shock people, to make them conscious of the contradictions in everyday environments. Dadaists and Pop Artists applied such designs as distortion in the size of objects, change of materials, destruction of language, play with significations, etc., etc. Man Ray in his photographs used cuttings, where the perceptor is supposed to complete the image himself, and collage as a means of illuminating or discovering new relationships between subjects in a composition.

If a designer tries to disorder prevalent or conventional signification systems, he has to be aware of the fact that people will respond only if they understand such distortions to find a cue for new and more creative solutions. Hall describes the existence of the limits of understanding distortions with the law of congruence, using the example of an artist. "The artist has a highly developed sense for working with patterns, making the most of them, pushing and stretching their boundaries, but never crossing them, so that the spell can be maintained and not broken." (1973, Hall, p. 138).

The mechanism of choice can be activated only if there is a recognition or identification with the images already stored in experience. Thus, we probably will have to experiment with new patterns as how far one can go and still give inhabitants clues for creative behavior. Hertzberger suggests observation and analysis of environments to gain sensitivity for possible interactive use of environments. The architect "should be constantly putting himself into other situations in order to give these a place in his ways of thinking. (1977a, Hertzberger, p. 142). The designer has to overcome his fixation on the influential environment to discover latent opportunities. "Only by using our imagination can we break through these persistent associations and put another in their place, and thus separate a specific object from its system of significations so that it opens to receive a new signification." (1977, Hertzberger, p. 128). In the design process the architect may use "disturbances" of identity and structure, but "he must try to foresee all conceivable images of each of his-unknown-opponents in order to embrace these within his offer. This means, concretely speaking, that for each thing you want to make, you have to summon up yourself all images of all the users and integrate these as intentions in what you present." (1977a, Hertzberger, p. 142). In order not to violate the law of congruence a recognizable framework of action or choices has to

be provided, because people "cannot free themselves from the system of signification and the underlying system of values and evaluation... Everyone needs an incitement, a helping hand, to motivate and stimulate him to fitting his environment to himself and making it his own." (1977, Hertzberger, p. 130).

By means of elements where adaptation and change are incorporated, environments will become better adjusted and amenable to change for user's needs. Form has to evoke associations and ideas of use and to achieve this we have to build up a kind of "musée imaginaire" (Andre Malraux) of potent but operational images, "wherein the process of change of significations is displayed as an effort of human imagination, always finding a way to break through the established order, so as to find a more appropriate solution." (1977a, Hertzberger, p. 144).

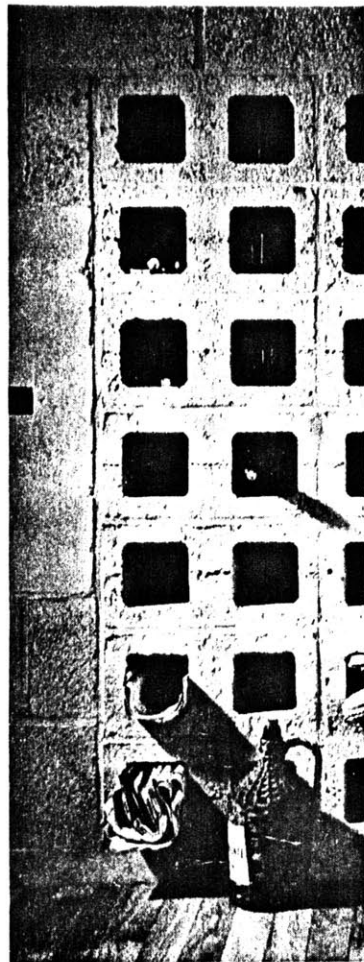
4.4.4. Manipulation Through Form.

In analyzing Hertzberger's projects, we can observe how he uses both openness and distortions of significations of objects to elicit user interventions.

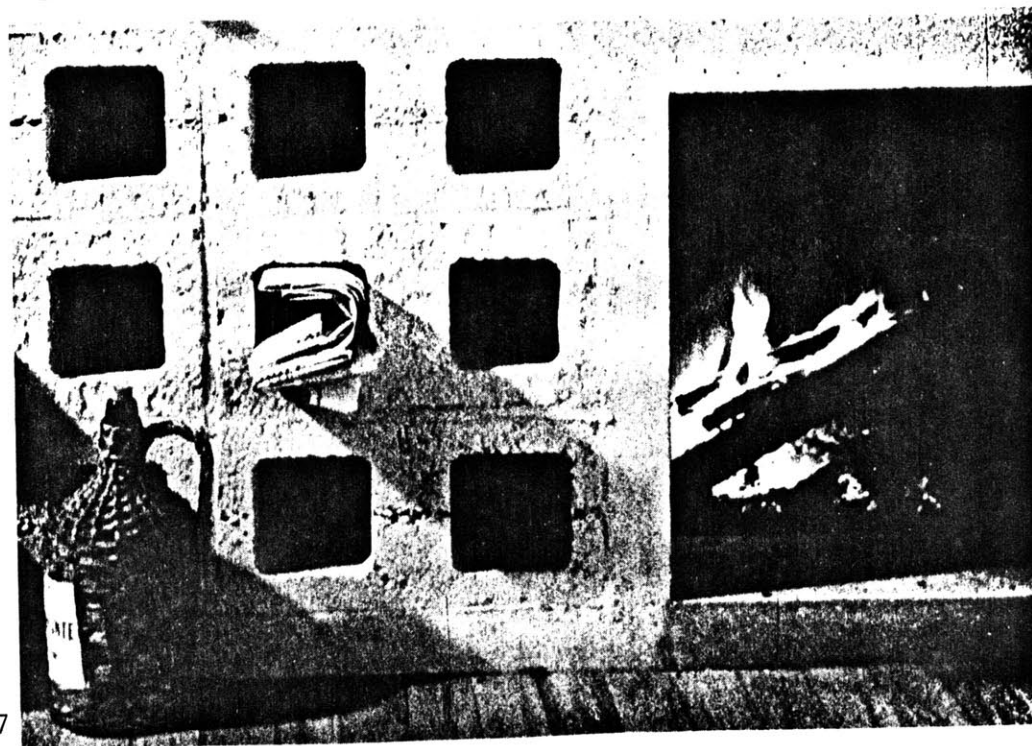
There are basically three tools for such communication and manipulation: (1) Provisions for change, (2) stimulation, and (3) provocation. Each category is related to the severity of a problem or a conflict involved in the

process, and on the motivational matrix of occupants. In the life-cycle of families, change as a matter of necessity occurs. The reasons and requests for adjustment of the living environment proceed from people themselves and architecture has to set provisions for change. Certain features of the design of the floorplan will support adaptation and change such as giving rooms a minimum size, to allow use for many functions; envisage possible present or future combinations and grouping of spaces; design polyvalent areas, such as a common center space of a live-in kitchen. Designers might try to get people involved in initiating intervention themselves. Stimulation may occur through offering the users opportunities, e.g., capacities in a support which have not been fully exhausted yet: such features as high ceiling heights, (3 meters or more), which favor imagination use of the higher space; "soft" space in old buildings; i.e., rooms with no clearly defined uses, such as loggias, interior gardens, etc., which may suggest unconventional and innovative solutions. Hertzberger himself introduces simple design elements for people to interpret or play with, and to make the surroundings more vivid: The introduction of an active element, say water, into public space, and suggestions such as use of perforated blocks are typical of his approach. Water in public spaces has always acted as a very stimulating element of civic life and an essential characteristic of many Dutch cities. The city of Freiburg

14 Montessori Kindergarten, in Delft, H. Hertzberger

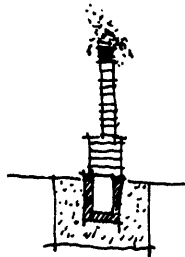
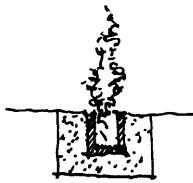
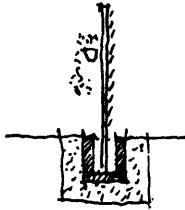


15 Student Housing, Amserdam H. Hertzberger



"The Perforated Block"

in Germany is another vivid example: here the water flows through the streets in small canals, creating a visual and audible component of the urban space and something people can "play" with. In the playground of the Montessori school in Delft, there is a little canal filled with water; in De Drie Hoven and Apeldorn, there are little fountains in the interior streets which are places to stop and rest. In the Diagoon project, Hertzberger designed a canal as the boundary between the private area of a possible front yard and the public area in front of the houses. Another element, the perforated block, is employed in most of his projects and in many different contexts. A line of blocks indicate the boundaries of the gardens and the roof terraces in the Diagoon project. Using the blocks as a "provocation" for action, people can put piles into the wholes and make a fence, or grow plants or a hedge in them, or use the block to build a "perforated wall." in the Montessori kindergarden in Delft they are used to define small alcoves to play in and in a student housing project in Amsterdam, Hertzberger designed a shelf with perforated blocks where students put newspapers and objects into the holes of the blocks.



The strongest tool Hertzberger applies in his designs is provocation. By such means he creates an obvious "problem" and confronts the user with an obvious conflict to be resolved. He thus provides a "collision" with the

expectations and values of the users. In Chapter 5.5, a list of "provocations" will be compiled. In this list conflict is distinguished according to the different levels where conflict may occur, i.e., colliding with three components of the signification structure causing:

- (1) aesthetical conflict - as a violation of "taste,"
- (2) functional conflict - resulting in discomfort,
- (3) organizational conflict - concerning privacy regulations and life patterns.

4.4.5. Common Denominators of Form.

The last important issue of form to be discussed is the idea of arch-forms as the expression of collective memory. As Hall reflects in his definition of patterns, Lynch assumes that every individual "creates and bears his own image, but there seems to be substantial agreement among members of the same group," (1968, Lynch, p. 7). Assuming that this is a valid observation, and instead of looking exclusively at images, we have to look for entire or whole settings of common behavioral patterns. Along with Hertzberger, we might assume an underlying "objective" structure of forms - the derivation of which is what we get to "see" in a given situation (as "objective" structures). These arch-forms, which incorporate essential elements of plurality, can serve as a starting point for the definition of form. We can

interpret arch-forms as the smallest common denominator of use and signification of form. The designer has to extract those images or settings held in common to find the underlying "unchangeable" element. The "carcase" in Delft shows this principle as it starts from a common underlying denominator which consists of the elements and spatial definitions on which all the inhabitants of the settlement may agree on. Given this common agreement on a minimal structure, they can start to elaborate their own interpretations - make the skeleton to their own house. As we actually can see in the built project, the "carcase" is fairly well defined and freedom left is confined to a set of fairly limited repertoire of alternative options.

The common denominator is a "support," presumably defined by agreed upon basic behavioral patterns, which does not necessarily imply total freedom for innovation. In that sense, it represents a special interpretation of Habraken's "support" and "infill" concept. It is difficult to use the SAR method in this case as it is not a linear structure. Instead, the Diagoon and the center space concept are its main features. The method cannot help to characterize the design. This shows the need for understanding the SAR method primarily as an organizational tool and not as a means of creating significance in terms of behavioral options and possible use. In order to become "meaningfull" the design tool has to include both formal and place

specific architectural "provocation" along with specific "clues" in the environment. The user has to be involved not only as a "consumer" of potential variety, but also as an instigator in the resolution of abstract "zones" of freedom. The design must provide him or her with actual physical stimuli to resolve conflict by attaching "meaning" to forms offered by the designer. The user is obliged to confront architectural form in a specific setting not through passive observation but through imagining its potential both as an accommodation for specific use and as a conveyance of meaning.

V. Comparison

5.0 Comparison of the Case Studies

In Section 3 a set of specific similarities has been established between the projects in Delft and Munich. Architects and inhabitants were both anxious to experiment and formed a consensus for questioning prevalent living habits. A strong relationship exists in both examples between the public and private realms, but there is no exchange with the larger general public; neither project provides incentives for communication in the urban structure. Clearly we have to limit the investigation to architectural decisions alone and look at the projects as more or less "closed" systems. The principle variable in both is the diverse interpretation of participation which means design with uncertainties. The case studies represent extreme statements thus opening a wide spectrum of possible modes of different participatory approaches. This, in turn, implies a variety of design tactics. What is required as a follow-up is reflection and translation of such design processes in the general built environment. The principles discussed in Section 4 are here to assist in setting a structure for conceptual comparison.

5.1 The Participatory Process.

The participatory processes differ according to the stages at which people start to participate, and the strategies used. Social interaction began early in Munich and specific means for user education and communication had

to be created. The inhabitants were involved not only in decision-making but also in the building construction and thus they could make adaptation and changes while building. In a way this is like working with a full scale model. Hertzberger provided a different kind of common denominator or skeleton, which had to be subsequently "appropriated" by the inhabitants. Form was used to initiate intervention after the houses were already built. Plans as a set of drawn options were his communication devices. Both architects proceeded from a specifically clear vision of social life linked to interventions in the public realm. The examples seem to bear out the discovery that with succeeding stages, form becomes increasingly an even stronger determining force.

The Participatory Process

Stage	Delft	Munich
DESIGN	+Design of the car-case as a common denominator	+Standard Book +Scrap Book
	+Suggestion of a set of choices	+Collective decision-making
Result	"open" floorplan	Translation into floorplans

CONSTRUCTION		+Self-help
	people start to get involved	+Adaptation, while the house is being built
Result	enclosed but unfinished house	the building
SETTLING	+defining the boundaries	+furnishing
	+defining private space in the inside	
	+adaptation to changing needs	
	+extensions	

5.2 Latency in the Environment

Participation assumes both a social and physical framework able to respond to individual requests. Such an environment is capable of embodying many user interpretations. It contains various, previously unrecognized opportunities and offers new incentives for people to start intervention. As there must be many decisions taken that extend over an individual's or group's boundary, a stage has to be set for creative social interaction, where conflicts can be resolved and balanced. The next chart describes the opportunities within this frame of reference for means of achieving a "resilient" environment, called the potential environment.

The Potential Environment

	DELFT	MUNICH
<hr/>		
1.0	THE BUILDING	
<hr/>		
1.1	Determinism of the invar- iants	+"carcase" concept; the interior organization is fairly determined +center space concept -kitchen, thus living area fixed -bedrooms upstairs +design of the living units is open
<hr/>		
1.2	Construction	-"carcase" as a monolith +moving of partitions in the living units +using sleeping alcoves +later changes possible (skeleton) +standard book as a tool
<hr/>		
1.3	Capacity of the interior	1.2.1 neutrality of use of space: rooms are large enough to contain almost any function (16 sqm) 1.2.2 polyvalent spaces: spaces are designed to serve many purposes +center space -live-in kitchen +family space, 2nd floor
<hr/>		

1.2.3 combination and grouping of spaces:			
		+through center hall; view and sound contact	+use of sliding walls, 2nd floor
			+collective space with rooms around, 2nd floor
<hr/>			
1.4	Extensions or incomplete- ness of the structure as a stimulus	+filling the open corners	+eventually on the north side
		+filling the open ground floor	+the area under the terrace invites use
		+building on the roof	
<hr/>			
2.0 CIRCULATION			
<hr/>			
2.1	Introduction of a "special" element		+greenhouse
	Horizontal Link		+community interior space link of the houses
			+has no clearly prescribed use
<hr/>			
2.2	Vertical Link		+interior stairs
			+exterior stairs
<hr/>			
2.3	Entrances and transitional zones	unfinished entrance zone	+transition 1 exterior stairs
		no inside view into the house (open groundfloor)	+transition 2 stoop, north side
			+transition 3 greenhouse
			(regulators for conflict)

The chart lists many common features needed to ensure a high robustness in the environment. Nevertheless it is now possible to state some of the limitations of the "carcase" concept in Hertzberger's design. Its exterior shape provides open corners and niches which are meant to suggest opportunities for later extensions. Finally, adaptation and change are expected to give the house a more personal touch. (1.4) Another strong distinction between the projects is the special circulation system in Munich (2.1-2.3). One can argue that the high capacity for individual and communal use of the support which is achieved by multiple circulation networks is linked to the concept of community. The closer a community lives together, the more important the means to keep and regulate privacy becomes, e.g., by allowing less controlled movements by each individual member of the group.

5.3. Translation of the Concept of Community

After examining the general capacity for individual or communal use of environments, it is interesting to make a more detailed comparison of the projects in terms of community relations and their translation into design. Two general boundaries have emerged as important, the individual/family and the family/collective. Each of these boundaries requires a different set of privacy regulations.

Concept of Community

DELFT

MUNICH

Settlement Level

1. Ownership	-no collective ownership ownership -clearly defined bound- aries of private owner- ship	+the site is collectively owned and used
2.1 Group Image	+grouping of one-family houses +forming an L-shape, cul- de-sac +some opportunity for individual expression, minimum facades	+strong overall shape; greenhouse is a dominant element; symbol of the community +skeleton, grid outer ap- pearance reflects the participatory process (individual facades are integrated in the frame)
	2.2.1 shared facilities	+greenhouse = living room of the community +workshop +storage +guestroom
	2.2.2 use of exterior space	+garden is collectively used
	+Definition of the bound- aries by the occupants influences mutual use	

2.3	Group Space/ Public Space	+"ugliness" of the space in front of the houses provokes change	+greenhouse is a use link for multiple activities +family activity room +niches accommodate person- al furnishings
3.1	Relations Public/ Private	-no direct relation be- tween family center and public space -center of the house is turned away from the street	+family activity center is tied to the greenhouse
3.2	Relations Between Neighbors	+design of public realm requires social inter- action +garden and balcony di- vision require mutual decisions	+greenhouse activities +courtyards are shared +no division of the ter- races
The House			
4.1	General Floorplan Organization	+center-space concept	+live-in kitchen concept
4.2	Use of the Center	living and dining <u>hall</u> room (use of bedrooms "radi- ates" into the hall)	work and living- <u>room</u> (bedrooms are separated)

Studying these examples we discovered a stronger concept of community built into the design in Munich. There, the greenhouse represents community. Symbiosis between public and private space is stressed: the greenhouse is closely tied to the activity center of each family. Even the outdoor space need not be divided or allocated to a particular family. The design thus reflects an implicit trust and commitment to a collective lifestyle.

Hertzberger's design represents a more "reserved" position. There are no shared spaces and every unit has its own clearly defined territory. He planned for both contained and separated use areas, as he was not able to predict a close preference for collective life. In order not to surrender and design for total isolation, he tries to induce social interaction by using a detour via built form: he designs for conflict at the exterior boundaries of the houses.

The decision on communal use and cultivation of the exterior spaces is left to be resolved by the occupants. They have the possibility of claiming as much territory for private use as they need or agree among themselves. In providing people the ownership of a large territory in the public realm, Hertzberger ensures the proper care of the entire area in front of their houses through a sense of individual responsibility.

5.4 Means for Privacy - Regulation

Both solutions for the interior organization of the plans differ from standard corridor-floorplans, which represent a "safe" solution. The latter do not require any design incentive for mutual interaction. Secondly, rejecting the concept of the living room as a "representative" front parlor (gute Stube) further differentiates the case studies from conventional floorplan designs. In conventional stereotype designs the living room is considered the space where guests are received or "quiet," passive family functions occur. It is, therefore, well furnished and always "kept in order." The inhabitants in Munich instead decided on the live-in kitchen concept which defines a work, play, and living room (as the most important space) that represents the real center of family-activities. The center hall in Delft connects all the rooms of the house. Thus it can be considered an activity center and the use and furnishing of the balconies will radiate into the hall.

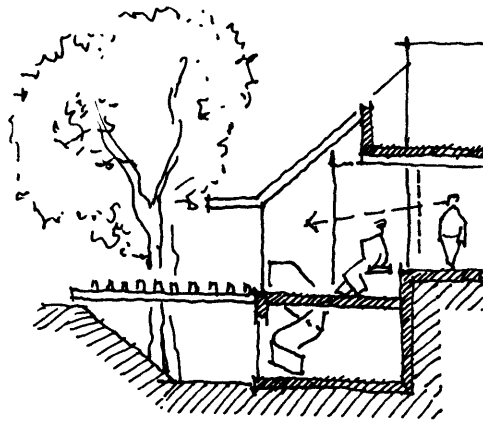
Different organizational concepts and increased emphasis on group activities require innovative solutions to regulate privacy. Privacy has to be carefully defined in order to make more active social life possible; contact must be unconstrained (protected communication), and free movement, uncontrolled by neighbors should be guaranteed by the layout. In these

environments people will learn how to deal with conflict.

The next chart will compare the design of territorial sequences and the permeability between various individual/family and family/neighborhood boundaries.

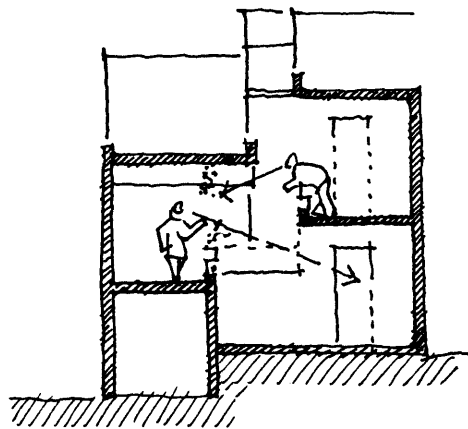
	DELFT	MUNICH
1.1 Concept of Use of the Family-Activity Center/Spatial Concept	dining, living hall, connects all living areas	cooking, working, playing, dining, living room, separated from private rooms upstairs
1.2 Hierarchy of Territories and Transitional Zones Between Territories	individual room balcony hall stairs/porch front area street	group of private rooms stairs family space stoop greenhouse
2 Transitional Zones		
2.1 Vertical	+semi story difference; view and sound contact through the hall +half floor difference between street and living room	+multi level dwelling; no vertical spatial overlap; upstairs more private areas +exterior stairs to the 2nd floor

3.2 Horizontal	+porch in the street +balcony	+stoop on the north side +stoop between greenhouse and family space
3.3.1 Transmitting Elements, Dynamic Privacy, Regulation, Group/Family		
	-no view inside from the street into the house (if there is no room on the ground floor)	+sliding windows +curtains or shutters for the windows +shelf in front of the window to put plants, personal items -difference in height
3.3.2 Privacy Regulation Family/Individual		
	+balcony sill open or closed with windows +curtains, plants personal items which close off the balcony	-stairs to 2nd floor
4 Open Boundaries	+garden terrace +public space in front of the house +roof top terrace (requires intervention)	+greenhouse +terrace no clearly defined boundaries shared use (niches or other indications)



Greenhouse, Munich

As stated before, positive reinforcement of community varies between Munich and Delft, and this is reflected in boundary design. In Hertzberger's case the public is assumed more anonymous. There is a strong separation between street and interior living area with no visual connection from the outside into the house. Only the porch or open space on the ground floor which can be fenced off later, serve as elements "radiating" into the street. The greenhouse represents a more intimate group space. Symbiosis between family and group space has been achieved here; the group space is activated by what is going on in the adjacent family spaces. The boundary is fairly open; it has large sliding windows which can also be closed off if desired.



Center space, Delft

The interior spatial organization in Delft calls for other innovative solutions to define privacy. While the stairs serve as a buffer between family and private area in Munich, in Hertzberger's case, symbiosis is achieved by using the center hall as a spatial link between private areas. Hertzberger emphasizes this interdependence by applying the alcove concept where private functions are extended into more public space. Occupants' activity on the balconies immediately "radiate" into the hall. The balcony becomes a "porch." The design solutions for the balcony sills can be compared to the boundary between family space and greenhouse in Munich; it

allows for dynamic privacy regulation.

5.5 The Role of Form

Form differences are strongest between the two examples. Form reflects the participatory process (Munich) or may be used to stimulate and support intervention (Delft). Provocation through form appears only in Hertzberger's project - as one could expect.

	DELFT	MUNICH
1 The Frame	+one family houses are joined to L-shape; the design emphasises individual units	+individual houses under one roof; strong and simple group form +south side; the greenhouse dominates
2.1 Facades	-the facade (elements can be shaped partly by the occupants	+north side individual facade design +the grid structure ties the parts together +the grid is a permanent invitation to change
2.2 Materials	-no choice	+three materials can be combined

3	Stimulation	+the "carcase" design stimulates change and extension +open corners +open ground floor +bars on the roof terrace +perforated block	+niches in the greenhouse +outside terrace is carved
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The preceding list of "provocative measures" in Hertzberger's design completes the chart. He induces functional, aesthetic, and organizational conflicts in varying combinations to stimulate intervention. In creating obvious problems at boundaries, he tries to elicit social interaction and provides "clues" in the environment to support user intervention by creating:

Functional problems

- there are no stairs to connect the heightened terrace with the garden level
- a wall directly in front of the entrance does not permit direct entry, so people must always enter through a niche (to be designed as a porch)

Aesthetical conflicts

- in the view of the architect the buildings are considered as incomplete in terms of the "colorless, grey and unfinished appearance of the materials used," (1977, Hertzberger, p. 138)
- the bare concrete is expected to provoke decoration by the inhabitants
- the wall in front of the entrance is so "ugly" that people are obliged to do something with it. They are walls on which "everybody can write down, in his own way, whatever he wants to communicate to others," (1977, Hertzberger, p. 138). In contrast, R. Meier in a personal communication: "Graffiti destroy architecture")
- the open groundfloor, a dark hole in the street, calls for spatial definition or furnishing, e.g., a stoop or a porch
- the boundary between the roof terrace, indicated by a row of perforated blocks, has to be defined
- the protection of the terrace on the groundfloor is clearly a provisional arrangement and thus requires resolution

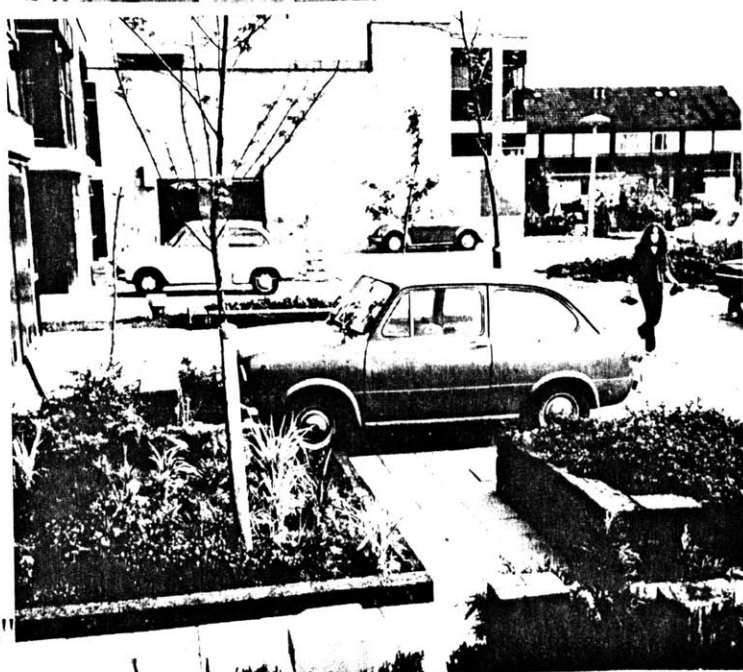
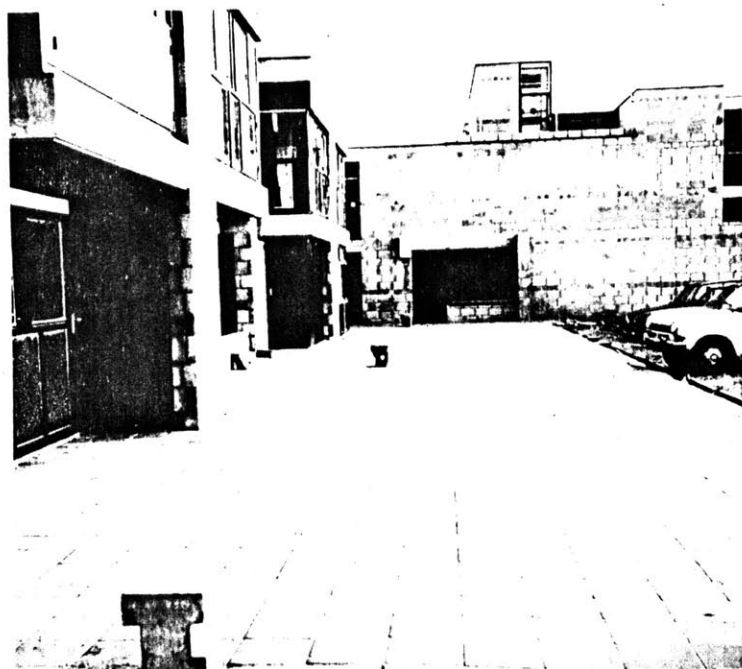
by agreeing on a more specific course of action

- in the interior of the house, occupants have to define for themselves the permeability of the balconies, according to their own privacy needs.

Further, combinations of conflicts correlate interaction, e.g., the intervention in the public area in front of the Diagoon Houses:

- the public area was initially completely covered with concrete piles. The design looks too empty and boring that people have to intervene.
- light fixtures and furnishings are missing. A neighborhood committee must decide what to do.
- the provocation is supported by the organizational device of providing a large area in the public realm that legally belongs to the occupants. The lots are very long and narrow, and the private territory in the public is defined by a canal. Thus the space is clearly "offered" to the occupants who are expected to take care of it.

In Munich, form reflects the design process and the control of the inhabitants on their living environment. Unlike Hertzberger's approach, there is no need for design "initiators." Hertzberger uses form to manipulate people's



18 Diagoon Houses
"The Metamorphosis
of the Public Space"

action, and as evidenced by the metamorphosis of the public space in Delft, his approach was successful.



VI. Conclusion

6. Conclusion

The case studies represent a different approach to the perception of environments and the act of "dwelling." Inhabitants are involved not as passive consumers of "set facts" or of "potential variety," but as instigators in the design of their own living environment:

- people can design their private surroundings according to their life pattern
- They can intervene physically and sensorially
- Through conflict built into the design of boundaries and public space, people will have to resolve problems by "crossing their territories," and therefore, enhance social interaction.

In this kind of approach, people gain control and are induced by their virtual environment into mastering new tasks. Such an environment contains the "clues" and opportunities for appropriating the "support." Nevertheless, since social life cannot be predicted, nor can user involvement be guaranteed, the design should be initially rich enough to function without modification. Thus, the "active environments" will be more complex than "mute environments," the latter being specialized, generally in terms of use, and specifically mainly stressing separation and passiveness of inhabitants.

The analysis of "mute" environments shows a clear lack of conscious design for creative conflict, in the sense that:

- There is no evidence of creative intervention by the inhabitants after the act of occupation
- The stereotype corridor floor plan favors the isolation of dwellers by rigid compartmentation
- The general organization of conventional housing schemes is more a means of separating inhabitants, rather than of integrating them in a social structure
- Public space is "reduced" to mere circulation purposes, and it fails to function as a social catalyst.

Here, conflict acts as a destructive force (vandalism, crimes, desertion, alienation, etc.). This is to a large degree due to designers' failure to perceive architecture as a setting for "social living," all other factors being equal. In order to achieve the "vital life-of-the-street," designers have to focus on a sympatric relationship in environments, and the role of "permeable" boundaries in establishing and maintaining such relationships.

In order to design such active environments and create settings for sympatric relations, the designer not only needs a formal or spatial

imagination, but a clear vision of social life for his project. This vision of social life will determine the design of public space, the boundaries between the public and private realms, and participatory process. The designer has to suggest a general concept of community as an idea of possible relationships between inhabitants and social interaction. In addition, the designer has to invent tactics to enforce social life in the public realm. Apart from the flow of passers-by, which by itself constitutes a potential for contact, there are three issues, directly tied to design, which support and enhance social exchange:

- What is the possible attitude of future inhabitants toward their community, and what can they agree upon? (prerequisites for communication; design of "common denominators" of form)
- Which functions can be added or used to enforce an active social life in a project? (need for functional mix)
- Exterior factors impact: In other words, how does the urban context affect social life in a neighborhood? (Principle of creative conflict on the urban design level)

Such an investigation should lead to the design of a "sociable space;" i.e., an intricate system of boundaries, transitional zones, group spaces, linked

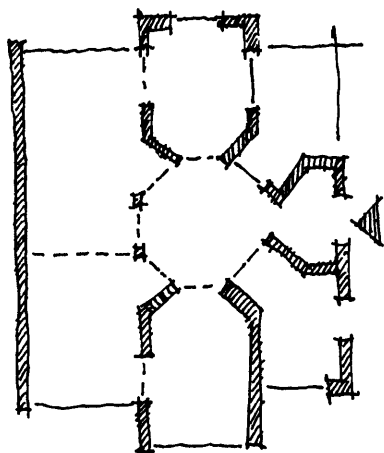
by circulation.

There are two main tools the designer could use in order to translate his vision of the social matrix into form:

- Designing environments with a high potential for interpretation by users
- Drawing out of a "musee imaginaire" the elements for adaptation and change

The environment is defined as a framework for people's intervention, through the "clues" it contains. These clues are the elements for adaptation and change, and are extracted from the social and physical contexts, in which they have proved their appropriateness. The support is not neutral, i.e., providing "zones of freedom," but a form conveying meaning and significance. The user may ignore the opportunity of involvement, or may act as an instigator, using his creativity in order to adapt his environment to his needs.

The analysis of the case-studies demonstrated in more detail, the consequences of such an approach to the design process. Floorplan arrangements were contrasted with traditional corridor floorplans, which favor separation. This enhances the concept of community, as the inhabitants are able to extend private functions into more public spaces. The appropriate definition



of privacy is achieved by means of designing boundaries that act not as barriers, but as penetrable membranes which allow for an alternating permeability. Inhabitants are able to furnish the transitional zones, and by doing so, influence the "radiation" into other territories; through maintaining the ultimate option of "shutting themselves off." This can be clearly seen in the balconies in the Diagoon houses, or in the boundaries between the green-house and the live-in kitchen, in Munich: Privacy is attainable and the symbiosis between territories is achieved. Social contact, in these projects, is not only advocated in the interior organization, but also between public and private realms.

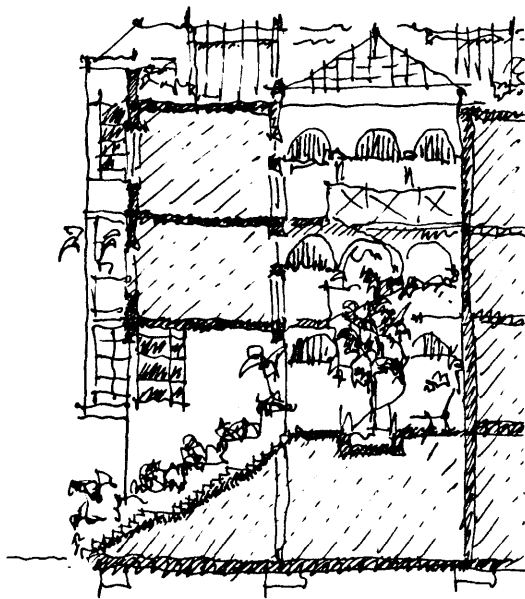
The Public space is intended to act as a social-catalyst. In both case studies the shared or public spaces are the result of collective action. In the design process agreement among the members of the community had to be achieved. The public space became the stage to solve conflict. The vital social-life-of-the-street is maintained by the exchange between public and private realms, supported by an appropriate design of the physical surroundings. Some important design principles are listed as follows:

- Grouping of dwellings has to be understood as a means to define an identifiable space and image of a community. Group spaces are places

for more intimate contact which allows more open boundaries (Greenhouse, Munich)

- shared facilities or spaces may generate contact and unconstrained communication,
- multiple circulation networks will permit uncontrolled motion and help to increase the capacity for use even of dense fabrics.
- the design for a symbiosis of public and private realms is a tool to bring life to the streets and to enrich the fabric of the social condition of the inhabitants. There are three supporting principles: (1) adding functions like shops, work-shops, offices..., (2) directing activity spaces in the dwelling toward circulation, and (3) make boundaries penetrable and design them for a dynamic regulation of privacy. (Chapter 5.2.4)

The court (circulation and group-space)



- there has to be a clear, perceptible relationship between dwelling and the street. Every dwelling should have an entrance door in the street (Dutch housing projects)
- circulation and public space have to be designed as spaces to "live in." This includes stimulation for social interaction (a bench next to the entrance door) and "niches" for possible "intervention"

by the inhabitants (a porch, open ground floor). Contact to the exterior (sunlight, view, sounds, greenery) is a very important quality in the design. Exterior circulation is a means to mediate the feeling of a street.

The design provides only a setting for the behavior and activities of people. Public space will only be vivified if inhabitants are willing to commit themselves and pay attention to their surroundings. The case studies show how social interaction and physical intervention in the design is initiated.

Both examples represent two very different approaches to participation, which contradict or modify the conventional building process. Usually the designer is confronted with anonymous, unknown inhabitants, as e.g., in public housing, or else he may work together with a loosely connected group of house owners, as it is the case in the Diagoon project. As a strategy, Hertzberger designs a framework which can be interpreted and appropriated by inhabitants themselves, giving a helping hand for intervention and preventing chaos. Form is used as a mediator, a means to communicate and to manipulate. This strategy is very pragmatic: The role of the architect and of the dweller in the design process are not changed, only modified. In

Hertzberger's approach, there is a clearly defined design domain of the architect that corresponds to the building process: occupants start to get involved only after the house is already habitable. This strategy works perfectly well under the existing market mechanisms and does not include as many utopian assumptions as does Thut's approach. A general translation of Thut's ideas would require a radical change in planning and administrative policies, and of people's attitude toward "dwelling" (Weiter wohnen, wie gewohnt?). It is important to conduct some experiments, in order to test alternative strategies, other than the conventional approach, and to demonstrate that such alternatives are possible, successful and affordable.

This thesis is an attempt to motivate designers, politicians, dwellers, and others to evaluate their attitude toward living environments and to stimulate new ways of thinking in the design of housing. It is imperative that designers meet the challenge of human unpredictability by seeking innovative solutions, based on the design for creative conflict.

Translations:

1965, Mitscherlich, p. 127

"Any section cut through a time period reveals the multi-dimensionality (of time) rather than the one-dimensionality of time. The rockets which are built today are predecessors of a historic tomorrow; the cars and razors, and the supermarkets are present-day features; the dictatorship on the realty market by virtue of personal property corresponds truly to the past times, it represents the delightful dream of a capitalistic nature coming out of an undisturbed 19th C. What is built and rented out today (the prices asked and the missing loveliness of the housing offered) reflects by means of a grotesque tragedy the distortion of the supply and demand market."

Hugo Haering:

"Form is a consecutive function of function and our aesthetic ability is nothing but the unconscious confirmation of the matter of fact, that the thing itself, which we see before us is adapted visually to its purpose."

Translated by August Sarnitz, M.I.T., 1982.

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