Participatory Design in Focus

Henry Sanoff
North Carolina State University
School of Design
Box 7701
Raleigh, North Carolina 27695-7701
U.S.A.

Summary

Citizen participation is a complex concept. Planning for effective participation requires an analysis of the issue that is to be discussed, the individuals or groups that are to be affected, the resources that will be needed and the goals for which the participation is being initiated. While it is necessary to identify goals and objectives in planning for participation, it is also necessary to analyze the techniques that are available and the resources they require. Techniques such as surveys, review boards, neighbourhood meetings, conferences, task forces, workshops and interviews, represent a few of the options available to participatory planners. Once the goals and objectives of community participation are stated, it may be clear that participation is perceived differently depending upon the type of issue and people involved.

With the introduction of the users in the decision-making, the planners and designers have to add new capacities to their conventional approach. It does not mean that their creativity has been obliterated. When people participate in the creation of their environment, they need the feeling of control; it is the only way that their needs and values can be taken into consideration.

Résumé

La participation des citoyens est un concept difficile à définir. Si l'on veut que la participation soit efficace, il faut que sa planification comporte une analyse de la question à traiter, des individus ou des groupes d'individus qui seront concernés, des ressources dont on aura besoin et des buts vers lesquels tend la participation. Alors qu'il est nécessaire d'identifier les buts et les objectifs lorsque l'on projette une participation des usagers, il est également nécessaire d'analyser les techniques qui sont disponibles et les ressources qu'elles réclament. Des techniques telles que des enquêtes, des "panels", des réunions entre voisins, des conférences, des ateliers et des entrevues représentent quelques-unes des options à la disposition des planificateurs pour une participation des usagers.

Avec l'introduction des usagers dans la prise de décisions, les planificateurs et les architectes doivent rendre leur approche conventionnelle plus efficace. Cela ne signifie pas que leur créativité est annihilée. Cependant, lorsque les gens participent à la création de leur environnement, ils ont besoin d'un sentiment de contrôle. Leurs besoins et leurs valeurs ne peuvent pas être pris en considération d'une autre manière.

1. Advocacy: A Form of Participatory Planning

During the last two decades, there has been a considerable movement towards the direct involvement of the public in the definition of their physical environment. The increased sense of social responsibility took root in the mid-1960's, when a feeling of community consciousness started prevailing in many low income urban neighbourhoods. One result was the establishment of Community Design Centres (CDC's) whose purpose was to offer design and planning services to enable the poor to define and implement their own planning goals. The premise guiding the operation of the CDC's was that communities should have the right to participate in the planning of their own future. In an effort to help people define and present their planning goals, CDC's became advocacy groups providing technical, management, and design assistance.

Advocacy planning introduces the participation of non-professionals and non-designers in the process of decision making. This means that the citizens ought to be heard, to be well informed about the reasons behind the planning proposals and be able to respond to them in the technical language of professional planners/designers.

The advocate represents an individual, group or organization who assists the client(s) in clarifying and expressing their ideas. The advocate is responsible to the client, so he/she would seek to express the client's views and interests. "... citizen participation is a categorical term for city power. It is the redistribution of power that enables the have-not citizens, presently excluded from the political and economic processes, to be deliberately included in the future". "... participation without redistribution of power is an empty and frustrating process for the powerless. It allows the power holders to claim that all sides were considered but makes it possible for only some of these to benefit. It maintains the status quo" (Arnstein, 1969).

2. Sharing Decisions

Thus participation might be seen as direct public involvement in decision making processes: citizens share in social decisions that determine the quality and direction of their lives. This requires provision of effective communication media in order to provide suitable grounds for citizen participation in designing. My experiences in user participation in design show that the main source of user satisfaction is not so much the degree to which his or her needs have been met, but the feeling of having influenced the decision. However, there are many benefits accruing from such an approach for the community, the users and the designers (Wrona, 1981).

Firstly, from the social point of view participation results in a greater meeting of social needs and increasingly effective utilization of resources at the disposal of a particular community (Cashden *et al.*, 1978).

Secondly, to the user group, it represents an increased sense of having influenced the design decision making process and an increased awareness of the consequences of decisions made.

Thirdly, to the designer, it represents more relevant and up-to-date information than was possible before. Creating a methodological framework can enable the effective use of rational design methods without affecting the creative process (Wrona, 1981).

The potential benefits offered by an organized approach to design participation constitutes logical, emotional, technological and economic tenets for its use.

A collective review of the theories and practices of participation can be summarized as follows:

The designer's job is no longer to produce finished and unalterable solutions but to extract solutions from a continuous confrontation with those who will use his/her work. The designer's energy and imagination will be completely directed to raising the level of awareness of his/her partners (clients/users) in the discussion, and the solution will come out of the exchanges between the two; the designer states his/her opinions, provides technical information, and discusses consequences of various alternatives, just as the users state their opinions and contribute their expertise.

Since participation has a diversity of expression, a design and planning solution from this approach will need to be made "transparent" so that the decisions are understood by the people who made them. By convening public forums that encourage community participation, people can openly express their opinions, make necessary compromises, and arrive at decisions that are acceptable. By involving as many interests as possible, not only is the product strengthened by the wealth of input, but the user group is strengthened as well by learning more about itself.

3. Participatory Planning in Gibson

Burns (1979) classifies participation in four categories or "experiences" that can lead to ultimate agreement about what the future should bring:

Awareness: This experience involves discovering or rediscovering the realities of a given environment or situation, so that everyone in the "Take Part" process is talking the same language based on their experiences in the field where change is proposed.

Perception: This entails going from awareness of the situation to understanding it, and its physical, social, cultural and economic ramifications. It means sharing with each other so that the understanding, objectives and expectations of all participants become resources for planning and not hidden agendas that could disrupt the project later on.

Decision-Making: This phase concentrates on working from awareness and perception to a program for the situation under consideration. In it, participants make actual physical designs based on their priorities for professionals to use as resource to synthesize alternative and final plans.

Implementation: Many community-based planning processes stop with awareness, perception and decision-making, often with fatal results to a project because it ends people's responsibilities just when they could be of most value: when the how-to, where-to, when-to and who-will-do-it must be added to what people want and how it will look. People must stay involved, throughout the process, and take responsibility with their professionals to see that there are results (Hurwitz, 1975).

To illustrate the connections between awareness, perception, decision-making and implementation, my experiences in the town of Gibson will be discussed. This cotton farming town was begun in the first half of the 19th century when a stagecoach rest stop was established at Noah Gibson's General Store. Further commercial expansion occurred when the railroad was built. Gibson's development peaked in the 1940's, but rapidly declined after World War II, when technological advances in machinery, power

and chemicals were made available to farmers. Since the 1940's a net out-migration has occurred in Gibson, leveling off in the 1970's to its present population of 502 people. The existing business sector of the county can be characterized as a growing, undiversified industrial business sector, supported by a small service sector and a population of low density and low purchasing power who are willing to commute long distances for low to moderate paying jobs. Gibson's business sector can be characterized as untapped and undeveloped in employment and purchasing power potential. In assessing Gibson's potential for growth in the residential and business sector, local businessmen and town officials sought assistance in community organization. In less than one year a non-profit community development organization was formed in order to distribute and allocate funds received from private grants and public monies. Local cultural characteristics and economics play an important role in the future of Gibson's business sector since citizens are accustomed to shopping 20 miles away. The primary users of Gibson's downtown are the elderly and blacks who do not have the inclination or transportation to take a 20 mile round trip.

While the citizens and the newly formed community development corporation were interested in expanding their services, they still wanted to retain their small town character. As a result, they requested my design and planning assistance for a revitalization strategy to give life back to the declining town.

Like every town, Gibson has its own special personality. The unique combination of elements such as the size of the town, the people who live there and the buildings, all contribute to the town's identity.

Quite often the character of a town is taken for granted or unnoticed until successive changes call attention to its new face. Gibson is unique in that it has not gone through the building alterations so common in neighbouring communities. As the process of deciding upon Gibson's future began, it seemed quite desirable to have the residents renew their acquaintance with the town. Quite often when we live in a town for a long time we forget to look at our surroundings. In order to begin a dialogue about the problems and resources of the downtown, a Gibson town walk was proposed. Specific paths were designated for townspeople to walk to and record their observations and impressions. Maps were distributed at the local shops depicting nodal points in the town where residents were asked to make a special note of the occurrences they observed.

Children, too, were involved in describing their feelings about Gibson by drawing pictures of important features of the town. All school teachers were asked to conduct these exercises in the class room where children sketched their favourite places as well as proposed aspects of the town.

Children's drawings covered the walls of the community meeting room which was the location of the first town workshops. An open invitation was extended to residents of the community to attend the planning workshop since any town revitalization effort in the United States requires community support. Gibsonians would not only have to invest in the growth of the town, but there would be changes in the way the downtown would function. Ten vacant buildings in the downtown area represented thirty percent of the usable building inventory. Since many of the owners of the vacant properties did not reside in Gibson, it was not only important to find appropriate uses for these vacant buildings, but exert pressure on the absentee owners to sell their properties. For this reason, it was considered that finding a use for the

vacant buildings was an important objective that would require community input, particularly if the residents were to have a stake in reviving the downtown area.

A workshop strategy was developed to provide community participants with the opportunity to engage in a process of choosing appropriate uses for vacant buildings. It was also recognized that each participant should have an equal voice in decision making in an atmosphere of open communication. To achieve this goal we developed a base map of the town and a set of activity charts that defined a variety of public and private uses for the vacant buildings. Also included in the workshop package was a set of building survey sheets that described the size and condition of each building accompanied by a graphic symbol (Figure 1) of each use for locating a particular activity on the base map. Each participant received a set of these materials for use during the workshop which was designed for a period of three hours.

Twenty Gibsonians voluntarily participated in the Downtown Workshop held at the old railroad depot. Although this may appear to be a small group, it generated a variety of viewpoints. Three work groups were randomly identified with one designer acting as a facilitator for each team. Small groups were used to assure that everyone would have an opportunity to contribute their ideas in the planning process. In order to create an informal atmosphere between all the participants, a getting acquainted exercise was conducted where people asked questions of one another and then introduced that person to the group. This approach attempted to promote feedback and self-disclosure regarding initial perceptions even between participants already familiar to each other.

Fig. 1 The workshop package included a set of building survey sheets that described the size and condition of each building accompanied by a graphic symbol of each use for locating a particular activity on the base map. Each participant received a set of these materials for use during the workshop.

Le matériel utilisé dans l'atelier incluait un jeu de feuilles qui décrivaient la taille et l'état de chaque bâtiment. Ces feuilles étaient accompagnées du symbole graphique de l'affectation des bâtiments pour pouvoir les situer sur le plan. Chaque participant recevait ce matériel et l'utilisait durant l'atelier de participation.

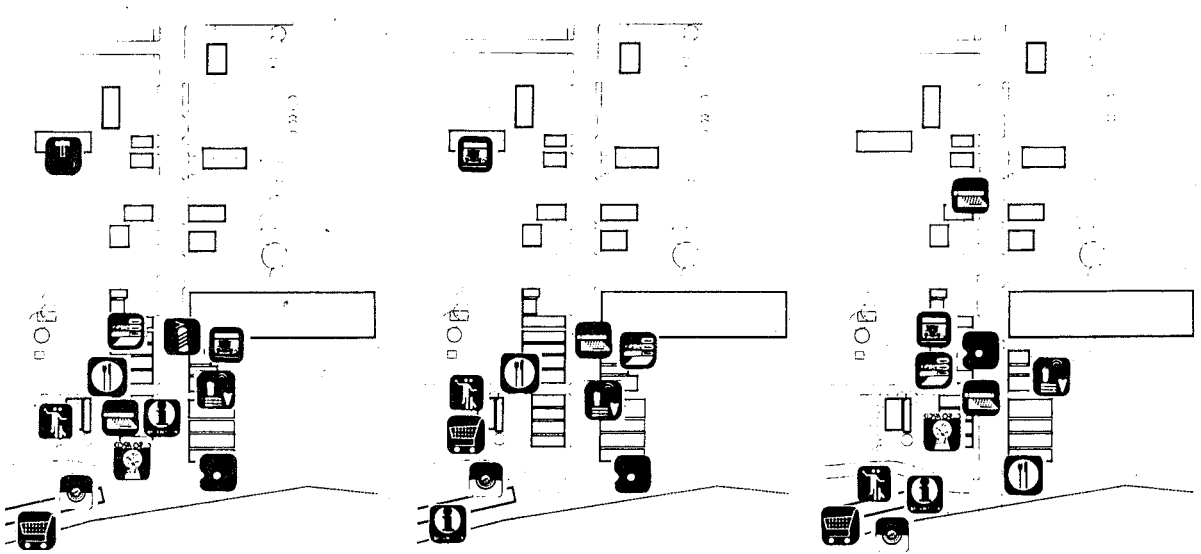


Fig. 2 The initial step in the group process required each member to develop a downtown plan by placing their individual activity choices on a score sheet corresponding to the base map. The illustration shows alternative proposals for activity infill for the town of Gibson.

La phase initiale du travail de groupe demandait à chaque membre de définir un plan de quartier en plaçant son choix d'activités sur le plan de base. L'illustration montre quelques propositions pour la ville de Gibson.

The initial step in the group process required each member to develop a downtown plan by placing their individual activity choices on a score sheet corresponding to the base map (Figure 2). Next, each score sheet representing individual choices was reviewed by the group. We requested that each group arrive at a consensus plan and avoid reaching a solution by voting. Consensus decision making encourages all viewpoints to be expressed and the opportunity for people to learn from each other. Voting usually inhibits the free flow of ideas and often results in alienation of community members. The consensus approach constructively involved the participants in a 'collaborative' planning process where positions were won or lost by the pervasiveness of the argument. People whose positions were not popular still believed that the process was fair, since all viewpoints were heard by the team members.

When each work group arrived at an acceptable plan, all participants met for a review of the three proposals for the use of vacant properties in downtown Gibson. Each plan was presented by a community member and discussed in terms of their major disagreements in order to understand the prevailing viewpoints. The two controversial issues centred around the best location for the restaurant and the disposition of an old barn situated in the downtown area. Two groups proposed that the vacant fire station was the best location for the restaurant because it afforded ample parking space and provided the possibility for outdoor eating. Their position was not easily contestable and after considerable site analysis by the planning team, the decision was made to locate the restaurant in the fire station which was owned by the town and donated to the local community development corporation. With the aid of a private grant, a member of the community agreed to assume responsibility for managing the restaurant which is presently in operation.

Another important decision made at the group meeting was the need of a Community Centre. All groups identified the vacant railroad station as the most suitable location, particularly since the life of the town centred around the depot. Now, the railroad makes occasional freight stops, but most trains only pass through Gibson without stopping. The re-use of the railroad depot, which was donated by the Railroad Company to the town, was designated as the first priority for implementation at the community workshop. The planning team discussed the various uses for this facility which would include dancing, musical performances, a library, and meeting hall. The depot has already been renovated and refurnished with the help of grants, donated materials and volunteer labour from local citizens.

Other activities that were generated from the workshop were workdays. Clean up days were held on a regular basis to maintain neighbourhood yards and public places. Downtown clean-up consisted of trash removal and clearing of vacant lots and developed into the construction of a new downtown park. This workshop was one of the numerous events held in Gibson. My experience indicates that not all people wish to have time to be involved in community workshops. Small towns engage their residents in a number of social and service organizations where conflicts between meetings are frequent, therefore, scheduling community meetings is an arduous task. Nevertheless, it was evident that overall community involvement, particularly in the construction projects, was especially high from all segments of the population. Much of this was attributed to the continuous communication by the local newspaper inviting the residents' participation in ways convenient with their interests and capabilities.

In a period of one year, Gibson's potential for development was realized through a community development process which began by a rediscovery of the town's worth and

moved systematically towards the implementation of numerous community projects. Although there had been numerous attempts to upgrade the town through various master plans, the direct involvement of the community was instrumental in creating physical changes to a town that had been dormant for the past 40 years.

4. Housing Infill

The previous experiences described techniques used in a downtown revitalization project, though there are other useful tools that might be used within the context of community workshops. Often residential areas too, suffer from dilapidated buildings, vacant areas and the need of expanded or rehabilitated development. On numerous occasions I have encountered problems of 'infill' in residential areas, resulting from the demolition of unsafe buildings. These are typical problems confronting community groups where the determination of the most appropriate use for the vacant properties is often a public hearing. These are usually heated discussions where land owners, public officials and professionals try to communicate their ideas using a wide variety of economic, social and aesthetic arguments. My experience has indicated that there needs to be a discussion of the consequences of various types of infill strategies prior to examining a specific situation. There are numerous social and economic concepts that need to be understood by citizens, public officials, planners, and designers in order to assure that the infill solution is appropriate for the residential setting.

The Best Fit Slide Rule (Figure 3) is a discussion tool designed to examine infill solutions and their consequences (Sanoff, 1978). It is most effectively used in small groups where participants make individual choices, defend their decisions, yet reach a consensus for the most appropriate fit. Small groups permit all participants to contribute to the discussion and learn about each others viewpoints. The process requires each group member to select one of the thirteen options for the infill of a residential street. The choices include high rise buildings, commercial buildings of historic character and modern buildings reflecting different aesthetic ideologies. Participants then try to hold their positions, debate them, but the final goal of the exercise is a solution that is acceptable to the group. Participants in these design groups learn about each others' value differences and use the game props to clarify and reconcile them. An exercise such as Best Fit Slide Rule can generate discussion about what is valued in a particular design situation. Since the participants respond to a design situation with different values and beliefs, the design exercise offers the opportunity for participants to share those differences. It is the first step in the process of consensus decision-making. Developing an awareness of the complex issues pertaining to infill can enable community members to focus on reasonable options as they proceed to discuss their own particular situation. Typically, the issues participants discuss are related to the impact of changing uses depicted by office buildings, commercial shops and corresponding parking requirements. Similarly, concerns about residential stability are as integral to the discussions as architectural style. The exercise enables participants to explore the social, economic, and visual implications of a residential street prior to the group embarking on their particular problem. I have found this preliminary step useful since residential infill issues are often confounded with site and economic constraints that often foreclose opportunities for other issues from entering into the discussion. This technique, using a hypothetical street facade, can sensitize participants to each others viewpoints, to learn from each other, and to explore a diverse range of alternatives.

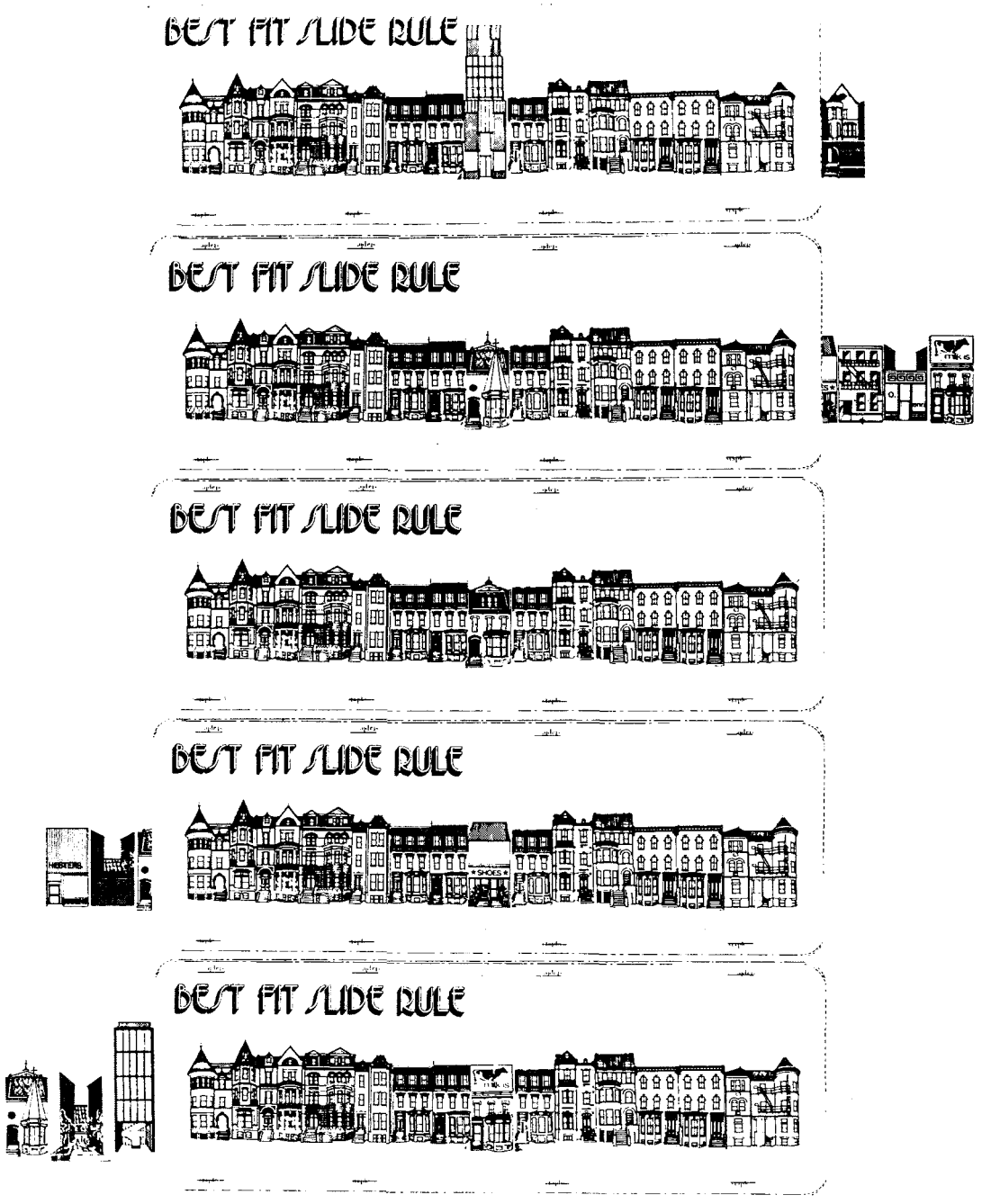


Fig. 3 The Best Fit Slide Rule is a discussion tool designed to examine alternative infill solutions and their consequences.

La 'règle pour le meilleur remplissage' est un outil de discussion qui permet d'examiner différentes propositions de façades et leur insertion dans le contexte urbain.

part 2 **workshop**

HOUSE ACTIVITIES

RULES

Each player makes an alternate choice from the activities shown in the pictures below. The point value of each arrangement is displayed in the lower left hand corner of each picture. The total of the choices cannot exceed 45 POINTS.
If the total exceeds 45 points, the player must make alternative choices until the total point value of the choices is less than or equal to 45 points.

RESULTS

1a) LIVING-DINING & KITCHEN ☐
1b) LIVING & DINING-KITCHEN ☐
1c) LIVING & DINING & KITCHEN ☐
2a) LARGE CHILDRENS BEDROOM WITH PLAYAREA ☐
2b) LARGE CHILDRENS BEDROOM ☐
2c) SMALL CHILDRENS BEDROOM ☐
3a) LARGE PARENTS BEDROOM ☐
3b) SMALL PARENTS BEDROOM ☐
4a) BATHROOM ☐
4b) HALFBATHROOM ☐
5) STORAGE ROOM ☐
6) GREENHOUSE ☐

TOTAL ☐

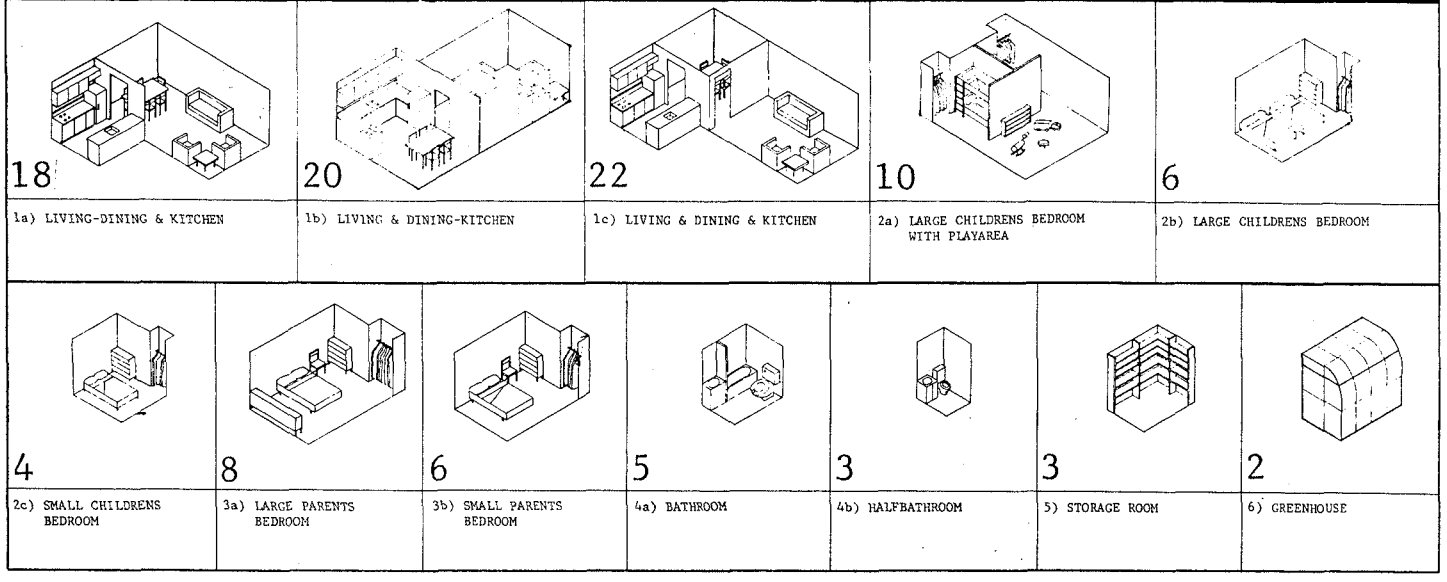


Fig. 4 In the Durham Owner-Built Housing Process workshops were organized where decisions about the house were discussed in terms of 'trade-offs': for instance, competitive alternatives about house activities, were compared.

Dans l'atelier de participation organisé pour le programme d'auto-construction à Durham, les décisions ont été prise à la suite de 'marchandages': par exemple, plusieurs alternatives d'activités domestiques furent comparées pour en désigner les prioritaires.

6. Housing Trade-off's

Another important concept that is integral to the participatory process is that of 'trade-off', where competitive alternatives can be compared particularly where each contain different types of amenities. Community groups are often confronted with choices that must be 'weighed' for their appropriateness, since there are often constraints that limit the range of choices. People involved in making trade-off's typically evaluate the costs and benefits of available options. This is illustrated in the Durham Owner-Built Housing Process where ten families who agreed to utilize personal labour as a form of equity in reducing dwelling cost were identified by a local Neighbourhood Housing Service Agency (Sanoff, 1982). Construction cost was the major constraint within which future home owners would be required to make choices. In order to make the decision process 'transparent', yet reflect the value differences between the families, workshops were organized where decisions about the house were divided into four categories: house activities (Figure 4), house image (Figure 5), passive energy (Figure 6) and site arrangements. The relatively low income families were faced with budget limitations that influenced the size of dwelling and the level of amenities. The concept of trade-off's was introduced in the first planning workshop where the dwelling was subdivided into activity components such as living-dining and kitchen, or living and dining and kitchen. Three options were provided of the living-eating component of the dwelling, each requiring a different amount of area, signified by the number in the left corner of the picture (Figure 4). Similar components were developed for the adults' and children's sleeping areas. Each family was given an allotment of 45 points which corresponded to their budget and reflected the total area of the dwelling. All family members worked through the process in family groups where trade-off's were made between spatial alternatives that separated the living and sleeping components of a dwelling. This approach to spatial organization is based on previous research linking intra-dwelling use patterns with family attitudes (Sanoff, 1970). People tend to differ in their concerns for more personal space compared to space devoted to family activities. The housing trade-off exercise is a preliminary step designed to enable families to discover their unique attitudes towards the dwelling, yet remain within budget limitations.

The house image exercise consists of a series of dwelling photographs that describe subtle and profound character differences (Figure 5). This exercise is important since buildings contain clues that have something to say about the values of the people who own and occupy them (Becker, 1977). Since the building form is conveying an environmental message reflecting the inner life, actions, and social conceptions of the occupants, this social meaning needs to be consciously understood by future home owners. The House Image is a sensory awareness exercise performed with small groups where individuals make personal choices and discuss their decisions within the group. During the process, participants learn about each others' values as well as become aware of the meaning conveyed by different buildings.

From the discussion of my participatory experiences, it may be evident that all group activities begin with establishing an awareness of the situation as the basis for further individual or community action. This approach reflects the idea of empowerment where the expertise of the designer is transferred through specific techniques that enable user groups to make informed environmental decisions. These design assistance techniques form the core of a repertoire of available methods used to effectively engage people in making design decisions (see also Figure 6).

part 3 **workshop**

HOUSE IMAGES

RULES

Each player selects the picture,that he likes the most and that one he dislikes the most.Then he describes the particular charakteristics of the first as well of the last choice.

After each player has completed this step in the process,the individual selections are pooled.Through negotiation the group must agree on the pictures,they like and dislike the most.

PERSONAL RESULTS

like the most: _____

dislike the most:_____

comments:_____

_____

_____

GROUP RESULTS

like the most: _____

dislike the most:_____

comments:_____

_____

_____

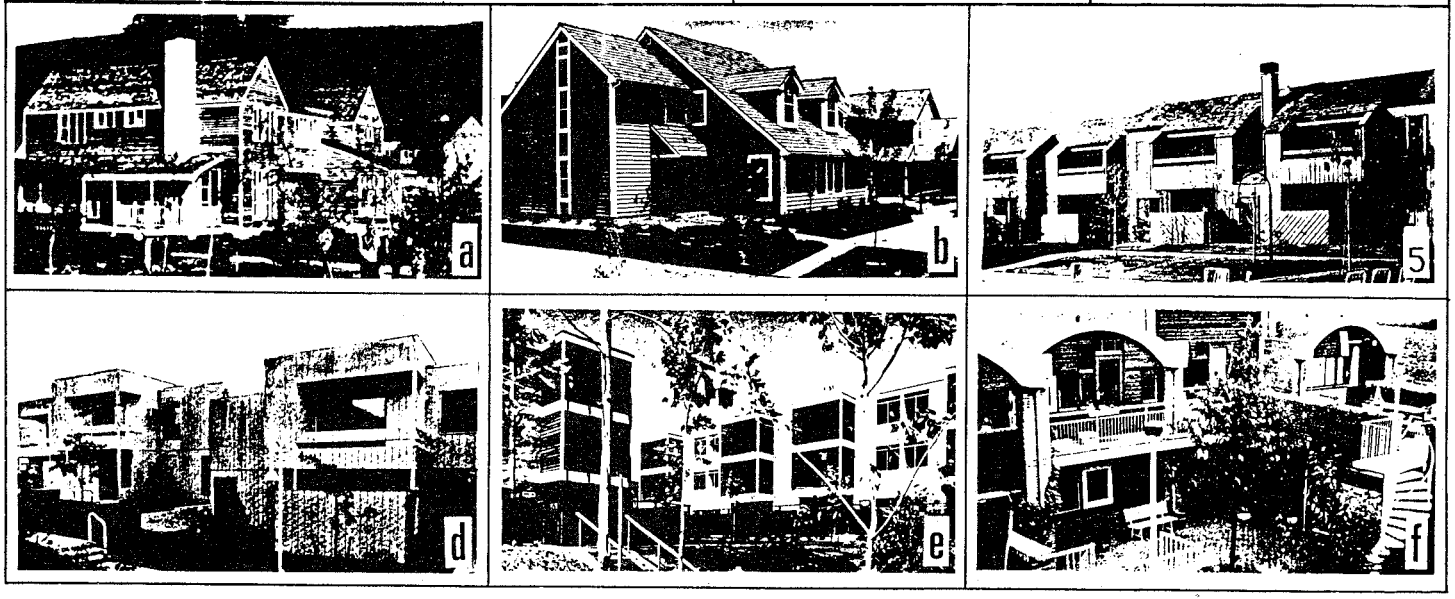


Fig. 5 The concept of trade-off's was also used in the planning of workshops for comparing house images. The exercise is important, since buildings contain clues that have something to say about the values of the people who own and occupy them.

Le concept du 'marchandage' fut aussi utilisé pour comparer des images de maisons. L'exercice est important puisque les bâtiments contiennent des indices qui ont quelque chose à dire sur les valeurs des gens qui les possèdent et les occupent.

6. Participatory Planning and Design

Participation in neighbourhoods and with community organizations is widely recognized as a solution to many social problems. Over the last two decades, people in thousands of neighbourhoods and rural communities have come together to create their own community based organizations to tackle problems which government and the private sector have long neglected. They have formed countless block clubs, self-help groups, neighbourhood associations, community organizing fund drives, and community development corporations. The public demand for participation, especially in planning, has grown to where governments have begun to incorporate into their legislation compulsory provisions for public participation and public authorities have come to regard public involvement as a normal part of their practice (Shearer, 1984). In a recent research project (Chesterman & Stone, 1987) aimed at answering the question of whether participation made any difference to the outcome of the project, investigators concluded that residents contribution to the final proposal of a New South Wales housing project was substantial. The main areas of contribution from the participants included safety, security, privacy, density and community facilities and re-use of existing buildings. It was further observed that the participation process was not considered a separate exercise from the design process.

We might synthesize a collective review of the theories and practices of participation into the following five statements:

There is no 'best solution' to design problems (Peattie, 1968). Each problem has a number of solutions. Solutions to design and planning problems are traditionally based on two sets of criteria: (a) *facts* - the empirical data concerning material strengths, economics, building codes, and so forth; and (b) *attitudes* - interpretation of the facts, the state of the art in any particular area, traditional and customary approaches, and value judgements. Thus design and planning decisions are by nature biased and depend on the values of the decisions-maker(s).

'Expert decisions' are not necessarily better than 'lay' decisions (Rittel, 1972). Given the facts with which to make decisions, the users can examine the available alternatives and choose among them. The architect or planner involved in such an approach should be considered a participant who is expected to state his opinion, provide technical information, and discuss consequences of various alternatives, just as the users state their opinions and contribute their expertise.

The design of a planning task can be made 'transparent' (Rittel, 1972). Steps taken and alternatives considered by the architect/planner, traditionally in their own minds in the privacy of an office, can be brought to the surface for the users to discuss. By understanding the components of planning and design decisions and 'shopping' among the alternatives, the users in effect *generate* their own plan rather than *react* to one done for them. The final product is more likely to succeed because it is better understood by the people who will use it.

All individuals and interest groups should come together in an open forum. In this way people can openly express their opinions, make necessary compromises, and arrive at decisions that are acceptable to all concerned. By involving as many interests as possible, not only is the product strengthened by the wealth of input, but the user group is strengthened as well by learning more about itself.

workshop

PASSIVE ENERGY STRATEGY SELECTION

RULES

Below and on the next page there is a series of pictures that represent techniques for different passive energy principles.

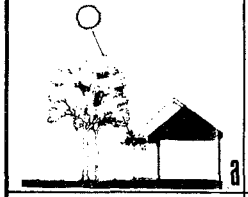
Each player chooses the technique that he considers the best for each principle.

After each player has completed this step in the process, the individual selections are pooled. Through discussion the group must agree on the techniques they consider the best for each principle.

GROUP RESULTS

1.) Protect from the sun when it's too hot for comfort: ____
2.) Allow wind to ventilate and cool when it's too hot for comfort: ____
3.) Avoid creating additional humidity: ____
4.) Insulate from outdoor temperatures to reduce heating needs and increase comfort: ____
5.) Let the sunlight in when it's too cold for comfort: ____
6.) Protect from cold winds when it's too cool for comfort: ____

1 PROTECT FROM THE SUN WHEN IT'S TOO HOT FOR COMFORT

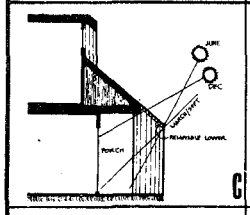


a

Use landscaping (deciduous trees,vines), along with overhanging roofs and other building elements,to shade living space.

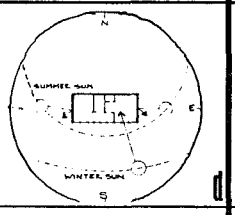
b

Shade windows,Shutters,awnings, and other exterior shading devices offer best protection and allow ventilation.



c

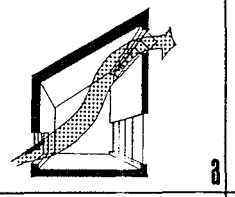
Design overhangs to let in winter sun while excluding higher summer sun.



d

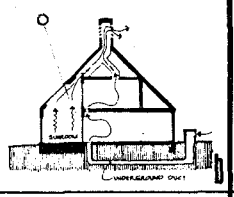
Orient the lenght on an east-west axis to avoid summer baking and allow winter heating. Southern exposures are easy to shade from the summer sun.

2 ALLOW WIND TO VENTILATE AND COOL WHEN IT'S TOO HOT FOR COMFORT



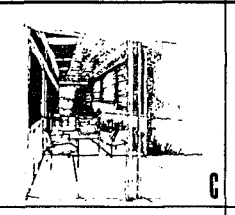
a

Inlets should be low, but outlets should be near the ceiling to maximize cross ventilation.



b

Consider induced ventilation through shafts or other vertical spaces.



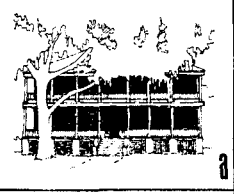
c

Design outside spaces for ventilation and shade.

d

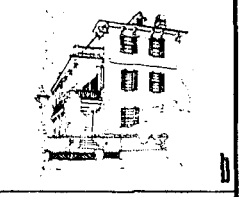
Elevate the house to allow air movement beneath and to reduce humidity.

3 AVOID CREATING ADDITIONAL HUMIDITY



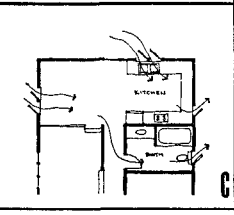
a

Elevate the main floor to reduce humidity.



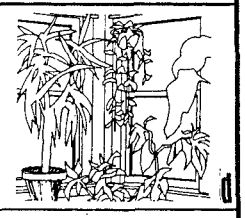
b

Ventilate spaces between dense landscaping and living space.



c

Ventilate kitchens, baths and laundry rooms in order to exhaust humid air.



d

In summer, remove plants from direct sunlight to reduce evaporation.

Fig. 6 The relatively low income families in this project were faced with budget limitations that influenced the level of amenities. Thus a workshop on the selection of a passive energy strategy was also important. Individual selections are pooled and through discussion the group must agree on the techniques they consider the best for each principle.

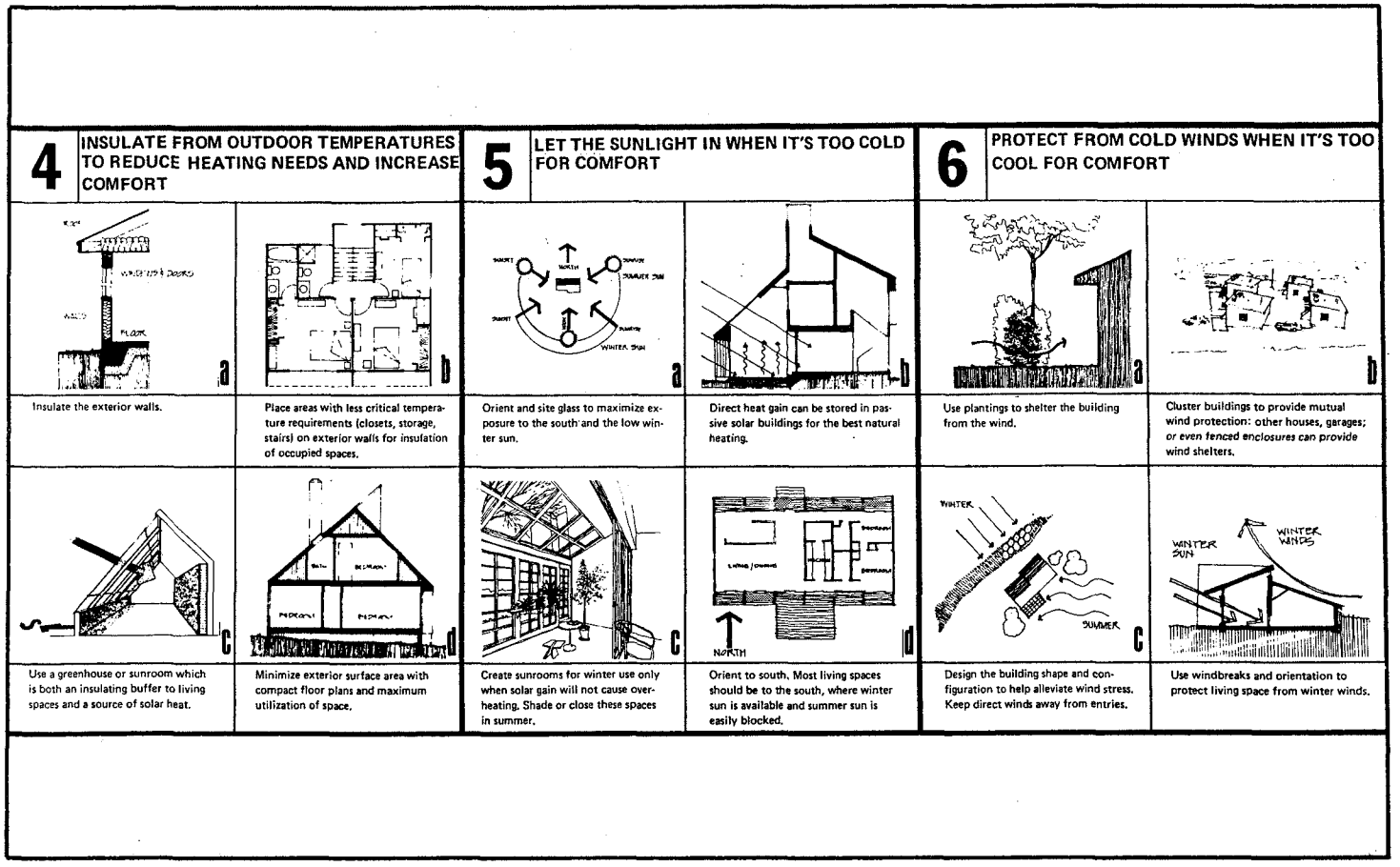


Fig. 6 Les familles à revenu relativement bas furent, lors de ce projet, confrontées à des limitations de budget qui influencèrent le niveau des agréments. Ainsi un atelier traitant de la sélection d'une forme d'énergie passive avait aussi son importance. Les choix individuels sont groupés et au travers de la discussion le groupe doit décider des techniques qu'il considère les meilleures pour chaque principe.

The process is continuous and ever changing. The product is not the end of the process. It must be managed, reevaluated and adapted to changing needs. Those most directly involved with the product, the users, are best able to assume those tasks.

Efforts are necessary to increase people's awareness about planning issues that need to be considered in order to achieve effective and efficient participation in designing. In business and industry changing management styles that emphasize participation (Ouchi, 1981) have had resounding effects on productivity and worker satisfaction. Increasingly, architects have described their participatory experiences as rewarding and influential in changing their relation ship with clients and users (Burns, 1979; Kaplan McLaughlin, 1981); Lewis and Gindroz, 1974).

Architecture in the future should be characterized by an increasing participation of the user in its organizational and formal definition. In order to respond to this situation, professionals will need to do everything possible to make design solutions less the representation of its designers and more the representation of its users.

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