The Full-Scale Method as a Tool for Participation

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In Lund the full-scale laboratory is mainly used as a tool for citizen or user participation. Our intention is to develop the full-scale method further for this purpose. For several years now, we have carried through projects together with different users - mainly people from various types of working-places but recently also with dwellers. Most of our work has been financed by our clients, i.e. private enterprises, trade unions, county councils or municipalities, but since this summer we also receive support from the Swedish Council for Building Research.

We have worked with many types of environments and their specific problems, but thanks to the research money we will now have an opportunity to develop our method in a more conscious manner. The purpose of our research is to increase the awareness of the different mechanisms involved in the participant/user process. We want to improve and refine our method and evaluate its advantages and disadvantages compared to other media for spatial communication.

In our research program we will now present some criteria that have developed from our previous experiences and which we find essential to our future work.

Abstract - concrete

The full-scale mockup is abstract as compared to reality. When we use it for simulations we sometimes make the environments rather abstract and at other times very realistic. We are interested in finding out whether the abstraction of the mockup influences the creativity of the user and his ability to handle environmental problems. Another question is whether there are situations when it is more appropriate to use an even more abstract setting or one less abstract.

In our research program we have defined different levels of abstraction that we would like to test. The most abstract level is when the walls and the equipment only are painted on the floor of the laboratory. The most realistic one is when the walls and the equipment are completely built up and real furniture and real materials are used, such as wall paper and floor-surfaces.

Our thesis is that a certain amount of abstraction supports the creativity.
Presence and absence of physical restrictions

Our experience is that total freedom can be difficult to handle and that a certain amount of physical restriction is necessary, when you work with non-professionals. Again, we ask ourselves whether restrictions are equally needed in all types of studies and how firm the restrictions should be in order to support creativity. (By restrictions we mean supporting walls and constructions, pipelines etc.)

The full-scale mockup and other media for communication

It is quite clear to us that the full-scale mockup is a superior medium for communication. Still, we would like to compare it to other media, such as drawings and mockups in other scales, in order to define its advantages.

Interaction

As we sometimes have worked with individuals and sometimes with groups of users, it would be interesting to compare how the working process and the result is influenced by this. It’s quite obvious to us that we have an important and influential part in the process. Therefore, it is essential to find out exactly how the interaction between us and the users takes place.

PROJECT 1 The Malmö Theatre

Here we will illustrate how we use our laboratory for participation by presenting two projects carried through this spring. The first one was a commission to make a new layout for the ticket-office at the theatre in Malmö. The second we had chosen ourselves - to cooperate with a group of people planning a new collective-house in Lund. The common thing was that the physical restrictions were partly given - the theatre is an existing building and the shape of the collective-house had already been lined out by an architect. The differences between the two projects were:

- In the theatre project we worked with groups of users, while in the other case we worked with individuals.
- The collective-house was partly designed by an architect and the plans altered by the dwellers; the working process started with the layout for the flat and ended with studies of details. In the theatre project there was no drawing made by an architect.

We thus started with studies of individual working-places and finished with a layout for the whole.
ticket-office.
- Since the theatre was our client in the first case, the result played a major part, while in the second case the working process was more important.

The theatre in Malmö was erected in 1943 and is considered a monument of the modernist era. The present ticket-office is situated at the entrance of the building. There are three main types of activities located to one half of the office:
- employees selling tickets directly to the audience at ticket-desks
- employees booking tickets on telephone
- a theatre hostess giving information to the audience and selling programs

On the other side of the entrance there is another office where you can book tickets for larger groups of people. Three people work there, two with booking and one attendant.

The main problem in the present ticket-office has been that there is too little space, there is almost no daylight and the working desks have not been adjusted to computerization. Our task was to make a new layout for the office together with the employees. Only one condition was made by the management; that the two ticket-offices were to be located at the same place.

We started our work by interviewing the employees in order to obtain their opinion on their working environment and the problems connected with it. We also made observations on the spot, to find out how the working space was used and what activities take place. Then, the full-scale work started. We worked parallelly with 3, sometimes 4 groups of employees and the design process was carried through in 3 steps. In each step the different groups were presented with the same design problems.

In the first step, the task was to design the desks for the different activities. When the employees came to the laboratory for the first time they had to start from scratch. We had prepared table-tops of different sizes and dummies for the equipment. With these elements they had to organize the desks and the result was 2-3 designs for each activity. The various solutions were discussed by all the employees and some of them were selected to be further developed.

In step 2 we dedicated ourselves to the task of designing the "ideal" ticket-office. At this stage no consideration was taken to the existing building. First, the main activities were organized within themselves and then they were added to each other. The connections and separations between different spaces were discussed.

Finally, in step 3, the "ideal" ticket-office was adjusted.
to the given premises in the building, the pillars, windows and so on.

PROJECT 2 The Collective House

This project was initiated by ourselves and our intention was to develop the full-scale method in accordance with the concepts just introduced.

Our idea was that dwellings would raise other questions and give different answers than working-places do, and this would perhaps broaden the content of the concepts and give us new ideas to analyze.

The participants were a group of approximately 20 families, planning a collective house with 23 flats in Lund. They started the process about one year ago and the house is scheduled to be completed in about two years. The participants are single mothers and fathers, single men and women, couples and families.

In this project we had the opportunity to work with the participants individually. Because of the time limits we were not able to meet them quite as many times as if they had come in groups. Our goal was to work together with at least 10 families. Since the participants had to take time off from work or school, this also reduced our number of meetings.

Before the participants came to the full-scale laboratory we interviewed them in their homes - in their own environment. This was done in order to better understand their wishes and frames of reference.

Half the group - 5 families - were supposed to make their own drawings of their future flat. These would serve as a basis when building the flat in the full-scale laboratory.

The second group - another 5 families - were supposed to choose their flat among the architects lay-outs.

The first group started from scratch in the laboratory by first discussing the drawing with us. The flats were not always planned according to Swedish housing regulations or the limits of the house. Therefore we sometimes had to adjust the drawings to these circumstances. As soon as the family was more or less satisfied we started to build the flat together in the laboratory. In most of the cases we started with that part of the flat which was most important to the family, and most visualized. At the same time we had to solve the problems connected to the parts that were not as well planned by the participants. We ended each session in the full-scale laboratory with an interview with the participants about their feelings on the process and the result of it.
In the next step the architect in charge of the project took the ideas that came out of the work in the full-scale laboratory into consideration and used them as a basis for the layouts for the entire collective.

The group which chose the flats from the architect's layouts came to already built up models when they arrived at the laboratory. They were then asked to adjust it to their personal needs and wishes. We now had the same amount of time at our disposal as the participants from the former group had.

Both groups started with the general planning of their flat paying much attention to the function of the kitchen.

The whole process was guided more by the participants and the different circumstances than by us as researchers. Nevertheless, we had many opportunities to study the process in the full-scale laboratory. As there also was a consulting architect present in charge of the concluding layouts, we could concentrate on analysing the concepts.

**Full-scale mockup and other media for communication**

- Our experience is that non-professionals in general have great difficulties in understanding a drawing. This is, however, a matter of practice and learning. When the dwellers from the collective house came to the laboratory for the first time, many of them did not understand e.g. the window symbols on the drawing and even less could they transform the symbol to what the window would look like in reality. But after some time their capacity to interpret drawings increased remarkably although they still seemed to find it easier to express themselves in the mockup.

- When it is not obvious how a space should be designed, the users often prefer to make a drawing before building in full-scale. We appreciate this interaction between the two media. We imagine that this helps the layman to transform his/her vision of the two-dimensional space to a visualization of three-dimensional space. (It also seems to be a good way of using the advantages of each medium.)

- Our impression is that the full-scale mockup is a help in decision-making. It makes the layman aware of problems they didn't pay attention to before.

**Presence and absence of physical restrictions**

In both projects here presented, we investigated the
influence of physical restrictions and absence of physical restrictions.

In the Malmö Theatre project we started out without any physical restrictions.

Our intention was to stimulate the participants creativity without restrictions. The participants, however, found it difficult to pretend there were no such limits. Their imagination was restricted by the existing building, since they knew it was unlikely that they would move into another building. Perhaps the result of the full-scale modelling would have been different if the participants had believed in the possibility of moving the working-places somewhere else.

In this case the absence of restrictions didn't reflect any differences in the type of layouts. They turned out to be very alike. In all suggested working-places the position of the windows was of great importance, as well as the location of the office in relation to the lobby. Closeness and distance worked like a rubber-band and asked both for restrictions and adaptations.

We would like to think that the similarity depended on careful preparations. But there is also a risk that the participants had adapted to their present working situation too much.

In the full-scale-modelling for the Malmö Theatre the participants were organized in different groups in the three steps of the process. Although these groups had different constellations, they made almost the same suggestions of solving the functional problems.

In the collective house project the starting point was both absence of and presence of some physical restriction.

When modelling without restrictions, one creates a situation where it is possible to look for different environmental solutions, such as those for the light. But if there are restrictions you have to press your desires and needs into them and have to accept not so good solutions.

As a result of the present planning restrictions for the collective house the architect's layouts showed deeper flats.

We will now try to summarize some of the experiences we had so far:

* There has to be a great deal of accuracy in doing layout for an environment before making a mockup of it.
* If you have to adjust to some present physical
restrictions you will achieve results faster.

- The restrictions should be clearly defined: area, economy, technical equipment, shape of the house etc. But you are of course also dependent on the intentions of the future proprietor. Space and different levels are difficult concepts for laymen.

- We also found it important for the participants to do at least some of the building-work in the laboratory themselves. They soon realize how easy it is to pull panels down and erect them again.

- It is obvious that restrictions encourage the participants to use the area more thoroughly. It is, however, also obvious, how difficult it is for them to apply all their best ideas in the full-scale modelling.

Abstract and concrete

It is rather difficult to give an answer to the questions we have. We have not had the opportunity to test different levels of abstraction in one single project but we still feel that some things can be deduced:

- When looking at abstract/concrete in the perspective of the full-scale process as we are using it, the need of realistic presentation increases the closer you get to the final design.

- At first, the users often find it difficult to accept the abstraction of the mockup. The employees from the theatre, for instance, were rather upset the first time they came to the laboratory and found tables made of cardboard and telephones made of frigolite. After a while, however, they got used to it and our impression is that they had no difficulties in imagining the real function of the dummies.

- At times we don’t build the walls with the elements, we just lay them on the floor to show the limits of a space. It is obvious that the user’s sense of space decreases in these cases.

- There are some qualities that are difficult to communicate in the full-scale mockup, for instance the light from windows, the space between floors in a two-storey house. This was expressed by the future dwellers in the collective house.

Interaction

Usually a working-place is a collective environment. For this reason it is important to carry out the full-scale projects with groups of participants.

Dwellings, on the other hand are more private spaces, where it is more
suitable to work with the participants individually.

According to our experiences the participants working in a group of 3-4 persons are more creative than participants working individually. The more persons, the more ideas brought into the discussions and the more persons involved in the task of rebuilding the models in the laboratory.

We also realized that direct participation not always is necessary. Sometimes new participants could adjust to the work done by "old" participants, and continue creatively from this point.

It is not always easy to communicate with the participants even in the laboratory. Different kinds of personalities have to be treated in different ways and it is important to spend some time for getting to know the participants in the full-scale environment.

To ask questions, is a very effective way of forcing the participants to consider functional problems. "Why" is our most common question. Not always do the participants like being questioned. They want answers, not questions. And indeed there are some questions we as researchers and architects ought to have the answers for like the Swedish housing regulations and former research that has been done in the field of building function analysis.