DESIGN PROPOSAL FOR
USER RESPONSIVE HOUSING
AT MODERATE DENSITY

by

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ABSTRACT

A DESIGN PROPOSAL FOR USER RESPONSIVE HOUSING AT MODERATE DENSITY

by NORRIS STRAWBRIDGE

SUBMITTED TO THE DEPARTMENT OF ARCHITECTURE ON JANUARY 21, 1976, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARCHITECTURE.

This thesis is an exploration of the synthesis of large scale design and the need to allow individual citizens to personalize their environment. The design is for 600 units of housing between Cambridgeport and the Charles River in Cambridge, Massachusetts. The intention of the design is to provide a variety of large and small places over the entire range of public to private space and to suggest an approach to a building system that will allow the citizen to directly affect the environment both initially and over time.

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"There is many a slip between the cup and the lip," and I guess that something similar can be said about writing a thesis. A project that started as an exploration of the S.A.R. methodology as it might relate to "built-form" quickly metamorphosed into an exercise in large scale design. As an experiment, Peter Ziegler and myself chose to use the same Memorial Drive site that is presently owned by Stop & Shop. Although we were working toward an agreed goal, (how much stuff can you reasonably put on this site and what should it look like?) we chose different paths. I elected to concentrate on networks and ignored the actual buildings and their specific designs. This approach proved difficult as I was rapidly forced to develop some notions about the size and general layout of the units. After some experiments with integrating parking grids and residential dimensions, I elected to use a 15' x 15' bay for all the residential work (see drawings), because it seemed that this size would allow a reasonable number of options for the interior space. Besides it was easily integrated with the 30' x 30' parking grid. I also chose to use a rowhouse system as it follows directly from the emphasis on street. Finally I wanted to work first in section and the row house is most easily explored as extruded section.
Several problems occurred. I started working with the S.A.R. methodology as a possible way to introduce the opportunity for "a user" to participate in the design of his/her "home", and as a way to introduce some external variety characteristic of traditional streets. I soon decided that the method was useful but by itself would not insure good results as it was too "neutral." Also the methodology had been used almost exclusively in plan and did not directly address itself to the problems of three dimensional space. Another problem that I faced was that in my desire for variety, I might not be able to distill an imagable order out of the chaos. I was looking for the human quality and local decisions of a bario without the ramshackle discontinuities. My goal lay somewhere between chaos and a cube.

After considerable consideration and reviewing of old notes, I arrived at the following:

in a field, the organizing principle must be constant and easily imagable, but the actual physical reality should be recognizable as an individual member of some larger family.

or

the organizing principle must be constant but the image should be different every time that it occurs within the field.

This concept, along with the constrains of the site and the desire to build housing over parking as a new ground, became the controlling elements of the design.
After settling on an approach, the next step was to test it within the confines of the problem. I soon discovered that the design process had two components: decisions that were related to the site, and decisions that were generated by architectural considerations. Although it is impossible to really separate these two issues, I would like to deal with them as separate parts of the same problem.

Let me begin with the architecture. My first step was to develop a section that would be 2/3 fixed and 1/3 variable (see diagram). I fixed the bay size, (variation would be accomplished by cantilevering) the location of the stacks and chases and the location of most of the floors. I felt a vertical zone in the middle for private internal circulation which allows the platforms to be combined into many different types of units depending upon their location, entrance condition, and the size and shape desired. I decided to use sloping roofs because of the Cambridgeport context and because I wanted to generate strong axial masses of housing to reinforce my "street patterns." More on this later.

After establishing the platforms, I made a couple of passes at designing prototype sections and then a typical section to investigate the relationships between entrance, street, and private zones. At the same time, I developed a few typical unit plans to test my decisions. Although
I am satisfied that the "system" can generate almost any unit as defined by MHFA standards, I feel that this is by far the weakest part of the design process to date. Time, however, was running short, and so I settled for a low level of specificity that I had achieved and pushed on to the areas that I was most interested in, namely the transition from the public street to the private "home" and how to best accomplish it.

This brings me to the second part of the design: the organization of the entire project and the relationship of the built-form to the site. I made two decisions rather arbitrarily in the beginning. I feel that they are still valid. They tended to control the entire design. First I decided to keep the Stop & Shop on the site, but to re-locate it. Also I provided a parking ratio of 1:1. The first massing model yielded a F.A.R. of just over one, and it exposed some of the major problems that I would face while trying to organize a project of this scale. Specifically, if I tried to introduce a pattern of organization that was not well established in the site context, I was asking for trouble. An investigation of the local Cambridgeport area showed that the street was the major organizing principle, and that the houses tend to have a direct one to one relationship to the street. Closer evaluation revealed that it was really the sidewalk, not the street, that supported the local activity and that the re-
4 General types of organization distribution

1. Radial

2. Spine

3. Grid

4. Field
relationship of the front door, entrance, porch, yard, and street was the key to the physical organization. Since I was increasing the density drastically, I decided to relegate the car to a limited portion of the project, the most public and the lowest. This decision tied in well with my parking requirement and the desire to keep the Stop & Shop which I feel is demand retail. After all, when was the last time that you just happened to drop into a supermarket on a whim and walked out with a head of cabbage? People make a conscious decision to go to a supermarket. After all the Star at the Prudential Center has expanded three times and it doesn't even have any parking. Above my parking and the new Stop & Shop, I elected to develop a new system of pedestrian streets modeled on the Cambridgeport sidewalks. The low housing provides a transition from the street scale neighborhood to the towers that are required to get the density up to 100 units per acre. The towers themselves are placed along Memorial Drive to keep their shadows away from the existing neighborhood and to relate to the scale of the river and Fenway Motor Court just to the west. The best views from the low rise was to the river and this suggested a North/South arrangement of the pedestrian streets which is, in itself, desirable in a cold climate. The towers also established general small regions within the design and located vertical transportation systems.

As I explored the pedestrian networks I made two major
decisions: (1) the lower pedestrian system should be at the level of some new ground which had the characteristics of the local site, and which was as much on one level as possible, this to accommodate the handicapped; and (2) the upper level, serving the top floors of the low-rise, should roughly parallel the major system, be directly connected with the elevator system and be covered at times. Together these two networks provide a direct access to at least all the low-rise units. The antecedent for this system is found in many of the small Swiss villages in the Italian section of that country. The tri-level system (ground, new ground, and raised street) are linked by a "public" elevator system, as distinct from the "private" system serving the towers, and by connecting stairs. Although the result may be criticised as complicated and perhaps confusing, as are most human scale towns. The overall grid/spine system, although complicated by the direction change inherent in the site, is reinforced by the directionality of Memorial Drive and the river. Many local private places or regions are generated that are intended to allow greater personalization of the site. They are the descendants of the small alleys, cul-de-sacs, and internal courts found in small towns.

In order to further integrate the new with the existing, and at the same time to provide some neutral ground for the community as a whole to meet, I included a public health
club and pool. I hope that those members of Cambridgeport who so desire will join this facility and that it will also provide the semi-private outside space that can be shared with and by the residents of the towers.

My conclusions? First, if and when you do a thesis, be very careful to limit the scope of the project, then reduce your goals by 50% and if you really bust your __, you might get half of that accomplished well. After all, "the touchstone of art is its precision." (Ezra Pound)

Others? Well they have all been said or done better before, if you only know where to look, so the less I say the better. Oh, yes; it was very worthwhile and I even learned to draw.
PROBLEMS - 1) Is it good to have housing in parking - different grid? What is perceptual relationship?

2) What happens to memorial done if we add wall? Parking is it like N.Y.C. Westside highway.

Took photo 11-8-78.
notes:

SECTION - DIAGONAL LOADING METHODOLOGY TO ESTABLISH BULKHEAD DIMENSIONS AND SHOWING THE INTEGRATION OF THE 2'-6"x2'-6"
PACKING GRID WITH THE WALL FRAMING SYSTEM