

728.100  
.15  
B84

**BUILDING  
RESEARCH  
INSTITUTE**

**5<sup>th</sup> ANNUAL MEETING.**

*Technical Sessions on Housing:*

Federal Housing Administration  
Library

*9 copies*  
**Building a New Community;**

**What Mrs. America Wants  
in Tomorrow's Home;**

**FHA's Technical Program,** *5<sup>th</sup> Annual Meeting*

**BUILDING RESEARCH INSTITUTE**  
Division of Engineering and Industrial Research *book d-1*  
National Academy of Sciences—National Research Council  
Washington, D. C.



TH  
5  
~~1385~~  
1956a

Fifth Annual Meeting of the  
BUILDING RESEARCH INSTITUTE  
Niagara Falls, Ontario  
May 20-22, 1956

7128.10a 15  
B 84

TECHNICAL SESSIONS ON HOUSING

	Page
BUILDING A NEW COMMUNITY (Panel Discussion) . . . . .	1
INTRODUCTION BY MODERATOR. . . . .	1
Leonard G. Haeger, Vice President, Levitt & Sons, Inc.	
COMMUNITY PLANNING PROCEDURES AND PROBLEMS . . . . .	1
Charles D. Clark, Land Planning Consultant, Los Angeles.	
DESIGNING THE HOUSES AND SHOPPING CENTER . . . . .	10
John N. Highland, Jr., Chairman, American Institute of Architects Committee on Home Building	
BUILDING THE NEW COMMUNITY . . . . .	18
Leonard G. Haeger.	
WHAT MRS. AMERICA WANTS IN TOMORROW'S HOME (Panel Discussion) .	
INTRODUCTION BY MODERATOR. . . . .	23
James M. Lange, Executive Editor, Practical Builder.	
ESTHER FOLEY . . . . .	24
Home Service Director, MacFadden Publications, Inc.	
MARGARET SPADER. . . . .	28
Food & Home Appliances Editor, Living for Young Homemakers.	
ANNABELLE F. HEATH . . . . .	33
Assistant Administrator, Housing and Home Finance Agency.	
CLOSING COMMENTARY . . . . .	36
FHA'S TECHNICAL PROGRAM . . . . .	38
Neil H. Connor, Director, Architectural Standards Division, Federal Housing Administration.	

BUILDING RESEARCH INSTITUTE  
Division of Engineering and Industrial Research  
National Academy of Sciences - National Research Council  
Washington, D. C.  
1956



## BUILDING A NEW COMMUNITY

(A Panel Discussion)

MR. HAEGER (Moderator): This afternoon our panel will undertake to describe to you how we go about planning the city -- that is, land planning-wise -- how we consider the elements of design and planning of the houses and shopping centers, and then, finally, how the builder goes about building the new community.

Our first speaker, Charles D. Clark of Los Angeles is a land planning consultant. He is going to tell us how we approach an actual 5,000 acres of land; what we have to do to plan the roads, the access roads, the arterial highways, how we consider the size of the lots, etc. His talk is called, "Community Planning Procedures and Problems." Mr. Clark.

- - - -

### COMMUNITY PLANNING PROCEDURES AND PROBLEMS

By Charles D. Clark, Land Planning  
Consultant, Los Angeles, California

I was born in Los Angeles County and can remember when it was a quiet community with plenty of wide open spaces. With appropriate apologies to Texas, it can be said that Los Angeles County is big, although it is one of the smaller counties of California. If it could be rearranged, it could be made to form a strip of land almost two miles wide reaching from Niagara Falls to the Los Angeles smog enshrouded Chamber of Commerce building.

People are coming by train, air, boat, truck, automobile and via the maternity wards. We are required to have ready a new 600 student school house every Monday morning each week of the year. With 4,085 square miles in the County we are beginning to run short of good subdivision land, even at four to six thousand dollars and up per raw acre. The hills, which a few years ago, were considered too steep for subdivision development, are looking more flat every day. I know of one developer who spent over \$3,000 per acre for rough grading a residential development and he is still very much in business.

Although my work takes me over the entire country and into foreign lands, you may gather from my previous remarks that Los Angeles is a rather good home address for one of my calling.

I am a developer's planner as contrasted, and sometimes opposed, to public planners. The public planning official is responsible for establishing



the foundation for the growth of a region. He builds the framework for mass transportation and predetermines, in its broad scope, the land use pattern. He does many other things related to regional growth too numerous to dwell upon here. He is a patient man who makes plans which are not small and is content to wait for their fulfillment.

The land developer's planner works within the framework of the regional plan. He is impatient in the knowledge that he is partially responsible for the timing of an important and expensive undertaking. Interest on an initial investment is relentlessly at work.

I have often been asked to explain the process which is used in preparing a development plan. A proper answer to this question would fill a rather large book and the student of such a text would not necessarily become a good subdivision planner. Please be assured that good plans are not the result of a dream, or a nightmare. They arrive on paper mostly through long, and sometimes bitter, experience. Some of the plans which I produced 25 years ago are rather pitiful when compared to present-day knowledge, yet who is to say what laughs, or tears, today's plans will invoke 25 years hence?

We as builders, engineers, architects and land planners achieve our greatest success when we cooperatively produce long-term values acceptable to today's market. Although I cannot put into so many words the thought processes involved in preparing a good plan, I can give you some of the principles which apply, and from which you can recognize an acceptable product.

Let us assume that you have selected the site for your development. Perhaps you had more than one choice, in which case you obtained preliminary reports from your engineer and from your planner as an aid to determining the best selection. The engineer will advise you on such matters as the availability and capacity of existing sanitary and storm sewers. He will report on water supply facilities and off-site and on-site drainage problems. The bearing capacity of the soil and the existence of any unfavorable soil formations or rock outcrops will be noted as they have considerable effect upon grading and ditching costs. He will advise you as to the requirements of local authorities for street and utility installations and will provide cost figures for each required or proposed improvement including his fees for the various phase of the work.

The land planner will prepare preliminary sketches for each site after determining the requirements of any local official planning agency. From these plans the yield from the land in building sites and commercial areas can be determined and improvement cost estimates can be prepared. These facts, coupled with the cost of the land, a developer's sixth sense, a good business head and a lot of luck permit the choice of the right property and the developer is ready for the great adventure.



Being a first class community builder, the developer advises the land planner of his decision and allows him a full week, or even ten days, to prepare a complete design for the new town. At this point one, or both, of two things happen. The planner may be fired and the developer may learn the virtue of patience. If the planner is still around he will start asking questions, when all of the time it was thought that he was hired to supply some of the answers. The planner assumes first, and rightly, that you, the developer, know more in a general way about what you want than he ever will.

What lot size do you contemplate, what frontage, what depth? Have you existing house plans to fit the lots or must some architectural work be done before answering this question? Is there local prejudice against fronting the house in certain directions? What is found in competing areas? Is F.H.A. financing contemplated and do you have any pet schemes for a favorite church site or a little lake to be named for your mother-in-law? Perhaps the big boss or the president of the loaning agency would like a playground named in his honor. It is not too early to decide upon a good catchy name for the development and there is always a big list of nice sounding street names to compile.

To top it all off the planner tells you that he can do some preliminary work but cannot start the final plan until a good topographic map is available. This may take days, or weeks, unless advantage can be taken of aerial cartographic methods. If the area is heavily wooded, and if the season is such that the leaves are on the trees prohibiting a view of the ground from the air, topography will have to be taken by the slower field survey methods. During the fall season it is often advantageous and time saving to delay topographic mapping until the ground can be seen from the air. Unless you are like Leonard Haeger, and have been through this many times before, you may be ready to call it a day and resort to poetry:

The pessimist lacks in vision;  
Given a hill, a rock, a ditch,  
He said, "This thing can't make me rich",  
So he made of it a subdivision.

The optomist is a man of vision;  
Given a hill, a rock, a ditch,  
He said, "This thing can make me rich,"  
So he made of it a subdivision.

This outburst runs the planner out of your office but he does hesitate long enough to remind you that he needs a boundary survey and will require a title report to determine the location and purpose of any easements.



Eventually, but rarely soon enough, the basic material is gathered and the planner can begin his design. His work is governed, not alone by his ability, but by many physical, practical and sometimes impractical controls. The physical controls are principally:

1. Topography, which in addition to the contours of the land, includes tree growth and other natural and man made features.
2. Shape of the land, or contour of the boundary.
3. Drainage course sizes, determined in part by off-site contributing areas.
4. Adjoining development and uses of property including adjacent highways and streets and the location, facilities and market area of nearby shopping centers.
5. Sewer and water lines and other public utilities available to the property.

Practical controls over the plan include:

1. The developer's desires for his community.
2. The real estate market, which in great part dictates lot sizes.
3. Plans of local agencies for highways and for lands for public use.
4. Easements within the property for telephone, power, gas and water lines. These are often underground and are not readily discernable upon inspection of the land.
5. Local subdivision and zoning regulations
6. Federal Housing Administration regulations.
7. The cost of the proposed improvements, particularly the cost of earth moving.

The impractical controls will be discussed in some detail later. They are, unfortunately, very real and are deserving of careful scrutiny.

With all of the data at hand the planner may, at least, begin his design, that is, he may if there are no legal hurdles to surmount such as changes in zoning. Here may be found a most trying and time-consuming problem.

I have had the questionable pleasure of representing a client on a zone change case which required four years for its consumation. This was unusual, but it is not unusual for these cases to require six months. Nevertheless, let us assume that everything is in order and that the plan may be prepared. What must the planner consider?

First, he knows that he has been employed by the developer for only two reasons. The developer believes that the planner can produce economies and a yield from the land far in excess of any amount of the planner's fee. The developer also knows that prospective home buyers and public officials have become planning conscious and that he will have more sales



Appeal and official cooperation if he can truthfully offer a planned community. Although people like to buy in a planned community, they are not yet quite sure of its proper definition. Let's try this simple statement on for size:

A planned community is one which has been designed to create, most advantageously from the land, a place for convenient and safe living with an assurance of lasting values. If the planner can help to produce such a community he will not have picked up his pencil in vain.

I believe that the starting point for any plan is the elementary school. There are factors which can be applied to give us the number of schools needed in any new area. The total area of the land can then be quickly divided into school areas and these areas separated by a convenient system of collector, or through, streets. The problem then immediately simplifies itself into designing a local street system within each superblock, which has a school as its nucleus, and providing, at strategic locations outside the superblocks, facilities for convenient shopping and for recreation and community use.

Mr. Haeger's community of Levittown, Pennsylvania, is an excellent example of the application of this design principle. The residential streets within the superblocks can, and should, be narrow, and designed solely to serve the houses fronting upon them.

I prefer winding streets which discourage through short-cut traffic, yet, I am opposed to some designs which require the use of a guide dog to find one's way in and out. People like quiet neighborhoods, however they do not wish to become lost when visiting their neighbors. I like loop streets and have no objections to a moderate number of culs de sac where needed, and when they are not made the basis for the plan. Pavements 26 feet in width are sufficient when the system of streets is designed for their proper function. Some communities seem to believe that streets should be designed like a main line railroad and must be built to standard gauge, and the wider the better.

Now I would like to discuss the items which exercise control over the planner's design. The final items in this category I choose to call "impractical" controls. These constitute the extra-legal requirements and regulations which are imposed upon the developer by some of our public planning technicians. Before continuing, I wish to make it clear that I am certainly not opposed to public planners as a group. I was one of them for 16 years. The great majority are hard working, conscientious men and women who have dedicated their lives and interest to your and my welfare.

Consider, if you will, how much simpler and easier your development problems become in an area for which a broad pattern of orderly future growth has been established. A few years ago I had occasion to design a 2,200

acre development in a county which had no master plans. It was necessary to first prepare a highway plan for an area covering over half of the county, some 500 square miles. Certainly this was a very cursory job of highway planning, but it was essential to establish a basic pattern for planning this \$40,000,000 development.

The important point in this story is that my highway plan was not official and there was no assurance of its ever being carried out in whole or in part. Fortunately, this county now has an official planning agency; my old highway plan has been adopted almost without change and the entire area is protected by a comprehensive zoning ordinance. If official master plans had been in force at the outset the developer would have been saved time and money and been assured that his plans were integrated with the future growth of the region.

Now let us look at another phase of the public planning subject in the hope that we may be alert to some of the difficulties to be encountered and that collectively we may find means to avoid them.

Deliver me, please, from the young planning zealot who has just read a book. There exists a shortage of planning technicians. Many fine but inexperienced new people are finding themselves in public planning positions of considerable authority. Authority, that is, over your pocketbook and mine.

As a case in point, let me tell you of one predicament with which a developer is now confronted. He submitted, for approval, a development plan to a county planning director. The plan was not unusual but provided a good curvilinear solution to the problem. After a 30-day delay, the plan was disapproved on the basis that it was old fashioned and mediocre. The developer was told that modern planning requires all interior streets to be loops and culs de sac.

A new plan was prepared and submitted on the so-called modern concept. This was received with considerable praise and approval. The F.H.A. planner had read a different book and promptly disapproved the new plan as being inefficient and having an inconvenient system of streets. The Chief Underwriter upheld this decision. Neither planner will give in to the other or compromise one iota.

The developer cares little which plan he uses but he is anxious to get started. Does he follow the county plan and forego the advantages of F.H.A. financing or does he sue the county for a writ of mandamus and forever after be on the unofficial blacklist? Yes, this is unusual, but the unusual is happening somewhere every hour.

I have had a plan disapproved with the statement that houses can never be built upon filled ground. It took considerable time and money to prove



to the planning official that properly compacted fills can be more stable than is some natural ground.

And how about the taking of property without just compensation? One of my clients is trying to develop an 180-acre subdivision. He has been asked to withhold the best 65 acres for possible future public acquisition for a regional park. He is required to dedicate a major highway diagonally across his property and provide land for elaborate interchanges at two points on the boundary of his property. This will take another 25 acres leaving him the less valuable 50 per cent of his land. Certainly, he will eventually be paid a condemnation price for the park land, but when? In the interim he is deprived of the use of his land. Just to make sure that the park land would remain available, and although this land is high on a hill, the county placed it in a flood hazard zone which prohibits its sale in less than 10-acre parcels. Unfair, illegal, a violation of authority? Yes, but who has the nerve, the intestinal fortitude and the means to correct these abuses?

The individual seems to be precluded by simple economics on the basis that it is cheaper to give in and proceed than to contest and possibly lose all. This leaves this serious problem squarely up to organizations such as this Building Research Institute, the Federal Housing Administration and the American Institute of Planners. We must hang together or separately.

Somewhere right now a developer is giving away a park, a school site or a playground. Someone is paving a major highway with concrete 74 feet wide and six inches thick at no expense to the general public. Acres and acres of unnecessary paving is being laid in streets which are of an uneconomical width.

Every wasted dollar is reflected in the house, the final product. It is not easy to simply add these dollars to the total price. We have economic ceilings to meet and there is always competition. Tonight we are to be told what Mrs. America wants in tomorrow's home. I hope that she can afford them. Of course, we must have schools and parks and playgrounds. They are no less essential than bathtubs and bedrooms, but what builder gives these items away? All of the public areas are normally charged against the final package, so let's put them on a strictly businesslike basis. Sell the school site to the School Board and sell the recreation areas to a District set up for their acquisition and maintenance. To promote the illusion that these areas are gifts to the community is an invitation to higher and higher development costs.

An official attitude is rapidly growing which presumes that if developer Burns can dedicate land for public use then developer Levitt can give even more. And so starts the avalanche. At least one city in California



is now collecting a fee of \$25 per lot, as a condition to map recordation, which money goes into a fund for the acquisition of some park, somewhere, sometime. This is a dangerous precedent for who knows what other worthy projects will be saddled onto the land developer? Of course, some of my young planning friends shrug it off with the statement that, "Its only money".

So far I have spoken in generalities. We have said a little about my home town, discussed the planners relationship with the developer, seen something of how a planner thinks and why, and brought to light some of our mutual problems. Now, let's get down to work and build a new community on a rather large scale.

Have you ever heard of the town of Oracle or of the San Manuel Copper Company? Most of us have not, and five years ago I was no exception. I think that we are familiar with the names Arizona and Anaconda. San Manuel is a subsidiary of Anaconda Copper and Oracle is a town in Arizona. Now Oracle has nothing to do with this story except that it is the nearest habitation to a place in the desert where San Manuel purchases a big piece of real estate containing a profitable percentage of copper ore. This spot is some 45 miles northeast of Tucson and in the beginning of this yarn could be reached only by air, provided that you had no desire to stop. Even parachutes were of no transportation value unless you had no objection to landing in a very dense covering of cactus from which there was no pedestrian escape.

At the time, I was associated with Mr. Seward Mott in Washington, a practical planner, whom I believe is unexcelled anywhere. We had available some good air photos and a U.S.G.S. map.

San Manuel laid down the basic specifications which were simply that we design a complete community for an initial 3,000 employees with space and facilities for double that number. We were told that adequate water could be developed and were given the location of the ore body. It was our job to choose the site for the town and develop the plans. San Manuel stood ready to clear the land and had arranged with county officials to build a road to the property. An excellent engineering firm in Phoenix was placed at our disposal.

After a careful map study, Mr. Mott visited the area by air and selected the town location based upon a convenient relationship to the mines and smelter, the prevailing winds, the views and the dictates of topography. Here was an ideal situation for the town planner and for the developer. An unlimited quantity of inexpensive land from which to choose the best location; an assured and exactly defined market for the finished properties; financing by the owning corporation without restrictions; no public or official planning agencies to exercise controls.



The copper company began immediately to clear the land giving priority to constructing an air strip for light aeroplanes. An aerial topographic map was ordered and preliminary planning sketches were started. Research indicated an elementary school population of seven-tenths of a child per family. We decided to provide four elementary schools of ten acres each and a forty-acre high school site.

Other required items were a main shopping center of 20 acres, a 15-acre sports and recreation area, 10 acres for a civic center, three church sites, 10 acres for a hospital, one small neighborhood shopping center and areas for a trailer court and transient motel. Even a site for a cemetery was selected. Approximately 40 acres adjacent to the centrally located shopping center and recreation area was retained for possible expansion of the community area or for unforeseen needs which often, and usually do, arise. These 40 acres provide a million and three-quarters square feet of planner's alibi. A place was found for an 120-acre golf course. Although two small parks are shown on the final plan, this feature was not stressed due to maintenance problems and the fact that no point in the community is more distant than 3,000 feet from the unlimited desert playground.

After consultation with the architects, we decided to make the building sites 65 feet wide and 120 feet deep. This provides three and one-half lots per acre of residential area. Now we have the approximate size of our new town.

The 6,000 lots will require 1,700 acres and the non-residential uses need 300 acres giving a nice round total of 2,000 acres. Having all of the ingredients of our recipe in mind, and with a good map from which to work, we need now only but to choose the best 2,000 acres from our previously selected townsite and arrange the various parts to form an economical pattern for safe and pleasant living. This is the easiest part of the job, especially if you have done it a few thousand times before. We will decide on a scheme for the main traffic circulation routes, place our non-residential uses at strategic and convenient locations, block out areas each of which has a school site as a nucleus and subdivide these various areas into building sites served by safe local streets.

And there, after many revisions and adjustments, a new town is created on paper and the hard work of development can proceed. San Manuel may, or may not, be the best town in the country, or even in Arizona, but I assure you that it is the best planned community in its immediate vicinity. Five years ago I thought that it was perfectly planned. Today I can see several ways for improvement. In your work, and mine, we are always learning and improving. If we stand still, or even pause, we may be run over and eliminated.

Thank you very much for helping me, this afternoon, to build a town. A long time ago Dr. Fisher, then Chief Counsel for F.H.A., told me how cities

grow. I think that you should have the advantage of his wisdom, for when one knows how a thing is put together it is rather easy to understand the various parts. He said: "Cities do not grow by accretion or by the obtrusion of excrescences at the periphery, but by the establishment of nuclei in the penumbra and the gradual filling in of the interstices between the nuclei."

- - - -

DESIGNING THE HOUSES AND SHOPPING CENTER

By John N. Highland, Jr., Chairman,  
American Institute of Architects  
Committee on Home Building

Ladies, gentlemen, fellow members of former round tables -- I see many of them here -- guests. I don't think that any speaker has been so disqualified from the standpoint of distance than I have been. I live across the "creek" over here. My contention of eminence is that possibly I am the biggest architect in the room! We have spent about fifteen years attempting to learn the elements of the practice of architecture. In addition to that we have spent another ten years trying to figure out how to describe it in twenty-five or thirty minutes. It's an involved subject mainly because of its complexity. We can only cover some of the highlights, obviously.

My subject is the house and the shopping center. I'd like to cover some of the elements of design, but before we get into that I'd like to talk about some of the limited factors of design.

There are many architects in this room -- I think we would all agree, as would our other planners that preceded me -- that the limiting factor of design is not our knowledge of design or the talent or ability of the designer. The limiting factor of design is the management that permits it or encourages it or refuses to pay for it.

We have heard, and you will continue to hear about the revolution in the home building industry. In the period of time since World War II, the home building industry has come from the situation where the typical member built two homes a year, entirely by craft methods, into the large industry that it is today -- possibly the largest in the country - most definitely one of the two or three largest industries in the country.

That revolution in the home building industry essentially is the application of management as we see it today. In the application of management I think it would be a smart thing to discuss management as the accumulation of experience, rather than the repetition of experience.



We have many men that have had, in their opinion, twenty years' experience. We find in many cases they have had one year's experience twenty times.

The other limiting factor that we have in good designing, one that is being overcome by the application of management, are habits. Habits are the most expensive thing that go into the house today. They are the most expensive thing that goes into the community. The need for extravagantly wide streets, as previously described, is a habit.

Habits are also mental blocks. Mental blocks, I think, are a fascinating subject. I'd like to give you a couple of illustrations of mental blocks.

It took us thirty years to get the garage attached to the house because the horse smelled. Mental blocks! We had our horse in the barn, we lived in the front of the house. That was our pattern of living. It was certainly a reasonable one.

We sold the horse. We bought a car. We put it in the barn. That was an economically sound piece of judgment. When we built a new house we were astute enough to know -- any fool would know -- we would build the garage where the barn had been. It took us thirty years to get that thing attached to the house. We can all laugh at that because we can recognize it is behind us. And it is very easy for me to poke fun at other mental blocks. Those which we indulged in ourselves we are not aware of.

Another mental block is within the planning of a house -- building a dining room because we have dining room furniture. In many cases the dining room is a sound thing in a house, but you would be amazed at the number of people that have dining rooms because they happen to have the furniture. They build a Five Thousand Dollar room because they have Five Hundred dollars worth of furniture which, frankly, they don't expect to use, but they have it.

Now, we have had mental blocks in our own profession and the application of management to home building is enlightening the profession in its attitude toward community planning and towards work for the home building industry. For years, of course, we knew that a church was a problem for an architect. A school was a fit problem for an architect. But certainly you didn't need an architect for a factory - that was a matter of engineering.

Now, under modern enlightened management we see industrial buildings like the one developed by General Motors in their new Research Center -- that building is an inspiration for the people who work in it. Possibly, it will be one of the greatest contributions General Motors will make to this country. It is a very fine thing. So our clients show there is an awareness that they need architects as a matter of practice in the industrial building.

Incidentally, it might be a proper thing to point out a difference between an architect and an engineer. At one of our State Conferences we had a very

distinguished man from California -- Harvey Wiley Corbett. He graduated as an engineer from California in the class of '92. He has had some years of experience. He is both an engineer and an architect. Asked to define the difference he said that if an architect built a building without an engineer, quite possibly it would fall down. On the other hand, if the engineer built a building without an architect, people would take it down.

Now, in our profession we always start with people, generally with themselves and the orientation of their thinking. The architects for years have thought in terms of the custom home, the one or two per cent of homes that are individually designed. Those, of course, are a fitting province for architectural practice. They have concerned themselves with schools but have ignored the four to five hundred homes immediately surrounding the school.

Now, there is awareness of the full opportunity. We are talking of communities, and everything that goes into that community is part of our life. It is our opinion today that the design of a small home, or the relatively small home, the one in biggest use by the majority, is one of the most challenging things that our profession can get into, and we are in it with both feet.

Now, on this question of the house and the shopping center, with the time available I'd like to mention very briefly the shopping center.

The shopping center is a new animal. Nothing has been more abused, designing and planning wise, than the shopping center. We have attempted to build out in the plains among the trees, among these newer homes, the same type of a block building that you would find, let's say in Radio City. We have space with which we can afford to be generous, and yet we have compacted these shops very closely together.

You will find that in the major shopping areas, the large ones, are such stores as Macy's. Those shopping centers are the result of competent management. They are generally most beautifully designed and executed. They are set for human scale, there are trees, there are plantings, there is something attractive, it's a nice place to shop.

The contention of most sponsors of small shopping centers is that it is fine for the big ones but the small ones can't afford design, that all their interest is "How much is the rent?"

Gentlemen, we have a fundamental question to ask on a shopping center: Is the purpose of a shopping center to serve a community or to exploit it? Of what value is a shopping center that is built devoid of character? Some of them even take pride almost in being ugly by plastering all sorts of cut rate signs. True, they serve the community but they deteriorate the values of the residences that are built around it.



That is merely the result of not thinking the thing through thoroughly. To me, in the designing of a shopping center for a community a recognition of the same type of character is possible. I don't think there is anything that requires us to have flat roofs on shopping centers. Certainly nothing to preclude the use of green areas to have the cooling effect in the summer time of some trees and some grass.

If we need to rationalize their practicality before we can justify the use of trees and grass -- we get into the reduction of air conditioning and things like that. But people in a community want a sense of belonging in a small community. They need an area where they can go to congregate and talk. We need something pleasant. It seems to us that those things should be recognized in shopping center design.

In the old fashioned bazaar you had a series of hucksters competing with each other to sell the same product. If you had six drugstores in a row, there might be some justification such extremely bad taste as windows plastered with red stickers. But if there is only one drugstore in the community we fail to see the merit of such bad taste.

That goes back to management, gets back to housekeeping. The design of a shopping center too frequently has been an assembly of blocks, each building unrelated. We need very much the philosophy of a longer range point of view to apply the principles proven in larger shopping centers -- the result of better management -- to the small community shopping center.

It can be attractive. It can be a community asset. It is most definitely necessary. We should make the most of it.

In this community we have to start with the people. Let's talk about the elements of the house. First, we need space. That is our biggest luxury today. And the home building industry has done much to get across to the people the awareness of what they should be seeking. This has been done through collaborative research, as a result of the Round Tables that have been held by Life Magazine and House and Home, in cooperation with the American Standards Association and other groups, and the excellent publication work done by the other professional and general publications.

We need more space. Through their research the builder's house has gone from eight hundred or nine hundred square feet to eleven, to twelve, to thirteen hundred square feet. We are developing the techniques of building houses larger and making them more adequate. The larger families that we now have to house have definitely demanded that these houses be larger.

Nevertheless, within the house we need more than physical space - we need a sense of spaciousness. That has gotten us into the various principles of open planning, including the use of correlated colors, the use of partitions that do not go to the ceilings, the use of intelligently planned large glass areas.

Since the kitchen and laundry equipment have become more attractive we don't have to conceal them. Laundries are being used in the bathroom rather than in a utility area. Kitchens are attractive enough that they can be seen from other parts of the living area. We do need, occasionally, visual methods of screening them. By such means we have analyzed the use of space and made more sense and more use out of it.

We have even stopped pretending that we have maids. Most people never had them, but now we are stopping the pretense of having them. If we are going to put the housewife in the kitchen then that kitchen should be open and should have a view better than that from a three by three window over the kitchen sink.

I'd like to mention one thing, when talking about the use of space, that the architect today, must take a total look at the picture when planning a community development. Our practice is much more involved. When we used to do individual homes the owners would employ landscapers to correct our mistakes on the outside, and our problem was relatively simple.

Now, some one has to visualize the over-all picture. One of the interesting things that came out of recent talks between architects and builders was the point very well presented by the builders -- that the architects have over-sold themselves. In many cases we architects have talked about services that we are prepared to render, but are not quite capable of rendering properly.

This is a point well taken, because until now we haven't had much opportunity to do this "total practice". We have to learn, and we have to learn fast. But at least we have been permitted -- encouraged to do this total practice.

In this kind of practice the site (a 6520 foot lot, or preferably a slightly larger one) must be given consideration. The large glass areas of the house should face -- not into the house next door or immediately into the street light, but toward the private area of the lot. These large windows are one method of obtaining spaciousness and they need to be related intelligently to the land.

Now, people's habits are interesting. We have been able to take people who live in a little house with small windows and shutters and move those people into houses with picture windows. People with picture windows are later ready to move into houses with glass walls.

It's difficult to get them to move from the shutters to the glass walls. We normally have to move them in three stages.

We have designed a lot of houses with picture windows, or we had to. The biggest benefit is that they have sold thousands and thousands of brass lamps! That is not an intelligent use of glass!



If you have to have a definition to take away with you, gentlemen, I would appreciate your taking this one: Picture windows belong in the fronts of dressés and the backs of houses.

The second element that we must have in this house is privacy. The house is not only a place to live with your family but, if properly designed, it's a place to live away from your family. When television was brought into being many people were asked if this new thing, television, was going to create a new room. Very definitely it has. In most of the good homes today that you see designed, there is a room to get away from television!

Now, this new room that we are talking about used to be the living room. It's a quiet room, and it has books in it, it has magazines in it, and a place for music. The family room is the most used room. That is where the kids are. That is where you go occasionally.

I'd like to talk about this family room. Believe me, gentlemen, architects are not endowed with any superability to tell people how to live, but we should be reasonably good observers of how people do live. There is a distinction.

My family pattern is changing, but particularly, a few years ago, we were very conscious of this need for the family room. The youngsters can't watch television unless they are horizontal and eating. And when they are horizontal and eating, if you furnish this room with a slate or plastic floor rather than a carpet, it is an awful lot easier on the housewife. If Hoppalong Cassidy can be in one room and you have another room for conversation with your wife, or to read, then that house is pretty well planned.

We need zoning of areas for various family activities. We need zoning not only within the house but also on the outside. One of the new changes that you will see in the better homes, and it most definitely has got to come into the mass production type of home, is the use of zoned outside areas. A terraced area, for example, fenced in and entirely exclusive to the master bedroom.

We did this in my own home and thought it was reasonably good. We have a terrace that has a considerable amount of privacy. It faces the woods. But on Sundays the youngsters can't bring their guests for ping-pong on the terrace because I like to read the Sunday papers in my pajamas on the terrace.

If we have a separation of living areas, like the family room and the living room on the inside, we also should make use of zoned areas on the outdoors. Then you can go outside and get some sun and some relaxation without someone saying to the youngsters, "For gosh sakes, play at the neighbors."

The other purpose of that family room is to take care of a considerable amount of entertaining. In entertaining today we need a room that will take this fun

so we can enjoy our own parties. You have noticed parties -- you undoubtedly have been to them, I can tell by your chuckles -- where the hostess is trotting behind you, trying to put the coaster down before you set the glass down. We need a room that is literally "Martini-proof", if you want to call it that -- has glass walls, is a place to enjoy, a place that will take a little bit of rumpus.

We have statistics to support that, given in "Business Week" about two years or three years ago. In 1946, seventy per cent of all liquor consumed in the United States was consumed in restaurants and bars and thirty per cent at home. By 1952 that process had reversed itself so that seventy per cent of the liquor was then being consumed at home and thirty per cent in the bars and restaurants. This is a legitimate statistic.

You can come to some interesting conclusions. Either we have a room for proper entertaining in the way we want to live in our present houses; or else our homes are so inadequate we are driven to drinking.

I'd like to talk very briefly about the element of comfort and climate control. House Beautiful magazine, I think, did a phenomenal job for our group in disseminating this information. Climate control is merely the recognition of wind and rain, and particularly the sun, and you can design your home to accommodate them. White roofs, for example, keep a house much cooler in the summertime. With good insulation we can heat them better in winter.

With proper attic ventilation we have an excellent chance of keeping this house cool and more comfortable in summer. The use of overhangs is desirable to protect the windows from summer sun and above all, the absence of large glass areas facing west on a treeless site.

Now, air conditioning has brought several new things into being in planning. We are frequently asked in our immediate area here, if we think air conditioning is a desirable thing in a house. I'd like to say this, gentlemen. This does not apply to other parts of the country. A house in this area does not need air conditioning if it is properly designed from the standpoint of climate control. If it is not properly designed, you can't afford air conditioning. The operating cost is too high. Further south air conditioning can be desirable.

There is another modification I'd like to hang on this before somebody catches me. That is, we do air condition buildings here, not because we need to air condition the building but we do need to air condition the people. When you have an assembly of people they give off a considerable amount of heat per person. In a restaurant, theater, or any gathering place, most certainly you should have air conditioning. But first of all, you must have intelligent climate control in building design.



If you do a large amount of entertaining air conditioning might be very desirable in your house, but first, again, you must have good climate control. That is merely designing for comfort and it does not add to the cost of the house.

Now, we believe in the "easy-does it" school of design. Many men in our profession are intellectuals. I don't regard myself as an intellectual. An intellectual I regard as a man who starts out to prove something. Now, we have had in the last several years proof that you can build a building entirely of glass. We have had proof you can build a building with no glass. We have had all sorts of intellectuals trying to establish proof for some new thing.

We have two types of timidity in design -- those who are "traditional" designers who merely follow what they think is safe and what they are sure that the banker will be pleased with. You have the other type of timid designer who has been trained under a certain system or discipline of design which holds that a building must show its structure in the form of rectangles or maybe some other particular characteristic. This type of timidity is the fear of not following the latest thing.

When we build this community it has an economic life from sixty to one hundred years. A fifty-year life is very important, whether it follows the latest use of materials or not. We dare be six months late in the use of a new material. The main thing is, I think -- a legitimate aspiration or ambition -- that fifty years from now, when somebody reviews this community, he comes up with the comment that for its time it was pretty good. That is enough ambition and difficult enough to achieve.

Now, buildings must have form. We admire the colonial architecture, and we say colonial buildings are beautiful. But some of us admire them for superficial reasons. Therefore, if we put a picket fence around the house or shutters on the windows, we think we have achieved something, even though the form be very ugly in its proportion. Too few of us admire the use of color, the simplicity and honest use of materials as real reasons for beauty.

Gentlemen, I can't describe the theory of architectural design in five minutes. I would like to set one thing straight -- try to plant this seed. All good architecture in its day was traditional. It was the contemporary design of its time. The tradition of architecture is honesty and integrity in the use of materials, good judgment in design and not the repetition of historical forms.

We have one new thing that I'd like to point out, and that is that all of this must have an economic justification. Within the building industry there are always men who represent enlightened management in building -- men with the vision, the ambition to create something that is more than just a source of profit. These men have sought and employed design talent and have cooperated with designers to build fine communities. Maybe they could be accused of building monuments to themselves. If so, more power to them. These men are the craftsmen.

But, we also have today an awareness on the part of some builders that they need "design" as a gimmick for merchandising. Such a builder has included all the household equipment. He has got washers, dryers and freezers and so forth. He is trying trick colors, he is trying a smorgasbord of materials in which he desperately throws in everything he can on the outside of his house. Now he is told that "this year you need design", and he thinks of it entirely superficially. He has the idea if this year's house is going to be "sharper" than last year's, people are going to turn in the old model and buy a new one, as they do with automobiles.

We have a real hazard there, gentlemen. I'd like you to think of this. We scrap automobiles after seven or eight years. And, if we build a car that is very ugly with miles and miles of chrome on it, it gets scrapped -- we don't inherit it from generation to generation.

What we are building in this community is a part of America. We are going to live with it. It affects the values of all our property. It affects our way of living, our families and our children. It has to be good. Thank you.

- - - -

#### BUILDING THE NEW COMMUNITY

By Leonard G. Haeger  
Vice President, Levitt & Sons, Inc.

Now that our land planner has laid down the broad principles of community planning, and our architect has described in a very broad way the size and character of these residences which we should build, we, the prospective builders, had better get down to work if we are going to complete this community by 4:00 o'clock this afternoon. Now, in case you don't really know about this builder at this late date, I'd like to tell you my favorite story about the home buyer:

This builder went for a walk in New York and when he got around 63rd Street he saw a new church. This new church was completely finished. He opened the gates and went into the church and got ahold of the construction superintendent and for the next two hours the two of them went through the church. There were many explanations about the fine mosaic work, the fine stained glass windows, the beautiful paneling, etc. At the end of the talk, this builder was at the gate ready to leave, when he turned to the construction superintendent and said, "By the way, what denomination is this church?" The construction superintendent replied, "Well, now, confidentially, we are building this for speculation!"



You have heard about the entire process which builders must face; it involves many things -- land planning and development, design of structures, the selection of building materials, actual construction. We've got to hire labor, we have got to get money, we have got to consider building and zoning regulations and other regulations. We have got to consider merchandising. In other words, we have to sell the houses. Have to carry on a public relations program.

So, considering all those things we'd better decide how to organize our company and decide what parts of this process we can do ourselves and what parts we might choose to have others do for us.

We have at Levitt & Sons the belief that the control of the entire process is fundamental to the success of the entire operation. The way in which we operate is not necessarily typical of the organization of many large builders, but it's at least one way of carrying out successfully a building venture.

We are organized into a small group of departments. Our engineering department -- our organization is not unlike many of your manufacturing organizations -- carries out the land planning and the civil engineering functions described by Mr. Clark.

Our technical department carries out the planning and design functions described by John Highland, as well as many of the broad original planning. Our construction department -- this is the third one -- actually carries out the construction of roads, sewers, water, houses, shopping centers and our community facilities.

The procurement of building materials for our operation is handled through a wholly owned subsidiary organization which is run by our comptroller.

We have a legal staff that handles the legal aspects of land acquisition and dwelling sale, as well as the many ramifications of municipal regulation.

Lastly, we have a public relations department which is concerned with broad public relations, advertising, and ultimately in the carrying out of community and social and athletic programs after we get this community. In spite of having a relatively small number of departments, we have actually staffed our organization.

There isn't time to accompany the first surveying parties and aerial photographers in their preliminary work, nor to follow the men making test borings all over our site to determine the character of the substratum. We will have to skip over the business of getting down a test well or two so that at an early date we can take our plans to the state agency which in most states controls the taking of water. We will have to study the various state sanitary regulations, as well as any and all local and state building codes and building regulations.



Now, John didn't exactly tell us the precise size nor the character of these houses. We have to decide that early in the game. We might base this upon previous experience; we might base it upon a survey of prospective purchasers, and we will learn from them, if we do this kind of thing all the time, the size of their families, their incomes, the number of children, where they work, where they come from and so on. Also, obviously a review of the school census is the type of information by which we can anticipate the school population and how it breaks down to the various age groups.

Next comes the seasoning of the factual information with the practical experience we have gathered over the years. After all this, we might be able to decide to build houses in about three price ranges this afternoon, say one at Nine Thousand Dollars, maybe one at Twelve and one at Twenty Thousand Dollars.

Now, rather than try to design this house we have simply had our designer work out house sketches. Previously, we have decided that about the minimum size of the lot for our smallest house will be about sixty feet by a hundred feet. Since we agree with Mr. Clark's concept of a curvilinear street pattern, we will quickly find out that about half the lots will exceed the six thousand square feet minimum, and that most of our lots will be somewhat larger, particularly the corner lot which will exceed this six thousand square feet minimum.

Our thinking on street widths is that neighborhood access streets should not exceed twenty-four feet in the pavement, and the so-called collector streets should not exceed thirty-two feet in the pavement width. I believe he suggested thirty-six feet for that. Our principal argument for these widths is in behalf of safety. Wide residential streets make high speed traffic possible and quite probable, and, conversely, narrower street widths make it almost impossible for automobiles to speed through a residential community at forty or fifty miles per hour.

Since our subdivision plans must be accepted by the FHA and VA, because we work with them, we have better have their reviews at an early moment. Mr. Clark has suggested, and we have found, that not only various land planners have read different books. We also find some of them are reluctant to believe what they have read and sometimes have personal fancies and whims and attitudes with which they will try to, shall we say, indoctrinate the builder. In my experience many builders are able to withstand this indoctrination.

Finally, the great day comes. We have acceptance from all the planning commissions, the various municipal groups and the Federal Housing Administration. We are ready to start, and rather than go out on the job this afternoon -- you are all worn out -- and start driving nails, I'd like to discuss only one aspect of the operation and that is its logistics.



Remember, we want to build fifteen thousand houses. Now, considering weather and vacation schedules, we can count upon about forty working weeks per year, so we will try to build about four thousand houses per year, or perhaps one hundred per week.

Assuming that our average house -- this house is hypothetical one for this afternoon, it's not one that Levitt builds so don't bother copying down these figures -- suppose this house contains twelve hundred square feet and has three bedrooms, it has two baths and a one-car garage.

On this basis, we will have a look at the materials procurement program. Since it's a slab house on the grade, we can count on using about thirty yards of concrete per house or we will use about three thousand yards per week. We will have to get set to handle about thirteen thousand five hundred bags, or nine to ten carloads, of cement per week. To make this cement into concrete, we will need seventy-eight hundred tons of sand and gravel per week.

This average house is going to take about seven and a half thousand board feet of framing lumber. This means each week three-quarter million feet or twenty-seven carloads of lumber for the framing operation alone -- that is, altogether.

If we use gypsum or plywood sheathing, each house will require about twelve hundred square feet or a total need of one hundred twenty thousand square feet per week. Each house will take four to five thousand square feet of sheetrock or a half million feet per week, which is roughly five hundred tons of gypsum dry wall per week.

Each house is going to take about eighteen squares of roofing shingles or eighteen hundred squares per week. This adds up to 189 tons of asphalt shingles per week.

Depending on the size and the design of the house we can expect about twenty to twenty-five windows and about twelve doors in each house. This works out to be about twenty-five hundred windows a week, about twelve hundred doors, and maybe half of them, maybe eight hundred or so, solid doors and perhaps four hundred might be folding doors.

Let's take a small item like nails. We think that we can build this house for about three hundred pounds of nails, which is considerably under the calculations of some builders, but even then this three hundred pounds will take fifteen tons of nails per week.

Since obviously the house has two bathrooms, we will need two hundred complete bathrooms per week -- that is, two hundred tubs, two hundred lavatories, and two hundred water closets.

While we are going to plan these houses better, as Mr. Highland suggested, we are still going to equip the kitchen. We need one hundred sinks, one hundred counter tops, one hundred ranges, one hundred refrigerators, and a hundred washing machines and a hundred dishwashers each week.

Should we decide to do an all-copper plumbing job with panel radiant heating, we will need about four hundred and fifty pounds of copper tubing per house.

We could go on and on into further detail of the many additional materials needed -- the asphalt tile, ceramic tile, asphalt shingles, insulation, furnaces, shower enclosures, wiring. To do the job you will need additional concrete for curbs, gutters and sidewalks. We will find as we go along we use about fifty feet of sewer pipe per house. This will be in varying sizes, or about one mile of sewer pipe must be laid each week. That is an important statistic.

My final parting statistic gives you some motion of the tremendous task which we have undertaken and the scope of the over-all job in terms of material handling. Each house, with its foundation, will weigh about seventy-five tons. If we build at the rate of one hundred houses per week, this means we must handle seventy-five hundred tons of building materials per week.

And, finally and quite obviously, our sales program, in spite of having placed this new community in precisely the right place and have planned it with all the considerations of land planning, and have done the best job of house design possible, we will still have to gear our sales program to our production line. Otherwise we will find ourselves in the same fix as today's automobile industry is in. We have got to, in addition to handling these materials, be geared to process a hundred contracts, a hundred mortgages, a hundred titles and a hundred warranty certificates each week.

If the houses sell for, say, Twelve Thousand Dollars, we'll be in a business here of a million two hundred thousand dollars per week. This is exclusive of shopping centers and other commercial ventures. This, I assure you, is big business -- the kind of business that needs the skill and direction of a real business man, like my boss -- Bill Levitt. Thank you very much.

WHAT MRS. AMERICA WANTS IN TOMORROW'S HOME

(Panel Discussion)

MR. LANG(Moderator): Mr. President, members of the head table, ladies and gentlemen: I can see expression of envy in the eyes of some of you men -- my being up here amidst these ladies. You may think its favoritism but I assure you it must be something deeper than that. I think probably I just take more vitamin pills. It is really a pleasure, and more so a privilege to appear before such an array of a technical power, femining finery and the jovial atmosphere of this delightful banquet.

Most banquets have entertainment, and this one is no different. Generally banquets have a master of ceremonies who tells jokes, and I may tell one. However, I am really a Moderator, or as it may turn out, a referee; anyway, my job is to keep the show moving. Now, at banquets generally there is an entertainment feature with girls - we've got them. Banquets also have music, and much of what these girls have to say to you tonight will be music to many of you. Banquets also have for a feature in some respects an acrobatic act. I assure you what the Panel will say will provide many of you with a great many mental gymnastics. So, we are pretty well rounded out for banquet entertainment. In addition to entertainment we will have education, something that you can stick back in your mind and take home to think over.

Now, the title is "What Mrs. America Wants in Tomorrow's Home". It covers a gamut that involves the wonderfully intriguing, changing and dreamlike interests of a woman's mind that are so stimulating and counterbalanced by what we men call "intuition".

Women are buyers, every man will agree to that. They are buyers, not payers. Women are also merchandisers, every man in this audience knows what good merchandisers they are.

Now, to enter into the focal part of this activity tonight, each one of you in the audience will interpret what the Panel of women has to say in the manner that is closest to his activity. To most of you, it will serve as a market barometer. You gentlemen who develop and create the things that make life more secure, more pleasant, more luxurious and ever moving toward a higher standard, you are the men who will take from this event tonight some stimulation.

With that thought, ladies and gentlemen, we want to go into this review of what Mrs. America wants, and as the first speaker on this Panel, I introduce the Home Service Director for MacFadden Publications, Inc. She has a bachelor of Science degree in Home Economics from Syracuse University. She has worked for the New York Herald Tribune and for the American Home Magazine, in all capacities in which she is now represented. She is a member of the American Home Economic Association, and all its affiliated societies. I present to you, ladies and gentlemen, Esther Foley.



MISS FOLEY: Thank you, Mr. Lange. It is very nice to be here tonight, and I hope I'm not here under false pretenses. I do not represent a "shelter" magazine. MacFadden Publications publish romance books. Our largest publication is True Story. But romance breeds home, as you all know, so there is no reason at all why I should not have a certain opinion, and an objective interest in what many women want in tomorrow's home.

My job gives me this advantage: The Company allows me to travel and I have been all over the country from Maine to California many times in many states.

When I go into a city, I go all through it. I go through the lovely sections of town, the park-like estates where perhaps you live, I go through the sections where business and professional people live, and then I go into the places where my readers live. You will find that 52 per cent of the families in any industrial city live in what I call a wage-earner neighborhood -- little houses, rather close together, built rather close to the sidewalk. I have found that the wage-earner in any town, lives in a neighborhood which closely resembles the one in Maine, the one in California, the one in Indiana. Wherever they are, they live alike.

I read in the New York Herald Tribune last Sunday that home ownership has gone up tremendously lately; even then, there was sort of small explanation - "people have to live somewhere." What's happened to those who would like to rent or share a house - to those who are not by tradition prepared for the troubles of ownership? Especially at the start of married life?

I think that a man who has to buy a home just to have a place to live buys under duress. Is he a good home-owner? Maybe he can get to be after a while. Perhaps a better design of house would help, and perhaps my observations might be useful to you in your thinking.

First, I will describe the group I am talking about: The income of the wage earner is somewhere between 35 and 45 hundred, and sooner or later it might go to 5,000; it might sometime with the more talented of the wage-earner group go to 7,000, but I think by and large we'll make it 5,000. This is going to be the highest point of his earnings in his lifetime. He reaches this quite soon. At 16 or 17 he starts to work, and maybe by the time he is 30 or 35 he has reached the peak of his earning power. With you it's different. Your earning power doesn't start rising until 35, and it keeps on going until you want to make it stop.

All right, then out of this income my particular young couple want three things: First, they want a car; second, they want to satisfy the need to travel, (it's an urge that is sweeping this whole country,); and then third, they want a place to live. There is no one, two three about this, and no A, B, C -- these three items must be satisfied all at once. So, any home that you design for anyone in the wage earning group to be satisfactory must be shaped by the other two big expenditures that will come out of his salary.

Let's consider first what a car means to a house. A man is the speaker for the car. He wants a garage or a carport or some shelter for the car, plus a very good driveway. Now, this couple is going to travel; they don't want to spend their time and strength at home, so the yard must be quite small and must require little care in both time and money.

Now, the character of the wage-earner neighborhood itself must not be changed for several reasons: First, small individual houses, close together, give the feeling of warmth and neighborhood intimacy which is desired by the wage-earning group. They are not academic students, but they are students of humanity and human nature. This closeness is a part of a satisfactory way of life. This is one of the reasons groups of homes have been bought so eagerly by wage-earning people. They like living close together, they like uniformity of design. You have to be an individual at heart to like something very different, and I think that if you have something very different in a neighborhood which is not very beautiful or large in a park-like arrangement, you ask for criticism - and this leads to unfriendliness.

Now, on all houses there must be a porch, there must be a fence or entryway to a porch, and an entryway to the back door. There is a reason for this in spite of the fact you'd like to make all neighborhoods open and free in appearance. There is going to be an element of vandalism in many parts of the country, always, and when you build, you must respect this. A baby carriage on a porch is never bothered; a baby carriage left loose in the front lawn without any porch to guard it, is going down the street like a roller-skate. There must be some physical line of demarcation which establishes ownership lines and you should bear this in mind again and again. It is essential in protecting against lawlessness to have a porch, a fence or a hedge around property.

Now, to take things room by room: The Kitchen: I have never seen one big enough, light enough, well designed enough to please the mother of the family. The living room: I have never seen one that any woman told me was too small. No one in the wage-earning group wants a living room except mama. She protects her furniture by putting a cover on the sofa, and "rain-coat" covers on the chairs. Only occasionally she takes these things off just to see what the whole place really looks like. The bedrooms: There are never enough, and many are too large. Women don't want large bedrooms. As soon as the children grow up, they get out - there is no lingering -- no making of a bed room beautiful for a teenager. The bathroom is always too narrow. A much larger bath would be much better than a bath and a half, and I have often thought that an answer to crowding would be a basin in the bedroom.

Now, the dining room: This is a very curious place. It's used for ironing, sewing, drying diapers. It would be much better used if it could be made a part of the kitchen. The attic and cellar: No, these are not wanted either, but a split level is an answer if you have storage above and below.

Here are some complaints against new small houses: The washing machine empties in the septic tank. This is not too good when the detergents foam up. The boards in the floor shrink and the linoleum buckles. The only outdoor exit from the basement is quite often through the garage, and the woman has to cart the clothes to the street and around back to hang them out. There is no space in the kitchen in the new houses for the broom, dustpan and ironing board.

Now, some special compliments for new small houses. I have had people say to me "Miss Foley, it's new - it is so clean". "The floor is plastic tile". "The windows have aluminum frames". Then they say, "We can build on later." They want a place where they can possibly put on another room - especially a bedroom if they need it.

If you would rather have statistics than impressions, MacFadden has collected a good deal of information from the wage-earner group (which is our specialty) and we have put it in the form (not yet printed) to be called, "Picture a House".

It covers the wage-earner's home as it is now, what he expects to do with renovation, additions and in brightening the whole neighborhood. I am going to leave a copy with Mr. Lange, and it is going to be put out on the table. If you like, and if you want it, perhaps soon we can get enough printed to send them to you on request.

Now, to add the whole thing up, I would like to say (and I think I can speak safely for the great many wage-earners around the country), my women do not expect perfection. They will settle for something that is better than they have, but still something that in their philosophy might be obtainable and enjoyable. Thank you.



WHAT MRS AMERICA WANTS IN TOMORROW'S HOME

(Panel Discussion)

MR. LANGE (Moderator): Thank you Miss Foley. I just want to make a few comments. I think we get these impressions around the country; it's a big country and there are so many variations of income level and so on, that a complete computation of impressions are of great value to us.

We are going to hear from another source of consumer preference and ideas, and I'm not going to introduce this next speaker as a substitute. We are sorry, indeed, that Edith Brazwell Evans is not here. I don't know a person in the shelter group who is as active, who is as alert, forward in thinking and actions as is Mrs. Evans. So we are sorry that she is not here to give us the benefit of her personal experiences, but I am sure we are going to be pleased.

The next speaker is the Editor of Food and Home Appliances for the Magazine, "Living for Young Homemakers", where she has served for the last five years. For six years she has been in research of new products for General Mills, during which time she interviewed homemakers over the country. She received a Bachelor of Science in Home Economics at the University of Nebraska. I introduce you now to Margaret Spader.

WHAT MRS. AMERICA WANTS IN TOMORROW'S HOME

(Panel)

MISS SPADER: Mrs. Evans regrets missing this meeting. The doctor tells her she has a few cylinders missing and she must take it easy for a while. Certainly she is here in spirit, tonight - as she loves chewing the proverbial building nails with this industry. These meetings are always an inspiration to her.

Mrs. Evans and all the editors on our magazine travel thousands of miles every year to try to find out what our readers want and what they don't want in houses, what they buy and what they are satisfied with. We have come to some conclusions recently that most of them don't really know what they want in tomorrow's houses.

How can they predict what they want, when they don't know what the new materials are going to be in just a few years? We have seen so many changes in our generation; new discoveries, new principles, new findings are being uncovered in your research laboratories which we in the editor's field don't even know about. We think the new developments will affect what we can get and what we can afford to pay for in just a very few years.

We have some indication that our young homemakers are not entirely satisfied with the houses they are now living in. Many of these people are living in houses which are built of materials we did not know about fifteen, twenty and twenty-five years ago. We feel reasonably certain that the turnover in real estate developments since the last World War is an indication of unrest someplace. Now, like all modern business organizations, we turn to a research panel to find out if they have any of the answers.

Let me assure you, we do not regard statistics such as these too seriously. Frequently it is too easy to disprove what they indicate. However, our last reader research panel seems to parallel, to some extent what Miss Heath has to say tonight. So, I'm going to take a minute to highlight the results for you.

The purpose of the survey was to determine the extent young homemakers have remodeled their homes in the past year and their plans for the coming year. It was conducted among 1,111 LIVING Reader-Panel members and the tabulations are based on a response of 74.8%. These readers are quite different from the audience Miss Foley just described to you. They are young married couples between 20-35 years of age. 60% have gone to college. These couples are quite self-reliant; they turn to experts rather than to their parents for advice. We find them going to Merrill, Lynch, Pierce, Fenner and Bean to ask about investments, rather than their fathers. Dr. Spock is the authority on children, not mothers or grandmothers. Our young homemakers are like Mr. Crandell's daughter, they are serving a lot of things their mothers never served in their home. They don't use mother's recipes; they resort to magazines and cookbooks. We find this right down the line. They turn first to experts and then to friends.



Part of this, we believe, is because they live further away from the family and relatives; their social set is more or less in business associates, sorority and fraternity friends. They do not confine their social life to family friends and relatives as their parents might have done a generation ago. They are not influenced by traditions as much as their parents were. To some extent this group rebels against conformity. Just the colored door doesn't mean their house looks distinctive in the housing development, and they are not satisfied with that kind of distinction. We find our husbands assisting with housework; they take a great deal of interest in child-raising and entertaining and they are not embarrassed to be caught in the act. That briefly, is the reader from which the survey was made.

Since 1955, home ownership within this group has increased from 53.9% to 65.2%; that is an 11% increase during the course of one year. 50.5% of the panel who own their own homes said they expect to buy again. That is over half of them. The average age of the home they now own is 4.3 years. The price of these homes is \$13,500; the houses have five rooms, excluding bath.

When are they going to buy again? Almost 14% will buy this year in 1956, and yet they have only owned these houses a little over four years; 11% will buy in 1957; 12% in 1958, and 18% in 1960. It is quite obvious the homes they have purchased have not fulfilled their need.

Now, we have recognized the fact that living in a house gives you some direction and knowledge of your needs for the future. Maybe they didn't spend as much as they should have, to begin with. We admit a lot of surveys reflect wishful thinking, but we can't help but feel this particular one reflects a need among our particular readers.

We ask them what they wanted in the next house they are going to buy, and 23% wanted eight rooms; 33.7% wanted seven rooms; and 24.3% wanted six rooms. They want more bathrooms, 43% wanted two bathrooms; almost 21% wanted two and a half bathrooms; and 23% wanted a bathroom and a half. We were rather surprised to see a large per cent wanted finished basements; 66%. 40% wanted finished attics. 96.8% wanted garages, and 60% of these wanted two-car garages. These statistics appear to say that today's home-owners want a change, but they do not tell you what to produce.

Three years ago we had a very interesting young couple come to our office from upstate New York. They brought with them a plan they had worked out with their architect. They had been married for two years, and were keeping house in a farm house which had been converted into three apartments. The apartments were small and not very adequate for a pair of college graduates who loved to entertain and enjoyed using heirlooms and exquisite wedding presents for everyday living.



One would assume the inadequacies of the little apartment would be the first considerations in the plans for a new house. But the floor plan for the kitchen was the most extravagant use of space I've ever seen. The architectural details of the exterior - and the rest of the house showed great care and thought had gone into the plan. But this couple hadn't even used good sense in anticipating what their future kitchen needs might be. Sixty inches of good storage space was designated for a picture window. Three doors opened into the room making it the center of traffic for the whole house. It would be impossible to include an eating area in that room after the major appliances and cabinets were installed. I pointed out these defects in the plan and suggested they go home and give these details a little thought and write me within a week - listing the factors which were most important - in order of importance.

After four days I received the list. It's a classic - and I feel it illustrates the ability of a large number of homemakers in estimating their future needs:

1. The kitchen must be pink.
2. The 60-inch picture window was second in importance
3. Washer and dryer in kitchen. (I had suggested they be placed in the basement.)
4. Double oven range.

She never mentioned storage, work space, or eating area. The aesthetic feeling was more important to this homemaker. It was a challenge to me - to the architectural editor and the decorating department on our magazine and we did the best we could with it. She got a lot of pink; she got her picture window and she got labor saving appliances and storage but not storage at point of use.

After working in this kitchen two years, she now appreciates the logic in my original recommendations. Today - she would put the laundry equipment in a utility room or the basement. She would design storage space to specifications of items to be stored. She would increase the size of the kitchen, reduce number of doors and design a more adequate eating and living area in that room.

This young couple had two years of apartment living experience, the advice of an architect, the specialized talents of our staff and their house is distinctive but even with all that help - they admit now the plan fell a little short of what they actually need.

I think they are fairly typical of the young people today. They don't really know what materials are available and where to get help to determine their long range needs. I think that part of that responsibility comes from groups, or should be assumed by groups such as this. Our young readers have confidence in the future; they want two baths, and they want double car garages, and they

want more room, and they expect you will produce it at a price they can afford to pay when they are ready to buy. These are material needs, and they are much easier to determine and formulate than the aesthetic and spiritual needs. You can have one without the other. We have plenty of examples of that in this country, but if you are going to please my special readers, and if you want them to be happy with the houses they buy, I think these elements, the material, the spiritual, aesthetic, must go hand in hand.

Our reader mail department keeps us advised of what our readers write us about; what stories they criticized, and I was stopped with a very brief one from a young couple in Indianapolis, recently. They have been through thirty-five builders' houses, and they couldn't find a single house with a room where they wanted to hang a portrait which they owned. They didn't think the houses deserving of their own things.

We find this same criticism from many parts of the country. They are not prejudiced about building materials and they are appreciative of new developments and imaginative use of the materials. They like flexibility of design; they like to be able to change a room and change arrangements in a room.

So, if you build for our young couples a home that becomes a background which time will enrich instead of scar, a place that inspires real pride of home ownership, a house that can grow gracefully and meet present needs and wants as well as future needs, yet keep within the economic range, I think our readers will buy and like it.



WHAT MRS AMERICA WANTS IN TOMORROW'S HOME

(Panel)

MR. LANGE (Moderator): Thank you, Miss Spader. I think expressions like this serve as inspiration to everyone in the building industry. The results of readers' surveys made by this magazine point out one thing to me of which many of you are aware - that is, we are coming into a market of second-home buyers. Naturally their needs are upgraded - they want larger rooms, larger everything, except perhaps larger price. I think there is a challenge to the building industry in one direction to satisfy that percentage of people who want these larger homes. I think there is a further challenge, however, that reaches down to manufacturers and then to builders, and that is that we in the house building industry have neglected entirely the building of a low cost house.

Now, I know, despite all the results of surveys and readers' preferences, a builder operates in a shadow of a dollar sign, and that shadow is quite deep.

On the other hand, ladies and gentlemen, we are going to be confronted with these challenges. The easier one to solve is the one for second-home buyers. But the primary challenge which we will meet very shortly, within the next five years, I would say, is the building of the low-cost house -- which we have entirely forgotten. That means a new approach in design, plan, assembly of materials, reduce construction time, and so forth. I want to bring that out because I think we in the industry, from a technical standpoint, are going to have to meet the challenge for the house we have now forgotten. We remember those \$10,000 houses of only four years ago. That house has disappeared not through our own fault entirely, but because our industry has raised the "appetites" of every one in this country.

Now, we have been into the background of surveys and statistics and readers' preferences. Next, we are going to get one of a very practical and immediate nature. Some months ago, an announcement was made out of Washington that Albert Cole was going to invite the women of America to tell him -- his agency -- the country, what they want the builders to build into the houses of tomorrow. That announcement was received with many mixed emotions. Some ridiculed, some seemed antagonistic. One builder said to me, "Sure, he'll get these women out there and they'll want him to build a twenty-five thousand dollar house for ten thousand dollars."

That ladies and gentlemen, was not the case. I happen to be very close to the conference that was held in Washington about two weeks ago. We had a feature editor down there; I have a complete report. What the builder feared was not the case. There was a very serious appraisal of present houses, and a very serious demand for what housing should be in the future.

We are going to have that report, "from the woman's mouth". She is the Assistant Administrator in the Administrator's Office of the Housing and Home Finance Agency. She was appointed to this position last December by Albert M. Cole. She has been Cole's Executive Assistant since he took office in 1953. She is a native of Kansas, attended Washburn University in Topeka, University of Texas, George Washington University. She has worked for the State Department and the American Consulate in Frankfurt, Germany, and was in Mr. Cole's staff while he was in Congress.

Ladies and gentlemen, as the final speaker on this Panel, I give you now Annabelle Heath.



MISS HEATH: I am not certain who Mrs. America is or when tomorrow starts. But I do know that the houses built today will be homes for many tomorrows. If we are to have better homes tomorrow we must start building them today. For we all know that there is not going to be, at some future day, a sudden revolution in the kind of houses we build. Changes are gradual. The results of research and experimentation and testing in use. For the first time the Government has gone directly to the person who spends 24 hours a day operating a house, an expert in her own right - the housewife - and asked her what she thinks a home for a growing family should be like. The Women's Congress on Housing focused on single-family homes for families with children, since they represent the greater part of the housing market demand.

While 103 representatives from all parts of the country were given an opportunity at the Congress to expand their ideas, we received well over 4,000 letters with many constructive suggestions.

Perhaps one of the most interesting things about the Congress was the scope and degree of agreement reached. In review, the reason for this becomes apparent. One of the women gave a key to this reason. "We have been interested in discovering geographic differences but we have enjoyed finding out how much we are alike in the way we feel about living values for our families." Experience in living in various kinds of housing, reading and studying plans in magazines and inspecting many new houses helped them to form an idea of the kind of house that would permit them to attain the desired living values. If these desired values for family living remain constant for tomorrow, then we have some good guides as to what Mrs. America wants in tomorrow's home.

In accordance with these values they want houses to serve them in achieving as full opportunity for personal development as possible for each member and the family as a group. They recognize that there are needs and functions which must be shared as a group, and there are the separate needs and activities of the individual members. Also they recognize that some of these activities are strenuous and noisy, others passive and quiet. Some members need to be noisy at the same time that others must have quiet. How can these conflicting interests be reconciled?

To permit as much freedom as possible, they say areas for quiet should be grouped together and insulated as much as possible from areas of activity.

In the active area the family can be together to share common interests, joys, pleasures and misfortunes. In the quiet area each individual should have a space, no matter how small, which is his own.

The formal living room becomes less important. In most cases, they want it as a quiet room, away from the traffic lanes in the house. It is frequently defined as the old-fashioned parlor type of room -- a place always in order, for receiving the unexpected caller. They will accept it smaller in size than the normal living room to compensate for the Family Room.

The most time-consuming operation, for many homemakers, is the constant daily chore of house-cleaning. This results when children playing outside have to enter the kitchen, cross the living room and go down a hall to get to a bathroom. And then back out again, perhaps many times a day.

Much of this work could be eliminated if there was what we have called a "decontamination area" at the kitchen entry. The women didn't call it that. They simply stated that they want a little entry area, where rubbers, galoshes, snowsuits, and muddy or sandy play clothes could be removed and a lavatory nearby where the children -- and Dad -- could clean up without tracking all through the house. Here the children can also get those endless drinks of water. A toilet placed here would serve the children running in and out from playing in the back yard. And for Mother's taking care of the smaller children conveniently, while working in the kitchen. It is merely a matter of relocating the guest "powder" room from the formal living area to the working area.

They want a modified area at the front entrance. That is, some kind of a foyer or screened-off area where guests and family can remove wet clothing and leave dripping umbrellas.

They want access to the front door and the bedroom area without having to cross the living room. Halls and passageways are much easier to clean than a whole room.

There was general agreement that two closets at least 5 feet long were needed in the parent's room and one in each of the other bedrooms.

They want planned storage for articles in daily and periodic use located conveniently near the places of most frequent use.

With a three bedroom house a three fixture bath in addition to the half bath at kitchen would be adequate for most. With a little more money they would like another lavatory in the main bath.

There was a preference for basements over a large area of the country. Apparently, this was based on a desire for assurance of adequate storage. Claimed substitutes for basement storage are not always fulfilled. Also, apparently, there is a strong belief that basements keep houses warmer.

Attics are generally recognized as keeping the house cooler. There is still a strong desire for attics for this reason only.

Location of Rooms

With regard to location of living areas, in general they want the kitchen facing the rear yard so they can supervise the children at play. They prefer the kitchen facing in a southerly direction. They want the kitchen to be bright.

It's bad enough to have to get up and get breakfast. Why have to do it in a dreary room facing north?

The living room is all right facing north. It gets its most frequent use in the evening. Facing north, the sun won't fade rugs, furniture and draperies.

It seems to me that what came out of this Women's Congress on Housing was something very simple. Something so simple that my main concern is that it might be overlooked. It is family living values that the women were talking about first and houses indirectly. These living values do not change with advances in technology. Improvements in technology should be directed toward making the task that women have to perform in achieving and maintaining those values easier, more convenient. As long as we keep this proper perspective it doesn't matter if the materials used are the conventional ones, newer metals or plastics or some now undreamed of wonder material or invention.

This is the challenge and opportunity that these women have given to you.

- - - -



CLOSING COMMENTARY

MR. LANGE(Moderator): Thank you, Miss Heath.

Now, isn't this better than having dancing girls? Seriously, ladies and gentlemen, we have concluded the Panel.

I am sure that each of these Panel members have material in printed form in one way or another of interest to you.

True Story magazine has a survey and so does the magazine Living for Young Homemakers.

I am sure Miss Heath will have printed something of this very successful and practical Congress on home design and its appointments. Our June issue has a five-page report on Miss Heath's convention. I am sure about one point on this Congress - it is as good a marketing barometer as I have seen that is of interest to manufacturers and merchandisers and research men.

Now, if I may have the opportunity from the President of opening this meeting for any questions or discussion, I would like to do so with whatever time limit they may place on us. I warn you, the women are going to have the last word. We have five minutes. Are there any comments?

MR. MICHAEL F.X. GIGLIOTTI, Monsanto: My question is directed to Miss Heath, but I think I involve Miss Spader and Miss Foley. Miss Spader spoke about her survey of 1,111 young couples twenty, twenty-five years old, who, as I remember, wanted finished basements.

Miss Foley spoke of her wage-earners in the bracket of \$3,500 to \$4,500 per year who did not want basements.

Miss Heath is giving us results of the survey of 103 women who do and don't. I am wondering if a breakdown has been made of the types and groups represented by these 103 women, their earning level, and how they were selected to participate in this forum?

MODERATOR: Do you care to answer the question, Miss Heath?

MISS HEATH: Well, I'll start backwards. All of them were selected from the letters that we received. The majority represented families with children, and children of school age, which automatically put them into an age class. We tried to select them from a cross-section, too, as far as the economic level was concerned. In other words, there were all levels of income within the middle income group. We had people whose husbands were professional, laboring class, some of them professors, some of them attorneys, we had a lathe operator, we had one woman whose husband worked in a restaurant, one of the women is a janitress, and one of the women is in one of the high schools in the Dakotas.

MODERATOR: Wasn't it true that you divided your groups into regional conferences?

MISS HEATH: They were divided into ten working groups, based on geographical areas, with the exception of the tenth group, which was a composite from all parts of the country. They were divided geographically which also represented some differences in the type of construction in their areas because of climatic conditions.

MODERATOR: Our five minutes are up. I am turning the meeting back to the President. I think the Panel deserves a good applause.



FHA'S TECHNICAL PROGRAM

By Neil H. Connor, Director  
Architectural Standards Division  
Federal Housing Administration

INTRODUCTION. H. F. Robertson, Manager, New Product Engineering Department, Bakelite Company, Session Chairman: The concluding item on the program is a paper on the Federal Housing Administration's Technical Program, by Neil H. Connor, Director of the Architectural Standards Division of the Federal Housing Administration. Prior to this position, he conducted a private architectural practice in Boston and specialized in housing. Mr. Connor is a graduate of Yale College and the Yale School of Architecture, and holds a Master of Architecture degree from Massachusetts Institute of Technology. He is a member of the American Institute of Architects and the Boston Society of Architects, and is a Commander in the United States Naval Reserve. Mr. Connor.

MR. CONNOR: I am delighted to be here because in the FHA we feel strongly about the technical studies program being carried on by BRAB for the FHA. We feel strongly about it because we hope it will solve some of our tougher problems. I think before going into details I had better run over the background of FHA's technical problems and the program which has evolved. The preamble to the Federal Housing Act contained a statement to the effect that the FHA should encourage improvement in housing standards and conditions. In the beginning of FHA operations, (1934), house-building was fairly simple -- using simple methods and well-known materials. The Insuring offices were able to decide pretty much what should be done. They consulted headquarters occasionally, but not often.

As the years went on, however, several things happened:

One was an enormous acceleration in technological advances in both materials and methods. Confronted with these changes, the 75 insuring offices sometimes made conflicting rulings because they had to base decisions upon local practices and their own information on what was good. These conflicting rulings, of course, made great difficulties for pre-fabbers as well as conventional builders moving from one jurisdiction to another, as many of them were.

Rising costs and increased volume of building posed other problems. As you know, the living area of houses in terms of square footage decreased for several years. Although it is increasing now, the amount of space that a family can afford today is less than that enjoyed by a family in



the same relative position of our social structure 20 years ago. So any way that can be found to increase living area is desirable. This means that the FHA, in its standards, must constantly watch for any excess requirements, that is, for things that are not absolutely necessary in a house.

Our tendency and a rather natural one, I think, in view of limited research data has been to go slowly on acceptance of new materials and methods. There are so many of them -- and there is always a risk until performance is proven. So unfortunately our answer has had to be "No," possibly in too many cases. I thought it was very interesting hearing the panel discussion about adhesives. A typical question came up -- how do we know something will last 30 years? This matter of durability is one thing with which we are constantly wrestling in order not to be insuring loans on dwellings that will not be as desirable in 15 or 20 years as the ones we are used to now. It is hard, you see, to keep ahead of things and impossible without proper technical data.

Our decisions on products and methods are far-reaching since FHA Minimum Property Requirements and acceptances of materials are generally followed by the VA. FHA and VA accounted for over half the 1,200,000 houses built last year. Conventionally financed homes, representing the remainder are strongly influenced by FHA actions.

The FHA, too, must recognize changes in architectural design. We can't afford to insist on Cape Cod houses or other designs just because they were good mortgage risks in 1934 or 1944. New ideas in houses are coming along so fast that acceptable design in 1930 and 1940 is no longer acceptable now. Lack of domestic help, interest in hobbies, recreation and travel have created entirely new requirements in planning. We have to keep looking forward, and we cannot wait too long to accept new developments.

In addition to an effort to keep our "minimums" to minimums, we are making a great effort to get quality. I did not mean to imply a moment ago that we are trying to push our standards down. We are simply trying to determine minimums to save money where it can legitimately be saved. Quality is recognized in our valuation process. Encouragement of quality in this manner is the most potent tool the FHA has to obtain it.

Two years ago the Architectural Standards Division was organized. The re-organization involved an attempt to solve the problems I have touched on. In the two years since the division was set up, we have done several things. We have changed our method of acceptance of materials from a local to a national basis.

For example, under the old FHA procedure, if Columbus, Ohio wanted a decision on a material, they would write to headquarters and we would say it was all right or it wasn't. Maybe we would say "no." Then about a



year later, Cleveland, Ohio would write in and ask about the same thing, and by that time we had learned enough about the material so we could say it was O.K. Then the builder who worked in Columbus would find out that the builder in Cleveland could use something else, and that created some pretty difficult situations. Now when anybody asks for acceptance of a material where there are no recognized standards by which our offices can measure, we investigate it and may produce an acceptance sheet that goes out to all the offices.

We have in process a consolidation of minimum property requirements which we hope to have out before the end of the year. It will reduce the number of books from 28 to 1. I think it will clear up a lot of misunderstanding in the same way the national acceptance of materials has done.

We started a program last year in which we asked the Building Research Advisory Board to help us. It was thought of as an initial stab at some technical problems. You may be familiar with the reports which are out. One has to do with slab-on-ground construction; another on anchorage of the house to the foundation; and a third, the effect of automatic sequence washing machines on private septic tank systems.

I thought when we started our program with BRAB that it was absolutely essential to come up with some concrete, definite actions to justify the studies. We had our first opportunity do so with the report on the slab-on-ground study and we have made several changes in our requirements already. They may seem minor, as for instance, allowing a tolerance of  $\frac{1}{2}$  inch in the thickness of a concrete slab-on-ground which is required to be a nominal 4 inches. This has quite a far-reaching effect because the warranty a builder must sign on completion of a house is involved. Anybody going out with a ruler might find that a slab is less than an actual 4 inches and would have a claim against the builder. The BRAB Committee decided that  $3\frac{1}{2}$ " is enough and, as a practical measure, adaptable to the use of 2" x 4"s in forming. When a body of people, representing the best thinking on the subject, thought that  $3\frac{1}{2}$  inches was thick enough -- this is very important. So we ask for 4 inches but will tolerate  $3\frac{1}{2}$ . For half the 1,200,000 houses built on slabs each year, a half-inch difference saved in the amount of concrete in the slab is important. However, even if we make no changes in requirements, a report such as this is very valuable if it confirms our actions and resolves doubts.

The Report on the anchorage study just came out but having been in Los Angeles at the A.I.A. convention, I haven't gotten through it yet. Nor have I had time to study the report on automatic washing machines, but both of these reports do come up with very concrete recommendations. The anchorage report, I understand, gives a formula which can be used to figure out whether or not anchor bolts are needed. This is a small thing, but is a fussy one for the builder. In half the places in the country,



the use of bolts is not customary -- in the other half, it is. So we turned the problem over to BRAB and they come up with a report that gives us answers. The report on automatic sequence washing machines indicated it is better to put all the waste water into one septic tank, and that is of consequence cost wise. There are many places in the country where separate tanks are required for laundry and for other wastes.

The other reports are due at the end of this month. They are concerned with several subjects. One on wood block flooring deals with how to put it down, and I understand it will indicate that it is possible to do so without using heated mastic. There is a report coming on concrete brick, which has always been troublesome because of problems of cracking. Another report is concerned with hot water heating and reasonable requirements for hot water heaters. We have had a lot of trouble with them. A family moves in, and before a year ends sometimes the hot water heater fails. Termites are covered in another report, and vapor barriers in the last of eight. These studies have been undertaken since the division was set up.

Another innovation we have made is to step up use of the committee system for handling our problems. We are very short of personnel. FHA doesn't, of course, depend on the taxpayer as do almost all government agencies, but we are dependent on Congress for appropriations. It is very hard to convince Congress that what I have been talking about is worthwhile. So we have been using a great number of committees to supplement lack of technical resources. When I first got to Washington, one proposal was for a permanent committee to study the problems of the Architectural Standards Division. This was followed through and we have set up an Architectural Standards Committee which is devoting its time largely to working on consolidation of the MFR's. There are a number of committees composed of people who are interested in special subdivisions of the industry. A group might come in on concrete or roofing or something of that kind. We have many committees like that. The most recent committee is a technical Studies committee. It is composed of industry people, members of BRAB, Forest Products Laboratory, Bureau of Standards, Department of Agriculture, and Public Health people. They came up with the idea that we need to do more with technical studies. And so we now have a bill in Congress, approved by the Bureau of the Budget for \$50,000 for administrative and \$300,000 for non-administrative expenses in the next year. This is to provide studies of three kinds. We have a list of them on which we will seek industry advice. We hope BRAB may be able to help us figure out what is involved in these problems, in terms of time and cost required. Then we will call upon industry to help us assign priorities to the problems on the list and say what studies are worth while and what are not.



Three types of problems are on our list: Problems involving (1) acceptance of new products or uses for old products. (2) Materials and products in combination, and (3) the compiling of data produced as a result of FHA's own extensive experience with housing.

1. With regard to product acceptance problems, we have a backlog of about six weeks in the office, and we just don't feel we are doing as good a job as we might be. If we need information about a product being submitted, we have no problem at all in getting the proponent to pay for necessary tests. We never have any difficulty in arranging with them to pay for tests at the Bureau of Standards or wherever necessary. We are confident that industry will pay for as much of this part of the technical studies program as can possibly be arranged if we can only get some technicians to assist in programming. The function of FHA in the case of new materials will be only to guide manufacturers along the way.

2. The second type of problem, which is very difficult, and which is solved to some extent in these first BRAB studies, is where a combination of materials or products is involved. In such cases you find it impossible to get industry to put up the money for research or tests, because obviously nobody wants to pay money for an experiment which may not be of some advantage to him. In areas where we need answers to such problems, we expect BRAB will be asked to help us.

3. The third type of problem we all feel quite strongly about. There are millions and millions of houses in this country which have been insured by the FHA and upon which we have no experience information at all. We have a vast storehouse of knowledge in houses throughout the country which only needs to be tapped. Maybe we will have to do this job of data collecting by turning the job over to outside groups -- university groups, or others who can make the studies, because I think it is fair to assume we cannot put more personnel on to do the job ourselves.

The personnel problem is so difficult that we have resorted to using task groups to accomplish many tasks such as the MPR revision, going along largely with the help of architects from our various insuring offices who come in for three weeks at a time. A group of eight have been with us a total of six weeks. With the technical studies program now in Congress we may be able to get answers without penalizing operations in our insuring offices.

In closing, I want to emphasize a few points regarding operation of the technical studies program. There have been similar programs in the Government that have been terminated. There was one in the HHFA which I think Congress felt was too removed from practical problems, so it was discontinued. The approach we are taking is, first, that we will have no projects which do not have some direct bearing on what we have to know. Second, no Government funds are to be spent on anything that industry can be expected to pay for.



One last point I should like to make is that although this program is geared to our operations in FHA, in all cases results will be made available to everybody. There will be things we hope to come out of the program that will be of use to the Public Housing Authority, certainly to VA, and to private industry.

MR. ROBERTSON: We have time for one or two questions, if Mr. Connor will be willing to subject himself to them.

JOHN WHITE: John White, American Housing.

Yesterday it was stated that the Building Research Institute was started to avoid having the Government establish large research programs on its own with the resultant bureaucracy. Do you feel that the Building Research Institute is performing a function that will avoid that?

MR. CONNOR: I didn't mention the Building Research Institute. As far as BRAB is concerned, when we asked for help on research problems, we could not afford to have research done, but we could go to BRAB to obtain criteria based on the best opinion available throughout the country. I am pretty sure that BRAB cannot do laboratory research. We don't contemplate using BRAB for research, but more for the type of thing we have been doing on these studies.

MR. ROBERTSON: I believe BRAB is acting where called upon by the FHA as consultant to them, to tab the various authorities in order to help Mr. Connor formulate his performance standards. FHA has had the problem of satisfying the demands on it, and its only approach can be through performance specifications, and I believe that BRAB can serve FHA very effectively as an advisory body.

MR. RASWEILER: This is a subject that I have been dealing with a great many years now.

I want to make two things very clear: First, the Building Research Institute is not advising the Government, or setting any standards, and is not involved in the work that Mr. Connor has been talking about. The Building Research Institute is an association to bring members of the industry together, so that we can discuss our problems and meet other people doing similar work, to provide a forum for the presentation and discussion of industry technical problems.

The Building Research Institute is not an advisory body, it is not a research, nor is it a standards-setting body. It is permitted in the fabric of the Academy-Research Council only because its by-laws and its charter very deliberately state it is a forum for discussion and not an organization that expresses opinion or gives advice.



Second, the Building Research Advisory Board is an entirely different organization. The two are closely related, have the same executive secretary. Members of the Building Research Institute are dues-paying members. The Institute is severely restricted in the things it may do.

The Building Research Board is an entirely different organization. The Building Research Advisory Board is an advisory committee, and one of its main functions is to be advisory to the Government.

The National Academy of Sciences was established originally as a scientific organization to consult with Government people and give them advice regarding scientific and technical matters. It is chartered by Congress and is not a government agency. Whenever any government agency requests advice and consultation -- scientific or on technical matters -- it is the responsibility of the Academy and the National Research Council to bring together people from industry, or the universities and elsewhere, to provide that advice.

The Building Research Advisory Board is a committee of the National Research Council working for that purpose in building science. The members of the Building Research Advisory Board are appointed by the President of the National Academy and perform service as individuals. They are not appointed as representatives of any company. Some of the members of BRAB are members of the Institute, of course, and some come from companies who are not members of the Institute.

Thus BRAB is an advisory board of the National Academy, working under the National Academy rules. Where an agency of the Government is looking for advice, the Academy is obligated to bring together permanent or ad hoc committees to provide the Government with that advice. This is a very far-reaching activity, and I am speaking now really as the Chairman of the Division of Engineering and Industrial Research, of which this Institute and BRAB are parts. The work goes all the way from advising the Government how to build the highways to how to build steel ships. But units of the Academy are advisory groups -- not standards-making groups -- not the kind that can say, "You use this much material, not that much material."

I recall the meeting you are talking about. We went over very carefully with FHA the things we could do for the FHA within the limits of the Academy charter, and the things we couldn't. What we think BRAB can do, and do most effectively, is to bring together groups of industry or university people who have the best background available, and under the chairmanship of somebody from their own group, they can put together the best advice they can give FHA. This represents the best advice they can give with the technical knowledge available to serve as the basis for decisions to be made by the Government agency, and not by the Advisory Committee.