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COME OFTEN.
REPORT
OF
CONFERENCE ON RURAL HOUSING
HELD AT
COLORADO STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS
FORT COLLINS, COLORADO

June 30, and July 1, 1941

Cooperative Extension Work in Agriculture and Home Economics, State of Colorado, Colorado State College of Agriculture and Mechanic Arts and United States Department of Agriculture Cooperating.
RURAL HOUSING CONFERENCE

On June 30 and July 1, 1941 there was held at Fort Collins a conference on Rural Housing. At the opening session Director F. A. Anderson of the Colorado Extension Service presided and explained the origin and purpose of the conference. He stated that the conference was first suggested by Connie Bonslagel, state home demonstration agent in Arkansas, a member of the faculty of the Colorado Extension Service Summer School in 1940 and again during the present summer.

Director Anderson continued: "Miss Bonslagel is chairman of the Rural Housing Section of the American Home Economics Association, and has an intensive interest in rural housing. She has been doing much in trying to improve the situation in her capacity as chairman.

"We all realize that the improvement in rural homes depends on an income, but there are many things that can be done and should be done that do not entail the expenditure of very large sums of money, and we hope that this conference will suggest ways and means of improving our own rural housing situation."

Director Anderson then introduced the first of the speakers on the morning program, Mr. James C. Foster of the Bureau of Agricultural Economics. The main topic of the morning meeting was The Present Situation in Rural Housing.

Mr. Foster spoke as follows:

When I was asked to talk on the subject of improving rural housing I hardly knew where to obtain the information that might give us some idea as to what rural housing problems were as we know them in Colorado, so casting about for some information I went back to a survey that we made in 1938 of eleven counties in Colorado, which gave some information with regard to housing conditions in that area as they existed at that time.

The area surveyed was a dry land area and amounted to eighteen million acres. Realizing that a lot of things can be covered up when scattered over eighteen million acres of land, and wanting myself to bring you a picture of rural housing as we see it I would like for you to think of this condition as if it existed in a city rather than in a rural area. If we would place all those houses together in one city, we would have a likely population of about 55,000 people. We would have 11,800 houses in a city of about one mile square of residence area.

When we went in there to examine this area we found that 5,081 of the houses were actually occupied; that is, we found residences or at least buildings to show that a residence had been there.

Thinking in terms of a city you can see what it makes in a town, but being in a rural area we are inclined to forget about the 4,391 houses standing unoccupied in the area in various conditions of disintegration.

In the 5,081 occupied houses 3,143 were in good to fair condition. That means that they were houses that were livable. Folks were getting along. Sixteen and a half percent or 1,938 of the houses were in very poor condition, and in various stages of disintegration.

Of the occupied houses 16.2 percent had electricity; 12 percent had water in the house; 15.2 percent had telephones; 37.1 percent had radios; 51 percent had none of these facilities whatsoever.
We all know that if these 11,800 houses were in a city and if only 5,081 were occupied and if all were brought together in an area of a mile square with no more facilities than mentioned it would be a scandal.

Director Anderson then presented the next speaker, Dr. K. W. Koskelley, assistant professor of sociology, of Colorado State College.

Mr. Roskelley: I would like to interpret this rural housing program perhaps from a little different angle.

As I see the problem in Colorado we have at least five major problems. These five major problems follow under three general divisions. First, we have the problem of housing as it is related to agricultural labor; we have second, the problem of housing as it is related to the farm group; and we have third, the problem of housing as it is related to our non-agricultural people.

May I go now into some detail and suggest various aspects of these three divisions.

I would like to divide the labor problem into two phases: The first is the sugar beet labor and the typical farm labor. Our sugar beet problem is characterized by the following factors: First, as a group -- German-Russians or Mexicans who represent a very different cultural background from that of their employers. Their standard of living which clashes with that of their employers, has caused friction.

We have a second characteristic of this group -- a very low educational status. The third aspect of this group is the fact that they are migratory. This makes many of their employers very reluctant to improve their houses, because the farmers say the tenants will not take care of them.

Another factor to consider is that in the absence of homes, these laborers have attempted to achieve security and status by excelling in other things. For example, many of the sugar beet laborers have been thwarted in their efforts to acquire a home and as a result have spent their money on automobiles. The niceties which would sometimes be placed in a home, if they owned one, are purchased for the car.

We find, too, that the sugar beet laborers are really between the rock and the hard pan. That is, they are really in a more vulnerable position than any of the other groups interested in the sugar beet industry with the result that any cuts which may occur in the industry are usually imposed upon the laborers first. We know, too, they receive a very low income -- from $400 to $600 a year -- which makes it impossible for them to improve their homes.

We have also the question of limited resources in rural areas, such as no electricity, no running water, poor facilities for sewage disposal. The inaccessibility of these factors in rural areas make it almost impossible for rural people, especially the sugar beet laborers, to enjoy them, even if they had sufficient income to obtain them.

Another complicating problem is the fact that many of the employers of the sugar beet labor group are tenants, and for that reason are not interested in making any permanent investments in the houses of the sugar beet laborers. The sugar beet labor constitutes quite a substantial portion of our population in Colorado -- 6 to 10 percent in rural areas.
A second group of laborers whom I would like to discuss very briefly is that of the traditional hired men. They have a different standard from that of the sugar beet laborers.

The first problem of this group is their limited economic resources, or low wages; the second is that of stability. A hired man does not know how long he will stay on a place. The education of this group is below normal, and that affects the problem of effective utilization of the resources they have. Another difficulty with this group is that of becoming eligible for various types of governmental assistance.

The farm laborer is in the same vulnerable position as the sugar beet laborer and is the first recipient of any economic squeezing that may occur in the industry.

I should like to present next the status of the farmers and break that down into owner and tenant. I think as far as our owners' status is concerned we are interested in three primary factors. The first is the lack of income on the farm to actually make any improvements in the home. The second factor is the competition for improvements between the farm and in the home; that is, whether money should be spent to install electric lights in the farm home or purchase a new mowing machine.

The third major problem is that of the education of the people and the effective utilization of the resources that are available.

The tenant is faced with the same three problems that I have just mentioned for the owner, but he has some additional problems.

First, under our present tenure system we have no provision made whereby a man who wishes to make any permanent improvements in the house could expect any remuneration for such improvements in case he is asked to leave. The second problem is that of indefinite tenure which causes him to be very reluctant to make any improvements on the house.

The third group is the non-farm group of individuals. They are people of two primary classes. Those who live in the country because they want to maintain a subsistence homestead and the others who are of better economic status and who move to the country because they think it is a better place to live.

I think we need to view the house not as an object in itself, but as an instrument which assists in the normal functioning and development of the family. It has been said that the home is the cradle of civilization and democracy. A vital part of a good home is a good house; hence, it is imperative that in any effort to improve the home or civilization as well as any attempt to preserve democracy must give attention to the improvement of the physical plant -- the house.

The next speaker was Jack Davis, engineering assistant in the Division of Public Health whose subject was Sanitation in Connection with Rural Housing.

Mr. Davis: Sanitation is a very wide field. It covers many phases. The most important phase of this topic is water supply and sewage disposal. We are confronted with two problems in scattered farm communities. We are very seriously faced with the construction of many homes outside of the city limits where water
supply and sewage are not available. Most of the people are of the better class yet ignorant in many respects of sanitation.

In southeastern Colorado we have a great deal of trouble with Mexicans and the Spanish-American class of people who have not been educated in the sanitary needs of water supply and sewage disposal. The water which they usually obtain from irrigation ditches is highly contaminated with a bacteria count of more than 55,000. The better class of farmers too often use ditch water. They filter it through a bucket of charcoal and swear to us that it is pure water as it has no color or odor.

We have tried to develop deep wells in some counties and have put down two that have been piped into nearby farms. In many cases cesspools are located as close as 50 to 75 feet to a well which is very dangerous and causes contamination. Numerous typhoid epidemics occur. Typhoid carriers, in obtaining water where there is no pump, take hold of the bucket, drop it in the water with both hands; the bucket thus comes in contact with the water and germs are released.

The better class of people are moving outside of the city limits to avoid taxes which brings another problem. We have a great deal of trouble with people building homes on two or three lots and then expecting that water supply and sewage disposal systems will be installed. It takes at least an acre of ground to put in a sewage disposal and water supply system on the same tract. Regulations of the State Health Department require that cesspools should be 300 feet from a well. In adobe soil the distance could be shortened upon the investigation of an engineer who can determine the sphere of influence.

Near the new armament plant many new houses are being constructed. Recently a zoning ordinance was passed requiring approval on all water supply and sewage disposal.

Garbage disposal is an important factor. Farmers do not believe in fly-tight garbage containers. The largest carrier of disease outside of water is the fly carrier and when garbage is left open it attracts rats also. The main diseases which rats carry are tuberculosis and rabies.

Mr. C. K. Collins of the United States Forest Service was the next speaker. His topic was "The Present Situation in Rural Housing."

Mr. Collins: We conducted a study in northern Colorado to see whether or not the Forest Service had been meeting responsibility in regard to supplying material to people needing it and to see what other governmental organizations had done along this line. We compiled a questionnaire which was used in eleven counties in northeastern Colorado, approximately one-half of the dryland area in the state. The eleven counties covered were: Larimer, Boulder, Weld, Adams, Arapahoe, Morgan, Washington, Logan, Sedgwick, Phillips, and Yuma. County agents, Farm Security Administration and other organizations were active in supplying information for this questionnaire.

Approximately 47.95 percent of the farms are farmed by tenants. The state average is 39 percent.

Percent of tenancy on farms in Colorado according to the Colorado Year Book:

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>1910</td>
<td>8.2 percent</td>
</tr>
<tr>
<td>1935</td>
<td>39.0 percent</td>
</tr>
</tbody>
</table>
Attitudes of landlords toward financing improvements (364 reporting):

56 percent favorable
44 percent not favorable

Twenty-six percent of the landlords themselves were living outside of the state of Colorado which makes it very difficult to contact them regarding improvements.

It is believed that the questionnaires were very evenly distributed and 635 were tabulated. We used as comparison a farm-housing survey made in 1934 which was published in 1939 by the Bureau of Agricultural Economics.

There were 4.8 rooms shown in a survey made in 1934 and 5.2 rooms shown in the present survey.

Table showing age of houses (579 reporting):

<table>
<thead>
<tr>
<th>Age</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 1 year or less</td>
<td>48</td>
</tr>
<tr>
<td>48 - 1 to 10 years</td>
<td>246</td>
</tr>
<tr>
<td>246 - 11 to 24 years</td>
<td>228</td>
</tr>
<tr>
<td>228 - 25 to 49 years</td>
<td>37</td>
</tr>
<tr>
<td>37 - 50 or more</td>
<td></td>
</tr>
</tbody>
</table>

Classification of houses (676 reporting):

<table>
<thead>
<tr>
<th>Material</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>579 frame</td>
<td>579</td>
</tr>
<tr>
<td>6 log</td>
<td></td>
</tr>
<tr>
<td>10 stucco</td>
<td>10</td>
</tr>
<tr>
<td>18 stone</td>
<td>18</td>
</tr>
<tr>
<td>25 concrete</td>
<td>25</td>
</tr>
<tr>
<td>22 brick</td>
<td>22</td>
</tr>
<tr>
<td>15 earth</td>
<td>15</td>
</tr>
</tbody>
</table>

A federal agent here last month said that lumber here compares favorably with any place in the United States.

Farmers themselves were asked to fill out questionnaires. Seventy-four percent of the farmers were interested in repair and construction while twenty-six percent were not interested.

Most of the new construction has centered around the following types of structures: windbreaks, poultry houses, milk houses, vegetable cellars, and windmill towers; there has been little new in the way of tenant houses and bunk houses.

Out of the 676 farm houses mentioned 340, or 50 percent, need repair. Forty-one percent of the tenant houses, thirty percent garages, forty-four percent of the general barns, thirty-eight percent dairy barns, and thirty percent of the cow sheds need repair.

Need replacing: Nine percent of farm houses, eight percent of dairy houses, thirteen percent of garages, sixteen percent of the general barns, and sixteen percent of the cow sheds.
From the study we know that the farm communities use considerable more material in construction and repairs than do towns. Twenty-five million board feet of lumber were used for maintenance and construction last year against a little over five million in towns.

The next talk was given by Eleanor Wilson of the Rural Electrification Administration.

Miss Wilson: On one of my trips I noticed three electric wires from a pole to a one-room cabin. I thought, "imagine putting electricity in that!" At first we could not see the improvement that comes directly to the people in that home. I thought that perhaps instead they needed a few more screens or perhaps better steps. We are seeing very definite improvements in a large percentage of homes. One of the several factors that is bringing this about is the housing problem as related to electricity.

In Nebraska I have been over about six counties. They think they are going to have a bumper wheat crop and so many are interested in electricity for the homes. It is rather interesting to find out how many of the women said, "when we have this crop in I am going to have those new curtains." I wondered just how much we have invited curtains to the exclusion of something else. Was there something else that would mean more to her than curtains!

Regardless of income any improvement that is within the home is closely tied up with management. It is our duty to help and direct that improvement whatever it may be.

If the woman in that home is able to purchase an electrical appliance that shortens her task don't you think she will be more interested in a landscaping program? A low percentage of homes have beauty around them. The reason is that although people may love flowers just as much as the rest of us they have no time or have so many other things to do, or do not know how to go about creating beauty. We are helping as well as we can in beautifying the home, in sanitation and other phases of importance, and we can help with other improvements."

Mrs. Neva Bloom of the Farm Security Administration gave many examples of housing conditions which come under her supervision and the ways in which poor conditions were being improved.

Mrs. Carmen Johnson, Home Demonstration Agent of Larimer County, was the last speaker in the morning. Mrs. Johnson's topic was "The Present Situation in Rural Housing."

Mrs. Johnson: The housing problem is not merely a question of building houses, but is also a question of building character. Living today is a complex affair involving a great number of processes which go to make up the activities in the home and out of it. It isn't the amount of income but what can be done with it that influences the standards of the family. Perhaps economic value has been stressed too much and not enough emphasis given to the returns in health and satisfaction.

Many of the early houses in this county "just grew" like Torrey. Too few rural homes are designed to meet the needs of the farm families and too many were built without ideas of comfort and convenience. The finish of the house, the number of rooms and the amount of equipment provided are not so important as
adequate space, efficiently planned, and the suitability of arrangement to the specific requirements of the farm family on its own farm and in its own locality. What we expect of a house is: Shelter, convenient workshop, recreation, comfort, and storage space.

A report of 42 homes in one community in Larimer County in 1937 showed that owner's families averaged 3.9 members and renter's families averaged 3.6 members.

There was little difference in the size of owner's and renter's dwellings - average size 7 rooms and average value $2,400. The value was slightly higher for owner-operators.

Four of the 42 dwellings had all modern facilities. Renter's dwellings averaged one facility less than the number reported in owner's dwellings, by far the largest number of improvements desired by the 42 farm families was in the nature of home conveniences. The improvements most desired were: a piped-in water system, electricity and electrical appliances. Those reporting were asked to state improvements most needed for a happier and fuller rural life. Cupboards, electricity, water in the home and lots of paint were the improvements stressed most. One person said a parlor.

Family labor has done much of the repair work, renovation and upkeep of homes in Larimer County.

The 1934 farm housing survey revealed the fact that many houses are deficient in comfort, conveniences, privacy and sanitation, a state of affairs that cannot be blamed altogether on lack of income. For a few cents, rooms have been made warmer and easier to care for by using homemade supplies. Blocks and bricks have been used to raise working surfaces to a proper height. This has involved no cash outlay but has resulted in energy-saving that is paying big dividends.

The repairs have included: Painted furniture, screens, doors, floors and fences, new floors in some rooms, in others, floors repaired or refinishing, new linoleum added, and many refinishing of walls.

Rooms were furnished with shades and curtains that added much to attractiveness of homes. Many new pieces of furniture were added: Rugs, beds, chairs, refrigerators headed the list; screens, windows, fences, gates, porches and steps were reported in good repair.

In the Home Beautification project carried the same year, yards were landscaped according to a plan and were beautified with lawns, trees, shrubs, and flowers, and trees and shrubs were trimmed.

Homemakers were asked to list one improvement they had made that added comfort, pleasure or convenience in the home: Electric or other refrigeration, new linoleum, refinishing floors, a business center added, and re-arrangement of the kitchen for greater convenience added the list.

For the cultural and recreational phase of living, many added pictures, others arranged play space for children and, 60 percent added musical instruments in the home, 80 percent reported having books and magazines for the family. The county library service reaches every community in the county.
Good health is but a means toward good living, but is of basic importance. Larimer County women through their health program this year have endeavored to improve and maintain good health in order to have a courageous outlook upon life and to develop resourcefulness in meeting difficulties.

First aid has taught them what to do and how to do it. They have been urged to have health examinations, to produce and preserve food supply, and to plan for leisure time for rest and relaxation.

Cooperation with the public health nurse has made it possible to give greater service to rural people in improving health conditions. We have hot lunches in one-half of the rural schools; three freezer-locker plants for preserving food supply; are more than half through with the mattress-making project that will bring comfort and health into 144 homes in the county.

What we need in Larimer County is more conveniences in the homes. Home is an index of family customs, habits and traditions. Tastes are molded by their intimate surroundings, not by their occasional glimpses of beauty.

The second part of the morning session was devoted to a panel discussion. The members of the panel who were introduced by Director F. A. Anderson of the Colorado Extension Service were:


Ruby M. Loper, Extension Engineer, Extension Service of Nebraska.

Inga M. K. Allison, Dean, Division of Home Economics, Colorado State College, Fort Collins, Colorado.

Carmen Hensel of the Rural Electrification Administration.

Margaret Tuller, Home Management Specialist, Extension Service, Montana.

Myrtle Davidson, State Home Agent, Utah Extension Service.

Ruth McConnon, State Home Agent, Colorado Extension Service.

The following outline for the discussion had been prepared by Ruth McConnon:

The Home Economist should:

1. Develop a feeling of responsibility toward housing. Consideration of number of below the standards of healthful housing? (Leonard K. Elmhirst says that in foreign countries, the greater the farm population in a given area, the lower the standard of living becomes. Families should be encouraged to build the best they can, based upon income.)

2. Develop within farm families a realization of the importance of housing. The farm home is a "whole family house." It must serve the needs of the family over a long period of time because they can't move from one farm to another for better housing as other people do. The farm home must serve the farm business as well as the farm family.
It should be built to save the homemaker's time since she uses some of her time for the farm business.

3. Extend her horizons as to the possibilities of housing.

A house should be a home - one where the family enjoys living.
Reasons why there are not better housing facilities:
- Low money income
- High proportion of tenancy
- High costs of materials, labor, fire insurance, credit, taxes on housing improvements
- Lack of adequate facilities
- Electricity, architectural service, sources of information
- Attitude of the family toward good housing, and knowledge of what it is, and how to get it - must work at overcoming attitudes.

4. Improve her own information by working with -

Cooperating groups
- Governmental, journalistic, educational, commercial

5. Be able to give simple answers to simple questions.

6. Know a few things the country carpenter does not know.

7. Get the homemaker's point of view.

Recent studies indicate that only a small proportion of rural families live in houses that have many of the features desirable for family life.

Miss Rokahr acted as leader of the panel discussion, and opened the discussion with mentioning The Home Economist's Stake in Rural Housing in relation to National Defense. The discussion then proceeded.

Lopor: I should like to approach the subject from the standpoint of what we want from you folks in the home economics field. I have a deep-seated conviction that housing is a very broad subject. As architects and engineers, we can design and construct homes that are constructionally sound, but we do need to know what you people, as home economists, feel are the essentials of these homes. The home is the center of the family living. The kitchen in the farm home is probably more of a work shop for the farm homemaker, than kitchens in the city are. We need to know more about what space the homemaker needs for her activities, and how she will conduct these activities.

We feel that housing first and foremost must give us protection from the elements. We need it for the center of the development of family living. The farm house is not only the place for farm family living, but it is also the center of the business activities of the family.

Allison: In the winter of 1933-34, as a part of the recovery program in our part of the country, we conducted a housing survey. We selected six counties as representative of the counties of Colorado. Eleven women were appointed to conduct the survey. Following the survey, an engineer in each county took about 10 percent of typical families that had been interviewed by home economists and went into those homes, working out specifications and plans for making improvements. The three objectives in the general nation-wide survey were:
1. To find out what the needs were, and the forms of the needs.
2. To work out plans for good types of farm homes, with specifications for all phases.

Engineers were designated to work out costs. It was found that 10,000 reports were turned in, and the total cost of bringing up the repairs and improvements needed amounted to three and a half million dollars, or $550 per home. No follow-up has been made on this survey.

Home economists want to know what is going to be done now. The women who made the surveys found that again and again, the farm people said "We do not want to borrow money; we want fair prices for our products. Through your national and state agencies are you not going to do something about getting fair prices for our crops, and are you not going to lower taxes." What will be the follow-up of this survey?

Honsel: I think we are interested in the farm home for one reason in its relation to national defense, and that is because it is the center of the producing unit. It must be an efficient producing unit. One problem is that we will be asked to produce greater quantities of specific types of food-stuffs with existing facilities. The farms are short-handed; therefore the farm homemaker is going to have more things to do, and is interested in labor-saving devices.

What does a farm woman do with her time who has an electrified home? She has an extra day each week, if she has an electrified farm home. The farm homemaker does not waste time, but devotes her time to making the income of the farming unit greater, by producing chickens, perhaps milking cows, growing gardens and similar activities. She has more time to devote to her children and husband. She is more rested and uses her leisure time well.

We need to measure for ourselves and for the people with whom we work, in fact we need a yardstick for evaluating better housing. Planning for better housing is important, whether it is the REA, or building a lean-to that the family needs.

For good living, we need to consider, first of all, some aesthetic values, whether the house is a nice place to live, whether it is appealing to the eye, and how it measures up from a comfort standpoint. People need to know what things will bring the most in the way of enjoyment and usefulness, and how to evaluate those things which are planned.

We know the farm home is a production unit. It is also a place where good citizens are growing so that they can make and contribute to the democracy that we would like to keep. As a result, everyone who is concerned with rural living should assist in a guidance program with specific recommendations in making their state better.

(Rokahr read an excerpt from a talk by Haud Wilson, as follows)

"There are lacking statistics of houses that would be rated high relatively speaking in a survey such as that made by the U.S. Department of Agriculture in 1934, but the survey showed that they were inconvenient, unattractive, and uncomfortable. As everyone who makes home visits knows these houses constitute a high percentage of so-called good houses."
"In spite of the publicity given in magazines and bulletins to the principles of planning, new houses often fail to measure up to their possibilities for utility and beauty, considering the money spent."

Tuller: Planning for a house should be considered from an economic standpoint, because money is most important in doing things in a house. It takes wise spending and use of money in giving the family what they would like to have. Along with that is the organization of good business principles.

Another phase with which we may be able to help rural families is the physical side of housing. Conveniences are very important, not only for mother, but also for the rest of the family, because the mother's attitude toward home-making is going to be reflected in family relationships.

One of the most important things in any home is the getting rid of clutter. "A place for everything and everything in its place" might be changed to "A convenient place for everything and everything in its place." Storage is one thing that we can help rural people with.

We must have a little beauty around us because just breathing, eating, and sleeping are very uninteresting after a time if we do not have beauty. Attractiveness is therefore important, too.

We must equip ourselves by keeping informed on all recommendations for good rural houses. We must test our recommendations in our own living, and must acquire skills ourselves that we wish to give to our people. We need to prepare ourselves also. Our job is first to know about housing principles ourselves, and then convey to our rural people the information that will fit their needs and the skills that they will need to know in order to carry out some of the things that make for better living in rural homes.

McCannon: Some of the things that I am going to say will be a repetition of what has been said. Home economists should be interested in rural housing for two reasons: One is because of attitude and the other is because of health. A survey was made two or three years ago in which high school children were asked why they did not stay on the farm. One of the important reasons they gave was that the house or the home was not attractive. Of course, health is very important. It is being stressed at the present time.

Davidson: It is the responsibility of the home economist to know something of the social and living conditions of the family, as well as the economic problems of the family. Rural people should be given consideration in the analysis of local problems. It is our belief that in county planning committees when discussing housing as it relates to clothing, food, recreation, and cultural phases of our lives and our family relationships, we should have the viewpoint of the rural people.

Points brought out in county planning meetings are that rural people should:
1. Become acquainted with their own condition.
2. Be willing to admit the things they find.
3. Learn to cooperate with various agencies.
4. Realize that they are much more resourceful than city people.
5. Consider the possibilities of local material.
6. Try to avoid duplication, and to work for more harmony.
7. Recognize the resources about them.
8. Try to have less competition between what is purchased for the farm and what is purchased for the home.
Housing, as part of county planning, is progressing and is bringing to the mind (point of view) of the people things that will improve living conditions both socially and economically.

Rokahr: The home economist's stake in rural housing certainly lies in the field of presenting and collecting facts about situations, and interpreting them so that two groups of people may become familiar with them.

We are concerned with attitudes of people in the development of public opinion in rural areas, as well as city areas. We must ascertain what is better housing, how can we approach the problem, and how can we help move along.

The home economist should be so familiar with rural problems that she can help along all lines. She must understand the living conditions of people.

Certain standards have been set up because we have had lots of research in the construction field of housing, but we must continue to work on them in relation to housing costs. We are going to have to face the issue of standards. The biggest field now is in repairing and remodeling.

The question, "What are the changes that are going to happen in relation to defense activities that will affect any kind of a housing program?" brought up slightly different angles in the discussion.

Jeanne Warner of the Colorado Extension Service: In some areas there is need for a lot of homes now. It is a housing problem now, but in 4 or 5 years what are we going to do with the homes? Houses must be built at a minimum of cost, because they will not be permanent.

Effie F. Barrows of the Utah Extension Service: Our rural people are going to have the opportunity of working in munitions plants and are going to be less interested in keeping their own homes up because they will be away from them so much. Materials are pretty well tied-up, prices are high, and many things are not available now.

Rokahr: We are going into a time when labor will be less available for doing anything because prices may go up, but there is always some opportunity of keeping that from moving too fast.

Looper: A big bomber plant near Omaha is being built. This is out in the country and is near a town of about 900 people. The biggest problem confronting those people now is sanitation.

Elizabeth Riner, Supervisor of Homemaking Education, Public Schools, Omaha, Nebraska: A committee is working on that problem of sanitation in Omaha on minimum living conditions that will be desirable. They are already conferring with labor and construction people, and plans for demonstration houses are being made - the demonstration houses to be built immediately.

Rokahr: What percentage of the population in any given state is concerned with your problem? A very small percentage.

Looper: It seems to me that with all our immediate plans, we do not want to lose sight of the fact that this thing is going to come to an end. A large percentage of communities do not have skilled carpenters and skilled laborers in normal times.
Tuller: Every war period brings an inflation of prices. If we could persuade farm families to pay off indebtedness they already have, and perhaps to improve their homes rather than take on more indebtedness, they would be better off.

Loper: That is no problem in our state. The people have had their fingers burned and are now trying to get out of debt. Material investments seem to attract them.

McCannon: The home economist should see herself as one of a large group. She by herself cannot do much on better housing, but by cooperating with all other people, individuals, agencies and organizations, magazines and commercial concerns, we will more nearly accomplish something, but a home economist is just one part of it.

Ellen Lindstrom of the Wyoming Extension Service: In Wyoming, the lack of farm labor is causing a number of farm women to go into the fields.

Loper: Because women are working in the fields, we need to have things much more convenient in the home.

Barrows: Women do not have time to supervise labor in the home, when they are working in the field.

Tuller: We have talked about homes and individual families, but nothing has been said about communities. It is the community working together that brings electricity, sewage systems, and other conveniences. One of the chief drawbacks to progress is the fighting among people in small communities.

Rohr: Attention has been called to many things that deal with subject-matter. The home economist needs to evaluate where she should put her time.

The main topic of the afternoon session on the first day was "Possibilities of Rural Housing." The first speaker was Walter G. Ward, Extension Architect, Kansas State College. His topic was Some Things to Look for in Construction.

Mr. Ward: Lack of familiarity with all of the conditions which influence building practices in the territory which some of you represent makes it rather presumptuous for me to attempt to speak authoritatively on those items which require adaptation to local situations.

Perhaps a few generalities might be indulged in, such as reference to the use of good quality materials and good workmanship. It is my opinion, however, that not all materials need to be first quality to represent the most practical building. I am convinced many farmers in my state penalize themselves by insisting that all dimension lumber in their structures shall be No. 1 grade.

Substantial foundations might be mentioned as an almost universal requirement for durable structures. In many instances, sufficient material has been used, but due to failure to properly proportion the footings to their loads, unequal settlement may occur, with its attendant difficulties. Most frame structures being relatively light in weight, do not require a massive foundation, but in the area with which I am most familiar, I believe the foundations should begin below frost depth and continue well above grade.
In my state the majority of foundation work is of concrete. Generally accepted specifications for concrete work limit the size of the aggregate to perhaps a maximum of two inches. While we have not ventured to deviate appreciably from that recommendation in our printed publications and other publicity, we do frequently suggest to individuals that with proper precautions large units of aggregate may be incorporated in the foundation walls with satisfactory results. One change in practice we are trying to encourage is that of using reinforcement in footings and foundation walls.

In appraising old structures and in making recommendations for new ones, one of the items that calls for early consideration is that of protection from termite damage. Many buildings which superficially appear structurally sound show on close examination to be infested with termites. We find this a particularly common situation in houses built close to the ground with only part or no basement.

While I mentioned earlier there are many instances where the dimension lumber in farm houses and service buildings is not loaded to its safe capacity, there are perhaps many more instances where the members are too small for their purpose. This is particularly common in floor joists where they may be two sizes smaller than good design would provide. The inadequacy of joist sizes is often apparent by a superficial inspection of the building where those members are exposed to view. In other cases, where they may be enclosed as in house work, walking across the floor may enable you to feel a spring in the joists, indicating they are not of proper size. While only a very rough guide subject to variation with the species of timber and other factors, an approximate rule for floor joists in residence work is that they should have a depth of 1/2" for each foot of length. Thus a room 14' to 15' wide should have joists not less than 2" x 6". Bridging of floor joists is sometimes omitted, resulting in a less stable floor.

Wind bracing adds only a few dollars to the cost of an ordinary farm structure, but may mean the difference between a building which will remain sound for generations and one which after a relatively short period of time sways in the wind, is difficult to keep in repair, and requires early replacement or expensive repairs. The exact type of wind bracing will vary with the building and may in the case of residence work be provided in the form of diagonal sheathing.

Construction floors for residence work should always be laid diagonally so that the finished floor is not parallel with the sub-floor. Failure to observe this point usually results in the finished floor showing wide joints at intervals corresponding approximately with the width of the boards used in the sub-floor.

One of the items of construction that is receiving increased attention in my state, and I expect in others represented here today, is that of insulation. It is my opinion that insulation represents an excellent investment if considered solely from the standpoint of fuel saving in those areas requiring considerable artificial heat.

Other items which need careful attention in constructing new buildings or in appraising old ones include such features as flashing of windows and doors; proper guttering for roof water so that it is carried some distance from the foundation; roof of suitable pitch for the material used; weather stripping of windows, etc.

With the enormous investment in farm buildings, it is my opinion that an effort should be made to encourage any future buildings to be so constructed
that the annual maintenance cost is reduced and the length of the life of the building increased, thereby reducing the annual cost for the maintenance of the buildings on a given farm. It may require a slightly larger first cost, but it is primarily a matter of greater attention to the selection of materials and construction details, and I believe this represents a field in which those of us here may make a valuable contribution.

Unless farm purchasing power can be restored or increased it seems to me that there are only about one of three possible answers to the rural housing situation. Either we will have to increase the use of local materials and develop some of the skills at home, perhaps organize barn building bees, or accept a lower standard of living.

We need to develop more plans of various types of buildings and I am wondering if we ought not do something in the way of convertible buildings, work out a plan that with a few minor changes can work it into a different type of building.

In closing I would like to add to what one of the speakers brought out this morning. That was not entirely a matter of finances. I am not personally convinced that this is the entire explanation of why we have such a pathetically low percentage of modernized homes. I believe that we have a real opportunity of helping to develop an appreciation for what a modern and convenient home will mean to the family. I have yet to find the first person expressing a regret in investing money in improvements. They say "why didn't we do it years ago," as I see the situation now with the intense effort which must be made on defense that perhaps we won't get as far as we would like to get in the next year or so but we should be ready when the post war period comes. If we can be ready with plans, with experience, with organization to utilize some of that surplus labor I wonder if we can't make some real progress then in education.

Mr. Hard's talk was followed by one by Mr. A. W. Bennett, Director of the Federal Housing Administration. Mr. Bennett's topic was "How to Avoid Common Errors in Construction."

Mr. Bennett: The work of the Federal Housing Administration up to the present time has been concerned principally with housing in cities due primarily to the fact that houses are financed more readily in the cities than in the country.

The first phase in the Federal Housing Administration's rules is "To improve housing conditions in the United States," and that is the basis upon which we work.

There is a vast amount of improvement that could be made in farm homes now. I look at this proposition from the standpoint of financing. A good-looking house, well-designed, well-built, well-located and well-landscaped has a ready market. Out of 900 loans that we have insured in the State of Colorado we have taken back 10 properties. So we do take some of them back. And in each of these we have found that there was something wrong with the property. As we say, it is a "phony", something wrong with the design or construction. We now have a set of minimum construction standards that we require in the construction of these homes.

We have improved the construction of homes—not alone from the standpoint of timbers that go into the home but the design and the livability of these homes.
The biggest job we have before us is the improvement of farm homes. Up to the present time we have been unable to convince the bankers or the lending institutions that a farm improvement loan is a good loan, even though the Federal Housing Administration guarantees these loans one hundred percent.

You folks have a big job cut out for you too. From our standpoint we will go along to the very limit because we are convinced that farm properties—homes properly designed and properly built—constitute a good sound insurable loan.

I think we will be able to work out something that is in the air now. We are going to have to have something to take up the slack when this emergency is over and I do not know of any better program that could be launched than that of improving housing conditions in the United States. The situation is just about as bad as it could be—homes poorly designed and badly constructed.

The Federal Housing Administration has insured homes in the New England States that are 150 years old, and we are placing a life on the homes that we are now building for from 50 to 75 years. We have learned some amazing things in regard to construction of homes.

Mr. Glen Huntington, Chief Architect for the Federal Housing Administration, spoke on the topic "How to Avoid Common Errors in Construction."

Mr. Huntington: Probably most of the errors in construction are due to the fact that people want to keep the cost down. Too many amateur builders waste money experimenting rather than hiring someone who is in the business and would know how to avoid those errors.

When I first went with the Federal Housing Administration it seemed to me all I did was answer complaints due to faulty foundations—house after house "cracked up." It was a real job. The entire State of Colorado is underlain with a layer of calcium carbonate which is detrimental to materials. The trouble was first thought to be due to prairie dogs, but after a little investigation it was found that it wasn't prairie dogs at all, when the soil swells up and heaves it then shrinks to very much less than its normal volume.

We have found that water is one thing that wrecks buildings. Ninety-five percent of the homes in Denver alone have cracks. We find it everywhere. After we found what was causing it we put one man on inspection. It is very easy to detect where there is trouble. Just buy a little hydrochloric acid and if it reacts there is pretty apt to be trouble. If you properly take care of the water it will not give any trouble.

All of that naturally has added to the cost of building at a time in which we want to cut the cost, so recently we have gotten into soil solidification which is a very interesting subject and a very cheap method of insuring the foundation design. They get all ready for the foundation and use a solution of waterglass and soak that into the ground. After that has disappeared, put in solution of calcium chloride and sodium chloride. In order to avoid the one error we try to avoid the poor foundations and we think we have it solved.

We can't understand why the builders have been building over a period of years and haven't made an investigation of it. We had to make investigations because the houses started to come back on us. The Public Service Company is interested in our difficulties in that their service pipes didn't last. They have what they call their covered-pipe area. Water lines also go. We haven't done very much about that."
At this point several questions intervened which occasioned some discussion which led to the following statement:

**Solidifying** is an old German practice done by use of jet. It is now done by percolation and goes down to about 5 feet in depth and about 4 or 5 feet in width. Costs about $25.00 per house. This will solidify almost any soil.

Reinforcing should never be eliminated.

We find some using gypsum when it should be portland.

Stucco houses -- We find it almost impossible to get them to lap the lath and consequently the stucco cracks. In many stucco houses you can see the lath underneath and can count the number of laths in some of those houses. However, this is being corrected.

Then followed questions and answers:

Q. Does solidification work up into the foundation?
A. No

Q. How long does solidifying process take?
A. About two days

Q. What do you do if the ground isn't level?
A. Foundation should be made first.

Q. How long have you been using this method?
A. Experimenting for over a year. Only very few houses that have really tried it out. Should be sure before it is used.

Q. How effective is pre-fabrication in Colorado?
A. There is no pre-fabrication in Colorado.

Q. What is minimum loan?
A. $500.

Q. What is cost of houses in the Denver project?
A. $2,650.00. A man from East was here inspecting houses and said that these houses in Denver are the best in the United States. They are frame with two bedrooms, living room, dinette, kitchen and bath. There are about 250 houses in the district east of Federal Boulevard.

Further questions from the floor brought the following answers from Mr. Huntington.

Portland cement should be used in plastering basement walls. No wood floors should be used in basements.

The laths should be lapped on stucco houses, because the finish will crack and one can see through to the laths.

Termites are not yet serious enough in Colorado to require termite shields. The first warning that many people have of the presence of termites may come in the spring of the year, when winged insects will be seen swarming out of joints in the house. These insects are flying ants which are usually a sure sign of termite infestation. Basement windows are often points of entrance as are supporting columns in basements. It is difficult to get them out of old structures, but comparatively easy to build them out of new structures.

Copper pipe in plumbing will last a long time, but it sets up an electrolysis with the main therefore is not satisfactory. Covered pipes should be used.
"Business week" magazine says that plastics are in the picture, and will be brought out after the emergency is over. For example plastic plumbing will be used.

FHA uses adobe in building some houses in the southern part of the State and in New Mexico. It is very cheap in comparison to other types of construction.

Metal waterproofing is very satisfactory over cement or concrete on the interior of basements.

Asbestos shingles last longer than any other building material. Stone veneer over frame is probably one of the best methods of construction.

Bulletins available from Federal Housing Administration are:


Following the discussion period the question of financing came up. Mr. R. E. Kiely, State Director of Rural Rehabilitation spoke as follows:

I have been connected more or less with rural housing for about the last four years. Previous to that time I was employed as an extension agent to work with farmers.

I remember back in 1934, under the old Rural Rehabilitation Corporation, one of their first problems was to conduct a survey among the rural people regarding their houses, out buildings, water and what-not.

One thing we found out at that time was the manner in which many of these farm families obtained drinking water. We found from the survey that many of them hauled water 20 to 25 miles. We found a few families running ditch water into a cistern.

There are approximately twenty-five million people living on farms. There are approximately fifty-four thousand farms in Colorado. The Farm Security is interested in working with the lower one-third group. When you stop to realize this fact -- twenty-five million people -- then one-third of that amount.

I would like to go a little bit further into rural planning and rural housing. We have a house with four walls and a family living in those four walls. This is rural housing for 18,000 families. It is a very definite problem--this cooperation to give better housing accommodations. We consider rural housing a very important part of our program.

We have another factor--tenancy. Suppose you have a family coming in this year. They use the house then another family comes in and uses it. Five, six, seven, ten families--all tenants may occupy the same house during a period of years. How much rural housing can you do with them? Any rural housing program has a very definite responsibility in working with this particular group.

The first thing we ask "Is the lease for three, five, or ten years?" If the tenant can get a long-time lease Farm Security will make some small improvements, such as improved furnishings, sound window casings, and getting rid of bedbugs.
We have a lot of poor farm years and if we go to any great expense it just won’t work out. We can talk about rural plans and rural housing but there are many other things that indicate a successful farmer. A definition of a successful farmer is "A man who has plenty to eat, and a roof over his head." He is considered a success in his community.

Farm Security attempts to do something for rural housing for the farm laborer. If we can get some kind of an idea as to where rural housing conditions are especially bad, Farm Security will do everything possible to improve that particular place. We are making plans now to take care of the transient population—peach pickers on the Western Slope and the living conditions of vegetable pickers. We are doing what we can to alleviate existing conditions in the lower third group."

"We could go on and discuss many things in connection with rural housing but we have got to do what we can with what we have. With any problem, let us not forget the lower group where improvements are needed most."

Mr. Kiely's talk was followed by one by Dr. W. I. Myers of Cornell University. Dr. Myers' talk was also on Finances.

Mr. Myers: In his excellent talk Mr. Kiely has outlined the problems of housing of one group of rural people. My discussion pertains to the problem of farm owner-operators. Both groups must be concerned in getting an understanding of the total problem of rural housing.

One of the unfortunate results of the long and severe depression of the 30's was the under-maintenance of farm homes and other buildings (that prevails at this time). Farm people in general were unable to keep pace with urban improvements in the standards of comfort and attractiveness of urban homes. Both of these important deficiencies must be met before the rural housing situation can be said to be satisfactory.

One of the important results of a conference of this kind is the dissemination of information as to desirable standards of rural housing. It is equally important to discuss ways in which these standards can gradually be attained in an orderly fashion and at a minimum cash expenditure. Farm homes that are attractive both inside and outside are helpful in promoting a more satisfactory home life and in keeping enough of the best people on the land.

The problem of financing housing is usually assumed to be the borrowing of necessary funds. More accurately, finance refers to the wise use of capital whether owner or borrowed. In considering borrowing for any purpose two important factors must be given careful consideration. The first is, the availability of income for the repayment of the loan within the period for which it is made from funds available above necessary expenses for business and for living. The other factor is that of security or collateral the purpose of which is to insure payment to the lender in case of bad luck.

Federal Land Bank loans are made only on a first mortgage to a maximum of 50 percent of a normal value of the land plus 20 percent of the value to the farm of permanent insured improvements. In most cases such a loan will work out at somewhat less than 50 percent of the normal value of the farm. In addition Land Bank Commissioners' Loans are available. These can be made on second mortgage and together with the Land Bank loan can be made to a maximum of 75 percent of the normal value of the farm. Normal value refers to the estimated value of the farm.
that can be assisted with the proper income over the period of years for which the loan runs. It emphasizes the expected income over a series of years rather than the income in any one year. The contract interest rate on Land Bank loans is now 4 percent and on Land Bank Commissioners loans 5 percent. Both are temporarily reduced to 3 1/2 percent by direct subsidies paid by the treasury during the present emergency.

The building or improvement of a farm home is a legal and proper purpose for either a Land Bank or a Land Bank Commissioners loan. If his equity in the property permits, a farmer-owner can increase his existing loan or can make a new one, if the farm is unmortgaged, to finance permanent improvements of this type. In addition short-term loans are available from Production Credit Associations for the financing of minor improvements and household equipment that can be repaid within a year.

The farm business and the farm home are integral parts of a common enterprise.

Except on farms near cities the farm home has no rental value and cannot be used except in connection with the operation of the farm business on which it is located. For this reason there is a necessary close relation between the investment in the home and the productivity of the farm. A good farm business on good land justifies a good home. On cheap unproductive land the investment in the home must be kept to a minimum if loss is to be avoided. The most effective way of raising standards of rural housing is through educational programs as to what desirable standards are and how these can be attained at a minimum cash expenditure. In the improvement of their homes personal planning for farm families is highly important. Such plans should include the gradual, orderly improvement of the farm business and the farm home, keeping both in reasonable adjustment. Good farmers who are concerned chiefly with farm business sometimes have a tendency to center their attention on the improvement of the business and put off home improvement too long. While the business must come first because it provides the income to support the home, the latter should not be neglected.

Borrowing should usually be confined largely to investments which will provide the income for the repayment of the loan. While an attractive and convenient home is an important factor in promoting a satisfactory home life it is wise to work toward this goal gradually, borrowing as little as possible. The income from a home, while important, is intangible and cannot be applied on the principal of a debt.

The purpose of a home is to increase the satisfaction in living. Enjoyment is possible only when one is free from worry over debt. While no set rule can be laid down, every farm family should plan to improve its home gradually and systematically with a minimum of borrowing, keeping debt safely within its capacity for repayment.

Still another talk on Finance was given by Dr. U. E. Grimes of Kansas State College.

Mr. Grimes: In financing rural housing there are certain fundamental facts that should be kept in mind:

1. The real objective is to build rural homes and not just houses or plumbing or lights or fixtures.

2. A two-room cottage or 'shack' may be more of a home than an eight-room modern house. The difference is in the attitudes of the occupants toward it and toward each other.
3. Other things being equal, the more pretentious, more comfortable and better equipped but not extravagant house, is preferable.

4. Pride in achievement is a fundamental, essential, praiseworthy and desirable human trait. The little fellow's statement that "I made it" and the young home maker's proud assertion that "John made the cupboard and I painted it" tell far more than the mere creation of a physical thing. They tell of the exercise of fundamental rights of people in a democracy - the rights of personal liberty, individual initiative and the possession and enjoyment of the rewards for the exercise of these rights.

5. A home, even though lacking in architectural perfection and convenience, and even though atrocious to one with artistic sensibilities, is preferable to a house with these characteristics but which is not a home.

6. Parents, the government, or some one else can give a young couple a house but they cannot give them a home. Homes are created by those who live in the home.

7. Saving consists of using the resources of today to create things that may be enjoyed tomorrow. Savings may be in money, in other property, in time and effort or in thought and ideas. A home may be created by saving resources such as these.

8. A house may be financed by borrowing part or all of the required funds. Such borrowing may help in building the home or it may undermine the very processes of home building. The latter is true if the amount borrowed is more than can be repaid with reasonable effort. The latter leads to worry, friction, insecurity and other conditions and attitudes that may undermine the home.

9. A loan secured for the building of a home is not a self-liquidating loan. The income from the home is in the form of direct human satisfactions consumed by those who occupy and make the home. This type of income is not bought and sold on the market and cannot be transferred to the lender in payment of interest and principal.

10. Loans secured for the building of a house that is to be a home should be conservative. It is better to live in a house that lacks some, or all, modern conveniences than to live in one that has these things but in which the real characteristics of a home are lacking.

11. Those interested in better rural housing should not permit interest in the physical characteristics of the house and its surroundings to over-shadow those factors which are essential in the building of real rural homes. It is well to keep in mind the following:
   a. Under the usual circumstances the development of the house should come gradually.
   b. The time, thought and effort of the man and his home-maker should be used to the fullest possible extent even to the sacrifice of quality in finish and construction.
   c. The cost of the home should be kept within the present and reasonable expectation of future cash income of the people who are to own and occupy the house as a home.
   d. Excessive borrowing for home building or home improvement should be avoided under all circumstances.

12. For those occupying rented houses, the problem is even greater since the owner - the landlord - must be convinced and in position to do his part in making a real home possible. This involves problems beyond the scope of this program but problems that are not impossible of solution. There are, at present, many good landlords who, through the pressure of public opinion and the arousing of public consciousness,
many others may become better landlords.

13. Home building is a slow process and cannot be hurried unduly. Also it is a process that must be done over for each generation.

Exine Davenport, Economist in Home Management on the Colorado Extension Service, presided at the morning session on the second day of the Conference.

The general topic for this meeting was "Choice of Materials and Factors Affecting Choice." The first speaker was R. E. Ford, Forester of the Colorado Extension Service.

Mr. Ford: I will limit my talk to the lumber and timber materials. I believe it is unnecessary to try to defend the use of wood in building construction, because our own wood is an important product. So rather than try to defend its value I am going to try to defend the use of native woods grown in Colorado. Whatever I say here will apply not only to Colorado, but to Wyoming, Utah, Arizona, and South Dakota.

In order that I may attack this problem to the best advantage, I believe it is necessary for me to give you a little history of where the lumber industry came from.

Along about 160 or 170 years ago they started manufacturing lumber in the New England States. They started manufacturing it with saws and water power. That industry moved slowly, and through about 60 or 70 years. In other words, from about 1820 to 1860 they were moving slowly down through the Atlantic coast. It then began to take on bigger size. It moved from this country over into the Lake States section. Over a period of about 20 years -- 1890 to 1900 -- this really took the cream of the crop out of the Lake States area. This period was a hay-day. During that time the big commercial interests were looking for bigger fields to conquer.

They began to move their big mills from the Lake States to the Southeastern part of the United States. They had their hey-day from 1900 to 1920. During this time they had been developing wonderful timber. Then they were looking for another field to conquer; they leaped over to the Northwest -- 1920 to 1940 was a big peak out here. They found even better timber here than other places.

The Colorado timber and lumber factor has its day. (Demonstration Map on Blackboard). The first depicts Colorado's annual growth, averaged from 1934 to 1938. This shows an annual growth in Colorado of 325,000,000 board feet.

We have had a lot of little mills working in Colorado that have made lumber without seasoning it, without manufacturing it very carefully. The result is this: "The man who used that lumber, paid $20.00 per thousand for it, put in his barn, fence, or what have you, and it began to season on the job. It began to warp, split and check. He used some West Coast lumber and it didn't do that, due to the fact that it was properly seasoned; that cost him $40.00 or $50.00 or $60.00 per thousand.

If we are going to solve this problem, in order to encourage this rural housing program, we must start right at home. As long as the dealer allows the wood to go out to the hands of the consumer without being properly seasoned every sale he makes will be poor profit.

If we can afford to hold a stack of this lumber for 90 or 120 days to compete with West Coast lumber, we can develop an industry in Colorado that will
keep a large part of that $6,681,000 right here in Colorado. The local lumber dealer can use and sell his lumber product and keep that business at home if he gets the lumber seasoned. It can be done and we should all get in and help do it.

Mr. Ford was followed by A.R. Legault, Civil Engineer of Colorado State College who also spoke on the Choice of Materials. His suggestions follow:

If we use sound judgment we can select materials that will give satisfactory results at the lowest possible cost. Adobe brick has proved very satisfactory. If we look at the problem it is clear that in many cases judgment can be applied to the use of native materials. Possibly the failure to see the possibility of the use of native materials has been due to a large extent to the rapid influx of new materials, and the more or less tendency to lean toward the use of commercial products.

Adobe is a product that has been used for centuries. I found in my work with this material that many people feel adobe is a particular kind of soil. They speak of the soil which we commonly identify with "gumminess," and which as it dries becomes rubbery and when entirely dry forms cakes or clogs. That particular kind of soil is not the best to use. It has usually a very high colloidal clay content.

When proper soil is used for adobe and when it has been moistened, mixed and dried a very hard and durable product is the result. It does not take a particular kind of soil. Any soil that has sufficient clay content will be satisfactory. The best thing to do is add some sand—about 50 or 60% seems desirable.

One of the reasons why adobe has not been used more extensively is because of its lack of pleasing appearance. The raw adobe walls do not present a very pleasing appearance. In the Southwest and to some extent the Middle West and Western states—California in particular—there has been a marked tendency toward adobe constructions. It has been limited to that area because the first Spanish settlers introduced that material.

The entrance of moisture into the soil will soften it and in a climate where moisture may get in between the bricks and freeze there will be trouble. The action of frost and expansion of freezing water will cause the side of the walls to cake off.

I have started an investigation on water-proofing adobe walls. This investigation, however, is not far enough along for me to give you anything but generalities.

The two best possibilities so far in the investigation for water-proofing seems to be a painting of the surface with some waterproof paint. Aluminum paint is the best I have found so far, and to add a waterproofing material to the cement stucco, if it is put over the surface. If the aluminum is put directly onto the wall the appearance would be very pleasing.

The other thing would be to paint the adobe brick first and put an ordinary coat of stucco over it. This, however, would probably run the cost up.

Waterproofing the stucco would be the ordinary procedure and would prevent the penetration of moisture to the adobe underneath.

A good foundation is very important. Any settlement, as you can see, would be disastrous in adobe walls. The foundation should not be of adobe.
As to the footing -- soft clay or sand loam or silt will stand about from 1,000 to 2,000 pounds pressure per square foot without fear of settlement. Bearing capacity is from about 3,000 to 4,000 pounds per square foot. The weight of ordinary adobe is 100 pounds per cubic foot.

You should put on top of the foundation some sort of waterproofing membrane. A layer of tar paper, for instance, then lay the adobe on top of that. The reason is to prevent the working of the moisture up from the foundation into the base of the wall, causing trouble.

References which I would suggest are: USDA Farmers Bulletin #1500 -- "Rammed Earth Walls for Buildings"
Farmers Bulletin #1720 -- "Adobe or Sun Dried Brick for Farm Buildings"

These bulletins may be obtained by writing to Superintendent of Documents, Washington, D. C. The price is 5¢ each.

Mr. William B. Cheek, representative of the Portland Cement Company gave many suggestions on the use of Portland Cement.

Mr. Cheek: I wonder how many know what Portland Cement is? People have the impression that Portland Cement is made by one large company with numerous branches. It isn’t a trust, or it isn’t made by one company, it didn’t originate in Portland, Oregon or Maine. It is simply a name of a material describing a certain type of cement that can be made by anyone that can put up a mill and grind and burn the ingredients in the making of cement. It got its name from the fact that some man developed a material very similar to our modern Portland Cement. It differed from the hydraulic lime and the natural cements in that the ingredients were carefully proportioned. The hydraulic limes are impure limestones. Natural cements made in this country in the early days were simply made of native rock that was burned and ground.

The most important or the fundamental thing of concrete is the paste. The amount of water to a sack of cement is the most important ingredient. The most expensive ingredient is excess water. Water is the principal factor in determining the quality of cement. Cement is just a fine powder to most of us and is shaped like broken glass. In mixing 7 1/2 gallons of water you get 1.485 of paste, practically 1 1/2 cubic feet of paste. The more water used the weaker the concrete. Actual amount of water is the determining factor of strength. In mixing use as little water as possible if you want to strengthen the concrete. After concrete is poured, give it as much water as possible.

The use of concrete in rural buildings is for basements and foundations. Concrete of almost any quality has strength enough to carry the load of rural house foundations. The aggregate to be used in rural construction is often a problem. Farmers do not usually have access to gravel, etc. One of the things that causes trouble is the organic material in the local aggregate. Organic material is titanic acid. Titanic acid will cause the concrete to become weakened. You should be sure that the aggregate is clean. Most farms try to use pit run, that is just as it comes from the pit. Finer aggregate should be used for large surface areas. One part of concrete, two parts sand and three parts gravel. From a report on Porous Concrete For House Construction, Mr. Cheek read as follows:

"Porous concrete has been used extensively by the U. S. Bureau of Reclamation in connection with the construction of dams and appurtenances and in the construction of porous concrete pipe. This type of concrete is sometimes designated
as "pop corn" concrete and differs from conventional concrete in that no sand is used and the coarse particles for any given batch are of approximately the same size.

"This does not mean that only one size of aggregate is suitable. The user has the choice of one of several sizes; as, for instance, the aggregate may all pass the 1" sieve and be retained on the 3/4" or it may pass the 3/4" and be retained on the 1/2", or pass the 1/2" and be retained on the 3/8" sieve. This grading may be carried on down even below the ordinary division between sand and coarse aggregate, but only one fraction of aggregate is used.

"Porous concrete consists essentially of particles approximately equal in size and stuck together at points of contact by cement paste. Only sufficient paste is used to accomplish this end and the air voids are many times greater in volume in regular concrete. This large void space naturally reduces the compressive strength, but the insulating value of the concrete is greatly increased.

"A field engineer of the U.S.B.R., located in the State of Washington, conceived the idea that such concrete would be exceptionally advantageous in the construction of concrete residences and other small buildings. Advantages claimed for this type of concrete wall are:

1. Low first cost due to low cement factor (a 1 to 10 mix has compressive strength of 600# to 900# per sq. in.,) requiring around 3 sacks of cement per cu. yd.

2. Low first cost due to ready availability of aggregate in most localities.

3. Low first cost because of lightness and openness of forms. Since the mix used is dry and the amount of paste used is relatively small, there is little pressure on the forms and little paste to leak through cracks in forms.

4. Low cost of exterior and interior finish. Stucco or cement paint may be applied direct to the outside and plaster or cement paint may be used on the inside without furring or lathing.

5. Low first cost because the insulation is built into the wall at no additional cost.

6. Shrinkage of the concrete is very low and absence of tendency to crack is marked.

In the second half of the morning session on the second day, Dr. A. C. Hildreth of the United States Horticulture Field Station gave a most interesting talk on the "Use of Native Material in Landscaping."

Mr. Hildreth: I noticed in the remarks of the only speaker I had heard that you had stressed the use of native building material. If that is important, it should be doubly important to emphasize the use of native plant material in landscaping about those same houses.

We are dealing with living materials when we are dealing with plants. They ought to be adapted to the conditions. Plants are a good deal like prophets—not without honor save in their own country.
We have the material available for nearly all our needs in landscaping by using trees and shrubs in kinds that happen to be native in the area near us. Some people spend money for exotic species, and usually pick up things not well adapted to climatic and soil conditions.

Those who settled the United States were pleased with the great variety of plant material at hand, but botanists and horticulturists were busy carrying things back to Europe. They were sent first to England to develop and then back to the United States.

This same thing happened in the migration westward. It was a different picture in the West from plains to mountain states. Wherever people moved they seemed to want to take plants with them that their grandmothers grew in their gardens.

This western country out here presents a great area of plant material very suitable for landscaping. Colorado Blue Spruce is grown all over the country, wherever it will do well. Juniper or Cedar is rapidly finding its way into the nursery trade. Conifer Fir is a suitable landscaping plant all over the eastern part of the United States. Much of our native shrubbery seems to have been overlooked. It is in the process of development.

I should like to mention a few species of plants growing here on the plains. Black Hills Spruce and Ponderosa Pine are excellent. Limber Pine does well in high elevations. Pinion Pine has a wide range of adaptability. Bristlecone Pine makes a good landscape specimen. Cherrystone Juniper is good. Utah Juniper is well distributed as far north as the Wyoming and Montana line. It is very drought resistant. Not all are suitable for growing in all kinds of soil. I feel that altitude has not as much effect on growth as has soil.

Ponderosa Pine overlaps with the Lodge Pole. Limber Pine overlaps with Lodge Pole. Limber Pine and Ponderosa are good on plains but not Lodge Pole.

Douglas Fir is not moved down readily from the higher altitudes and is not good on alkali soil. It grows well on acid soil.

Deciduous trees do well on the plains and the northern part of the range up through the Black Hills. Burr Oak, Horn Berry, American Elm and Hackberry are all excellent shade trees. Trees for windbreaks are Boxelder, Green Ash, Willows and Cottonwoods, if they have irrigation.

Ornamental or large shrubs are the Mountain Maple, Buffalo Berry which is an interesting and good ornamental tree. Be sure you have both a male and female tree of the Buffalo Berry or the berries will not materialize.

Silver Berry is an interesting species that is good for a grey foliage in landscaping. Chokecherry is good in either plains or mountain country—yellow berries for contrast, as well as the black and red. June Berry and Wild Plums are good for spring. Mountain Birch, one of our native birches, is a fairly good dryland tree. An experiment showed they did well in Kansas. Mountain Ash has fine red berries and a nice bloom in spring.

Flowering ornamental trees are Native Flowering Hawthorne and Flowering Locust which are small trees or small shrubs. The Wild Olive of the Rio Grande valley makes a good hedge plant for us. It is a good substitute for privet where privet will not do well.
Medium height shrubs are Dogwood and Currant. Currants are tolerant of shade. Gooseberries are fine ornamental plants which give a nice spot of green in early spring. False Indigo or Lead Plant is a fine ornamental shrub good for a mass effect. They also work very nicely in shrub beds.

In desert areas sagebrush gives an excellent spot of gray. Rabbitbrush is a shrub goldenrod and gives a greenish-gray color. Winter effect should be considered.

Of the sumacs, there is the Mountain Sumac and the Skunkbush or Plains Sumac. One of the best medium shrubs is the Foothills Thimbleberry which is sought after by landscape men now.

Among the small shrubs are Snowberries, Shrubby Cinquefoil and Artemesia which make nice beds.

Of the broadleaf evergreen, there is the Oregon Grape, Mountain Balm and Manzanita.

Vines wander all through the plains and mountain country. There is the Wild Grape and Woodbine, found everywhere; also Clematis. Blue Clematis with a little care makes a nice climbing vine.

We are fortunate in this area to have a number of desert plants. There is Yucca or Soapweed, and Cactus. Cactus thrives in good soil, but needs gravel around the top and not much water. Cactus will bloom and give fine effects where moisture is too limited to grow any other garden. There are fine cactus gardens in California. These plants would do well for landscaping.

Landscaping goes with the lawn. My impression of a lawn is that it should be rather small. I got that impression when I was very young and had to mow a large area too often. I think a little bit of grass around a place is fine, but if it is too much to take care of, it will be as bad as no lawn at all. One of the finest dryland lawns is native Buffalo Grass. It responds readily to water.

Needle-bearing plants, or the evergreens, had better be moved with a ball of earth. The roots must be covered. Deciduous trees can be moved without so much care.

USE NATIVE PLANT MATERIAL WHEN AVAILABLE

One of the outstanding talks of the Conference was given by Miss Mena Hogan, District Home Demonstration Agent in Arkansas.

Miss Hogan: We used to have an old governor who used to make quite lengthy addresses and who used to point out that if Arkansas were surrounded by a wall that was unscaleable and impenetrable its inhabitants could live. The Arkansas Live-at-Home-Program has helped keep this tradition alive.

We believe that with our Home Made Home Program we've added an important item to the late governor's idea.

We have set up a balance sheet and on one side of the sheet is the liability column on the other is the asset column. One of the chief liabilities in Arkansas would be the income, an average of which is not over $710.00 per year.
Another liability is unskilled labor. These unskilled laborers know little or nothing about building principles. Then we have the "amateurs" in the way of carpenters. We have a housing situation in which about 4 out of every 5 houses needed some structural revision or replacement such as roof, porch, floor, paint or foundation.

Some of our assets are: We have a native building stone which is almost unsurpassable for building purposes. There is a sandstone that has a mossy cover and is a very attractive kind of stone. We have a lot of lava like rock which is used in 4 or 5 counties. We have grey limestone that is very beautiful. Logs grow over much of the land area of the state such as pine, oak, and some walnut. We have saw-mills where a farmer can trade timber for rough lumber. He can get gravel and sand just for the asking or getting. Farm labor is in abundance during seasons when not in demand in crops. Country carpenters are not liabilities when they have been given training.

Our Net Balance? To date approximately 2000 houses, barns and other farm buildings have been built each year since 1936. The houses are well built, have good lines, are durable. They are houses that are comfortable and livable. These houses cost unbelievably small amounts of money.

It has been the business of the Extension Service to teach people to bring natural resources together for homes; to teach the importance of a good plan; to furnish a plan to suit the needs of farm people at no cost; to furnish technical information to demonstrators building Home Made Homes such as giving information on laying stone, on fundamentals of house construction and on other building problems. The Extension Service has conducted Home Made Homes Schools to which have been invited prospective home builders and rural carpenters.

We've talked Home Made Homes, we've practically lived the subject. Our results? Here are a few examples: The home of Mr. and Mrs. Ray McClellan. They raise livestock and live up on a hill. The annual income in that community is less than $700.00 per year. The annual income of this family is much less. Over a period of years Mr. McClellan saved $100.00 from making a few cedar chests. The cedar grew on his farm. The family had always had a dream of a home but never thought it was in the reach of their income. At a meeting of a home demonstration club, Mrs. McClellan heard the agent telling about the Home Made Homes Program. After the meeting she asked the agent to come out to her home and talk to her husband and get him interested in this program. Much to her delight he was very interested. That was 3 years ago. Three plans were worn out during the construction of this home. Their house is now valued at between $4 and $5,000.00.

Another example is of another farm family. An old man and old lady lived all their life in a poor type of shack with a lean-to on it. They had raised 4 children giving them a common school type of education. The children left home fairly early except one boy. Those children wanted to help the older people at home in the way of a real home. They saved up $400.00. They budgeted the amount of money they had to spend. Their budget was so good that after building a 4 room house the total cost was $395.00, and they knew the cost of every nail in that house.

Much of our results have come about through the philosophy developed through the years.
Substituting for Dean Gray, at a conference of Lumber Dealers from all parts of the state in July, of 1937, Miss Bonslagel wrote the dean for his suggestion for a discussion on "Homemade homes."

His reply has become one of the most widely used texts we've ever had in the Extension Service. It was the foreword for our House Plan Service Handbook. It has been the basis for at least one discussion by every member of the Extension Service from Miss Bonslagel on down.

Certainly I couldn't talk about using natural resources without quoting a few of his statements.

"I would make the point that Arkansas is now - and never has - made enough wealth to have satisfactory homes; provided the homes are to be built in a commercial way; by a commercial way, I mean through buying timber, foundations, paying for carpenters, etc. In fact, there is no reason to believe that Arkansas people ever will make enough money to build satisfactory homes commercially. Last year, the average income of the farmers of Arkansas was about $710.00 - and such small sums don't build homes.

"This being true, it becomes necessary for Arkansas to look about and see what the Lord placed in the state, free of charge, for homemaking purposes. When we look about, we find that we have been given stone, clay and timber. These three articles are scattered about everywhere, and all the individual farmer needs to do is to use his intelligence, his muscles, and his artistic ability in bringing them together in the shape of a home. Iowa builds good farm homes from a commercial standpoint, because Iowa has made a lot of wealth and hasn't had natural material lying about. Arkansas hasn't made the wealth that is made in Iowa, but she has the advantage of natural material -- which she has used very exceptionally.

"Wealth is lying all about us in the shape of stone, timber, clay, etc. Unless, however, these things are brought together into the shape of some sort of structure, they are worth no more than gold lying unmined in the earth. Before gold is valuable, it must be mined, and put into commercial use. Before our stone, timber, clay, etc., are valuable, they must be brought together by man, and put to some use for humans. When a farmer brings these natural products of his together, and makes a house of them, he is actually producing wealth -- just as much as when he makes a crop of cotton or corn. In other words, there is no difference between picking cotton and picking stones, provided the cotton, as it is picked, is sold, and the stones after they are picked, are made part of a farm structure; one process is producing wealth just as much as the other."

Here then is our own answer to some of the problems discussed yesterday. Many of the speakers might well have been referring to such a program in their statements - Dr. Myers, "Homes must be made livable and attractive." Mr. Grimes, "Homes are created," Dr. Rockelley, "There must be pride of achievement." Development must come slowly - home building is a slow process." Bankers, "We should caution against expenditures of large sums of money." We believe we have accomplished some of these goals.

Mr. James E. Morrison was the leader of a panel discussion on the last afternoon of the conference. The topic was "Organization of a State-wide Rural Housing Program."

Those serving on the panel were:
Mr. Morrison opened the discussion.

Morrison: If we are to preserve democracy in America the basis of prosperity is that the people be well fed, well clothed, and well housed. It seems to me that in the discussion, particularly yesterday afternoon, we were anticipating a building movement. We are starting out to clear up some of the objectives of the housing program. During the conference these two days we have been discussing the building of new houses and also the remodeling of the houses we have to make them more livable. In this panel we have some objectives to decide what we can do -- when, where, what it will cost, et cetera. (The panel members were introduced at this point)

Morrison: What do you think of this building program? Are we going to build new houses?

Ward: I think not for several definite reasons. First, lack of information. Second, definite lack of labor since the men are called to defense work and the farm women are going to the fields. Still another factor is that supplies are not available for many are being used for defense.

Hensel: The problem is not so much a matter of getting many new houses but to do something with the houses already there and make them habitable. We should make basic plans for a Federal Housing Program that will be applicable to the people.

Bowen: Many are doing mostly remodeling as insulating of homes for comfort, putting up screens for sanitation, working on foundations, and similar things.

Morrison: From what Mr. Ford said yesterday he is selling forests. Mr. Ford, what do you think of the problem in Colorado?

Ford: Income from the Eastern Colorado farmers, particularly the dry land farmers, has been pretty low for the last six or eight years. Farmers like to get back debts paid up before spending money for anything new. We should induce them to take advantage of using native materials.

Morrison: So the leading factors in an extensive building program are: lack of labor, and lack of income. You have all experienced it -- the need for improvement in the livability of the home, a continuing educational process to condition the people for these things. We should try to set up some housing objectives for it.

Rokahr: At no given time are there more than 5% new houses in any given year. So we can clear this question of new houses. I think when economic conditions are better, there will be better houses.
Ward: Every generation has its own desires as to what it wants in houses. Each makes changes in the style of houses already there rather than tearing them down. I do not believe that we need to apply the brakes in building of new houses. Farmers take care of that.

Morrison: What do the rest of you think?

Gist: I do not think it makes any difference. When we get the idea we want to build houses we will build them whether we have the money or not. As someone has said, "We may as well build now as we are going into another 30-years' war." We will, therefore, probably need the houses.

Morrison: I can give you an argument on that. There are several good reasons why we do not build houses now. 1. Everyone is working on defense. 2. Most farmers say, "I am going to get out of debt first." 3. The panic we have seen is nothing yet.

Gist: What about paying for these houses with the inflated dollar a few years from now?

Morrison: Building costs are going up. The inflation is already beginning.

Man in audience: Perhaps we had better try raising more crops.

Woman in audience: What are you going to do when you can't raise crops?

Gist: Keep on having young'sters.

Man in audience: In our county which is sparsely settled the young'brides are demanding better homes and they are getting them too through FSA loans.

Loper: One advantage that industry in general has is that the building industry does not have is that of selling packaged goods. If the building industry could ever sell a complete house it would do better. One has to buy the lumber here, the nails, screws, and other metals there, the cement somewhere else.

Morrison: We do not want an unusual housing campaign, but just make the houses we have more livable. Make use of available native materials. Make the farmers see the advantage of learning to do their own work.

Loper: Where we have an absence of skilled labor can't we do something to help the 4-H clubs in learning to do the work — train them to use saws, hammers, and mix cement?

Morrison: You are ahead of the discussion, Miss Loper, though I do feel very keenly that we need to do more to educate our youth.

Gist: We have a vast majority of farmers with a $350 a year income. They can't afford to buy houses. They can just buy the essential metals.

Bonslagel: We have CCC, NYA, forestry boys. Aren't we overlooking a good deal of material when we do not use these boys for further training?
McCann: In other words we should take an inventory of the local situation. We need to know about material. We need to know what the Extension Service can do, what the FSA is doing, where the need is felt most, where the FSA is needed. We need to know where all of these resources are and take advantage of our facilities.

Bonslagel: I would like to say that Miss Hogan’s program in our State (Ark.) was based on experience over a 15-year period in home demonstration work. Families have worked on the biggest improvement at the lowest cost.

Audience: How did you start?

Bonslagel: We discovered a group of families who were working on the idea and we put on tours, set aside days for meetings and discussions, until many communities had the idea and went to work on it.

McCann: As I said before we should have more information for we need to know what the different agencies are doing. What of these resources, human, organizations, and the like. We need to count all of these.

Morrison: Consider ways and means to make a program good. Use the newspapers and the radio for publicity. Does this group feel that it is important to have some kind of standards before starting on a state-wide program?

Woman in audience: Yes, I think we should have definite ideas or you may call them standards upon which to work. The better organized the program is the less time it will take to put it across to the various communities.

Man in audience: In traveling over seven states, I have been appalled at the stacks of board feet of lumber that could be used in improving the living conditions on farms. If we want to make an action program of this, we will have to get an inventory of the needs and give the people some education. There is no time like the present to start this program.

Morrison: Survey the situation, discuss problems and recommendations and develop the program may be the summary of the discussion at this point.

Woman in audience: In some states many farmers are not enthusiastic about building new homes because they say that their taxes will be raised by the government.

Davis of Utah: Our director made a special survey to know where taxes are raised and found that this was not true. We have a very low income group. The farmers are earning less than $500, gross income per year. We have a county housing committee and districts within the county and representatives in each district. Cooperating with our forestry service we are going into the mountains and getting timber sites. We have the timber located and will cut it in the fall. We will cut it, bring it to mills, saw up the lumber and cooperate in building the houses.

Morrison: Are these to be log houses?

Davis: They will be log or stockade log-side or even square logs laid horizontally. The Extension Service has put out circular letters on how to make log houses, how to cut the logs, explaining the different steps. We are not even sheltered from the wind. We will get houses built by the old exchange method.
As educators we neglect to remember that farm people are people with initiative and need to be encouraged to do things. Make them realize that better living conditions are desirable. We need to give guidance.

Most people get what they really want.

Are we agreed that money is quite secondary to a building program? If the people want these houses will they really build them?

What are the things that need to be done?

I think that we need to have more interest come out of the schools to reach the people in general.

How would you reach those people?

Have meetings like this. Form discussion groups, after contacting the teachers in the field, the 4-H club members and all the people that they meet.

Appoint a committee and have it done.

It is a part for the people in the community to take the responsibility of planning their own program. The experience gained through this process is most valuable.

We should take small areas and have those people line up their needs. Let them discuss their problems. The supervisor may guide them and let them think that all the ideas are coming from themselves.

Nearly every state has millions of acres in national forests. I would like for Mr. Davis from Utah to go a little further in explaining whether the work they are doing would be applicable to other states.

Yes, I think the Forestry Service is very willing to assist the farmers whenever they apply and by use of the blueprints and the guidance of the supervisor, I see no reason why any of the states could not do this.

It has been done in Colorado. In working with the Forestry Commission, part of the outcome was that the Forestry Service offered the farmers of Eastern Colorado the chance to come into the hills and take back what lumber they needed at no expense to them. In the past if an individual farmer would make application for posts the ranger would permit him to come in subject to regulations. Many farmers resented this and did not go out to get lumber. Now if you get a farmer or group who want to go into the national forest, we will have a forest man meet them and set aside a section in which they can work. In this manner there is not so much red tape but they still must follow section rules. In other words, this is just supervised cutting of timber.

We are concerned with educating the people who have this housing problem. We suggest that the 4-H clubs and the community Finding Committee meet and give attention to their housing problem. Work out ways and means cooperatively as harvesting in the national forests. The same means may be used in other lines. Get a vision and an inspiration and work on it.
Morrison: We need a housing campaign.

Lindstrom Wyo.: In the matter of rural housing it is a matter of creating interest in our state. Definitely I think the matter of mapping public opinion as to what is the situation in housing. We have started a tenure program in housing trying to get the people aware of the situation in their counties. You cannot get anybody interested in improving a place unless he knows that he can stay on that place a few years.

Morrison: What can we do about it?

Men in Audience: The Federal Security has been working on five to ten year leases.

Men in Audience: I think it is a good idea to get a gigantic educational program started in Las Animas County, Colorado. At the present time we are on the verge of purchasing some land through the cooperating purchasing association. We do have a tenure problem.

Panel: I am sure that is true. In Dr. Roskelley's talk he mentioned housing of contract labor such as beet workers who stay during crop season. Housing of the hired man is a very definite problem also. They think that since he is single that he may sleep just anywhere. Even our land owner doesn't have adequate housing in some cases.

Audience: Some of these inhibitions of improving the houses on rented property might be removed if some compensation for the house that they have put up can be given. This is a problem which is a definite part of agricultural planning.

Audience: We should think of home improvement in the broad sense. Make improvements of a type that can be moved such as removable sinks and cabinets. Many times out of one small improvement, many things grow.

Morrison: Quite obviously we cannot explore the whole field. We are still concerned with a general program of better housing at this time and the need for defining the job more accurately. As the defense program gets under way there will be a spiraling of prices. All of these things should be taken into account for this group to set up a program and then get out and see that the job is started.

Panel: A very logical procedure in this housing problem is that all of us give every bit of assistance to communities to study their housing situations—electricity, conveniences, and other problems. I am sure we can all feel that we are on safe ground if we initiate this housing program on the community level. What resources are there that can be used economically, the human material too. Get an inventory and make it available. Draw on the resources of the farmers in the community. Let one man act as a supervisor to train other men in building houses. In time these men may take over the job themselves and continue the work. As Miss McCammon said, "We can't acquire in two days the information to enable us to become architects, etc."

Woman Audience: Some of us are going back to our respective states and try to profit by the work we have had these last few days. It seems to me that we could have a procedure worked out—something more concrete.
Davis: Go back to your communities, find out how many want to build, get their ideas and then get blue prints which are available from the Washington office at six cents each.

Morrison: Whom do you want on the committee to formulate plans for the program?

Miss McCammon, Mrs. Bloom, Miss Loper, Mr. Ford, Miss Rokahr, Mr. Ward and Miss Bonslagel were appointed for the committee.

Gist: We are agreed then that we are going to start on the community instead of starting in Washington?

Rokahr: Of course, we have to know what the community wants in this program and get their ideas but unless the offices in Washington, the national level, had been working for a number of years on the set-up, I have an idea that we would not have been sitting here today.

At the last session of the Conference on Wednesday afternoon Ruth McCammon presided. She introduced as the first speaker Ruby M. Loper, Assistant Agricultural Engineer of the Extension Service of Nebraska.

Miss Loper: The preparation of plans for a rural home should include careful study of the needs of the family which will live in the house, as well as the construction requirements necessary for a structurally sound building. The two main factors which limit housing work are:

1. The amount of money which the family has to spend.
2. The intensity of desire on the part of the family for better housing conditions.

The amount of money needed is, of course, dependent to a large extent upon the kind and quantity of native building materials which are available locally. If, as in Nebraska, there are very few native materials available, the question revolves itself into how far can the available dollar be stretched, or how much of a house can one get for the money that one has to spend.

The next question which must be given consideration is, what are the minimum standards for a farm home? First and foremost, of course, are protection from the elements and the inclusion of such features as will provide sanitation. In some cases, the only sanitation features which will be possible are screens. The omission of the use of screens on any farm house, no matter how low the initial cost, is doubtful economy.

Number of rooms. For low cost farm homes, one of the first decisions which must be made is, how many rooms should the house have? The minimum number of rooms is naturally one. Some authorities claim that there should be one room to a person. This is entirely feasible if there are only three or four people in the family, but it is impractical if the family is a large one, such as nine or more.

Flexibility. In order to keep the number of rooms to a minimum, and yet provide comfortable living quarters it will be necessary to introduce flexibility. Some rooms are going to have to serve two or more purposes. The kitchen can be just a kitchen, or it can be a combination kitchen-dining room. Using such a combination, a house of three rooms would be possible, and could be made very livable for a family of three or four. It would include the combination kitchen-dining room, a living room, in which could be used a rollaway bed, and a bedroom.
For only two people this house could be reduced to two rooms, a kitchen-dining room and a combination living-bedroom. The social welfare people say that more consideration should be given to the number of bedrooms in a home. Case histories show that children are often kept in the parents' bedroom too long.

**Size of Rooms.** There are two factors which control the size of the room. One of these is the size of the furniture which must be placed in the room, and the second is the economical and physical limitations of the structural material. In many of the houses which were built years ago, the rooms were extremely large. These sizes often were impractical, due to heating difficulties and the added work which was necessary to keep them clean. Size and shape of furniture have changed during recent years. Such changes permit the design of smaller rooms, into which the necessary furniture can be placed and enough space still left for the ordinary activities of that room. For example, dining room tables are now much smaller than they were twenty-five years ago. The shape is also different. The dining area should be sufficient in size to accommodate a table, chairs on each side, and leave traffic space behind the chairs. By allowing 18" for this, the size of the dining room could be kept to a minimum. If finances permit a larger room, it would, of course, be more convenient.

The size of the bedroom is another example where the minimum dimensions are dictated by the size of the furniture which must go in the bedroom. The ordinary type of bed is approximately 5' x 7'. Enough additional space must be left in this room to permit the placement of at least one other piece of furniture, and provide enough room for dressing purposes. In some instances the omission of a door for the closet permits a smaller floor size, since the swing of the door does not have to be taken into consideration.

Bedrooms can also be reduced in size by the use of double-deck bunks. The use of bunks should be considered carefully however, before they are accepted. Bed-making of the upper bunk is difficult, and if these bunks are built in, difficulties are often experienced with bed bugs, since adequate fumigation is almost impossible.

The physical and economical limitations of the structural material must not be overlooked in planning a home. Lumber comes in even foot lengths, and room sizes should be so planned that the floor joists can be used to best advantage. Enough length at each end of the floor joists must be left so that it can rest upon the supporting structure below. For example, a 14-foot floor joist will not permit a room width of 14 feet. At least 6 inches at each end of the joist must be extended underneath the walls which are erected at that point. Consequently, the room cannot be wider than 13 feet, and in some cases it is desirable to decrease it to 12 feet, six inches. If a 14-foot width is demanded it will mean that a 16-foot floor joist must be used. This will, of course, increase the cost of construction. Lumber prices increase very rapidly for lengths over 16 feet, and to avoid the payment of this premium price, it is well to develop a plan and arrange the rooms so that joists 16 feet or less in length can be used. By careful planning it is oftentimes possible to reduce the size of the room only a few inches, and yet make considerable savings in the lumber which will be necessary for construction.

**Fundamentals of Farm House Design.** There are certain fundamentals in the design of farm homes that should always be kept in mind. The farm home needs to be entirely different in plan than does the urban one. The town house will not be satisfactory on the farm, but surprisingly enough the farmhouse adapts itself very well for city use. In too many cases, our farmhouse plans have just grown, and were not planned. Oftentimes they were a pet plan of the local carpenter, or they
may be a copy of a house which the farm family has seen in town. The farmhouse is not only a living center for the farm family, but it is also the center from which all of the business activities of the farm are directed. Because of this reason, it needs to be planned very carefully, so that it will meet the needs of not only the family, but also the farm business. Experienced rural architects have found that there are three main fundamentals which should be included in every farmhouse, regardless of what part of the country it may be built. These are:

1. The farmhouse should face the entrance drive, since the driveway is the farmer's street, not the highway which goes by the place.

2. The rear entrance should be so planned and so arranged that traffic coming in can get through to the other part of the house without having to go through the kitchen. In low cost homes, hallways must be reduced to a minimum and it may mean that this rear traffic way is merely one edge of the kitchen, but if the kitchen equipment is arranged carefully, this will not cause too much inconvenience.

3. A first floor workroom or utility room. This workroom may be completely enclosed, or it may be nothing but a screened porch, depending entirely upon the climate and the amount of money which is available. In addition to these fundamentals, there are many others, which are also very important. In some cases, some of these may seem more important than the first floor workroom.

4. Have the kitchen so placed in the house design that from it the housewife has a view of the farm drive, in order that she may see who is coming into the place at all times. The housewife also needs to have a view of the service buildings, so that the livestock cannot get out of the lots without being seen.

5. If there is a basement under the house, access to it from the outside as well as the inside is recommended.

6. If a farm office is possible in the home, it should be included. The arrangement should be planned so that the men can get to it without having to go through the rest of the house.

7. A closet for work clothes near the rear entrance is also important. It should have some method of ventilation.

8. One bedroom on the ground floor is very convenient, particularly in case of illness, or if there are small children in the family.

9. For a two-story house, the stairs should be so placed that one may go up the stairs from the rear part of the house. Men dressed in work clothes find that it is better to come down the back way, rather than having to walk through all of the other rooms of the house to get to the stairs.

10. Open stairs are cold in the parts of the country where temperatures are low during part of the year. They should be enclosed if at all possible. If a house contains an open stairway, and it is impractical to enclose it, a heavy curtain hung across the opening at the top of the stairs will reduce drafts to a minimum.

11. All stairs should have hand rails.
12. Dog-legs (three-cornered steps) should never be built. They are a constant source of accidents.

13. All bedrooms should have closets. If possible, all closets should be at least two feet deep, and the door should be placed in the center of the closet wall. Careful examination of houses which are now in existence usually brings to light unused space which could be converted into closets. It may be an unused end of a hallway, or it may be a set-back in some room. If these closets are to be used for bedding and linen storage, they should not be too deep. Usually 16 inches or 18 inches is adequate.

14. If complete plumbing facilities may eventually be installed in the home, it is wise to rough-in the soil pipe and water supply pipes at the time of construction. This will save money later. A shower in the basement is advocated for the use of the men as they come in from the field.

15. In climates where the seasons bring extreme weather changes, it is wise to provide some protection over the entrances to the house. For a house facing north, a porch over the entry way will reduce heating costs in the winter time. A porch over a south door makes the house much more comfortable in the summer time.

It is not possible to get all of these features in a farmhouse of moderate cost. It is much easier to make wise selections of such features as can be included if the fundamental principles of farmhouse design are kept in the back of one's mind at all times. They form a much better basis for selection when developing a workable plan.

Costs for homes will vary in different parts of the country, depending upon labor charges and upon the amount of native material available. Where all materials must be purchased and all labor hired, division of cost is about 40% for labor and 60% for materials. Since the farmer can usually do a great deal of the rough work at least for himself, he is in a position to reduce labor charges materially. In contract-built homes the cost of all mechanical conveniences is usually considered about 20% of the total investment. These conveniences include plumbing, wiring, heating, etc. Here again, a cost reduction can be made if the labor can be done by the farmer himself.

A farm home must give us, first, protection from the elements; and second, a place where the family can be happy and content. It need not be an elaborate dwelling, but if it has been planned carefully, it will contribute a great deal to the contentment and health and happiness of the family which lives in it. Again, the two controlling factors of the size and quality of a house depend upon:

1. The amount of money available, and 2. Upon the initiative of the family which will live in the house.

Occasionally this initiative may be very low, and the family does not realize how their housing conditions could be improved with the amount of the money they do have to spend. It may be that poor nutrition is responsible for this lack of initiative. There are many examples of improvements that can be made for a small amount of cash outlay, if people have the desire to improve their conditions.

As a wind-up of the Conference, Connie Bonslagel, State Home Demonstration Agent of the Arkansas Extension Service, gave in a most delightful way, interspersed with many humorous remarks, the following summary of the Conference.
Miss Bonslagel: Colorado State, so far as I can find out, is the only institution of its kind to sponsor a regional housing conference. The response of the states in the region is a testimonial to the interest in the subject throughout the region. The well-planned program shows that much sound thinking has been done along the line of housing.

More than 100 men and women are in attendance, from 17 states, the District of Columbia and Hawaii. Men and women from 8 states and Washington responded to the invitation to appear on the program. None were absent.

We may not have been building houses these two days, but we have been building and changing attitudes. There have been four or five unscheduled talks and all pertinent to our subject. More than half of those in attendance took part in discussions.

In presenting a picture of the present situation in housing, the seven speakers gave facts relative to sub-standard structures, inadequate facilities, and causes and effects of both; the economic and social status of farmers concerned, including owners, tenants, farm laborers and migrants; the evident effects of lack of adequate income, of competition between farm buildings and equipment and home buildings and equipment, mobility, landlord-tenant relationships, uncertainty of tenure, and the two types of non-farming rural families—subsistence (sub-marginal) and retired business and professional man type which offer little problem. Figures from surveys showing inadequate water supply and sewage disposal with their effects on health were given and the contributing factors including scattered population, and undirected suburban developments were discussed. The effects of electric service as a motivating influence on further improvements in the home, and its tendency to attract a better type of tenant were discussed as well as over-balanced expenditures for electric equipment at the expense of more fundamental improvements in the house itself.

It was pointed out that Resettlement projects place an ideal in housing before the people—show adequate examples that serve as a demonstration. The same is true of houses purchased and remodeled or built under farm-tenant security.

Income does not influence standards of living nearly as much as standards of living will increase income.

Appreciation and use of resources at hand in repairs was discussed.

A knowledge of standards in house construction, of the use requirements of houses for farm families, and of financing, was urged upon home economists.

A discussion of defense housing was brought out.

More than one speaker agreed with Mrs. Carmen Johnson who said: "The housing problem is not merely a question of building houses, it is also a question of building character."

"Living today is a complex affair involving a great number of processes which go to make up the activities in the home and out of it, the knowledge of those things and how to use them. It isn't the amount of income but what can be done with it that influences the standards of the family. Perhaps economic value has been stressed too much and not enough emphasis given to the returns in health and satisfaction. Health is but a means toward good living, but it is of basic importance."
I think we need to look upon the house as a means to an end. Its major purpose is to provide a type of protection that will afford maximum family relationships, personality, growth and favorable social attitudes. It has been said that the cradle of democracy is in the home; if that is true, we see the importance of the house in contributing to the home and to democracy.

It is agreed that home economists need to broaden their own horizons, learn of engineers and architects, at the same time teach them more about home economics.

They need, with help, to develop in farm families an awareness of the influence housing has on the social and spiritual as well as the physical and moral development of the family and community.

The identification of housing with land use planning was stressed by at least one speaker.

The three men who spoke on the subject of construction problems took the home economists present a long way along the road to broadened horizons and increased information on problems in architecture, engineering and house construction.

In the discussion of financing, it was brought out that money is not always the deciding factor in good housing. The desire for a good home—an overpowering desire—will prove a compelling motive for making the necessary money, finding the necessary time, labor and material resources.

Farm homes have not kept pace with other building operations owing to the unfortunate conditions of income and outgo.

Before borrowing, prospective borrowers should be sure of the income from which the debt is to be paid. Make improvements gradually with a minimum of debts incurred.

Family planning for family affairs was compared with county and state land use planning for county and state affairs. Plan to work toward desirable standards, gradually borrowing as little as possible. Borrowing or planning for financing the farm business and farm home should keep step. Borrow gradually as little as possible. A conservative attitude is best toward borrowing to build a dwelling since the loan is not self-liquidating.

Joint family planning creates a pride in achievement, and family relationships, rather than size of house, makes a house a home.

The relative worth and the relative costs of imported lumber and the home grown, home processed kind was discussed by two speakers.

The loss to Colorado of $6,681,000 due to failure to use native lumber was brought out by Mr. Ford. Small mills sending out unseasoned lumber caused prejudice against home product. West-coast lumber costing twice as much seems to be preferred.

Mr. Legault discussed construction materials which included adobe, cement, and rock. It was suggested that when building, select material which will give satisfactory results at lowest possible cost.
Rapid influx of commercial materials on the market, salesmanship for these, cause people to under-estimate local and native materials. We become a country "not without honor save for its own profits."

Miss Hogan gave a picture of what the people in her state are doing with the rock that is really a menace to the farmer. The particular building program was patronized by a land extension education program for the use of rocks and logs, rough lumber and poles and material at hand. Such materials need to be popularized.

In Arkansas a log house was built by a millionaire. It was a big house. Later cottages were built. People of means began building play houses, and week-end houses. We got the cooperation of people with money to build rather pretentious houses of native rocks. With the use of native material in building, there seems to be a need for the use of native material for landscaping.

Dr. A. C. Hildreth gave a rather complete report of native materials available for landscaping.

I think this brings us up to this afternoon's discussion.

Miss Loper of Nebraska talked on the needs and requirements for Planning the Rural Home.

Are we going to ask any questions about the type of families we are going to work with? Or is it just the results?

In one county the average age of houses is over fifty years, it was brought out. Young people's needs will be developed from older people. The reason for their being unusually old is the fact that all sections of our country want to live in plain houses. They are not really farmers but part-time farmers. They do not like the term subsistence farming but they set a good table.

The conference has been exceedingly successful. I hope Colorado people are as well pleased. I consider it a privilege to have been here.
HOUSING BIBLIOGRAPHY 8/1/41
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