The influence of the housing reform movement on proposed farmhouse design (1900-1930)

by

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INTRODUCTION

The evolution of vernacular farmhouse types (1900-1930) generally paralleled that of urban/suburban vernacular domestic architecture of the same time period. Beginning around 1870, the industrialization of American manufacturing processes made a common building vocabulary available to urban and rural builders alike, so that on the exterior there were many similarities among dwellings, regardless of their locations.[1] From 1900 to 1930, rural vernacular structures built by builders and/or patterned after designs published in builder's or agricultural journals vastly outnumbered high-styled, site-specific structures designed by architects. However, despite similarities in exterior appearances which resulted from the use of common building materials and ornamentation, and the subsequent compositions which resulted from the placement of openings and these materials, farmhouse interior configurations often differed from their urban counterparts, due to the unique spatial requirements for houses in rural areas.

In this thesis, I proposed to show that these interior differences may be primarily attributed to a national movement which promoted domestic architectural reform. In addition to ever-increasing developments in the building technologies, the turn-of-the-century also saw an increasing awareness of the "condition" of housing, culminating in the formation of a movement directed at improving the home environment. Healthfulness, economy, and efficiency were the basis of the "housing reform movement" which officially began in the last decade of the

nineteenth century and drove the design of popular houses toward modernization. Calling themselves progressive, men and women of the time often began ambitious reform campaigns to improve housing conditions for all persons and, in particular, to create an efficient work place for the housewife.[2] Because of the overwhelming lack of modern conveniences in the farm home, and because so many of the reformers were home economists at land-grant universities, the reform movement produced a great deal of information specifically directed at the planning of farmhouses. This information was primarily disseminated through writings in monthly publications and extension bulletins and through the information presented to special organizations.

The extent to which the activities of the housing reform movement impacted the reform of proposed farmhouse interiors has not been previously established, although the quantity of historic reform literature which specifically addressed rural conditions and their proposed improvement clearly indicates an attempt at influence. With this in mind, the objectives of this research are:

1. To identify and describe the condition of farmhouses during the period 1900-1930 through the use of historic literature. This literature includes governmental surveys of agricultural areas, private inquiries, information about farmhouses which was gathered by certain popular serials of the time, and the discussions of the condition of farmhouses found in the published proceedings of the meetings of reform-oriented organizations.

2. To identify the development of the housing reform movement: its messages, the methods used to transmit its messages, and the recipients of the messages. Because of the rural focus of this research, the aspects of the housing reform movement which addressed the issue of farmhouse reform will be particularly discussed.
3. To analyze the design and interior spatial organizations of proposed vernacular farmhouses from the period 1900-1930 through a content analysis of the primary historic serials which contained published farmhouse designs. The extent to which the housing reform movement's recommendations on farmhouse design were exhibited in the farmhouse plans is to be identified. A collection of proposed farmhouse plans will be used as a sample survey of rural dwellings.

Methodology

This research is based on historic literature as a direct reflection of the time period 1900-1930 and its depiction of social development and domestic design. Published literature is the only major source of documentation for the beliefs and activities of the housing reformers. Although a great deal of the reform information was delivered verbally, it is possible to document the major points of the movement through the use of historic transcripts, articles, and books. Published floor plans and design details provide a likewise concise sample of early twentieth century farmhouses which would be otherwise

unavailable, due to the lack of extant unaltered examples and the geographic difficulties of a nation-wide survey.

The analytical approach utilized for the purpose of determining the correlation between the messages of the housing reform movement and farmhouse design is the content analysis of historic literature. The housing reform movement's postulations about the modernization of rural housing shall be identified through the use of the writings of and about the reformers. From this, a checklist of standards for the design of farmhouses shall be derived and applied to historic farmhouse plans which were published between 1900 and 1930.

The literature associated with the housing reform movement consists of many primary and secondary sources. Its theories were first published in domestic treatises and then gradually spread through a more diverse network of publications. For the purposes of this research, three general types of primary sources will be used: home economics documents primarily consisting of transcripts, extension bulletins, and journal articles; written transcripts from the meetings of reform groups; and published articles and editorials from popular women's magazines. The contemporary works of social housing historians often include the cause of the reformers, although the specific application of this information to rural areas is rarely addressed. Published articles and books by the researchers of housing history will be used to provide a general overview of the movement, while specifics concerning the rural aspects of the movement will be derived from historic literature.

From this survey, specific standards for the design of farmhouses will be identified and described. Following the determination of a comprehensive statement of reform recommendations for farmhouse designs, this list will be limited only to factors which can be determined through the analysis of a published plan. Therefore, aspects of design such as structural orientation and the treatment of floor, wall, and ceiling surfaces, which can only be determined by analyzing extant structures, shall be excluded from the list of standards. Also excluded shall be information pertaining to the exterior design of farmhouses, due to the interior focus of this research. Instead, the list of reform standards will focus only on spatial allocation and the relationships between spaces.

All vernacular farmhouse types found in the historic journals shall be subject to analysis, although exception will be given to farmhouse plans which were directly produced by the housing reformers themselves. For this research, "farmhouse" shall be defined as the residence of a person or persons who make their living directly through agriculture, thereby giving exception to dwellings identified as "country houses," which were designed to house persons who desired to live in the country but did not have an agricultural occupation.

The data resulting from the analysis of the proposed farmhouses shall be used to determine the level to which the housing reformer's recommendations correlate with the designs proposed and published in historic journals. Analysis will be made in terms of the date the design was proposed so that the time period when the movement's message

influenced design most strongly may be ascertained. Also, the areas of the farm home will be analyzed separately to determine whether an emphasis was given to the reform of specific types of spaces by persons designing farmhouses.

Identification of the Conditions of Farmhouses (1900-1930)

In order to understand the basis for the housing reformer's interest in improving the farmhouse interiors, it is well to establish the condition of farmhouses during the time period of 1900-1930 when the movement was most active. Generally, the farmhouse of the early twentieth century lacked most modern conveniences such as plumbing, heating, and electricity which were usually found in urban housing. This "rural condition" can be documented through the analysis of several surveys of farmhouses which were conducted in the first half of the twentieth century. Before 1930, small-scaled investigations into the status of the farmhouse and the farm woman were conducted by groups of reformers, although this information was not often published in great detail. As determined by this research, the first full-scale nation-wide survey of farmhouses was conducted in conjunction with the 1920 agricultural census, which included selected data about the conditions of farmhouses to document the almost complete lack of modern conveniences.[3] The 1930 agricultural census followed up with a similar inquiry, although only a rough estimate for the actual number of farm-houses can be derived from the census information because it documented the number of farms instead of occupied residences. The federal

Committee on Farm and Village Housing also conducted a survey of housing conditions on farms between 1930 and 1932.[4] A more detailed national farm-housing survey was conducted by the Bureau of Home Economics in cooperation with the Bureau of Agricultural Engineering, the Extension Service, and the Office of the Secretary during January and February of 1934.[5] The Agricultural Census of 1935 included a national count of farmhouses but did not include some of the specifics about their condition that were found in the 1930 census. Chronologically, documented cases of farmhouse surveys span the time period as follows:

The earliest large-scale investigation into the housing conditions of farmers identified by this research occurred in 1909, when the woman's journal Good Housekeeping organized a national inquiry as a showing of their disapproval of President Theodore Roosevelt's Country Life Commission. In the January 1909 issue, an objection was raised by housing reformer Charlotte Perkins Gilman to the fact that no women were included on the Country Life Commission. In response, Good Housekeeping proposed a National Farm Home Inquiry in cooperation with several agricultural publications.[6] By publishing information about the inquiry in these various journals, the investigation had the potential of reaching up to 675,000 farm families (the total of their subscriptions). However, results of this study were not published in Good Housekeeping. In July 1909, it was announced that the data received would be used by the state or branch federations of the General Federation of Women's Clubs to address deficiencies in rural conditions at state-wide levels. It was also noted in the July 1909 issue that

the Good Housekeeping Farm Home Inquiry derived added importance from the fact that the "returns" from the Country Life Commission's Rural Inquiry were not being used because of a lack of funding for their publication.[7]

The information provided from the 1920 census first officially confirmed what was believed of rural living conditions. Only 10% of the farmhouses surveyed had water piped directly into them. Seven percent were lit by gas or electric lights. Contrastingly, 30.7% had automobiles and 38.7% had telephones.[8]

Also in 1920, county home economics agents from the Department of Agriculture surveyed over 10,000 rural homes in 33 northern and western states. Overall, this survey showed that less than 25% of the farmhouses were equipped with electricity and running water, and that only a small group of farm housekeepers were provided with the labor-saving devices that were common in urban and suburban homes. In addition to asking for information about the physical conditions of the farmhouse, this survey also included questions about the working conditions of farm women. It was found that the woman on the farm worked an average of 13.25 hours per day in the summer, and that only 12% of the women who responded reported taking a vacation during the last year.[9] The higher percentage of homes with electricity and water documented by this survey can be attributed to the fact that farm women with adequate educational backgrounds and time to fill out the questionnaire were probably from a more favorable area.

The increase in farm home improvements was not necessarily reflected in the summary of the next nation-wide investigation, reported in Successful Farming. In 1926, the General Federation of Women's Clubs surveyed 40,000 farm homes in 642 counties in 46 states. The survey was distributed by County Home Demonstration agents, Farm Bureaus, and Granges. Although 33% of the farmhouses surveyed in the Farm Home Equipment Survey had water piped to their kitchen sinks, the increase in the number of homes with electric power was less (27%), and over half of the farmhouses were still lighted with kerosene lamps. It was also noted that only one-fifth of the houses with electricity used it to do laundry. Similarly, 80% of all farmhouses contained sewing machines, although only 2% used machines with electric motors. Eighty percent of the farmers owned automobiles and 57% had telephones.[10]

Between 1930 and 1932, the Committee on Farm and Village Housing conducted research and published a report on the state of farmhouses in the United States. Information was gathered on a total of 2,162 farmhouses representing all regions of the country. Statistics for the age and size of farm dwellings were included in addition to data on their level of modernization. According to the survey, houses in the New England area were the oldest, with 42% of them constructed before 1850. Houses of the Great Plains regions were the newest, with over half of them constructed after 1910. With regard to size, more than half of the houses in the northern half of the country were at least two stories tall, while the majority of the southern rural houses were

one story in height. In general, the largest houses were located in the part of the country where the housing stock was the oldest. Houses in the New England area averaged over 8 rooms, while only 5.1 rooms were found in the average farmhouse of the Great Plains region.[11]

As to the state of repair of the farmhouses and their level of modernization, the overall information gathered in the survey was remarkably lower than data formulated by the earlier surveys. Over half of the houses in the Appalachian-Ozark Highlands and Great Plains regions were considered to be in poor repair, while over half of the houses in the New England, Central East, Corn Belt, Great Basin, and Pacific Northwest were evaluated to be in good repair. Good repair was defined as having been recently painted and in good general upkeep.

The regional results of the survey supported the view that the level of modernization in a farmhouse was directly related to its location. Nationally, less than one out of seven farmhouses was lighted by electricity according to the survey, although over 50% were electrified in areas near urban centers or where farms were irrigated. Less than 25% of all farmhouses were electrified in the Corn Belt, Cotton Belt, Great Plains, and Great Basin areas. The number of farmhouses having water piped directly to them also was related to locale. Nationally, the proportion of farm families with plumbing was less than one out of six, although farmhouses with plumbing were more commonly found in hilly areas. The presence of bathtubs and indoor toilets was largely dependent on the presence of plumbing, although sinks were normally found without the presence of running water.

Although the number of farmhouses with plumbing was greater than those with electricity, the two systems were commonly co-existent.[12]

The Agricultural Census of 1930 documented an even lower percentage of farmhouses which had been modernized in terms of plumbing and electricity. Only 13.4% of all farmhouses had electric lights in the census and 15.8% had piped water, although only 8.4% of the farmhouses had water piped to a bathroom.[13]

A farm-housing survey was conducted by the Bureau of Home Economics in 1934 through a house-to-house canvass of all farmhouses in selected rural counties. It was designed to measure the potential demand for improved home facilities on farms. In all, 595,855 rural dwellings were surveyed, or 8.6% of all occupied farmhouses.

Again, age and physical size were documented in addition to the measures of modernization which were made by the surveyors. Although not broken down by regions, over half of the farmhouses were constructed before 1910 (36% were constructed between 1885 and 1909, and 19% were constructed before 1884); 30% were constructed between 1910 and 1924, while only 15% were constructed after 1925. Fifty-six percent of the surveyed farmhouses had only one story, and 43.8% were more than one story in height. The average farmhouse had 5.4 rooms, with only 1.4 closets, and only 14.5% of the farmhouses surveyed had bathrooms.[14]

With regard to the inclusion of plumbing, over one-fourth of the farmhouses had a kitchen sink with a drain. Eight and one-half percent had flush toilets. Bathtubs were recorded in 11.2% of the farmhouses,

while only 7.7% of the houses were equipped with both hot and cold water.[15]

Farmhouses with either a home electric plant or a power line numbered nearly 18%, although only 2.4% of the farmhouses refrigerated with a mechanical refrigerator. Farmhouses refrigerated with ice in 22.7% of the sample.[16]

Ray Lyman Wilbur speculated in the foreword to the committee's published report that the condition of farmhouses occurred out of habit instead of poverty. This view, expressed by many of the reformers, was supported by statistics which reflected a high percentage of farmers who own automobiles. Wilbur continued to speculate that at the lower standard of rural housing there were "long-established home habits and a good deal of mental inertia," partially due to the fact that the farmer was more isolated and less affected by the standards of his neighbors.[17]

Summary

The documented primitive living conditions of most rural housing clearly illustrate why farmhouses were a potential concern of housing reformers. The lack of plumbing and electricity in farmhouses resulted in questionable health conditions for the farm family and unsatisfactory work conditions for the woman of the farm. The fact that conscious efforts were made during this time period to document these conditions demonstrated the specific interest of various groups in rural housing

and suggested to the author the possibility of identifying a rural division of the housing reform movement. Also suggested was the possibility for defining design standards for farmhouses, which were developed by reformers to improve the conditions documented by these studies. The following table summarizes the status of farm housing as depicted by the surveys of the 1920s and 30s.

Table 1. Summary of farmhouse conditions as documented by various surveys

Convenience	1920	1920	1926	1930	1930	1934
Plumbing						
Water piped to house	10[a]	24	33	18.3	17	17.1
Kitchen sink		52				28.4
Flush toilet		7				
Bathtub		19		10.5		11.2
Lighting						
Kerosene			>50			
Gas			3			2.7
Electric	7	21	27	16.1	<25	17.8
Laundry						
Washing machine (electric)		67	20			
Washing machine (manual)		33	22			
Electric iron		28	21			
Gas iron			7			
Sewing machine (treadle)			80			
Sewing machine (electric)			2			
Sewing machine (either)		95				
Others						
Automobile	30.7	73	80			
Telephone	38.7	85	57			
Radios			44			
Refrigeration (mechanical)						22.7
Refrigeration (ice)						2.4

[a]Figures given in percentages.

Endnotes

[1]For a detailed discussion of the definition of manufactured vernacular architecture upon which this research is based, see Herbert Gottfried and Jan Jennings, American Vernacular Design, 1870-1940 (New York: Van Nostrand Reinhold Co., 1985), vii.

[2]Gwendolyn Wright, Building the Dream (New York: Pantheon Books, 1981), 156.

[3]Edith Elmer Wood, Recent Trends in American Housing (New York: The Macmillan Company, 1931), 30-31.

[4]John M. Gries and James Ford, ed., Farm and Village Housing (Washington, D.C.: The President's Conference on Home Building and Home Ownership, 1932), 5-13.

[5]U.S. Department of Agriculture, The Farm-Housing Survey, Misc. Pub. No. 323 (Washington, D.C.: USDA, March, 1939), 1.

[6]The other publications involved were Orange Judd Farmer of Chicago, American Agriculturist, New England Homestead, and Farm and Home.

[7]"A New Era for Farm Women," Good Housekeeping (July, 1909), 40.

[8]Wood, Recent Trends in American Housing, 30-31.

[9]"A Survey of Ten Thousand Farm Homes," Successful Farming 19 (October, 1920): 148-149.

[10]"Modern Conveniences in Farm Homes," Successful Farming 25 (September, 1927): 12, 70.

[11]Gries and Ford, ed., Farm and Village Housing, 5-10.

[12]Ibid., 10-13.

[13]U.S. Department of Agriculture, The Farm-Housing Survey, Misc. Pub. No. 323 (Washington, D.C.: USDA, March, 1939), 35.

[14]Ibid., 2, 7.

[15]Ibid., 11.

[16]Ibid., 15.

[17]Ibid., viii.

LITERATURE REVIEW

The content analysis of historic literature is the basis for this research on the housing reform movement's influence on proposed farmhouse design. To accomplish the research, two categories of literature on the topic of domestic architectural design have been identified and reviewed: publications which promoted proposed rural domestic designs to farmers and rural builders, and publications which reflected the views of housing reformers on rural domestic design. At the turn of the century, many kinds of publications dealt with the topic of domestic architecture, including professional architectural and engineering journals and books, builder's journals, women's journals, domestic science textbooks and publications, and housekeeping guides. Information specifically directed at the rural dwelling was included in all of these sources. In general, the common aesthetic position of all of these publications during this time period called for the simplification of dwellings by changing their appearance, the technology that equipped them, and the dwellings' relationship to their neighbors.[1] It is the accessibility of a large quantity of manuals and magazines, as well as the availability of standardized building components that gave control over the design and building of a house to local builders and homeowners. This theme of seeking improvement through an access to information and mass-produced materials had a major impact on Americans in the early 1900s.[2]

Of all types of available publications, magazines may have had the most widespread effect on the general public. This may be due, in part, to the fact that the magazine was assembled more carefully than the daily newspaper, and was more timely than the book. Also, the postal act of March 3, 1879, gave second-class mailing privileges to magazines "originated and published for the dissemination of information of a public character, or devoted to literature, the sciences, arts, or some special industry," causing the number of monthly magazines to increase from 280 to 1800 during the time period 1860-1900.[3]

Farmhouse Design

Specific information about rural domestic architecture is found most prominently in two general types of monthly publications: the professional builder's journal and the agricultural journal. The methods of presentation for farmhouse plans varied, although there were commonalities among the journals. With few exceptions, a minimum of a floor plan, a perspective drawing or photograph of the actual structure, and a written description were presented for each farmhouse published. Occasionally, other information such as front and side elevations, construction details, and specifications was provided. However, farmhouses published in builder's journals were more likely to include this additional information than were designs found in agricultural journals.

The providers of farmhouse designs to these journals also varied. Some were designed by architects on the journal's staff. Others were designed by architects who were not actual staff members, although plans

for the designs were sold through the journals. Still others were submitted by builders, contractors, and the journal's subscribers. Occasionally, the winning entries from competitions sponsored by the journal or an outside source were included. Examples of these methods of presentation and their various providers can be found in Appendix 1.

Builder's journals

Professional builder's journals, published for the most part in New York and Chicago, presented all aspects of domestic architecture, including site, form, the commercial market, standardization, building type, aesthetic treatments, and technical details. Carpentry and Building (later Building Age), which was published in New York, circulated material directly aimed at the rural builder from its inception. Plans submitted by readers, builders, and architects were published. Competitions for outstanding farmhouse designs were sponsored. Information promoting the installation of plumbing equipment was included. All in all, the plans for 19 farmhouses were published in Carpentry and Building/Building Age from 1901-1929.

The largest volume of information relating to farmhouse design in a builder's journal, as identified by this research, was published in American Carpenter and Builder (later American Builder), which was edited and published by William Radford in Chicago. It introduced a wide range of information about rural vernacular architecture to builders through plans and articles. All types of farmstead architecture were promoted by the magazine, including barns, granaries, corn

cribs, and, of course, farmhouses. From 1900 to 1910, the journal's emphasis was primarily on products and building technology although a few plans were published in each issue. However, little attention was given to rural domestic architecture. During the second decade of this century, more than 30 designs were published for the land-owning farmer and tenant housing. Plans which were recommended by the Department of Agriculture and prize-winning designs from variously sponsored competitions were also occasionally published. The largest concentration of farmhouse plans appeared in the journal during this decade, possibly because American Builder reported on and endorsed a change in emphasis toward rural building during and after World War I. Farmhouse plans continued to appear early in the period 1920 to 1929, although a shift in attention away from rural design to small house and picturesque cottage designs occurred during this decade. Also, American Builder's monthly "Woman and the Home" column occasionally featured the farm home and rural women early in this decade.

Agricultural journals

Regardless of his economic position, the farmer always had many low-priced agricultural journals available to him. In generalized or specialized format, well over a thousand periodicals dealing with rural life and industry may have been published between the years 1885 and 1905. Supported mostly by advertising receipts, the number of state and regional papers and national agricultural publications increased 50% from 1885 to 1905, according to the Ayer directory.[4]

Because of the variations among agricultural conditions on the various regions of the United States, state and regional periodicals had greater prominence and inhibited the development of farm journals of national importance with few exceptions. The most important regional journals that developed during the first decades of the twentieth century began in the western and southern regions. Wallace's Farmer, which began in 1894 when Henry Wallace joined Farm and Dairy and changed its name, was a dominant journal in the midwest. While a few articles discussing rural domestic architecture were included between 1900 and 1930, only a few floor plans with elevations and details were published. A series of articles entitled "Fixing Up the Farm House" was featured in the last half of the 1920s, which focused on the remodeling and modernization of existing farmhouses.

Successful Farming, an agricultural journal which was founded by Edwin T. Meredith in Des Moines, Iowa, in 1902, had a very large circulation over a wide area. A farmhouse floor plan was first featured in 1911, and several followed. Few floor plans were given between 1915 and 1920, while emphasis was placed on the design of improved outbuildings.

The majority of the house plans published in Successful Farming appeared between 1923 and 1927, when men and women submitted what they considered to be exemplary farmhouse designs. Architect J. B. Gordon had several plans published during the 1920s. Complete sets of the plans were made available to readers for a nominal fee. Architect J. H. Hawkins also contributed several farmhouse designs to the publication.[5]

The influence of agricultural journals on rural readers was best summarized in the 1935 published report by the Committee on Farm and Village Housing. According to the report, the circulation in 1930 of agricultural publications belonging to the Audit Bureau of Circulation reached 16,287,136 among approximately six million farm families. A survey of these publications by the committee revealed a devotion to the improvement of rural housing conditions by the agricultural press, through the provision of "inspirational and practical materials" to their readers.[6]

Other agricultural sources

In addition to monthly journals, other types of historic publications also addressed farmers on the topic of farmhouse design. Many books on the general design of farm buildings were published after the turn of the century, and often a chapter on farmhouse planning was included. The authors of these works were often professors of agriculture or agricultural engineering at midwestern land-grant universities. Farm Structures by K. J. T. Ekblaw (1914), The Farmstead by Isaac Phillips Roberts (1914), and Farm Buildings by W. A. Foster and Deane G. Carter (1922) are particularly of note in their attention to efficient farmhouse planning, the exterior appearance of the farmhouse, and its relationship to the other buildings comprising the farmstead.

Of note, also, is a booklet entitled Farm Buildings by W. E. Frudden (1916) of Charles City, Iowa. The information in this booklet is directed at both the farmer and the rural contractor. Frudden

contended that the quality of the farmhouse was directly related to the level of success of the farm and the level of mental and physical character of the occupants.

The Housing Reform Movement

Although much of the information generated by the housing reform movement was delivered verbally to groups of rural women and other reformers, many published sources provide written documentation of its concerns. Monthly publications again play a large role in the distribution of the reformer's views, because of their ability to make a large amount of current information accessible to many regular subscribers. Publications by various land-grant universities and the U.S. Department of Agriculture also helped distribute the housing reform movement's specific views about the improvement of farmhouses. A final source of documentation is the published proceedings of meetings of organizations which were associated with the housing reform movement.

Popular women's journals

The topics of domestic architecture and housing reform were promoted by many monthly magazines directed at women in the early decades of the twentieth century. Information about sanitation in the home, planning for greater efficiency in housekeeping, and the latest in finishing and furnishing trends was included by journalists in every kind of popular magazine. Social historian Gwendolyn Wright proposed that the nonprofessional critics of the American home who edited and

wrote for popular magazines had the greatest impact on housing styles and decor.[7]

Most of the housing information which was published in these various women's journals was oriented toward the middle to upper class suburban housewife. Journals such as Woman's Home Companion, which incorporated fiction, fashion, and food preparation, also included house plans, decorating information, and columns on the various club involvements which engaged the "modern" housewife. Architect-designed plans for cottages and country homes and decorating columns were offered more extensively in magazines such as House Beautiful and House and Garden.

However, housing reform information oriented toward urban and rural women can also be found in this kind of woman's publication. The Ladies' Home Journal, begun in 1883 as the "Woman and the Home" section of the Tribune and Farmer, was one of the best known and most widely circulated publications for women from the 1890s into the twentieth century. In 1889, Edward Bok became editor. Among his many objectives for the publication was the intention to improve standards with everything having to do with the home. Many critics, such as architect Stanford White, firmly believed that Edward Bok had influenced American domestic architecture for the better more than any other man of his generation.[8]

In 1895, The Ladies' Home Journal began the publication of plans for model homes that could be built for $1500-5000. Complete scaled plans, specifications, and builder's estimates were sold for $5.00 per set. Contests for the best home were part of Bok's campaign for

improved dwellings. From these plans, The Ladies' Home Journal houses were built in all parts of the country.

From February 1900 through 1901, a series of seven model farmhouses was featured in The Ladies' Home Journal. These houses were designed by architect Robert C. Spencer, Jr., who also published designs in House Beautiful. The published farmhouse plans were intended to be built in specific regions of the country, although all were of types which were recognized nationally.

Good Housekeeping, a journal which was a contemporary of The Ladies' Home Journal, began as an editorial department which provided detailed and accurate information on subjects related to home economics. Initially, the journal was designed to promote perfection in the household environment. This was partially enhanced by the Good Housekeeping Experiment Station, which was introduced in 1900. The Experiment Station tested methods and practices, and eventually products, and those judged satisfactory were subsequently recommended to housewives through the magazine. Good Housekeeping is currently best known as a magazine of fiction, but during the first decade of this century the reform message was published often through editorials and articles. In 1912, information about food and nutrition was added to the format.

Home economics/extension publications

Another body of historic literature produced by home economists and extensionists takes up the topic of farmhouse design and planning. For the most part, this literature addressed the woman of the farm

directly. For instance, noted home economist Isabel Bevier singled out the farmhouse as a unique planning situation in her popular textbook of 1912, The House: Its Plan, Decoration and Care. Helen Dodd, who identified herself as a farmer's wife, wrote The Healthful Farmhouse in 1906. Dodd placed great importance on the farmhouse as an ideal setting for the raising of a family, if it was sanitary and modern. In her own words, "a farmhouse is always different from other houses, even village houses, because it is more than a dwelling; it is the heart of the farm, the beginning and the end of every day's work.[9]

Manual of Homemaking, a part of The Rural Manuals series, was compiled by Martha Van Rensselaer, Flora Rose, and Helen Canon. It includes a chapter on "The Modern House" by Helen Binkerd Young.[10] This chapter makes a very thorough investigation of the planning of interior spatial relationships in a farmhouse and the exterior appearance as well.

The published proceedings of the meetings of state and national organizations have also proven to be valuable primary sources of information about farmhouse design. Most notable are the yearbooks of the Illinois Farmers' Institute's Department of Household Science meetings and transcripts of the meetings of the Lake Placid Conference on Home Economics.

The development of the Extension Service, a governmental educational system operated through the United States Department of Agriculture and land-grant colleges, resulted in the publication of a great deal of rural-oriented information on home design and

improvement. To address the Service's objective of promoting better homes and a higher standard of living on the farm, extension bulletins were published by the various land-grant colleges on the topics of house design and furnishing, in addition to other functions traditionally associated with homemaking. Though representing only a small portion of the Extension Service's work in rural America, the bulletins were unique in that they provided design-based information to the homemaker by stressing such design principles as balance and proportion instead of recommending a specific set of motifs or ornamentation.[11]

Academic literature which was directed at agricultural engineers who were doing research at various land-grant institutions across the country also contained information about rural domestic architecture. Agricultural Engineering, which contained articles written by these researchers, documented the relationship between agricultural engineering and home economics, whose combined efforts resulted in much of the information produced by the housing reform movement.

Historical background of the movement

In addition to the variety of primary sources that have been considered, many secondary sources also provided information about the topic of housing reform, although the research that has been done pertaining specifically to farmhouse design is minimal. Literature that discusses the housing reform movement has been published in several social histories of housing and various academic journals which deal with social, cultural, or architectural history.

One early social history that included information on both rural and urban housing is American Housing, authored by Edith Louise Allen and published in 1930. This work is unusual due to Allen's specific discussion of rural housing as a separate division of American housing and provides valuable data on the condition of such housing in the early twentieth century. Edith Elmer Wood's Recent Trends in American Housing (1931) is another similar analysis of housing conditions which included data about rural areas.

Currently, one of the most prolific authors on the topic of housing history is Gwendolyn Wright. Her social history of housing, Building the Dream, investigates the "progressive movement" of the first decades of the twentieth century and its influence by the home economics movement, although many of the persons involved with this subject are not discussed. Also, twentieth century rural housing is not singled out as a separate entity. Wright's study of the domestic architecture of Chicago (1873-1913), Moralism and the Model Home, investigates the progressive housing movement and the industrial aesthetic that evolved during this time period. She also discusses the impacts of technology on the home and the kitchen in particular. Her article, "Sweet and Clean: The Domestic Landscape in the Progressive Era,"[12] discusses the impact of published magazines on American women, both urban and rural.

Delores Hayden has explored the early developments of housing reform and has published extensively about the work of Catherine Beecher. Hayden's article, "Catherine Beecher and the Politics of Housework," which appears in Women in American Architecture, is an

excellent summary of the period of Beecher's life in which she most actively dealt with the topic of house design. This subject is also mentioned by Hayden in her book, The Grand Domestic Revolution, which deals more generally with the topic of cooperative housekeeping and other more radical reform concepts. A thorough investigation of Beecher's life is made by Katherine Kish Sklar in her book, Catherine Beecher: A Study in American Domesticity.

Several articles on the topic of the impact of technology on the home have been published in journals. Most notable are "Efficiency and the American Home" by David P. Handlin, published in Architectural Association Quarterly; "Technology and the Housewife in Nineteenth-Century America" by William D. and Deborah C. Andrews, published in Women's Studies; "The 'Industrial Revolution' in the Home: Household Technology and Social Change in the 20th Century" and "From Virginia Dare to Virginia Slims: Women and Technology in American Life," both by Ruth Schwartz Cowan and published in Technology and Culture.

Endnotes

[1]Gwendolyn Wright, Moralism and the Model Home (Chicago: The University of Chicago Press, 1980), 231.

[2]Michael J. Doucet and John C. Weaver, "Material Culture and the North American House: The Era of the Common Man, 1870-1920," The Journal of American History 72 (December, 1985): 575.

[3]James Playsted Wood, Magazines in the United States (New York: The Ronald Press Company, 1956), 100-103. The other works which dealt with the history of magazines and their impact on society used for this research were Frank Luther Mott's A History of American Magazines, 1885-1905 and A History of American Magazines, 1905-1930 (Cambridge, Mass.: Harvard University Press, 1957).

[4]Frank Luther Mott, A History of American Magazines, 1885-1905 (Cambridge, Mass.: Harvard University Press, 1957), 336-340.

[5]Typically, no other information was given to identify architects such as these in popular journals. Although several designs by the same person were published during the course of a year or years, the plans were sold directly through the publisher, and the architectural practice remained anonymous.

[6]John M. Gries and James Ford, ed., Farm and Village Housing, (Washington, D.C.: The President's Conference on Home Building and Home Ownership, 1932), 254.

[7]Wright, Moralism and the Model Home, 108.

[8]Mott, A History of American Magazines 1885-1905, 545.

[9]Helen Dodd, The Healthful Farmhouse (Boston: Whitcomb and Barrows, 1906), 2.

[10]The majority of this chapter is taken from Helen Binkerd Young, "The Farmhouse," Cornell Reading-Course for the Farm Home, Farmhouse Series No. 6 (Ithaca, N.Y.: New York State College of Agriculture, 1913).

[11]Jan Jennings and Herbert Gottfried, American Vernacular Interior Architecture, 1870-1940 (New York: Van Nostrand Reinhold Co., 1988), xi.

[12]Gwendolyn Wright, "Sweet and Clean: The Domestic Landscape in the Progressive Era," Landscape 20 (October, 1975): 38-43.

THE HOUSING REFORM MOVEMENT

The housing reform movement was multi-faceted. As defined by this research, the movement included a broad period of time (approximately 1840-1940) and was the product of the efforts of hundreds of persons, primarily women. These persons from diverse backgrounds channeled their energies into one common goal: the improvement of the living conditions in low- and middle-class American houses in order to benefit the housewife, and therefore the American family.

Generally, three aspects of modernization were promoted by reformers for the home. These were: increased healthfulness, achieved by raising the consciousness of the housewife and changing the interior forms of the home in order to create a germ-free atmosphere; improved efficiency through the revision of the interior layouts and the methods used to perform housekeeping tasks; and the introduction of technological products into the home for the purpose of uplifting the position of the housewife to a level of respectability comparable to that of the professional in the work force.

In the eyes of the reformers, the result of the successful integration of the aspects of modernization into the home was a reduction in the demands on the urban or rural woman's time. This newly found free time was to be used in two ways: to increase the amount of time spent spreading the reform message to those who were still unfortunate enough to need an efficiently arranged house with labor-saving devices; and to increase the amount of time spent in self-reflection.

The immigrants and poor of the city and less progressive rural areas who made up the lower class were the focus of the efforts of a special group of reformers at the end of the nineteenth century. However, messages of modernization delivered by the movement as a whole were intended primarily for the middle-class who could take the information provided and use it to help themselves. The large number of unimproved farmhouses made the rural areas of the country sources of particular concern for the reformers, although all homes, both urban and rural, were exposed to new ideas about the role of the housewife and encouraged to reap the presumed benefits of efficiency and technology.

Reform messages were delivered through a diverse network of organizations and publications. This network was composed of three areas which have been identified as the primary sources of reform information. First, the end of the nineteenth century saw the rise in popularity of home economics as a program of education for women in the areas of food preparation and home management. The increase of these curriculums in colleges and universities and the development of research and extension programs carried verbal and written information to women across the country. Groups were formed in rural areas, small towns, and cities.

Secondly, the beginning of the twentieth century saw the promotion of the formation of women's clubs at national, state, and local levels. These clubs brought women together for the purpose of sharing information about self and home improvement. For the rural woman, these

organizations were often formed as part of established organizations for men, such as the Grange and Farmer's Institutes.

Thirdly, the availability of popular women's magazines brought the reformer's messages about all aspects of the movement to a nation-wide audience and provided a forum for the sharing of ideas between readers.

While most of the persons involved with the housing reform movement were women, the contributions of men in the areas of research and progressive housing design should also be acknowledged. A detailed discussion of the development of the housing reform movement and, more specifically, the aspects of it which dealt with farmhouse design as well as the persons responsible for the promotion of the movement's ideas follows.

The Movement's Background (1840-1900)

The roots of the housing reform movement of the early twentieth century can be found in domestic treatises and "ladies" magazines, like Godey's Lady's Book, of the 1840-1860s. During this time period, many home manuals written by women addressed housewives on the importance of creating a clean, artistic, personalized setting in the home. Because the nation was still overwhelmingly rural during this time period, information provided in these works was meant for city women and farm women alike.

It was at this time that technology was first introduced into the household.[1] For this study, technology is considered as both the introduction of innovative objects to the home and the development of

innovative processes for homemaking. Advances in technology helped to strengthen a campaign to professionalize the role of the housewife; a campaign which began in the middle of the nineteenth century. It was the general intention of the authors of domestic treatises and home manuals to create a professional role for women in the home. This role, it was hoped, would dignify women and elevate them to a status that was thought to be equal to the so-called "male" professions of law, medicine, engineering, etc. The terms domestic economy, and later domestic science, reflect this desire to apply a new professionalism to the role of the housewife.

One of the most dominant persons in this crusade was writer and educator Catherine Beecher, who was, according to social historian Delores Hayden, the most important female American designer of the nineteenth century. Beecher's belief in the inherent superiority of women based on their capacity for self-sacrifice caused her to re-define women's roles and, subsequently, to design domestic architecture to support them.[2]

In 1841, Beecher wrote her Treatise on Domestic Economy, For the Use of Young Ladies at Home and at School. She defined a new role for women in the household and proposed to standardize and systematize American domestic practices. According to Beecher, as an authority in the home, it was women's duty to mold the character of the community by instilling sound moral principles in its youth. This role as "minister of the home" gave women the broad responsibility of developing the nation's social conscience. Also, the woman's role in the home

should be one of a professional in a technically efficient, exclusively female domain. Therefore, although Beecher is well-known for designing technical innovations for the home, she was motivated by the desire to define a domestic standard for women. It was not her intention to reduce the effort required for domestic work.[3]

In the late 1840s, the evangelical emphasis disappeared from Beecher's work, and she focused on women from a more secular, urban perspective. Her ability to do skilled domestic design culminated in the publication of The American Woman's Home in 1869, co-authored with her sister Harriet Beecher Stowe. In this work, the design of the house was more fully developed and refined, from its plan and elevations to its interior detailing. The concepts of simplification and flexibility were emphasized through the use of movable partitions, dual-purpose spaces, and built-in or movable furnishings. Many inventions were described in The American Woman's Home, including stove improvements, dumbwaiters, "earth closets," and storage units.[4]

Beecher's view of female supremacy in the home was a new one in the 1840s, for most of the books on domestic economy which preceded the Treatise still assumed male control in the middle-class household. However, her view, described in such popular sayings as "a woman's place is in the home," became widely accepted in the later literature of domestic science and also in the treatises on domestic architecture, which were usually authored by men.

Between 1870 and 1900, a limited number of new developments in the transformation of housing were introduced, although activity related to housing reform gradually increased as the twentieth century grew near.

Before 1900, Catherine Beecher's well-established view of the household as a woman's domain was rarely questioned, and her work inspired a new generation of two types of reformers. First, there was a minority of active, educated protestors who created a backlash against Beecher's imposed isolation on the woman in the home. While still conceding that home management was a woman's responsibility, these reformers argued for the development of the concept of cooperative housekeeping.[5]

Secondly, the concept of the housewife as a professional, and the importance of providing an efficient place aided by technological improvements in a healthful atmosphere, was embraced by a larger group of reformers who gained recognition through the development of a network of organizations in which women could exchange ideas on housing equipment and house management. It is this group of women who comprised the majority of the housing reform movement's influence in rural areas, by becoming involved in home economics or extension, other organized women's clubs, or by reading the information which was disseminated through a multitude of popular women's publications.

The Movement Toward Modernization (1900-1930)

The development of home economics

The development of home economics programs had a major impact on the development of the housing reform movement. The organization of home economics began in the 1870s as a provision for improvement in the education of Civil War widows. Programs were first developed in mid-western land-grant universities and cooking schools in the cities of the east. In the 1880s, the interest in the formal education of women in the household arts declined, and home economics became more rurally oriented. However, encouraged by the interest of a small group of educated women and the inclusion of women's needs and concerns in the Chicago World's Columbian Exposition of 1893, interest in home economics rose again in the 1890s culminating in the formation of the National Home Economics Association.[6]

Interest in the home economics revival of the 1890s was primarily to enhance the education of lower class women as servants, but as the feasibility of employing household help diminished in the middle class (and was practically nonexistent in rural areas), the goal of the home economics movement changed to include all women who desired the skills to manage their own homes. It was during this period that the home economics movement developed its close association with the Department of Agriculture.

Beginning in September 1899, the Lake Placid Conference on Home Economics was held to define the role of home economics in the development of educational programs and methods for improving the living

conditions of the home. Ten participants were involved with the first conference. According to the proceedings, the instigators of the conference, sensing that they were involved in the evolution of a large and important movement, decided to hold the first conference in 1899 instead of waiting for the turn-of-the-century.

Several topics were suggested for the first Lake Placid Conference. Subjects which particularly related to rural domesticity included: (1) the preparation of a series of papers or brochures on the subject of domestic science to be published by the government and distributed by the Department of Agriculture; (2) the selection of an appropriate name for the work; (3) the inclusion of domestic science in farmer's institutes; and (4) the discussion of technical details in the conduct of the home which may lead to some agreement on definite and approved methods.[7]

During the first conference, the name Home Economics was chosen as the most suitable title for the general subject. The participants were careful to specify that home economics was a section of the general subject of economics and was in no way synonymous with the term "household arts." Other phrases were specified for the subdivisions of home economics. "Domestic economy" was to be the title which referred to lessons for school children. "Domestic science" was the title applied to education at the high school level where scientific method was used as the basis for study. The term "household or home economics" was to refer to study in colleges or universities.

Ellen H. Richards was designated as the first chairwoman of the Lake Placid Conference. Richards (1842-1911) is generally considered one of the early leaders of the home economics movement. She believed that technology in the home would make it possible for women to devote more of their time to the improved aesthetics in the home, and that, in turn, an efficient, attractive home would make it possible for women to have an increased amount of free time. Standardized housing and industrially produced furnishings were a part of this new efficient home in Richards' view. She stressed the role of aesthetics and house design in home economics education, primarily so that women could be intelligent consumers, but also because she believed that women should become designers or professional housing advisors.[8] The success of the first Lake Placid Conference was reflected by subsequent participation in the meetings. The number of participants at the second meeting jumped to 30 from the original 10. The number of speakers was also increased.

It was reported during the second conference that a bill had been introduced to the New York legislature in 1900 which endorsed both instruction and research in the field of home economics. It established the New York State Experiment Station as a department of Cornell University and provided for the training of informed teachers, organizers, and lecturers who supplied assistance to farmer's wives and other home makers through farmers' institutes and the methods of extension teaching.[9] Experiment stations were eventually located across the country, all with this basic purpose in mind.

During the course of the conferences, topics which related specifically to rural domestic architecture and the rural homemaker continued to be presented. These subjects generally fell into four categories: (1) healthfulness in the farm home, (2) good design in the farm home, (3) securing more free time for rural homemakers through greater efficiency, and (4) the education of rural young women.

Presentations on increased healthfulness generally applied themselves to both rural and urban houses. For instance, at the eighth Lake Placid Conference in 1906, Claudia Q. Murphy of Grand Rapids, Michigan, spoke on the topic of wall sanitation. Murphy reinforced the popular view of the decade; that layered tapestries, hangings, and wallpaper decorations were undesirable for the modern home. A change from ornate, carved woodwork was prescribed to reduce the number of surfaces on which dirt and dust could collect.[10]

Similarly, messages about changing the household environment to create a more healthful atmosphere were often translated into design-related issues. The home economics movement was an education-oriented movement, and homemakers were taught that a safe environment could also be made visually attractive. For instance, while smooth tinted (painted) walls were prescribed by Murphy as most healthful, she also justified the change by teaching that every crack and crevice in a wall disfigured the symmetry of the wall. Similarly, the message about woodwork was that smooth, convex surfaces were not only easier to keep clean, but also were more "pleasing to the eye."[11]

Because one of the goals of the housing reform movement was to free up more of the urban and rural woman's time, the issue was addressed at the Lake Placid Conferences. "What Shall We Do With Time Set Free by Modern Methods,"[12] a 1902 report on the results of a survey on this topic, first established that the women of 1902 had more leisure time than the women of the 1880s, and also that they had the option of choosing how their spare time would be filled. Secondly, women in 1902 were filling their leisure time with "philanthropic work of every sort" with "classes for self-improvement in arts, letters, cookery, and needlework" and were using the results of such self-improvement for the betterment of the community. The third area of the survey dealt with how women should spend their leisure time. Some of the respondents apparently felt that leisure time should be spent in self-reflection. It was felt that women currently did too much work outside of the home, so that the tendency was to "broaden, not deepen life." The debate, then, on this issue was whether or not women's ideal was self-realization or self-realization through self-sacrifice.[13]

Relating only to rural domesticity was the problem of a young population that was rapidly deserting rural areas for the city. This condition was often linked directly to the unmodernized condition of many farmhouses and was discussed many times at the conferences. Schemes for alternative educational systems were presented in order to make life in the country more appealing to young people and, in particular, young women.[14] As stated in the proceedings, "people leave their farms because the girls are not satisfied there." It was believed

that girls were to be trained in country schools "to see the beauties of country life and to believe that the farm home affords place and opportunity for full development."[15]

In general, the home economists believed that the key to improving domestic architecture was the education of consumers. In addition to the Lake Placid Conference, extension courses held at Columbia Teachers College, Drexel Institute of Philadelphia, and the University of Wisconsin made information on home management available to urban and rural women.

Perhaps the most extensive educational effort made by the home economists during the first half of the twentieth century was the extension service and, in particular, extension bulletins with information on most aspects of home and farm management. Developed through the Agricultural Experiment Stations of various land-grant universities, some of these bulletins dealt specifically with the technological modernization of the home, food preparation and preservation, and home decoration. Because of the agricultural emphasis of the bulletins, the primary domestic focus was on the farmhouse.[16]

Beginning in 1902, Cornell University published a series of bulletins entitled "The Farm House Series." It was supervised by Martha Van Rensselaer and Flora Rose, who were both active participants of the Home Economics movement. Forming a reading course for farm women, the bulletins were devoted to the improvement of the farm home and promoted easier and improved methods of doing work in the home.[17] They were 12 to 16 pages in length, illustrated, with a 4-page discussion paper

available to women who were participating in the course. Five bulletins per year were published by Cornell University. In 1906, 18,000 women were participating in this particular reading course.[18]

The Extension Service grew to an extensive force by 1930. Presentations by county agents on farmhouse improvements to groups of women in rural areas incorporated illustrative materials such as models, photographs, charts, blue-prints, etc. in order to clarify new information. Thought to be the most effective way for getting the extension information into practice, 2,414 county agents made 546,208 visits relating to projects for the house to 330,084 farm homes in 1930.[19]

Much of what the home economics movement accomplished through land-grant universities and extension services was done in conjunction with departments of agricultural engineering, which also taught courses in farm building and farm home conveniences to agricultural and engineering students. Instructors from agricultural engineering departments were also requested by home economics departments to teach similar classes to their students.[20]

Many noted agricultural engineers were responsible for extension bulletins and manuals which included technical building information as well as planning information for all farm structures including the farmhouse. Unlike literature directed at the farm woman, this body of work was a more direct link between the reform message and the farmer himself.

Agricultural engineers and home economists together addressed the problems of farmhouse design and their possible solutions in forums

other than the classroom as well. For example, in February 1926, the American Society of Agricultural Engineers sponsored the National Farm Homes Conference in Chicago. For two days, farm women, agricultural engineers, home economists, architects, manufacturers, and representatives of various public service organizations shared information about the current farmhouse status, the needs of the rural homemaker, and suggestions for improvements. In his opening remarks, agricultural engineer Deane G. Carter identified the goals of the conference as the exchanging of ideas, sharing of the results of research done by specialists, and finally the formulation of a program which looked toward a concerted effort for better farm homes. The conference endorsed the work of the General Federation of Women's Clubs, the Better Homes in America movement, and the work of governmental departments and public service associations.[21]

Papers were presented at the conference by a variety of professionals on many farmhouse design-related topics. The most desirable features of a farmhouse were summarized,[22] the advantages of labor-saving technology were identified,[23] the necessity of treating the design of farmhouses with criteria specific to rural needs was promoted,[24] and the close identification of agricultural engineering with home economics was reinforced.[25]

The American Society of Agricultural Engineers officially addressed the issue of farm housing again at their Structures Division Meeting of December 1927.[26]

In summary, Gwendolyn Wright identified four general points that were endorsed by the home economics movement, all of which were addressed during the Lake Placid meetings and were the subject of extension research and bulletins. First, the ideal home is not tied to the traditions of the past. The heavy ornamentation of the Victorian era was found to be inappropriate for the sanitary modern home. Secondly, all of the resources of modern science should be utilized to improve home life. Thirdly, the home should be free from the dominance of things and the subordination of ideals. Finally, there should be simplicity in material surroundings.[27]

Home economists such as Martha Van Rensselaer saw the farm home as a potentially ideal home and found the area of rural improvement an inspiring field in which to work.[28] While their efforts were often addressed to the individual reader, the subsequent organization of rural clubs became an additionally effective way for the housing reform movement to contact the rural woman.

Women's clubs

Thousands of organizations or "women's clubs" were formed after the turn of the century.[29] Among them were home economics, domestic science, and domestic art clubs. Most eventually became affiliated with national organizations such as the American Home Economics Association or the General Federation of Women's Clubs.[30]

Women's clubs were strongly promoted in the rural areas and were seen as a remedy for the isolated conditions under which most rural

women lived. Many women belonged to the Grange. Many states had Farmers' Institutes, which often had women's divisions. For instance, the Illinois Farmers' Institute's Department of Household Science, which was organized in 1898, was very active in the areas of household management and food production. Yearbooks were published, printing the papers and presentations that were made, as well as the discussions which followed. The participants in the Institute were, for the most part, academic women from the state's universities and homemakers who were interested in the research of home improvements.

Generally, the topics on rural domestic reform which were addressed in the Illinois Farmers' Institute's Department of Household Science meetings focused on four areas: (1) the design and construction of the home, (2) the finishing of the house and its furnishing with modern conveniences, (3) the domestic education of rural homemakers and their relationship to home economics, and (4) the documentation of current domestic conditions.

Addressing the issue of the design and construction of farmhouses, Mrs. John C. Hessler took a feminist stance (which was shared by most rural housing reformers) by maintaining that "if there is money to be spent at all for conveniences of any sort for men's work, there must be money to spend for conveniences for women's work too" in order to maintain a fair division.[31] Hessler recommended the inclusion of running water, modern plumbing, electric light or acetylene gas light, a furnace, and sufficient laundry conveniences for every moderately

prosperous farmhouse. She prescribed a system of millwork which accommodated the need for easing housework--flat wood strips and a rounded top for baseboards, and modern doors with large panels which reduced the collection of dust in the home.[32]

Many persons addressed the topic of finishing and furnishing the house with modern conveniences. Often it was suggested that all conveniences that were found in city homes, such as adequate laundry facilities, electric vacuum cleaners, as well as rocking chairs, books and magazines, should be included in the farmhouse.[33] The injustice of making improvements for the farm while ignoring the condition of the farmhouses was stressed.[34] One presentation, made in 1913, gave a professionalized view of the farm wife by describing the woman's "business" as looking after the health and comfort of the family and maintaining a "healthful, comfortable home, conducted on business principles."[35]

The domestic education of farm women was a favorite topic of the presenters at the Illinois Farmers' Institute, due to its educational orientation. For instance, it was proposed by one presentation that because the farmer's wife lived in a scientific world, she needed to be knowledgeable in the topics of soils, biology, chemistry, and physics (which had specific implications for the development of labor-saving devices).[36]

The close association of Farmers' Institutes to the home economics movement was evident through the types of topics which were discussed at the annual meetings of the Household Department of the Illinois

Farmers' Institute. Because of the similarity in the topics addressed by both groups, their relationship to each other was explored.[37]

Finally, the documentation of current domestic conditions was a major interest of the women's clubs of the housing reform movement, and the Illinois Farmers' Institute responded accordingly. Based on the results of President Roosevelt's Country Life Commission survey of agricultural districts, one presentation outlined the sources of the widespread discontent in the majority of the farming community and some possible solutions that related directly to the farmhouse. The goal for improving the farmhouse was to create a home so convenient and attractive that the women on the farm would not desire to leave the farm for the city. The sense of isolation that was so often identified by rural women was thought to be more often the result of having to use out-of-date equipment than it was of the lack of neighbors.[38]

The household science divisions of Farmers' Institutes were not the only organized women's clubs which considered the plight of the woman on the farm. Additionally, many clubs that were not affiliated specifically with other rural organizations addressed rural housing issues. The General Federation of Women's Clubs was formed in 1889, and by 1892 it represented 100 clubs. By 1902, there were 3,358 various women's clubs in the federation with 250,000 members.[39]

In addition to their separate work, the home economics movement and women's clubs united with other professional groups in 1922 to form a national education organization called Better Homes in America. The Better Homes in America movement was organized to stir public interest

in home improvement and to promote research into methods for families and communities to improve housing conditions. Led by President Calvin Coolidge and Secretary Herbert Hoover, such groups as the Bureau of Home Economics of the U.S. Department of Agriculture, the Architects Small House Service Bureau, the General Federation of Women's Clubs, and the Division of Building and Housing of the Department of Commerce formed the advisory council and board of directors for the organization.[40]

Although the organization's objectives stressed the more urban issues of home ownership, the replenishment of what was considered a shortage of houses after World War I and increased efficiency for the wage-earner through improved housing conditions, the Better Homes in America movement recognized the importance of improving rural homes as well.[41] In 1925, 278 rural districts were active in the Better Homes in America movement, and specific strategies for rural campaigns were carefully outlined in periodic publications.[42]

A primary feature of the Better Homes campaign was the designation of a demonstration house to feature during a specifically designated "Better Homes" week. The demonstration house could be newly constructed or recently remodelled, with the focus being on the interior finishes, furnishings, and included technology. Often the local state university provided the demonstration house. If a house was not available, "country tours" were an alternative that allowed participants to drive from house to house to examine the various modernized features of each.

Local rural chairpersons were also encouraged to organize a series of lectures and discussions to be held at Better Homes meetings or in

conjunction with other organizations. County home demonstration agents, speakers from agricultural colleges, Farm Bureaus, Granges, and other local clubs were encouraged to work together because it was believed that this unity would strengthen the individual activities of each. It was also thought that by concentrating community effort into a certain week, the organizations involved might reach their common goal of better homes more expediently.[43]

Women's journals

In addition to publications which resulted from the home economics movement, views on housing reform were promoted through published writings in popular women's magazines. However, information that was specific to rural domestic architecture was not as common on a national level. As mentioned previously, Good Housekeeping magazine took up the farmhouse reform crusade in 1909 as a response to the development of President Roosevelt's Country Life Commission. A commentary by Charlotte Perkins Gilman appeared in the January 1909 issue in which she questioned the lack of women on the commission since the subject matter most specifically affected the farm wife and family. Gilman described farm women as the "hardest worked and least paid of any class." She went on to describe the women as

> having nothing beyond the house and family except the church; that is why she (the farm wife) becomes insane so often, and usually with religious mania. The key to the whole trouble is mainly in one word--isolation.[44]

According to Good Housekeeping's editorial staff, the "Farm House Inquiry" initiated as a result of Gilman's commentary was

> the first opportunity of the farm women of America to make their voices heard as a unit in a great cause--that of their own emancipation from conditions which hamper their happiness, the best development of their home life and especially their children.[45]

The Farm Home Inquiry's questionnaire included questions about social life, health, religion, culture, entertainment, and the conditions of the farm home. The women were asked if there was any kind of an organization for them to belong to outside of the church, and whether there was a woman capable of the leadership responsibilities in a movement for social betterment. They were questioned about their feelings about living in the country: If forced to leave the country for the city, what would they most regret leaving behind? Did they hope that their sons would grow up to be farmers and their daughters to be farmer's wives?[46]

The Ladies' Home Journal, Better Homes and Gardens, and The House Beautiful among others also addressed the issue of reform, although their information was directed at middle to upper-middle class audiences. Model house plans for new construction, suggestions for remodeling existing structures, and technical articles about improved kitchen planning, adequate lighting and the like addressed professional homemakers, both urban and rural. The women's journals also were an excellent vehicle for women's clubs to promote their activities. Often the projects of various state federations of the General Federation of Women's Clubs were documented in the magazines. Inspirational editorials were published to encourage other women to become organized into clubs.

Floor plans by architects or readers were published in most women's magazines. However, plans specifically for farmhouses were not usually published. Instead, the major contributions made to farm women by these magazines can be attributed to their articles on modern home equipment, modern finishes and ornaments, and editorials by housing reformers.

Conclusions

Many conclusions about the housing reform movement and its message to rural homemakers can be drawn from this overview. While the individual reformers often addressed specific issues relating to domestic improvement through their various methods of communicating, a general philosophy for the movement is evident through the recurring themes in their writings.

The identification of the movement's principles for farmhouse design

Healthfulness The most dominant of the general principles promoted by the reformers was healthfulness in the home; that is, creating an environment which supported the good health of its occupants. Much of the literature on the establishment of a healthful atmosphere focused on sanitation issues, which included the availability of fresh water in the home, the safe disposal of waste products from the home, and the provision of adequate ventilation for the home. This meant that the inclusion of plumbing in both the farm kitchen and the bathroom was considered absolutely essential by the reformers because it meant the

elimination of many dangers of contamination in the farmyard and also released the farm woman from walks to a well several times a day for fresh water.

Ventilation was also emphasized as a necessity in the home. Individual rooms, specifically the kitchen, bathroom, and bedrooms, required adequate cross-ventilation for the removal of stale air and the introduction of ample supplies of fresh air. It was also recommended that openings in the various rooms of the house were positioned to allow for maximum ventilation.

A second aspect of healthfulness in the home was improved cleanliness. This was often accomplished by eliminating surface treatments in the home which promoted the collection of dust and dirt. A modern system of interior millwork which was made up of smooth, flat surfaces and rounded edges replaced the intricacy of nineteenth-century millwork treatments. Smooth surfaces were recommended for walls and floors as well, particularly in the service areas. Linoleum was recommended in the kitchen because of its ease of maintenance and durability; and tinted wall surfaces were to take the place of wallpaper, which was believed to promote germ collection in its paste and did not provide a washable surface. Cleanliness was also addressed by the arrangement of spaces so as to reduce the amount of dirt brought into the house at the entrances. In the farmhouse, this was particularly important both because of the nature of the farmer's work and the number of persons coming into the house at various times of the day. To limit dirt at

the entrance, a washroom was recommended by the reformers just inside the rear entrance where workers from the fields and farm yard were most likely to enter.

A final aspect of the principle of healthfulness was the inclusion of unrestricted natural light in the house. Large covered porches that wrapped around many large nineteenth-century house forms were inappropriate for modern twentieth-century houses, according to the reformers, because light could not reach the living areas. Sunshine was considered necessary to purify the home's atmosphere.

Step-saving The principle of conserving the housekeeper's energy, which was usually referred to as step-saving, was addressed by the reformers nearly as often as that of healthfulness. Improving the circulation patterns within the house in order to direct traffic away from areas of activity, particularly in the kitchen, was thought to make great improvements in the farm (and urban) woman's efficiency.

Reducing the number of steps required in the execution of household tasks was another important aspect of step-saving. Many studies were made of common household tasks to determine the method(s) which required the least effort. Recommendations for necessitating the fewest possible steps from the start to the finish of a task resulted.

Other issues addressed by the step-saving principle were the compactness and openness of the house plan. Around the turn-of-the-century, the overall tendency was for floor plans to become more rectangular in outline in contrast to the irregular outlines of popular

Victorian styles. This new regularity reduced the number of projections from the house and the number of passages, nooks, and crannies within it. The resulting compact plan reduced the number of steps required in passing from space to space. Along the same line, openness within the plan reduced the required steps by eliminating halls and creating spaces that flowed into one another.

Convenience The third principle which resulted from the movement was an emphasis on convenience, or the inclusion of design and specific products which promoted the saving of time for the woman of the house. General simplification in the home falls under this category, usually in the form of the standardization of tasks and layout. The introduction of modern technology into the home also contributed to added convenience. Electricity made most new technology possible, including electric washing machines, irons, vacuum cleaners, and sewing machines. The redesign of household equipment to provide a more modern appearance and easier maintenance also contributed to the increased convenience for the woman of the house. It was believed that such standardization of tasks and equipment would result in a reduction in the amount of time required to maintain a healthful home. However, as proven by various time studies conducted by extensionists, this was not the case. For instance, a time study conducted in Oregon in 1928 to compare the time spent doing house work in rural and urban (town) households revealed that women in town spent nearly $2\frac{1}{2}$ hours per week more than rural women doing housework. Logically, one would presume

that the increased availability of technology in the home would reduce the amount of time spent doing housework by women in towns and cities. The implication of this research suggests that the use of labor-saving devices in homes was in actuality a symbol of status rather than an increase in efficiency.[47]

Increased built-in storage in the home also contributed to the housekeeper's convenience. By increasing the number of closets in the home and placing them strategically in all bedrooms, inside entrances, etc., it became possible to store things at the place where they were most likely to be used. This principle was also applied in the kitchen, where the inclusion of built-in cabinets was encouraged to eliminate the need for a pantry or butler's pantry. By having food items and utensils stored in the kitchen proper, the task of food preparation was simplified.

Aesthetics A fourth principle of the movement was the improvement of aesthetics in the home. Although many of the changes in surface treatment in the home were based on the principle of healthfulness, a high value continued to be placed on the creation of an attractive environment. The atmosphere of the twentieth-century home was carefully balanced between modernity and the picturesque quaintness associated with cottage architecture. Never were the home-like qualities of a house's living area meant to be replaced by an impersonal modern sleekness. In fact, the living room of the home was the primary target of the reformer's interest in maintaining an area in the home for

relaxation, family interaction, reading, and entertaining. Two specific suggestions were emphasized to create this atmosphere. A fireplace was almost always recommended in living rooms; not for heating the room, but primarily for the feeling of stability and intimacy connoted historically by fireplaces. Secondly, specific picturesque views and qualities of light were prescribed for the various areas of the home: a view toward the road for the living rooms, a view toward the fields and outbuildings for the farmer's office, and windows on the east in the dining rooms for morning light.

Comfort Finally, similar to the principle of aesthetics was the principle of comfort in the home. While the recommendations associated with aesthetics were intended to create visually pleasing spaces in the home, comfort was emphasized to create spaces that felt good. Much of the recommendations having to do with comfort in the home involved the inclusion of fresh air and provision for the appropriate temperature in the home. Ventilation was required in the kitchen to regulate the build-up of heat generated by the stove and the general activity of persons working in the space. Cross-ventilation in the bedrooms to assure an adequate supply of cool air on warm summer nights and the recommendation for the inclusion of a second-story sleeping porch for the same reason are related to the principle of comfort. The presence of a window in the bathroom for adequate ventilation was recommended as well.

The motivation of the movement

In order to best determine the effectiveness of the movement, it is important to understand the movement's motives; that is, the basis for their promotion of improved living conditions. While the reasoning behind much of the movement was based on the belief that a more efficient work place would benefit the homemaker, the housing reform movement should not be confused with any kind of movement with the purpose of liberating women from the home. Even in its infancy, the housing reform movement sought to professionalize the homemaker and give women more input into the organization of the home. The introduction of technology and efficient planning gave the homemaker that kind of professional identity. However, instead of pushing women out of the home and into the work force, the ultimate goal of the movement was to make the home an important and fulfilling place to work so that the woman of the house would never feel the need to leave. This was particularly true in rural areas. The general trend during this time period was toward persons leaving the country for urban areas, and participants in the home economics movement and various rural women's organizations devoted a great deal of time to this issue. It was their general belief that families left their farms for the city because the females were not satisfied with life in the country.[48] Because of this view, the reformers equated the importance of modernizing the farmhouse with maintaining a rural population.

Along the same line, the rural reformers were also motivated to modernize the farm home in order to improve the plight of rural women

who were forced to remain in the country. While there was concern about women abandoning their rural homes, a great deal of attention was also given to the mental and physical health of women who did not have home improvements or the option of moving to a city or town. Though less of a factor toward 1930 when the use of the automobile and telephone became more commonplace, the seclusion felt by farm women was addressed by the reformers with regard to the importance of home improvement which incorporated their basic principles.

Farmhouse surveys and the resulting standards of design

Some of the most beneficial work done by the reformers with regard to farm women and farmhouses involved the formal analysis of rural housing conditions and the subsequent development of standards for acceptable living conditions which addressed their basic principles. Only by conducting surveys of rural households could the gravity of the issue be documented, and only through the analysis of these surveys could standards be developed which accurately addressed the real issues concerning modernization. This survey work began around 1905 and increased with the passing of the first three decades. The survey results tended to be lower (and probably more accurate) when the sample was large and equally diverse. Consequently, the later surveys and their subsequent revelations were most beneficial. The culminating study was made between 1930 and 1932 by the Committee on Farm and Village Housing, which produced a large document containing statements

about the living conditions of the full- and part-time farmers and suggestions for planning and constructing the farmhouse and farmstead.

Suggestions or standards were often associated with official surveys. They were presented to rural women verbally, as well as through publication. Often lists of recommendations for farmhouse designs were published by farmhouse specialists in extension publications. Publications by agricultural engineers for farmers and rural builders also often included recommendations for farmhouse planning.

It was these standards for rural housing that reflect the housing reform movement's specific recommendations for farmhouse design. For the purpose of analysis, a list has been derived from them with which to analyze published farmhouse plans in order to determine the extent to which the movement's impact was felt. Although many standards were proposed for farmhouses during this period, the following list is comprised of recommendations for farmhouse design which were made by at least two different recognized housing reform publications.

The sources for this data and the date of their influences span the time period included in this analysis. The recommendations come from varied sources so as to accurately represent all concerns of the reformers. Books such as The Healthful Farmhouse by Helen Dodd, The House: Its Plan, Decoration and Care by Isabel Bevier, Farm Structures by K. J. T. Ekblaw, Agricultural Drawing and the Design of Farm Structures by Thomas E. French, and Farm Buildings by W. A. Foster and Deane G. Carter included lists of recommendations, or design standards, which

responded to the movement's concerns. Governmental publications such as Modern Conveniences for the Farm Home by Elmina T. Wilson, Home Furnishing by Winifred S. Gettemy, "Better Farmhouses" by L. H. Bailey and "The Farmhouse" by Helen Binkerd Young, both part of The Cornell Reading Courses Farm House Series No. 6, and Modernizing Farmhouses by Walace Ashby and Walter H. Nash also were excellent sources which included listings of recommendations. Articles published as part of reports, such as "Making the Best of It" by Mary E. Bronson of the Department of Household Science of the Illinois State Farmers' Institute and "Standards for the Interior of the Farmhouse" by Mary A. Rokahr and Walace Ashby of the President's Conference of Home Building and Home Ownership, both included lists of design standards. In some cases, the recommendations or standards were presented formally as a comprehensive checklist for persons building farmhouses.

The standards of design and their associated principles

Despite the fact that the presentations were made in varying formats, a composite of the housing reform movement's recommendations produces a clear picture of the changes that were proposed for rural dwellings. The recommendations made by the housing reformers for modern farmhouse design, listed in the order of the frequency of their appearance in the literature, are as follows:

Healthfulness

1. A hot-water supply, bathroom, laundry, and washroom should always be included.

2. Places for persons to wash and to hang their coats should be located near both the kitchen and rear entrance.
3. Doors, windows and passages should be arranged so as to provide good ventilation between spaces.
4. A bathroom should be located near the bedrooms.
5. A second bathroom for help is recommended.
6. All bedrooms should be provided with cross-ventilation.
7. It is desirable to have a bathroom with a toilet located conveniently to the sleeping quarters.
8. Covered porches should not be placed so as to reduce the amount of natural light of rooms.
9. Walls should be painted.
10. Floors should be hardwood, linoleum, or oilcloth.
11. The kitchen must have good ventilation.
12. The bathroom should be located on the house's exterior and have a window.
13. A sleeping porch is recommended.

Step-saving

1. A bathroom, permanent laundry area, and washroom inside rear entrance should be provided.
2. The kitchen work centers should be grouped to save steps (stove, sink, and work surfaces each not more than 12'-0" from all others). The area of the work space should be between 90 and 150 square feet.

3. A bedroom for guest or emergency use should be provided on the first floor.
4. Places for persons to wash and to hang coats should be located with easy access to one another.
5. A bathroom should be located near bedrooms.
6. The kitchen, food storage space, and dining area should be located with easy access to one another.
7. The laundry should be located near kitchen and rear of the house.
8. Ample kitchen cupboards should be planned and located with reference to the materials being stored, eliminating the need for a pantry.
9. It is desirable to have a bathroom with toilet located conveniently to the sleeping quarters.
10. The room arrangement should be as compact as possible.
11. The kitchen work space should not be broken by doors or passageways.
12. A rear closet for rough wraps and work clothes or wall hooks should be provided near the rear entrance.
13. A wrap closet near the front entrance should be provided.
14. Cupboards and bins in a dry basement should be provided near the stairs for canned products and vegetables.
15. The kitchen should have access to the rear porch.
16. The stairs should be centrally located in a hall, if there is one.

17. The stairs to the basement should be convenient to the kitchen and the rear entrance.
18. The office should be accessible from outside.
19. Most bedrooms should be on the second floor of a two story house.

Convenience

1. Facilities for reading, correspondence, business transactions, and keeping of farm records should be provided.
2. A closet should be provided in every bedroom.
3. A bedding and linen closet space should be provided.
4. Ample kitchen cupboards should be planned and located with reference to the materials to be stored, eliminating the need for a pantry.
5. Space for doing the laundry, where the washing machine, tubs, and other equipment may be left when not in use, should be protected from the weather, close to the drying space, and not less than 50 square feet in size and should be located near the kitchen and the rear of the house.
6. A rear closet for rough wraps and work clothes or hooks should be provided near rear entrance.
7. A wrap closet near the front entrance should be provided.
8. Work cabinets with satisfactory storage space for small and large utensils, kitchen tools, and linens should be included in the kitchen.

9. A cupboard and bins in a dry basement near the stairs should be provided for canned products and vegetables.

Aesthetics

1. The living room should contain a fireplace.
2. The kitchen and dining space should have a view of both farm buildings and the road.
3. The living room should be located on the sheltered side of the house, or where there is the best view.
4. The floor color should be darker than the walls, and ceiling should be lighter.
5. Windows should be grouped and well-placed.
6. The farmer's office should be placed so as to have a view of the outbuildings and fields.

Comfort

1. A living porch should be present and placed to the side if the house faces the road.
2. The bedrooms which are used regularly should be placed on the second floor, if the house has two stories.
3. A sleeping porch is recommended.

Endnotes

[1]A detailed description of the technological advances in the home and some of the personalities and events which promoted them can be found in William D. and Deborah C. Andrews, "Technology and the Housewife in Nineteenth-Century America," Women's Studies, 2 (1974): 309-328.

[2]Delores Hayden, "Catherine Beecher and the Politics of Housework," in Women in American Architecture: A Historic and Contemporary Perspective, ed. Susana Torre (New York: Whitney Library of Design, 1977), 40.

[3]Ibid., 42-46.

[4]Katherine Kish Sklar, Catherine Beecher: A Study in American Domesticity (New Haven: Yale University Press, 1973), 172-174.

[5]This radical view was best represented by Catherine Beecher's grand-niece Charlotte Perkins Gilman, who wrote Women and Economics in 1898 and The Home: Its Work and Influence in 1903. Gilman and her contemporaries viewed the single-family dwelling as an outdated holdover from the pre-industrial era. They insisted that all household activities either be mechanized and collectivized, or abandoned. Their plans for apartment living, collective kitchens and dining rooms, and cooperative childcare facilities were meant to impact the working class in both urban and rural locations.

[6]Gwendolyn Wright, Building the Dream (New York: Pantheon Books, 1981), 158-159.

[7]These subjects were identified by the author through the analysis of the full proceedings of the Lake Placid Conferences.

[8]Definitive Themes in Home Economics and Their Impact on Families 1909-1984 (Washington, D.C.: American Home Economics Association, 1984), 105.

[9]Lake Placid Conference on Home Economics, Proceedings of the First, Second and Third Conferences (Lake Placid, N.Y.: n.p., 1901), 41-42 (hereafter cited as Lake Placid, Proceedings...).

[10]Lake Placid, Proceedings of the Eighth Annual Conference (Lake Placid, N.Y.: n.p., 1906), 47-50.

[11]Ibid.

[12]This report was made by Alice P. Norton of the University of Chicago.

[13]Lake Placid, Proceedings on the Fourth Annual Conference (Lake Placid, N.Y.: n.p., 1902), 60.

[14]At the second conference in 1900, Virginia C. Meredith of the Minnesota agricultural school described a high school for rural youth, in session for six months out of the year, which left the other six to farm life, thus reducing the children's desire to leave the rural setting. Lake Placid, Proceedings on the First, Second and Third Conferences, 17.

[15]Ibid.

[16]Lake Placid, Proceedings on the Eighth Annual Conference, 92-93.

[17]Van Rensselaer, a noted home economist at Cornell University, evaluated the farm woman's situation in an address to the Lake Placid group in 1906 by stating that the farm woman's necessities seemed to be greater than those of the village homemaker because of the variety of demands made upon her, in combination with the fact that she was located a greater distance from the market. Van Rensselaer saw those demands as so great that the woman on the farm was likely to feel the monotony of manual labor without the inspiration that came from study and recreation. Ibid.

[18]Ibid.

[19]John M. Gries and James Ford, ed., Farm and Village Housing (Washington, D.C.: The President's Conference on Home Building and Home Ownership, 1932), 241-242.

[20]F. A. Wirt, "The Agricultural Engineer and the Farm Home," Agricultural Engineering 7 (April, 1926): 115.

[21]Deane G. Carter, "The Purpose of the Conference," Agricultural Engineering 7 (April, 1926): 118.

[22]Architect William Draper Brinkloe, who submitted house plans to many monthly publications during the 1920s, presented "Analysis of Farm Home Needs," based on farmhouse planning contests which he conducted through several farm periodicals. According to Brinkloe, the most desirable farmhouses were either bungalows or two-story houses with a screened porch, wash room, kitchen, dining room, living room, bath, and from two to four bedrooms, one of which was to be located on the first floor. If costs permitted, hardwood floors, a breakfast nook, sewing room, sleeping porch, office and a first-floor laundry were also provided. Also required were a fireplace, a hot-air furnace and electricity. Brinkloe, "Analysis of Farm Home Needs," 199-120.

[23]The woman's view of farmhouse improvement was further developed by Nora B. Dunlap in her paper. Stressing the inclusion of labor-saving technology, Dunlap quoted the results of the General Federation of Women's Clubs' home equipment survey, and proclaimed the importance of including progressive equipment in the farm home. Dunlap, "What We Farm Women Want Our Homes to Be," Agricultural Engineering 7 (April, 1926): 122-124. Ellen Rose Dickey, home advisor for the Sears-Roebuck Agricultural Foundation, also noted the necessary modern conveniences for the farmhouse in her paper. Dickey, "Improving the Farm Home," Agricultural Engineering 7 (April, 1926): 132-133.

[24]Dr. Louise Stanley, Chief of the Bureau of Home Economics, presented a paper in which she condemned the use of urban standards for rural homes, making it more challenging for the farm woman to find house designs which were specifically adapted to her needs. Stanley, "The Development of Better Farm Homes," Agricultural Engineering 7 (April, 1926): 129-130.

[25]Eloise Davison, Assistant Professor of Household Administration, Division of Home Economics, Iowa State College, addressed the interest of the American Home Ecoomics Association in improved farmhouses, again identifying the close connection between home economics and agricultural engineering. Davison, "The Interest of the American Home Economics Association in Better Farm Homes," Agricultural Engineering 7 (April, 1926): 142.

[26]The group was addressed by Greta Gray of the University of Nebraska, who delivered an illustrated paper which stressed planning the farm home for the future as well as the present, so that it could accommodate the maximum use put upon it and still allow for shutting part of it off when not needed. This kind of flexibility in a farmhouse was necessary, according to Gray, because of the permanence of a family's residency. "Agricultural Engineers Consider Farm Houses at Structures Division Meeting," Agricultural Engineering 9 (January, 1928): 17-19.

[27]Gwendolyn Wright, Moralism and the Model Home (Chicago: The University of Chicago Press, 1980), 155.

[28]Lake Placid, Proceedings of the Eighth Annual Conference, 93.

[29]David Handlin, "Efficiency and the American Home," Architectural Association Quarterly 6 (Winter, 1973): 53.

[30]Ibid.

[31]Illinois Farmers' Institute, Department of Household Science Yearbook 1912 (Springfield, Ill.: Illinois State Journal Company, 1912), 17 (hereafter cited as Institute, Yearbook...).

[32]Another presentation related to this topic was made by Nora Dunlap. Her premise was similar to previous speeches on this topic, giving an emphasis to permanency in the building of the farmhouse in order to provide an atmosphere of comfort and stability for the family. Dunlap elaborated on the differences between town and country houses, specifying the importance of the inclusion of a well-planned office and step-saving first floor laundry in the farmhouse. Institute, Yearbook 1915, 156-157.

[33]Presentations addressing this topic included "The Conservation of the Home," by Minnie Starr Grainger, Institute, Yearbook 1911, 38; "Making the Best of It," by Mary E. Bronson, Institute, Yearbook 1919, 143; "The House Beautiful," by Mabel M. Hollis, Institute, Yearbook 1928, 19-28; "Running Water in Every Farm and Small Town Home," by M. Attie Souder, Institute, Yearbook 1930, 172-177; and "Art in Relation to the Unpretentious Rural Home," by Joanne H. Hansen, a well-known economist from Iowa State College, Institute, Yearbook 1929, 20-28.

[34]This view was presented in "How to make Life More Pleasant and Agreeable for the Farmer's Wife," by Mrs. William Maddock, Institute, Yearbook 1913, 241-243.

[35]Ibid.

[36]In 1911, Mary S. Snow, supervisor of Household Arts in the Chicago Public Schools, presented this view in her paper, "The Advantages to Women of Formal Training in Household Science," Institute, Yearbook 1911, p. 41. Similarly, Mrs. Florence Busse Smith spoke on "Training the Homemaker" in 1928, Institute, Yearbook 1928, 39-45.

[37]For instance, "The Value of Household Economics - What It Has Done and Is Doing for Us, and Some Things That It Ought To Do," by Alice P. Norton, Institute, Yearbook 1912, 67-75; and "Your Sister Clubs: What They Are Doing in Home Economics," by Mrs. Olaf Guldlin, Ibid., 75-83, both discussed the relationship and similarities between these two organizations.

[38]This specific program was by Dr. J. H. Worst of Fargo, North Dakota, Institute, Yearbook 1912, 129-133. Orther presentations which addressed the documentation of rural conditions included "Our State Survey," by Maud C. Hessler, which outlined the results of an 1linois survey of farm women which was conducted through the Farmer's Institute, The Home Bureau, The Vocational Board, and the Galesburg Women's Clubs, Institute, Yearbook 1924, 78-92; and "Objectives of Household Science Work," by Grace Viall Gray, which outlined the current state of affairs in household science, Institute, Yearbook 1929, 159-165.

[39]Wood, Recent Trends in American Housing, 29-33.

[40]Specifically representing rural housing in the organization were Secretary William Jardine (Department of Agriculture), Dr. Louise Stanley and Kenyon Butterfield, president of the American Country Life Association. T. M. Sloane, "The Better Homes in American Movement," Agricultural Engineering 7 (April, 1926): 139.

[41]A complete listing of the purposes of Better Homes in America can be found in the organization's annual publications, Guidebook for Better Homes Campaigns in Cities and Towns (1924-1932).

[42]Sloane, "The Better Homes in America Movement," 139.

[43]Better Homes in America, Guide Book of Better Homes in America, Publication No. 10 (1926), 32-37.

[44]Charlotte Perkins Gilman, "That Rural Home Inquiry," Good Housekeeping 48 (January, 1909), 121.

[45]"A Good Housekeeping Commission," Good Housekeeping 48 (January, 1909), 122.

[46]"National Farm Home Inquiry," American Agriculturist 83 (January 9, 1909).

[47]Ruth Schwartz Cowan, "The 'Industrial Revolution' in the Home: Household Technology and Social Change in the Twentieth Century," Technology and Culture 171 (January, 1976): 14.

[48]For example, see Virginia C. Meredith's presentation in Lake Placid Conference on Home Economics, Proceedings of the First, Second and Third Conferences (Lake Placid, N.Y., 1901), 17.

EVALUATION OF PROPOSED FARMHOUSE PLANS

In order to determine the extent to which the housing reform movement's standards for farmhouse design influenced the actual design of farmhouses proposed between 1900 and 1930, a specific sample of farmhouses and a listing of reform design standards to be used in the evaluation of the published floor plans were defined.

Identification of Farmhouse Sample

Published farmhouse plans from historic journals were first collected and placed in chronological order. As noted in the introduction, published plans were selected to serve as the survey sample due to the lack of extant farmhouses with intact interiors and the difficulty of conducting a national survey. Following an extensive review of historic publications, two general types of journals revealed the greatest number of farmhouse proposals: the agricultural journal and the builder's journal.

Specifically, although plans were sporadically included in many agricultural journals, Successful Farming had the largest number of plans published during the subject time period. In total, 29 plans were published between 1911 and 1927, and a great diversity of vernacular house types were represented in the sample from this journal.

Of the builder's journals examined, Carpentry and Building/Building Age and American Carpenter and Builder/American Builder both included a large quantity of farmhouse plans. Nineteen plans were published in Carpentry and Building/Building Age from 1901 to 1929. Thirty plans

were published in American Carpenter and Builder/American Builder between 1911 and 1921. Again, many house types were represented among the plans published.

It was anticipated that a third type of publication, the woman's journal, would also publish farmhouse plans during the first three decades of the twentieth century, based on the number of general suburban house plans and the quantity of reform literature that was included. However, no significant supply of specifically rural house plans was identified through this research. Commonly, "country houses" were included in journals targeted toward affluent people who desired to live in the country, but these houses were clearly not identified as farmhouses. In one instance, a short series of "farmhouses" was in The Ladies' Home Journal, but these houses, all by architect Robert C. Spencer, were much larger than typical farmhouses and were probably intended as country houses instead. Table 2 illustrates the specific distribution of floor plans from the three journals which were used for the sample. In all, 78 farmhouse floor plans formed the sample evaluated. Although farmhouse plans were published throughout the subject time period, the heaviest concentration of plans was found between 1910 and 1919. This is perhaps due to the fact that regulations which resulted from the United States' involvement in World War I caused a serious reduction in new construction activity in cities, and rural construction became a more prominent concern in builders' journals. A February 1920 article in American Builder credits rural construction with being the mainstay of the building industry during the war.

Table 2. Identification of sources of farmhouse plans used in analysis

Source	Total	1900-09	1910-19	1920-30
Carpentry and Building	19	9	7	3
American Builder[a]	30		21	9
Successful Farming[b]	29		11	18
Total	78	9	39	30

[a]First issue published in 1905.

[b]First issue published in 1902.

Reportedly, the governmental restrictions which were placed on building in other fields did not apply to farm building because of the importance of modern farm buildings to the economical production of foodstuffs.[1]

The fewest number of farmhouse plans were found between 1900 and 1909, probably because the interest in improving farmhouse design created by the housing reform movement had not yet had time to gain in strength. Carpentry and Building conducted several house design competitions during this decade and published the top three prize-winning designs. One of these competitions was directed specifically at farmhouses, accounting for three of the early published plans. Others were included as responses to requests for farmhouse plans made by the journal's readers.

Contrastingly, the majority of the farmhouse plans published between 1920 and 1930 were found in Successful Farming. Until 1920, modernization and primary importance was placed on other farm buildings, but finally the need for improved housing was addressed by the journal with greater regularity. After 1920, the number of plans for farmhouses published in the builder's journals reduced dramatically. This is probably because of the intense interest in small house design and the push for home ownership that occurred in the builder's journals during the 1920s. During that time period, much of the builder's attention was focused on the design of bungalows and various picturesque cottage-style house types. Although they were also adapted as farmhouses, the primary intention was to replicate them throughout American suburbs.

Development of Applicable Reform Criteria

The comprehensive list of design standards recommended by the reformers defined in the previous chapter includes all of the identifiable aspects of the reformer's concerns about rural housing. However, certain limitations are imposed on the use of this listing, due to the fact that this research is based on the use of floor plans instead of the actual structures. While most of the standards were associated with the principles of healthfulness, step-saving, convenience, and comfort, those associated with aesthetics were generally eliminated from use for plan evaluation because they dealt with the orientation of the farmhouse for specific views; a point which cannot be determined from the published plans. Also, standards which addressed the treatment of

various surfaces in the house (i.e., floor, wall, and ceiling treatments including millwork) were eliminated for the same reason. Standards associated with basement storage were eliminated because the majority of the publications did not include basement plans.

The list of standards used for the evaluation of the farmhouse plans was first configured specifically to be used for analyzing the farmhouses by rooms to measure the level of influence between them (see Table 3). This list placed the standards according to the areas of the house with which they were associated. A section of standards which applied to the spatial relationships between the areas of the house was also included. The areas of the farmhouse were identified through the analysis of the standards and the determination of which rooms they specifically addressed. The kitchen, living room, office, bathroom, bedrooms, and storage spaces were defined as the rooms to be evaluated.

Results of the Farmhouse Plan Evaluation

During the evaluation process, each farmhouse plan was examined for the presence of each of the 26 standards of farmhouse design produced by the housing reform movement, although none of the 78 farmhouse plans received a score of 100%. Table 4 illustrates the scores for the individual farmhouses by year. The highest score was 22, or 84.6%, achieved by one house in 1915, one in 1916, and three in 1927. Overall, 58 out of the 78 farmhouses scored positively on 50% or more of the standards.

Table 3. List of standards used to evaluate farmhouse plans by room

SPATIAL RELATIONSHIPS

1. Space to wash and hang coats near kitchen and rear entrance.
2. Kitchen and dining area near each other.
3. Doors, windows, and passages arranged to provide ventilation.
4. Bathroom with toilet near sleeping quarters.
5. Stairs to basement near kitchen or rear entrance.
6. Covered porches placed so as not to reduce light.

CHARACTERISTICS OF INDIVIDUAL SPACES:

Kitchen

7. Kitchen work centers less than 12'-0" from one another.
8. Kitchen cupboards provided to replace pantry.
9. Work space not broken by doors and passages.
10. Kitchen provided with ventilation.
11. Kitchen has access to rear porch.

Living Room

12. Fireplace in living room.
13. Side porch accessible to living room.

Office

14. Room for correspondence and record keeping provided.

Bathroom

15. Bathroom on exterior wall provided.
16. Second bathroom for help provided.
17. Permanent space for laundry provided.
18. Washroom provided.

Bedroom

19. Bedrooms provided with cross-ventilation.
20. Bedroom on first floor provided.
21. Other bedrooms located on second floor.
22. Sleeping porch provided.

Storage

23. Closet provided in each bedroom.
24. Linen closet provided.
25. Rear closet provided.
26. Front closet provided.

Table 4. Percentage of positive responses of farmhouses to standards by decades

Criteria	1900-1909	1910-1919	1920-1930	Total
Spatial Relationships				
1[a]	4 (44.4%)	21 (53.8%)	19 (63.3%)	44 (56.4%)
2	8 (88.8%)	35 (89.7%)	27 (90.0%)	70 (89.7%)
3	8 (88.8%)	35 (89.7%)	20 (66.6%)	63 (80.7%)
4	3 (33.3%)	35 (89.7%)	28 (93.3%)	66 (84.6%)
5	9 (100%)	32 (82.0%)	23 (76.6%)	64 (82.0%)
6	6 (66.6%)	32 (82.0%)	23 (76.6%)	61 (78.2%)
Kitchen				
7	0	29 (74.3%)	26 (86.6%)	55 (70.5%)
8	0	11 (28.2%)	17 (56.6%)	28 (35.8%)
9	1 (11.1%)	20 (51.2%)	13 (43.3%)	34 (43.5%)
10	6 (66.6%)	31 (39.7%)	23 (76.6%)	60 (76.9%)
11	9 (100%)	35 (89.7%)	28 (93.3%)	71 (91.0%)
Living Room				
12	1 (11.1%)	18 (46.1%)	26 (86.6%)	45 (57.6%)
13	0	8 (20.5%)	9 (30.0%)	17 (21.7%)
Office				
14	0	8 (20.5%)	9 (30.0%)	17 (21.7%)
Bathroom				
15	4 (44.4%)	36 (92.3%)	30 (100%)	70 (89.7%)
16	0	6 (15.3%)	2 (6.6%)	8 (10.2%)
17	0	14 (35.8%)	7 (23.3%)	21 (26.9%)
18	4 (44.4%)	23 (58.9%)	19 (63.3%)	46 (58.9%)
Bedroom				
19	8 (88.8%)	26 (66.6%)	19 (63.3%)	53 (67.9%)
20	9 (100%)	28 (71.7%)	16 (53.3%)	53 (67.9%)
21	9 (100%)	30 (76.9%)	25 (83.3%)	64 (82.0%)
22	0	5 (6.4%)	6 (20.0%)	11 (14.1%)
Storage				
23	9 (100%)	34 (87.1%)	30 (100%)	73 (93.5%)
24	3 (33.3%)	18 (46.1%)	17 (56.6%)	38 (48.7%)
25	1 (11.1%)	12 (30.7%)	11 (36.6%)	24 (30.7%)
26	2 (22.2%)	13 (33.3%)	17 (56.6%	32 (41.0%)

[a]Corresponding number of standards listed in Table 3.

By the end of the decade, of the nine farmhouses published between 1900 and 1909, three (33%) scored positively on 50% or more of the standards listed. Six (66%) of the farmhouses scored below 50%, with the lowest receiving a score of 6 (23%). The farmhouses proposed during this decade were the lowest scoring, or least influenced, of any evaluated.

Thirty-nine farmhouses were published between 1910 and 1919. Twenty-eight (71.7%) exhibited 50% or more of the reformer's standards. Eleven (28.2%) of the farmhouses proposed during this time period scored positively on less than half of the design standards. The farmhouses proposed during this decade showed a considerably higher correlation between the plans and the farmhouse standards.

Thirty farmhouse plans were published between 1920 and 1930. Twenty-seven (90%) of them revealed the presence of at least half of the design standards, leaving only three (10%) farmhouse proposals scoring under 50%. This was the most highly responsive decade of the time period studied.

Six standards were found to be associated with general spatial relationships. The relationship between the kitchen and its associated spaces were particularly well-defined. According to the reformers, a transitional space for washing off dirt and hanging coats and other work clothes was a necessity in the farm home, and the location of this space was to be near both the kitchen and rear entrance. Of the farmhouses proposed between 1900 and 1909, four (44.4%) provided a washroom near

the kitchen; while of the farmhouses proposed between 1910 and 1919, 21 (53.8%) had a washroom and 19 (63.3%) of the farmhouses proposed between 1920 and 1930 did.

The kitchen was also to be placed in near proximity to the dining room in order to reduce the effort required for the serving of food. This was the case in eight (88.8%) of the farmhouses (1900-1909), 35 (89.7%) of the farmhouses (1910-1919), and 27 (90.0%) of the farmhouses (1920-1930).

Another standard which was related to the configuration of the rooms of the farmhouse was the requirement for good ventilation. While many spaces were specified individually to have good ventilation, the reformers also noted the importance of positioning openings so that good ventilation would be promoted between spaces. Eight (88.8%) of the farmhouses (1900-1909), 35 (89.7%) of the farmhouses (1910-1919), and 20 (66.6%) of the farmhouses (1920-1930) were judged as having good overall ventilation.

The presence of a bathroom with a toilet, which was unanimously deemed a requirement by all reformers, was also recommended; and it was thought to be best located near the sleeping quarters of the farmhouse. Only three (33.3%) of the farmhouses proposed between 1900 and 1909 met this requirement, but 35 (89.7%) of the farmhouses from 1910 through 1919 and 28 (93.3%) of the farmhouses from 1920 through 1930 included a bathroom near the bedrooms.

The reformers also stipulated that the stairs to the basement be placed inside the house and near the kitchen and rear entry to best make

the laundry facilities and vegetable storage area accessible to the woman of the house. All of the farmhouses in the 1900 through 1909 time period had the stairs to the basement in this location. Thirty-two (82.0%) of the farmhouses from 1910 through 1919 and 23 (76.6%) of the farmhouses proposed between 1920 and 1930 also exhibited this standard.

Finally, the reformers specified that covered porches be placed carefully so as not to reduce the amount of natural light allowed to enter the house. Although covered porches continued to be recommended as extensions of the living spaces in farmhouses, the large continuous porches that wrapped around several sides of large nineteenth-century houses were not thought to be compatible with the modern farmhouse. Six (66.6%) of the farmhouses proposed between 1900 and 1909, 32 (82.0%) of the farmhouses (1910-1919), and 23 (76.6%) of the farmhouses of 1920 through 1930 limited the placement of their covered porches according to the movement's standard.

The standards for design associated specifically with the farm kitchen that could be determined from a floor plan numbered five; more standards than were identified for any other space in the farmhouse. Historically, the farm kitchen was a large room capable of containing the necessary space and equipment for many activities. The reformers discovered that an overabundance of space created additional work for the woman of the farm because a greater distance was created between equipment. Instead, they recommended a more compact room which allowed no more than 12'-0" between the various "work centers." Also in the

interest of saving the woman's energy were recommendations for the inclusion of built-in cabinets in the kitchen so that the need for a pantry would be eliminated.[2] Instead of being an asset, the reformers viewed the pantry as unnecessarily segregated from the work area, necessitating additional effort by the person in charge of food preparation. Butlers' pantries, which were located between the kitchen and the dining room, were discouraged for the same reason and also because they placed greater distance between the kitchen and dining room.

Another aspect of the large nineteenth-century farm kitchen re-evaluated by the reformers was the control of traffic through the kitchen. The smaller, modern farm kitchen did not allow space for traffic to cross the work space, and the reduction of openings allowed for greater wall space for the built-in cabinetry.

Good ventilation was considered a necessity in the kitchen for the purpose of releasing the heat and humidity created by cooking, canning, baking, cleaning, etc. Accessibility to the rear porch was to be provided, partly to provide increased ventilation and also because the woman of the farm spent a great deal of time in the farm yard and outbuildings tending to hens, separating cream, etc., and direct access to the work space in the home was recommended.

Of the nine farmhouses proposed between 1900 and 1909, none of the kitchens met the standard which placed work centers less than 12'-0" from one another and none of the kitchens provided built-in cabinetry.

Only one kitchen exhibited a sensitivity to reducing the number of openings and traffic paths in the kitchen. Six of the kitchens provided adequate cross-ventilation. All of them had access to the farmhouse's rear porch.

The decade of 1910 through 1919 saw a greater sensitivity to the reform standards in the area of the kitchen. Of the 39 farmhouses published during this time period, 29 (74.3%) were of an overall size that would place work centers less than 12'-0" from one another. Eleven (28.2%) provided built-in cabinets to replace the need for pantries. Twenty (51.2%) of the kitchens provided unbroken work spaces. Thirty-one (79.4%) were cross-ventilated, and 35 (89.7%) had access to the rear porch.

The farmhouses that were proposed between 1920 and 1930 continued to reveal a higher correlation between the standards and the floor plans. Twenty-six (86.6%) out of 30 farmhouses had kitchens with work centers less than 12'-0" apart, and 17 (56.6%) had built-in cabinets. Only 13 (43.3%) of the kitchens provided unbroken work spaces for the woman of the farm. Twenty-three (76.6%) of the kitchens were cross-ventilated, and 28 (93.3%) were directly accessible to the rear porch.

The reform standards for the living room of the farmhouse were much less clearly definable. Most suggestions for the living area were associated with the provision of adequate space for privacy and entertaining and the appropriate placement furnishings which allowed maintaining a clean environment. However, these standards could not be used

to evaluate a published floor plan. However, the inclusion of a fireplace in the living room for aesthetic purposes was highly recommended by the reformers and was included as part of the evaluation. Also included was the recommendation that a living porch be accessible to the living room for use during the summer months.

Of the farmhouses proposed between 1900 and 1909, only one (11.1%) included a fireplace in its living room, and none of them had side porches accessible. Contrastingly, from 1910 through 1919, 18 (46.1%) of the farmhouses had fireplaces, and eight (20.5%) had side porches. The farmhouses of 1920 through 1930 included 26 (86.6%) fireplaces and nine (30.0%) side porches.

The development of a space which was devoted exclusively to the administration of the farm business was unique to farmhouse design and a strongly recommended standard by the reformers. They suggested that a separate room with a desk and file for correspondence, transactions, and record keeping be included on the first floor of the farmhouse.

None of the farmhouses proposed between 1900 and 1909 had specific offices included as part of their floor plans. Eight (20.5%) farmhouses in the 1910 through 1919 time period had offices designated, and nine (30.0%) of the farmhouses (1920-1929) had an office.

The inclusion of a bathroom in farmhouse design was unanimously promoted by the reformers, preferably placed on an exterior wall so that a window could be included for light and ventilation. Only four (44.4%) of the farmhouses proposed between 1900 and 1909 included a bathroom.

However, 36 (92.3%) of the farmhouses from 1910 through 1919 had at least one bathroom. All of the farmhouses proposed after 1920 were planned with bathrooms. All of these percentages were much higher than the statistics for existing farmhouses during these time periods.

In large farmhouses that included spaces for hired help, it was also recommended that a second bathroom also be provided for their use. However, none of the farmhouses (1900-1909), only six (15.3%) of the farmhouses (1910-1919), and two (6.6%) of the farmhouses (1920-1930) were designed with second bathrooms, implying that the expense of the space, plumbing, and fixtures for a second bathroom made its inclusion a luxury to most farmers despite the anticipated health benefits.

Another recommended space associated with sanitation in the farmhouse was a permanent laundry area where the washing machine, tubs, and iron and ironing board could remain, even when not in use. Again, none of the farmhouses proposed between 1900 and 1909 specified a laundry area. Fourteen (35.8%) of the farmhouses from 1910 through 1919 and seven (23.3%) farmhouses from 1920 through 1930 specified laundry spaces.

A washroom with a sink and lockers or a closet for coat storage was also to be provided for use by the hired help, as well as the farmer himself. A more widely accepted standard, four (44.4%) of the farmhouses (1900-1909), 23 (58.9%) of the farmhouses (1910-1919), and 19 (63.3%) of the farmhouses (1920-29) included washrooms.

Standards for bedrooms were also identified by the reformers. They specified that all bedrooms have cross-ventilation. Eight (88.8%) of

the farmhouses proposed between 1900 and 1909 complied. Twenty-six (66.6%) of the farmhouses proposed between 1910 through 1919 and 19 (63.3%) of the farmhouses (1920-1930) had cross-ventilation. Part of the relatively low scores associated with this standard can be attributed to the large number of bungalows and semi-bungalows that comprised the sample. The steep pitch of the roofs of this house type reduced the opportunity for placing windows on two different walls of the bedrooms.

In two-story farmhouses, it was thought best to have the bedrooms grouped together and located on the second floor, with the exception of one bedroom for persons in the farmhouse who were ill or elderly. All of the farmhouses proposed during the time period of 1900-1909 met both of these standards. Twenty-eight (71.7%) of the farmhouses proposed between 1910 and 1919 had a bedroom located on the first floor, and 30 (76.9%) had all or all but one of their bedrooms on the second floor. Sixteen (53.3%) of the farmhouses from 1920 through 1930 had a bedroom on the first floor, and 25 (83.3%) of them located all or all but one of their bedrooms on the second floor.

A screened sleeping porch was also recommended for use during the summer. However, this standard was rarely exhibited by any of the farmhouses. None of the farmhouses from 1900 through 1909 included a sleeping porch. Only five (6.4%) of the farmhouses proposed between 1910 through 1919 had a sleeping porch. Six (20.0%) of the farmhouses (1920-1930) also included sleeping porches.

The final areas specifically addressed by the reformers were associated with architectural storage, or built-in closets. During the nineteenth-century, it was not uncommon to construct farmhouses without closets, but the reformers recommended them highly. They also recommended that closets be placed in the most advantageous position possible. A closet in each bedroom was considered a necessity by the movement. All of the farmhouses proposed between 1900 and 1909 and also 1920 through 1930 included a closet in every bedroom. Thirty-four (87.1%) of the farmhouses from 1910 through 1919 had closets in the bedrooms.

A closet for bedding or linens was recommended to be located near the bathroom and sleeping quarters. Three (33.3%) of the farmhouses (1900-1909), 18 (46.1%) of the farmhouses (1910-1919), and 17 (56.6%) of the farmhouses (1920-1930) obliged.

Also, the reformers suggested that a coat closet be placed near each entrance of the farmhouse. A closet was placed near the rear entrance in one (11.1%) of the farmhouses (1900-1909), 12 (30.7%) of the farmhouses (1910-1919), and 11 (36.6%) of the farmhouses (1920-1930). Closets near front entrances were more common with two (22.2%) of the farmhouses (1900-1909) having one, 13 (33.3%) of the farmhouses (1910-1919), and 17 (56.6%) of the farmhouses (1920-1930) designed with a front closet.

In the interest of general comparison of the areas of the farmhouses between the decades, an overall average has been determined for each area of the farmhouse. This is illustrated by Table 5.

Table 5. General percentages representing the composite scores of positive responses to standards for each farmhouse's rooms by decade

Area	1900-1909	1910-1919	1920-1930	Total
	----------%			----------
Spatial relationship	70.3	81.1	77.7	78.6
Kitchen	35.5	64.5	71.2	63.5
Living Room	5.5	33.3	58.3	39.6
Office	--	20.5	30.0	21.7
Bathroom	22.2	50.5	48.3	46.4
Bedroom	72.2	55.4	54.9	57.9
Storage	41.6	49.3	62.4	53.4

With the exception of two areas, the average scores increased as anticipated with each passing decade. The bedrooms of the farmhouses scored highest with regard to the movement's design standards, perhaps because the standards demanded less drastic changes. However, the bedrooms were also one area of the farmhouse which failed to exhibit an increasing correlation with the standards as the time period of the movement progressed. The average score of the bedrooms proposed between 1900 and 1909 was 72.2%. This high percentage can perhaps be attributed to the fact that the large early farmhouses very often had bedrooms placed at the corners of the second floor for cross-ventilation and a

bedroom on the first floor. The percentages for bedrooms in 1910-1919 and 1920-1930 were 55.4% and 54.9%, respectively; lower because of the introduction of the bungalow, which was usually one-story in height, and the semi-bungalow, which usually failed to provide windows on more than one bedroom wall due to the steep pitch of the roof.

The number of kitchens exhibiting the presence of the standards between 1900 and 1909 averaged 35.5%; not an overwhelming show of the movement's influence. However, by the 1910 through 1919 time period, kitchens scored 56.6% and increased to 71.2% from 1920 through 1930. This gradual display of reform characteristics in farmhouses was typical because of the time required for the information to become distributed and distilled by persons designing rural housing.

This same trend of gradually increasing scores was also revealed in living rooms, offices, and the storage areas of the farmhouses. Contrastingly, percentages for bathrooms decreased slightly in the 1920-1930 time period because the smaller farmhouses of this decade rarely had second bathrooms and did not always include specific laundry areas.

In general, these percentages reveal a steadily increasing presence of the reform standards of farmhouse design, although the majority of the percentages are between 50 and 75% and do not necessarily represent a strong influence by the movement. However, the scoring was aimed at comparing the various areas of the farmhouses and gave equal weight to each of the reform standards. In the literature of the reformers, this was not necessarily the case.

Results of farmhouse evaluation according to reform principles

To best reflect the extent to which the principles most advocated by the reformers were present in the farmhouse plans, each standard was also evaluated according to the principle(s) which motivated it. Therefore, if a standard was recommended by the reformers for more than one reason, it was weighted more heavily than the others. For example, the standard which recommends that the kitchen be provided with adequate ventilation does so because fresh air was believed to be extremely healthful and also because ventilation in the kitchen allowed for greater temperature control which promoted comfort.

Figure 1 illustrates the association of the standards of design with the reform principles which motivated their recommendations. The standards most associated with the principle of healthfulness are those that require the provision of adequate ventilation (3, 10, 15, 19, and 22); recommendations for the inclusions of plumbing (4, 15, 16, and 18); and the standard which prescribed unlimited natural light in the farmhouse (6).

The step-saving principle was represented by most of the standards which dealt with spatial relationship (1, 2, 4, and 5); standards which limited the size and traffic flows in the kitchen (7, 8, 9, and 11), the placement of porches (13), the provision of appropriately placed laundry and washroom facilities (17 and 18), the location of bedrooms (20 and 21), and the placement of storage areas (24, 25, and 26).

Principle	H	SS	C	C	A
Healthfulness	6,[a]15,16 19	4,18		19,22	
Step-saving		2,5,7 9,11,20	1,8,17 24,25,26	13,21	13
Convenience			14,23		
Comfort	3,10				
Aesthetics					12

[a]Corresponding number of standard as listed in Table 3.

Figure 1. The reform movement's design principles and their associated design standards for farmhouses

The principle of convenience related most closely to standards which dealt with storage (1, 8, 14, 23, 24, 25, and 26) and also with the provision of a permanent laundry area (17).

Comfort motivated the standards that recommended temperature control through ventilation (3, 10, 13, 19, 21, and 22).

The only standards which addressed aesthetics were associated with the atmosphere of the living room and the availability of a living porch (12 and 13).

The evaluation of the farmhouses in terms of the presence of the reform principles revealed a greater reflection of the movement's influence on the design of farmhouses. This is illustrated by Table 6 which compares the results of the first evaluation with the second, revealing the higher percentages. Figure 2 illustrates the total scores for each of the 78 floor plans evaluated.

Utilizing the second set of statistics, it becomes evident that the reform principles were reflected in well over 50% of most of the areas of the farmhouses, although they usually became more predominant with the passing of time. Also, certain areas of the farmhouses were affected more dramatically than others.

The results of the evaluation of the relationships between spaces in the farmhouses scored well in all three decades, but the decade 1910-1919 was the highest scoring. This is explained by the fact that the early farmhouses were usually quite large and the late quite small. The farmhouses of 1910-1919 tended to include the number of spaces

Table 6. Comparison of total percentages of positive responses to standards associated with each area of the farmhouses by decade

Area	1900-1909		1910-1919		1920-1930	
	1st[a]	2nd[b]	1st	2nd	1st	2nd
	%					
Spatial Relationship	70.3	77.7	81.1	90.1	77.7	88.2
Kitchen	35.5	48.8	64.5	86.1	71.2	122.4
Living Room	5.5	5.5	33.3	53.8	58.3	88.3
Office	—	--	20.5	20.5	30.0	30.0
Bathroom	22.2	22.2	50.5	59.5	48.3	54.1
Bedroom	72.2	119.4	55.4	96.1	54.9	96.6
Storage	41.6	58.3	49.3	76.8	62.4	99.9

[a]Percentages resulting from straight evaluation of plans by standards.

[b]Percentages resulting from evaluations of plans by standards as applied to design principles.

considered necessary by the reformers and would thus score highly in terms of the arrangements between spaces.

Scores for kitchens were on the average quite low (48.8%) in the early decade, but a dramatic increase was realized after 1910, perhaps because the kitchen became an increasingly important subject of discussion by the reformers.

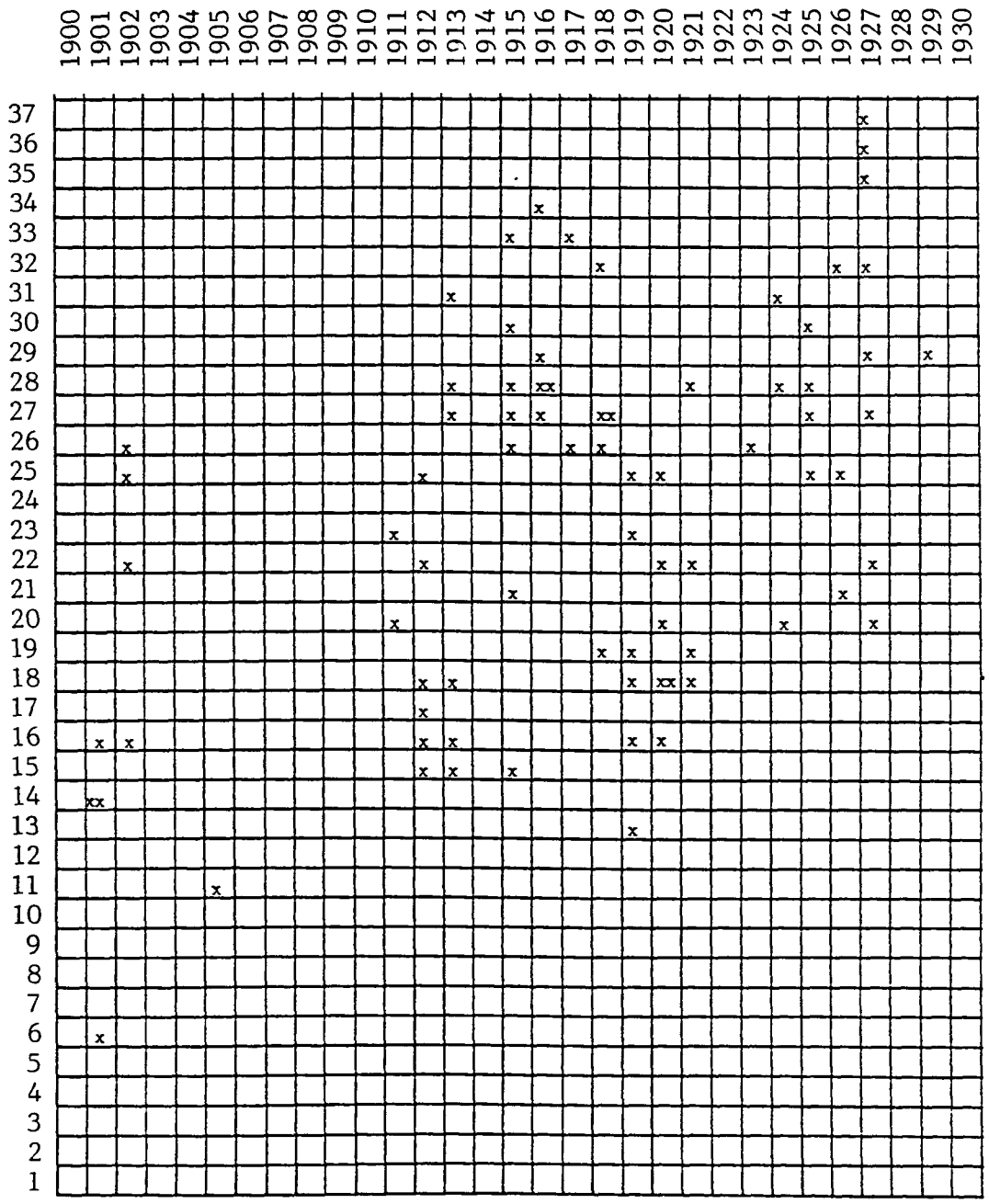

Figure 2. Total scores for farmhouses as per evaluation by design principles

Although the living room was only evaluated on two points, an increase in influence across the time period is again evident. These two points of evaluation (the inclusion of a fireplace and the accessibility of a side porch) reveal the reformer's belief in the popular aesthetic concept of the modern house. Both of these criteria are the requirements of a cottage-type modern house such as the bungalow and the colonial cottage and, by 1920, were present in high percentages of the farmhouses evaluated.

The presence of an office in the farmhouse was recommended by the reformers, but the idea was not strongly exemplified in the proposed designs. Although the appearance of offices in the plans increased between 1910 and 1930, an office was included in less than one-third of the farmhouses studied. This requirement was, perhaps, too much of a luxury for the average farmer to have included it regularly in his farmhouse. Also, it cannot be determined from the floor plans if an area of the living room or dining room was furnished with a desk and served as an alternate space for the farmer's administrative duties.

The scores for the bathrooms were also lower than those for other spaces but were, on the whole, quite high compared to the documented existing conditions of most farmhouses. The most highly scoring decade for bathrooms was 1910-1919 when the proposed farmhouses studied were regularly fitted with modern plumbing and were also still large enough to include all of the recommended spaces.

The bedrooms, as previously stated, were extremely well-scoring, particularly in the first decade. However, the evaluation of the

bedroom spaces in terms of the reform principles reveal much higher percentages for 1910-1919 and 1920-1930, suggesting that the most important of the reformer's recommendations were indeed accommodated in the proposed designs.

Recommendations for storage were followed increasingly across the time period, with nearly 100% of the farmhouses of 1920-1930 exhibiting the suggested storage facilities.

Endnotes

[1]"Farm Building Runs Into Huge Sums Annually," American Builder 28 (February, 1920): 96.

[2]The term which evolved to describe the inclusion of built-in cupboards in the kitchen was "cabinet kitchen."

SUMMARY

This research has focused on two major areas: (1) the identification of a rurally-oriented branch of the housing reform movement, and (2) the evaluation of this movement's influence on the proposed farmhouse designs of the same time period. The results of the research have revealed an active network of reformers who specifically addressed the improvement of farmhouse design. Also, a moderately high correlation between the reformer's recommended design standards and farmhouse designs published in journals between 1900 and 1930 was established, suggesting a direct influence by the housing reform movement on persons proposing designs.

In a broader context, the identification of a rural branch of the housing reform movement had not previously been established. However, motivated by the documented primitive rural living conditions and the mental suffering of rural women, groups of home economists, club workers, and writers for popular magazines organized for the purpose of promoting rural domestic modernization.

Both literature and verbal instruction were utilized by the reformers in the spread of the rural reform message. The various subgroups of reformers used these methods to reach the rural population across the country. Although their surveys sometimes revealed the regions of the country most in need of improvement, rural reform standards, which were derived from the principles of healthfulness, step-saving, convenience, aesthetics, and comfort, were intended to be

applied nationally to promote the general modernization of farmhouses. Identification of the rural reformer's design principles and subsequent specific design standards for farmhouses is an initial step in understanding the planning concepts behind early twentieth century farmhouses; a subject which had not previously been examined in much detail.

Although a correlation between the design standards and the proposed farmhouse designs was identified by this research, it was also revealed that this was not necessarily the case initially. The farmhouses published between 1900 and 1909 only correlated with slightly more than half of the design standards on average. This was not unexpected because little time had been allowed for the message to spread. Also, because a lack of documentation made it difficult to assess the extent to which the proposed farmhouses were improved in comparison to the existing farmhouses, it is likely that the inclusion of 50% of the design standards still marked a decided influence by the movement's principles.

The decade of 1910 through 1919 saw a large increase in the correlation between the proposed farmhouses and the design standards (nearly 70%), suggesting a more drastic influence of the movement on farmhouse designers. By the end of this decade, a much larger quantity of reform literature had become available to farmers and other persons who were likely to submit farmhouse designs to journals. Extension programs, such as the Cornell Reading-Course, were operating during most of this decade, supplying many of the design standards used for evaluation.

During this time period, many of the architects who submitted plans to the journals acknowledged that they realized that farmhouses had specialized requirements that had not previously been taken into consideration.

The decade of 1920 to 1930 revealed the highest correlation of the time periods studied. An average of more than 80% of the standards were included in the designs evaluated. The plans during this decade were fully modernized, always including a bathroom and a modern, efficient kitchen. In comparison to the existing farmhouses which were documented through surveys, the proposed farmhouses were dramatically improved in the extent to which they exhibited the reform principles.

With one exception, the individual areas of the farmhouse revealed the highest level of influence by the movement during the 1920-1930 time period. The kitchen, which had been the focus of much of the reform information, scored highest of all areas of the farmhouse during this decade, reflecting the particular importance of the principles of healthfulness and step-saving. The living room, bedrooms, and storage requirements were also met to a high degree. Only one-third of the proposed farmhouses included offices; the lowest scoring of the areas of the home. However, because the office was the only prescribed area which was unique to the farmhouse, the presence of this space in one-third of the plans is more significant when considered in this respect. The space that did not receive the highest score between 1920 and 1930 was the bathroom, primarily because the farmhouses of this time period were usually smaller than they had previously been, and second

bathrooms, washrooms, and laundry facilities were not always present. Contrastingly, the 1920 through 1930 time period was the first instance of a bathroom being included in 100% of the plans.

On the whole, the reform standards were directed at larger farmhouses which were occupied by large families and sometimes hired help as well. Two-story houses capable of being planned or zoned through the use of the reform principles were obviously the preferred house form of the movement. These larger houses were also thought to be better ventilated and more suitable to hot climates than were one-story houses. The reduction in the sizes of dwellings which occurred most predominantly around 1920 resulted in lower scoring farmhouses in the last decade of the sample.

Although this research did not consider economic factors as a part of the evaluation, they seem to have impacted the influence of the housing reform movement. Smaller, standardized house forms gained in prominence during the time period studied and were preferred after 1930. Some of the reform movement's recommendations required re-evaluation at that time because hired help was less likely to reside in the smaller farmhouses and further changes in technology altered the kind of work that both the farmer and the woman of the farm did. Also after 1930, very few new farmhouses were proposed in the journals due to dismal economic conditions. Instead, improvement through remodeling became the cause of the reformers. The radical design changes proposed by the reformers became modified in terms of the limitations of

remodeling over new construction, and the period of the housing reform movement ended, having reached a point when their standards became the expectations of the designers of farmhouses in most of the major aspects of farmhouse design.

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ACKNOWLEDGMENTS

I wish to express my gratitude to the members of my graduate committee, Gina Crandell and Robert Findlay, for their insights into this subject. In particular, I wish to express my sincere appreciation to my major professor, Jan Jennings, for her encouragement, generosity, and friendship. I could not have a finer role-model. And finally, my thanks for the patience and supportiveness of my friends during the writing of this thesis.

APPENDIX 1: SAMPLES OF PUBLISHED FARMHOUSE PLANS FROM HISTORIC JOURNALS

The first article is an example of the published results of a farmhouse competition sponsored by Carpentry and Building. Each entry (as published) included front and side elevations, floor plans, construction details, and specifications.

The second article is an example of a farmhouse floor plan which was one of several submitted to Successful Farming by the same architect. These plans were available to subscribers through the journal.

The third and fourth articles are examples of farmhouses which were designed and published by American Builder's staff. The designs were presented in varying levels of detail. Number three is a simple floor plan, perspective drawing, and written description; while number four includes those components as well as a page of additional interior details.

Article One:

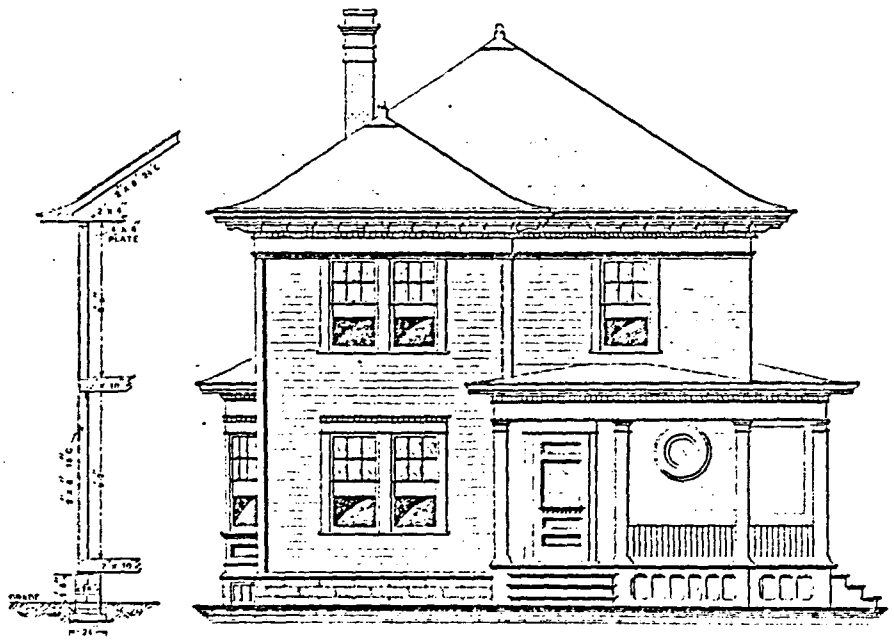
COMPETITION IN FARM HOUSES.

SECOND-PRIZE DESIGN.

AS announced in our last issue, the set of drawings submitted by M. W. Fuller of Fort Collins, Col., were awarded the second prize, and we take pleasure in illustrating the design herewith. We also give, in connection with the engravings, the specifications of the author in full, together with his detailed estimate of cost. In submitting his design the author accompanied it by a few comments, calling the attention of the Committee of Award to certain local conditions having a bearing upon the question of cost. He first states that there are no labor unions in Fort Collins and that carpenters' wages range from $2 to $3 per day, with other labor in proportion; that there is an abundance of fine building stone close at hand, with stucco and cement plaster works within 15 miles of the place. Therefore, he says, they are in shape to do building much cheaper than in other places in the State. In closing he calls attention to the fact that the plumbing is figured complete, except well and wind mill. There are a good many wells and wind mills in his section of the country, for pumping water for stock and domestic use, and his plan is to connect a 2-inch pipe from the house to the wind mill pump at the well and pump the water to a tank in the attic. The author states that he has several plants of this kind installed, giving excellent satisfaction.

The Committee of Award, in commenting upon this design, said in their report: "The designer has given much thought to the question of convenience, as he has provided a direct entrance for the men to a room where they can wash and clean up and, if necessary, pass directly to their rooms on the second floor before entering the dining room for their meals. They can also reach the dining room directly from the washroom and without going through the kitchen, which is a great convenience in a house of this kind. There is a large pantry, with dresser for dishes and flour and meal bins; also an ample storeroom for supplies and stores for farm use. The rear stairway is very convenient to the men's rooms and there is a side porch for the help and a front one for the family."

The specifications, as submitted by the author of the design, are as follows:



Section.

Front Elevation.—Scale, ⅛ Inch to the Foot.

Competition in Farm Houses.—Second-Prize Design.—M. W. Fuller, Architect, Fort Collins, Col.

Stone Work.

All stone walls and footings are to be laid to grade line with a good quality of gray rubble stone laid in the best of lime and sand mortar, pointed tight both inside and out. All walls above grade on exposed fronts laid in parallel courses of hammer dressed rubble stone from selected rubble; rear exposed wall rubble work. All exposed walls ½-inch raised beads pointed with cement. All cellar opening sills 4-inch flagstone, coal chute the same. On account of the dry climate of the State frost proof walls not required. Cellar floors flagged with 3-inch gray flagstone bedded in sand and joints cemented.

Brick Work.

Cellar partition walls and chimney to be laid up of hard burned hand made brick, trowel tuck pointed; flues to be plastered smooth from bottom to top, center flue to be used for ventilator for kitchen.

Lath and Plastering.

First and second floors and ceilings in cellars lathed with 4-foot soft pine No. 1 lath. Cellar ceilings one coat cement plaster, troweled smooth. The first and second floors plastered throughout with the Consolidated Plaster Company cement plaster and stucco hard finished.

On account of the difference between climate here and in the Eastern States, we do not back plaster our houses.

Painting and Varnishing.

The outside of house knife puttied and painted three

coats, using Woodman's linseed oil and Carter's white lead, in two colors, sash trimmed the third color. Roof, Samuel Cabot's creosote shingle stain, two coats; outside of doors grained in oak and varnished. All metal work of roofs two coats mineral paint. The inside throughout to have one coat white shellac; sandpaper lightly and flow on two coats of the Murphy Varnish Company transparent wood finish.

Plumbing.

Six hundred gallon 14-ounce copper planished lined tank to be placed in attic on heavy timbers. Supply from well from wind mill in yard. Supply hot and cold water to all fixtures from tank. All exposed supply pipes ⅝-inch strong lead, concealed pipes ½-inch galvanized iron. Range boiler, 40 gallons galvanized iron. Bathtub, 5 feet 6 inches, steel clad 12-ounce copper planished lined; nickel plated Fuller bath compression cock. Siphon jet water closet, 16-inch enameled iron slab and bowl combined. Fuller compression cocks, nickel plate. All waste pipes to soil of lead. Sink in kitchen, iron, blue enameled. Soil pipe, 4-inch, through roof; tile to cesspool, 4-inch, first grade, cement joints. Cesspool, 6 feet inside, round, goes to sand and water, laid up dry with hard brick, domed over with brick. All to be properly vented. Exposed plumbing.

Furnace.

The furnace to be a No. 48 Home Comfort portable steel furnace set on brick ash pit; all pipes of tin covered with asbestos, with cold air duct and valves all complete; black japanned registers.

Tin and Iron Work.

All gutters around house and porches of galvanized iron, forming crown mold. All down spouts 4-inch corrugated galvanized iron. Porch roof of IC tin, flat seam, finish over edge with bead. Chimney flashed and counter flashed with tin. Valley, tin, 14 inches wide, soldered, all drips flashed.

Carpenter's Specifications.

Sills 2 x 8 inch, bedded in mortar.

First and second floor beams 2 x 10 inch—16-inch centers, doubled under all stud partitions, boxed 4 inches apart where not air pipes pass through.

Ceiling beams 2 x 4 inch and all inside stud partitions 2 x 4 inch spaced 16-inch centers, first floor bearing stud partitions 12-inch centers.

Rafters 2 x 6 inch—24 inch centers, well supported with props from over bearings.

Wall studs 2 x 6 inch—16-inch centers, doubled at corners and openings.

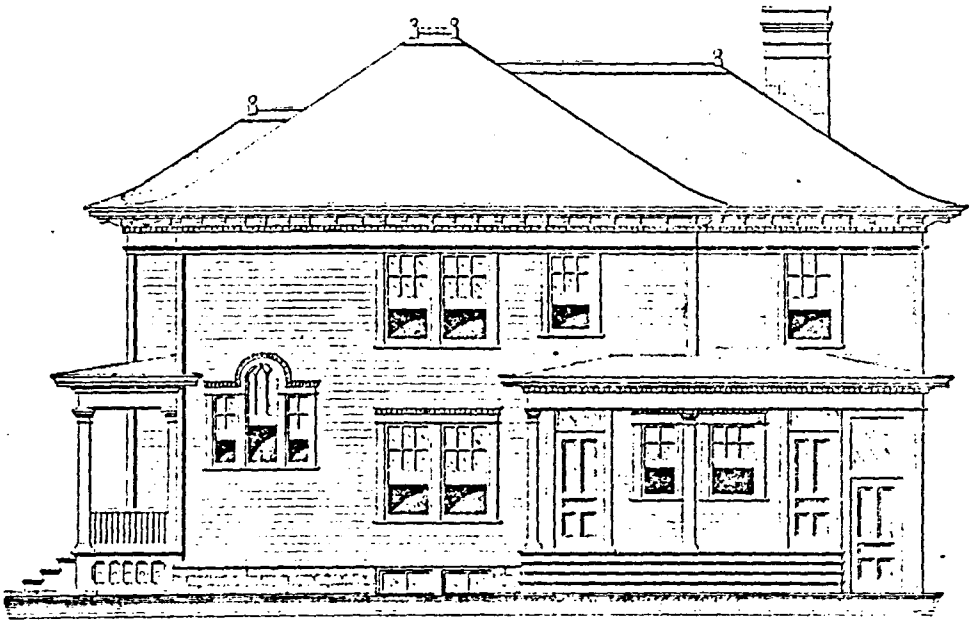
Porch framing 2 x 6 inch stuff, all machine sized.

All walls and roofs boarded tight, surfaced boards; all to be Colorado common lumber.

Paper.—All walls and roofs to be covered with gray rosin sized paper.

Siding.—Siding ½ x 6 inch, lap siding 4 inches exposed to weather. Mexican clear pine, machine dressed.

Frames.—All window frames Mexican clear white pine, axle pulleys and pockets. All outside door frames 1¾-inch jambs rabbeted for doors.



Side (Right) Elevation.—Scale, ⅛ Inch to the Foot.

Competition in Farm Houses. Second-Prize Design.

Cornices.—To be of Mexican C stock, planed; all porch posts round shafts, 8 inch, of redwood; porches ceiled overhead ⅝ x 3⅛ inch Texas star ceiling.

Shingles.—All house and V window roofs laid with Oregon star cedar shingles, laid 4½ inches to the weather, hips covered with tin shingles shingled in.

Trim.—Trim throughout of clear Texas pine, hand dressed and scraped; the four principal rooms below 5-inch back band and cap trim—see details. The kitchen, pantry, storeroom and second floor Texas pine cap trim, 4¾-inch casings. All closets 4-inch OG white pine casings. All inside door jambs 1¼-inch Texas pine, plant on 1¾ x ½ rabbet strips. Base, three-member on lower floor, OG upstairs, 8-inch, with floor mold; closets, 6-inch, OG base.

Wainscoting.—Kitchen wainscoted 3 feet high, wash and bath rooms wainscoted 4 feet high, cap and floor mold.

Sinks.—All sinks to be left open beneath, fitted with 6-inch risers, drain boards and splash boards.

Pantry.—Pantry to be fitted up with work table, with bins under closed cupboard. Fit up closets and storeroom with ample number of shelves and hooks, all complete.

All house floors to be laid with ⅞ x 3½ neat size Colorado white pine matched flooring, blind nailed. Porch floors ⅞ x 3¼ inch vertical grain Texas flooring.

Sash.—All sash 1⅜-inch white pine, cellar sash S. S. glass hinges, hooks and catches. All check windows set with clear glass, double strength, hung with cast iron weights, old copper finish Ives locks and lifts. Front door 1¾ inches thick, flush molded outside, set with enameled figure glass. All other doors except closet doors second floor 1⅜ inches thick. Doors downstairs five panel, those upstairs four panel, all OG finish; California white pine selected nice grain for oil finish. Rolling doors 1¾ inches, hung on Prouty hangers and steel track. Mortise locks throughout, Russell & Erwin's Thebes design steel mortise locks, old copper finish; hinge with Stanley polished steel butts 3½ x 3½ inches and 4 x 4 inches; for front door old copper finish; front door to have night latch lock and door bell.

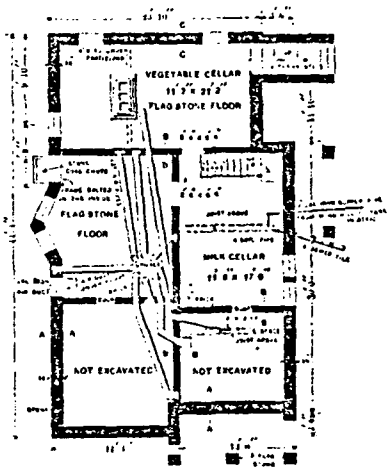
Picture Mold.—Put up Texas pine varnished picture mold in four rooms downstairs.

Stairs.—Front stairs housed, wedged and glued stairs, paneled rakes and soffits, molded hand rail and balusters, steps 1⅛ inches thick, ⅞-inch risers, nosings and cove. Back stairs 1¼-inch housed strings, 1⅛-inch nosed steps, cove, and ⅞-inch risers, ceiled up on washroom side to hand rail hight with ⅝-inch Texas pine partition stuff; this side will have coat and hat hooks screwed on for men's use.

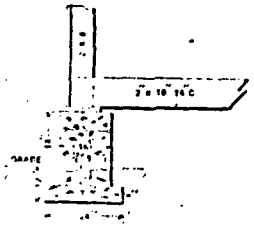
Detailed Estimate of Cost.

The detailed estimate of cost of the various parts of the work is as follows:

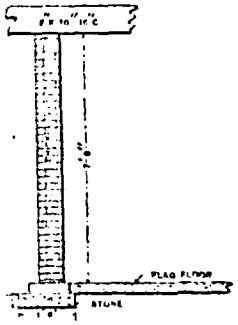
Excavation, 150 yards at 20c. per yard	$30.00
Stone work, 70 perch, 16½ F. P., rubble and R., $2 P. P.	158.00
Stone window sills, footing and coal hole	9.00
Flagstone floor in cellar, 624 square feet, laid, at 9c. per foot	56.16
9500 brick in cellar and chimney, at $8 per M	68.00
900 yards lath and plastering, at 25c. per yard	225.00
Painting and varnishing	130.00
Plumbing, includes cesspool, sewer pipe, tank in attic, all piping to all fixtures in house	250.00
Furnace, complete, with air duct of Br. and G. iron	140.00
Tin, galvanized iron work, gutters and down spouts	85.00
Carpenters' material—14 M. Colorado framing and boards, at $15 per M	210.00
20 M. Oregon cedar shingles, at $3 per M	60.00
9 500 foot rolls building paper, at $1	9.00
2000 feet M. C. L. B. lap siding, at $20 per M	40.00
2700 feet Colorado ⅞ x 5⅛ matched flooring, at $20 per M	54.00
160 lineal feet main cornice, at 20c. per foot	32.00
144 lineal feet cornice boards, at 5c. per foot	7.20
150 lineal feet base course, at 3c. per foot	4.50
20 lineal feet ridge boards, at 3c. per foot	.60
4 finials, 5 x 5 inches, turned, at 10c	.40



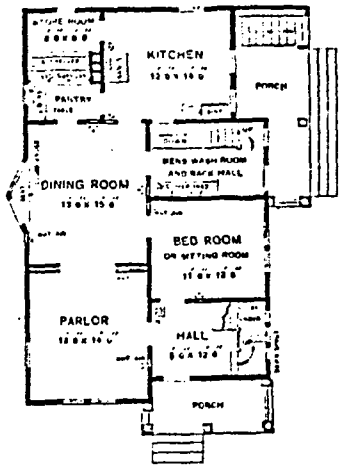
Foundation.



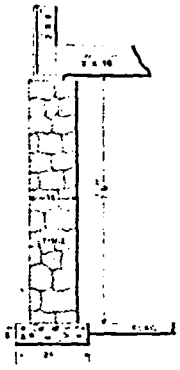
Section through Foundation Wall on lines A A.



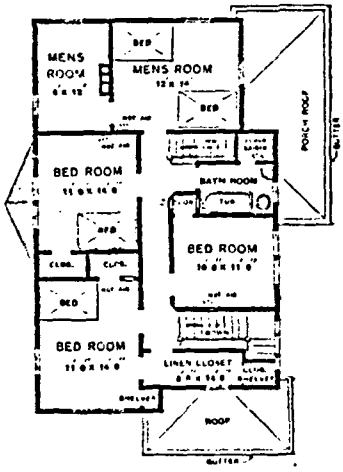
Section through Partition Walls in Cellar on Lines B B.



First Floor.



Section through Foundation Wall on Line C C.



Second Floor.

Competition in Farm Houses.—Second-Prize Design.—Floor Plans.—Scale, 1-16 Inch to the Foot.—Sections.—Scale, ½ Inch to the Foot.

36 lineal feet porches, without tin, including carpenter work, at $2.50	90.00
8 cellar windows, complete, at $2.25 each	18.00
1 air duct opening	1.80
1 outside cellar door, complete	4.50
2 inside cellar doors, complete, at $4	8.00
2 side doors with Gr., complete, at $9	18.00
9 inside doors, downstairs, at $7.50	67.50
8 inside doors, upstairs, at $7	56.00
5 inside doors, upstairs, at $6	30.00
1 set roll doors, downstairs	27.00
26 windows, complete, at $7	182.00
1 stairway window, triplet	18.00
Fitting up pantry, complete, including work	25.00
Shelves in closets and storeroom, strips, &c	15.00
Front stairs in place, including carpenter work	65.00
Back stairs in place, including carpenter work	35.00
Cellar stairs in place, including carpenter work	10.00
Wainscoting, bath, washroom, kitchen	25.00
600 lineal feet base, laid, at 6c. per foot	36.00
Carpenter work on frame, shingling, siding, cornice and floor	210.00
Miscellaneous items	.14
Total	$1,198.00

A Concrete Court House.

It is probable that the court house which has recently been completed at Mineola, N. Y., for Nassau County will rank as one of the most important buildings ever constructed entirely of cement concrete.

The general dimensions of the building are 195 x 95 feet, in the form of an inverted T. It is two stories in hight, 30 feet from the ground to the roof, and the hight to the apex of the dome is 67 feet. The general measurements of the court room are 38 x 50 feet and 18 feet high to the ceiling.

The foundation walls, floors, pillars, partitions and dome are of cement concrete. The building is practically an immense rock, cut and dressed with architectural ornament on the outside and mined inside in the form of rooms. The entire work was executed under the Ransome system, which consists of reinforcing the concrete with cold twisted steel bars of great strength, which are placed at proper points, both vertically and horizontally, in the concrete.

The exterior of the new county court is especially attractive. The concrete is finished in a very satisfactory manner; both smooth and rough surfaces are produced with perfect success. To give the concrete the appearance of rough dressed stone, it is gone over with pneumatic tools, except on ornamental and fine dressed work, where hand chisel is used. The appearance is so perfect that the difference between natural stone and the concrete is hardly distinguishable. The lines representing the joints between stones are made by placing strips of molding lightly nailed to the inner surface of the mold. They may be arranged in such manner as desired, and of any shape or size to suit requirements. The concrete is then filled into the molds in the usual manner, and when it is sufficiently set the molds are removed. This leaves the concrete marked off as if built up with stone. The ornamental work was made from plaster molds, and each part has imbedded in it the bars of twisted steel, which not only serve to strengthen it, but also afford a means of securing the ornament to the wall in a most satisfactory way. The sharpness of the detail in ornamentation of the most elaborate design is a feature of the work on this building. The court house is connected by a concrete tunnel with the jail, which was also built according to the Ransome system.

A Large Power House

All the contracts for the building of the main power station of the Pittsburgh, McKeesport & Connellsville Electric Railway, to be erected at New Haven, Pa., have been awarded, the last contract given out being that for the buildings, which was given to James Stewart & Co. of Pittsburgh, Pa. The contract for the buildings calls for completion about June 20. The building will be constructed of buff brick and stone, with a steel superstructure. It will be 135 feet long, 100 feet wide and about 50 feet high. Included in the contract for building is the construction of a large brick smoke stack, which will have a diameter of 12 feet, and will be 200 feet high. The building will be a two story structure, with the exception of 45 feet; but under the latter there will be a 12 foot basement to provide space for extra power machinery in the event of the increase being found necessary. That part of the second floor located over the boiler room, which will be separate from the main structure by thick fire walls, will be used for the storage of coal, as the entire supply will be kept there. The coal and ashes will all be handled by machinery, as it is the intention to install separate plants for that purpose.

A Southern California Home.

The residence of A. C. Burrage at Redlands, Cal., which has recently been completed, is typical of the present movement toward the construction of costly homes in the smaller towns of Southern California. The Burrage residence, which is situated on a knoll 250 feet above the business section of the town and covers an area of 128 x 148 feet, is modeled after the old Christian-Spanish style of architecture. The house is in the form of the letter H, with towers where the cross bar joins the two sides of the letter. The walls are of brick, with a coating of white cement on the outside. The roof is of red tiling. A board plazza surrounds the house proper on three sides.

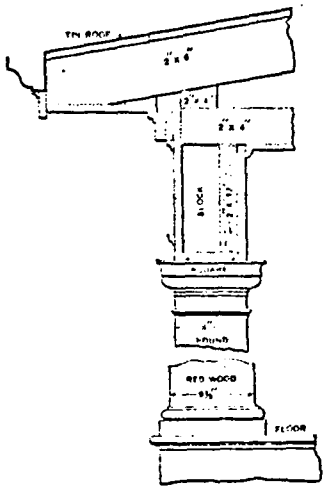
The main entrance, which is on the north side, opens into a Pompeiian reception room, with terraz pavement and mural paintings. In the center of the court is a marble pool containing a fountain surrounded by flowers. The balcony around the court is supported by ten pillars of white Italian marble. Across the court in the east wing are parlors, drawing rooms, library, billiard room, dining room and kitchen. This portion of the house is finished in hard wood, with polished oak floors. The dining room is circular and is finished in carved Mexican mahogany. To the right of the court, formed by the south portion of the letter H, is a swimming pool 24 x 28 feet in size. This is supplied with water from a reservoir built on the topmost part of the building. This reservoir also supplies water throughout the house, flower gardens, &c. On the second floor of the building are the guest chambers, six in number, so situated that their doors open on the balcony above the court. The servants' quarters are in the extreme wings of the house.

The building is wired completely for the use of electricity and is supplied with furnaces in the basement for heating purposes. Lynn & Lewis of Redlands were the contractors. The total cost of the building was $60,000.

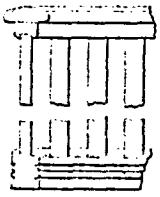
A BUILDING is about to be erected on the West Side in New York City, which will possess a number of rather novel features. The basement and street floors of the proposed structure will be devoted to a thoroughly equipped stable, having entrances on two streets. The next story, which will be of considerable hight, will be fitted up as a squash and tennis court. The upper floors will contain a few living rooms and also apartments adapted to the entertaining of the guests of the owner, J. Henry Smith, who is an enthusiastic horseman and is also greatly interested in many branches of sport, particularly in squash and tennis. We understand that the building and the site upon which it will rest represent an investment of nearly half a million dollars.

A CELEBRATED café on the Boulevard des Italiens, Paris, will shortly be transferred into a cabaret on the lines of those of Montmartre, and a novelty, in its new arrangement, will be a sliding floor. When the performance is over the whole floor will revolve and the seats and stage will disappear, giving place to tables, chairs and the usual paraphernalia of a café.

WE have received a copy of the proceedings of the Ontario Association of Architects, this being the second annual volume and bearing date of February, 1902. The matter is compiled from the minutes of the convention, and embraces a great deal that is of interest to the architectural profession.

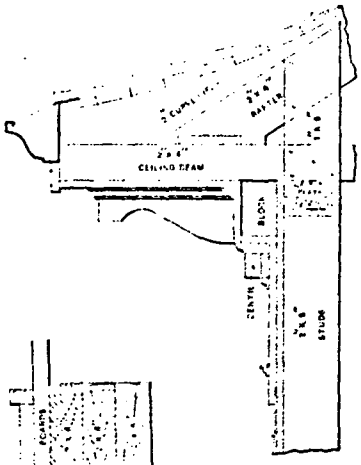


Details of Porch Cornice and Column.—Scale, ¾ Inch to the Foot.

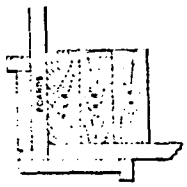


Detail of Porch Railing.—Scale, 1 Inch to the Foot.

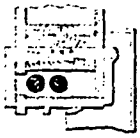
Section through Window Head.—Scale, 1 Inch to the Foot.



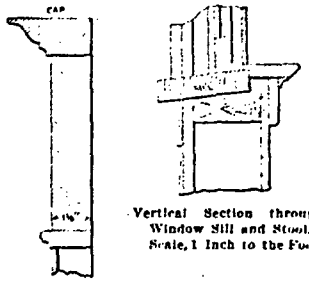
Detail of Main Cornice.—Scale, ¾ Inch to the Foot.



Section through Corner of Building.—Scale, 1½ Inches to the Foot.



Horizontal Section through Window Frame.—Scale, 1 Inch to the Foot.

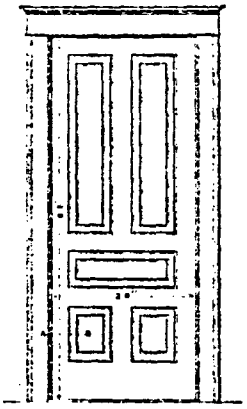


Vertical Section through Window Sill and Stool.—Scale, 1 Inch to the Foot.

Detail of Head Door Casing.—Scale, 3 Inches to the Foot.

Section of Hand Rail.—Scale, 3 Inches to the Foot.

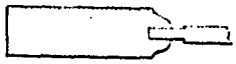
Section through Door Frame.—Scale, 1½ Inches to the Foot.



Elevation of Door, Showing Trim.—Scale, ¾ Inch to the Foot.

Detail of Molding at Top of Newel.

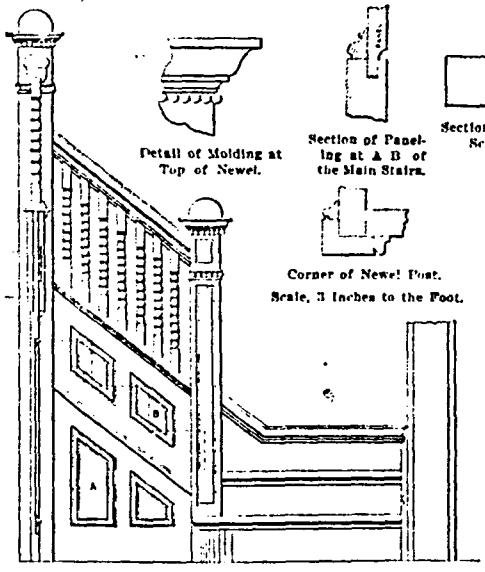
Section of Panelling at A B of the Main Stairs.



Section of Door on Line A B.—Scale, 3 Inches to the Foot.

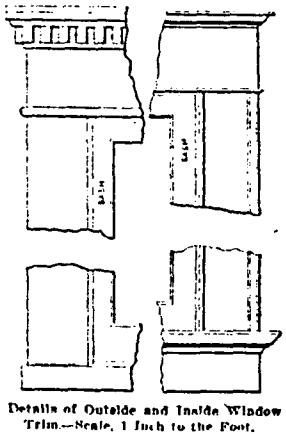
Corner of Newel Post.

Scale, 3 Inches to the Foot.



Elevation of Main Stairs.—Scale, ½ Inch to the Foot.

Base for First Floor.—Scale, 3 Inches to the Foot.



Details of Outside and Inside Window Trim.—Scale, 1 Inch to the Foot.

Competition in Farm Houses. Second-Prize Design.—Miscellaneous Constructive Details.

Article Two:

A Farm House Planned by a Farm Woman

Some Practical Ideas for Convenience and Comfort

By J. B. GORDON

I JUST wish some men had to housekeep in the farmhouses they have planned and wished off on poor farm women!" said a farmer's wife to me wearily. "I've lived in farmhouses planned—or misplanned—by men folks, all my life; I'm sure I could qualify as an expert on how *not* to plan a farm home!"

Now, I quite agree with her; not one man in a thousand is capable of planning a really worthwhile farmhouse, unless he takes some woman's advice. I'm showing you a farmhouse not planned by a man. A farm woman laid out the first floor, exactly as you see it; all I did was to put the plans in shape, and design the exterior.

First of all, let us look at the kitchen. "O" and "R" represent the positions of oil-stove and range; "T" is a movable table. "S" is the sink; it has drain boards at right and left. A single drain board is very inconvenient; there is no place to stack the dirty pots and dishes.

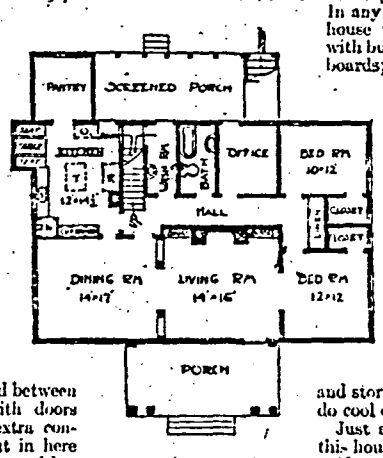
Note, please, that there is a double window over the sink, looking out from the side of the house. This is quite important; Mrs. Farmer can see who is coming up the road, instead of merely watching a flock of sharp-toed hens scratch holes in a frowsy back yard.

"D.W." is a dumb-waiter opening from both kitchen and dining room, and running down to the cellar.

The breakfast nook needs no recommendation from me; thousands of farm women know how convenient it is. There is a cupboard between the kitchen and dining room, with doors opening to both rooms. This is extra convenient; washed dishes may be put in here from the kitchen, and taken off from either dining room or kitchen, as they happen to be wanted.

There is another form of cupboards, sometimes used in such places; it consists of a kitchen dresser and a dining room buffet, built back to back. Sliding panels permit the housewife to pass meals, soiled dishes, etc., thru.

Some women will want the pantry; others will not. Personally, I would prefer to omit it; using the wall-space where the pantry door now is to set a kitchen cabinet or built-in dresser. Then a very much smaller pantry might be built, opening from the porch, to hold extra barrels of flour, brooms, mops, and a number of miscellaneous things.



The screened porch should, I think, be enclosed with glass for winter; in summer the sash can be taken out. This porch will make a most excellent laundry; stationary tubs can be set under the bathroom window, and connected to the plumbing at a very small expense.

The rest of the first-floor layout needs no comment.

The attic is unfinished; but there is ample space to partition off three very good bedrooms, besides a storeroom.

So much for the plan; now, a few words about the building of the house.

I have supposed this to have frame walls, covered with stucco; tho frame clapboards would answer equally well. In any event, we should always sheathe the house with cheap lumber, and cover this with building paper before applying the clapboards; this will make the house a great deal more comfortable, in winter, and save anywhere from 10 to 30 percent of fuel. Where the climate is extra cold, it will pay to use some sort of insulating fabric, instead of just building paper; there are several good sorts on the market. One type is made of wood fibre, loosened up like wool; another is cane-fibre, pressed into sheets. Two other sorts are made of sea-grass and hair-felt, respectively.

These various fabrics, by the way, will keep out heat just as well as cold; they are often used to line the ceilings of bungalows and story-and-a-half houses. And they surely do cool off a hot attic room!

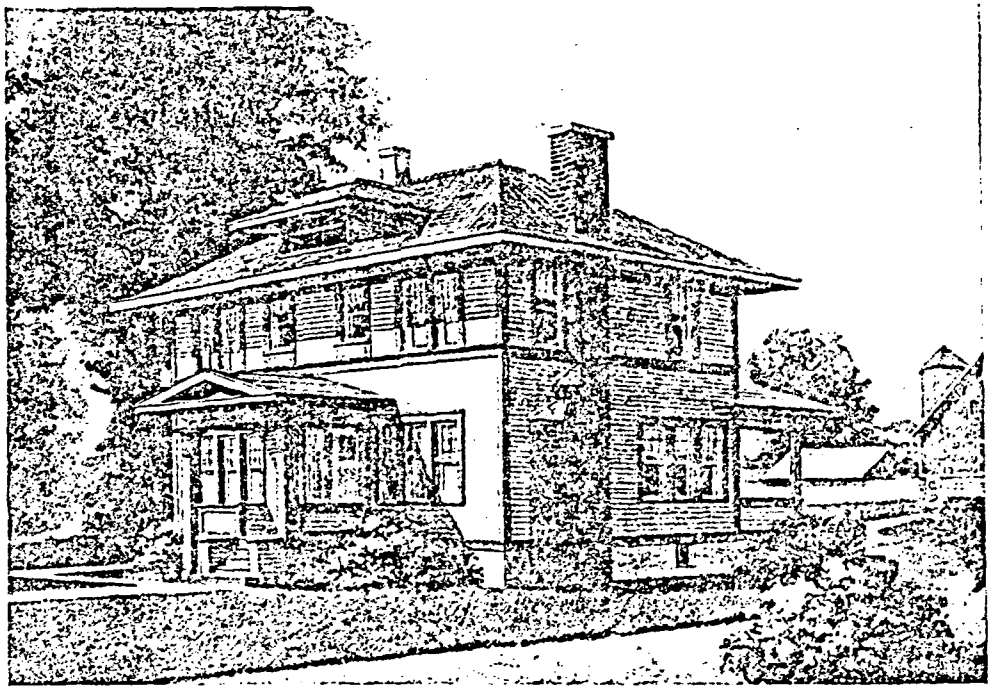
Just a few final words about the color of this house.

If we use smooth, wooden siding, let us paint the walls white; if rough siding or shingles, stain them white or silver-gray. Sash, porch columns and similar trim, white; shutters, plant-boxes, gable cornices, blue or olive-green. I rather prefer blue—a rich ultramarine shade; it stands the weather well.

[Editor's Note: We can furnish blue-prints of the house for $2 per set. Write to Farmhouse Editor, Successful Farming, Des Moines, Iowa; enclose check or money order for $2 and ask for plans No. 886. We do not furnish specifications nor material lists, because your local builder can prepare these to suit your local conditions. It may take a week or ten days for the plans to reach you.]

Article Three:

Guaranteed Building Plans



A two-story square built farm house. It is 37 by 32 fe et 6 inches, exclusive of the front porch. We can furnish complete blue-printed working plans and typewritten specifications for only $10.00 per set. Blue-prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections, and all necessary details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6654.

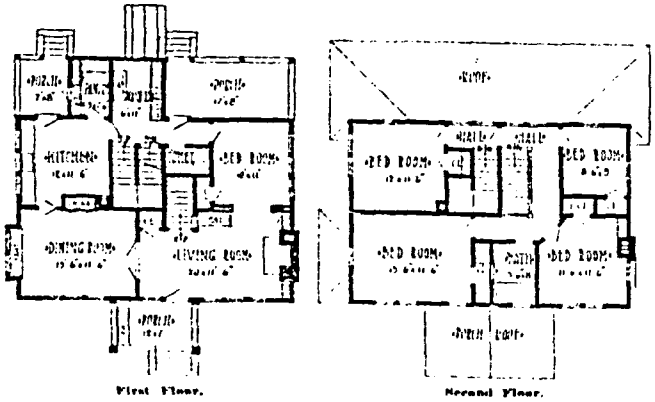
Square Built Farm House

Here we have a full two-story country house, 37 by 32 ft. 6 in. in size, including the projection at the back. It is square built and is covered with a hip roof. The plan is designed especially for the farm. Farm houses differ from town houses in many respects. They are built for business as well as for residence purposes, but the comforts of home are not to be sacrificed to accommodate business.

This plan is arranged to keep the farm work in the rear so far as possible, leaving the front of the house to family comfort and sociability. There is a wide rear entrance to the cellar because a farm house cellar is the most important part of the house. The cellar entrance should be wide, with easy concrete steps leading down to a 4-foot door. Household supplies in the country are provided in wholesale quantities, so that plenty of storage is required, and it should be cool, if not cold. For this reason farm cellars should be partitioned off into compartments in order to have rooms for different purposes.

The floor plans of this house show conveniences for farm help, both on the first and second floors. On the first floor is a washroom with lockers, so that each man may have a separate cupboard for his extra clothing. All farm hands like to have a place to keep their small belongings under lock, and they like to have a comfortable place to wash. The old-fashioned plan of washing in a tin basin on a bench near the pump may never go out of fashion on farms in hot weather, but for about nine months in the year a special washroom provided with hot and cold water on tap is a modern necessity on the farm.

The rooms upstairs intended for the family are in the front part of the house, and space for farm help in the room at the head of the back stair. In fact, there are two bedrooms upstairs that may be used for the help when necessary, leaving the downstairs bedroom and the two front bedrooms and the upstairs bath room for the farmer and his family.



Arrangement of Farm House, Size 37 ft. by 32 ft. 6 in.

Article Four:

Farm House of Cosy Bungalow Design

NINE ROOMS ARRANGED WITH SPECIAL REFERENCE TO FARM NEEDS

The great advantage of the room arrangement shown in this model farmhouse lies in the fact that the living quarters and living rooms of the family are separated from the rooms that are used by the hired help. This arrangement applies both to the first and second floors. This idea was recently brought into prominence by the Minnesota State contest for prize farm house designs. Each design had to incorporate this arrangement in some way.

From the back porch the entrance leads to a wash room where the men coming in from their work can clean up, without going into the kitchen and interfering with the cooking. It is not necessary for the men to go into the kitchen at all, as they can go directly to the dining room from the wash room. A case is provided in which the men can hang their outside work clothes.

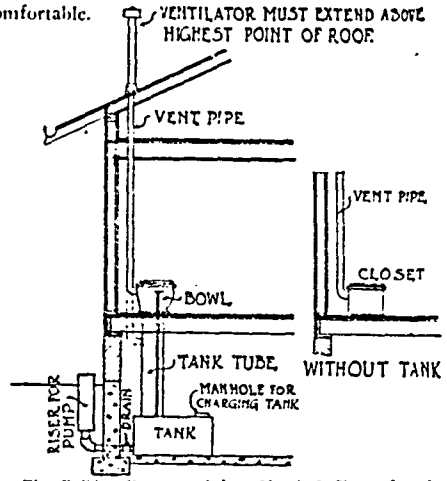
Two bedrooms are provided for the help on the second floor. These can be shut off from the rest of the upstairs by closing one door in the large bedroom that leads to the back hall. The family occupy the other three rooms on this floor and reach them by the front stairs, while the back rooms are reached by the back stairs.

On the first floor one of the back corners of the house is fitted up as a farm office—the farmer's private room for the transaction of the farm business. In these days of scientific farming, the guessing system is as useless as it would be in any other kind of business. There must be filing systems and records that are kept on costs and all the various other details of a business. The farm office is located so that the owner or manager can see all the buildings from this room thru the windows on the three sides.

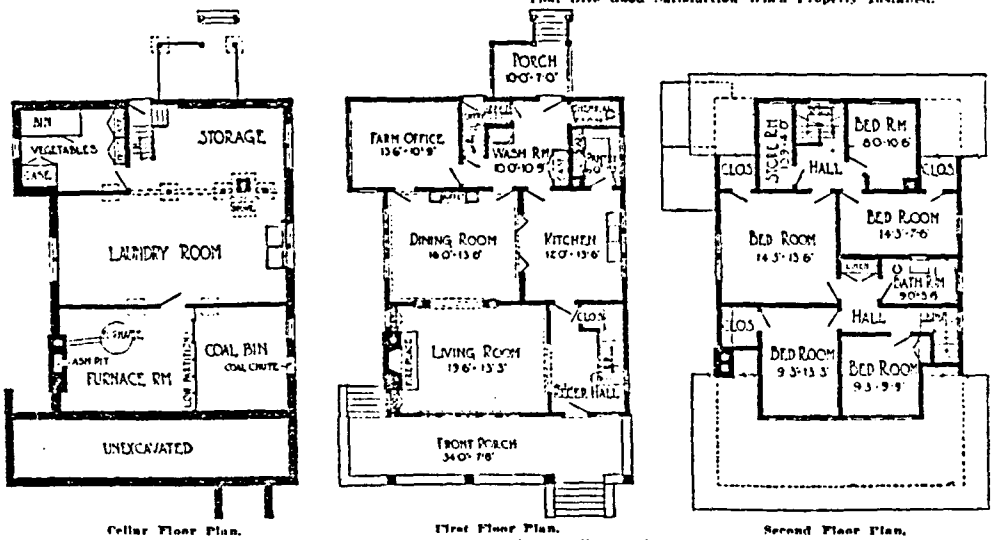
The kitchen and dining room are connected by double folding doors which can be opened so that the table can be stretched away out long and placed between these rooms at threshing time, silo filling, or for the big Thanksgiving dinner, when all the folks are home.

A feature of the basement arrangement is the large space that is provided in one corner for the storage of fruits and vegetables. This is placed away from the furnace and the laundry stove, and is shut off with a solid masonry wall.

In exterior design this farm house follows the popular bungalow style—broad and low, well-lighted and comfortable.

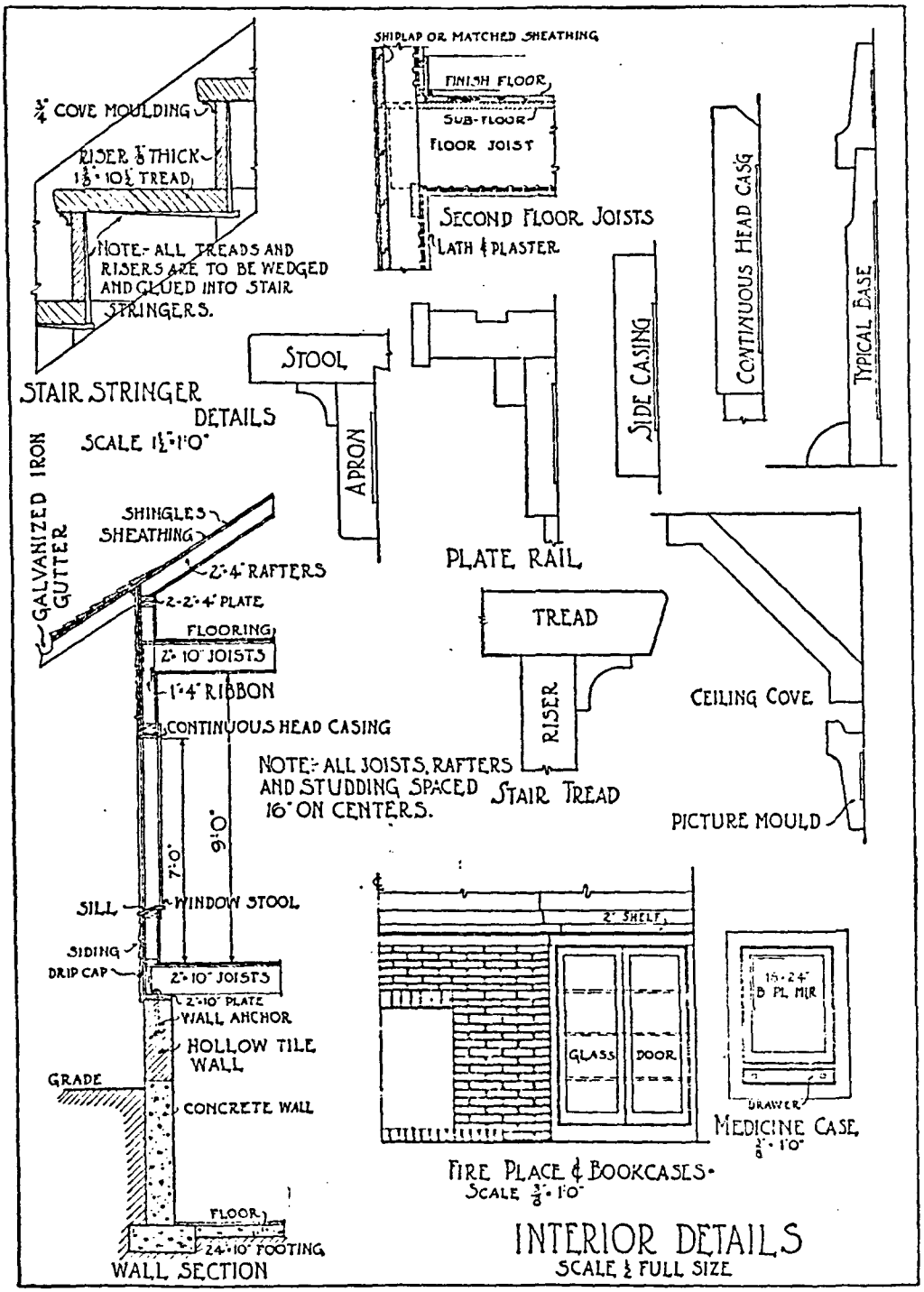


The Builder Recommended a Chemical Closet for the Toilet Off the Wash Room; Said There Are Several Kinds That Give Good Satisfaction When Properly Installed.

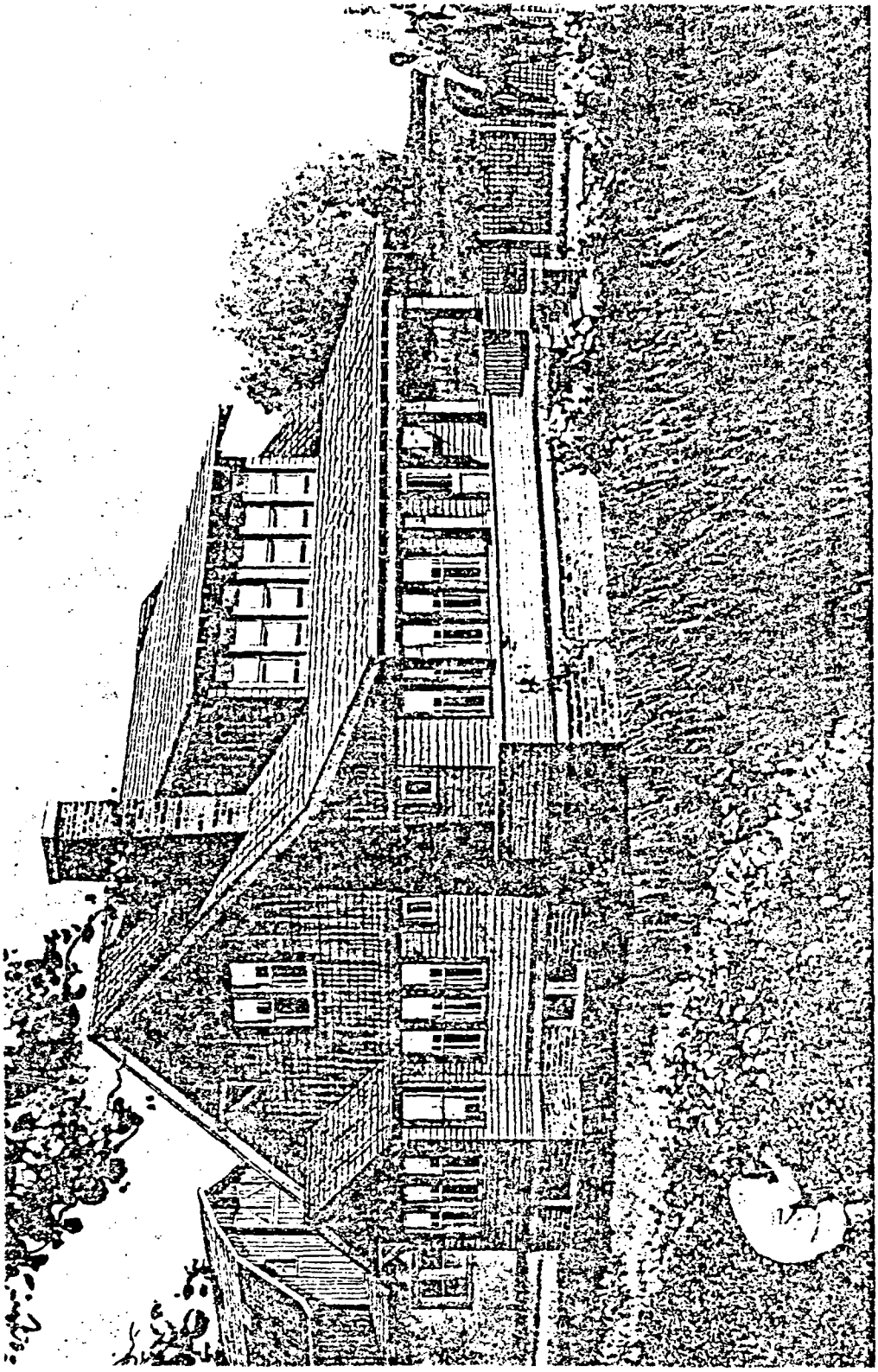


Cellar Floor Plan. First Floor Plan. Second Floor Plan.

Arrangements of Nine-Room Farm House, Size 30 by 39 Feet 8 Inches, as Illustrated on Opposite Page. Design No. 6172.



Details of Inside Trim and of Construction Used in Model Nine-Room Farm House No. 6772, as Illustrated on Page 86.



Photographic Architectural View of Model Farm House Designed Along the Latest Bungalow Lines, and Containing Those Special Features of Interior Arrangement that a Real Farm House Requires. For Floor Plans and Interior Details, See Pages 87 and 88. When Writing in Regard to This Design, Please Refer to No. 6712.

APPENDIX 2: SOURCES OF FARMHOUSE PLANS

"A Country Home of Dutch Colonial Design." American Builder (February, 1918): Plate 16.

"A Farm Cottage at Locust Valley." Building Age (November, 1919): 351-352.

"A Farm Cottage with Seven Rooms." Building Age (August, 1919): 247-248.

"A Farm House for $1,000." Building Age (May, 1917): 153-154.

"A Farm House for a Small Family." The Building Age (July, 1916): 29-33.

"A Farm House of the Cottage Type." Building Age (November, 1916): 34-37.

"A Farmhouse of the Cottage Type." Building Age (October, 1919): 572-575.

"A Good Country Home." Successful Farming (September, 1912): 52.

"A Model Farm House." American Carpenter and Builder (August, 1911): 49.

"A Modern 5 Room Bungalow and Garage." American Builder (Febuary, 1918): Plate 13.

"A Nobby Bungalow." Successful Farming (December, 1912): 18.

"An American Farm Home." Building Age and National Builder (July, 1927): 88-89.

"Attractive Bungalow Farm Home." American Builder (April, 1921): 99.

"Attractive Farm Home with Floor Tile Details." American Builder (May, 1920): 103-104.

Bell, John G. "A Good Modern Farm Home." Successful Farming (September, 1912): 42.

"Blue Prints of a Nine-Room Stucco House." American Builder (October, 1919): 94, sheets 1-3.

"Blue Prints of Farm Home and Three Associated Buildings." American Builder (November, 1918): 33-36.

Brinkloe, William Draper. "A Modern Farm Home." Successful Farming (May, 1912): 20,24.

Brinkloe, William Draper. "Enlarging the Farm Home." Successful Farming (July, 1916): 9.

"Business Farm House." American Carpenter and Builder (August, 1915): 49-51.

"Cement Block Farm House." American Carpenter and Builder (November, 1913): 65.

"Comforts and Conveniences for the Farm Home." American Builder (February, 1920): 115-117.

"Competition in Farm Houses." Carpentry and Building (April, 1902): 87-92.

"Competition in Farm Houses." Carpentry and Building (May, 1902): 107-111.

"Competition in Farm Houses." Carpentry and Building (June, 1902): 143-146.

"Country House with Circle Porch." American Carpenter and Builder (March, 1915): 62.

"Curb Roof Farm House." American Carpenter and Builder (August, 1915): 51.

"Design for a Farm House." Carpentry and Building (February, 1905): 53-55.

"Design for a Modern Farm Home." American Builder (July, 1919): 56.

"Designs for Farm Houses." Carpentry and Building (September, 1901): 259.

"Design for Modern Farm Home." American Builder (February, 1920): 112-114.

"Distinctive Farm Home with Dumbwaiter Details." American Builder (January, 1921): 104.

"Don't Neglect Farm Home." American Builder (February, 1921): 89.

"Dutch Colonial Farmhouse." American Builder (July, 1918): 39.

Edgemar, William. "Fresh Air for the Farmhouse." Successful Farming 24 (February, 1926): 34.

Edgemar, William. "Plans for a Convenient Farm Cottage." Successful Farming 22 (December, 1925): 26.

"Elegant Modern Country House." American Carpenter and Builder (March, 1915): 51.

"Farm House of Cosy Bungalow Design." American Carpenter and Builder (February, 1916): 86-88.

"Farmers Want Modern bungalows." American Builder (February, 1919): 57-60.

"Farmhouse with a Sewing Room." Successful Farming 21 (February, 1924): 30.

Gordon, John B. "A Bright, Cheery Farm House." Successful Farming 21 (December, 1924): 20.

Gordon, J. B. "A Farm House Planned by a Farm Woman." Successful Farming 22 (October, 1925): 32.

Gordon, J. B. "A Practical Farmhouse." Successful Farming 20 (October, 1923): 17.

Gordon, J. B. "A Practical Home for the Farm Family." Successful Farming 22 (March, 1925): 32.

Gordon, J. B. "A Small, Roomy Farmhouse." Successful Farming 21 (April, 1924): 30.

Haines, D. A. "A Model Farm House." American Carpenter and Builder (April, 1913): 49-50.

Hawkins, J. H. "A Semi-Bungalow with Plenty of Room." Successful Farming 24 (November, 1926): 28.

Hawkins, J. H. "Convenience and Comfort Combined." Successful Farming 24 (July, 1926): 13.

Hawkins, J. H. "Designed for the Farm Family." Successful Farming 25 (January, 1927): 30.

Hawkins, J. H. "Insuring Your Family's Comfort." Successful Farming 25 (May, 1927): 13.

Hawkins, J. H. "One Floor That Is Just Right." Successful Farming 25 (February, 1927): 32.

"How About Plans." Successful Farming (March, 1913): 66.

Martini, E. A. "An Economical Farm Home." Building Age and National Builder (April, 1927): 198-200.

"Model Design of Minnesota Farm House." Building Age (March, 1915): 38-39.

"Modern Farm Home with Sewage Disposal Details." American Builder (October, 1920): 108.

"Modern Farm Home with Water Supply System Details." American Builder (August, 1920): 80.

"Modern Roomy Farmhouse of Attractive Appearance." American Carpenter and Builder (April, 1916): 46.

Nussbaum, Mrs. Walter F. "We Plan to Remodel." Successful Farming 25 (October, 1927): 78.

"Plans for Farm House." Carpentry and Building (August, 1901): 207.

"Plans for Farm Houses." Carpentry and Building (October, 1901): 258.

"Plans No. 85." Successful Farming (October, 1912): 62.

"Repairing and Modernizing the Farm Home." American Builder (February, 1918): 80-81, 172.

Revis, Mrs. W. W. "The Ideal Farm House For My Family." Successful Farming 25 (September, 1927): 26.

Russell, George L. "A Farm Home Planned by a Farmer." Successful Farming 22 (April, 1925): 28.

"Seven-Room Modern Farm House." American Carpenter and Builder (July, 1915): 43.

"Square Built Farm House." American Carpenter and Builder (February, 1915): 69.

Stadelman, J. G. "Farm Building Plans." Succesful Farming (January, 1911): 26, 30.

"Story and a Half Farm Bungalow." American Builder (February, 1920): 130.

Stovall, Dennis H. "A Good Bungalow for $900." Successful Farming (July, 1912): 12-13.

Stovall, Dennis H. "A Low Priced Bungalow for the Country." Successful Farming (May, 1913): 32.

Stovall, Dennis H. "Plans for a Farm Bungalow." Successful Farming (January, 1912): 40.

"The Farmhouse Design." American Builder (February, 1917): 71-72.

"The Ideal Farm Home." Building Age (July, 1929): 44-46.

"This is Just a Farmhouse." Successful Farming 20 (November, 1921): 14.

Toellner, C. H., Jr. "Nine-Room Farm Home for $3600." American Carpenter and Builder (October, 1913): 67-68.

Wylie, W. S. "Design for a Farm House." Carpentry and Building (January, 1902): 17.

Zeller, Mrs. Fred. "My Dream Home." Successful Farming 25 (December, 1927): 64.