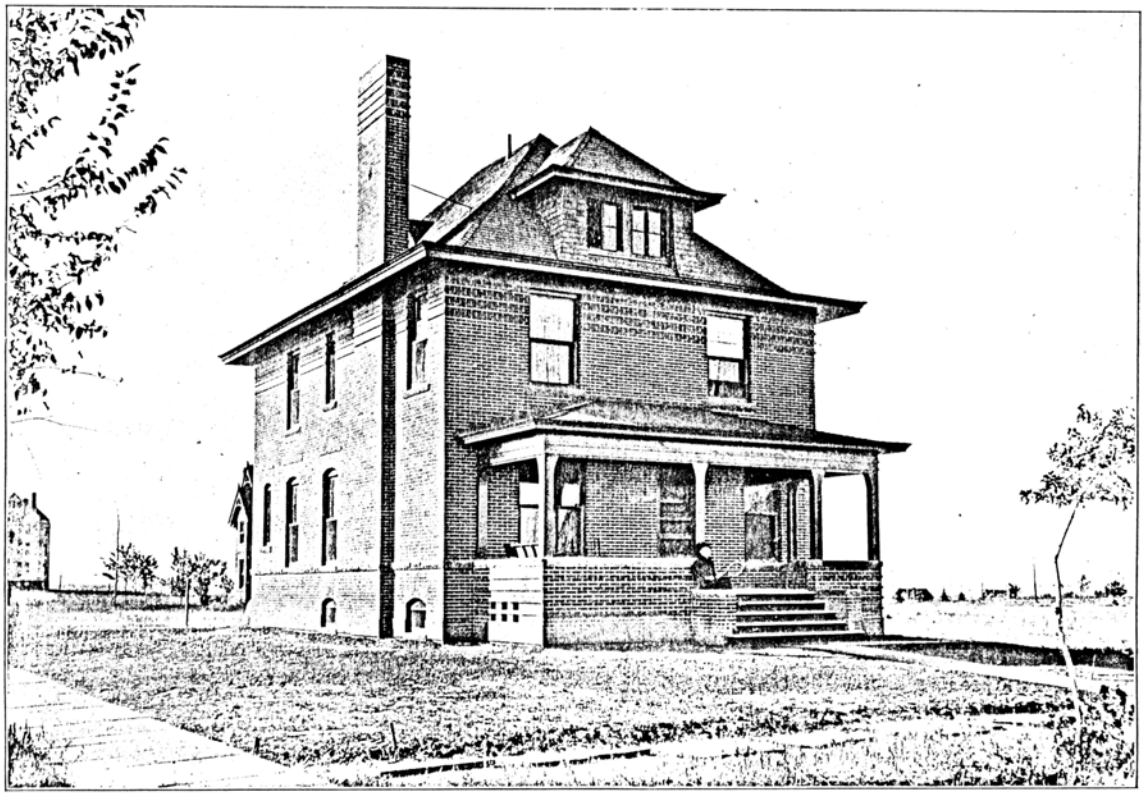
The University of Chicago

The Four Square House in the United States

A Paper Submitted to the Faculty of the Division of Social Sciences in the Candidacy for the Degree of Masters of Arts in the Divisional Masters Program



By Thomas Walter Hanchett
Chicago, Illinois
April 1986

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DEDICATED TO

my parents
Dr. Walter S. and Catherine M. Hanchett

PREFACE AND ACKNOWLEDGMENTS

I first became interested in what I now call the Four Square house type and the Rectilinear style in 1975 when I spent a summer working on an inventory of older buildings in an Ithaca, New York, neighborhood for Historic Ithaca, Inc. A number of large, plain, two-story houses with gable ends to the street appeared some time after the late 1890s and in time to be included on the 1910 Sanborn Insurance map. The proportions of the "1910 houses" were not Greek Revival, nor any other style I could identify, and nothing like them was pictured in the architectural style guides I was using. Along with the gable-roofed "1910 houses" was one with a pyramid-shaped "hip" roof apparently built just after 1910, and equally mysterious in its plain-trimmed architectural style.

Since then I have found the hip-roofed house, the Four Square (Figure 1), in many parts of the country, and also, much less commonly, the gable-roofed version (Figure 3). The Four Square is in the Piedmont Park neighborhood of Charlotte, North Carolina, in Chicago's far south suburbs, in small-town New England, on Wisconsin farms, intermixed with Bungalows in Berkeley, California, and many places in between. The house is called by a different name in each place, if it is dignified by a name at all. Most people I have talked to consider it too plain to be "Architecture," classifying it rather as "mere building." Not a few find its plainness unattractive: the Denver architect who responded to my first question of a telephone interview with, "Oh yes, I know the house you are describing. Out here we call it the Denver Square. I think it's ugly."

My curiosity came to a peak during a year-long contract as an architectural historian with the Utah State Historic Preservation Office. In the course of an architectural survey of the Avenues neighborhood of Salt Lake City, my tasks included writing descriptions of dozens of the hip-roofed houses, which we referred to as "box-type". When it came time to write my Masters Paper at the University of Chicago a year later, decided to learn what I could about the hip-roofed, plainly trimmed, two-story house: where the idea had come from and why, how it had spread, and why it fell from popularity. The project was designed not only to answer

my questions about a particular type, but also to sharpen my understanding of how commonplace house designs are conceived and spread.

From my previous reading in architectural history, I expected, by going back through plan books and magazines, easily to identify an original "form-giver" or perhaps a small group of "form-giving" colleagues. They would loudly proclaim the practical and philosophical benefits of their new design, with great attention to historical precedents or lack of same, and write books and magazine articles urging all to adopt it. Because of the Four Square's simplicity, I suspected these persons might be builders rather than architects, but whatever their position I was sure they would spread their ideas with the sort of oratory I had come to expect through Ayn Rand and Vincent Scully.

I found no such oratory in the books and journals I sampled. While I still think there must have been an original "form-giver" I now believe that if any such proclamations had occurred, one of the dozens of other architectural historians who have combed the material of this era would have written of them. What I did find in the years preceding the appearance of the Four Square type, however, was a tremendous rebellion against the existing style of residential architecture, the elaborate, eclectic Queen Anne. To my surprise, even before Frank Lloyd Wright, dozens and dozens of writers from nationally respected architects to obscure local newspaper columnists cried out for a simpler, more sensible, non-eclectic house.

The Rectilinear style, to use a name coined by Wilbert Hasbrouck and Paul Sprague, was a response to this rebellion. My Four Square house, the "1910 houses" in Ithaca, as well as several variants, were all part of this movement. The Rectilinear stylistic movement did not leave behind an articulated body of doctrine or highly visible leaders to be studied by future architectural historians, as its contemporaries the Prairie and academic revival movements did. Yet it did produce thousands of substantial homes between the late 1890s and the early 1920s, identifiable by their plain wall surfaces, simple massing, and lack of strong links to the Victorian, Colonial, Prairie, Bungalow, or other styles. And this plain-trimmed style was no mere builders' expediency, for I found that many early Rectilinear practitioners were trained architects loud in their criticism of the Queen Anne.

* * *

This paper begins by defining the Four Square type and its relation to the Rectilinear style. After discussing other scholars who have noted the existence of the Rectilinear, I outline my method of research and summarize my arguments. The next chapters develop these arguments in detail: Chapter Two discusses the rebellion against the Queen Anne and presents some theories on the origins of the Four Square type, based on the earliest published designs. Chapter Three deals with the rise to popularity of the type, from publication in a large-circulation builders' magazine in 1895, through the 1910s when Four Square plans were available through Sears, Roebuck and Company and dozens of other sources. Then I break from the chronological narrative to present in Chapter Four a case study of the type's adoption in a particular neighborhood. Finally, Chapter Five traces the decline of both the Four Square type and the Rectilinear style after World War I, and offers some conclusions based on present research, as well as suggestions for future work.

* * *

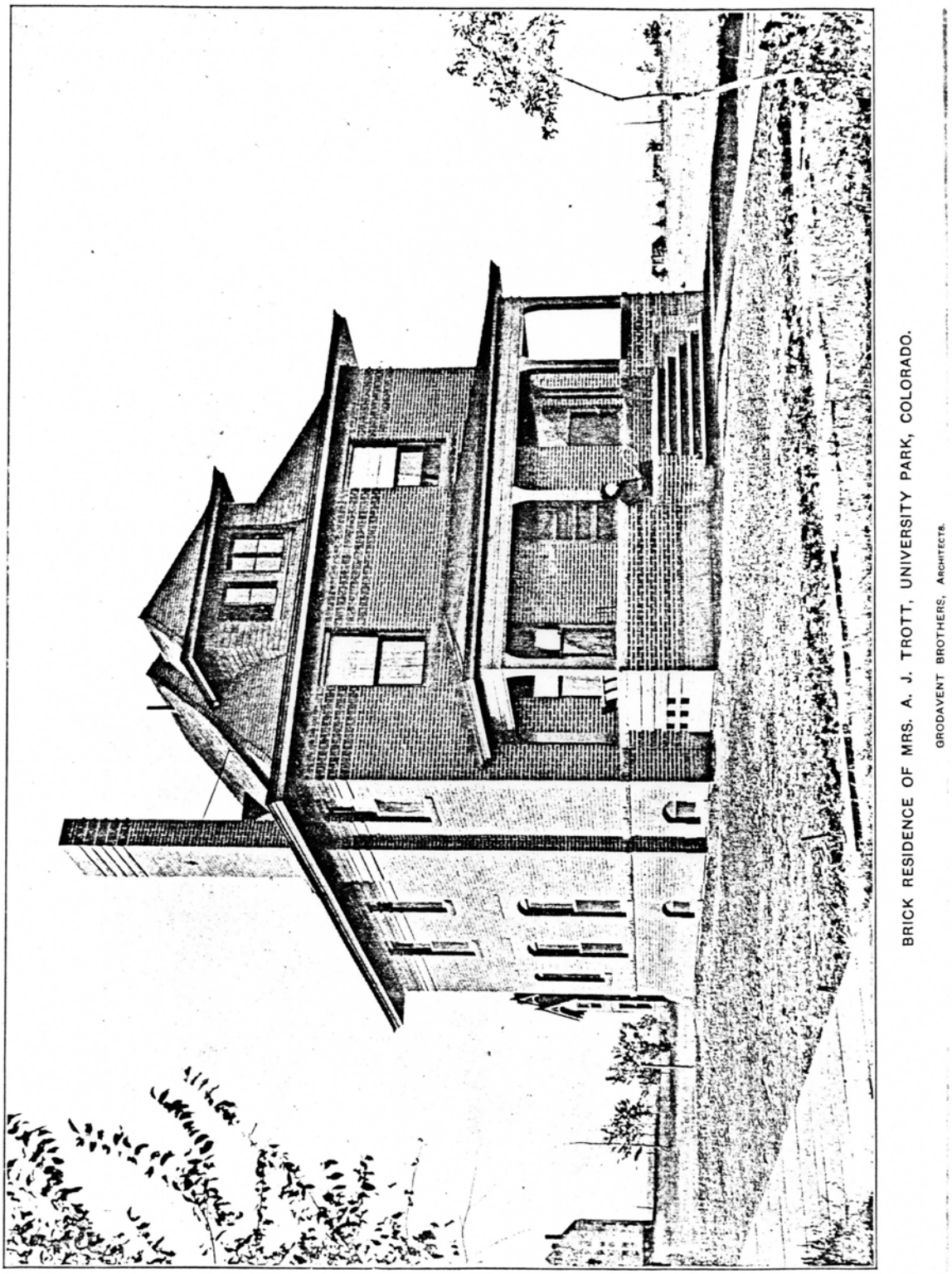
Before continuing I must try to acknowledge those who have helped in the course of this project. For years I have read researchers' obligatory phrase about the impossibility of mentioning all who were of assistance. Now I know what they meant. Forgive me my omissions and I will forgive yours.

Phil Neuberg, Tom Carter, and the late Stephen Jacobs each in very different ways introduced me to new concepts in research on the built environment and helped me crystallize the questions that led to this paper. I received much assistance from the librarians and staffs of the University of Chicago, Syracuse University, the State University of New York College at Cortland, and especially the Cornell University Fine Arts Library. I am grateful also to the Utah State Historic Preservation Office, including Karl Haglund and Phil Notarianni, the Colorado State Historic Preservation Office, and to Don Etter who drove me around Denver

photographing Four Square houses in a snowstorm. Dozens of others including John and Kathy Moroz, Sharon Elfenbein, Judy Hertz, Margaret Weir, Jo Schaffer, and the folks at Chicago's Prairie Avenue Bookshop freely provided information, rides, couches to sleep on, and other research essentials. For their reading of the manuscript, thanks to my Divisional Masters Program preceptor Elizabeth Bankoff, and to my advisor Doctor Kathleen Conzen and her husband Michael. Discussions with them helped me sharpen my ideas. I am particularly grateful for the gracious assistance of my unpaid, unofficial readers and advisors, Cornell professors Michael and Mary Tomlan. Testing my findings in conversation against their detailed knowledge of pattern-book architecture kept my research on the right track. I also profited from the opportunity to present my research as a work-in-progress to the 1981 meeting of the Vernacular Architecture Forum and benefited from members' comments. Catherine Hanchett provided welcome editorial advice, proofreading, and high-pressure draft typing. Final typist was Peter Bennett, of Great * Scott Information Services in Cortland, New York, who is the world's 1981 Classical Whistling Champion.

Charlotte, N.C.
December, 1981

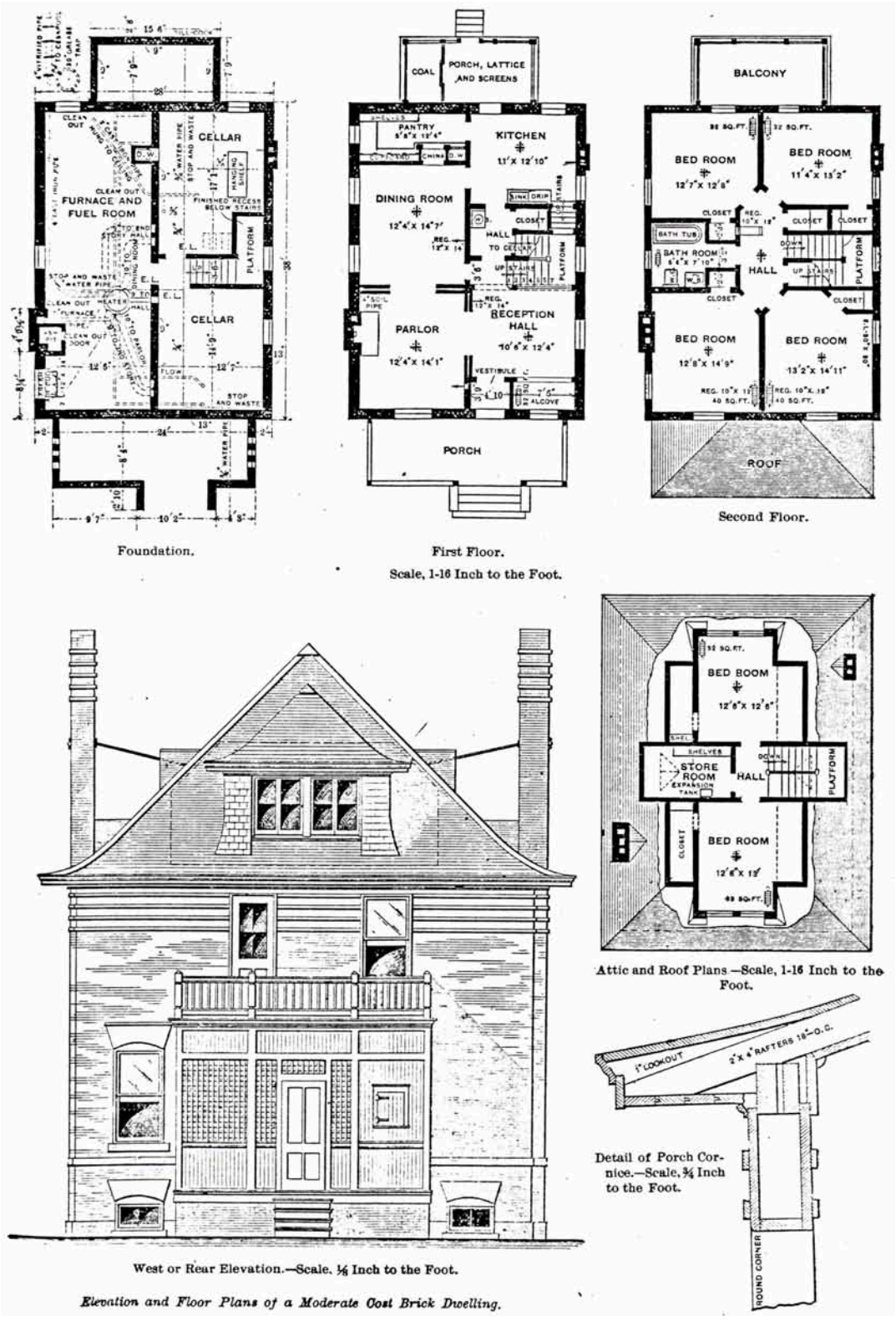
Figure 1. FIRST FOUR SQUARE TO APPEAR IN A LARGE-CIRCULATION JOURNAL: A.J. Trott house (1895) by Grodavent Brothers of Denver. Carpentry and Building 17 (1895) April plate.



BRICK RESIDENCE OF MRS. A. J. TROTT, UNIVERSITY PARK, COLORADO.

GRODAVENT BROTHERS, ARCHITECTS.

Figure 2. FOUR SQUARE IN PLAN:
A.J. Trott house (1895) by Grodavent Brothers of Denver. Carpentry and Building 17 (1895) 83



CHAPTER I.
INTRODUCTION

With the work In the last thirty years of scholars such as urban historian Sam Bass Warner, Jr., anthropologist Amos Rapoport, and folklorist and cultural geographer Henry Glassie, social scientists are increasingly using ordinary housing as a tool for studying social history.[1] This Master's paper will examine one "ordinary" house type, the so-called Four Square house popular across the United States from the end of the 1890s into the 1920s. Tracing the origins, spread and adoption of this type will provide an understanding of how architectural ideas spread and how the "built environment" in which we live is formed. Looking closely at the Four Square house itself, we will see what it can tell about the people who lived in it and about the era of which they were a part.

The Four Square Type and Rectilinear Style.

In the 1880s the long reign of Victorian architecture in America came to an ornate, eclectic peak in the Queen Anne style. The gaudy complexity of the Queen Anne brought a widespread revolt which set the course of American design from the l890s through the first World War. Architects and the general public as well cried out for a simpler, more sensible residential architecture.

Two of the stylistic movements resulting from the rebellion are well known, mentioned by all architectural historians dealing with the decades around the turn of the century. One was the academic revival. Its advocates proposed a return to

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[1] Sam Bass Warner, Jr., Streetcar Suburbs: The Process of Growth in Boston, 1870-1900 (Cambridge: Harvard University and the M.I.T. Press, 1962); Amos Rapoport, House Form and Culture (Englewood Cliffs, N.J.: Prentice-Hall, 1969); Henry Glassie, Folk Housing in Middle Virginia: A Structural Analysis of Historic Artifacts (Knoxville: University of Tennessee Press, 1975).

"correct" Colonial and to a lesser extent European forms, seeking refuge from the chaos of Queen Anne eclecticism in a controlled world strictly governed by historic precedent. The other movement was the Prairie school led by Frank Lloyd Wright, followed later by the Western Stick and popular Bungalow styles. These modernists threw out all history and battled the arbitrary Queen Anne with an "organic" approach to design that sprang from the properties of building materials and site and the real needs of the occupants.

Historians have all but ignored a third response to the Queen Anne, one which achieved greater public acceptance in the period before World War I than the Prairie style and which rivaled the Colonial. In recent years urban geographers and historic preservationists looking closely at American cities and suburbs have noticed a genus of house with severely simple massing and little or no historic ornament. These houses did not follow historic precedent as the revivals did, but at the same time they strayed less far from conventional images of "home" than did the Prairie style. The new designs were not limited to a single architect or city, or even region, but seemed to have been produced by dozens of young architects all over the country. Architectural historians Wilbert Hasbrouck and Paul Sprague have dubbed this movement the Rectilinear style.[2]

Style -- the decoration, window arrangement, and so on, applied to the outside of a building -- may be thought of as one component of the form of a house. The other component may be called type. This includes both plan--layout of rooms, passages, stairs and entrances -- and massing -- the basic shape of the shell of the house formed by walls and roof.[3]

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[2] Wilbert R. Hasbrouck and Paul E. Sprague, A Survey of Historic Architecture of the Village of Oak Park, Illinois (Oak Park, Ill.: Landmarks Commission, Village of Oak Park, 1976), pp. 8-14, 16-19.

[3] The type/style distinction has been used extensively by Fred Kniffen, Henry Glassie, and other folklorists in their investigation of housing. For an early discussion, see Fred Kniffen, "Folk Housing: Key to Diffusion," Annals of the Association of American Geographers 55 (1965): 553.

A house type usually achieves popularity as the result of a particular style; for instance, the symmetrical center-hall "I" house associated with the symmetrical Georgian style, or the gable-roofed "temple-and-wing" associated with the Greek Revival.[4] A housetype that fits people's needs well is soon adopted by builders who wish to use other stylistic trim, and may even outlast the style that brought it into being. This may be seen in southern "I" houses with Greek and Gothic trim, or in midwestern temple-and-wing farmhouses with decoration in Victorian styles built long after the Greek Revival had fallen from favor.[5]

The Four Square was a type that became popular as the result of the Rectilinear style. It was in massing an almost cube-shaped dwelling two stories tall topped by a pyramid-like "hip" roof (Figure 1). A dormered window usually poked through the center of the front face of the roof, and there was often a wide one-story front porch. Bay windows could be added, but in pure examples of the type they did not break through the wide eaves to complicate the straightforward form of the roof. The house often had little exterior decoration, a characteristic of the Rectilinear style, but some late examples of the type carry Colonial, Spanish, Craftsman, Prairie and other decorative motifs.

Inside, the basic plan had eight roughly equal-sized rooms, four on each floor (Figure 2). Sometimes, however, two rooms were combined as one or the house was extended in the rear. Openness of plan characterized the first floor. One entered a large reception hall, then moved through an archway into the adjoining parlor. Behind the parlor one could see the dining room through another archway, perhaps with big sliding doors. The kitchen, next to the dining room and behind the reception hall, was the only closed space.

The stairway was at the side of the house between the front reception hall and the kitchen. Located behind the hall and conceptually separated from it, the

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[4] Henry Glassie, Pattern in Material Folk Culture of the Eastern United States (Philadelphia: University of Pennsylvania Press, 1968), pp. 48-55, 129-133.

[5] Ibid. Also Michael Southern, "The I-house as a Carrier of Style in Three Counties of the Northern Piedmont," in Carolina Dwelling, ed. Doug Swaim (Raleigh: North Carolina State University, School of Design, 1978), p. 70.

stairs rose grandly in two or three runs broken by landings. The staircase led to a smaller hall on the second floor from which three or four bedrooms and a full bathroom opened. Because the stair and reception hall were at the one side of the building, the Four Square's front door was always off-center in the front facade. At its most basic, two characteristics define the Four Square type: its two story box-like massing with the hip roof, and its side-stair, corner-hall plan.

Plans published in the period more often than not simply labeled the house "a design of the popular square type." This vague identification could extend to any house with a roughly rectangular plan, however, regardless of massing or room arrangement. Recent architectural field surveys which note the type use a wide variety of titles from Box to Prairie Bungalow.

It is proposed that the term "Four Square" be adopted for all examples of the side-stair hip-roofed cube defined above. The term connotes dignity and solidity, attributes of the housetype that were usually stressed in writing accompanying the designs.[6] The term includes the word "square", which is historically correct and also identifies the usual facade shape and often the plan outline. The addition of the word "four", referring to the four-sided hip roof, four-over-four typical room arrangement, and the four-walled simple massing, serves to sharpen the name.

While this paper will focus only on the Four Square type just defined, it should be noted that the type had several Rectilinear cousins that shared some but not all of its characteristics. A center-hall version existed with a central stair and symmetrical front facade (Figures 4, 14, 17). It had the simple massing, dormered hip roof and often the wide front porch of the Four Square, but people in the period associated its symmetrical plan with the Colonial style, even if it lacked all trace

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[6] According to Webster's Third New International Dictionary of the English Language Unabridged, definitions for the word "foursquare" include: "la: having four equal sides and four right angles … 2: characterized by boldness and conviction: sound and unswerving: forthright [they are ** and simple and staunch-H.S. Commager] … adv. 1: in a square position: solidly [their monuments stand ** -J.E.M. White] 2: in an unequivocal manner …"

of Colonial ornament.[7] This center-hall type apparently came from New England, a fusion of Rectilinear impulse with Colonial forms.

A one-story version of the Four Square also appeared, occasionally intermingled with it in turn-of-the-century housing developments (Figure 5). The one-story version had the characteristic roof, dormer window, and often the porch, but its interior arrangement naturally differed from that of the two-story Four Square. A third Rectilinear house type was the gable-roofed version of the Four Square (Figure 3). Its two-story plan, straightforward cubic shape, simple decoration and broad porch could be identical to the Four Square. The peaked roof serves to confuse it visually with a long line of earlier vernacular structures, making its origin and spread much more difficult to trace.

Though cube-shaped hip-roofed types had been popular at several times 1n the nineteenth century, the Four Square type was distinct from the others. Early in the century a version of the Greek Revival had simple cubic massing, but generally a gable roof. In the Italianate period, 1840-1880, one of the most popular housetypes was a two-story hip-roofed cube with a heavy cornice that mimicked Florentine palazzos. The Italianate roof, however, was very low-pitched, and the interior featured a narrow entry hall, straight stair, and closed plan first story much as had the Greek Revival.

Contemporaries also perceived the Four Square type as separate from the Colonial and Renaissance revival styles. The main housetypes of the Colonial revival were center-hall, usually with center-stair plans. Magazines or plan books referred to the corner-hall side-stair Four Square as "Colonial" only when embellished with overtly Colonial ornament. As to Four Square resemblance to Chateauesque or other Renaissance-inspired mansions, which sometimes had high hip roofs and fairly simple massing in the period, writers gave no indication that they saw any

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[7] For instance, see the design by T.G. Windes, Jr., for Alfred F. Pashley, National Builder 54 (April 1911): 29; or George W. Maher's design for John Farson reprinted 1n H. Allen Brooks, The Prairie School: Frank Lloyd Wright and His Midwest Contemporaries (Toronto: University of Toronto Press, 1972), pp. 35-36.

relationship beyond the fact that all were blessedly free of Queen Anne over-complexity.

Figure 3. RECTILINEAR HOUSE TYPES: the gable-roofed type.
10 Townley Avenue (1910 c) in Cortland, N.Y.

Figure 4. RECTILINAR HOUSE TYPES: the center-entry type. J.S. Flowers house (1896) by William Cowe of Denver. American Architect and Building News 53 (1896) plate 1031.

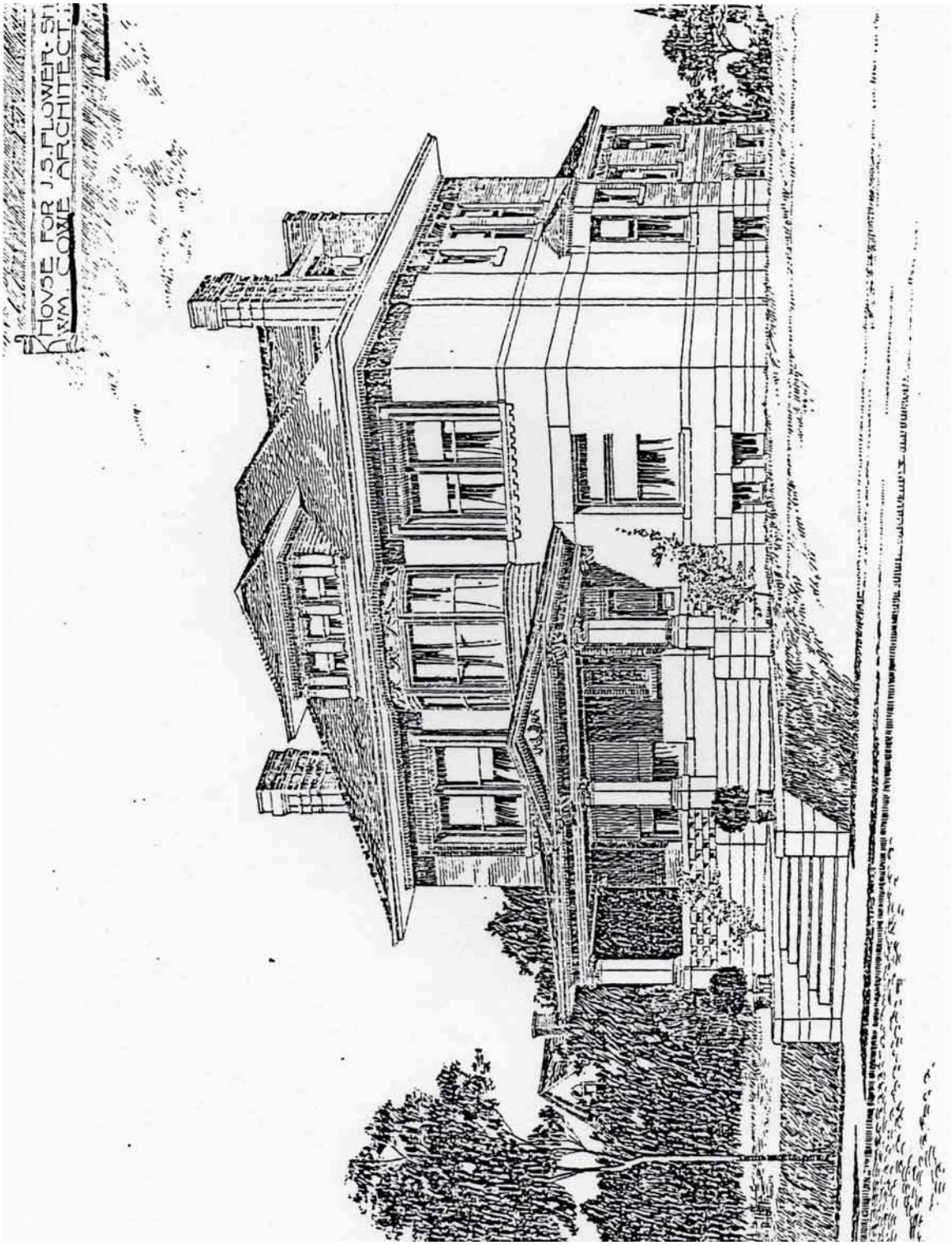
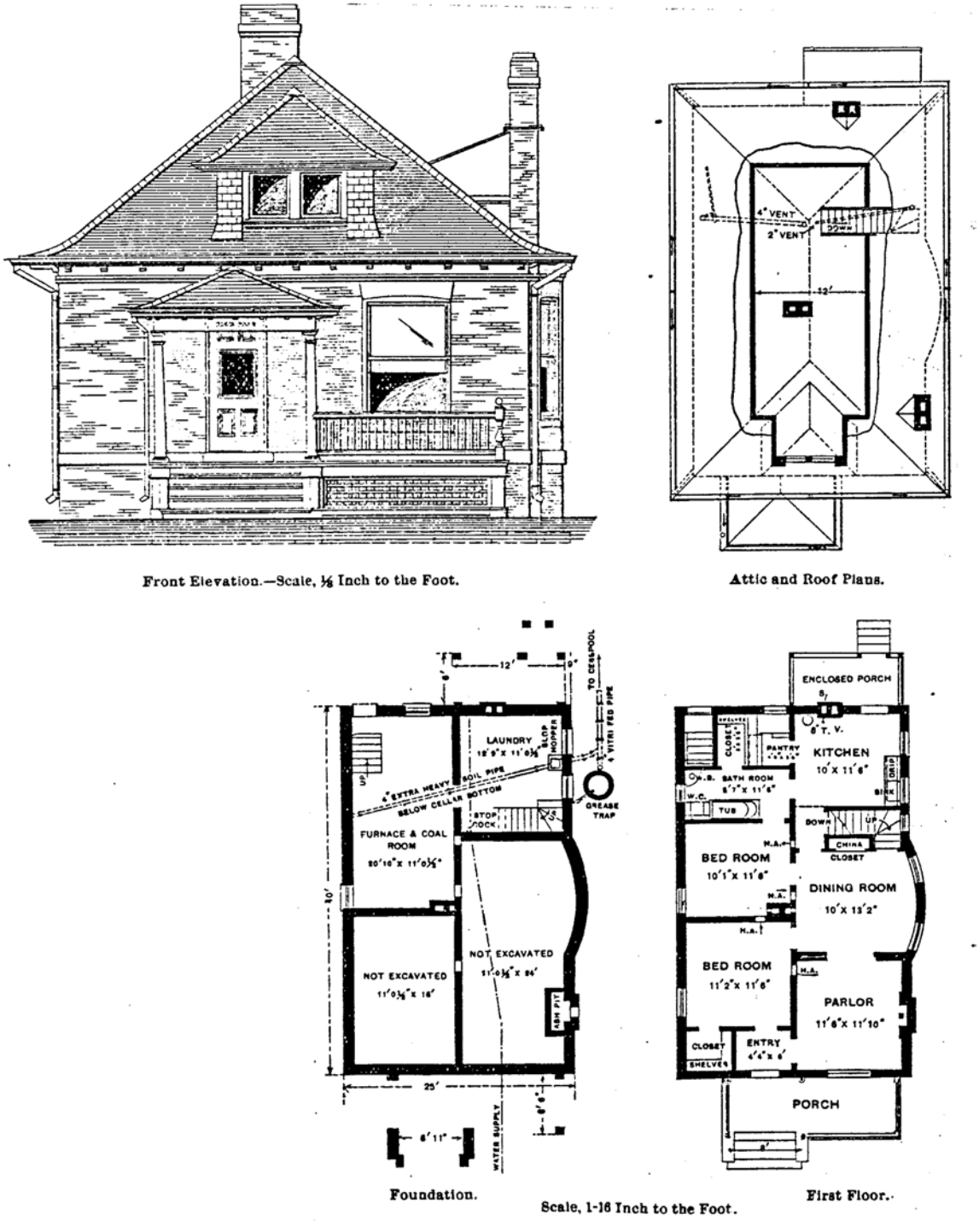


Figure 5. Rectilinear House Types: a one story type. (1894) by Frank and Herbert Grodavent of Denver Carpentry and Building 16 (1894) 272.



A few present day writers have tried to include the Four Square within the Bungalow style.[8] Both were popular in the early years of the twentieth century, and both featured a relatively a-historic approach to design that in light of present research may be seen as resulting from the revolt against the Queen Anne. A Bungalow style house, however, was by definition one story in appearance, though the low spreading roof often hid a second story. In fact, the Bengali word "bangla" from which the style name derived signified "a low house with galleries or porches all around."[9] In addition, while the periods of popularity of the Bungalow and Four Square overlapped, the Bungalow's beginning and peak seems to have been slightly later than the Four Square's. The bluntly two-story form of the Four Square type cannot be included within the Bungalow style, but must instead be seen as part of a separate Rectilinear stylistic movement.

The Rectilinear and Architectural Historians.

The Rectilinear is not to be found among the styles identified in standard works on American architecture. Marcus Whiffen did not list it in his American Architecture Since 1790: A Guide to the Styles, nor is it in the recently revised edition of John J.G. Blumenson's Identifying American Architecture: A Pictorial Guide to Styles and Terms 1600-1945.[10] Henry and Ottalie Williams' A Guide to Old American Houses and Carole Rifkind's Field Guide to American Architecture also do

[8] Especially Arthur J. Krim, Survey of Architectural History in Cambridge, Report Five: Northwest Cambridge (Cambridge, Mass.: Cambridge Historical Commission, 1977), p. 107.

[9] Clay Lancaster, "The American Bungalow," The Art Bulletin 40, no. 3 (1958): 241.

[10] Marcus Whiffen, American Architecture Since 1790: A Guide to the Styles (Cambridge: M.I.T. Press, 1969); John J.G. Blumenson, Identifying American Architecture: A Pictorial Guide to Styles and Terms 1600-1945. 2nd ed. (Nashville: American Association of State and Local Historians, 1981).

not include it.[11] Mary Mix Foley's new The American House is the only major book to note the movement, calling it "American Basic." Using a very late Four Square as illustration, she writes, "This house is as familiar as the city streets of residential America."[12] The first scholars to identify the Rectilinear movement and the Four Square type in particular were not the high-style architectural historians but urban geographers and historic preservationists closely studying America's urban fabric. Their studies have all been local in nature and have seldom been able to do more than note the style's existence and speculate on its origins based on a limited number of local examples. Because the Rectilinear style has not been recognized by architectural historians at the national level, the local studies use different terms, but it is clear the same phenomenon appears in all parts of the United States.

Two of the geographers who pioneered the use of architectural evidence as a tool for studying cultural geography briefly noted the existence of the Four Square. Glenn Trewartha's 1948 study "Some Regional Characteristics of American Farmsteads" found that boxy, hip-roofed dwellings served 13.3% of the farmsteads he surveyed.[13] His category did not differentiate among the earlier Italianate and later Colonial Revival and Four Square types or even between those two-story houses and the one story Bungalow. Fred Kniffen, at the end of his landmark 1965 article "Folk Housing: Key to Diffusion," included a photo of a "square, two-story pyramidal-roof house that became prominent in the central Corn Belt in the late nineteenth century" and suggested that it may have originated in that area.[14]

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[11] Henry L. and Ottalie K. Williams, A Guide to Old American Houses 1700-1900 (South Brunswick, N.Y.: A.S. Barnes and Co., 1962); Carole Rifkind, A Field Guide to American Architecture (New York: New American Library, 1980).

[12] Mary Mix Foley, The American House (New York: Harper and Row, 1980), p. 229.

[13] Glenn Trewartha, "Some Regional Characteristics of American Farmsteads," Annals of the Association of American Geographers 38 (1948): 180-181.

[14] Fred Kniffen, "Folk Housing: Key to Diffusion," Annals of the Association of American Geographers 55 (1965): 576-577.

One of the earliest attempts to define the Rectilinear style and its relation to other styles was made by another geographer, John E. Rickert, in his 1967 typology "House Facades of the Northeastern United States; a Tool of Geographic Analysis."[15] Rickert designated the years 1900-1920 as the era of "Eclectic Cubes." This included the Bungalow as well as a range of types corresponding with Hasbrouck and Sprague's Rectilinear. The trend in decoration was away from "Victorian gingerbread… to Cubic." In his illustrations, Rickert chose a Rectilinear Four Square house as most representative of the "cubic" tendency of the period.

A pair of architectural history student papers have explored aspects of the development of the Rectilinear style and the Four Square type in widely separate locales. In 1970 University of Chicago Master's student Frances Steiner traced the career of architect E.E. Roberts, a neighbor of Frank Lloyd Wright in Oak Park, Illinois.[16] Beginning with relatively simple Four Square designs in the mid-1890s, Roberts developed a Rectilinear style that apparently incorporated some of Wright's Prairie school principles. In 1974 University of Colorado undergraduate Sharon Elfenbein researched the "Denver Square" house, as the Four Square and its center-hall cousin are known in that city. She found thousands of examples, making the "Denver Square … perhaps the most typical Denver home built around the turn of the century… The majority of these homes," she found, "seemed to have been built between 1896 and 1910."[17]

Neighborhood surveys published by historic preservation organizations across the country have included Four Square houses under a variety of names. Arthur J. Krim's 1977 study of Northwest Cambridge, Massachusetts, discussed the

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[15] John E. Rickert, "House Facades of the Northeastern U. S.; a To0 1 of Geographic Analysis," Annals of the Association of American Geographers 57 (1967): 229-233.

[16] Frances Steiner, "E.E. Roberts: Popularizing the Prairie School," The Prairie School Review 10, no. 2 (1973): 5-24.

[17] Sharon Elfenbein, "The Denver Square House," term paper submitted to Mr. Carlson, Colorado University, Denver Campus, May 1974, pp. 1-2.

type under the title "Prairie Bungalow". Krim was one of the first scholars to suggest that the movement occurred at the same time as the Prairie school, not as a result of it. "Contemporaneous with the evolution of Frank Lloyd Wright's Prairie houses in Chicago during the l890s are several substantial houses in North Cambridge whose form embodies a similar exaggeration of line and absence of historical detailing." Krim saw "a clear parallel to contemporary Midwestern work in … the tightly massed hip roof … given a strong horizontal effect by a broad extension of the eaves on thin purlins; and the porch … supported by two tapered square posts, nearly free of classical ornament."[18]

In another survey publication, The Avenues of Salt Lake City, Utah state architectural historian Karl Haglund illustrated among local styles a "Box" type two stories tall "with a full-width porch, hip roof and center dormer window. The interior usually follows the side hall plan."[19] Everyday Architecture in Evanston, Illinois, also showed Four Square homes, noting that the unnamed type was "very popular during the first two decades of the Twentieth century."[20]

It was in yet another survey publication that Hasbrouck and Sprague coined the term "Rectilinear style." In 1976 they published A Survey of Historic Architecture of the Village of Oak Park, Illinois. They theorized that the "style seems partly to have evolved out of a gradual simplification of the Queen Anne. "[21]Surfaces became flattened and the rectangular and geometric were emphasized. By the early 1900s at least one Oak Park practitioner had "eliminated all obvious historical references and so emphasized rectilinear masses that the house almost becomes

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[18] Krimp, 107.

[19] Karl T. Haglund and Philip F. Notarianni, The Avenues of Salt Lake City (Salt Lake City: Utah State Historical Society, 1980), p.62.

[20] Pamela Rogash, ed., Everyday Architecture: Vernacular Houses in Evanston (Evanston, Ill.: City of Evanston Planning Dept., 1979), p. 13.

[21] Hasbrouck and Sprague, p. 8.

early modern style."[22] The authors concluded on the basis of local examples that the Rectilinear was "transitional between nineteenth century historical styles and the very original, non-historical styles of Wright and others. In fact Wright's work in Oak Park from his own home of 1889 through the Furbeck Houses of 1897 may be thought of as Rectilinear Queen Anne."[23]

Evidence in the present paper indicates that the Rectilinear, and the Four Square in particular, indeed inspired Wright's early designs. The movement was not merely transitional, however. It continued to grow and far surpassed the Prairie style as a popular mode of a-historic residential construction in the years prior to World War I.

The Research Method.

Research on the Four Square house type proceeded in two ways. The first and most time-consuming was searching page by page through plan books and magazines from the period 1885-1930 for examples of the type and for general articles on home design. The period chosen bracketed the reported occurrence of the Four Square in the secondary sources discussed above.

Planbook investigation was most thorough for the first ten years in an effort to exhaustively track the origin of the type. Almost every book on house planning published in America 1885-1894, a total of sixty-six gleaned from Henry-Russell Hitchcock's definitive bibliography American Architectural Books, was examined for Four Square examples.[24] For the years 1895-1930, seventy-seven additional books were consulted, a fraction of the total output, but enough to follow the spread of the

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[22] Ibid., p. 9.

[23] Ibid.

[24] Henry-Russell Hitchcock, American Architectural Books: New Expanded Edition... (New York: DaCapo Press, 1976).

type.[25] For magazine research ten representative publications were chosen from the five or six dozen that proliferated in the period.[26] They ranged from the primly high-style American Architect and Building News to carpenters' guides like Builder and Woodworker and The National Builder, to the mass-market homemakers' periodicals House Beautiful and Ladies Home Journal. Major regions of the country were represented, from the California Architect and Building News, to Denver's Western Architect and Building News, to New York City's Architecture and Building. The Inland Architect published in Chicago was, along with the Boston-based American Architect and Building News, one of the era's most influential magazines

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[25] See Appendix II for a list of books examined, as well as a more comprehensive bibliography of house books published 1885-1930.

[26] The glut of journals which resulted from the lowering of postal rates in 1879 was frequently mentioned in the magazines themselves. See also Gwendolyn Wright, Moralism and the Model Home: Domestic Architecture and Cultural Conflict In Chicago, 1873-1913 (Chicago: University of Chicago Press, 1980), p. 22; N.W. Ayer and Son, American Newspaper Annual (Philadelphia: N.W. Ayer and Son, various years); George P. Rowell, American Newspaper Directory (New York: George P. Rowell and Co., various years).

It is difficult to find complete runs of many of the magazines from this period. The following is a list of years examined for each magazine: Carpentry and Building (became Building Age in 1910), 1879-1930; American Architect and Building News, 1885-1930; House Beautiful, 1896-1930; California Architect and Building News, 1884-1896; Builder and Woodworker, 1889-1895; Building (became Architecture and Building in 1890, Architecture in 1899), 1882-1899, 1904-1905; National Builder, 1885-1886, 1896-1911; Inland Architect, 1887-1908; Ladies Home Journal, 1890-1907; Western Architect and Builders News, 1889-1891. One issue of Architects' and Builders' Magazine of February, 1901, was also consulted.

An additional problem is completeness of the volumes available. When photography was a novelty, up until the 1910s or 1920s, magazines often issued their illustrations on unbound sheets of paper --"plates"-- with each issue, and at least one, American Architect and Building News, provided different numbers of plates to different price classes of subscribers. It is extremely difficult for the researcher to tell whether all plates have been bound into the volumes he consults, and if they are in the correct order. Also, librarians often removed advertising pages when they sent periodicals to be bound, sometimes leaving "representative" ad pages, sometimes leaving none. The present paper is based on the magazines as they existed at Cornell University, Syracuse University, Chicago Center for Research Libraries, and University of Chicago.

among architects. Carpentry and Building was the most popular with builders throughout the 1890s with higher circulation figures than any other journal.[27] Periodicals frequently reprinted planbook material and vice versa, so the book research also included a sampling of other magazines from the period.[28]

The second area of research consisted of a computer-assisted case study of the Four Square's adoption in a particular community, a turn-of-the-century streetcar suburb of Salt Lake City, Utah. Though one must always be careful about generalizing from a specific case, this study gives a measure of the type's actual popularity. It also indicates what kind of people designed, built, and inhabited Four Square houses, and allows a comparison of the Rectilinear style with competing styles in terms of use patterns, speculative construction, and other variables.

Secondary reading on American social history, domestic culture, and architectural development supplemented the work with primary sources. Among the more helpful books was Russell Lynes' The Domesticated Americans, one of the first to link nineteenth century popular interiors with the changing society that lived in them.[29] Henry Glassie's recent Folk Housing in Middle Virginia demonstrated the exciting potential of ordinary houses under rigorous study to yield surprising amounts of information on social change. Vincent Scully, Jr. 's landmark of architectural history research, The Shingle Style and the Stick Style, not only set forth the basic framework of nineteenth century high-style architectural evolution based on his work in Newport, Rhode Island, but also provided a widely emulated

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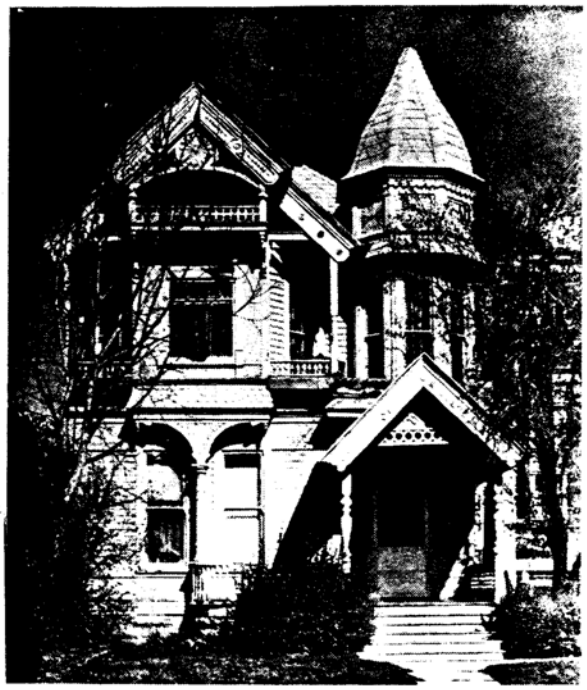
[27] N.W. Ayer and Son, 1891, p. 1203; George P. Rowell, 1899, pp. 1371-1372.

[28] For instance, see Samuel B. Reed, Cottage Houses for Village and Country Homes (New York: Orange Judd Co., 1883), which reprinted plans he originally did for the American Agriculturalist magazine, or Frederick T. Hodgson, Practical Bungalows and Cottages for Town and Country ... 300 Low and Medium Priced Houses and Bungalows (Chicago: Frederick J. Drake, 1916), whose designs later appeared in the National Builder, or the plan books of Gustav Stickley, which reprinted material originally published in The Craftsman magazine.

[29] Russell Lynes, The Domesticated Americans (New York: Harper and Row, 1963).

Figure 6 and 7. Competing Styles

Queen Ann Victorian.
Dr. Jerimiah Beattie house (1892)
in Salt Lake City, Utah.



201 Eighth Avenue
Style: Bungalow
Original Owner: Mary Grant Judd
Built: 1915

Bungalow.
Mary Grant Judd house (1915)
in Salt Lake City, Utah.

Both photographs from Haglund and Notariani, The Avenues of Salt Lake City (Salt Lake City: Utah State Historical Society, 1980).

research model.[30] Especially useful was Gwendolyn Wright's new Moralism and the Model Home, which used thorough magazine and planbook research to examine the changing social patterns expressed in America's residential architecture from the 1870s to the 1910s in Chicago.

Rise and Fall of the Four Square: An Outline.

Exactly where the Four Square idea originated is not known. Throughout the nineteenth century builders recognized that, of all geometric forms with right-angle walls, the cube enclosed the most space with the least material. Before 1890 a handful of cubical designs resembling in some respects the Four Square appeared in magazines and pattern books, "no frills" houses for people too poor to afford something stylish (Figure 8). Most had very low hip roofs dictated by the old Italianate style, however, and none had the open plan of the Four Square. The true Four Square type did not come into being until the 1890s with the rebellion against the Queen Anne.

Around 1891 architectural magazines and plan services published the first upper-middle class Four Square homes. (Figure 10) During the next few years the type spread quickly within the American architectural community. The spread followed no geographic pattern and was so rapid that it may well have been the result of personal contact among traveling architects. Innovative young designers, such as nationally known, M.I.T. trained Frank E. Kidder in Denver, the young Frank Lloyd Wright in Chicago, and the new firm of Greene and Greene in Pasadena, experimented with the type between 1890 and 1895 (Figure 11). The simplicity of the Four Square has often caused it to be dismissed as a mere builder's house type.

[30] Vincent J. Scully, Jr., The Shingle Style and the Stick Style: Architectural Theory and Design from Downing to the Origins of Wright, rev. ed. (New Haven, Conn.: Yale University Press, 1971).

Research indicates, however, that the house was first developed by architects, and that its design was a statement against Queen Anne complexity.

The use of the Four Square by architects for their upperclass clients paved the way for wider popularity. In the second half of the nineties the Four Square passed into the large-circulation builders' magazines. These first widely published designs permanently defined the type's proportions and layout for the next quarter of a century (Figures 1 & 2). After 1900 the type became a staple of magazines and plan books. Next, the new ready-cut housing industry picked it up, including such major catalogue firms as Montgomery Ward (Figures 18-21). Advertisements stressed the Four Square's solid, dignified appearance, its sensible, spacious interior, and the economy of construction inherent in its nearly cubic shape. This wide range of published plan sources served to spread the design to all parts of the country, both urban and rural. Most Four Square examples seen today date from this period of middle-class popularity which lasted from the very late 1890s into the early 1920s.

During these years its interior changed to reflect Americans' changing social attitudes. When the type first appeared in the 1890s, its room arrangement was borrowed directly from the Queen Anne, merely squared off to fit the new massing. Private areas, the bedrooms and baths, were upstairs, clearly separated from the semi-public areas on the first floor. The downstairs plan was fairly open compared with earlier nineteenth century practice, but still had distinct hall, parlor and dining areas.

By the twenties the term "parlor" disappeared and a single large "living room" across the front of the house replaced the hall and parlor, reflecting the general transition from nineteenth century formality to the more relaxed lifestyle of the twentieth century. Upstairs, the average number of bedrooms decreased to three as families became smaller. This interior evolution did not bring changes in the Four Square's exterior form, and conversely the introduction of the type in the 1890s did not reflect any new developments in interior use. Despite the business-like appearance of the Four Square, its form followed Rectilinear fashion more than it followed changing function.

The house attained its widespread acceptance with the aid of surprisingly little rhetoric. Professional and popular magazines in the period devoted hundreds of pages of praise to the Colonial, and much of the attention paid the Prairie school resulted from the inspirational writings of Wright, Thomas Tallmadge, Charles White and others. But no books were written on the aesthetics of the Four Square, nor was much magazine space given to debate on its merits. The rapid acceptance of the Four Square may be seen as a measure of the strength of the reaction against the Queen Anne, not only by the architectural profession but also by the American people.

After World War I the Four Square declined in popularity. The American middle class once again unanimously craved homes in identifiable styles. The look of solidity conveyed by the Four Square no longer fitted middle class ideals. The "quaint, cute" image was now the fashion: the romantic snug thatched cottage. In this final decade Four Square designs were often decorated to recall English or Spanish stucco and timber cottages, and magazines carried articles on remodeling the "styleless boxes" of the preceding decades (Figure 25). By 1930 the era of the Rectilinear style and the Four Square type was over, the end of a period when a new, a-historic residential architecture was widely accepted in America.

CHAPTER II.

THE EARLY DEVELOPMENT OF THE FOUR SQUARE, TO 1895

Forerunners of the Four Square.

Americans had long recognized that the square house was the most economical form to build. The earliest plans for hip-roofed, cube-shaped, corner hall houses discovered in the course of this research appeared in Andrew Jackson Downing's 1850 Architecture of Country Houses.[1] Downing made no claim that he had originated the idea, only that he had clothed it in aesthetic trim: "This is only an attempt to give a tolerable exterior to a species of cottage of very moderate size, common in the suburbs of all our villages."[2]

Downing's two cubic designs were labeled "A Square Suburban Cottage" and a "Cubical Cottage in the Tuscan Style," and at $800 and $1300 were among the least expensive in the book. Though they had Italianate exteriors they did not have the narrow side or center hall with straight stairs typical of the Italianate style. Instead the rooms were arranged four over four with one of the downstairs front corner rooms becoming a small, square reception hall.

While they did have corner halls and cubic massing, the Downing houses differed from the later Four Square in several ways. The stairs in Downing's "Square Cottage" were located within the entry hall right next to the front door, rather than in a separate alcove at the rear of the hall. In both Downing designs the stairs were tight and used winders to make turns, rather than being spacious and using landings. The houses had no bathrooms, and the separation of private and public spaces was not as sharp as it would be in later years; there was a bedroom downstairs behind the parlor where the dining room would be placed in the Four Square.

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[1] Andrew Jackson Downing, The Architecture of Country Houses (New York: D. Appleton & Co., 1850; reprint ed., New York: DaCapo Press, 1968), pp. 128-134.

[2] Ibid.

The most important difference was one that marked Downing's cottages clearly as a product of the mid rather than late nineteenth century. Each room including the entry hall formed a closed box, shut off by walls and doors from the next. Downing did hint that the parlor and the rear "living" room of the "Tuscan Cottage" could be connected by sliding doors as an option, but he drew the plan with the boxes closed. Not until the last decades of the century would downstairs divisions finally break down in popular house plans, the public spaces flowing together from hall to parlor to dining room interrupted only slightly by archways, colonnades or large pocket doors.

At least four designers after Downing published variations on the cubic, hip-roofed house. Like Downing's homes, they were intended for those too poor to afford something more complex. One such appeared in 1884 in Leffel's House Plans, a book of "houses costing from $SOO to $3000 and adapted to families having good taste and moderate means."[3] Designer I.P.C. Steddom, a builder from the village of Webster, Indiana, defended his humble design: "It may be objected to on account of its plainness or lack of style, but the idea has been to get a house large enough for a good-sized family with the least money. Such a house I built here last season for a small farmer."[4] Publisher Leffel managed the faint praise that "the result is not unsatisfactory, even as regards the external appearance." He outlined the design's basic attraction: "The form of this house, which is nearly an exact square, having no wings, 'L's, or re-entrant angles, is that which undoubtedly admits of the largest available room at the lowest cost."[5]

Steddom's design had a much simpler exterior than Downing's, with no stylistic pretenses. It was a clapboard-sided perfect cube with a wide front porch, plain eaves, and little trim. Like Downing's cottages it had a small corner hall

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[3] James Leffel, Leffel's House Plans … (New York: J. Leffel and Co., 1884), title page, pp. 22-25.

[4] Ibid., p. 22.

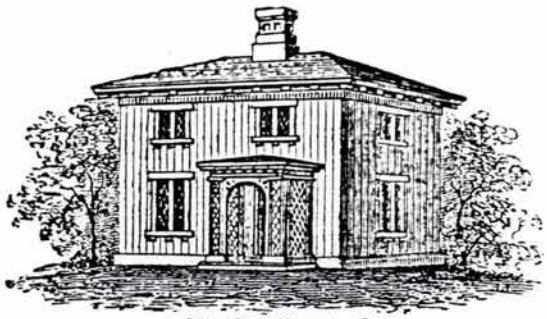
[5] Ibid.

Figure 8. Predecessors:
"Square Suburban Cottage" (1850) by Andrew Jackson Downing.
Downing, The Architecture of Country Houses (New York: D. Appleton & Co., 1850; reprint ed., New York: DaCapo Press, 1968), p. 129.

The roof projects eighteen inches, upon rafter brackets of plainest description, being only common joists or the small bers of the roof.

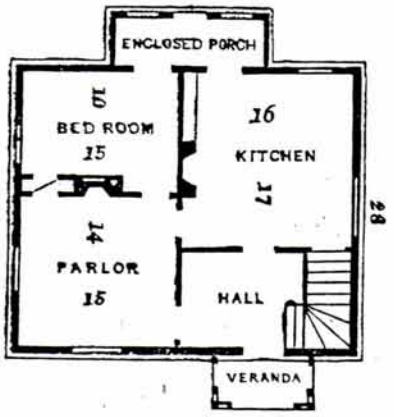
An open porch of trellis-work for vines assists in giving an of some taste to the exterior of this cottage.

ACCOMMODATION. In a cottage of this kind not an inch uld be lost, and, therefore, a form nearly square has been pted.



[Fig. 52. Elevation.]

An inspection of Fig. 53, which is the first floor of this ttage, will show the arrangement of the apartments of this



[Fig. 53. First Floor.]

ory. The rooms are of good size for a dwelling of this class,

containing tight, winding stairs. Walls and doors cut the first floor into separate boxy rooms including once again a downstairs bedroom. Upstairs, the builder/architect showed his architectural naiveté with a three bedroom layout so poorly thought out that walls fell where front windows would have been: Steddom blithely drew clapboard-filled false windows on the front facade.

Two years later in 1886 architect David W. King of New York City included a "simple and unpretentious" hip-roofed cottage in the section on inexpensive designs in his book Homes for Home Builders, or Practical for Country, Farm and Village.[6] Though it had a fairly high hip roof and plain trim, King's design more resembled earlier Italianate types than the coming Four Square. A long and narrow hall with a straight stair ran down one side of the house in the old Italianate manner. This plan made the front facade narrower than it was tall, giving the house a decided verticality unlike the balance of the Four Square. The design's simple form and lack of elaborate trim meant it could be erected for only $1500.

Around 1890 two homes appeared that indicated public attitudes toward the cubic house form were undergoing a change. One was a sketch in Builder and Woodworker magazine for a "Proposed Janitor's House, Biological Department, University of Pennsylvania" by the Philadelphia architectural firm of Brown and Day.[7] It had an up-to-date exterior treatment with brick on the first story and wood shingle siding on the second. Inside, double doors from the reception hall to the parlor and then to the dining room gave a hint of the fluid spaces to be found in more expensive homes of the decade. There was no downstairs bedroom, and for the first time a bathroom appeared upstairs. As in previous examples, however, the cramped corner reception hall included winding stairs and the home's form was dictated by economy, rather than by its tenant's aesthetic desires.

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[6] David W. King, Homes for Home Builders … (New York: O. Judd Co., 1886), pp. 48-53.

[7] Builder and Woodworker 26 (1890): plate 62. University of Pennsylvania Dean G. Holmes Perkins, who is now cataloging the University's architectural archives, is unable to find any information on the firm or even to say whether their design was ever built. Telephone interviews with Perkins by the author, March 1981.

The second design appeared in 1891 in a book by Grand Rapids, Michigan, architect Frank P. Allen.[8] It, too, had a somewhat stylish exterior with a recessed corner porch much like that in Brown and Day's design. Inside it recalled earlier houses with a first-floor bedroom and no bathroom. It also carried the stigma of ''cheap'' design. Allen estimated the house would cost $1100 to $1350 to build, exclusive of lot.

Though these two homes closely foreshadowed the Four Square, they were probably not the designs that inspired American architects to begin using the type for their well-to-do clients. Even before they appeared, two other architects had already submitted designs for full-blown upperclass Four Square homes to national publications. We shall see how these latter designs apparently triggered adoption of the type in America's architectural community. First, however, it is necessary to turn to high style architecture and look at the developments leading up to the period in order to understand the sudden surge of interest in simple cubic house forms around 1890.

* * *

The Rise of Queen Anne Style and the Revolt Against It.

During the decades in which the series of plain, low cost little cottages examined above appeared, the middle class and wealthy had been building their homes in a succession of increasingly elaborate styles. In the early nineteenth century, residential architects favored the rigid, temple-like forms of the Greek Revival style. Andrew Jackson Downing and others at mid-century found the formality of the Greek Revival repressive and proposed a new "picturesque" approach to design. The nation turned to Gothic and Italian models which followed

[8] Frank P. Allen, Artistic Dwellings … from $700.00 Upwards … (Grand Rapids, Mich.: F.P. Allen, 1891), pp. 74-75. For an obituary of Allen see American Architect 144 (July 1934): 143. For an example of Allen's plan service ads, see Ladies Home Journal 20 (May 1903): 42.

asymmetrical designs, giving residents flexibility to plan houses to fit living requirements rather than trying to cram an American lifestyle into a predetermined Greek shell. After more than a generation of stark wooden temples, Americans found great beauty in picturesque asymmetry.

By the l860s the Gothic and Italianate gave way to a series of Victorian styles that continued the "picturesque" trend, becoming ever freer in massing and in the selection of historic decoration. First came the mansard roofed Second Empire style, inspired by the Louvre in Paris. At almost the same time, a stick style developed with a welter of "cross gables, towers and pointed dormers, and large verandas and porches" covered with stick-like wood trim that echoed the framing beneath.[9] There was also the Victorian Gothic inspired by architecture critic John Ruskin, who preached that a building should incorporate a variety of construction materials so that it would be decorated by their natural colors and textures. The Eastlake style took a different approach to decoration. It used wood almost exclusively, turning it into ornate posts, panels, balustrades and brackets with the aid of the most recent developments in mechanical lathes and wood carving machinery.

The height of the trend toward complex massing and decoration came in the Queen Anne style, which was borrowed from England in the 1870s. As practiced in the United States, the Queen Anne was characterized by irregularity of plan and massing with an intense, eclectic variety of color and texture.[10] Complex roof shapes were prized, and wings, bay windows, porches and towers popped out in every direction. This allowed rooms to be arranged with great flexibility according to their practical requirements of size and relation to one another, or merely for the sake of a picturesque exterior.

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[9] John J.G. Blumenson, Identifying American Architecture: A Pictorial Guide to Styles and Terms 1600-1945, 2nd ed. (Nashville: American Association of State and Local Historians, 1981), p.55.

[10] Marcus Whiffen, American Architecture Since 1790: A Guide to the Styles (Cambridge: M.I.T. Press, 1969), p.115.

The style freely combined ornament from every time period. Walls might be of stone or brick in a variety of patterns on the first story, with wooden paneling, clapboard, and oddly shaped shingles on the second, then wood and stucco "half timbering" in the gables. Trim on a single house could include Roman porch columns, an English chimney, Moorish brackets under the eaves, and scalloped Oriental bargeboards lining the gables.

The extreme freedom that the Queen Anne allowed has been hailed by architectural historians as the starting point of modern architecture. Designers were no longer bound by a single sharply defined house shape. They could now stretch out in any direction, fitting form to function. The porches and balconies outside, and the English medieval-inspired "living hall" and grand stair inside gave architects the push to experiment with new ideas of space.[11]

Thomas U. Walter, president of the American Institute of Architects, declared in 1879, "The manifest tendency of architects to break away from the trammels of conventional rules, and to make styles subservient to the spirit of the age, indicates a progress in the development of independent thought hitherto unknown. "[12] As it became Americanized, commentators began to call the style "free classic" or simply "American Vernacular," and to a few it seemed to be the "national" style American architects had long sought. As one writer argued, "Here we have an American type, original and universal."[13] By 1886 a magazine editorial could rejoice, "The square packing box houses of twenty years ago have gradually given place to snug, multi-gabled cottages with spacious bays, canny nooks, and quaint chimneys."[14]

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[11] Vincent J. Scully, Jr., The Shingle Style and the stick Style: Architectural Theory and Design from Downing to the Origins of Wright, rev. ed. (New Haven, Conn.: Yale University Press, 1971), p. 4 and passim.

[12] Quoted in Sadayoshi Omoto, "The Queen Anne Style and Architectural Criticism," Journal of the Society of Architectural Historians 23 (1964): 33.

[13] American Architect and Building News 41 (1893): 54.

[14] Builder and Woodworker 22 (1886): 177.

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Almost as quickly as it appeared, however, this receptive attitude toward the Queen Anne began to sour. Critics from all sides attacked the style for its gaudiness, falseness, and unnecessary complexity even as it continued to rise in popularity through the l880s and into the l890s. As early as 1885 The California Architect and Building News flatly stated, "The general tone of Eastern journals is against continuance of Queen Anne as a style of domestic architecture," and it hastened to add that it heartily concurred.[15]

Part of the criticism stemmed from the fact that the New England elite of the architectural profession had begun moving away from pure Queen Anne to a more decoratively restrained version as early as 1880. This so-called Shingle style practiced by H.H. Richardson and others had siding of wood shingles recalling New England's Colonial vernacular, but it usually kept the irregular massing of the Queen Anne. When leading architects adopted this new fashion, the Queen Anne became the province of local architects and builders, and especially the pattern books and mail order firms which supplied eye-catching designs at a fraction of the minimum price an architect could afford to charge. The anger of architects at competition from these mass-market designs using Queen Anne motifs, combined with the upper class fashionability of the Shingle style, may have contributed to the sharpness of the attacks on the Queen Anne. As one snobbish observer sniffed in 1890, "Queen Anne architecture, so-called, had its day a few years ago, and speedily fell into disuse when it became applied to the cheaper forms of dwellings."[16]

Most of the outpouring of criticism, however, aimed squarely at the inherent problems of the style itself. For one thing, the very freedom of the Queen Anne made it a severe test of ·the designer's taste and skill. "Men of small acquirement may work safely in a formed style, but such men are eclectic at their peril," cautioned

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[15] California Architect and Building News 6 (1885): 182.

[16] Architecture and Building 12 (1890): 87.

architect W.P.P. Longfellow.[17] When carpenter-builders took up the style, using machine-made ornament from local lumber planing mills, this became more of a problem. Writers accused builders of creating eccentric houses at the expense of good design so they could cash in on the "Queen Anne" name.

Because of the importance of large amounts of ornament to the style, Queen Anne designers were attracted to the new mass-produced imitation decorative materials of the era. Henry Van Brunt, later president of the American Institute of Architects, in 1890 castigated the style as an "architecture of pretense" because of

> its ambition and its desire to make a vain show with small means. The facility with which wood and galvanized iron may be molded, painted and sanded to imitate stone or other nobler materials makes this baleful process possible. [Builders in this "vernacular" style play] with these dangerously facile materials such fantastic tricks before high Heaven as make the angels weep. After a few years the paint wears off, the wooden sham begins to decay, and the galvanized iron to betray its hollow mockeries. The "vernacular" style has within itself the seeds of its own dissolution.[18]

A widely reprinted article criticized the complex roof designs that characterized the style, calling them "Crazy and Sham Roofs."[19] Magazine writers joked about homes with a Queen Anne front and Mary-Ann behind.[20] One E.S. Babbit went so far on this theme as to warn, "A parent should be … careful that his house not teach deceit…. Many of our boys and girls, I fear, learn to like sham, to do and wear for effect, to be what they do not appear to be, from deceitful construction,

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[17] American Architect and Building News 21 (1887):129.

[18] California Architect and Building News 11 (1890):10. The article originally appeared in The Atlantic Monthly, December 1889.

[19] Carpentry and Building 7 (1885): 188. Based on material that originally appeared in American Architect and Building News.

[20] For instance, House Beautiful 13 (1903): 109.

false windows, sham doors, painted marble, and paper carving of their father's house."[21]

Less moralistically concerned writers criticized the Queen Anne's high construction and maintenance costs. Its "gambols of the roofs play leap-frog with one another while the vertical angles are playing hide-and-seek for the amusement of an overhanging audience of balconies, bay windows, gables and dormers… suggesting to those knowing in such matters the question of repair," said the American Architect and Building News. "This irregularity of outline… often results in a more enjoyable and comfortable interior… , but it more certainly leads to a very large increase in the cost, not in the item of material only, but in that of labor."[22]

Protests against the Queen Anne style were not limited to professional journals. One of the most amusing critiques appeared in the Chattanooga Times and was reprinted in at least two architectural magazines. Under the title "Crazy Quilt Architecture" humorist Bill Nye gave his impression of a mythical summer cottage in the new style:

> The roofs were made of little odds and ends of misfit rafters and distorted shingles that somebody had purchased at a sheriff's sale, and the room and stairs were giddy in the extreme…. [The] porch was painted a dull red, and it had wooden rosettes at the corners that looked like a bran new carbuncle on the nose of a social wreck. Farther up on the demoralized lumber pile I saw now and then places where the workman's mind had wandered, and he had nailed on his clapboards wrong side up, and then painted them with the Paris green that he had intended to use on something else…. [If] my friends don't know me any better than to build me a summer house, and throw in odd windows nobody else wanted, and then daub it up with colors they have bought at an auction and applied to the house after dark with a shotgun I think it is time we had a better understanding.[23]

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[21] Building 4 (1886): 185.

[22] American Architect and Building News 18 (1885): 104.

[23] Ibid., p. 20. See also Carpentry and Building 7 (1885): 188.

The Academic Revivals, the Prairie School, and the Rectilinear Movement.

With the widespread outcry against the Queen Anne, architects all over the country began searching for a simpler, more controlled approach to residential design. This search set the course of American architecture for the next thirty years. It provided the context for the often-chronicled ideological battle between the advocates of historicism who countered the Queen Anne's arbitrary eclecticism with revivals of "pure" earlier styles, and those of modernism who proposed an a-historic "organic" residential architecture for the same reasons. Less well known is the Rectilinear movement, which fell between those two extremes. Like the more radical modernists, Rectilinear architects avoided historic precedent because of its abuse by the Queen Anne, but like more conservative revivalists they stayed close to the conventionally accepted house forms and interior layouts of the day.

* * *

Most critics of the Queen Anne in the 1880s and the 1890s proposed a return to American Colonial and early post-Revolutionary forms. This Colonial Revival movement had actually begun in the 1870s, and together with the Queen Anne formed the basis of the Shingle style. However, by the end of the eighties, according to the style's historian Vincent Scully, the free Shingle style declined in importance as its practitioners moved to more and more literal interpretations of Colonial sources.

This general "movement toward geometric and spatial discipline in design" was led by the architectural firms of McKim, Mead and White and especially Stevens and Cobb, both of New England.[24] An enthusiastic magazine review of Stevens and Cobb's influential 1889 book, Examples of American Domestic Architecture, applauded the authors for urging "that there is a need for more simplicity of design

[24] Scully, p. 113.

in domestic architecture." The review summarized the book's anti-Queen Anne argument:

> Perhaps the one word which best expresses the correct principle to follow in grouping economically under a roof the rooms required for a given family is the word 'unify'. Don't playfully make as many jogs as possible in your wall line; endeavor to reduce their number to a minimum. Don't study to contrive a skyline full of antics; but cover your wall with as few planes of roof as possible. Not only does following this principle give economical results, but also the design…will always be reposeful and grateful to the eye.[25]

In the book itself Stevens and Cobb proposed that "Old Colonial" prototypes replace the Queen Anne, particularly "the American Classic examples of the eighteenth and early nineteenth century."[26]

Many voices echoed this call, most notably the influential high style journal The American Architect and Building News, which focused increasingly on the Colonial throughout the 1890s and into the 1910s. In 1893 the most vernacular of the trade journals, Carpentry and Building, published its first Colonial house, a center hall plan with heavy Georgian trimmings.[27] The new consumer magazines House Beautiful and The Ladies Home Journal also took up the call. Though it had long been known to the east coast elite, the Colonial Revival in the late 1890s and 1900s became for the first time a nationwide phenomenon in popular housing as a result of the revolt against the Queen Anne style.

Other learned opponents of the Queen Anne suggested reviving styles of other countries. Several top American architects trained at the French Ecole des Beaux Arts proposed a Renaissance-derived Classicism. Architect Russell Sturgis

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[25] Building 11 (1889): 212.

[26] Quoted in Scully, p. 117.

[27] Carpentry and Building 15 (1893): 199-203.

suggested a "Modern Style Founded on Ancient Greek Architecture."[28] There was strong interest in the nostalgic English Arts and Crafts movement and also in the elegantly simple architecture of Japan. A writer in the Denver Western Architect and Building News summed up the outlook of the academic revivalists when he said, "What is needed is not a new style, but a more scholarly and conscientious treatment of those we already have."[29]

* * *

Frank Lloyd Wright and the now famous Prairie "school" of Chicago architects opposed the Queen Anne through use of a very different architectural vocabulary. Wright had begun his career in the Shingle style but soon moved beyond it. In 1889 he joined the firm of Adler and Sullivan, known for their radically a-historic office building designs.[30] As their chief residential designer, he began experimenting with various styles in an effort to "build a sensible house."[31] He broke with Sullivan and by 1893 with the design of the Herman Winslow house in Oak Park, Illinois, began to develop his own style.[32] This Prairie architecture was almost unfettered by historic precedent or current conventions about what a house should be. It featured horizontal lines recalling the flat prairies of the Midwest, natural materials and simple ornamentation, and fluid interior spaces. Beginning in the 1900s, Wright's new ideas slowly caught architects' attention and today he is considered to have been America's most important architect.

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[28] Architecture and Building 21 (1894): 263.

[29] Western Architect and Building News 2 (1891): 181-182.

[30] Henry-Russell Hitchcock, In the Nature of Materials 1887-1941: The Buildings of Frank Lloyd Wright (New York: Duell, Sloan and Pearce, 1942), p. 6.

[31] Frank Lloyd Wright, The Natural House (New York: Horizon Press, 1954), p.13.

[32] Ibid. Wright refers to the house as the "Herman" Winslow residence in The Natural House. It is also known as the William H. Winslow house.

Years later in an article recalling the houses he had rebelled against, Wright made it clear that the Queen Anne in particular led to his break with tradition. "Floors were the only part of the house left plain after 'Queen Anne' had swept past," he wrote. The often quoted passage echoed precisely the criticisms of the Queen Anne's "sham" materials, "crazy roofs," "hide-and-seek massing," arbitrary fenestration and over-decoration which we have seen were common in architectural magazines when he was still a teen ager. "All materials looked alike to it or to anybody in it," said Wright.

> This "house" was a bedeviled box with a fussy lid; a complex box that had to be cut up by all kinds of holes made in it to let in light and air, with an especially ugly hole to go in and come out of. The holes were all "trimmed"; the doors and windows themselves trimmed; the roofs trimmed; the walls trimmed. [33]

As Wright and his Chicago colleagues developed Prairie architecture through the 1890s and 1900s, they discarded many commonly held ideas of what a house should be. "Get rid of the attic, and therefore the dormer," Wright urged. "Next get rid of the unwholesome basement."[34] He insisted on casement windows rather than conventional double-hung ones. New materials like concrete and stucco were used, and he "wiped out all ornament unless it, too, was an integral feature of the whole."[35]

Most importantly, the Prairie architects fully developed a trend in interior planning that had begun with the Queen Anne. In Wright's words, they cut out "all the room partitions that did not serve the kitchen or give needed privacy for sleeping apartments," creating a new sense of continuous space.[36] From all these experiments came new concepts of architectural form whose influence on twentieth

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[33] Ibid., p. 14. The essay appeared originally in The Architects' Journal of London, 1936.

[34] Ibid., p. 37.

[35] Ibid., p. 29.

[36] Ibid. , p. 17.

century design has been profound. Because of the radical appearance of the houses created by Wright and his Chicago colleagues, however, in its period Prairie architecture never achieved widespread popular acceptance.

* * *

The academic revivals from the Northeast and the new Prairie developments in the Midwest were not the only architectural movements resulting from the rebellion against the Queen Anne style. Even before Wright built the first Prairie house, other architects around the country were working out alternatives to the Queen Anne that would not tie them to the equally arbitrary restrictions of the revivals. Out of this Rectilinear movement, with its emphasis on straightforward massing and lack of historical references, came the Four Square house.

When Hasbrouck and Sprague identified the Rectilinear style, they guessed that it originated in the Midwest in the 1890s. Present research indicates that it appeared as early or earlier in other areas. The New York Commercial Advertiser in 1886 noted, "the general taste in matters of decoration is undergoing an almost radical change. … The tendencies are altogether toward a greater simplicity of adornment."[37] Three designs by Pittsburgh architect C.M. Bartberger published 1887-1888 showed a distinct simplification of Queen Anne motifs with square or rectangular plans.[38] Based on her extensive research into plan books and magazines of the period, historian Gwendolyn Wright has noted that the 1890s marked a broad trend in American suburban architecture toward simpler forms, a revolution not limited "to a restricted group of architects and their forward-looking clients. In fact, similar formal changes were evident in the houses of builders and architects alike, in

[37] Quoted in National Builder1 (1886): no. 12, pp. 4-5.

[38] Builder and Woodworker 23 (1887): plate 92; 27 (1888): plates 45, 46, 59.

the model homes of domestic scientists, of women's magazine editors, and of carpenters."[39]

Designs and articles advocating simpler, more controlled residential architecture appeared in a wide range of magazines in the late 1880s and 1890s, but two seemed especially active in fostering the Rectilinear movement. W.T. Comstock's New York City based Building (later Architecture and Building) from the late eighties urged a more rational architecture with articles such as Cornell professor C.F. Osborne's methodically functional series "Notes on the Art of House Planning," the enthusiastic Stevens and Cobb review and the E.S. Babbit essay quoted earlier, as well as work by architects David King and Frank Kidder which will be discussed later. Building had the attention of architects searching for a new order, as evidenced by the inclusion of an 1886 essay by the dean of the rebellious younger generation, Louis Sullivan, and also by the fact that Frank Lloyd Wright apparently chose a house published in the magazine as the basis for his own home in Oak Park in 1889.[40] In the 1890s the National Builder magazine published by Frederick Hodgson in Chicago joined Building as a Rectilinear leader. "By 1897," according to Gwendolyn Wright, "many of the dwellings shown in Hodgson's journal -- whether small cottages, large suburban houses, two-family dwellings, or small brick apartment buildings -- had simple, rectilinear outlines."[41]

The First Published Four Square Designs.

The Four Square emerged early in the Rectilinear movement as an important house type. Architects may have seized on one or another of the older low cost houses discussed at the beginning of this chapter and redesigned it, or they may have reinvented the idea. It is certain, however, that with the widespread

[39] Gwendolyn Wright, Moralism and the Model Home: Domestic Architecture and Cultural Conflict in Chicago, 1873-1913 (Chicago: University of Chicago Press, 1980), p. 191.

[40] Building 4 (1886): 43; Scully, p. 159.

[41] Gwendolyn Wright, p. 191.

disenchantment with the Queen Anne the Four Square suddenly became desirable for middle and upper middle class housing in the first half of the 1890s. Where designs in the 1850s through the 1880s had been in the $500 to $1,500 range -- no-frills shelter designed and built by local builders for people with little money -- now Four Square homes appeared costing $3,000 to $8,000 and designed by some of the best architects of the era.[42]

The earliest indication of a Four Square design for middle class clients which has been discovered came in an 1888 article "Notes on Estimating" by David W. King, published in Building. Incidental illustrations included plans and a perspective of a "House Costing $6,060 and Architect's Fees" (Figure 9).[43] The rough sketch showed a hip-roofed cube with dormers and a broad front porch. Inside one could make out a four-over-four room arrangement with a bath and generous stair, and see that hall, parlor and dining room flowed into one another without doors. Massing was squatter than it would be in later examples. The eaves were very shallow, the porch had spindly Victorian turned columns and brackets, and the house had Stick style trim. King's article did not make specific reference to the house or indicate whether it had been constructed, though presumably the design was by the author. Two years earlier King had published an Italianate-influenced "simple and unpretentious" hip-roofed farm cottage, so it is possible that he was consciously trying to develop the new type, though all of his other published designs were more conventional (See pages 19, 20).

In 1891 two national publications almost simultaneously featured Four Square designs from widely separate parts of the country. One in a Philadelphia plan book, the other from Denver in a national architecture magazine, they were the first major presentations of the type as a middle class home. Together they marked the

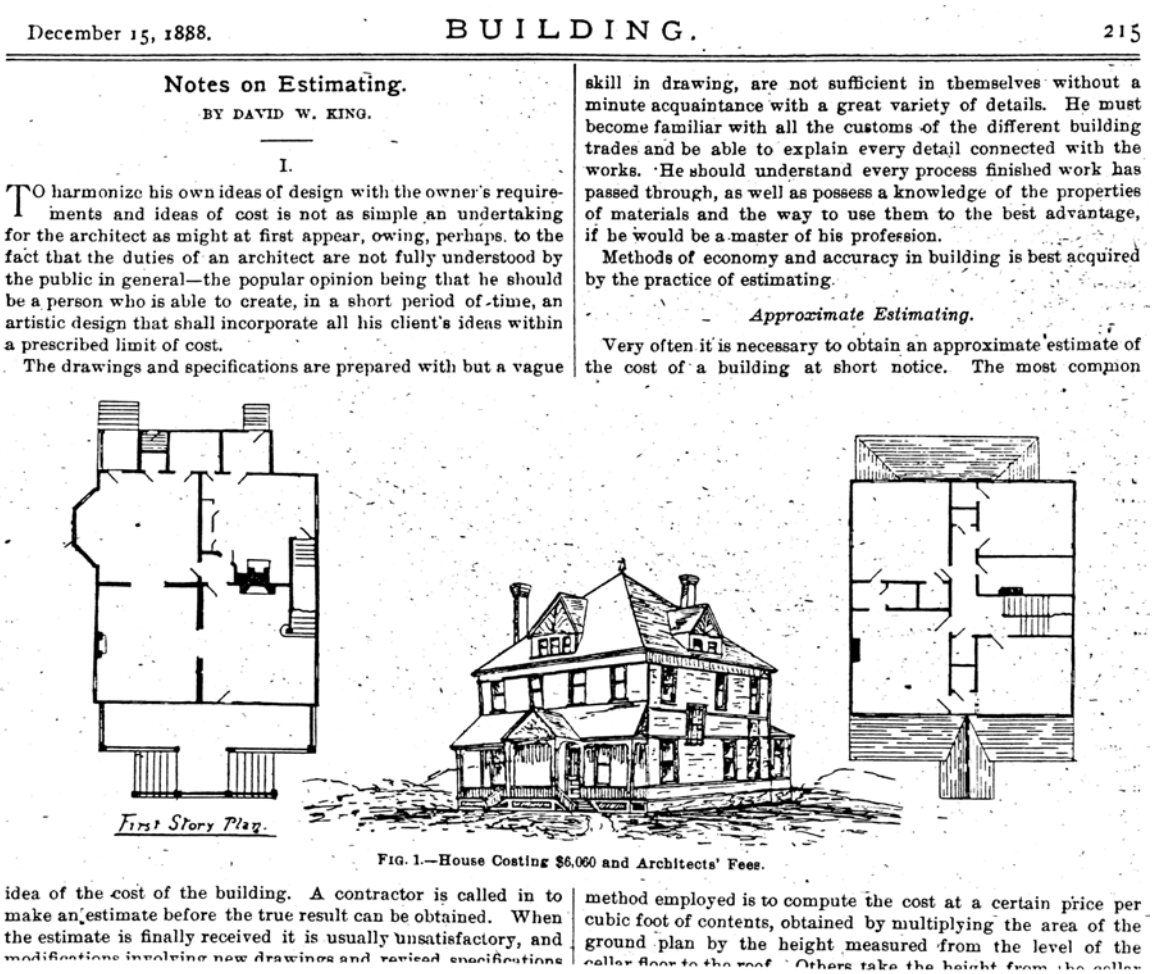
[42] Ibid., pp. 83-84, for a discussion of the price ranges of middle class housing. Though it is difficult to compare prices closely over this wide a time span, it is easy to see the sharp jump from lower to middle/upper middle price ranges around 1890.

[43] Building 9 (1888): 215.

Four Square's emergence as an important type within America's architectural community.

Volume Three of the National Architects' Union's plan book Sensible Low Cost Houses for 1891 included a house labeled simply "Design No. 456, Cost

Figure 9. Predecessors:
"House Costing $6060 and Architects' Fees" (1888) by David W. King. Building 9 (1888) 215.



December 15, 1888. BUILDING. 215

Notes on Estimating.

BY DAVID W. KING.

I.

TO harmonize his own ideas of design with the owner's requirements and ideas of cost is not as simple an undertaking for the architect as might at first appear, owing, perhaps, to the fact that the duties of an architect are not fully understood by the public in general—the popular opinion being that he should be a person who is able to create, in a short period of time, an artistic design that shall incorporate all his client's ideas within a prescribed limit of cost.

The drawings and specifications are prepared with but a vague idea of the cost of the building. A contractor is called in to make an estimate before the true result can be obtained. When the estimate is finally received it is usually unsatisfactory, and modifications involving new drawings and revised specifications

skill in drawing, are not sufficient in themselves without a minute acquaintance with a great variety of details. He must become familiar with all the customs of the different building trades and be able to explain every detail connected with the works. He should understand every process finished work has passed through, as well as possess a knowledge of the properties of materials and the way to use them to the best advantage, if he would be a master of his profession.

Methods of economy and accuracy in building is best acquired by the practice of estimating.

Approximate Estimating.

Very often it is necessary to obtain an approximate estimate of the cost of a building at short notice. The most common method employed is to compute the cost at a certain price per cubic foot of contents, obtained by multiplying the area of the ground plan by the height measured from the level of the cellar floor to the roof. Others take the height from the cellar

First Story Plan.

FIG. 1.—House Costing $6,060 and Architects' Fees.

Complete $3,500."[44] Except for narrow eaves outside, and a wall and door obstructing easy movement between parlor and dining room inside, the house was a model Four Square design. It had extremely simple rectangular massing, a high hip roof with front and side dormers and a wooden one-story porch across the full width of the front. Exterior materials consisted of "first story stone, second shingle, and roof slate," as befitted a middle class residence. Trim made no obvious reference to previous styles beyond the hint of Shingle influence in the second story siding and the vaguely Victorian flavor of the turned porch columns.

Inside, the house had what was to be a typical Four Square plan with generous reception hall, parlor, dining room and kitchen downstairs, three bedrooms and bath up. The staircase included the usual large side stair and also a back stair up from the kitchen for servants who probably lived in the attic. The description gave ceiling heights as nine feet six inches and nine feet zero inches with an eight foot cellar, and overall width and depth of the house as twenty-eight feet by fifty feet. The drawings in the book were not complete, giving just enough detail to entice the reader to mail thirty-five dollars for "Complete Working Plans, Details and Specifications ... Bill of materials $10."

The design may have been the work of A.C. Child, who held the copyright on the book. New York City directories from 1892 onward listed Child as a practicing architect there, but little else is known about him.[45] Later books by the National Architects' Union did not include any additional Four Squares and no indication has been found so far of other Four Square houses built or published by Child.

The architect of the second Four Square design published in 1891 was much better known. The January 10 issue of Architecture and Building carried a full-page drawing of a Four Square "House for Frank E. Kidder, Esq." built in Denver the previous year by the architectural firm of Kidder and Humphreys (Figure 10).[46]

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[44] National Architects' Union, Sensible Low-Cost Houses, vol. 3 (Philadelphia: National Architects' Union, 1891), design 456.
[45] Dennis Steadman Francis, comp., Architects in Practice In New York City, 1840-1900 (New York: Committee for the Preservation of Architectural Records, 1979), pp.21, 57.
[46] Architecture and Building 14 (1891): plates for January 10 Issue.

Franklin Eugene Kidder was born in Bangor, Maine in 1859.[47] A graduate of Maine State College, he also attended the newly opened Cornell University Architecture School and a special two year course in architecture at the Massachusetts Institute of Technology. As a student he worked in the office of Ware and Van Brunt, and after graduation was head draftsman for the city architect of Boston for two years be fore opening his own practice.[48] Health problems forced him to move to Denver in 1888 just in time for a huge building boom that swept the city as a result of development of rich silver deposits nearby. Later that year he brought twenty-two year old Baltimore born architect John J. Humphreys from Boston as a partner. Frank Kidder designed many of Denver's churches, and both Kidder and Humphreys did residential work.[49]

Kidder's reputation extended far beyond Denver. In 1884 at age twenty five he completed the first edition of his Architect's and Builder's Pocket Book, a comprehensive guide to construction techniques that remained in print for sixty years, the major reference work in the field.[50] His serial articles on schoolhouse design, brick work, wooden roof trusses, building construction and superintendence and other topics kept his name before the readers of architectural periodicals.[51]

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[47] Henry F. and Elsie Rathbun Withey, Biographical Dictionary of American Architects (Deceased) (Los Angeles: New Age Pub., 1956), pp. 341-342; National Builder 41 (November 1905): 41. Kidder's obituary appeared in most national magazines.

[48] A very thorough biography of Kidder appeared in Architects' and Builders' Magazine 2 (1901): 171-172.

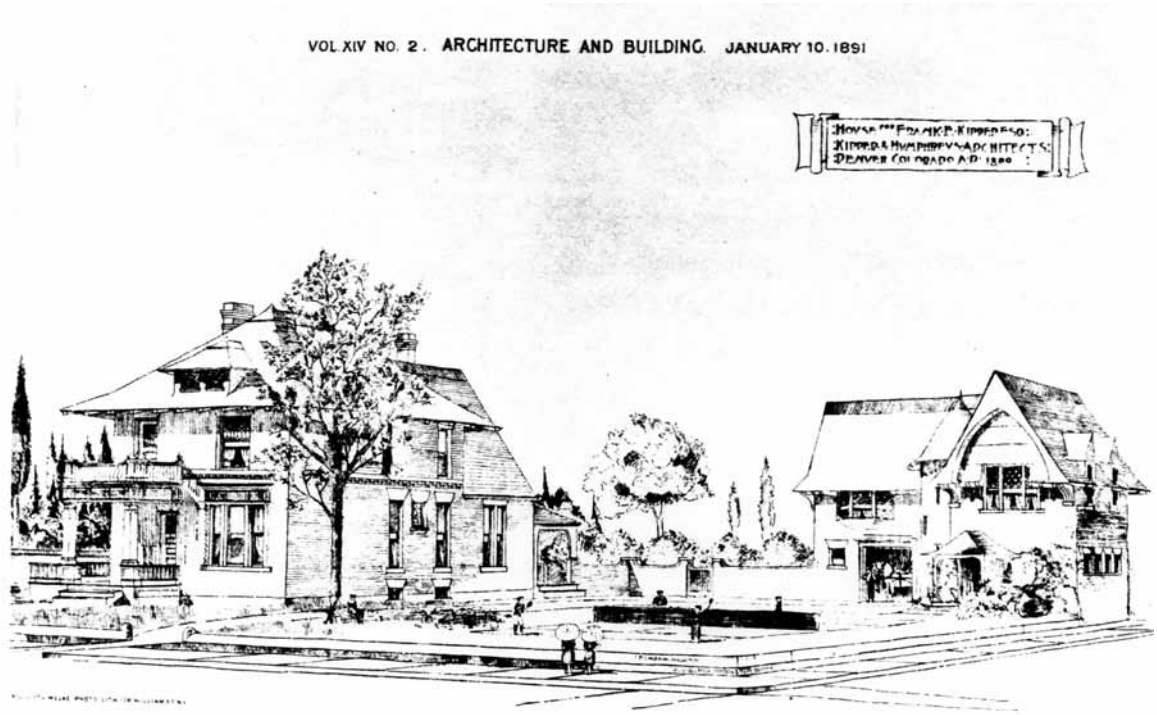
[49] Richard R. Brettell, Historic Denver: The Architects and the Architecture, 1858-1893 (Denver: Historic Denver, Inc., 1973), pp. 135-141; Architecture and Building 29 (1898): 103. See also note 29.

[50] Withey, p. 342; Frank E. Kidder and Harry Parker, Kidder-Parker Architects' and Builders' Handbook, 18th ed. enl. (New York: John Wiley and Sons, 1931), copyright information, pp. x, xi.

[51] For instance, serial articles on schoolhouse design in Builder and Woodworker 22 (1886); on building construction and superintendence in Architecture and Building 18-21 (1893-1894); on brickwork in Brickbuilder 5 (1896); on roof trusses in Architecture and Building 25 (1896); plus single articles on building woods in Inland Architect 23 (1894):

After his house appeared in Architecture and Building in 1891, Kidder broke with Humphreys and became a full time "consulting architect" helping other firms with the technical aspects of their projects, evidently all over the country.[52] Architects'

Figure 10. Early Four Square
"House for Frank Kidder, Esq." (built 1890) by Kidder and Humpheys of Denver. Architecture and Building 14 (1891) plate for Jan. 10.



and Builders' Magazine, in an extensive write-up on Kidder, said he was, "we believe, the first architect to assume this title in this country. In this capacity and

3-5; on number and distribution of U.S. architects in Architecture and Building 21 (1894): 255; on unit stresses in timber in Inland Architect 28 (1896): 2.

[52] Western Architect and Building News 3 (1891): 78; Architecture and Building 21 (1894): 145. "Mr. Kidder, the well-known consulting architect, received the honorary degree of PhD. from Maine State College."

through his … publications, … Mr. Kidder has come in touch with more of his professional brethren than usually falls to the lot of an architect."[53]

The 1891 drawing of Kidder's home showed a Four Square design with a gable-roofed one story kitchen wing at the rear and a small Classically inspired front porch. The house occupied one side of a large corner lot, with a tennis court at the corner, and a gabled and turreted carriage house at the back of the property. Kidder took out the permit to build his house in October, 1890, listing the construction cost at a healthy $8,000.[54] The city directory showed him living at the address the following year.

As it exists today, the Kidder house at 1310 Race Street in Denver differs somewhat from the rendering. A newer house has replaced the tennis court on the corner half of the lot and there is no evidence of the carriage house. Kidder apparently had his residence built with a two-story rather than one-story rear kitchen wing and with a different chimney arrangement than drawn. A simple full-width porch replaced the original porch at a later date, so carefully matched to the house that it may have been designed by Kidder. Though the house is now divided into apartments, its interior has been well maintained.

Despite these changes the Kidder home is clearly an example of the Four Square house type. It has the hip roof, the front dormer, boxy massing, and, except for the now-replaced porch, the low-key decoration of the type. Walls are of brick with two ornamental courses marking the break between first and second stories. The hip roof flares out at the wall line, with exposed rafters in the eaves.[55] An

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[53] Architects' and Builders' Magazine 2 (1901): 172.

[54] Denver building permit no. 1917, October 1890, permit ledgers on microfilm in the Western History Department, Denver Public Library; city directories for 1890 and 1891 in the collection of the Colorado State Historical Society Library. The builder of Kidder's house was listed as George Bailey.

[55] When I first saw the flared hip roof and exposed rafters on Kidder's 1890 design I was surprised because I had associated the motifs with the post-1900 Bungalow era, and especially the influence of the Arts and Crafts movement toward exposed structure. However, I have since found that American Romanesque architect H.H. Richardson used both motifs In the l860s-1880s, for instance his work at Harvard, and have seen slides of

interview with a tenant and inspection of one apartment indicated that the first floor interior originally had the free flow of space which characterizes Four Square houses.[56] A reception hall, with a large stair at the rear, opened onto a front parlor which 1n turn opened onto a rear parlor. The fact that the kitchen was pulled back into the wing at the rear of the house meant there was room for two parlors, with the dining room located behind the stairs. In the Kidder house the dining room was especially large, and it and the bedrooms above it extended that part of the side of the house about six feet out beyond the reception hall, a slight complication in the basically simple massing that was not visible in the drawing. Upstairs room arrangement is not known.

Because Frank Kidder used the Four Square design for his own residence, its straightforward simplicity must be seen as a statement of his design philosophy. This is corroborated by a letter the firm wrote to Denver's Western Architect and Building News magazine in 1890 when the house was on the drawing board. It said in part:

> In our opinion, one may find in the whole city a dozen or so houses that are architecturally pleasing, the others are an abomination and an eye-sore to good taste. They resemble a rich but uncultivated woman, who piles all the ornamentation and rich material she can upon her person regardless of the harmony of color, or to good taste.[sic] [57]

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similar treatments on buildings constructed centuries earlier in the north of France during its Romanesque period. The way in which Kidder used brickwork as subtle ornament on his house can also be seen as Richardsonian, not a surprising influence because Richardson was the leading architect in Boston during Kidder's student days. It may be that the Four Square is based on some particular Richardsonian or Romanesque precedent, but so far I have been unable to track this down.

[56] The Kidder house has been owned and occupied for several years by Rev. and Mrs. Elchonon Gelberg, who would not allow the writer entry. The former dining room and kitchen are rented as an apartment, and that tenant graciously allowed me to inspect the space, and also described the rest of the house.

[57] Western Architect and Building News 1 (1890): 180.

It also fits well with architectural historian Richard Brettell's recent characterization of Kidder as "an architect who was concerned with good, solid and intelligent architecture, and his temperament was somewhat at odds with the brash and markedly eclectic architecture of the late 1880s and 1890s" in Denver.[58]

Not all of Kidder's houses in the period were Four Square. Both the A.C. Chamberlin mansion which appeared in the Inland Architect 1889-91 and the Central Presbyterian Parsonage published in American Architect and Building News in 1890 had complex massing, but both featured smooth uncluttered brick surfaces.[59] Kidder did utilize Four Square massing for a pair of houses across the street from his home, 1309 and 1311 Race, and he thought well enough of them to use them to illustrate his 1892 Denver directory advertisement.[60] Research into Denver's remarkably thorough building permit records will almost certainly uncover more Four Square designs by Kidder and perhaps by Humphreys.

Kidder's residence was not the first Four Square in Denver. A recent city sponsored "Denver Architectural Survey" and work done independently by local architectural historian Donald Etter have turned up a handful of examples of the type from 1888 and 1889.[61] More work with the thousands of Four Squares in Denver may identify earlier examples and determine whether the house existed in the city before the building boom drew Kidder and other eastern architects.

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[58] Brettell, p. 140.

[59] Inland Architect 14 (1889), August plate; 16 (1890), December plate; 17 (1891), May plate; American Architect and Building News 30 (1890): 74, plate 775. For an earlier example of Kidder's work, see Builder and Woodworker 17 (1881): 82 and plate 33.

[60] Architects', Contractors' and Material Dealers' Directory for the State of Colorado (Denver: Commercial Publishing Co., 1892), p. 44; see also Denver building permits no. 1203 (1890) and no. 1016 (1891). One of the pair has been demolished for a parking lot. The other at 1311 Race Street appears to be in excellent original condition.

[61] Denver Planning Office, Revised Denver Inventory (Denver: City of Denver Planning Office, 1979), see 2036 Ogden, 1261 York, 3721 Eliot, 3733 Eliot; Don D. Etter, letter to Thomas Hanchett, January 19, 1981, concerning 2142 South Milwaukee Street.

In any case Denver seems to have had a love affair with the basic hip-roofed cube form. Literally thousands of variations line the streets, at all price levels from duplex to mansion.[62] A Denver architect, Frank Grodavent, designed the first Four Square house published in the circulation-leading Carpentry and Building, kicking off mass interest in the type as we shall see (Figures 1 and 2). Hip-roofed, dormered, rectangular designs by another Denver architect, William Cowe, were among the earliest Rectilinear houses to appear in the influential Inland Architect and American Architect and Building News, in 1894 and 1896 (Figure 4).[63] A series of mansions featuring elaborate variations on the hip-roofed, dormered rectangular form appeared in Inland Architect in the early 1900s, designed by several different Denver architects.[64] Many other of the city's leading designers were also known to have favored the Four Square, ranging from the European trained Baerrenson Brothers, whose clients included Colorado's governor, to master stone mason David Coxe, Sr., who took time from his work on leading Denver churches to build a stone Four Square for his daughter.[65] It is interesting that local residents today call the type the "Denver Square. "

Parallels between Denver and Chicago in the late 1880s and early 1890s attract one's attention. Both cities underwent unprecedented building booms, with Denver's growth rate actually exceeding Chicago's by one account.[66] The

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[62] Sharon Elfenbein, "The Denver Square House," term paper submitted to Mr. Carlson, Colorado University, Denver Campus, May 1974, passim.

[63] Inland Architect 24 (1894): 49, 62; American Architect and Building News 53 (1896): plate 1081; 54 (1896): plate 1093. Thanks to Sharon Elfenbein for bringing the last illustration to my attention.

[64] Inland Architect 37 (1901): plate 6; 38 (1901): plate 1; 39 (1902): plate 6; 40 (1902): plates 2, 3.

[65] Baerresen Brothers, A Booklet of Architectural Views (Denver: Baerresen Bros., n.d. [19??]), passim; Langdon E. Morris, Jr., Denver Landmarks (Denver: Charles W. Cleworth, 1979), pp. 6-7.

[66] "In a list of forty-eight cities, showing their relative position In this matter of building construction Denver, population considered, this year leads all the rest. Chicago which

opportunity to build large numbers of new structures drew innovative young architects to both cities. As architectural historian Richard Brettell has shown, the Denver architectural community was strong and self-aware, promoting drafting competitions, lecture series, and for two years an architectural journal, The Western Architect and Building News.[67] Though much more study is needed, it is not implausible that, much as the "Chicago school" of architects created the Prairie house, a "Denver school" may have developed the Four Square as its own a-historic rebellion against the Queen Anne. Whether or not this proves to have been the case, it is evident that Chicago was not the only city in the period experimenting with new ideas in residential architecture.

The Spread of the Type to 1895.

Quickly following the 1891 publication of the Frank Kidder and National Architects' Union houses, a number of architects around the country built versions of the type for middle and upper class clients. The years 1892 through 1895 marked growing acceptance of the type within the American architectural community, which helped propel it to national popularity in the next decade. It is interesting that every one of the handful of examples found from this early period had the flared hip roof used by Frank Kidder.

In 1892 architects Rand and Taylor built a house in Northwest Cambridge, Massachusetts, just outside Boston, with Four Square massing and Rectilinear detailing including a flared hip roof with plain boxed eaves.[68] In 1893 across the

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claims to have six times the number of people here, had but a little more than a half more building." Andrew Morrison, ed., The City of Denver and the State of Colorado (n.p., George W. Englehart, 1890), p. 61.

[67] Brettell, pp. 20-31.

[68] Arthur J. Krim, Survey of Architectural History in Cambridge, Report Five: Northwest Cambridge (Cambridge, Mass.: Cambridge Historical Commission, 1977), p. 107. The firm also designed a Colonial-influenced hospital for Montpelier, Vermont, that shared some of the same characteristics, American Architect and Building News 58 (1897): plate 1146.

continent in Pasadena, California, the young firm of Greene and Greene designed a Four Square house and two Rectilinear ones for the Pasadena Security Investment Corporation.[69] Their Four Square rendering showed a middle class home with what appeared to be a flared hip roof and exposed rafters. Greene and Greene would go on to become the most famous innovators of the Bungalow movement.

The most notable of the early architects who designed Four Square homes was none other than Frank Lloyd Wright in Chicago. At the beginning of his career, Wright seems to have briefly experimented with several stylistic alternatives before synthesizing his Prairie architecture. These included the Shingle style of his own house, the Colonial revival of the 1892 George Blossom house and the Dutch Colonial seen in the 1894 Frederick Bagley residence.[70] Equally important was his exploration of the new Rectilinear Four Square.

Although it has not been possible to examine interiors, the outsides of the 1893 Francis Wooley house in Oak Park and the 1894 Peter Goan residence in LaGrange, Illinois, are literal interpretations of the Rectilinear Four Square.[71] Both have the characteristic lack of historic detail, off-center front door, boxy massing, and flared hip roof with dormers. The Wooley house also has a small front porch whose proportions, but not detail, recall those in Frank Kidder's 1891 sketch in Architecture and Building. Wright also used Four Square massing and Rectilinear detail in the 1900 William Adams house and in at least one remodeling job.[72] His famous "Fire Proof House for $5,000" published in Ladies Home Journal in 1907 had

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[69] Randell L. Makinson, Greene and Greene: Architecture As a Fine Art (Salt Lake City: Peregrine Smith, 1977), pp. 38, 40, 43-45.

[70] William Allen Storrer, The Architecture of Frank Lloyd Wright: A Complete Catalog (Cambridge: M.I.T. Press, 1974).

[71] Ibid., see also Yugio Futagawa and William Marlin, Frank Lloyd Wright: Houses in Oak Park and River Forest, Illinois, 1889-1913, Global Architecture Series (Tokyo: *A.D.A.* Edita, 1973), pp. 20, 34.

[72] Storrer, design no. 48; House Beautiful 31 (January 1912): 52.

inside its radical exterior a plan that owed much to the Four Square.[73] Shape, room layout, and circulation were pure Four Square, the major changes being Wright's symbolic emphasis on the central chimney and fireplace, and his exaggeration of the staircase bay at the side of the house, making it the main entrance and omitting the customary front door.

Of Wright's literal Four Square exercises, the most important may have been the Wooley house. Wright built it at the time he was designing the Herman Winslow residence a few blocks away, the house which he considered his first Prairie design.[74] The Winslow design, viewed from the street, is a simple rectangular block with a plain hip roof. Architectural historians have noted its similarity to Wright's Colonial Revival Blossom house, but its uncomplicated roof, wide eaves, simple wall planes and lack of historic references seem to owe as much to the Rectilinear Four Square design of the Wooley house.

[73] Ladies Home Journal 24 (April 1907): 24.
[74] All dates for Wright's work are those given by Storrer.

Figure 11. Early Four Square

Francis Wooley house (1893) by Frank Lloyd Wright of Oak Park, Illinois. Photo by Yugio Fuagawa, Frank Lloyd Wright: Houses in Oak Park and River Forest, Illinois, 1889-1913 (Tokyo: A.D.A. Edita, 1973), p. 20.

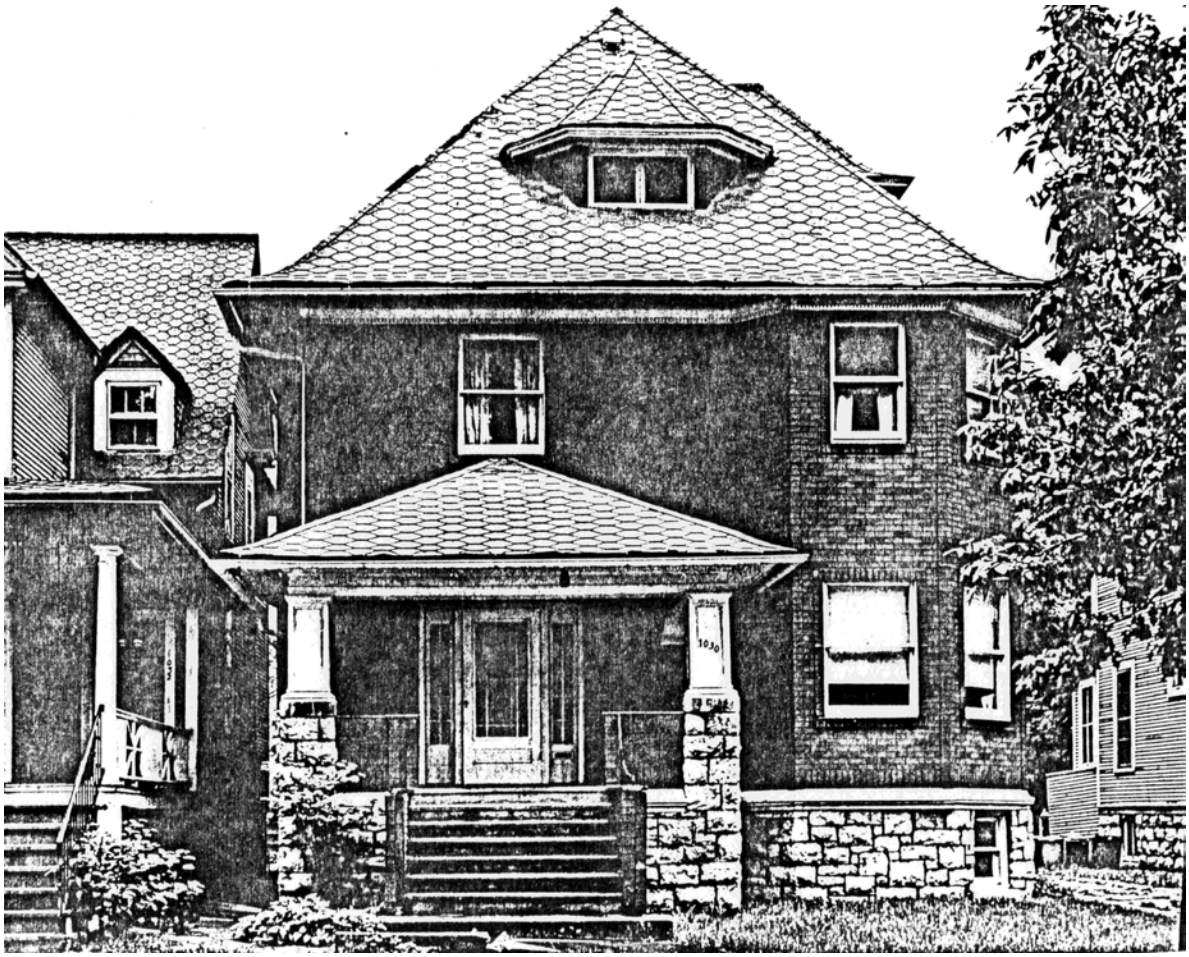
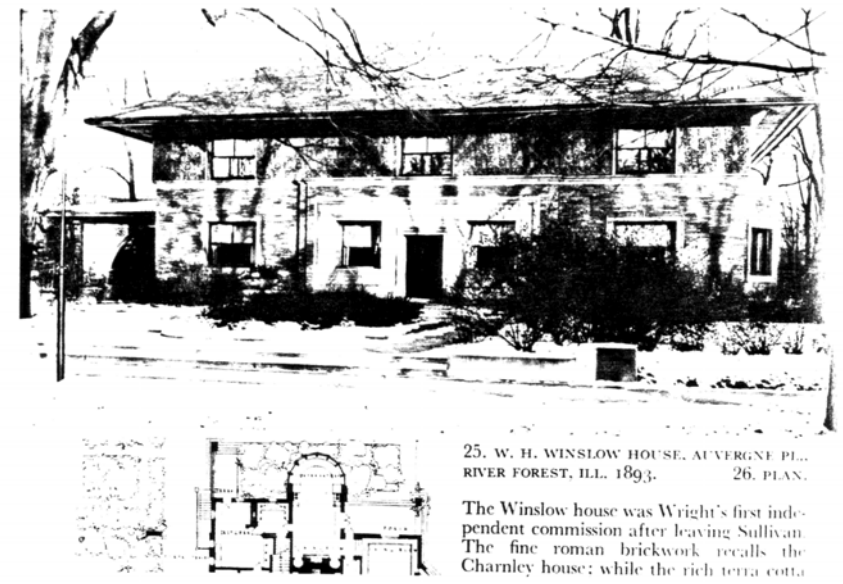


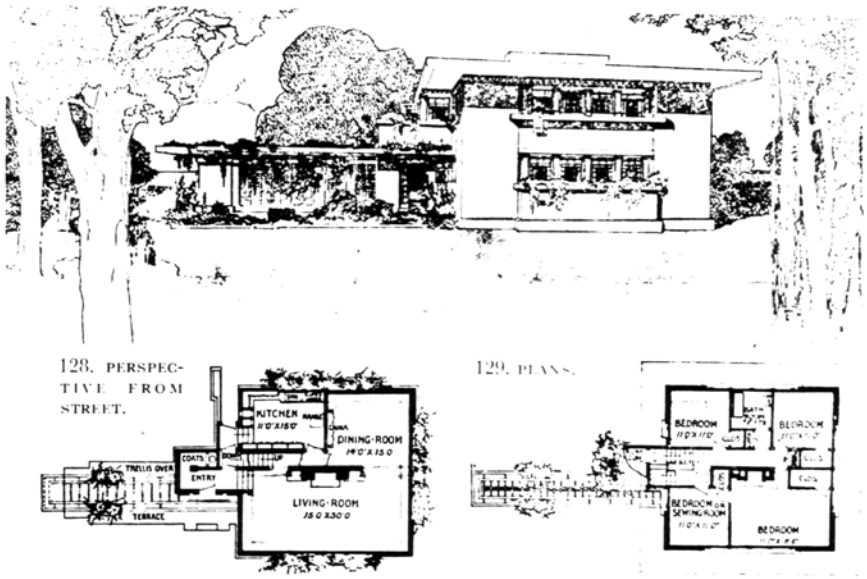
Figure 12. The First Prairie House: W.H. Winslow house (1893) by Frank Lloyd Wright of Oak Park, Illinois.



25. W. H. WINSLOW HOUSE, AUVERGNE PL., RIVER FOREST, ILL. 1893. 26. PLAN.

The Winslow house was Wright's first independent commission after leaving Sullivan. The fine roman brickwork recalls the Charnley house; while the rich terra cotta

Figure 13. Prairie House with a Four Square Plan: "A Fireproof House for $5000" (1907) by Frank Lloyd Wright.



Illustrations from Hitchcock, In The Nature of Materials 1887-1941: The Buildings of Frank Lloyd Wright (New York: Duell, Sloan and Pearce, 1942).

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By the mid 1890s, then, the Four Square was in use as a middle class house type by architects in major cities around the country. It is still not clear how the Four Square idea spread in those years, especially before 1892. Scholars have proposed two models to explain the diffusion of architectural ideas. One is geographical, used by Henry Glassie, Fred Kniffen and other folklorists.[75] It posits that building habits are developed through interplay among builders within geographically defined culture regions and spread physically as people from these regions move carrying their habits with them. The second model might be termed literary, and may be seen in the work of Vincent Scully and many other architectural historians.[76] It assumes that ideas may be developed by an architect or architects in a particular area and are then transmitted through books and magazines.

The spread of the Four Square fits neither model. From the late 1880s through the mid 1890s more nationally published Four Square designs originated in Denver than in any other city, but Philadelphia, New York, Boston, Grand Rapids, Chicago and Pasadena architects also experimented with the type -- hardly a well-defined geographical region. It is also impossible to construct a chain of influence from the literary documents explored. At the time the first vaguely sketched upper class Four Square was published in 1888, builders in Denver were already constructing houses of the type. Kidder's 1891 Denver house appeared in Architecture and Building simultaneously with the publication of a similar design in Philadelphia and at nearly the same moment as two low-cost houses from Philadelphia and Grand Rapids. The speed with which this far flung group of

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[75] For instance, Fred Kniffen, "Folk Housing: Key to Diffusion," Annals of the Association of American Geographers 55 (1965): 549-577. Kniffen's basic research method was to inventory all buildings in a section of the U.S. and attempt, on the -basis of concentrations of different house types in space and time, to define various "culture regions".

[76] For example, in Scully's The Shingle Style and the stick Style his basic research method was to comb the American Architect and Building News for buildings that created a chain of architectural influences from A.J. Downing to Frank Lloyd Wright.

architects adopted the form suggests simultaneous evolution, but similarities in plan, massing, and such minor details as flared roof shape on several examples make this unlikely.

Circumstantial evidence suggests a third model of architectural diffusion to explain the spread of the Four Square house type. The fact that big-city architects all over the country quickly came to share the same idea indicates that the concept of an American architectural "community" was much stronger in the late nineteenth century than historians have supposed. The growth of the American Institute of Architects and other professional organizations with annual conferences and more frequent committee meetings and regional activities, plus the development of an extensive railroad system which enabled architects to design or consult far from their home offices and which also encouraged transcontinental pleasure trips, all meant frequent personal contact between the more active architects of the day no matter where they lived. No longer did an idea have to develop in a particular region or among graduates of a certain architectural school, or in the pages of the architectural press. An idea like the Four Square could travel quickly all over the country through the network of the architectural community.

The hypothesis that a "Denver school" of architects perhaps originated and more certainly developed the Four Square house type fits this diffusion model well. In Frank Kidder the city had a nationally known consulting architect active in the AIA who was an early proponent of the Four Square. Many other Denver architects also had strong eastern ties, notably Harry W.J. Edbrooke whose brother Willoughby was chief architect for the U.S. Treasury Department under President Benjamin Harrison (1889-1893) and whose brother George was a leading Chicago architect.[77] Denver was also apparently a popular vacation stop for architects from around the country, because railroad companies aggressively advertised Colorado tours in several architectural magazines throughout the period.

Though the Denver hypothesis is most likely at the present stage of research, two other possibilities can be suggested. Perhaps the upper class Four Square home

[77] Withey, p. 189.

first came into existence back east in the Philadelphia-New York-Boston area, either as a streamlining of Richardsonian ideas or as a result of a collision of anti-eclectic Rectilinear sentiment, Colonial massing, and Queen Anne plan. The architects who streamed from that region to the big and small boom towns of the era would have carried the idea with them.

Or maybe, despite the marked differences between the types, the Four Square actually did result from practical refinements of the older Italianate cubic type. Country builders could have made the hip roof higher to shed snow, left off the hard-to-maintain ornament, and opened up the plan in response to improvements in central heating. This evolution would have taken place in the Midwest, where the Italianate hung on long after it had passed from fashion in the East, a folk development somehow picked up by architects and spread to the cities of the east and west where it was finally published.

More research in magazines from the late 1880s and early nineties, and especially in local records in these parts of the country, may provide definitive answers to the question of Four Square origin and early spread. Of interest will be work on the architects known to have experimented with the Four Square in its first years. Equally important are the ongoing historic building surveys being conducted by neighborhood groups and state historic preservation offices, which will help identify the earliest examples of middle class Four Square housing.

* * *

Though it is not possible now to pinpoint the origin of the type or offer more than a hypothesis about its diffusion before 1895, some important conclusions about the early development of the Four Square are clear. The basic idea of a hip-roofed cube with a corner hall and six or seven other rooms had been known since at least the middle of the nineteenth century. It had never been fashionable or popular, however, having been built only by people with little money or pretension who needed its inherent economy.

Suddenly in the first half of the 1890s the Four Square began to be used as a middle and upper middle class house, with sophisticated open plan and expensive materials. In this period the Four Square was not a mere "builder's house." It attracted innovative architects across the country, and may have been spread primarily by personal contact within the nationwide architectural community. Like the Colonial and Academic revivals and the iconoclastic Prairie movement, the Rectilinear Four Square house represented a rebellion against the gaudy eclecticism of the Queen Anne style. The Four Square with its simple hip roof, wide eaves, and almost plain wall surfaces predated and apparently influenced Frank Lloyd Wright's earliest Prairie formulations.

CHAPTER III.

AMERICA ADOPTS THE FOUR SQUARE, 1895-1920

The growing use of the Four Square among architects, plus disenchantment with the Queen Anne on the part of the general public set the stage for the type's rise to widespread prominence in the late 1890s and early 1900s. Large-circulation building magazines began publishing Four Square houses in 1895, and by the 1900s the type was a staple of the magazines and house plan books. Next the new ready-cut housing industry, including such firms as Montgomery Ward, adopted the type. With all this publicity it became a popular low-cost housing design, a major competitor of the Bungalow and the Colonial. Builders and the American public during the 1900s and 1910s saw it as modern, respectable, and economical.

The Augusta Trott House, 1895.

The breakthrough came in April 1895 when a Four Square design by the Grodavent Brothers of Denver appeared in Carpentry and Building. (Figures 1 & 2)[1] Throughout the 1890s that periodical led the architecture and building field with a monthly circulation of 20,000 rivaled only by the Architects and Builders Edition of the Scientific American.[2] Carpentry and Building had many more readers than the high-style sources usually studied by architectural historians: the 7,500 reader American Architect and Building News and the tiny Inland Architect with about 3,500 readers.[3] Publication in Carpentry and Building introduced the Four Square to American builders, making it no longer the sole property of a small community of high-style architects.

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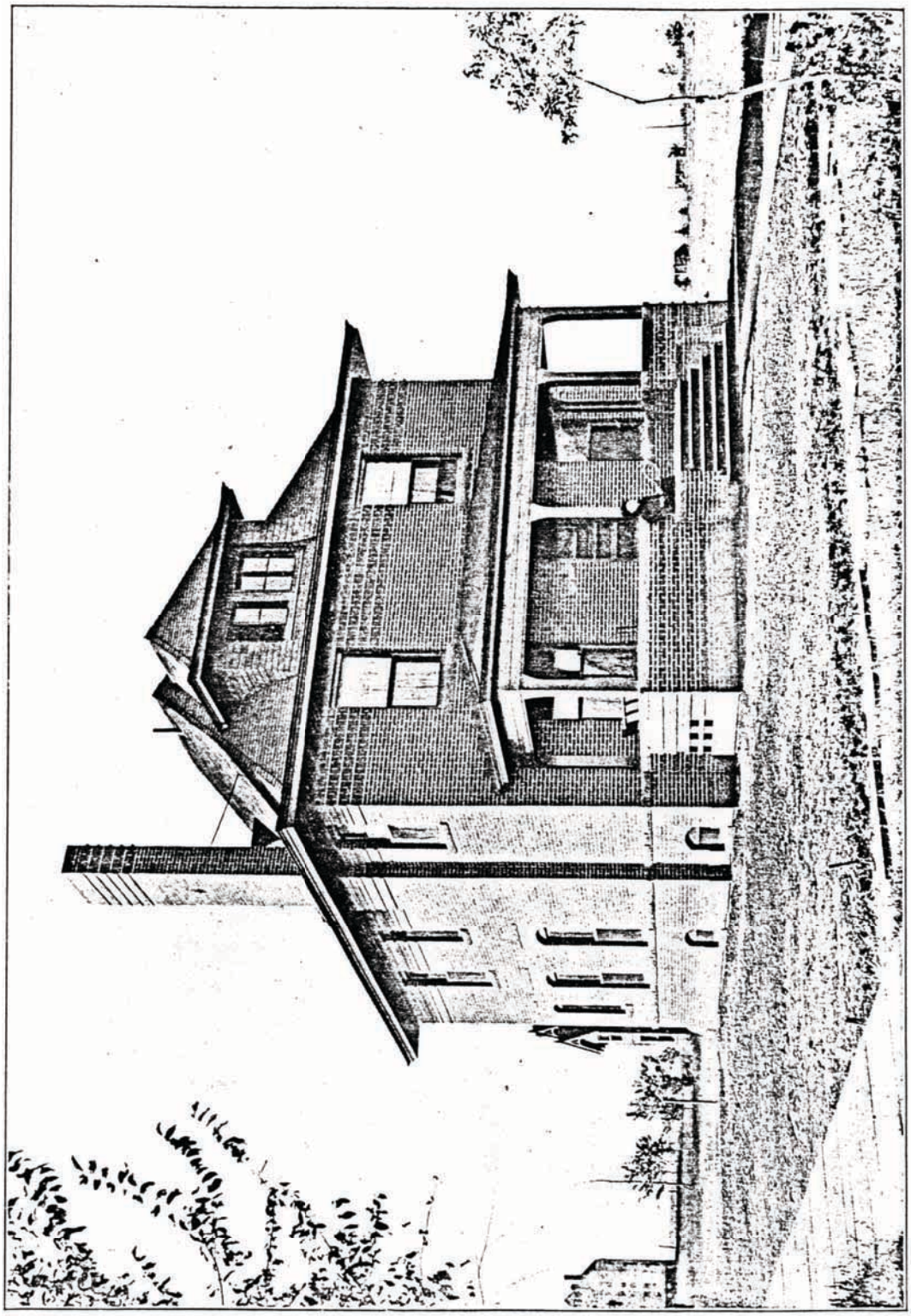
[1] Carpentry and Building 17 (1895): 81-85 and April plate.

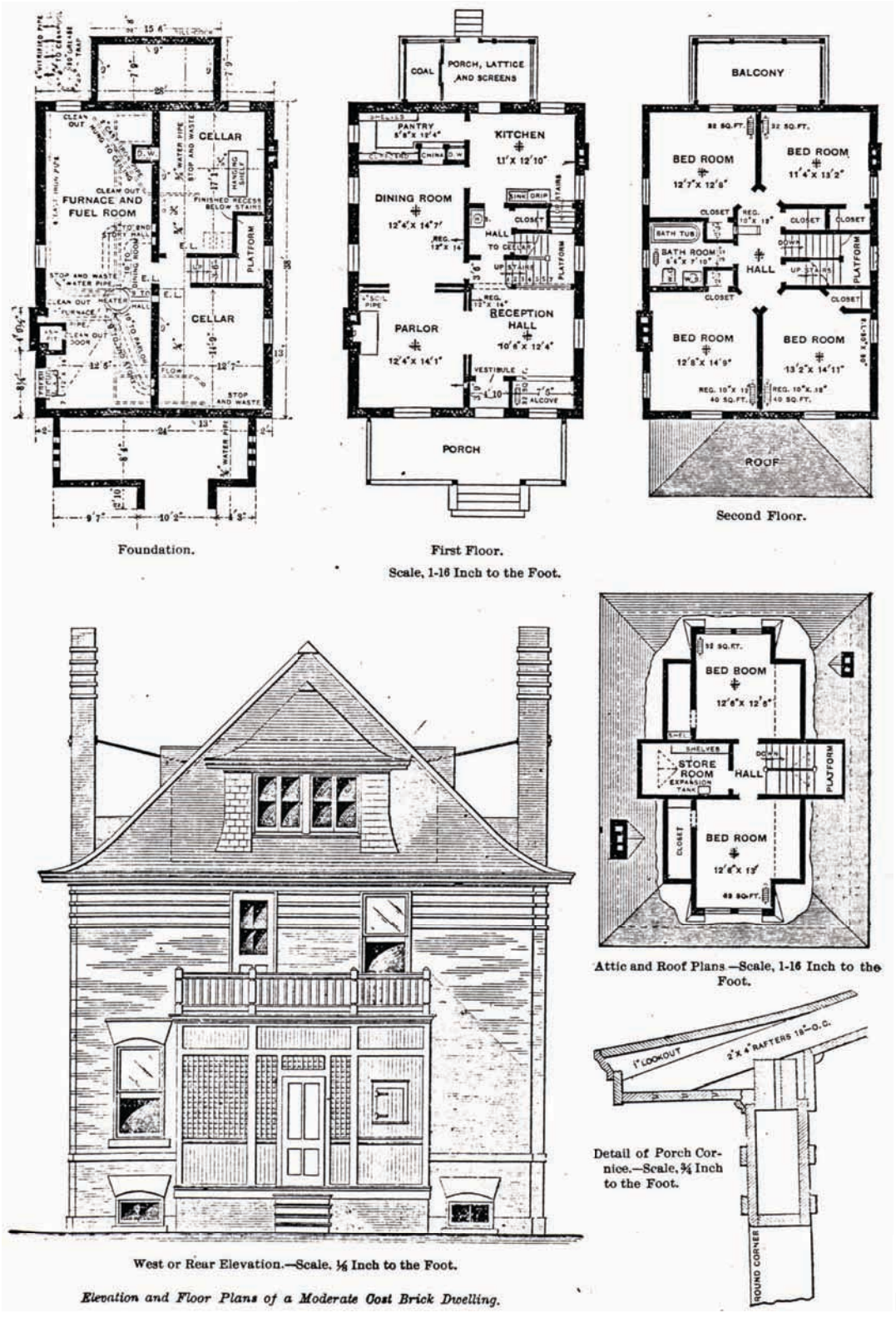
[2] N. W. Ayer and Son, American Newspaper Annual (Philadelphia: N.W. Ayer and Son, 1891), p. 1203; 1902, pp. 1410-1411; George P. Rowell, American Newspaper Directory (New York: George P. Rowell and Co., 1899), pp. 1371-1372.

[3] Ibid.



BRICK RESIDENCE OF MRS. A. J. TROTT, UNIVERSITY PARK, COLORADO.

GRODAVENT BROTHERS, Architects.



Elevation and Floor Plans of a Moderate Cost Brick Dwelling.

The Grodavents' design for Mrs. Augusta J. Trott's house in University Park, an upper class Denver suburb, represented not only the first large-circulation publication of the type but also the first complete presentation of a Four Square design in any book or magazine. The Frank Kidder residence had been shown in a single perspective drawing, and earlier plan books had carried only perspectives and sometimes sketch plans to entice the reader to send money for complete plans and specifications. For the Trott house Carpentry and Building ran a photograph of the actual building, a complete series of scale elevations and plans including a diagram of the central heating system, plus more than two pages of construction details and interior touches. A write-up on the house described all materials used but did not comment on the stylistic qualities of the design.

The 1895 photograph showed a rectangular block of brick with no bay windows or other projections and a perfectly square front facade. (Figure 1) The house was twenty-eight feet wide like the Kidder house, but only thirty-eight feet deep with no kitchen wing. The hip roof flared dramatically over wide, plain, boxed eaves. Large hip-roofed, shingle-sided dormers poked through the roof at the front and rear, and smaller gabled ones could be seen at the sides. A one-story porch ran across almost the full width of the front facade; a smaller one sheltered the back door. On the north side of the house a third entrance with no porch opened directly into the stairwell. On both sides of the structure an exterior chimney rose high above the roof line.

The Trott house had a striking lack of historic ornament. Under the eaves four simple double courses of brick projected slightly from the planes of the walls. This simple horizontal emphasis was echoed in the brick work at the top of the chimneys and in the railing wall of the front porch. The high, rough-faced stone water table also made a statement of horizontal simplicity, acting as first-story window sills and continuing out to form the porch railing. The wooden porch columns had no hint of historical ornament either, plain square posts that flared slightly at the top to carry the porch roof. The horizontals of the flared porch eaves and wide porch, plus the bands of brickwork and stone, balanced the verticality of

the windows, porch columns, and overall building height, giving the facade a restful sense of balance, solidity, and massiveness.

Today the simple massing and understated a-historic details of the Trott house do not seem unusual. However, when contrasted with the complex Queen Anne and heavily ornamented Colonial Revival houses that surrounded it 1n Carpentry and Building that year, it is startling. In 1895 Frank Lloyd Wright was still tied to ornate Sullivan-inspired ornament and, except for his as yet unpublished Charnley townhouse of 1891, had not yet showed the total elegant simplicity of both wall surface and massing that the Grodavents achieved in their design.

Inside, the Grodavent brothers showed similar care, though less radical ideas. The Trott plan stayed close to the conventions of the period seen in other Carpentry and Building homes. (Figure 2) The open first floor had wide sliding doors leading from reception hall to parlor to dining room, and then a closed kitchen. The stairway, coat closet, and passage to the kitchen were grouped in a compact "vertical circulation core," arranged just as they would be in most later Four Squares. The architects combined the grand stair and servants' stair into one: "The front stairs from the reception hall and the rear stairs from the kitchen meet about one-third up on a common platform, and thence continue as a single flight to the second story…." [4]

The second floor plan was especially clearly thought out. Circulation spaces, closets and bathroom were packaged as a kind of "service lozenge" across the middle of the house, separating the two front and two rear bedrooms. Up under the hip roof on the third level the plans showed two attic rooms which could be used for servants, children, or storage. The well thought out Trott plan showed a sharp contrast to the cramped, awkward interiors of the low-cost hip-roofed houses built before 1890.

[4] Carpentry and Building 17 (1895): 83.

Architect Frank J. Grodavent had come to Colorado from Syracuse, New York, in 1887 to prepare designs for the U.S. Government's Fort Logan.[5] Caught up in Denver's building boom, he sent for his brother Herbert D. Grodavent, "a builder of twenty years experience," in 1889 to help take care of private work.[6] The Grodavents published a handful of designs in Carpentry and Building in the middle 1890s including, notably, a one-story version of the Four Square in 1894. (Figure 5)[7] Most had complicated massing but shared the clean brick wall surfaces and the fairly open plan of their Four Square work.[8]

With its $3,500 construction cost and large suburban lot, the Trott Four Square was a distinctly upper middle class residence. The fact that Carpentry and Building published the design, however, now made the idea accessible to thousands of builders of houses in all price ranges. The Grodavents' drawings defined the house type, summing up a half decade of experimentation among architects. Most subsequent Four Square builders would copy the wide eaves, side chimneys, full width front porch, and other secondary characteristics that came together for the first time in the 1895 Trott house.

The Four Square in Magazines.

Over the next thirty years almost every magazine that printed house plans included Four Square designs. So-called builders' magazines read by both architects and builders led in publication of the type. Consumer magazines also carried examples. Even the high-style professional journals, which normally focused on

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[5] Andrew Morrison, ed., The City of Denver and the State of Colorado (n.p.: George W. Englehart, 1890), pp. 62-63. Boyd's Syracuse City Directory, Vol. XXVI, 1883-84, p. 174. Thanks to Michael and Mary Tomlan for alerting me that the Grodavents were from Syracuse.

[6] Ibid.

[7] Carpentry and Building 16(1894): 272.

[8] Carpentry and Building 16 (1894): 123-124, 271-273, June and December plates.

larger houses, printed a few Four Squares and showed a trend in all their designs toward a distinctly Rectilinear simplicity.

The most active early publisher of Four Square homes was the National Builder from Chicago. The first examples appeared in 1897 and 1898 by staff architect Robert Rae. Within a few years a number of architects, mostly from the Midwest, contributed variations of the type, the most prolific being I.P. Hicks of Omaha, Nebraska, and Albert O. Jewett, of Waterloo, Iowa.[9] Building material companies, especially those producing the new concrete block, provided the magazine with designs and photos of Four Squares built with their products.[10]

Carpentry and Building, which became Building Age in 1911, frequently presented Four Square houses in the decades after it published the Trott house. It has been possible to examine a nearly complete run of the magazine in the course of the present research, so it provides a good opportunity to trace the type's rise to popularity in print in the 1900s and 1910s.

In the first five years after the Trott design, at least five variations on the Four Square appeared, almost all with a strongly Colonial favor.[11] These designs, which were labeled "Colonial", came from Northeastern architects in cities such as Worcester, Massachusetts, and Elizabeth, New Jersey. At first glance this would seem to confirm the theory that the Four Square originated in that region of the country as part of the Colonial Revival, were it not for the fact that the a-historic

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[9] National Builder 21 (1897) October, pp. 18-22; 26 (1898) January, p. 10, February, p. 11; see also January, pp. 9, 13; 39 (1904) October, p. 34, December,p.37; 40 (1905) May, p. 40; 41 (1905) August, p. 40, September, p. 42; 42 (1906) April, p. 42, June, p. 43; 43 (1906) November, p. 43, December, pp. 36-39; 44 (1907) January, pp. 40-41; 46 (1908) April, p.26; 47 (1908) October, p. 39, November, p. 25; 48 (1909) February, p. 29, March p. 25, April p. 39; 49 (1909) July, pp. 27, 36, December, pp. 50-51; 52 (1911) June, pp. 36-37; 53 (1911) July, pp. 29-30, October, pp. 29-30, November, pp. 44-45.

[10] National Builder 35 (1902) December, p. 36; 41 (1905) October, p. 44; 42 (1906) June, p. 50; 43 (1906) August, p. 54, December, p. 50; 44 (1907) March, p. 44; 45(1907) August, pp. 22-24; 51 (1910) August, p. 60.

[11] Carpentry and Building 18 (1896): 275; 19 (1897): 77; 20 (1898): 121; 21 (1899): 277; 22 (1900): ; 23 (1901): 31,219.

Trott house from Denver had been published earlier. Carpentry and Building designs of the late 1890s are better understood when one realizes that the magazine was published in New York City and drew many of its contributors from that region. The appearance of Colonial Four Squares shows that Northeastern architects adopted the type as enthusiastically as did those of other regions and applied to it the stylistic touches popular in their area.

Around 1900 Carpentry and Building began printing Four Squares from other parts of the country, all of which showed little Colonial influence. Well into the mid 1920s the magazine published an example of the type every year or two from architects in both the east and Midwest.[12] Frank Grodavent remained the most westward contributor of the house type, in 1913 submitting another Four Square built in Denver.[13] While several National Builder contributors were contractors, every Four Square in Carpentry and Building - Building Age was architect-designed but one.

The magazine showed the Four Square to be a favorite among designers experimenting with new building materials. The earliest Midwestern design published was built of terra cotta block in Chicago.[14] Around 1911 stuccoed Four Squares began to appear, thanks to development of durable, fireproof metal lath over which the stucco was applied.[15] A 1916 house from Binghamton, New York,

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[12] Carpentry and Building 23 (1901): 59, 297; 25 (1903): 308; 27 (1905): 54; 30 (1908): 1 ; 221; Building Age 33 (1911): 118, 413; 34 (1912): 143; 35 (1913) March, p. 67; 36 (1914) January, p. 64, April, pp. 60-61, July, p. 40; 37 (1915) February, p. 63, March, p. 19, April, p. 76; 38 (1916) April, p. 79; 40 (1918) January, p. 41; 42 (1920): 366; 43 (1921) July, p. 43, November, p. 23; 44 (1922) March, p. 43; 45 (1923) January p. 60; 46 (1924) October, p. 64; 47 (1925) November, p. 90; 48 (1927) May, p.

[13] Building Age 35 (1913) January, p. 1. Grodavent was now based in Cheyenne, Wyoming.

[14] Carpentry and Building 22 (1900): 317.

[15] Building Age 33 (1911): 413; 34 (1912): 289, 331.

and a 1921 example from Elizabeth, New Jersey, represented experiments with cast concrete construction.[16]

By the 1910s articles in the magazine on new materials and general design advice began featuring Four Squares as "typical" homes in illustrations, for instance a 1912 stucco report or a 1916 feature on house moving.[17] During World War I the need for vast amounts of worker housing triggered experiments with new construction methods, especially cast-in-p1ace concrete. Stories on such innovators indicated that they favored variations on the Four Square house type, probably because of its combination of fashionability, simplicity of shape, and inherent construction economy.[18]

Even more than articles, advertisements made it clear that America considered the Four Square a popular house. Beginning in the early 1910s and continuing through the mid 1920s, many Carpentry and Building-Building Age advertisers chose examples of the type to illustrate their ads. Every major building material was represented, from Rocbond Stucco and Kno-Burn metal lath, to Parks Woodworking Machinery, to the Hollow Building Tile Association, to the American Face Brick Association, to Alpha Portland Cement. (Figure 16)[19] Makers of other products such as scaffolding, heating systems, and interior woodwork also used Rectilinear Four Square homes in illustrations, either alone or together with Bungalows, Colonials, and other houses.[20]

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[16] Ibid. 37 (1915) February, p. 63; 43 (1921) July, p. 43.

[17] Ibid. 34 (1912): 289, 331; 38 (1916) September, p. 71.

[18] Ibid. 40 (1918) January, p. 19; 42 (1920) June, p. 41. More research deserves to be done on this boom-period in U.S. industrialized housing, particularly on the cast-concrete experiments of Milton Dana Morrill, the Lambie Concrete House Corporation and others.

[19] Ibid. 40 (1918) March, p. 53; 42 (1920) February, p. 57; 43 (1921) February, p. 90; 46 (1924) July, p. 121; 48 (1926) March, p. 5; 49 (1927) March, p. 68.

[20] Ibid. 39 (1917) March, p. 15; 48 (1926) May, p. 21; 49 (1927) May, p. 49.

Though less active than Carpentry and Building and the National Builder, the Architecture and Building builders' journal continued its early emphasis on "sensible housing" through at least 1900 and presented several Rectilinear designs. Two of these were Four Squares, including an 1897 sketch by noted Colonial Revivalist Albert Winslow Cobb that surprisingly carried no historic ornament.[21] The journal's Rectilinear offerings also included a pair of striking hip-roofed rectangular frame homes with plain wall surfaces and strong horizontal emphasis, which an architectural historian might well attribute to Chicago's Prairie school circa 1900, but for the fact that they were designed by two New York City architects, Edward J. Brown and Edmund H. Antonius, in 1896 (Figure 15).[22]

Figure 14. Early Rectilinear Designs: “Residence of Frank Schiedenhelm” (1902) by George Washington Maher of Chicago. Inland Architect 39 (1902).

[21] Ibid. 26 (1897): plates for February 13; 27 (1897): 47. Cobb's a-historic Four Square also appeared in a photo accompanying an article he wrote on Winthrop, Massachusetts, with the caption: "An Architect' s Winthrop Home." Architects' and Builders' Magazine 2 (1901): 168.

[22] Architecture and Building 25 (1896): 30-31.

Figure 15: Early Rectilinear Designs: "First Prize Design" (1896) by Edward J. Brown of New York City. Architecture and Building 25 (1896) 30.

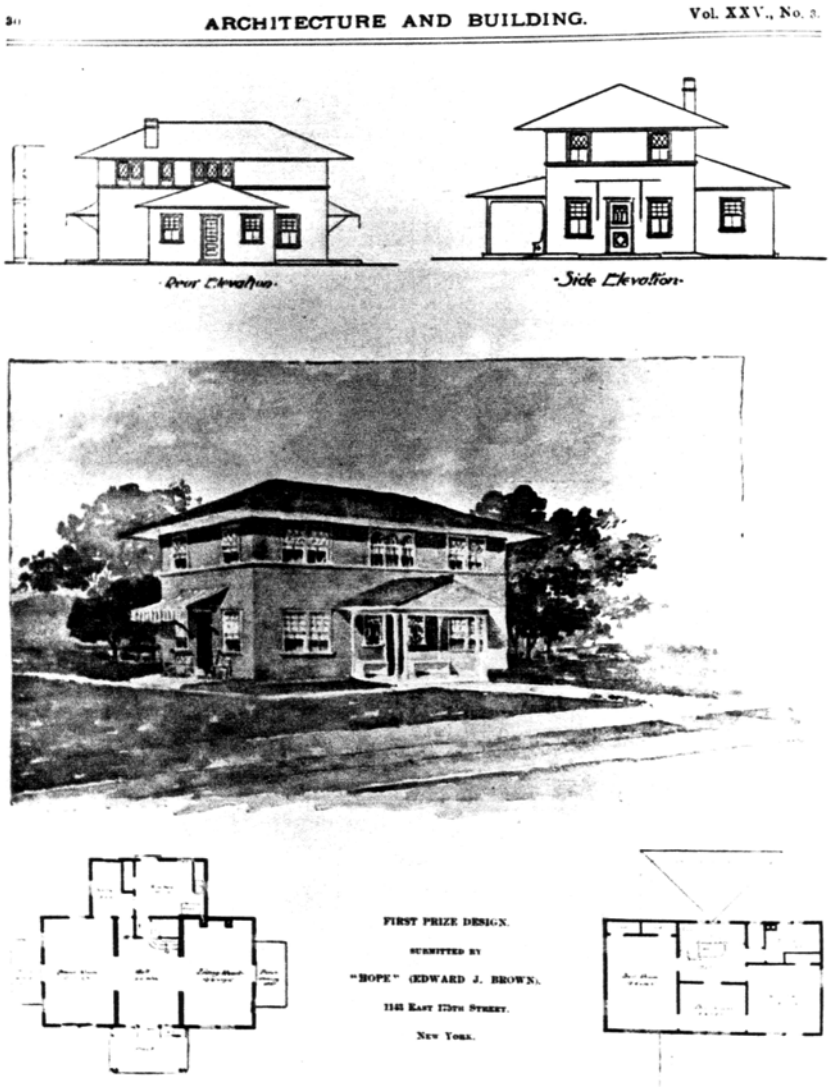

Figure 16: Four Square in Advertising: Rocbond Stucco (1927). Building Age 49 (1927) 68.

Figure 17. Manufacturers Provide Four Square Plans: Andrews Heating Company (1920s)

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While they normally focused on the grander mansions, neither of the two leading high style journals could totally ignore the Four Square type. The most prestigious magazine of the day was the American Architect and Building News, published in Boston. The primary journal of academic revival styles, it catered to the learned elite of the profession. In the late 1890s, however, a-historic Rectilinear houses began appearing, reflecting trends that had been under way for years in less stuffy magazines.

One of the earliest was a rectangular center-entry house by William Cowe of Denver in 1896. (Figure 4)[23] Its hip roof had wide, plain eaves and a central dormer; the house was free of historic ornament except for a trace of Classical trim on the front porch. In 1899 three designs from Pasadena, California, by architect Herbert Smith and the firm of Blick and Moore paid even less attention to precedent.[24] Over the next decade American Architect and Building News published nearly two dozen other designs that could be labeled Rectilinear as well as numerous stuccoed "English cottages" and stripped-down Colonials that sprang from the same desire for simplicity.

Among its Rectilinear houses the periodical included three Four Square variants. The first came in 1895 in a page of sketches of Colonial-related designs by the Boston architects Longfellow, Alden and Harlow.[25] The small Four Square drawing, with a hip roof, square front facade, and full-width porch, showed no particular Colonial motifs, even to the square, flared-top porch columns. It is interesting to note that J.J. Humphreys, Frank Kidder's Denver partner, had worked with this firm back in the 1880s.[26] Another Four Square appeared in the magazine in

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[23] American Architect and Building News 53 (1896): plate 1081. See Chapter II, note 63.

[24] Ibid. 64 (1899) April 29, p. iv, May 13, p. iv.

[25] Ibid. 48 (1895): plate 999.

[26] Architecture and Building 29 (1898): 103.

1907, probably by Buffalo architects Green and Wicks, and a third was extensively illustrated in 1909, a Birmingham, Alabama, commission of the firm of Warren and Welton.[27]

The Chicago Inland Architect, the other influential journal among leading architects, until it merged with American Architect and Building News in 1908, also carried Rectilinear designs and published one Four Square. A Rectilinear residence by Denver's William Cowe appeared in 1894.[28] In the early 1900s a spate of Rectilinear mansions came from architects all over the country, from Albert Yarnell of Philadelphia to Becker and Hitchcock of Toledo, Ohio, to several Denver firms.[29] The lone Four Square came from Chicago in 1904, the D.O. Hill house by Frederick Perkins, a massive home with a hint of Classical trim.[30] The most prolific designer in Inland Architect was George Washington Maher.[31] In his later period he has been recognized by architectural historians as an important member of the Prairie school, but his early houses from the mid 1890s to the early 1900s showed the simplicity, solidity, and traditional massing of the Rectilinear. Most of the designs were smooth-walled rectangular blocks with dormered, wide-eaved hip roofs and broad one-story front porches, quite similar to Cowe's designs in Denver. Perhaps the earliest example was the 1895 Charles V. L. Peters house published in 1896.[32]

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[27] American Architect and Building News 91 (1907): plate 1630; 95 (1909): plate 1746.

[28] Inland Architect 24 (1894): 49, 62.

[29] See Chapter II, note 63; Inland Architect 39 (1902): plates 1, 2, 4, 6; 40 (1902/1903): plates 3, 6; 43 (1904): plate 6.

[30] Ibid. 44 (1904): plate 3.

[31] Gwendolyn Wright, Moralism and the Model Home: Domestic Architecture and Cultural Conflict in Chicago, 1873-1913 (Chicago: University of Chicago Press, 1980), p. 215.

[32] H. Allen Brooks, The Prairie School: Frank Lloyd Wright and His Midwest Contemporaries (Toronto: University of Toronto Press, 1972), p. 34.

Dozens of Maher variations on the theme appeared in Inland Architect and other magazines. Only a handful of these, most notably the 1897 Farson house, had the ground hugging lines that characterized the Prairie school and none had Wright's interplay of masses.[33] Not until 1903-1904 did Maher begin experimenting with casement windows and more complicated massing, and by the 1908 E.J. Magerstadt residence was clearly working in the Prairie mode.[34] The frequent publication of Maher's hip-roofed Rectilinear homes for wealthy clients helped create a climate of acceptance of the style that undoubtedly contributed to the rising popularity of the Four Square among the middle class. (Figure 14)

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In addition to builders' and architects' professional journals, popular magazines that dealt with housing carried Rectilinear designs including examples of the Four Square type. These publications saw themselves as purveyors of "uplift", educating the American public in refined tastes. In the period, educated architectural taste meant the academic styles, but the nationwide Rectilinear trend could not be ignored.

House Beautiful, which began publication in 1896, stressed use of old styles as a springboard to new design, lamenting that "the usual contractor-built house looks as if there had never been a decent precedent to follow."[35] In the battle between historicism and "modernity" which dominated architectural discussions in the period, House Beautiful unequivocally favored historicism. A typical article titled, "What Will Follow the Colonial?" answered that nothing would, because Colonial was here to stay.[36]

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[33] Ibid., p. 36; H. Allen Brooks, Jr., "The Early Work of the Prairie Architects," Journal of the Society of Architectural Historians 19, no.1 (March 1960): 2-5.

[34] William J. Rudd, "George W. Maher: Architect of the Prairie School," Prairie School Review 1 (1964): 9.

[35] House Beautiful 30 (1911): 77.

[36] Ibid. 15 (1904): 232.

Nevertheless, Rectilinear homes appeared and the editors struggled valiantly to give them historical labels: A 1902 stuccoed rectangular block was said to show "the simple broad lines of Italian construction," while a 1909 design derived from "the New England farmhouse," and a third in 1912 was "a pleasant and quiet adaptation of both Colonial and Italian modes."[37] The editors headlined a side-stair Rectilinear box with its gable end toward the street as Colonial but were forced to admit that in "both plans and elevations there is a departure from Colonial lines …. The house is an extremely eclectic example of an extremely elastic style."[38] When the magazine published a Rectilinear Maher design in 1908, it forewent a specific label, but still tried to cloak the house in tasteful antiquity by calling it "a modification of the square dwelling of earlier days."[39] In a 1909 article on "Country Houses" that pictured examples of each important style, the editors let their exasperation show. After illustrating all the academic styles, they scrupulously showed a picture of a stuccoed Rectilinear residence with the caption "House Built in the Form of a Square. Not a Distinctive Type."[40]

Despite the magazine's obvious historicism, its underlying dedication to "Simplicity, Economy, and Appropriateness in Home Decoration and Furnishing" probably did encourage readers to explore Rectilinear designs. Occasionally a House Beautiful author even had a grudging compliment for the style, as when the prolific Aymer Embury II described a 1911 design as "a simple, straightforward house of the block shape …. The simplicity of its exterior gives a tremendous amount of room for its cost. While perhaps not so picturesque … it is nevertheless a simple and dignified sort of residence."[41]

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[37] Ibid. 12 (1902): 100; 26 (1909): 21; 32 (1912): 117.

[38] Ibid. 20 (June 1906): 25-26.

[39] Ibid. 24 (1908): 132.

[40] Ibid. 25 (1909): 122.

[41] Ibid. 29 (1911): 170.

Four variants of the Four Square appeared as House Beautiful designs in 1900, 1903, and 1907.[42] Many more examples of the type were included in advertisements, beginning in 1904. Some were the same as those seen in professional journals; others were for consumer products such as mail-order garden supplies and Frigidaire refrigerators, as well as many offerings of house designs by mail. (Figure 17) Though House Beautiful did its best to ignore the Four Square, its advertisers recognized the type as a typical American home.

Ladies Home Journal, less preoccupied with educated taste, proved somewhat more receptive to the new Rectilinear ideas. Shortly after Edward Bok became editor in 1889, he had begun including articles on house design, and by the mid l890s also featured plans drawn by leading architects of the day. Bok's editorials showed strong anti-Queen Anne sentiments: "The curse of the American Home today is useless bric-a-brac …. Simplicity is the only thing that ornaments."[43] His attitudes carried much weight, because by the 1900s the Ladies Home Journal had almost a million paid readers, a sharp contrast to the 2,000 - 20,000 figures of professional architectural and building journals.[44]

While Ladies Home Journal usually favored picturesque, associative designs, it included a good share of Rectilinear homes in articles as well as advertisements. The earliest came from California in 1897 and 1899.[45] The magazine wrote of the first design: "an up-to-date house … [with] much to commend it to one's attention and admiration. The almost absolute lack of elaborate detail is one of the chief

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[42] Ibid. 8 (1900): 666; 10 (1901): 231; 14 (1903): 344; 22 (1907) October, pp. 14, 17.

[43] Ladies Horne Journal 13 (1900) November, p. 18.

[44] Russell Lynes, The Domesticated Americans (New York: Harper and Row, 1963), p. 240; N.W. Ayer and Son, 1902, pp. 1410-1411; 1910, pp. 1105-1106; 1917, pp. 1216-1217.

[45] Ladies Home Journal 10 (1899) April, p. 18, October, p. 24.

charms of this residence.[46] Four Squares appeared during the 1900s by Robert Spencer, Will Bradley, W.A. Balch, and Lehman and O'Kane.[47] In addition to its support of the Rectilinear the Journal was the first popular magazine to feature Frank Lloyd Wright's Prairie homes, publishing a pair of his designs in 1900 and also his Four Square-influenced "Fire Proof House for $5,000" in 1907.[48]

While Rectilinear houses including Four Squares did appear with regularity in the women's magazines and the professional journals, the style was far from the most popular. Even in the so-called builders' journals with their common-sense approach to housing, Rectilinear designs were surpassed in number by those in the Colonial style, as well as the Victorian in the earliest years and very soon the Bungalow. While magazines were important in popularizing the Four Square, they had help from two other sources of architectural information in the period: the growing variety of plan services and the new ready-cut housing industry.

The Plan Services and the Four Square.

The popularity of the Four Square in magazines was duplicated in plan books during the 1900s and 1910s. The earliest architectural books in America had been "builders' guides" that gave hints on designing and constructing stairs and other difficult building components.[49] With Andrew Jackson Downing came the transition to "house pattern books" which provided plans and illustrations of complete houses. By the time of the Four Square, such works had given way to a third type, the "plan books."

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[46] Ibid., April, p. 18.

[47] Ibid. 19 (1902) June, p. 13; 22 (1905) April, p. 25; 23 (1906) April, p. 35, May, p. 25. See also 20 (1903) February, p. 20.

[48] Ibid., I8 (1901) February, p. 17, July, p. 15.

[49] Henry-Russell Hitchcock, American Architectural Books: New Expanded Edition… (New York: DaCapo Press, 1976), preface.

These did not attempt to give enough information to build a house, but were instead catalogues distributed by mail order firms to entice the reader to send from ten to fifty dollars for complete blueprints of a particular design. The influence of the books went far beyond those who actually ordered plans, because the inexpensive and widely distributed catalogues functioned as "idea books" for builders and prospective home owners.

We have already seen that plan books by Frank P. Allen and the National Architects' Union in 1891 carried some of the earliest Four Square designs. Over a decade passed, however, before examples of the type began to be presented regularly. Beginning about 1903 several plan services included Four Squares among their offerings. The Radford Architectural Company of Chicago was one of the first. They claimed their designs were "medium in price, and such as 80 to 90 percent of the people in the United States wish to build today."[50] In their 1903 American Homes this boast included three Four Squares and several Rectilinear designs.[51] Another was Frederick Hodgson and the National Builder. The magazine ran a mail order plan service and periodically reprinted its designs in book form to reach non-subscribers. Hodgson's 1904 compilation included three National Builder Four Squares.[52]

A third publisher to pick up the type in the 1900s was Gustav Stickley. Stickley led the Arts and Crafts movement in America, a "back-to-basics" response to the Queen Anne that stressed hand work and simple design. He published an influential magazine of interior design, furniture making, and house planning called The Craftsman, and occasionally reprinted house designs in book form. The first of these books, Craftsman Homes in 1909, included two variations on the Four

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[50] Radford Architectural Co., The Radford American Homes: 100 House Plans (New York: Industrial Publication Co., 1903), p. 250.

[51] Ibid., pp. 32-33, 42-43, 102-103, 132-133.

[52] Frederick T. Hodgson, Hodgson's Low Cost American Homes (Chicago: Frederick J. Drake and Co., 1904), "The Pearle," "The Luella," "The Watkins. "

Square.[53] "A Very Simple and Inexpensive Cottage Built of Battened Boards" reprinted from The Craftsman of April 1905 showed a compact version of the type in wood. "A Comfortable and Convenient House for the Suburbs or the Country" dated 1907 was a more substantial brick and concrete affair with a tile roof and a "half-timbered" second story. This second house appeared in Stickley's 1912 More Craftsman Homes along with another Four Square influenced design, "Two Story House for Village Corner Plot."[54] The years 1910 through 1920 were the heyday of the Four Square in the plan services. Sixteen of thirty-seven books examined for that period had Four Square designs.[55] Two in particular, by Herbert Chivers and Frederick Hodgson, showed a fascination with the type. The 1910 edition of Artistic

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[53] Gustav Stickley, Craftsman Homes (New York: The Craftsman Publishing Co., 1909), pp. 23, 32-35.

[54] Gustav Stickley, More Craftsman Homes (New York: Craftsman Publishing Co., 1912), pp. 56-57, 81.

[55] Books which included Four Squares or closely related Rectilinear designs 1910 through 1920 were: Aladdin Co., Aladdin Homes: "Built in a Day" 2d ed. (Bay City, Mich.: Aladdin Co., 1920); Aladdin Homes Manufactured by the Aladdin Co. of Bay City, Mich. (Bay City, Mich.: Aladdin Co., 1917); Aladdin Plan of Industrial Housing (Bay City, Mich.: Aladdin Co., 1918). The Average Man's Home (Cleveland: The Complete Building Show Co., 1916). Berkshire Lumber Co., Artcraft Homes (Pittsfield, Mass.: Eagle Printing and Binding Co., 1917). Herbert C. Chivers, Artistic Houses (St. Louis: H.C. Chivers, 1910). James Ford, American Country Houses of Today (New York: The Architectural Book Publishing Co., 1912-1915). [J. A. Green], Wildwood Homes, Being a Collection of Houses and Suggestions for the Home Builder (Fort Wayne, Ind.: printed by Fort Wayne Printing Co., cI912). Frederick T. Hodgson, Practical Bungalows and Cottages for Town and Country ... 300 Low and Medium Priced Houses and Bungalows (Chicago: Frederick J. Drake, 1916). Lewis Mfg. Co., Homes of Character (Bay City, Mich.: Lewis Mfg. Co., 1920). Lumber Dealers' Service Bureau, Architectural Economy (Chicago: printed by the Faithorn Co., 1920). Maurice M. Sloan, The Concrete House and Its Construction (Philadelphia: Association of American Portland Cement Manufacturers, 1912). Southern Pine Association, Homes for Workmen (New Orleans: Southern Pine Association, 1919). Gustav Stickley, More Craftsman Homes. Herman V. VonHolst, Modern American Homes (Chicago: American School of Correspondence, 1912). Ekin Wallick, The Small House for a Moderate Income (New York: Hearst's International Library Co., 1915). Montgomery Ward & Co., Building Plans of Modern Homes (Chicago: Montgomery Ward & Co., 1912).

Homes by Chivers' St. Louis architectural firm had among its hundreds of plans over three dozen Four Squares. These mainly varied in details of room layout, porches, chimney placement, and so on, but a Four Square city flat, a Four Square duplex and even a boat house with a Four Square exterior were available. Most of Chivers' Four Squares had unusually tall hip roofs and chunky detailing that recalled Chateauesque mansions.

Frederick Hodgson of the National Builder, who had included a few Four Squares on his 1904 book, embraced the type by the teens. The 1916 edition of his Practical Bungalows and Cottages for Town and Country was split between Bungalows and Rectilinear houses, particularly Four Squares. He explained that the Bungalow with its porches and low, rambling profile had developed as a response to California's climate. Similarly, he believed, Eastern climate had contributed to Four Square design: "In the East even the cheapest house … requires a cellar and a comparatively substantial foundation and as this foundation is one of the chief sources of expense the tendency is to make it cover as small an area as possible and to build over it a comparatively high square box of a house."[56] Hodgson saw both his Bungalows and Rectilinear cottages as appropriate to all parts of the country, no matter what their original source. Those who wanted a smaller, picturesque house built a Bungalow, while families that needed a full two stories and desired a solid, dignified appearance chose the Four Square.

The private plan services were not the only suppliers of house plans during the Four Square's period of popularity. Increasing mass production of building materials led to the rise of the trade associations in the period. Organizations like the Southern Pine Association, the Portland Cement Association, and the American Face Brick Association promoted their products by providing house plans at little or no cost.

This activity, combined with the already existing plan services, provoked the architectural profession to stop complaining about the quality of housing provided by mail order services and work out a way to supply inexpensive high-quality plans

[56] Hodgson, Practical Bungalows and Cottages for Town and Country, p. 5.

of its own.[57] The American Institute of Architects and its local branches through experiment and discussion evolved the Architects Small House Service Bureau to create and distribute stock designs for low-cost houses. Thus, even homes too inexpensive to warrant individual attention by an architect could be "architect-designed." Both the trade associations and the AIA included Four Squares among their offerings.

* * *

One should not assume that local builders blindly copied the mass designs offered by the plan services. Evidence is strong that developers and especially home owners freely combined published designs, local examples, and personal needs and whims to come up with an endless variety of unique houses. Magazines persistently lamented that readers refused to follow designs exactly. An AlA architect admitted, "While there are a great many standardized plans in the houses designed by the Architects Small House Bureau, most people who are building like to have the plan of their house embody their own pet ideas.[58] The official who ran the plan service of the Northwestern Lumbermen's Association was even more to the point: "Experience has brought out constantly that collections of building designs, standardized or otherwise, function merely as a suggestion."[59] Mass media spread the Four Square and other popular house types in the early twentieth century, but the houses as built remained as much an expression of their individual designers' and owners' creativity as earlier folk housing had been.

The Ready-Cut Housing Industry.

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[57] As this paper was being readied for final typing, an article appeared on the Architects' Small House Service Bureau by Thomas Harvey, "Mail Order Architecture in the 1920s," Landscape 25 (1981): 1-9.

[58] House Beautiful 58 (1925): 209. See also American Architect and Building News 127 (1925) March 25, p. 12.

[59] American Architect and Building News 116 (1919): 239-240.

Along with conventional plan services in the 1900s there appeared a new idea in residential design and construction. This was the ready-cut housing industry. Companies offered complete houses for sale of pre-cut, pre-painted lumber, factory-made window and door units and all other materials shipped complete with all plans and specifications ready for the home owner or his carpenter to assemble. The technological transformation that allowed this phenomenon was evident in the changing contents of the builders' magazines of the period, especially Carpentry and Building. In the l880s articles had dwelt on saw sharpening, formulating paint from natural pigments, and other topics that indicated the craft status of builders. By the 1900s craft articles all but disappeared, replaced by pages of advertising for pre-assembled windows, ready-mixed paint, wall board and so on. Home building was no longer a localized craft, but was becoming an industry of national component manufacturers. The appearance of the ready-cut firms was an indication that the process had gone so far that it was now feasible to package the components as a total house.

The Aladdin Company and Lewis Homes, both of Bay City, Michigan, Gordon-VanTine of Davenport, Iowa, Berkshire Lumber of Pittsfield, Massachusetts, and the famous catalogue sales pioneers Montgomery Ward and Sears, Roebuck and Company with corporate offices in Chicago were all active in the ready-cut field.[60] In plants around the country -- four of them in the case of Aladdin -- workmen with the latest power tools turned out all the materials needed for a house. Catalogues bragged that mass buying, mechanized production, and especially careful planning to eliminate waste meant they could ship their products for less than material could be purchased locally.

Prices quoted ranged from about $700 to $3,000 plus local assembly. The companies advertised their houses as ideal not only for home owners and suburban

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[60] In addition to catalogs of these companies listed in the bibliography (Appendix II), see House Beautiful 39 (1916): 166-167. For more on the Sears homes, including interviews with current owners, see the excellent new article by Kay Halpin, "Sears, Roebuck's Best Kept Secret," Historic Preservation 33 (September/October 1981): 24-29.

developers but also for mining companies and other industries that needed large amounts of worker housing quickly. When World War I brought a huge demand both by defense industries and by the Federal government in its first major involvement in housing, the ready-cut industry rushed in to meet it, Aladdin fotr one bringing out a special catalog geared to wartime clients.[61]

The ready-cut companies all loved the Four Square. It was fashionable, simple, and above all a very economical way to provide a great deal of interior space. Dozens of Four Squares appeared in the ready-cut catalogues, including concrete block ones from Montgomery Ward, designs with Craftsman and Colonial trim from Lewis Homes, and duplex, two-flat and grocery store variants from Aladdin.

What Made the Four Square Popular?

We have examined the mechanism whereby the Four Square spread, first in the architectural community, then through magazines and plan services. It remains to ask why the general public so readily adopted the type. The answer is a combination of economics and aesthetics.

The main economic advantage of the Four Square has already been identified. "It is a fact well known in building circles that the two-story, square, hip-roof house gives greatest floor space at less cost than any other style of residence," wrote one plan service, and a similar sentence appeared with most published designs.[62] The economy of the cube was indisputable, but it is not certain whether the hip roof really cost less to build than the competing gable: at least one article

[61] Aladdin Co., Aladdin Plan of Industrial Housing.

[62] Berkshire Lumber Co., Artcraft Homes, description of "The Auburn."

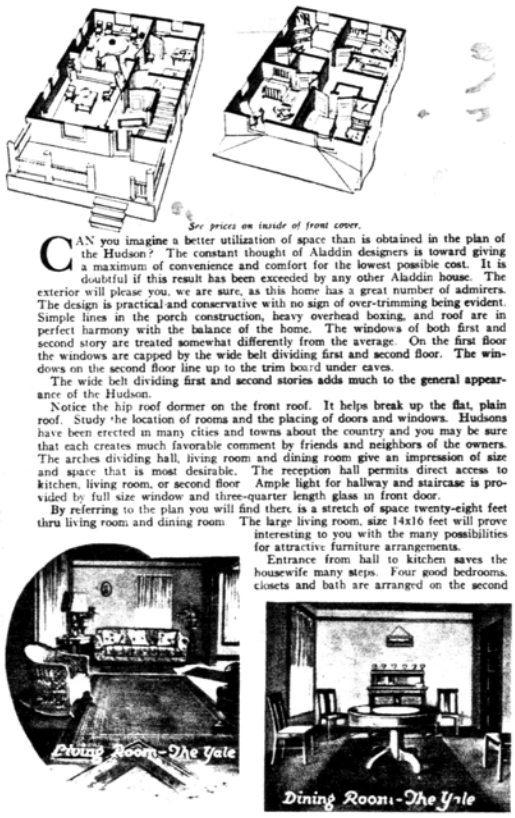
stated that the fact that it had four angles where the roof planes met, rather than one, made it more difficult to frame.[63]

[63] House Beautiful 25 (1908) November, p. 8.

Figure 18. Ready-Cut Industry Promotes the Four Square: Frontispiece of Book of Homes (1910c) by Montgomery, Ward and Company.

Figure 19. Ready-Cut Housing Industry Promotes the Rectilinear: Ad for Gordon-VanTine Plan-Cut Homes (1927).

Figure 20. Typical Ready-Cut Four Square: "The Hudson" (1920) by Aladdin Homes. From the company catalog, Aladdin Homes: "Built in a Day", 2d ed. (Bay City, Mich.: Aladdin Co., 1920).



See prices on inside of front cover.

CAN you imagine a better utilization of space than is obtained in the plan of the Hudson? The constant thought of Aladdin designers is toward giving a maximum of convenience and comfort for the lowest possible cost. It is doubtful if this result has been exceeded by any other Aladdin house. The exterior will please you, we are sure, as this home has a great number of admirers. The design is practical and conservative with no sign of over-trimming being evident. Simple lines in the porch construction, heavy overhead boxing, and roof are in perfect harmony with the balance of the home. The windows of both first and second story are treated somewhat differently from the average. On the first floor the windows are capped by the wide belt dividing first and second floor. The windows on the second floor line up to the trim board under eaves.

The wide belt dividing first and second stories adds much to the general appearance of the Hudson.

Notice the hip roof dormer on the front roof. It helps break up the flat, plain roof. Study the location of rooms and the placing of doors and windows. Hudsons have been erected in many cities and towns about the country and you may be sure that each creates much favorable comment by friends and neighbors of the owners. The arches dividing hall, living room and dining room give an impression of size and space that is most desirable. The reception hall permits direct access to kitchen, living room, or second floor. Ample light for hallway and staircase is provided by full size window and three-quarter length glass in front door.

By referring to the plan you will find there is a stretch of space twenty-eight feet thru living room and dining room. The large living room, size 14x16 feet will prove interesting to you with the many possibilities for attractive furniture arrangements.

Entrance from hall to kitchen saves the housewife many steps. Four good bedrooms, closets and bath are arranged on the second floor. The woodwork and floors are of beautiful grained lumber, which is subject to any treatment you like. To lovers of simplicity in home architecture the Hudson always appeals strongly.

The builder of the Hudson need have no fears as to the quality of the material in his home. The famous "Dollar-A-Knot" siding is used in the Hudson. The doors and interior finish are of clear Oregon Fir that is a real hard wood yet softer than either oak or birch. It will readily take any hard wood polish and it is soft enough to work easily. We cannot praise the quality of our interior finish too highly.

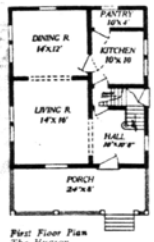
We have many interesting letters from Hudson owners telling of their experiences, cost of erection, and length of time in building. We will be glad to send you copies of these letters or will send you names and addresses of owners nearest you. In this way you can write and learn at first hand of their complete satisfaction.

For prices refer to inside of front cover. See Terms on page 2. See Specifications on pages 12 and 13.

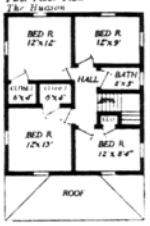
Living Room—The Yale

Dining Room—The Yale

The Hudson

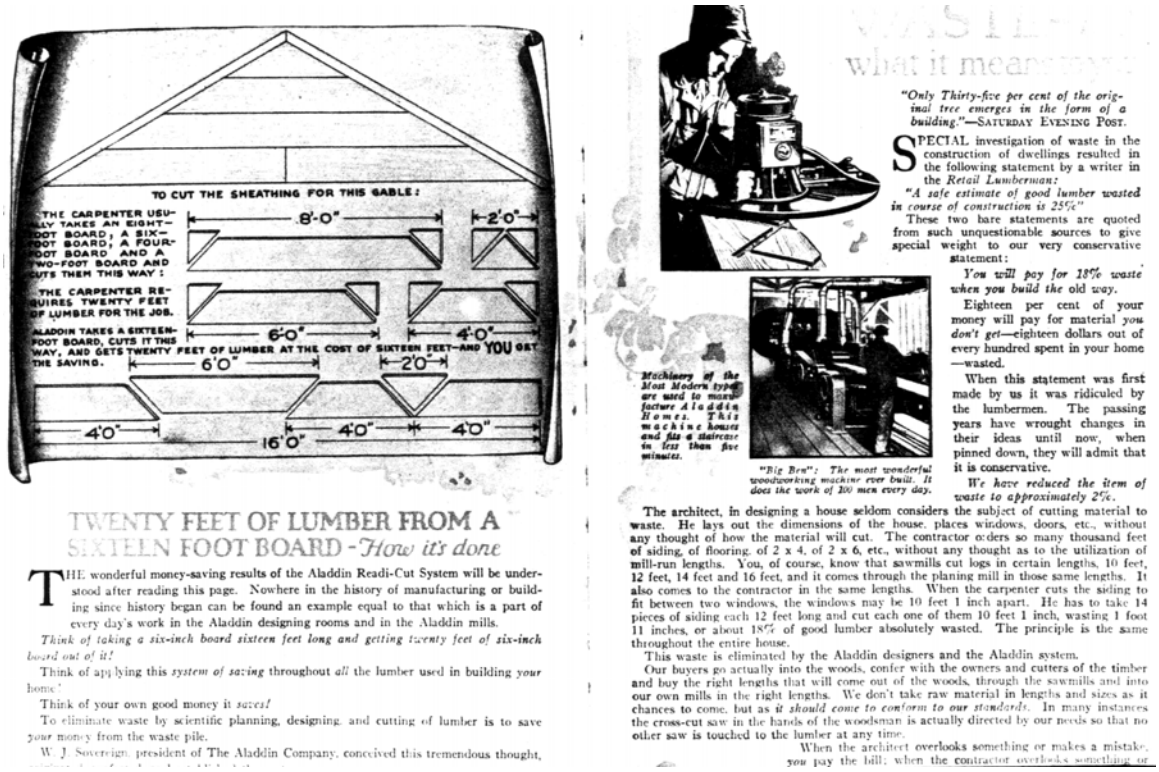


First Floor Plan
The Hudson



Second Floor Plan—The Hu

Figure 21. Advantages of the Ready-Cut System: . From the company catalog, Aladdin Homes: "Built in a Day", 2d ed. (Bay City, Mich.: Aladdin Co., 1920).



TO CUT THE SHEATHING FOR THIS GABLE:

THE CARPENTER USUALLY TAKES AN EIGHT-FOOT BOARD; A SIX-FOOT BOARD; A FOUR-FOOT BOARD AND A TWO-FOOT BOARD AND CUTS THEM THIS WAY:

8'-0" 2'-0"

THE CARPENTER REQUIRES TWENTY FEET OF LUMBER FOR THE JOB.

ALADDIN TAKES A SIXTEEN-FOOT BOARD, CUTS IT THIS WAY, AND GETS TWENTY FEET OF LUMBER AT THE COST OF SIXTEEN FEET—AND YOU GET THE SAVING.

6'-0" 4'-0" 6'0" 2'0"

4'0" 16'0" 4'0" 4'0"

TWENTY FEET OF LUMBER FROM A SIXTEEN FOOT BOARD - *How it's done*

THE wonderful money-saving results of the Aladdin Readi-Cut System will be understood after reading this page. Nowhere in the history of manufacturing or building since history began can be found an example equal to that which is a part of every day's work in the Aladdin designing rooms and in the Aladdin mills.

Think of taking a six-inch board sixteen feet long and getting twenty feet of six-inch board out of it!

Think of applying this *system of saving* throughout *all* the lumber used in building *your* home!

Think of your own good money it *saves!*

To eliminate waste by scientific planning, designing, and cutting of lumber is to save *your* money from the waste pile.

W. J. Sovereign, president of The Aladdin Company, conceived this tremendous thought,

"Only Thirty-five per cent of the original tree emerges in the form of a building."—SATURDAY EVENING POST.

SPECIAL investigation of waste in the construction of dwellings resulted in the following statement by a writer in the *Retail Lumberman:*

"A safe estimate of good lumber wasted in course of construction is 25%"

These two bare statements are quoted from such unquestionable sources to give special weight to our very conservative statement:

You will pay for 18% waste when you build the old way.

Eighteen per cent of your money will pay for material *you don't get*—eighteen dollars out of every hundred spent in your home —wasted.

When this statement was first made by us it was ridiculed by the lumbermen. The passing years have wrought changes in their ideas until now, when pinned down, they will admit that it is conservative.

We have reduced the item of waste to approximately 2%.

Machinery of the Most Modern type are used to manufacture Aladdin Homes. This machine houses and fits a staircase in less than five minutes.

"Big Ben": The most wonderful woodworking machine ever built. It does the work of 200 men every day.

The architect, in designing a house seldom considers the subject of cutting material to waste. He lays out the dimensions of the house, places windows, doors, etc., without any thought of how the material will cut. The contractor orders so many thousand feet of siding, of flooring, of 2 x 4, of 2 x 6, etc., without any thought as to the utilization of mill-run lengths. You, of course, know that sawmills cut logs in certain lengths, 10 feet, 12 feet, 14 feet and 16 feet, and it comes through the planing mill in those same lengths. It also comes to the contractor in the same lengths. When the carpenter cuts the siding to fit between two windows, the windows may be 10 feet 1 inch apart. He has to take 14 pieces of siding each 12 feet long and cut each one of them 10 feet 1 inch, wasting 1 foot 11 inches, or about 18% of good lumber absolutely wasted. The principle is the same throughout the entire house.

This waste is eliminated by the Aladdin designers and the Aladdin system.

Our buyers go actually into the woods, confer with the owners and cutters of the timber and buy the right lengths that will come out of the woods, through the sawmills and into our own mills in the right lengths. We don't take raw material in lengths and sizes as it chances to come, but as *it should come to conform to our standards.* In many instances the cross-cut saw in the hands of the woodsman is actually directed by our needs so that no other saw is touched to the lumber at any time.

When the architect overlooks something or makes a mistake, you pay the bill; when the contractor overlooks something or

In addition to the construction economies of its shape, the compact Four Square plan also proved efficient for the newly developed central heating. Stoves in each room had freed Victorian houses to ramble, but a central furnace was most economical when the heated air or water had only a short distance to travel. "This shape makes a compact convenient house," wrote Milton Dana Morrill, and "is therefore economical in building, in upkeep and repair, in heating and housework.[64]

A 1928 House Beautiful article hinted at another reason why the economical form of the Four Square was particularly desirable at the turn of the century:

> Just because such things as heating plants, plumbing and wiring installations, ventilating and refrigeration … and kitchen equipment were not economically possible before, just because they had never existed in the past,

[64] Building Age 42 (19 20) June, p. 20.

> they have never had to be included in the cost. A contract in our grandfather's day consisted only of masonry, carpentry, and painting …. Through the last half-century, more and more has been added in the way of mechanical conveniences, until today these amount to about a quarter of the entire expense of the building.[65]

According to the U.S. Census Bureau, the average price of a new housing unit held remarkably steady from 1890 through the 1900s at around $2,400.[66] In the next decade it finally succumbed to the steadily rising technology costs and jumped to over $4,000. Historian Gwendolyn Wright has suggested that in the early period "the trend toward smaller, less ornamented, more standardized houses … helped balance the mounting expenditures for technology." (Figure 24)[67] The combination of economy and roominess of the Four Square and other Rectilinear types made them a popular choice for people trying to hold the line against rising housing costs.

* * *

Aesthetics were at least as important as economics in the widespread acceptance of the Four Square. Today as America rediscovers the ornate beauty of Victorian styles, the Four Square is dismissed as unsophisticated, plain and ugly. People at the turn of the century, however, saw it as a bold, clean design, an end to the oppressive, arbitrary gaudiness of the Queen Anne.

When the National Builder, which was more vocal about the aesthetics of its designs than other magazines were, published its first Four Squares in the 1900s, it spoke of the house as modern and emphasized the lack of historic associations. Omaha architect I.P. Hicks titled a 1906 house "Nebraska Modern" and identified another in 1908 as "a modern house of the square type, the kind that is by far the

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[65] House Beautiful 63 (1928): 228.

[66] U.S. Bureau of the Census, Historical Statistics, series N-167.

[67] Gwendolyn Wright, p. 238.

most popular that is now being erected in Omaha."[68] Other architects echoed Hicks' enthusiasm with descriptions like: "thoroughly modern, its elegance lying in its simplicity, it being free of the usual filigree work.[69]

By the following decade the Four Square was perceived as less radical, for many examples now existed in all parts of the country. Advertisements in the 1910s and 1920s referred to the type as stately, dignified, and solid. "The conservative exterior … is appealing," ran the copy for one ready-cut design, "…inviting you into its big, strong, protecting walls to find comfort, pleasure and satisfaction."[70] Another house was "of the ever popular square type which gives an air of massiveness. Although … designed along conservative lines, it is not commonplace."[71] "That sort of house never goes out of style," maintained a third.[72]

One factor that enhanced respectability was the house's resemblance to other accepted types. It looked like an up-to-date version of the old Italianate mansions of the established wealthy families in many communities. It also resembled the cleaner, more compact form of the Colonial and Renaissance mansions being built by the well-to-do of the day. The Four Square allowed its owner to be modern without discarding time-tested ideas of what a house should be.

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In addition to its economic and aesthetic merits, the Four Square's prevalence in today's built environment results in part from a coincidence in time.

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[68] National Builder 42 (1906) April, p. 42; 47 (1908) October, p. 39.

[69] Ibid. 40 (1905) May, p. 40.

[70] Aladdin Co., Aladdin Homes: "Built in a Day," p. 16.

[71] Ibid., p. 49.

[72] Berkshire Lumber Co., Artcraft Homes, description of "The Auburn."

The Four Square's popularity came on the crest of a nationwide construction boom that lasted from 1905 until the United States' entrance into World War I in 1917 imposed wartime restrictions on building.[73] In the decade after the 1893 depression, housing starts had languished at two to three hundred thousand per year. In 1905 the slump abruptly ended with construction of over half a million new housing units, a sixty-one percent jump over the previous year. The annual level stayed between four and five hundred thousand for the next eleven years. This boom coincided with the height of Four Square popularity and led to construction of thousands of examples of the type across the country. By 1920 the Four Square house type was, in the words of Building Age, "one of the most popular in practically every section of the country."[74] Novelist Sinclair Lewis, known for his keen observation of everyday life in the period, summed up the 19l0s perception of the Four Square in his 1920 book Main Street. Will Kennicott, the stolid small-town doctor, wanted

> a house exactly like Sam Clark's, which was exactly like every third new house in every town in the country: a square, yellow solidity with immaculate clapboards, a broad screened porch, tidy grass plots, and concrete walks; a house resembling the mind of a merchant who votes the party ticket straight and goes to church once a month and owns a good car.[75]

In contrast, Kennicott's wife Carol, a devotee of women's magazines and "educated uplift," talked "of a low stone house with lattice windows and tulip beds, of colonial brick, of a white frame cottage with green shutters and dormer windows."[76]

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[73] U.S. Bureau of the Census, Historical Statistics of the United States: Colonial Times to 1970 (Washington, D.C.: U.S. Bureau of the Census, 1975), series N-156. See also series N-63, N-73, N-113.

[74] Building Age 42 (1920): 366.

[75] Sinclair Lewis, Main Street (New York: P.F. Collier & Son, 1920), pp. 297-298.

[76] Ibid., p. 297.

CHAPTER IV.
CASE STUDY: THE FOUR SQUARE IN SALT LAKE CITY

We now turn from examination of the Four Square house type as published in national magazines and plan books to a study of its adoption in a particular community. This will enable us to see when it was most popular in actual use and how it compared with competing styles. The case study will gauge involvement of architects and builders with the type and provide a glimpse of the owners who chose to build Four Squares for their own occupancy, for rental or for resale. While no one case study can offer generalizations for the entire country, this exercise does give a perspective on the adoption of the type that is a valuable addition to research in national printed sources.

The Study Community and the Research Method.

The Avenues district of Salt Lake City, Utah, was chosen for the case study. It is a middle class neighborhood of approximately 3,000 homes, largely single family, located immediately northeast of the central business district (Figure 23). First settled in the 1850s it experienced its greatest growth when it became Salt Lake's first "streetcar suburb" between 1880 and 1930, a period that nicely bracketed the popularity of the Four Square in the media (Table 1). The fluctuations of building activity in the neighborhood from year to year mirrored national trends closely, even after 1910 when the filling up of the area began to cut the real number of homes built each year. Though apartment buildings have replaced some houses near downtown, a comparison of old Sanborn insurance maps with present-day maps shows most of the homes from the 1880s-1930s remain, providing a good opportunity to study the Four Square in context.

From 1977 to 1980 the Avenues district from First up through Tenth Avenue was the focus of an intensive house-by-house historic survey by the Utah State Historical Society, undertaken in preparation for nomination to the National Register of Historic Places. A photograph was taken of every building regardless of age or condition and brief architectural descriptions were written. A team of

researchers used title searches, city directories, and newspaper obituaries to pinpoint construction dates and gather information on early owners and residents to at least 1940. The resulting data were most complete and reliable for buildings constructed before 1930, the cutoff date for National Register eligibility when much of the area was listed as a historic district in 1980.[1]

These data, after coding and analysis with a Wang Word Processor, comprised the basic data set for the present case study.[2] All buildings through Eighth Avenue were included in this data set, a slightly simpler upper boundary than the official one for the National Register District. Available information for each structure comprised street address, architectural rating assigned by the Society, primary exterior building material, architectural type/style, date of construction, first owner, architect, and builder, as well as original use, and whether the structure was built speculatively for quick resale rather than for occupancy by its first owner. The size of the total data set was 2,428 buildings.[3]

In the original survey a label "Box type" included Four Squares, hip-roofed center hall Rectilinear houses, plus a handful of earlier simple Italianate homes. For this paper Italianate houses built before 1895 have been removed from the category. Except where otherwise noted "Rectilinear" includes both the Four Square type and its center hall cousin, while "Four Square" refers to that type alone. Over three fourths of "Box type" houses in the Avenues were Four Squares.

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[1] A report on the survey has been published: Karl T. Haglund and Philip F. Notarianni, The Avenues of Salt Lake City (Salt Lake City: Utah State Historical Society, 1980).

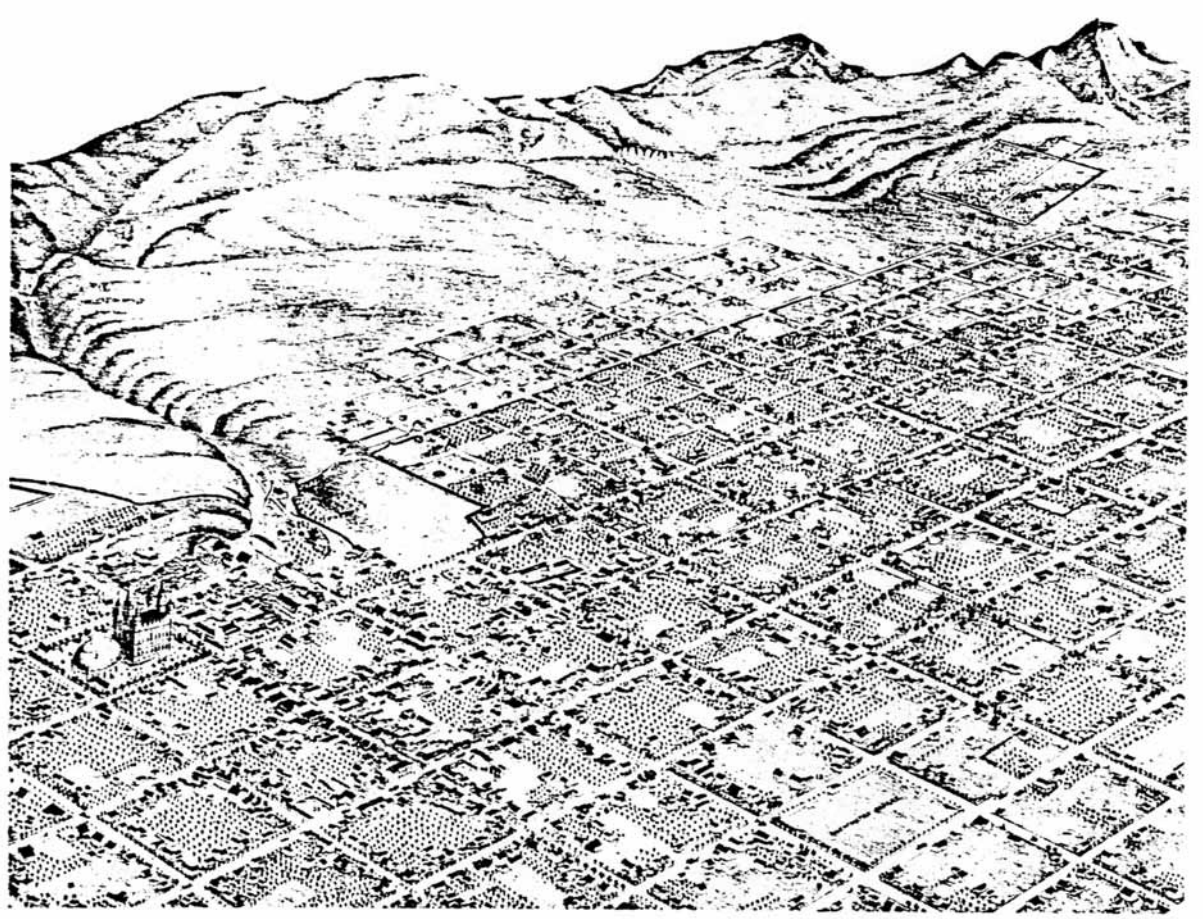
[2] The author wishes to thank the society for donating the use of the Wang Word processor for this project.

[3] Once coded and entered on the word processor, the material was sorted for each characteristic. One sort arranged the material alphabetically by architect, another grouped structure with the same original use, and so on. These resorted data sets were printed out on ordinary 8-1/2 x 11 paper and also archived on storage disks for use by future researchers at the Society. While the word processor is a very limited computer, unable to do any statistical work, it was quick and easy to use for this type of data manipulation. Calculations and tables were developed by hand with the help of a pocket calculator.

Figure 22. J.C. Penney's Four Square: Rhoda Chase Welker house (1906) in Salt Lake City, Utah. Photo from Haglund and Notariani, The Avenues of Salt Lake City (Salt Lake City: Utah State Historical Society, 1980).

371 Seventh Avenue
Style: Box
Original Owner: Rhoda Chase Welcker
Built: 1906

Figure 23. Salt Lake City and the Avenues Neighborhood: Birdseye map (1870). The Avenues consist of the grid of smaller blocks at the upper center of the view. From Haglund and Notariani, The Avenues of Salt Lake City (Salt Lake City: Utah State Historical Society, 1980).



In this 1870 Bird's Eye View of Salt Lake City the Avenues extend as far as Mountain Street, present-day Seventh Avenue. Drawn by Augustus Koch, the map looks northeast toward the Wasatch Mountains and shows the cemetery on the upper right. A completed version of the LDS temple emerges on the lower left even though the project was still under construction.

TABLE 1

THE AVENUES OF SALT LAKE CITY:
BUILDING ACTIVITY COMPARED WITH NATIONAL TREND.

	1865-69	1870-74	1875-79	1880-84	1885-89	1890-94	1895-99	1900-04	1905-09	1910-14	1915-19	1920-24	1925-29	TOTAL
Buildings Constructed in Avenues (Surviving in 1980)	2	26	10	44	112	299	230	353	452	156	56	74	58	1872
Housing Starts in U.S. (1,000's)						1539	1402	1272	2334	2052	1543	3176	3858	

Based on pre-1930 buildings for which date of construction was available - 1,872
Avenues data include a small number of non-residential buildings.
National data adapted from Historical Statistics of the United States, series N156.
Avenues data based on Utah State Historical Society survey.

Popularity.

Magazines and plan books examined in the course of this study suggested that the Rectilinear style, and the Four Square type in particular, was the third most popular American style from the late 1890s into the 1920s. It appeared to trail the Colonial and Bungalow but to be more popular than the rest of the academic and picturesque styles, the Prairie school and others. The highpoint of Four Square exposure in printed sources was the 1910s. Data from Salt Lake modify these conclusions somewhat.

The first true Four Squares in the Avenues appeared in 1896 following publication of the Trott house in Carpentry and Building, though a handful of earlier Victorian and Italianate houses had hinted at a Rectilinear simplicity. The Four Square type and its center hall cousin climbed to a peak of popularity in the period 1905-1909 when they accounted for fifteen per cent of all new construction. Popularity then steadily declined, and in 1922 the last Four Square was erected in the neighborhood (Table 2).

This peak and decline were earlier than seen in the media. The Salt Lake experience, however, seems to match reports by observers in other parts of the country.[4] The Four Square's real popularity evidently ended by 1920, though magazine advertisers continued to portray the type as a "typical house" well into the twenties. Salt Lake's high degree of enthusiasm for the type in the late 1890s was stronger than expected from the reports of other areas. This may have been due to links between Salt Lake and Denver, its nearest large neighbor, a day's journey by train. Architects from one city often had commissions in the other, and at least two who practiced in Denver in the 1880s eventually settled in Salt Lake.[5]

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[4] See Chapter I section on The Rectilinear and Architectural Historians.

[5] Walter Ware, who arrived from Denver 1n 1889, and F.A. Hale, who came 1n 1890, are examples of this tendency. Haglund and Notarianni, p. 39; Judith Brunvand, "The Salt Lake City Architecture of Frederick Albert Hale" (M.A. dissertation, Department of Art History, University of Utah, 1980), p. 12; see also monthly reports of new building in Western Architect and Building News, Inland Architect and other magazines of the period.

The leading style in the Avenues during most of the Four Square era was not the Colonial Revival as might be expected from magazines, but the Victorian. Avenues Victorians seldom reached the elaborateness of the Queen Anne, but did have wings, bay windows, and compound hip and gable roofs. Though the Victorian style peaked in the early l890s, Avenues builders did not abandon it until about 1920, long after its disappearance from architecture and building journals.

When the Four Square first appeared in the Avenues it was the second most popular style after the Victorian. Around 1900 the Bungalow was introduced and by the end of the decade surpassed the Four Square. In the early 1910s the Bungalow became the neighborhood's favorite style and showed no signs of decline until nearly 1930. Its extensive use as early as the 1900s is surprising, as the style is generally perceived to be part of the popular culture of the Roaring Twenties. Over all, Victorians comprised fifty-five per cent of Avenues homes, Bungalows twenty-two per cent, and Rectilinear examples a healthy eight per cent.

Only three per cent of houses in the neighborhood could be called Colonial Revival, even when one included the gambrel roofed "Dutch" Colonial. This may reflect a general low level of popularity of that style among the middle class in areas far from eighteenth century East Coast prototypes. The other picturesque styles and the Prairie school were even less important in the neighborhood. Their combined total came to less than five per cent. Humble vernacular cottages mostly from the pre-streetcar era, often of adobe, and twentieth century apartment buildings made up the rest of the area's housing.

* * *

To summarize, in Salt Lake City's Avenues the Four Square was popular from 1896 to 1922, achieving a highpoint of fifteen per cent of new construction during the local and national building boom of the late 1900s. Numerically it trailed the Victorian style, which peaked earlier, and the Bungalow which peaked later. In the Avenues the Four Square and other Rectilinear homes proved more popular than the Colonial Revival, favored by architecture magazines, or the other historic styles and or the Prairie school.

TABLE 2

THE AVENUES OF SALT LAKE CITY:
ARCHITECTURAL TYPE/STYLE
OF RESIDENCES BEFORE 1930

	1865-69	1870-74	1875-79	1880-84	1885-89	1890-94	1895-99	1900-04	1905-09	1910-14	1915-19	1920-24	1925-29	TOTAL
Victorian (incl. Queen Anne)		.41	.50	.47	.67	.87	.80	.74	.40	.12	.06	.03		.55
Bungalow								.08	.32	.60	.70	.90	.67	.22
Box/Four-Square							.09	.11	.15	.10	.09	.01		.08
Vernacular	.50	.50	.20	.24	.15	.06	.01							.04
Colonial				.02	.02		.02	.03	.06	.01	.02			.03
Other Residential	.50	.08	.30	.28	.12	.07	.08	.03	.05	.13	.13	.05	.32	.08

Proportion of total residential construction in period.
Based on Utah State Historical Society survey data.
Residential buildings with both date of construction and type/style listed = 1,7891 cases.
Pre-1895 homes with Italianate plans excluded from Box category.
Pre-1900 homes labeled "Bungalow" on basis of later remodeling excluded from Bungalow category.
A blank cell indicates no activity in period.

Architects, Builders and Owners.

Salt Lake City began recording building permits in the early 1890s with columns for owner, builder, among other data. The permit laws seem not to have been enforced, however, and the recording was lackadaisical. Nevertheless, 371 of 1,202, or thirty-one per cent, of Avenues structures built during the period of greatest Four Square activity 1895 to 1919, are attributable to architects and/or builders. For owners permit data were supplemented by title searches and city directory research which allowed first owner to be ascertained for all but nineteen buildings, a ninety-eight per cent identification rate. From study of these three groups we can arrive at some conclusions about the sort of people who chose to erect Four Square houses.

* * *

Magazines of the period often debated whether architects, who worked for a set percentage of construction cost, could afford to design middle class homes like those in the Avenues, or whether such jobs should be left to builders. Salt Lake research indicates architects were quite active. Nearly a fifth of all structures built 1895-1919, including small houses as well as large, had building permits listing an architect. Narrowing discussion to just those homes for which architect/builder permit data are available, we find that sixty-two per cent of permits listed an architect while only thirty-eight per cent gave the name of the builder alone.

Architects were at least as interested in designing Four Squares and other Rectilinear homes as they were in other styles. Of Rectilinear houses with architect/builder data, sixty-six per cent had architects compared with sixty-four per cent for Victorians and sixty for Bungalows in the 1895-1919 period (see Table 3). Architect Samuel C. Dallas designed one of the neighborhood's first Four Squares in 1896, and during the next twenty-five years many of the city's leading architects produced examples of the type, fifteen different firms in all. The most active was Walter Ware, either alone or with his partner Alberto Treganza. This was a firm

well-known in Utah as a leader of the Prairie movement.[6] Its promotional brochure displayed its Four Square and other Rectilinear designs as equals of its Prairie homes, yet another indication that the house type was part of an intellectual architectural avant garde.[7] Treganza attended architectural school at Cornell as had Frank Kidder, and Ware was a Massachusetts native who practiced in Denver before moving to Salt Lake City in 1889, so one or the other of the partners may have picked up the Four Square idea at its source.

TABLE 3

THE AVENUES OF SALT LAKE CITY:
ARCHITECTS AND BUILDERS' INVOLVEMENT BY STYLE 1895-1919

Style	No. buildings for which permit data available	Architect designed %	Builder only listed, %
Victorian	138	64	36
Bungalow	124	60	40
Box/Four Square	45	66	34
Other	64	59	41
Total	371	62	38

Total structures built 1895-1919: 1,202.
Permit data available for 31 per cent of structures.
Based on Utah State Historical Society survey data.

[6] Peter L. Goss, "The Prairie School Influence in Utah," Prairie School Review 12 (1975): 13-17.

[7] Ibid., p. 13.

TABLE 4

THE AVENUES OF SALT LAKE CITY:
ARCHITECTS AND BUILDERS' SHARE OF WORK OVER TIME 1895-1919

	1895-99	1900-04	1905-09	1910-14	1915-19	Total
Architect Listed	60	32	96	40	3	231
proportion of attributed structures	.75	.60	.63	.49	.11	.62
Builder Only Listed	20	22	56	41	25	140
proportion of attributed structures	.25	.40	.37	.60	.89	.38
Total Structures Attributed to Builder and/or Architect	80	54	152	81	28	371
proportion of total construc-tion	.35	.15	.34	.52	.50	.31

In absolute numbers, and as proportion of structures attributed to an architect and/or builder.
Total number of structures built 1895-1919: 1,202.

Based on Utah State Historical Society survey data.

* * *

While a relatively small number of architects participated in Avenues design, many different builders were active. This may reflect the increasing difficulty of entering the architectural profession in this era as the American Institute of Architects and other groups began to set professional standards; builders had no such restrictions. At least twenty-four builders constructed Avenues Four Squares, with no outfit erecting more than three. Builders worked without the help of an architect on thirty-four per cent of Rectilinear homes for which architect/builder

data were available, compared with thirty-six per cent for Victorians and forty per cent for Bungalows (Table 4). The tendency for builders to work alone increased toward the end of the period, partly because newly developing areas of the city were attracting the more well-to-do, who could afford architects, and partly because of the nationwide proliferation of plan services.

* * *

Owners showed much the same diffuse pattern as builders. Nearly 100 different owners were responsible for the 145 Four Square houses. The most prolific, Lucy and Adolph Richter, included ten examples of the house type among the twenty-six homes they had built in the neighborhood, followed by John Dorius who had eight. Frank A. Grant helped introduce the type to Salt Lakers when he had five examples constructed in 1896. Most people built only one house, however, for their own use.

Avenues Four Square owners included all types of people, not just the staid conservatives one might expect from Sinclair Lewis' writings. While there were merchants, doctors and stalwart Republican Party officials, owners included not only respectable non-entities but also such prominent persons as early female doctor Ellis Shipp, business leader John Bennett and state governors George Dern and William Spry.[8] Several daring and innovative entrepreneurs also owned Four Squares, the most famous being James Cash Penney who lived at 371 Seventh Avenue during the years he was founding his chain of J.C. Penney Stores in Utah mining camps (Figure 22).[9] That risk-takers like Penney chose the type corresponds with the evidence in published sources that the Four Square was seen as modern and efficient, not just safe and respectable.

[8] Haglund and Notarianni, pp. 11, 110, 126, 133, 134.

[9] Ibid., p. 111.

TABLE 5

THE AVENUES OF SALT LAKE CITY:
PERCENTAGE OF SPECULATIVE CONSTRUCTION 1895-1919

	Speculative, %	Non-speculative, %
Box/Four Square	29	71
All buildings	27	73

Based on Utah State Historical Society survey data.

TABLE 6

THE AVENUES OF SALT LAKE CITY:
BUILDING USE 1895-1919

House Style	Single family		Multi-family %	Total Total no. of structures
	Owner occupied %	Rental %		
Victorian	70	28	2	631
Bungalow	73	26	1	308
Box/Four Square	66	30	4	145
Other	48	16	36	118
Total	68	27	5	1,202

Based on Utah State Historical Society survey data.

"Spec" Construction and Rental Housing.

The absence of large-scale developers in the Avenues did not mean that the homes were all built for their owners' personal use. More than one fifth of all Avenues houses in 1895-1919 were erected by speculators who never lived in them but sold them within a year of construction. If one also includes houses held for a slightly longer period and groups of identical homes obviously built together but not

meeting these criteria, the amount of "spec" construction rises to twenty-seven per cent. This figure may well be low because all survey forms where information was unclear were coded non-speculative. Twenty-nine per cent of Four Square and other Rectilinear houses were speculatively built, a figure slightly higher than that for all homes (Table 6).

* * *

A major surprise In the Avenues case study was the large number of single-family houses in this middle and upper middle class suburb that were originally built to be rented. At least twenty-seven per cent of all buildings constructed between 1895 and 1919 were single-family homes first used for rental, a figure that remained fairly constant throughout the era. This underestimates the number of rental dwellings in the area at any given time for two reasons: all buildings for which survey data were vague on this point were coded as single-family owner occupied. Also, it was discovered during coding that it was fairly common for a family to build a house, live there for three to five years, then build another and hold the first as rental. One scholar has estimated that in 1900 in Salt Lake City as a whole 4,391 houses were owned by their occupants while about 6,700 were rented.[10]

Magazine articles in the period hinted that renting was common for the middle class. An occasional article on moderately priced housing made the assumption that it would be used as rental. Examples include "The Best House for the Small Wage Earner" in the 1917 American Architect and Building News which casually mentioned in the text that the design would rent for twenty-five dollars, and a 1920 Building Age article on "Big Profits in Bringing Old Houses Up to Date"

[10] Charles Brooks Anderson, "The Growth Pattern of Salt Lake City, Utah, and Its Determining Factors" (Ph.D. dissertation, New York University, 1945), p. 89, cited by Haglund and Notarianni, p. 14.

which urged remodeling of single family homes to make them more rentable.[11] Another indication that renting was customary among the middle class was the "Own Your Own Home" campaign of the 1910s and 1920s which urged families to give up rental houses or the new apartment buildings for a house of their own.[12]

Extensive rental housing was probably a response to the poorly developed banking and investment system in the U.S. in this period. As urban historian Sam Bass Warner has pointed out, few mechanisms existed for people with a small amount of capital to invest their money securely.[13] Banks, not yet backed by federal insurance and regulation, failed at an alarming rate and the roller coaster stock market gave even less security. Real estate provided one of the least risky investments, one that could be counted on to pay regular dividends in the form of rent and probably show a profit upon eventual sale. A rental house was something tangible that could be personally looked after by the investor and improved with his or her labor. In the Avenues dozens of small investors, especially widows and families striving to improve their lot, maintained one or two rental houses often next door to their residence. A good example of this was Joseph Daynes who built a Four Square for himself at the corner of D Street and Third Avenue, then had a matching Four Square and a center-hall Rectilinear house erected on two lots next door for rental.

At the same time, the lack of adequate financial institutions made rental housing a necessity for many residents. Though building and loan associations were becoming more widespread in the period, purchase of a home required a very large down payment and quick payoff of any loan that could be obtained. Low down payments and long term home loans were rare until the creation of the FHA and Veterans Administration programs in the mid 1930s and 1940s. In the 1950s and

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[11] American Architect and Building News 112 (1917): 381-384; Building Age 42 (February 1920): 44-46.

[12] Ladies Home Journal 24 (January 1907): 9-10.

[13] Sam Bass Warner, Jr., Streetcar Suburbs: The Process of Growth In Boston, 1870-1900 (Cambridge: Harvard University and the M.I.T. Press, 1962), pp. 117-124.

1960s these mechanisms would allow creation of entire suburbs of young -middle-class families all owning their own homes, a situation that is today accepted as the norm. In the late nineteenth and early twentieth centuries, however, only the wealthy could easily afford to own a house, so young families and those whose obligations kept them from acquiring a nest egg often rented. There seems to have been little social stigma involved, for some of the Avenues' most elaborate houses were built as rental and rental houses were equally distributed throughout the neighborhood.

People constructing houses to be rented seem to have favored the Four Square type slightly. Thirty per cent of Four Square and other Rectilinear homes were built as single family rental, compared with twenty-eight per cent for Victorians and twenty-six for Bungalows. The Rectilinear was also the most popular of the three for duplexes (Table 6). These differences are small enough to be a statistical fluke, but they do fit nicely with the fact well known in the period that the economical Four Square shape provided the most rentable space for the smallest capital outlay.

Case Study Conclusions.

Avenues Four Squares began appearing shortly after publication of the Trott house in Carpentry and Building and reached a high point in the late 1900s building boom. In this neighborhood, as in other parts of the U.S. for which historic survey reports were examined, the era of Four Square popularity was over shortly after World War I, despite the fact that it continued in magazine advertisements well into the mid 1920s. The Rectilinear never became the most popular style, but in the Avenues it surpassed the Prairie school and even the Colonial Revival. The data are further evidence that the Four Square was definitely not part of the Bungalow style, for it was introduced earlier and peaked earlier than the Bungalow.

Much as Sam Bass Warner, Jr., found in Streetcar Suburbs: The Process of Growth in Suburban Boston, 1870-1930, Avenues buildings were the work of dozens of individual owners, builders and architects rather than of a few large

developers.[14] While the data base is too small for certainty, research does indicate that Rectilinear owners and builders were more likely to be interested in economy than those who chose other styles, a tendency suggested by the fact that period descriptions of the style emphasized that attribute. A greater percentage of Rectilinear homes was built for resale or rental than any other leading style. Both architects and developers helped introduce the Four Square type to the neighborhood. Leading architects showed as much or more interest in the Rectilinear as they did in other styles, and one of the city's top Prairie architects was also the neighborhood's most active Rectilinear designer.

[14] Ibid. p. 117.

CHAPTER V.
THE END OF THE RECTILINEAR PERIOD

Decline of the Style.

Through the 1900s and 1910s the Rectilinear style and the Four Square type in particular were among the nation's most popular houses. Even in that period, however, the style had its critics who believed that picturesque massing and allusions to the past were more beautiful than simplicity. After World War I the general public came to share this view and the Four Square fell from favor by the end of the 1920s.

The first loud critics of the Rectilinear style appeared, not surprisingly, in House Beautiful. As early as 1910 Joy Wheeler Dow played off a neo-Georgian mansion against a Rectilinear mansion and a row of less expensive houses dominated by a Four Square, with the Rectilinear houses held up as objects of scorn.[1] The following year, Dow was joined by noted Prairie architect and writer Charles E. White. White had no quarrel with the Rectilinear style, but gave evidence that he disliked the Four Square:

> "To make a pleasing home design out of a square box is exceedingly hard. It has been done by clever designers, but there are so many more failures than successes…. Insist your house be rectangular instead of square … and you will have, right at the start, a much greater chance of success."[2]

Another writer railed against the Four Square in 1917: "The contractor, building for investment … kills miles of habitable land by building cube-like excrescences that cannot be called 'houses' -- let alone 'homes'."[3]

By the early 1920s other magazines began to pick up the attitude. Even Building Age, traditionally the least style-conscious of the journals, in 1922 asked

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[1] House Beautiful 28 (1910): 116-118.

[2] Ibid. 29 (1911): 77.

[3] Ibid. 43 (1917/18): 78.

the question: "Can a Box House be Artistic?"[4] Colonial, English cottage, and Italian variations on the Four Square were illustrated to show that "artistic designs are possible for the plain rectangular houses that are referred to as 'packing box architecture'."[5]

This trend extended to remodeling. Readers were counseled to saw off the Four Square's wide eaves and broad porches in an effort to make it conform to one style or another (see Figure 25). The most telling remodeling article, "From Nondescript to Georgian," appeared in 1930 in House Beautiful: the nondescript house to be remodeled was a Rectilinear design the magazine had originally printed with great pride in 1905.[6]

The change in public taste was widespread, bringing an end not only to the Rectilinear but also, more quickly, to the Prairie school. In his book on the Prairie movement, H. Allen Brooks attributed the shift in part to the rising importance of women in architect-client relations. The women's suffrage movement, culminating in the right to vote in 1920, encouraged women to be more active in all areas. At the same time, the new women's magazines with their huge circulations carried the message that women should be involved in creating their homes, and the examples shown were almost all picturesquely historical. As Prairie architect Thomas Tallmadge lamented in 1917, "Clients, the wives of whom at least, having received their architectural education in magazines edited in Boston and New York, now have turned back to pretty Colonial or the fashionable Italian."[7]

Another factor which contributed to the demise of the Rectilinear was suggested in a 1919 House Beautiful article, "American Domestic Architecture and

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[4] Building Age 44 (February 1922): 19.

[5] Ibid. 44 (February 1922):20-21; 47 (November 1925): 90; 49 (1927): 136; 49 (August 1927): 92-93.

[6] House Beautiful 68 (1930): 130-131.

[7] H. Allen Brooks, The Prairie School: Frank Lloyd Wright and His Midwest Contemporaries (Toronto: University of Toronto Press, 1972), p. 338.

the Great War."[8] Its author predicted that the American soldiers quartered in European villages would return home "awakened to the possibilities and beauties of the simple homes… , the French and English cottages, of the Sixteenth century." He went on to describe the details of these cottages: handcrafted stucco finish and picturesque massing, narrow windows with small panes and shutters, no porches, low roofs and so on. These were indeed the things that appeared on American houses when the two million young men came back to build homes for their families.[9]

A third reason for the shift to historicism in residential design may paradoxically have been rebellion against tradition. The 1920s were, in the words of historian William E. Leuchtenburg, "a time of questioning," of a "revolution in morals," of an "assault on the authority of the older America" summed up in the decade's nickname: "the Jazz Age."[10] By the 1920s the Four Square, the radical architecture of the 1890s and 1900s, had became commonplace. Sinclair Lewis and others mocked it as the mark of small-minded conservatism. When a person chose to build a quaintly decorated cottage, he or she was rebelling against the Rectilinear plainness of the preceding generation.

Coupled with this disdain for the stylistic status quo was the cold fact that rising construction costs and increasing industrial production of building components threatened individuality in housing. Experiments in mass housing initiated during World War I accelerated a trend toward large-scale suburban developments, houses built a neighborhood at a time. Adding historic detail could mask this reality and provide the illusion of individuality.

Whatever the combination of reasons, the romantic "cottage for two" became the ideal of the 1920s. Magazines went as far as to suggest ways a two-story gable-roofed Rectilinear house could be dressed up to give the appearance of a one-story

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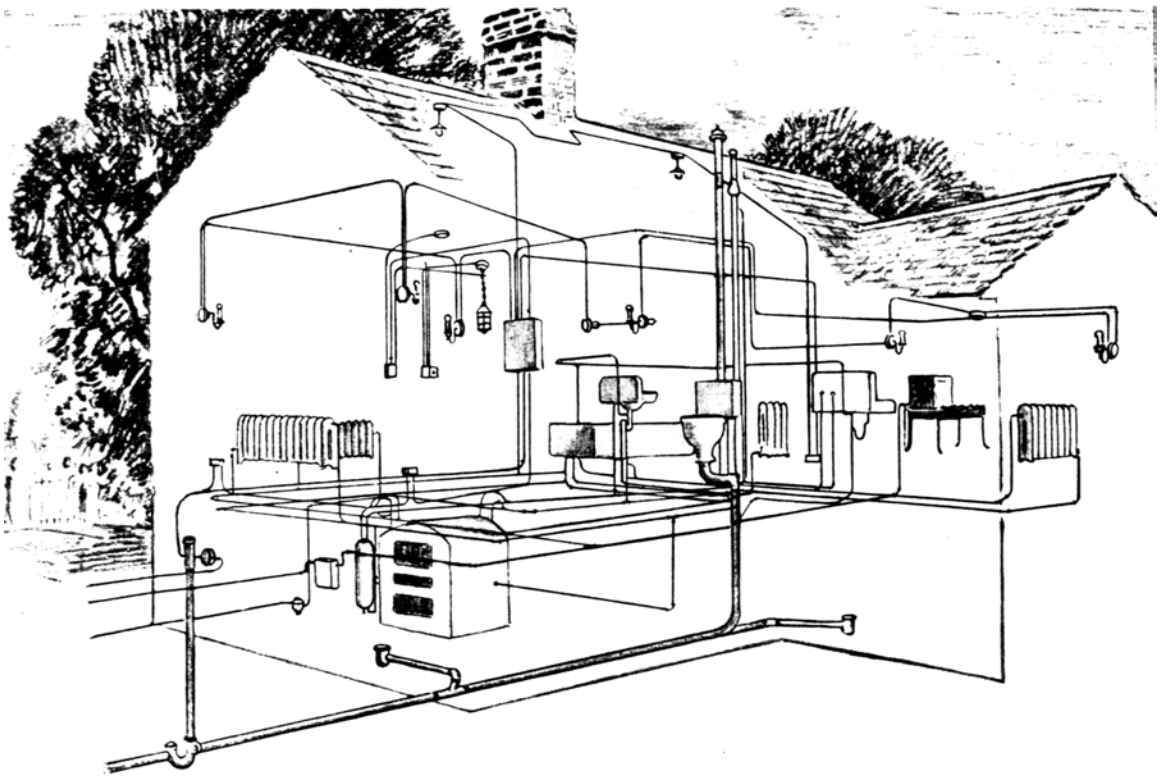
[8] House Beautiful 45 (1919): 70.

[9] William E. Leuchtenburg, The Perils of Prosperity, 1914-1932, The Chicago History of American Civilization (Chicago: University of Chicago Press, 1958), p. 36.

[10] Ibid. , pp. 7-8.

Figure 24. New Utility Systems Boost House Prices: Illustration from House Beautiful magazine. (1928)



ONE REASON WHY OUR HOUSES COST MORE THAN OUR GRANDSIRES' DID. AND THIS IS ONLY A THREE-ROOM HOUSE

Figure 25. THE RECTILINEAR GIVES WAY TO HISTORICISM:
E.A. Martini,"How I Did It: From 'Just House' to Something More",
House Beautiful 61 (1927) 686.

'DADDY, is that house Colonial, English, or just house?' This was the favorite question of an architect's little daughter who always showed great interest in her father's work. Her inability to remember more styles than Colonial and English induced her to call all other houses 'just house.' But even among us grown-ups, there are many who find it difficult to designate the style of a building. 'Colonial' seems to be the favorite, even though there often is a wide range between the so-called 'Colonial' houses and the beautiful Colonial homes of our ancestors.

However, 'just house' is about the best definition you can give of the first house here illustrated. A few years ago, you might have called it a 'real estate house.' But since the war, realtors are aware that if they wish to realize money on a sale, homes must be distinctive and attractive. Consequently the design of small houses has improved greatly during the last years.

Let us take a good look at this 'just house.' It resembles a square box as high as it is wide, with a lid on top which does not quite fit and which is pressed down so hard that it bulges out on the four sides. The lid has a few 'ornaments,' much too large in proportion, supposedly to admit air and light into the top of the box. Unfortunately the builder figured that nails were cheaper than hinges and nailed the sash tight, and probably explained this action by saying, 'Sash will be more nearly airtight in winter and children cannot climb out on the roof.' Naturally, if the sash is nailed the 'ornaments' are of little use.

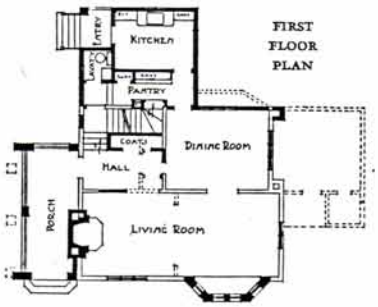
Where the space inside required it, the walls also bulge out, and the wide overhanging of the lid avoids an extra covering over these projections.

An addition in the form of a porch 'decorates' the front. Although the only weight sustained by the posts is a possible snow load on the porch roof, their size is adequate support for a five-story building, and instead of giving stability to the entire structure, in reality they look ridiculous. Whoever might sit on the porch might just as well pose on a stage — both cases seem equally conspicuous. The holes or windows in the box are too large in proportion, seeming to invite the public to look in, and eliminating all privacy generally associated with the sacredness of a home. A fireplace, the central feature of any real home, is entirely lacking in this box, or just house.

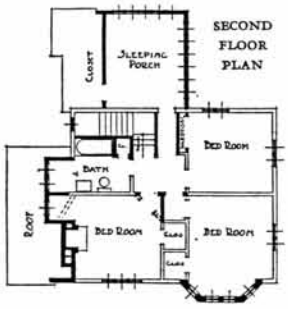
No wonder the owner hoped from year to year that his finances would permit a remodeling of the box. When a change in the town's planning made it necessary for him to move his house on to another lot, he was very happy over this opportunity to remodel his home! Instead of making his own changes on the building, he took the more economical course and turned over all plans to an architect.

'More economical course!' you may say. 'I consider it the most expensive!' If you were obliged to wear a suit of clothes for several years, would you cut and make it yourself with the cheapest possible materials? Would it not be best to employ a tailor whose long experience had taught him what styles would remain unchanged the longest, who could cut your material with the least amount of waste, who knew exactly what style suited you best? With such a man's advice and work you would feel confident that you had taken the most economical move. (*Continued on page 718*)

THE HOUSE BEFORE AND AFTER MOVING AND REMODELING. A NEW SERVICE WING WAS ADDED AND THE HOUSE WAS PLACED ON THE NEW LOT AT RIGHT ANGLES TO ITS OLD ORIENTATION. ROWE, DILLARD & ROWE, ARCHITECTS



ON THE PLANS, THE HEAVILY INKED PORTIONS ARE THE NEW ADDITIONS, AND THOSE DRAWN IN DOTTED LINES THE PARTS REMOVED



gambrel-roofed cottage with dormers.[11] In Salt Lake City the predominant house type at the end of the decade was a one-story house whose economical rectangular shape was artfully disguised by a T-shaped gabled roof layout. The short end of the T at the front of the residence made the house appear from the street to be a tiny cottage with Tudor or Colonial trim.

Columbia University professor H. Vandervoort Walsh summed up the decade's trend in domestic design in a 1928 article, "Whither American Architecture?":

> Everywhere today you will see the products of the architects who fake their materials in order to simulate the charm of craftsmanship. Houses two years old look like two hundred years…. The public likes their scenic effect. There is a sort of refuge in it, as dreams are a refuge from reality…. This trend in architecture has so completely captured our domestic work, that one rarely ever sees any originality, except in the plans and equipment of such houses. They have become little theaters….[12]

In this climate the simplicity and massive solidity of the Four Square was out of place. In 1927 the last Four Square appeared in Building Age.[13] By the end of the decade the Rectilinear style was dead.

Conclusions.

The spread of the Four Square apparently followed a top-down diffusion path from innovative architects, to a national architectural community, to large-circulation architecture and building magazines, and finally to a wide variety of plan services which brought the idea to home builders and potential owners in every part of the country. Though the idea of a simply decorated, hip-roofed, corner hall

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[11] Building Age 42 (February 1920): 44-45.

[12] Building Age 50 (1928): 142.

[13] Building Age (1928):

cubic house had been around for decades, it took the involvement of architects spurred by a revolt against the Queen Anne style to develop the Four Square and bring it to popularity. After Frank Kidder's house and several others appeared almost simultaneously around 1890, the idea was picked up by a small number of innovative architects around the country. Because of their interest in the house, the large circulation architecture and building magazines published examples beginning in 1895, and from there it spread quickly.

In addition to periodicals, plan services and their inexpensive catalogs were important communicators of architectural ideas in the first decades of the twentieth century. These included not only private architectural firms, as in the late nineteenth century, but also building material suppliers, trade associations, and even the AIA. The new ready-cut housing industry especially favored the Four Square.

With this wide range of published examples, local builders in every part of the United States adopted the Four Square type. Throughout the 1900s and 1910s it was one of America's most popular houses. After World War I public taste shifted to picturesquely historical cottages, and by the end of the 1920s the Rectilinear style and Four Square house type had fallen from popularity.

* * *

We see from study of the Four Square that the two decades before World War I were a time when a large segment of the American public desired "sensible," a-historic residential design. In its day, the Four Square's conscious simplicity represented a revolutionary change from the gaudy eclecticism of the Queen Anne style. Historic styles were always present and in competition, but for several years a sizable number of people preferred a "modern" non-associative alternative. The revolt against the over-trimmed "bedeviled boxes with fussy lids" of the Queen Anne was not limited to Frank Lloyd Wright and a select school of Midwestern architects. The Rectilinear movement and the Four Square house type in particular sprang from the same 1880s atmosphere of anti-eclectic rhetoric that inspired Wright. The

first Four Squares actually preceded the Prairie homes, and Wright's experiments with the type may have helped inspire his earliest Prairie formulations. The backgrounds of the Rectilinear pioneers were remarkably similar to that of Wright and his colleagues. All were in their twenties to early thirties and had engineering training with little of the history-oriented architectural education of the period. They were extremely hardworking and serious about their profession and were respected by their colleagues.

Although in the long run Wright's work was much more significant than that of the Rectilinear movement, in the first decades of the twentieth century the Four Square and Rectilinear architects proved much more successful in weaning the American public from historic precedent. Where Wright insisted that each house be designed from scratch, Rectilinear designers created stock types that builders could emulate. They also retained much of what Americans liked about their homes while striving to simplify exteriors, open up interior spaces, and create new house types.

More research is needed to pinpoint who first fully developed the Four Square idea around 1890, and to understand exactly how the idea spread in its earliest years. Thomas Carlyle long ago observed that "every new idea at its starting point is precisely in a minority of one." Was Frank Kidder this minority, or was it someone else? How important to the transmission of the new idea was face-to-face contact among an increasingly mobile national community of architects? How many others besides Frank Kidder and Frank Lloyd Wright were struggling to develop a new "sensible" a-historic approach to house design? Was geographical distribution of the type actually as uniform as availability of printed plans suggests?

All of this will require combing of more magazines and books than could be examined for this paper. Most important is the gathering and publication of local historic survey data in the communities across the country where the Rectilinear style and the Four Square type were the strongest. Among the critical communities in this respect are Denver, of course, and the Boston area where Frank Kidder spent his early years and where A.J. Krim has identified Four Squares from as early as 1892. Also important are Philadelphia, home of Brown and Day and the National Architects' Union; Grand Rapids, Michigan, home of Frank Allen and several other

plan services; and Pasadena, California, and Elizabeth, New Jersey, where large numbers of early examples originated. Developing these data will yield not only the roots of the Four Square, but help us understand the wider Rectilinear phenomenon.

Today thousands of Four Squares still exist across America. Most people seem to remember growing up in one or know someone who lives in one. The simple exteriors and spacious interiors still make the houses easy to maintain and comfortable places in which to live. As architectural historians and the public at large begin to learn more about the era in which they were built, we will also come to appreciate the beauty of their simplicity.

APPENDIX I

House Books: a Chronological List of Books on Contemporary American Domestic Architecture 1885 -1930.

This chronological bibliography focuses on collections of house plans published in the United States from 1885 through 1930. Some works on domestic science, interior decoration, and construction technology are also included. Books written in the period about houses in other places or times, for instance the spate of material on American Colonial prototypes that appeared in the 1910's and 20's, are not listed in this bibliography.

The list draws on two earlier published bibliographies, plus the holdings of several libraries. Entries for the years 1885 through 1894 were based largely on Henry Russell Hitchcock's American Architectural Books, a List of Books, Portfolios, and Pamphlets on Architecture and Related Subjects Published in America Before 1895 (Minneapolis: University of Minnesota, revised edition, 1975). Gwendolyn Wright's Moralism and the Model Home, Domestic Architecture and Cultural Conflict in Chicago 1873 -1913 (Chicago: University of Chicago Press, 1980) included a bibliography that overlapped Hitchcock's and extended through 1915. Her effort was less exhaustive than Hitchcock's. The Hitchcock and Wright lists were supplemented and carried through 1930 by examining card catalogs at the libraries of Cornell University, Syracuse University, The University of Chicago, plus the published catalog of Columbia University's Avery Library. The resulting bibliography is least complete for the years 1916 -1930, and most complete for the decade 1885 -1894.

This list of house books was compiled as a part of a University of Chicago Master's Paper on the origin and spread of the Four Square house type, a two-story, cube-shaped, hip-roofed house developed around 1890 and allover America from the late 90's into the 1920's. The dates 1885 -1930 were chosen to bracket this phenomenon. The bibliography should be a useful starting point for other students of American social and architectural history of that period.

Asterisks mark the books consulted in the course of that research.

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- Ogilvie, George W. Architecture Simplified or How to Build a House. Chicago: George W. Ogilvie, [c1885).

- Reed, Samuel B. Dwellings for Village and Country… New York: Orange Judd Co., 1885.

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- Tuthill, William B. The Suburban Cottage... New York: William T. Comstock, 1885.

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- Artistic Country Seats; Types of Recent American Villa and Cottage Architecture. 2 vols.

  Fuller, Albert W., and Wheeler, William A. Artistic Homes in City and Country... rev. ed. Boston: Ticknor and Co., 1886.

- Hopkins, David S. Cottage Portfolio, Twelve Designs of Low Cost Homes ... New York: F.A. Hodgson, 1886.

  Judson, W B. Beautiful Homes and How to Build Them.

- King, David W. Homes for Home-Builders... New York: O. Judd Co., 1886.

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- Page, Harvey L. Architectural Designs... 3rd. ed. (Washington: Gibson Bros. printers, c1886).

- Pierce, and Dockstader, Modern Buildings of Moderate Cost... (Elmira, N.Y.: Empire Printing House, c1886).

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- Brunner, A W. Interior Decoration... New York: Wm. T. Comstock, 1887.

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- Cutler, Manly N. The New York Building Plan Co.'s Illustrated Catalogue ... (Boston: Rand, Avery Co.), c1887.

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- Price, Bruce . ...A Large Country House .... New York: William T. Comstock, [c1887).

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- Short, R. Thomas. Proper Homes and How to Have Them ... (New York), c1887.

- Smith, Frank L. A Cozy Home: How It Was Built ... Boston: Press of T.O. Melcalf and Co., 1887.

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- Martin, George A. Our Homes; How to Beautify Them ... New York: Orange Judd Co., 1888.

- National Building Plan Assoc. Artistic Homes ... (Buffalo: Matthews, Northrup and Co.), c1888.

- Osborn, C. Francis. Notes on the Art of House Planning ... New York: William T. Comstock, 1888.

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- Harvey, T.W., Lumber Co. Architectural Designs. Chicago: T.W. Harvey Lumber Co., 1889.

- Hopkins, David S. Houses and Cottages. Grand Rapids: D.S. Hopkins, c1889.

- National Architects' Union. Modern Homes. The Perspective Views and Building Plans for Sensible Low-Cost Houses ... Philadelphia: National Architects Union, (1889).

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- National Architects' Union. Modern Rural Homes. The Perspective Views and Building Plans for Fifty-one Sensible Low-Cost Houses ... Philadelphia: National Architects' Union, (1889?)

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- Fuller, Albert W. Artistic Homes in City and in Country. 5th ed. Boston: Ticknor and Co., 1891.

- Garnsey, George O. The National Builder's Album of Beautiful Homes ... Chicago: The National Publishing Co., c1891.

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- National Architects' Union. Sensible Low-Cost Homes Vol. 3 ... Philadelphia: National Architects' Union, (1891).

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- Lent, Frank T. Sound Sense in Suburban Architecture. Cranford, NJ: F.T. Lent, 1893.

  Mayer, I.H. Domestic Economy. Lancaster, PA: I.H. Mayer, 1893.

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- National Architects' Union. Sensible Low-Cost Houses... New York: National Architects' Union, (1893?).

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  Johnson, William K. Modern Homes ... Chicago: (1894?).

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Allen, Jonathan K. Sanitation in the Modern Home. Chicago: Domestic Engineering, 1907.

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APPENDIX II

SALT LAKE CITY AVENUES DATA SET

The Avenues District is a turn-of-the-century suburb of Salt Lake City Utah now listed in the National Register of Historic Places. The following' data include all structures on 1st through 8th Avenues, and A through Virginia Streets as far north as 8th Avenue, a total of 2,428 buildings. Though the National Register district extended to 10th Avenue, the decision was made not to include the last two Avenues, whose homes date almost entirely from the twentieth century, in this data set in order to speed coding. The information is extracted from an intensive house-by-house survey of the district conducted 1977-1980 by the Utah State Historical Society, 300 Rio Grande, Salt Lake City, Utah 84101. The research was done by Jessie Embry, Thomas Hanchett, Lois Harris, Mark Lundgren, Kathryn McKay, John McCormick, and Henry Whiteside under the direction of Karl T. Haglund and Philip F. Notarianni. It was coded January 1981 by Thomas Hanchett and entered and sorted on the Society's Wang Word Processor by Rachel Olschewski, Janice Reed and Renae Hendry.

Each line represents a structure extant 1980. The first columns give the address. In the case of a building with multiple numbers (i.e. 107-109 3rd Ave.) only the first is given, due to space limitations.

Next is the architectural/historical rating assigned the structure: S = Significant, C = Contributory, N = Non-contributory, I = Intrusion, 0 = Out of period (past 1930).

Next is a two-letter code for the exterior material of the house, based on a system in use 1981 by the Society: Br = brick, Fr = frame, PI = plaster/ Stucco, Si = siding, Cn = concrete, St = stone, and Ad = adobe.

Following the material is an abbreviation for architectural type/style. Some of the more common are: Vict = Victorian, Bung = Bungalow, Com = Commercial, Col = Colonial, QAnne = Queen Anne, Prair = Prairie, Box = Box, Apt. = Apartment, Craft = Craftsman, Tudor = Tudor, Shing = Shingle, Class = Classical Revival, Greek = Greek Revival, Ranch = Ranch, and Chur = Church.

After this is the date of construction, then the name of the owner of the property at the time the building was constructed. A special effort was made during coding to distinguish this person, probably responsible for the house creation, from the first owner-resident when the two were different people.

Following the owner are two columns, each for a single letter. The first codes whether the house was speculatively built; i.e. constructed for a per or company that did not live in it and sold it within about a year of the date it was built: S = speculatively built, P = probably speculative (sold with 2-3 years, sold within a year but by a family that may have been forced to by financial problems), G = two or

more architecturally similar houses built at the same time but not meeting the criteria for speculative construction. Homes transferred to relatives are not considered speculative. Many homes have a blank in this column and appear not to have been speculatively built.

The second letter code represents the structure's first use. Where this is difficult to determine from the survey form, it is assumed to be single-family owner-occupied. Homes occupied by relatives of the owner are also considered single-family owner-occupied. S = single family owner-occupied, R = single family rental, M = multi-family including duplexes, C = commercial, and 0 = other.

The final two columns are for architect and builder. Where the owner or a close relative was in the building professions, his name has been entered in the appropriate column, followed by a question mark.

The data has been sorted by Address (0386c), Style (6658a), Date (6662a), 1st Owner (6661a), Spec Use (6666a), Architect (6656a), and Builder (6665a). They have also been subsorted for each five years by type (6663a).

ADDRESS	ARCHITECTURAL RATING	BUILDING MATERIAL	TYPE/STYLE	CONSTRUCTION DATE	FIRST OWNER	SPECULATIVELY BUILT?	FIRST USE	ARCHITECT	BUILDER
364 C St.	C	Br	Bung?	1926	Campbell,Sam.	SS			Campbell,S.
626 5th Ave	C	Br	Bung?	1927	Layton Constr.	SS			Layton Const
406 8th Ave	C	Br	Bung?	1927	Smith,Silas S.	S			Salzer,Frank
368 C St.	C	Br	Bung?	1927	Campbell,Sam.	SR			Campbell,S.
158 3rd Ave	C	Br	Bung?	1929c	Romney,Gaskell	SS			Romney,Gaske
237 B St.	C	Br	Bung?	1930c	Cairo,George	S			
978 3rd Ave	C	Br	Bung?	1931?					
30 S St.	C	Fr	Car	1900c	Grant,Robt.D.			Hale,Fred?	
139 A St.	O		Chur						
187 P St.	S	Br	Chur	1903	Church of LDS				
107 G St.	S	Br	Chur	1924	Church of LDS			Cannon&Fetzer	Henderson,H.
666 2nd Ave	O	Br	Church			O			
76 U St.	C	Fr	Clas?	1911	Smith,Geo.F.	PS		Cannonville,W.	Smith,Geo.S.
254 D St.	C	Br	Clas?	1913c	Thatcher&Hines	M			
259 7th Ave	S	Br	Class	1898	McIntyre	S			
1205 2nd Ave	S	Fr	Class	1901	Jennings,Marth	S			
165 A St.	S	Br	Class	1903	Richards,Jos.T	S		Headlund	
134 1st Ave	C	Br	Class	1909	Guthrie,Geo.R.	M		Ullmer,F.M.	
460 1st Ave	C	Br	Class	1909	Daynes,Rebecca	S			Meads
184 E St.	C	Br	Col	1884c	Lambourne,Geo	S			
227 J St	C	Br	Col	1889	Gunn,JohnF.	S			
89 N St	C	Pl	Col	1889c	Cardwell,Amos	S			
234 I St.	S	Br	Col	1895	Worthen,Eliz.	S			Worthen,A.H.
627 2nd Ave	C	Br	Col	1898	Nutting,Wm.H.	S			
573 5th Ave	C	Br	Col	1899	Nicholson,J.K.	S		Druce	
730 3rd Ave	C	Br	Col	1899?	Steers,Wm.C.	PS		Druce,Edgar	Steers,Wm.C.
933 2nd Ave	C	Fr	Col	1902	Robinson,Anne	PS			
211 F St.	C	Br	Col	1902c	Martin,Edward	M			
134 U St.	C	Br	Col	1903	Joralman,L.B.	S			Davidson&Alc
133 P St.	C	Br	Col	1903c	Richter,Lucy	SS			
381 7th Ave	C	Br	Col	1904	Watson,Alex?	SS			
234 F St.	C	Br	Col	1904	Midgley,C.W.	SS			Midgley-Bade
238 F St.	C	Br	Col	1904	Midgley,C.W.	SS			Midgley-Bade
236 J St	C	Br	Col	1904	Kjergaard,L.	SR			Kjergard,L.
321 D St.	C	Br	Col	1904c					
254 7th Ave	S	Br	Col	1905	Clayton,IssacA	S		Kletting,Richard	
128 2nd Ave	C	Br	Col	1905	Cook,Frank B.	R		Ware&Treganza	
221 2nd Ave	C	Br	Col	1905	Thomas,Elbridg	S			
967 2nd Ave	C	Br	Col	1905	Richter,Lucy	SR			
919 3rd Ave	C	Br	Col	1905	Richter,Adolph	SS		Dart,David C.	
128 J St			Col	1905	Owne,Rulon	S			Tuddenham
1184 1st Av				1905c	Ware,Walte			Ware&Treganza	
728 3rd A					Kjergar				Kjergard,L.P
925 2nd A									Kjergard,L.P
775 3rd									Kjergard,L.P
779 3rd									
911									

Avenues Date Set. Sample Printout Page.