

Frank Lloyd Wright in the Kitchen

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Frank Lloyd Wright in the Kitchen

In my 1996 essay entitled, “Transforming the Food Axis: Houses, Tools, Modes of Analysis,” I introduced the concept of the “food axis,” by which I mean the spaces in a dwelling used for food collectively—a constellation that incorporates indoor and outdoor spaces for storing, preserving, and cooking food, and the serving of meals.¹ That project resulted in a 2010 book that offered a much-expanded discussion of the concept. In the book I sketched the broad changes in American house planning from the seventeenth century to the present that arose in response to food.

In the present essay, I expand my questions on the food axis taken up in the article and book to ask: compared to the standards that evolved in popular architecture, what would the choices of an important architect look like? I consider the way spaces related to food were deployed and furnished in Frank Lloyd Wright’s residential designs of the Prairie era and in the later Usonian houses. In the later nineteenth and early twentieth century, food-axis rooms included kitchens, pantries and storage closets, and dining rooms; ancillary additions to this list included breakfast rooms, ice rooms, service porches, and summer kitchens. These rooms may be found in Wright’s houses and in contemporary food-axis ideas circulating in popular culture and vernacular architecture. Wright was well known as a designer of houses—some 70 percent of his design output was residential. His houses from the Prairie years, the first decade of the twentieth century, and his Usonian houses in the 1930s and ’40s have been widely celebrated for introducing a modern plan and a new aesthetic to residen-

tial design.² I am interested in seeing whether Wright extends an innovative spirit to food-axis rooms in his house designs. Will Wright’s ideas for the back of the house be progressive? Or will ideas found in popular sources suggest more modern approaches to the food axis? In short, did Wright lead or follow in the development of food-axis spaces?³

Even though every Wright Prairie house had a kitchen, “back of the house” service spaces have rarely been discussed by his historians.⁴ Façades, living rooms, and other social spaces have been treated by historians and critics as the equivalent of “capital A” architecture within his houses. The back of the house—kitchens and food storage spaces, servants’ spaces, and minor features like closets or utility rooms—has been treated as the vernacular part, not worthy of attention. Since Wright is always treated as a high-style architect in American architectural history, the omission of kitchens and pantries from Wright scholarship is not surprising. Instead Wright’s clients provide more information about his food-axis ideas, as do some of his own lectures and articles.

At the beginning of his career, Wright made use of the baseline standard for food-axis programs seen in later nineteenth-century middle- and upper-class houses. Typically these designs performed several functions, both low- and high-ranking. One set has to do with the preservation and storage of food. Another is space for preparing and cooking food. Yet another functional space is the butler’s pantry where servants or housekeepers readied food for serving, and cleaned and stored the china and silver used in

presenting a meal. The final space in the food axis sequence is the dining room where meals are served and consumed. All of these features are present in one well-known upper-middle-class house, the Glessner house in Chicago, designed by H. H. Richardson and completed in 1887 (Figure 1). The Glessner house occupies the north side of a long urban lot in the city and frames an open side yard on the south.⁵ On the entrance level a generous dining room with a bay window looks onto the yard. In addition to a dining table and chairs, this room contained storage furniture for linens, larger food-service pieces, and china or silver intended for display. Behind the dining room is a sequence of pantries and storage spaces, a large kitchen, an ice room, and access to outdoor space. The food spaces are contained within the house and do not spread out onto the home grounds; early nineteenth-century outbuildings, such as smokehouses, ice houses, spring houses, and root cellars, were re-conceptualized as kitchen storage closets and appliances in later nineteenth-century urban and suburban houses.

At the beginning of his career, Wright was familiar with this set of food-axis spaces, characteristic of servant-run households in urban and suburban settings. Wright and Louis Sullivan collaborated on the design of the Charnley house, completed in Chicago in 1892, using the same set of food-axis spaces found at the Glessner house. However, they developed these spaces on two floors rather than on a single level, acknowledging the spatial constraints of a smaller urban lot (Figure 2).⁶ At the Charnley house the dining room occupied one end of the entrance floor; the adjacent butler's pantry contained a dumbwaiter. The pantry provided space in which the dinner plates would receive final touches before being served to guests in the dining room. The pantry had a sink and plenty of storage cabinets for silverware and china, and its door kept the servants out of the view of guests. The basement contained a full kitchen, another pantry, a service staircase that connected the upper butler's pantry to the kitchen, and closets for storing the food. Cooked meals were raised up to the dining level on the dumbwaiter.

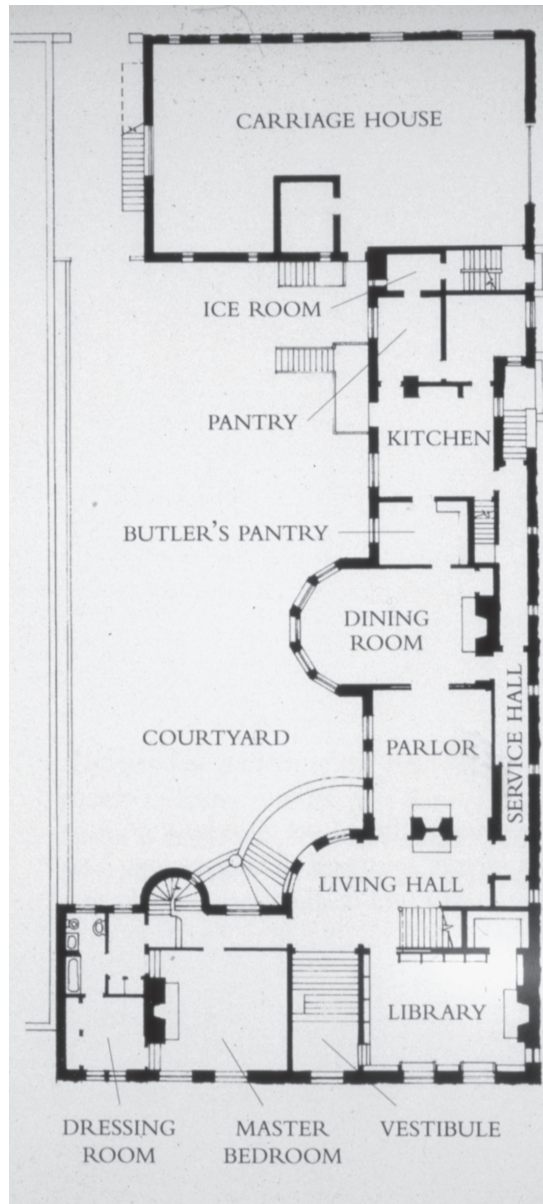


Figure 1. The Glessner house plan shows food axis spaces stretching from the dining room to an ice room at the back of the house; H. H. Richardson, Chicago, Ill., 1887. Courtesy of Larry Boerder, Carol Boerder Snyder, and Abbeville Press.

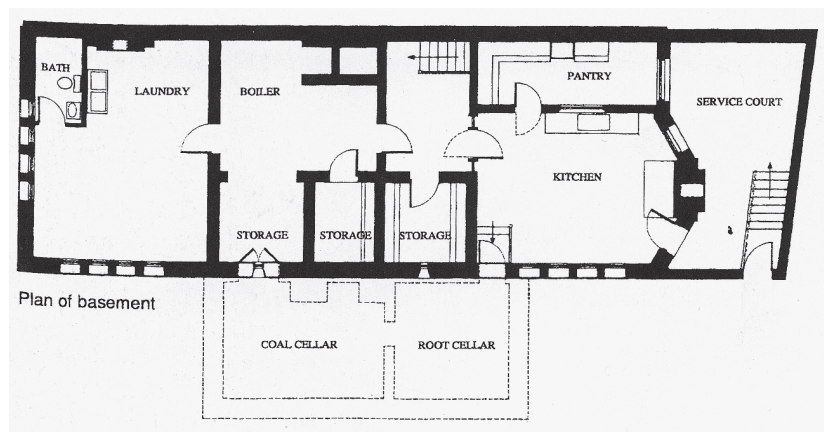


Figure 2. Urban houses for well-to-do clients often had cooking facilities in the basement with a pantry linked by a dumbwaiter to another first-floor pantry and the dining room. Kitchen level in the Charnley house, Chicago, Ill., by Frank Lloyd Wright and Louis Sullivan, 1891. Courtesy of Frank Lloyd Wright Foundation and William Storror.

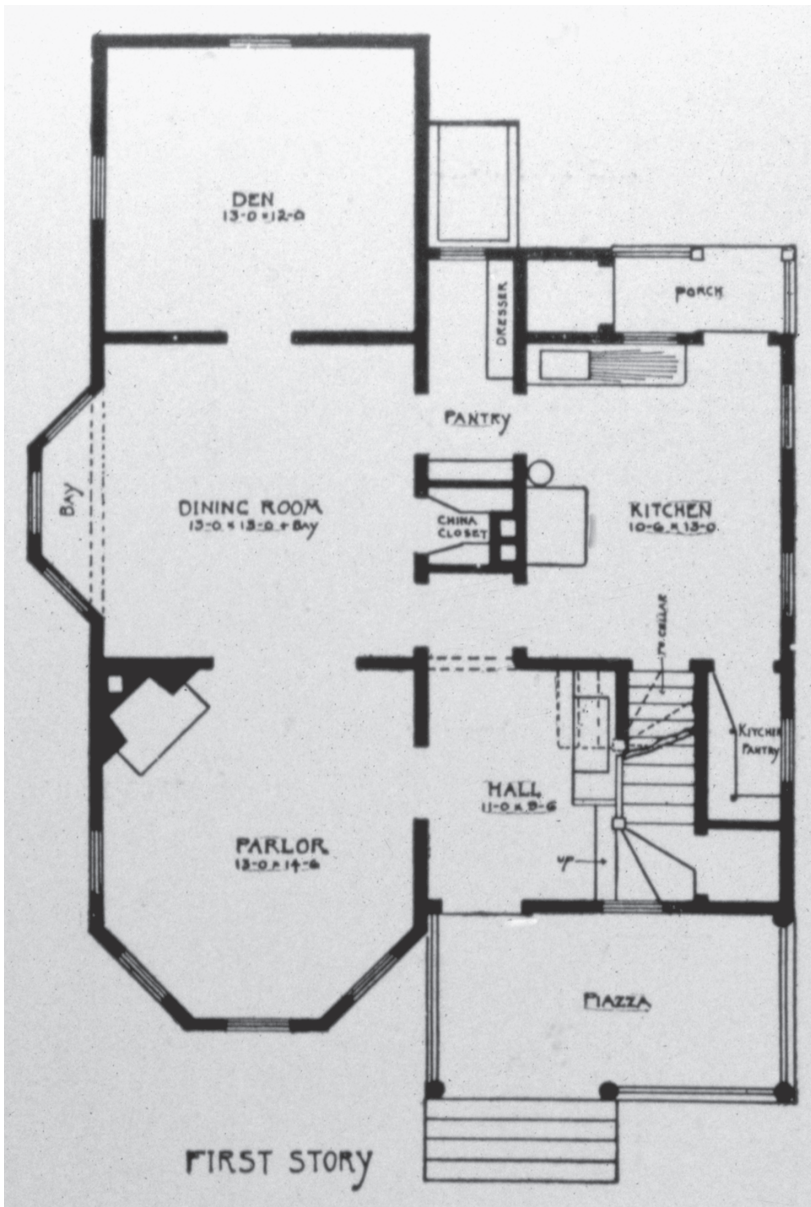
Figure 3. This 1894 house in suburban New Jersey by architect Frank Lent provided two pantries for the convenience of the housekeeper. Frank Lent, *Sensible Suburban Residences, Containing Suggestions, Hints, and Practical Ideas, Sketches, Plans, Etc., for the Building of Country Homes* (Cranford, N.J.: F. T. Lent, 1894).

In upper-middle-class houses in the late nineteenth century, the elaboration of food-axis spaces goes hand-in-hand with servants working in the kitchen and serving food in the dining room.⁷ The pair of spaces—kitchen and dining room—represented the dirty and clean poles of the food axis. One or two doors and a pantry typically created a barrier between them. Messy food preparation and the lack of refrigeration for food storage meant that the kitchen was often a disorderly, smelly space, occupied by lower-ranking members of the household. Guests and family mem-

bers occupied the dining room at the other end of the food axis. Therefore it had to be the very sign of gentility—always clean, tidy, well decorated, and free of unpleasant smells or sights. Late nineteenth-century designers and homeowners desired a strong demarcation between these two ends of the food axis, assuring the cleanliness of one, and not much minding the disarray of the other, regularly occupied by servants and never seen by guests.

Small houses for modest-income households had no presumption of live-in servants; thus designers and builders reduced the number and size of food-axis spaces. A number of house plans without servants' rooms were published as a result of competitions held by the *Midwestern magazine Carpentry and Building* in the last two decades of the nineteenth century.⁸ The food axis of one 1881 dwelling, a competition entry for a \$3,500 house, included a kitchen with a pantry, a passage from the kitchen to a service porch, and a dining room.⁹ For an 1883 competition for a "Floor Plan for a Cheap House," the architect used the same set of spaces—a kitchen, back porch, pantry, and dining room.¹⁰ A competition for an eight-room house plan from 1893 uses the same set of food-axis spaces.¹¹ Similar food-axis spaces can be seen in medium-priced 1890s houses built according to designs by architect Frank Lent in suburban New Jersey (Figure 3).¹² Lent provided a kitchen at the back of the plan, a separate dining room, a serving pantry, and a kitchen pantry. Even in servantless houses such as Lent's and those in *Carpentry and Building*, the kitchen was still sequestered and a pantry was deemed necessary to preserve the gentility of the dining room and hide the mess of food preparation from the gracious serving of meals.

The spaces for cooking and eating were combined only in much smaller dwellings such as tenements. For example, Vaux and Radford designed reform housing for the Improved Dwellings Association in New York City in the 1880s (Figure 4). Most of the food-related activity for working class families was collapsed into one "living room," while the sink and washing-up area were separated in a scullery behind it. Tenement-dwelling families did not have servants, while



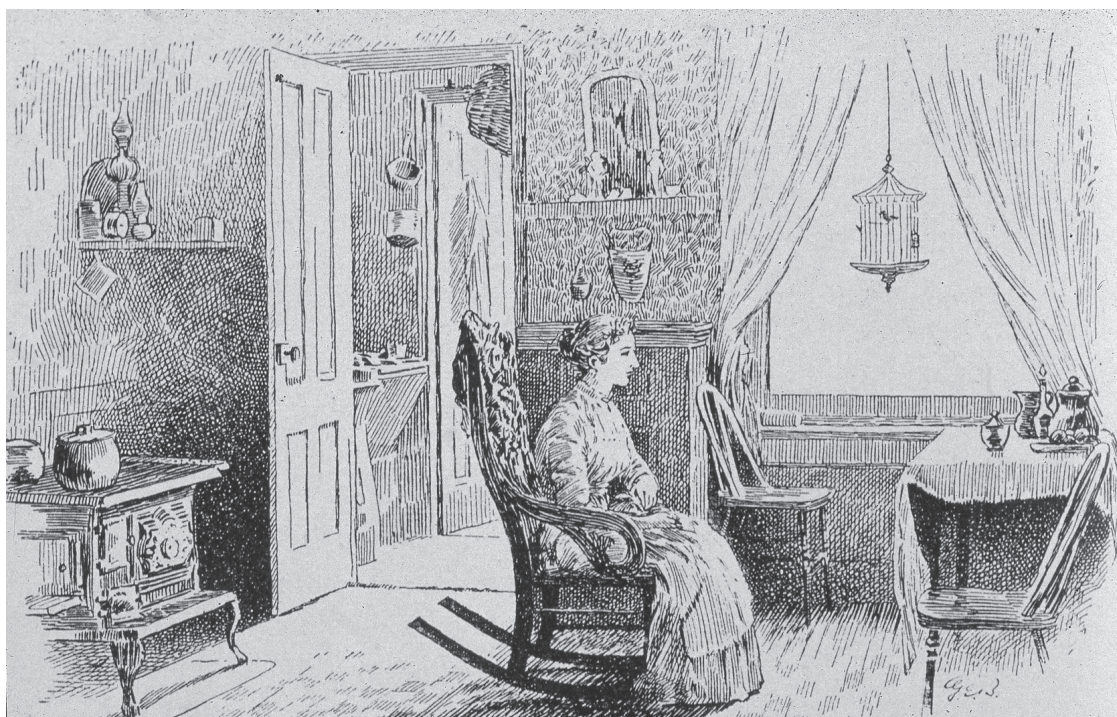


Figure 4. This 1881 tenement "living room" housed the cookstove and the dining table; it served as living/dining/kitchen all in one. Elizabeth Bisland, "Co-operative Housekeeping in Tenements," *Cosmopolitan* 8 (November 1889): 36.

the middle-class household typically depended on some servants' labor and therefore segregated spaces for that work. Placing the storage, preparation, and serving of food all in one room incorporated the kitchen worker or housewife into family space and offered no distinction between the messy and clean poles of the food axis then preferred by the full range of middle classes.

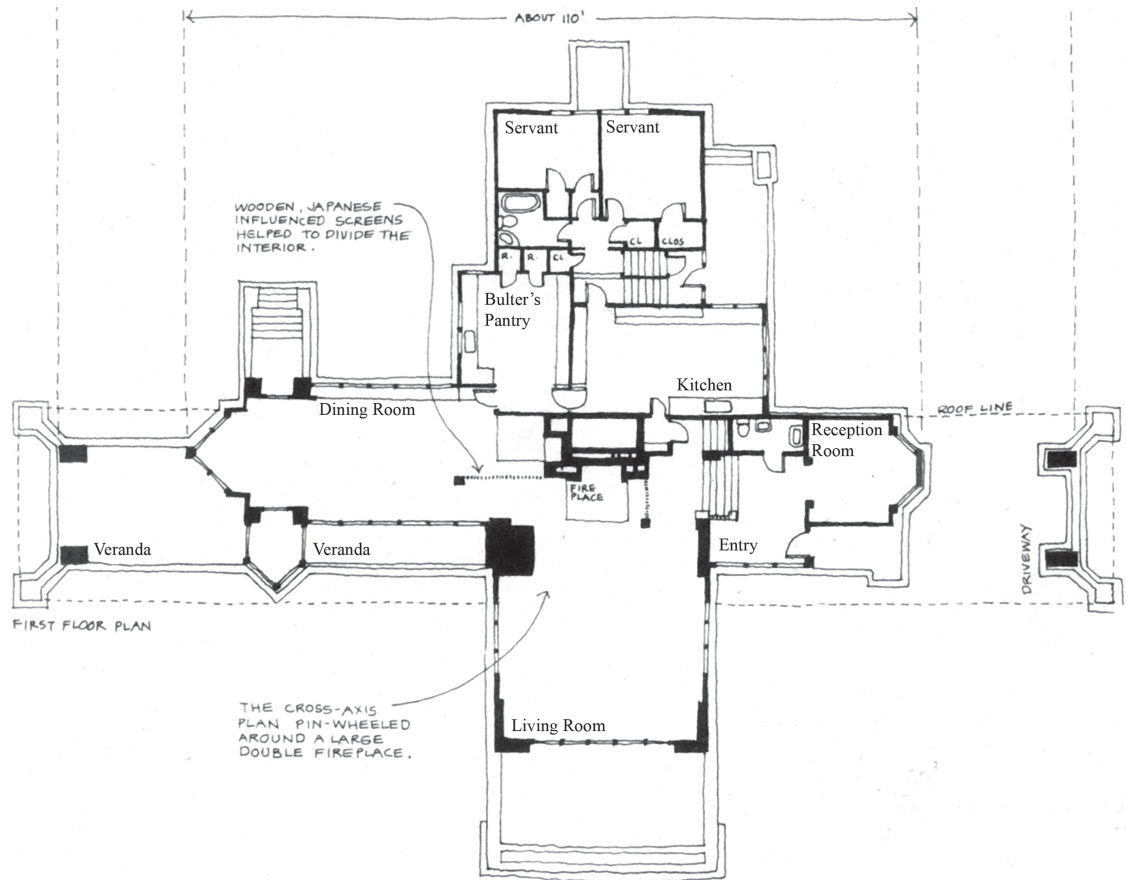
Wright's Prairie Houses and Changes in the Food Axis after 1900

Kitchen design in the early years of the twentieth century went through major changes. Magazines directed at householders discussed the way kitchens and dining rooms should be designed and furnished, while home economists developed their arguments for a more effective organization of cooking space.¹³ Pressing issues of the era included incorporating the infrastructure of utilities and modern conveniences available to support food space; deciding whether housework was to be done by servants, housewives, or machines; how the dining room for food service and the kitchen for food preparation were linked spatially and conceptually, with or without a pantry; and how the dining space should be furnished.

At the beginning of the twentieth century both urban and suburban houses offered models of the modern food axis for greater and lesser income levels—a larger and more complex set of spaces in more costly servant-run houses and a simpler, smaller set of spaces in lower-middle-class or working-class houses—yet they share some common assumptions. Wright charted some new possibilities for the domestic food axis in house designs and published statements from the 1890s through the Prairie period to around 1910. While home economists pushed their ideas about efficient housework and economically arranged kitchens, Wright often anticipated or paralleled their progressive ideas, especially in his writings.¹⁴

The concreteness of floor plans allows comparison of Wright's designs with popular houses and reveals how food-axis spaces operated. In 1902 Frank Lloyd Wright designed a house for the prosperous Ward Willits family in Highland Park, Illinois (Figure 5). Built for \$20,000, it has a complex arrangement of food-related rooms in two wings.¹⁵ The food-preparation wing contains a large kitchen with sink and drainboards; the large fitted butler's pantry also has a sink.¹⁶ In

Figure 5. Expanded cooking, dining, and servants' spaces make for a generous food-axis constellation. Frank Lloyd Wright, Willits house plan, 1902; courtesy of Lester Walker and Overlook Press.

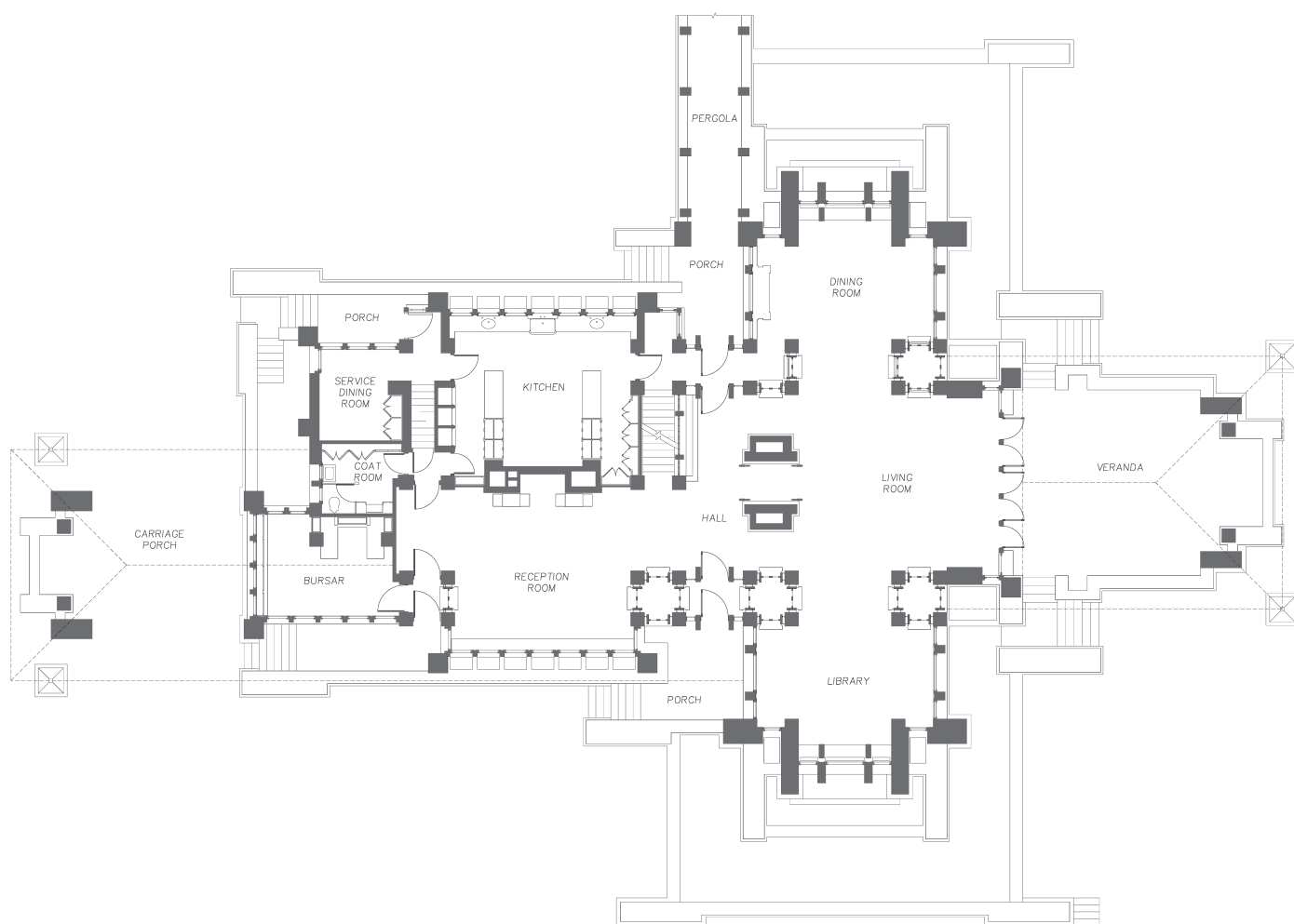


this wing are also two servants' rooms and the servants' bath, a utility porch, and a servants' stairs. The Willits's dining room in its own wing adds another large space to the chain of food-related elements. About half the square footage of the ground floor is given over to food-related spaces and to the servants who prepared and served the family's food. The 1904 Darwin Martin house, with its related buildings on this upper-middle-class family estate in Buffalo, New York, cost perhaps \$173,000.¹⁷ In the Martin's home, about a third of its main floor is devoted to the food axis (Figure 6). Its kitchen at the rear of the plan is adjacent to a servants' dining room on the west side and leads into the family dining room on the east side.¹⁸

Wright's statements at the turn of the twentieth century make evident his assumption that servants would run the housework side of the houses he designed. He recommended in 1894 that clients make the workspaces for servants—their kitchens—"fit to live in," and that they "treat

your servants as your friends."¹⁹ In an 1896 essay, Wright proposed that his clients should give their servants light, airy rooms near the kitchen rather than hot, stuffy rooms in the attic. He described the ideal kitchen as "not large but conveniently appointed and fitted with the little niceties of arrangement that put things on ball bearings and lessen the petty friction of everyday life."²⁰ The theme repeats in the 1901 *Ladies' Home Journal* essay, "A Small House with 'Lots of Room in It,'" where Wright again assumed that live-in servants would take care of the household.²¹

Although it seems contrary to the effort to make the food axis more efficient, traffic into and out of most houses must pass through kitchens to reach rear and side doors. The kitchen itself at the beginning of the twentieth century was normally clearly separated from the other rooms of the house but highly accessible through the use of multiple doors. At the 1902 Willits house, the kitchen has a door into the butler's pantry and thence to the dining room, another door to the



back stairs and thence to the rear service yard, and a third door that leads to the front entrance and reception rooms of the house (see Figure 5). The kitchen is buffered from a visitor's view by a double door, which insures that smells from the kitchen will not escape into the reception areas. The Darwin and Isabelle Martin house has double doors between the kitchen and dining room, and another door on the east side, leading to the back door and the servants' dining room (see Figure 6). Another door, perhaps a later addition to the Martin circulation system, leads into the reception room near the front entrance. In order to see into the kitchen, a guest would have to make a deliberate effort, passing through several doors, and would never inadvertently peer into this work zone.

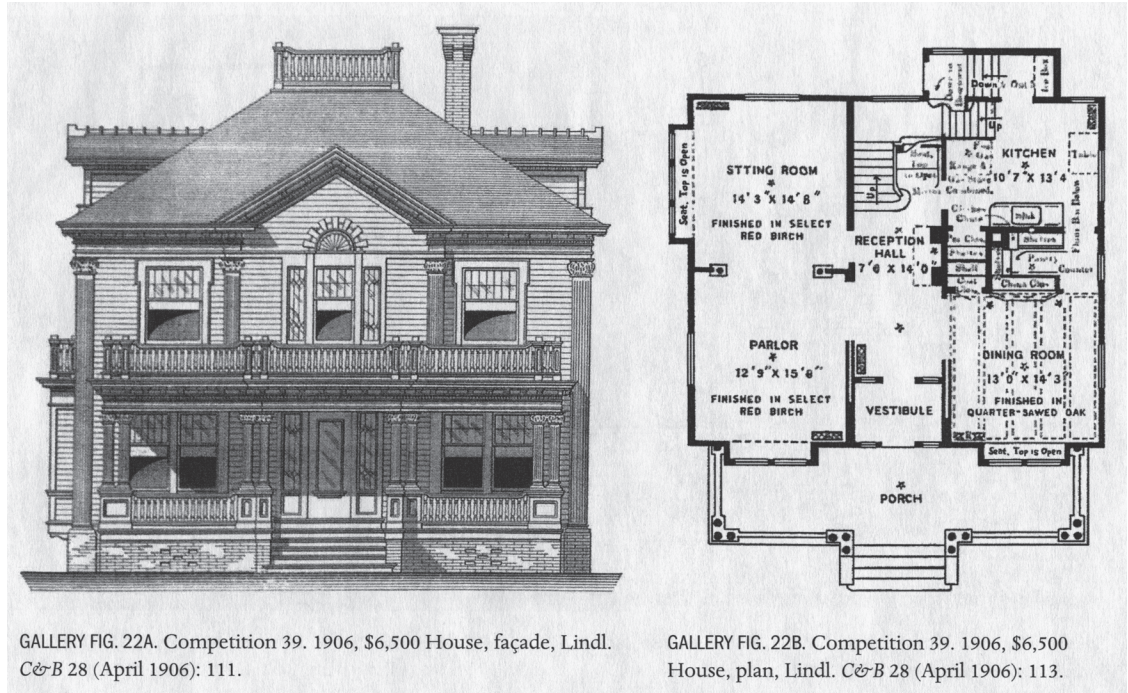
To compare high-end arrangements like the Willits house or the Martin house, with less ex-

pensive houses, one can study a plan entered into a *Carpentry and Building* competition in 1906 for a \$6,500 house. This house had a kitchen, a pantry, a dining room, and a door onto a service porch (Figure 7). The same set of food-axis spaces are offered in a 1903 entry in a competition for a \$5,000 house.²² Radford bungalows from the company's 1908 catalog of mail-away plans and specifications are similarly organized. Every house in this lower-budget selection has a kitchen, a separate dining room, and every one has a pantry, usually located to provide a bridge between the kitchen and the dining room. Continuing the genteel standards of the late nineteenth century, segregating workspace from hospitality was desired at the lower-budget end of house design just as it was at the high end, even when servants were not employed.

The kitchen sits at the back of the house in

Figure 6. The kitchen at the back is adjacent to the servants' dining room at Wright's Martin house, Buffalo, N.Y., 1904. The unit room served for library, living room, and dining functions. Plan courtesy of HHL Architects, Buffalo, N.Y.

Figure 7. Even inexpensive houses for the lower rungs of the middle class had pantries to shield dining rooms from kitchen work. Genteel dining and pantry arrangements in a lower-budget “House for \$6,500,” Competition 39, *Carpentry and Building*, 1906. Courtesy of University of Tennessee Press.



GALLERY FIG. 22A. Competition 39. 1906, \$6,500 House, façade, Lindl. *C&B* 28 (April 1906): 111.

GALLERY FIG. 22B. Competition 39. 1906, \$6,500 House, plan, Lindl. *C&B* 28 (April 1906): 113.

Wright’s designs for Willits and Martin and in popular smaller houses. This location allowed ventilation to the back yard, so kitchen smells could dissipate and never reach the noses of guests in dining rooms or other social spaces. Proximity to the back yard preserved an eighteenth- and early nineteenth-century history of outdoor spaces being linked to food preparation—chickens were plucked, vegetables peeled, butter churned on back service porches and in dooryards. Kitchens themselves had sometimes been outbuildings, detached from the house and placed in the back yard. Water was pumped in the yard to bring into houses in the period before fixed plumbing. Trash was disposed of there. Kitchens always had a link to the outdoors, usually by means of a small porch. Wright’s early thinking about kitchen design can be seen in his 1889 plan for his house in Oak Park where the kitchen is at the back of the plan.²³ Popular culture and fine architecture coincided in this tendency to push the kitchen to the rear.

The Pantry and Its Variants

Often called a butler’s pantry, a separate room between the kitchen and dining room provided a sink, built-in shelves that stored china and

glassware, and drawers for table silverware. The pantry was the device used by many house producers to create a buffer between spaces for food preparation and spaces for food service, but it was also the space in which dirty things—the china, glassware, and silver—were washed and turned into clean things ready again for the table. The pantry typically served as a valve to seal off the kitchen before opening the dining room door when food was being delivered to guests. The clean space of dining would not then be contaminated by the dirty space of cooking because of this safe barrier.²⁴

In nineteenth-century houses, pantries were the spaces fully fitted with cabinets, drawers, and shelves, instead of such furniture being built into kitchens, as one expects in modern houses (Figure 8). Wright’s 1889 plan for his house in Oak Park located a sizable pantry, with counter and cupboards, between the kitchen and the dining room, although it was subsequently rebuilt as he experimented with his house.²⁵ However, although amply described in *House Beautiful* in 1897, no mention was made of kitchen and pantry arrangements. The Charnley house had a butler’s pantry and dumbwaiter on the first floor that took food and dining equipment to the

basement pantry and kitchen. Following these nineteenth-century precedents, Wright's Willits House of 1902 and the 1902–4 Dana house had separate pantries.²⁶ His 1908–10 Robie House also utilized the pantry as a valve to protect the dining room from kitchen smells and sounds (Figure 9).

From the tone of articles published in the Prairie era, pantry function and layout were well established. As described in contemporary sources of the first decade, from the professional

journal *Architectural Record* to the short-lived homemakers' magazine *Indoors and Out*, authorities agreed that the pantry functioned as a china closet and a serving room.²⁷ Pantries prevented odors and noise from spreading from the kitchen to the dining space. In pantries, counter space was created on top of built-in lower cabinets, in contrast to kitchens that had little or no counter space; builders were cautioned to preserve an unimpeded counter space by lifting the upper cabinets above the counter so there would

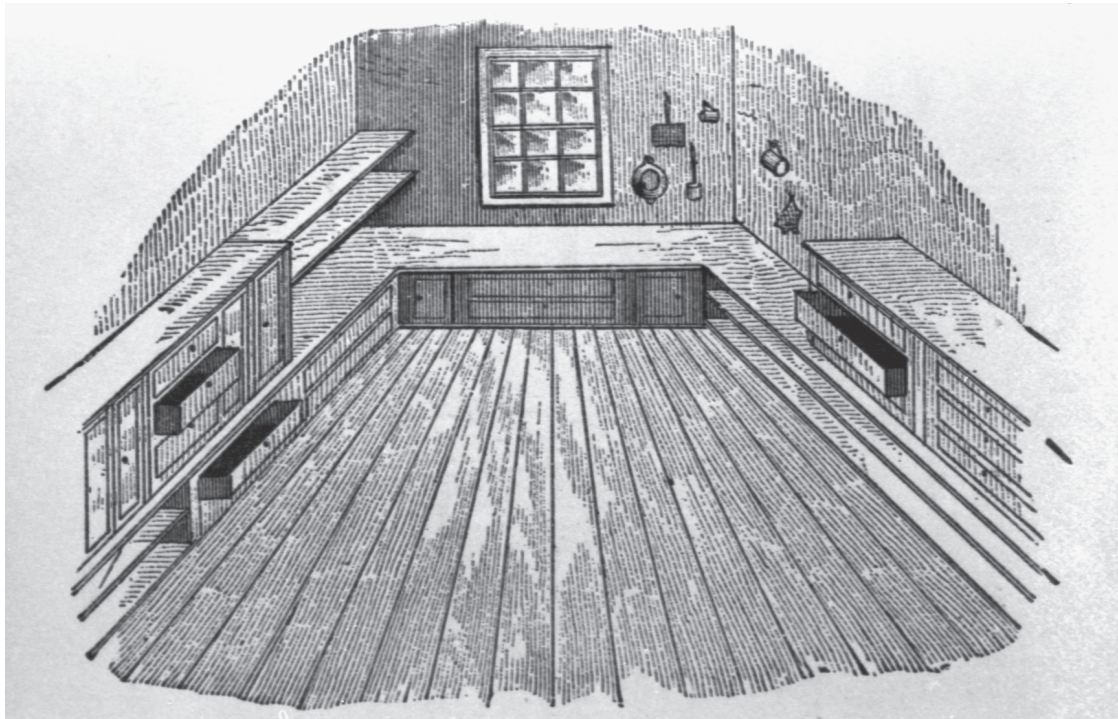


Figure 8. Built-in shelves and long countertops create convenient storage in a well-arranged pantry, from Byron David Halsted, *Household Conveniences*, 1884.

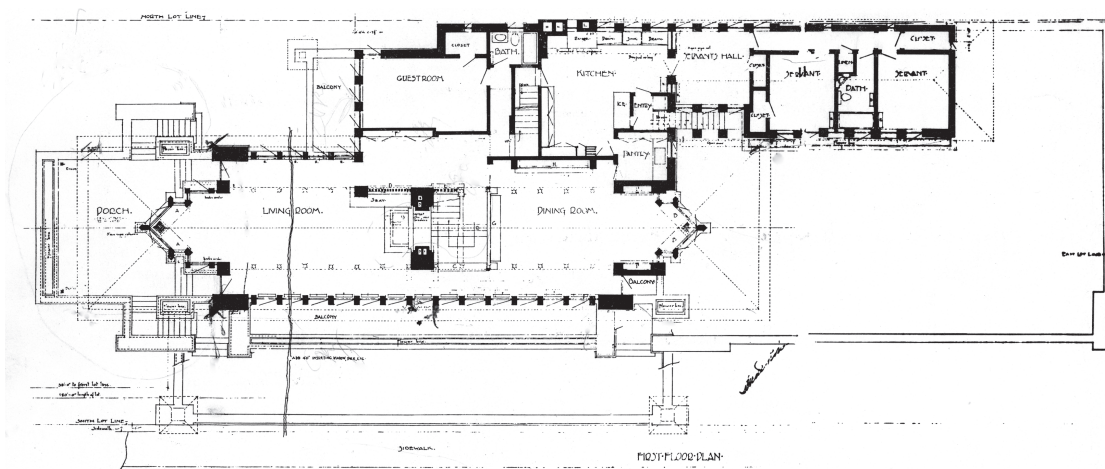


Figure 9. The food-axis spaces in Wright's Robie house are on the second floor; note especially the kitchen with its icebox. Plan courtesy of the Frank Lloyd Wright Foundation.

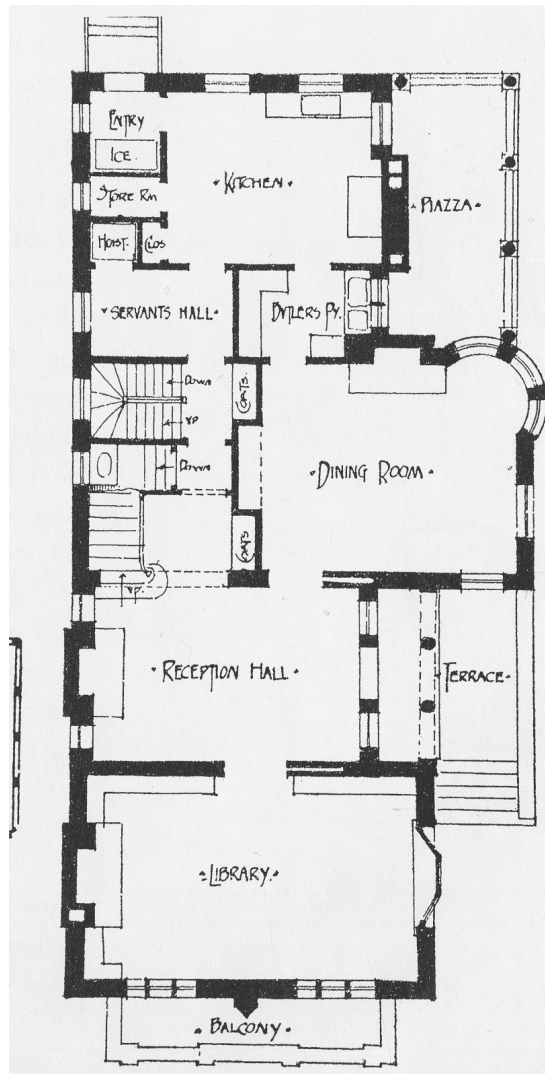
be room to place plates for serving or clearing the table. Dishes were washed in the pantry sink. Advice was given on creating the correct spacing for shelves: measure one's china pieces to make sure each thing fits in a specific place. Drawers held table linens, cupboards stored table leaves. In elaborate households where a butler was employed, pantries also contained an icebox; if the pantry and dining room were on another floor from the kitchen, pantries had a dumbwaiter. In contrast to English houses where many servants managed the food axis, American housekeepers, with limited access to servants, were much more concerned with efficiency and labor-saving design in their kitchens and pantries.²⁸ In addition to pantries, most upper-middle-class houses

of this era had additional separate rooms connected to the kitchen that further broke down the general activity into food and equipment storage closets and even safes for silver. In the expensive Boyce house in Chicago, designed and built by architect Francis Whitehouse in the 1890s, during Wright's early career, the kitchen has a butler's pantry, a storeroom, two additional closets, and a space for the icebox in the kitchen's rear entry (Figure 10).²⁹

In contrast to this pervasive use of pantries, Wright omitted separate pantries in his vacation cottages and a few less expensive houses of the Prairie years. There is a simple pantry-less arrangement in the kitchen of the Charles S. Ross House, a summer cottage on Delavan Lake, Wisconsin, from 1902. Here a kitchen sink's counter extends into an L with cupboards above. There is a small room on the back porch for an icebox with a small door on the outside wall for icing the box from the exterior.³⁰ Similarly in his 1907 "A Fireproof House for \$5000" for the *Ladies' Home Journal*, Wright includes no pantry, but there is a built-in china cabinet in the dining room for equipment that might otherwise have been stored in a pantry.³¹ The house for Isabel Roberts in River Forest, Illinois (1907), continues the trend of Wright's smaller houses by having no pantry. Roberts has a built-in set of china cupboards in the dining room, and built-in counters that are usually found in the pantry on two sides of her kitchen.³²

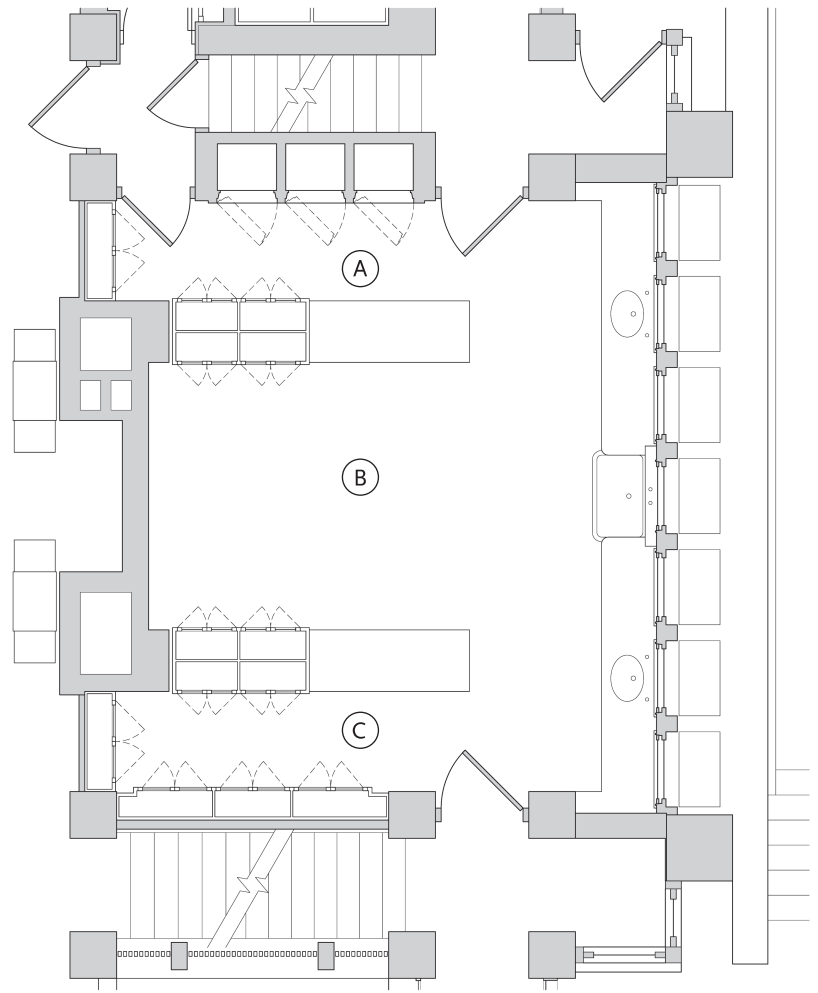
Wright's omission of pantries in these smaller or less-expensive houses contrasts with contemporary lower-budget house designs. In house-plan catalogs such as *Radford's*, or in magazines such as the *Craftsman*, which published house plans, lower middle-class houses typically keep the pantry as an essential part of the food axis. The plans for inexpensive houses published in *Carpentry and Building* in the first decade of the twentieth century provide a pantry, a clear separate space to help with food service. In every case, the pantry was the place for continuous built-in storage—shelves and cabinets, a countertop at waist level, and often a sink. The efficiency of built-in storage as well as the aesthetic of a continuous, smooth appearance was a sign

Figure 10. Subdivided kitchen in 1893 includes specific storage closets and an icebox alcove; S. Leonard Boyce House in Chicago, architect Francis Whitehouse; *Inland Architect* (April 1893): photogravure plate.



of modernity; a continuous smooth plane is still a preferred kitchen aesthetic, transferred from pantries to kitchens in the early twentieth century. Thus, in his vacation houses Frank Lloyd Wright ventured into new middle-class territory by eliminating pantries and collapsing the barriers between guests' space and homeowners' or servants' work space.

The most striking omission of a pantry is in the very expensive 1904 Darwin Martin House. In the reception areas of the Martin house, Wright developed his theory of breaking down the walls between social spaces, creating a long space, the so-called "unit room" (see Figure 6). In the Martin house kitchen, what would typically have been separate spaces for food storage, food preparation, equipment storage, and readying the diners' plates for service became one large room with all those spaces joined together, similar to the unit room. The principal social room in the Martin house was inflected to indicate three distinct areas of use. At the front end of this unit room, bookshelves promoted the atmosphere of the family library. In the center of the unit room, the living room furniture and a fireplace indicated family gatherings. Toward the back of the house, the remaining end of the unit room served for dining. Wright used changes in ceiling heights and cabinetry as well as portieres to indicate shifts from one use to the next in these three parts.³³ Similarly, the Martin house kitchen is not divided into typical small rooms separated by walls but instead is inflected by built-in counters and storage units into the "food department," the "cooking department," and the "china department" (Figure 11). They occupy separate areas of the kitchen but there are no walls between the differing functions. When Wright designed a "Fireproof House for \$5000" for the *Ladies' Home Journal* in 1907 in which he eliminated the butler's pantry, he said that an "open kitchen, with pantry conveniences built into it," is preferable and described a pantry as "superfluous."³⁴ This arrangement is just what he had used at the Martin House a few years earlier. Since Wright seems to have been consistent in his use of pantries in his larger houses except for the Martin House, I wonder if Isabelle Martin



urged him to give her the pantry-less design that he had explored in his less expensive houses.³⁵

Ideas about convenience and efficiency in kitchens were promulgated via home economics, the scientific study of home management. The first college programs training women in home economics started in the 1860s as an attempt to professionalize women's work in the house and make it as efficient and as valued as men's work in factories and offices. Through books and magazine articles, home economists' ideas became popular at the turn of the century at the same time that Wright's career was unfolding. For example, Maria Parloa published her *First Principles of Household Management and Cookery* in 1889, and *House Beautiful* magazine ran a column conducted by Marion Talbot and others called "Home Economics" several times a year beginning in 1904.³⁶ They traced their ideas to

Figure 11. Diagram of Martin house kitchen showing all the functions joined in one space encompassing (A) a food department, (B) cooking department, and (C) china department. Courtesy of HHL Architects.

Catharine Beecher who had focused attention on how houses performed for their users in her 1841 *Treatise on Domestic Economy*, and again with her sister Harriet Beecher Stowe in their 1869 book *American Woman's Home*.³⁷ Advising women on the design of a house, the sisters developed a new kind of kitchen: as small as possible, it provided a storage place for each piece of equipment and basic foodstuff. Wright's progressive clients were certainly familiar with home economists' theories and may have discussed with him the idea that smaller kitchens were more efficient and that pantry-less designs would lighten the housekeeping load.³⁸

Detailed and organized storage became desirable after home economists analyzed each move used in housekeeping. Identifying the major appliances and how they were used in the preparation of a meal, home economists recommended the most efficient paths of movement for the housekeeper working in her kitchen. From expensive houses to modest bungalows, this science led to an interior architecture that anticipated every cooking and house-cleaning need with built-in cabinets for cooking tools that would be constructed with just the right amount of space for the kitchen inventory. The multitude of built-in cabinets in the Martin house kitchen indicates an attention to these precepts for convenience.

Critical of pantries, home economists believed they were likely to become "a sort of catch-all," which got so overcrowded that housekeepers couldn't find what they needed. They argued that traversing a pantry required extra steps and that the most housework-efficient plan would have dining rooms immediately adjacent to kitchens. Housework-reformers like Christine Frederick, as well as plan vendors and house-kit manufacturers arguing for efficiency recommended substituting for a pantry a modern cabinet, perhaps of the Hoosier type, which would store many of the raw materials and utensils for preparing a meal in dedicated compartments.³⁹ Wright's design for the Martin house kitchen therefore met home economists' standards in lacking separate pantries or other storage rooms. However, the Martins' unified kitchen was very spacious, which may have let it in for criticism. "Too large

a kitchen is maintained at the expense of convenience and labor," chided James Earle Miller in the 1912 anthology *Distinctive Interiors*.⁴⁰ Gathering all the food equipment into a single room is conceptually similar to what was done in workers' cottages or tenements. The big difference is that tenement households also ate meals in the cooking room, whereas the Martin house and most other middle-class houses still had separate dining rooms.

Wright's experiments with pantry-less designs remained outside the middle-class norm. In the teens, a butler's pantry was still standard in many middle-class houses, even modest ones. A 1911 article in *House Beautiful* suggested that a pantry should contain the ice box, a sink, a cupboard for dry groceries, a table for pastry making, shelves to the ceiling, and hooks under the bottom shelf to hold small tools. The dining room should have built-in china and glass cupboards.⁴¹ Designer Gustav Stickley's magazine the *Craftsman* in June 1915 published designs for a bungalow, Briarwood, constructed in California. Briarwood's plan features a small "pass-pantry," combining in its name the virtues of a kitchen pass-through, a passage from kitchen to dining room, and a butler's pantry.⁴²

But by the late 1930s the pantry was disappearing in popular moderate-cost houses—replaced by built-in or purchased cabinets to be located right in the kitchen. "The disappearance of the butler's pantry marked the kitchen's gradual conquest of public domestic space," according to designers Ellen Lupton and Abbott Miller.⁴³ Once the kitchen was linked directly to the dining room with no buffering pantry, they concluded, it was one step closer to merging with the dining room and finally becoming social space itself.

The Smallest, Cleanest Kitchen; the Most Effective Refrigerator

The turn-of-the-century desire for efficiency led to recommendations for the smallest kitchen possible. Frank Lloyd Wright's recommendation for small kitchens appeared in an 1896 essay: "depending on the site you would be able to make your kitchen very small, but as completely

appointed as a chemist's laboratory."⁴⁴ His was a prescient proposal that anticipated the home economists' recommendations for efficient kitchens of the 1900s through the 1920s.⁴⁵ In her 1900 book, *First Aid to the Young Housekeeper*, Christine Herrick promoted the small kitchen: eliminate needless articles, she said, and have just a stove, a sink, and an icebox, with a center table. One does not need a separate laundry, pantry, or buttery; these functions are united in the modern kitchen. Covered laundry tubs in the kitchen will serve as a work surface.⁴⁶

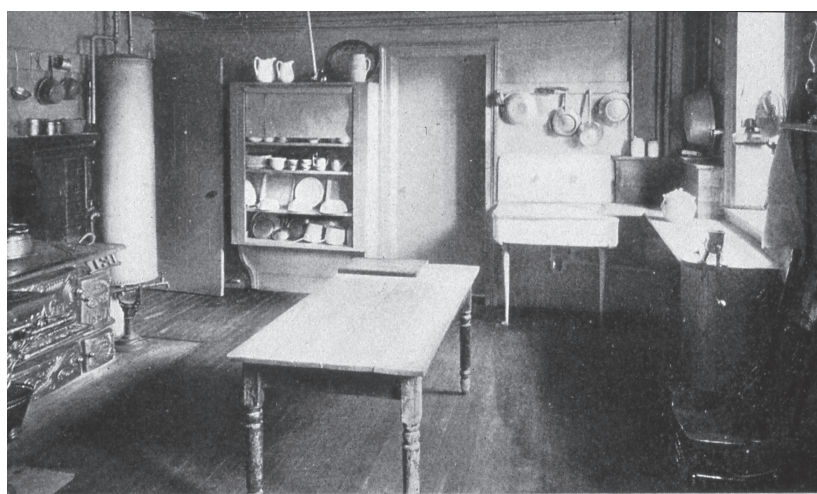
Magazines such as the *Ladies Home Journal* popularized ideas of smallness and efficiency by reproducing house designs for their readership. A 1910 article presented three single girls who commissioned a set of cottages for themselves. In plan, cottage A has a kitchen measuring only 9' by 9'6", with a range on one side and a sink with a drainboard opposite. There is a back porch and an entry space with a box marked "ice." The tiny pantry is subdivided into "food" on the left and "china" on the right. These girls chose to have the smallest possible kitchens with all the necessary kitchen utilities: "a sink, a table, a range, and one chair are all we require," they say, reiterating the arguments of home economists: the smallest kitchen, the least work. Housewives reading such magazines would see how the economical attitude could be realized in new physical space arrangements, resulting in very small but satisfying houses.

One of the marks of a mid-twentieth-century kitchen is the use of continuous countertops and cupboards below and above the counter that unify the various appliances. In contrast, early twentieth-century kitchen pieces normally sat on their own legs like furniture in a living room (Figure 12). Domestic scientists recommended kitchens comprising separate appliances around the periphery of the kitchen with a center table as a work surface. Maria Parloa and others of her generation conceived of the kitchen as a set of independent stations, each of which had its own major appliance and equipment: the stove with its coal and tools, the sink with its drainboard and shelves, and an icebox with exterior access for ice delivery; only the pantry had fitted

and continuous storage cabinets and integrated sink.⁴⁷

Wright's tendency up to 1900 was to fit the pantry or pantries with continuous cabinets and countertops but not the kitchen itself. The cooking range typically stands alone, and the refrigerator frequently is located in a vestibule off the rear entrance and not in the kitchen proper.⁴⁸ These arrangements are seen at the Robie house of 1908–9 where a large, freestanding range was placed against one wall, a white sink (lifted on legs to keep plumbing open beneath it) on another wall, flanked by dark wooden cabinets.⁴⁹

Figure 12. This era's preference for individual kitchen stations organized around the stove, work table, and sink result in a discontinuous aesthetic. A 1903 kitchen in two views from "The Efficient Kitchen," *Country Life in America* 28 (October 1915): 42–3.



139. A well-furnished kitchen,—everything simple, neat and handy



140. Another view of the same kitchen

The *Ladies' Home Journal* "Home in a Prairie Town" from February 1901 is Wright's first that has continuous counters around the kitchen, following two walls and onto a third to terminate short of a range. This kitchen starts to seem more coherent, yet a fitted pantry is still the bridge that leads into the dining room.⁵⁰ In "A Fireproof House for \$5000" of 1907 for *Ladies' Home Journal*, Wright proposed a pantry-less kitchen with continuous countertops on two sides. These incorporate a refrigerator and a sink with cupboards below. The third wall is also fitted with cupboards. On the fourth wall is the only remnant of the kitchen's independent stations: a freestanding range.⁵¹

The modern kitchen was supposed to be kept very clean. The Glessner house kitchen and pantry have easily washed surfaces of white tile without extra trim or moldings to trap dirt. The Martin house kitchen's surface, made of glass panels colored white, is very much in keeping with these intentions (Figure 13). These panels also increased the amount of light; the servants could better see what they were doing, and it may have also helped the vision-impaired Isabelle Martin.⁵² In Charles D. Waterbury's 1915 article "The Efficient Kitchen," he recommended using "hospital construction" with coved baseboards and tile surfaces to make everything cleanable and leave no empty spaces for rodents to hide. The most easy to keep clean, said Waterbury,

were steel furnishings with baked-on enamel finishes; tile floors, as used in the Robie kitchen, were also preferred because wood was harder to keep sanitary.⁵³ Linoleum gained a reputation as an inexpensive material that could be kept clean and thus was a favorite for kitchen floors.⁵⁴

Wright moved the Martin kitchen in the direction of unifying the appliances within a framework of continuous countertops and built-in cabinets, relinquishing the separate pantry and storage closets common elsewhere. By the late 1940s popular houses in magazines or catalogs generally had shifted to this coherent kitchen arrangement. Formerly separate appliances were incorporated into a unified design, which absorbed the fitted cabinets that once belonged in the pantry. Countertops at a uniform height and cupboards below and above the counter omitted dirt-catching gaps. In this regard, the Martin house kitchen with its continuous counter surfaces and cabinetry seems several decades ahead of the general run of kitchen design.

Important changes in the way food was preserved and distributed occurred in these years, and householders in the early twentieth century had only to store food for a few days at a time, instead of preserving and storing meat, for example, for the whole year as in the preceding century. Refrigerator cars transported fresh foods by railroad, advised a 1908 household encyclopedia, while tropical produce was transported to northern cities via refrigerated steamships.⁵⁵ Marion Talbot and Sophonisba Preston Breckinridge, in their 1912 book *The Modern Household*, reported that people rarely make or preserve their own food any more. Earlier generations, they said, were starved for vegetables at the end of winter, complained of "spring fever" deficits, and took tonics to replenish the body, but not by 1912, when stockyards and slaughterhouses, packing plants, and factories prepared all kinds of foods.⁵⁶

Several patents were taken out in the later nineteenth century for individual iced appliances—sometimes called refrigerators and sometimes iceboxes. The job of the refrigerator was to bring indoors in a small-scale appliance the healthy conditions that had prevailed outside the house in nineteenth-century icehouses, springhouses,

Figure 13. White surfaces in the Martin house kitchen signify cleanliness and also enhance the amount of light in the room, 1906. Photo by Henry Fuermann, courtesy Collection Centre Canadien d'Architecture/ Canadian Centre for Architecture.



and root cellars. One high-end solution was a separate iced room that chilled the foods, as in the Glessner house. Wright himself had designed such an iced room for the Dana house in 1902–4.⁵⁷ Having a steady flow of air was an important feature for all iceboxes, so that mold would not collect and food would not spoil. The Hygienic Refrigerator Company icebox, built in Boston, won an award in 1895 especially for these “hygienic” qualities.⁵⁸ Wright’s 1904 Martin house kitchen design called for a bank of refrigerated boxes chilled by ice on the west side of the kitchen, specially designed for the space and built in. However, this refrigerator was not accessible from an outside wall or porch, as iceboxes in smaller houses of the period often were. Ice had to be delivered into the kitchen, so drips and sawdust were likely to get on the kitchen floor. Perhaps Wright thought his refrigerator location was not important in preventing a mess, since the Martins’ resident servants would clean it up. Refrigerators that received ice deliveries directly from the back porch seemed a modern idea to many home economists, since it kept mess and traffic from entering the kitchen. Wright’s Robie house in Chicago had this type of refrigerator with an exterior ice door, but it was located at the top of a flight of stairs next to the second-floor kitchen, to which the iceman had to carry his load.⁵⁹

Refrigerator manufacturers struggled with the same problems of dampness and food spoilage through the 1910s and into the 1920s. By the twenties, small-scale electric motors became available to run small household-sized appliances. Ice-less refrigerators with electric motors then replaced the icebox for those who had access to electricity and could afford to make the change.

Qualities of a Dining Room

In the Prairie-house period, houses for the wealthy and for a wide range of the middle classes all had separate dining rooms. These rooms, the very sign of gentility, enabled even poorer households to position themselves as well mannered and to display dining equipment that showed their knowledge of hospitality. Dining rooms had a his-

tory of being placed at a distance from kitchens up to the mid-nineteenth century, even though a position adjacent to the kitchen seems like indisputable common sense. However, by the time of the Prairie houses, both popular house designers and stylish architects agreed that dining rooms ought to be close to kitchens to make serving food easier but not so close as to violate the protective barrier between gracious, clean dining and messy, smelly cooking. Even many small houses, like those sold by the Aladdin Company as precut kits, had separate dining rooms.

Built-in dining room furniture continued a long tradition of shaping dining rooms to accommodate china storage, as seen in an 1881 illustration from *Carpentry and Building* magazine for a sideboard (Figure 14). Wright had written in 1896 that it was hardly possible to “separate the building and furnishing of your house . . . you incorporate [furniture] with the house building.”⁶⁰ He was more explicit in 1907 when he wrote that the most satisfying rooms have “most or all of the furniture . . . built in as a part of the original scheme.”⁶¹ In the essay “In the Cause of Architecture” (1908), he reiterated his belief that “appliances or fixtures as such are undesirable. Assimilate them together with all appurtenances into the design of the structure.”⁶² He urged the integration of “appliances” such as lighting and heating fixtures in the principal front rooms of his houses, as well as built-in furniture.⁶³

In popular literature, built-in storage units were recommended to help a housewife run her house by herself, without the aid of servants. As a precedent, Ann Wentworth, in a *House Beautiful* article, cited eighteenth-century carpenters who built corner cupboards as early examples of built-ins; current houses benefit from the simplicity of built-in cabinets, sideboards, and “even beds” if not overdone. “The dining room is particularly adapted for [this] simple structural style.”⁶⁴ A feature of both the Martins’ dining room and the Robies’ is a built-in cabinet located in a niche on the side wall (Figure 15). Here Wright’s design parallels popular houses with their built-in dining room furniture.

Craftsman, published by Gustav Stickley from 1901 to 1916, promoted various ideas for built-in

Figure 14. An 1881 design for a dining room with a built-in sideboard. *Carpentry and Building*, courtesy of the University of Tennessee Press.



Figure 15. Martin house dining room with its built-in storage unit in a 1906 photo by Henry Fuermann, courtesy Collection Centre Canadien d'Architecture/ Canadian Centre for Architecture.



furniture to help in food preparation and service. To make a separate dining room more efficient, the magazine recommended a china cupboard built into the wall between kitchen and dining spaces that would have doors opening into both rooms. Thus dishes could be put away after washing them in the kitchen, then retrieved from the dining-room side to set the table, saving the housewife extra steps.⁶⁵ Wright called the living room the “heart of the house” in 1901 and recommended it be coupled with the dining room so “one leads naturally into the other.”⁶⁶ In houses of both high and low budgets, the efficiency of built-in storage reappeared in the living room with its built-in bookcase and window seat, the hall with its built-in coat closet, and the porch with its built-in flower box.

Decoration invoking nature was common in the all-important dining room in wealthy house-

holds at the turn of the century. The often-used animal head and rack of horns continued a nineteenth-century reference to hunting and the bounties of nature that provided food for the table.⁶⁷ But the Arts and Crafts movement's new taste for simplicity affected dining room decoration at both popular and elite levels. The Robie and Martin houses' dining rooms depart from the tradition of including representations of nature, substituting wood itself as a nature referent. These two dining rooms seem calm, orderly, and a little stiff with their high-backed chairs. Their calm is never compromised by animal heads, paintings of the hunt, or other specific animal images.⁶⁸ This simplifying was widespread in dining rooms—whether designed by Stickley, the Radford Company, or Wright.

Omitting the dining room slowly became a possibility in planning less costly houses. Radford bungalow plans, for example, sometimes had living/dining rooms where the two functions were merged. The design for Taliesin at Spring Green (1911) shows the dining area in an ell at one end of the living room. For Wright, combining the living and dining functions is a striking departure from his servant-run houses of the previous decade, similar to his working-class apartment designs of the 1910s, and predictive of his Usonian houses many years later.⁶⁹

Paving the Way to Usonian Food-Axis Ideas

Wright's Usonian houses of the later 1930s and '40s are characterized by their simplified spaces and reduced costs, in contrast to his larger Prairie houses. One of the signature features of the Usonian plan is its elimination of a separate dining room in favor of using one end of the living room for family meals. The kitchen, often renamed "work room," was open to the main living space and vented with clerestory windows raised above the roofline. Usonian houses were arranged for servantless housekeeping and designed to integrate the housewife into the social life of the home, even while she prepared meals in her "work room." These houses, targeted to modest-income professionals, not the wealthy, incorporated many ideas already widespread in popular culture.⁷⁰

Spatial Condensation: Eliminating the Separate Dining Room

In the later 1910s and '20s, popular house designers and magazine writers pressed for more economically planned spaces and sought money-saving ways to furnish rooms. These attempts increased in urgency during the Great Depression, when everyone's expenditures had to be reduced. Omitting a separate dining room for middle-class house owners was a popular way to save money and could be accomplished either by putting dining facilities at one end of the kitchen or at one end of the living room.

In inexpensive houses, money could be saved by merging dining activity with food-preparation spaces, so the kitchen became the location for serving as well as cooking meals. It is practical to combine dining and kitchen functions, counseled the *Craftsman* in 1905, in households where no servants are kept. Because modern kitchen appliances and plumbing are so easy to keep clean, a recess at one end of a kitchen "may well serve as a most comfortable and homelike dining room." The pots and pans hanging in the kitchen could be just as ornamental as racks of plates on display in formal dining rooms.⁷¹

Combining eating and cooking in one room also had a history in multiple dwellings. Apartments usually had smaller spaces than free-standing houses, so designers had to be inventive with space-saving strategies. Small kitchenettes became popular in apartment hotels and efficiency apartments of the 1910s and 1920s. They had small dimensions and reduced counter space but still supplied a full sink and refrigerator, and a stove, hot plate, or warming oven. A 1924 kitchenette occupied a space 6' 6" by 8' 6" at one end of the room; the other end held a dining table and four chairs in a space of the same dimensions. Two one-foot-deep china cabinets divided the two functions. Similar kitchen/dining arrangements, used in New York apartment buildings of the 1920s placed dining at one end and cooking at the other end of a single small room.⁷² A design by Robert Jones from 1929 included this kind of combined kitchen/dining space in a freestanding house.

Space-saving devices such as fold-up tables

and chairs in a kitchen enhanced the efficient use of houses in the 1920s. *American Builder* published an illustration of a “Pulmanook” in 1924. It consisted of a table mounted against the wall with an end leg that folded up underneath it; seats beside the table pulled out from indentations in the wall. Instead of the Pulmanook’s pull-down tables and seats, a built-in table and two benches created a breakfast or dining nook, designed by and published in William A. Radford’s *Architectural Details* in 1921.⁷³ Building in a table and benches, either foldable or fixed permanently in place, allowed specialized dining settings for their owners in the kitchens of the least expensive dwellings.⁷⁴ Combining cooking space with eating space continues a working-class tradition from nineteenth-century tenements and small houses, but in the early twentieth century the practice was promoted to make houses less costly to the lower levels of middle-class homeowners.

Alternatively, dining space could be combined with the living room. In his *Ladies’ Home Journal* essay of 1901, Wright had suggested making the dining room “a sunny alcove of the living room,” a very unusual arrangement for his then servant-run houses and one with less working-class associations.⁷⁵ Following his own advice, Wright made a merged living-/dining-room space at Taliesin East. *Craftsman* magazine published a bungalow in February 1915 that made use of a combined dining/living room 36 feet long. Built-in cabinetry inflected the space with perpendicular shelves in which residents stored china on the dining-room side and books on the living-room side of the one grand room.⁷⁶ Sears Roebuck house kits provided living rooms in the 1920s that also served for dining; diagrams in the catalog showed how to furnish these rooms. An illustration of the house model “The Valley,” for example, presented the living room with a round table and four chairs supporting the dining function, and two side chairs and a piano (no room for a “davenport”) representing the social function of the living room.⁷⁷

Even though dining rooms could be made efficient with built-in furniture and reduced square-footage, critics began to identify the room itself

as a wasted space. Edward W. Bok, former editor of the *Ladies Home Journal*, argued that dining rooms were unnecessary and old-fashioned in the 1927 article “Abolish the Dining Room.” Modern families would prefer to use one end of the living room for dining, said Bok, where the china and linens could be stored in built-in cabinets. A table set and concealed by a screen until dinner is served makes the use of the living room for dining perfectly feasible. Once dining materials were put away, the living room could return to its sociable uses. Omitting the dining room gives the housewife one less room to furnish and clean, and might in some cases mean one less maid. Just as no old-fashioned “parlor” would today be included in a new middle-class house, argued Bok, so too the dining room, as we know it will soon disappear.⁷⁸

Wright, in his designs for Usonian houses from the mid-1930s through the 1940s, addressed the elimination of the separate dining room. He recognized that the costly houses of his Prairie years did not have a market in Depression-depleted America and identified one of the clients for a Usonian house, the Jacobs family, as “lower middle.”⁷⁹ In fusing dining- with living-room space, he returned to a spatial arrangement used before in his working-class multiple dwellings such as the Munkwitz apartments, or in small vacation houses and in his own Taliesin East—all from the 1910s.

In several Usonian houses, transparent shelves, interior windows, see-through partitions, or simply an absent wall divided the kitchens—often called “work rooms”—from the social spaces of the house.⁸⁰ These devices allowed housewives doing kitchen work to participate in the social life of living and dining spaces, no longer sequestered like a servant in a boxed-in kitchen. The Malcolm Willey house in Minneapolis (1934) is an example of a food-axis arrangement that partially realizes the promise of modern, servantless housekeeping—that is, a kitchen that is the province of the housewife rather than a maid. Here Wright developed modern housekeeping with a plan that included dining and living spaces in one room and offered a kitchen that communicated with those living spaces through open

shelving. Built-in dining tables in this and other Usonian houses saved on expensive furnishings, following Wright's early recommendation for built-in furniture and the preferences of *Craftsman* and other magazines for built-in furniture in the first decade of the 1900s.

The Hanna house in California is a good example of Wright's later thinking about how a modern family lives without servants; it locates the housewife at the center of the house plan. Her space is in what he referred to as her workroom or laboratory, previously known as the kitchen. The Hanna house, designed starting in 1935, cost \$37,000.⁸¹ The percentage of square footage given over to food spaces is far smaller than it was at the Willits house. Wright seemed to be very pleased with the way Usonian kitchens were joined with the living rooms, reflecting that this arrangement enabled the kind of family relationships that we once had back in "the farm days when there was but one big living room, a stove in it, and Ma was there cooking."⁸² In a taped 1957 interview about Usonian designs, Wright claimed, "We did a great deal in the open plan when we took the hostess out of the kitchen and made her attractive as a hostess. She was no longer a cook in the kitchen; we made her a feature of her establishment."⁸³

Dining spaces in Usonian houses were located at the end of the living room and not in a separate room. Usually a dining table would be built in. At the end of the nineteenth century, popular low-budget houses had used an opening between kitchen and dining spaces in the form of a pass-through, as did Wright in his Oak Park home, but the transparent Usonian kitchen walls amplified the link between the kitchen and the dining area. After renovating the house, Jean Hanna wrote, "The central location of the kitchen—with two pass-throughs and quick access to the service hall and the rest of the house and the terrace—made possible a choice of places in which to eat . . . we could breakfast in winter in front of the library fireplace or the fireplace in the master bedroom. In summertime outdoor meals were favorites." The Hanna house also had an outdoor barbecue built into one of the outdoor terraces for picnics and informal parties. But, contrary to

Wright's opinion, the Hannas felt that the living room could only "be its best" when the dining function was removed.⁸⁴

The laboratory kitchen of the Usonian house changed in several ways from the earlier Prairie kitchen. The Hanna kitchen is buried in the center of the house—its windows take the form of hinged shutters that open to gather borrowed light from the playroom or the living room, rather than from the outside. The Usonian kitchen is open to one or more social rooms, so the housewife can see and connect to her children's play space, guests at a dining table, or outdoor terraces and views. Jean Hanna said she didn't find the room too dark and got plenty of views out from this arrangement.⁸⁵ In the Jacobs house, Katherine Jacobs could watch her children on the terrace from her kitchen or bring food to the table "almost without moving" since the table was located so close to the working kitchen. The Usonian kitchen has a ceiling and roof raised above others in the house, allowing clerestory windows and vents at the top. This both lets light into the kitchen, and allows cooking smells and heat to exit through the vents. One house owner claimed that his Usonian was the best place for cocktail parties because the clerestory windows over the kitchen vented out all the smoke from guests' cigarettes.⁸⁶ However, other Usonian clients were most dissatisfied with the kitchen's small size and its lack of views to the outdoors.⁸⁷

The open plan combining dining and living spaces, popular in cheaper houses of the teens and twenties and in avant-garde European designs, became a favorite in architect-designed houses in the United States in the later 1930s and 1940s. House designs, by professional contemporaries of Wright's, paralleled the open plans of Usonian designs. The architect Almon Fordyce published his design for a house with a "Living-Kitchen" in 1945. He merged the kitchen space with the dining area, using open shelves to signal the change in function. The dining area was fully part of the living room, as it was in Wright's Usonians. In 1949 the Museum of Modern Art invited Marcel Breuer to design an ideal modern house for a middle-class family that used the open plan.⁸⁸ Breuer placed the



Figure 16. The kitchen where the housewife works may be opened to the dining area by sliding panels. Marcel Breuer's Museum of Modern Art house, *Architectural Forum* 1949; Photograph Ezra Stoller c. Esto. All rights reserved.

kitchen, called “the control center of the home,” at the center of the rectangular plan. It was not buried within the house like the Hanna kitchen but opened into the dining/living room on one side and the utility room and playroom on the other. A “view panel” into the playroom and adjoining yard allowed “the housewife to supervise children both indoors and out.” In this period’s “servantless” living, the housewife replaces the servant in taking care of all the cooking, housework, and childcare (Figure 16). As in Usonian designs with glass shelves or interior windows that filtered the connection of kitchen to living space, Breuer’s sliding panels allowed a client to have second thoughts as to whether kitchen and dining should be connected spatially. This hesitancy may be attributed to the fact that, historically, working-class, not middle-class, cooking and dining spaces were likely to be integrated.

Conclusion

I have placed Frank Lloyd Wright’s ideas about the food axis in the context of popular American houses to see how forward-looking his work was. Popular-house ideas were familiar to mass-market magazine readers, house buyers, and Wright himself, whose houses were published in *House Beautiful* and the *Ladies’ Home Journal*. Both Wright and popular designers of the first decade

of the twentieth century conceived of appliances and furnishings as separate workstations in kitchens, used built-in storage pieces in dining rooms, and fitted storage cabinetry into pantries that buffered cooking from eating spaces. Both modest and costly houses of the early 1900s included butlers’ pantries, a sign of gentility for families who aspired to middle-class status or those who already had it. Prosperous householders of 1900 assumed the food axis should be enclosed in three or more rooms—a kitchen, a pantry, perhaps additional storage rooms, and a dedicated dining room. At the same time these spatial refinements became available to people of lower income levels living in small cottages and bungalows. Early twentieth-century plans for workers’ or lower-middle-class houses often included separate dining rooms and breakfast nooks like those of their wealthier contemporaries. Wright may have led the way in articles and lectures with ideas about making houses more efficient through reducing the number of rooms and building in furniture, yet his wealthy clients demanded more traditional servant-run spatial arrangements for his executed work.

Modern attitudes about women’s role in the family, combined with modern utilities systems and modes of food preservation, changed assumptions about the place of food-related work. Preserved foods, which once had required specialized rooms or outbuildings, could now be acquired commercially or preserved with electrical appliances, changing the ways that households managed their food supply. Utilities introduced in the nineteenth century, such as plumbing for water and gas and later wiring for electricity, became more widespread in the early twentieth century, altering the infrastructure necessary to support the food axis in a household. Home economists publicized the ways that kitchen work could be accomplished most effectively in a small space, cutting down on the need for servants. By the 1920s, the necessity of having separate dining rooms for the middle class came into question. Many popular builders experimented with merging the dining function with another room—either making dining part of the living room or joining it with the kitchen. Wright’s ideas for

merging dining with living rooms already can be found in the 1910s in his working-class apartments and in Taliesin; those experiments in merging elements of the food axis found full expression in his Usonian houses of the late 1930s.

While Wright's aesthetic choices made his houses stand out from the popular norm, the way his houses worked often matched popular culture's ways of interpreting the food axis, such as favoring built-in dining room storage. Wright sometimes proposed ideas that only caught on much later, such as pantry-less kitchens. At other times he trailed behind popular norms, as in his placement of and access to refrigerators. It may be that Wright's realization of his concepts of modern efficiency in the late 1890s and the first decade of the twentieth century was held back by wealthier clients who embraced conservative social norms, restricting the implementation of more modern arrangements that would threaten the social divide between labor and consumption. As a result, Wright's architecture is in this way at its most progressive at the lowest end of the economic spectrum, when building for clients less constrained by the social forces of elite entertaining.

Postscript

By the 1990s, client desire and architects' interest in the open flow of space made the merging of spaces into one large room incorporating family room, entertainment, cooking and serving food commonplace in both architect-designed and popular houses. Now the kitchen has absorbed living room, dining room, and family room functions to stand as the heart of the home. Even houses designed by Frank Lloyd Wright are subject to the pressures of the expanding kitchen/living/great room. The Usonian houses of the 1930s had been among the earliest architect-designed middle-class houses to open up kitchens to living/dining rooms. Yet when the Cretella family bought their 1959 Wright house on Staten Island, they wanted a "large bright kitchen that is nothing like the galley that Wright intended for the house."⁸⁹ They took down a couple of walls in 2004 in order to make a kitchen big enough for professional appliances. They also claimed part of the basement for the improved food axis,

turning a storeroom into a wine cellar. Wright's small, efficient kitchen, it seems, will no longer do when the kitchen, not the living room, has become the center of domestic social life.

AUTHOR BIOGRAPHY

Elizabeth Collins Cromley teaches architectural history in the School of Architecture at Northeastern University in Boston. Her research on vernacular architecture has yielded articles and books on such diverse topics as urban parks, apartment houses, the meaning of home renovations, Native American objects as decoration, and resort hotels. Her most recent book, *The Food Axis: Cooking, Eating, and the Architecture of American Houses* is reviewed in this issue.

NOTES

1. Elizabeth Collins Cromley, "Transforming the Food Axis: Houses, Tools, Modes of Analysis," *Material History Review* 44 (Fall 1996): 8–22; Elizabeth Collins Cromley, *The Food Axis: Cooking, Eating, and the Architecture of American Houses* (Charlottesville: University of Virginia Press, 2010). Here I borrow some of those insights and examples but reframe them in order to understand how a high-end architect's work relates to broadly held standards for the food axis. Other books that cover issues on house design in this period include Dolores Hayden, *The Grand Domestic Revolution: A History of Feminist Designs for American Homes, Neighborhoods, and Cities* (Cambridge, Mass.: MIT Press, 1981); Gwendolyn Wright, *Building the Dream: A Social History Of Housing In America* (New York: Pantheon Books, 1981); Gwendolyn Wright, *Moralism and the Model Home: Domestic Architecture and Cultural Conflict in Chicago* (Chicago: University of Chicago Press, 1980).

2. The Frank Lloyd Wright bibliography runs into the hundreds of items. Useful recent titles are Richard Longstreth, ed., *The Charnley House: Louis Sullivan, Frank Lloyd Wright, and the Making of Chicago's Gold Coast* (Chicago: University of Chicago Press, 2004); Neil Levine, *The Architecture of Frank Lloyd Wright* (Princeton, N.J.: Princeton University Press, 1996).

3. Since architects live and practice in the ordinary daily world, they are exposed to popular culture and the vernacular as well as to fine art and other aspects

of high culture. How do architects respond to the context of ideas that popular culture supplies?

4. Discussions of Wright's kitchens can be found in clients' recollections of working with Wright such as Paul and Jean Hanna, *Frank Lloyd Wright's Hanna House—the Clients' Report* (Cambridge, Mass.: MIT Press, 1981); Herbert and Katherine Jacobs, *Building with Frank Lloyd Wright, an Illustrated Memoir* (San Francisco: Chronicle Books, 1978); and in some of Frank Lloyd Wright's own writings. See Eugene Streich, "An Original-Owner Survey of Frank Lloyd Wright's Residential Architecture," in *Writings on Wright*, ed. H. Allen Brooks (Cambridge, Mass.: MIT press, 1983), 44. Most major books on Frank Lloyd Wright do not study kitchens although dining rooms are given more attention.

5. Thomas C. Hubka, "H. H. Richardson's Glessner House: A Garden in the Machine," *Winterthur Portfolio* 24, no. 4 (Winter 1989): 209–29, especially considers the courtyard and placement of the house on the lot.

6. Elizabeth Collins Cromley, "At Home on Astor Street," in *The Charnley House*, ed. Longstreth, 101–28.

7. Faye Dudden, *Serving Women: Household Service in Nineteenth-century America* (Middletown, Conn.: Wesleyan University Press, 1983); Susan Strasser, *Never Done: A History Of American Housework* (New York: Henry Holt, 2000).

8. See Jan Jennings, *Cheap and Tasteful Dwellings: Design Competitions and the Convenient Interior 1879–1909* (Knoxville: University of Tennessee Press, 2005).

9. Jennings, *Cheap and Tasteful*, 122.

10. Jennings, *Cheap and Tasteful*, 123.

11. Jennings, *Cheap and Tasteful*, 127.

12. Frank Lent, *Sensible Suburban Residences, Containing Suggestions, Hints, and Practical Ideas, Sketches, Plans, Etc., for the Building of Country Homes* (Cranford, N.J.: F. T. Lent, 1894).

13. On houses published in *Ladies' Home Journal*, see Leland Roth, "Getting the Houses to the People—Edward Bok, *The Ladies' Home Journal*, and the Ideal House," in *Perspectives in Vernacular Architecture IV*, eds. Tom Carter and Bernard Herman, 187–196, (Knoxville: University of Tennessee Press, 1991).

14. Kathryn Dethier, "The Spirit of Progressive Reform: The 'Ladies' Home Journal' House Plans, 1900–1902," *Journal of Design History* 6, no. 4 (1993):

247–61. Dethier wrote: "From 1895 to 1919, Bok published house plans and several pictorial series directed at modernizing the American home. Although the exact number of homes built from *Ladies' Home Journal* plans remains unknown, by 1916 the editors of the *Journal* estimated that 30,000 homes had been built from plans published during Bok's tenure as editor-in-chief, many of them from the series examined in this paper, 'Model Suburban Homes Which Can Be Built at Moderate Cost.' The series of fourteen plans, published in the *Journal* from October 1900 to January 1902, is probably most widely known for its two Prairie houses designed by Frank Lloyd Wright" (247–61).

15. Joseph Connors, *The Robie House of Frank Lloyd Wright* (Chicago: University of Chicago Press, 1984), 39. In contrast, Wright spent only \$4,700 for his house in Oak Park, Illinois, in 1889.

16. H. R. Hitchcock, *In the Nature of Materials* (New York: Da Capo Press, 1973), n.p., fig. 74. Hitchcock's book contains a generous selection of Wright house plans of both the Prairie and Usonian periods, so I have used it as a source for basic plan diagrams.

17. Jack Quinan, *Frank Lloyd Wright's Martin House—Architecture as Portraiture* (Princeton, N.J.: Princeton Architectural Press, 2004), 202.

18. Efficiency and convenience are two issues raised in kitchen design; according to the *Oxford English Dictionary*, efficient is "adequately operative, effective," while convenient is "suitable, appropriate," or "well adapted to . . . performance of functions; handy" (http://oxforddictionaries.com/search?searchType=dictionary&isWritersAndEditors=true&searchUri=All&q=efficient&_searchBtn=Search&contentVersion=US.) Dethier, in "The Spirit of Progressive Reform," notes, "Reorganization of the kitchen became a special target for Progressive movement reformers in the early decades of the twentieth century. The influence of science and technology, the changing role of women, and the increasing use of consumer goods and services from outside of the home resulted in smaller kitchens carefully planned for cleanliness, comfort, convenience, and suitability for the work that was to be done" (259).

19. Frank Lloyd Wright, "The Architect and the Machine" (1894), in *Frank Lloyd Wright, Collected Writings*, vol. 1, 1894–1930, ed. Bruce Brooks Pfeiffer (New York: Rizzoli, 1992), 22. Wright echoes many

household-advice books of the post-Civil War period in urging homeowners to offer their servants better living conditions.

20. Frank Lloyd Wright, "Architect, Architecture, and the Client" (1896), in *Collected Writings*, vol. 1, ed. Pfeiffer, 34. Wright used that phrase "on ball-bearings" repeatedly to indicate work flowing smoothly. Donald Hoffmann states, "Wright took much more care with the appearance of his kitchens as servants disappeared from middle-class life in America." See Hoffmann, *Frank Lloyd Wright's Robie House* (New York: Dover, 1984), 82.

21. Frank Lloyd Wright, "A Small House with 'Lots of Room in It'" (1901), in *Collected Writings*, vol. 1, ed. Pfeiffer, 76. This essay was published in *Ladies' Home Journal*.

22. Jennings, *Cheap and Tasteful*, 130–31.

23. From the kitchen a sizable pantry with counter and cupboards leads to the dining room that had a built-in sideboard. Hitchcock, *In the Nature of Materials*, fig. 12; the furniture indicated in the drawings is not labeled.

24. "The American kitchen is distinguished from its forebears and from contemporary English kitchens," wrote James Earle Miller in the 1912 anthology *Distinctive Interiors*, "by being located as close to the dining room as possible with only a china closet or butler's pantry as a buffer." James Earle Miller, "Planning the Kitchen," in *A Book of Distinctive Interiors*, ed. William Vollmer (New York: McBride, Nast & Company, 1912). For the pantry as a valve, see Ellen Lupton and J. Abbott Miller, *The Bathroom, the Kitchen, and the Aesthetics of Waste* (Cambridge, Mass.: MIT List Visual Arts Center, 1992), 44.

25. Hitchcock, *In the Nature of Materials*, fig. 12; this was later altered by Wright as he used his home and studio for experimenting with new spaces. Wright's own house is described in "Successful Houses III," *House Beautiful* 1 (February 1897): 64–69; early issues of *House Beautiful* were published in Chicago.

26. Hitchcock, *In the Nature of Materials*, fig. 165; the Robie house has discontinuous kitchen fittings, a butler's pantry with sink, and kitchen cupboards on two walls that continue around a corner.

27. Esther Stone, "Convenience in the Pantry," *In-doors and Out* 3 (1906): 127–33; Katherine Budd, "The American Pantry," *Architectural Record* 18 (September 1905): 225–31.

28. Budd, "Pantry," 225.

29. "Chicago House of S. Leonard Boyce, Architect Francis Whitehouse," *Inland Architect* 21, no. 3 (1893): n.p., special picture section.

30. Hitchcock, *In the Nature of Materials*, fig. 78.

31. Hitchcock, *In the Nature of Materials*, fig. 129.

32. Hitchcock, *In the Nature of Materials*, fig. 155.

33. Looking back on his fresh ideas for Prairie houses, Wright recalled in 1931, "I declared the whole lower floor one room, putting servants' sleeping and living quarters next to it, semi-detached, on the ground floor, screening various portions in the big room, for certain domestic purposes—like dining or reading, or receiving a formal caller." Wright's comments are cited in *An American Architecture: Frank Lloyd Wright*, ed. Edgar K. Kauffmann (New York: Bramhall House, 1955), 70–71.

34. Frank Lloyd Wright, "Fireproof House for \$5000" (1907), in *Collected Writings*, vol. 1, ed. Pfeiffer, 81. This essay was published in the *Ladies' Home Journal*. He said of his open-plan living areas, "My clients were pushed toward these ideas as helpful to a solution of the vexed servant problem," suggesting that houses with one continuous space rather than a larger number of individual rooms would be easier for maids to keep in order.

35. But Quinan in *Martin House* says that Isabelle Martin was excluded from Darwin's and Frank's discussions in planning the house (25, 187).

36. Annmarie Adams, "The House and All That Goes On in It: The Notebook of Frederica Shanks, 1905–6," *Winterthur Portfolio* 31, no. 2/3 (Summer/Autumn, 1996): 165–72. Adams shows that home economics as taught in Shanks's time extended far beyond cleaning, cooking, and sewing to include many technical aspects of house design such as plumbing and construction details (167).

37. Catharine Beecher published her *Treatise on Domestic Economy* (Boston, Mass.: T. H. Webb, 1841), which explained the duties of a good housewife and provided instruction, so female householders could be more skilled at their jobs. Catharine Beecher and Harriet Beecher Stowe, *American Woman's Home* (New York: J. B. Ford; Boston, H. A. Brown, 1869).

38. His client, Mamah Cheney, for example, translated texts by feminist Ellen Key and had Wright design her a pantry-less house. See Ruth Schwartz Cowan, *More Work for Mother: The Ironies of Household*

Technology from the Open Hearth to the Microwave (New York: Basic Books, 1983), which explores the ways that housework was not made easier by the introduction of new household technologies because standards of cleanliness were raised at the same time.

39. "The Passing of the Pantry," *Aladdin Homes* (1919; rpt., Watkins Glen, N.Y.: American Life Foundation, 1985), 67. See Nancy R. Hiller, *The Hoosier Cabinet In Kitchen History* (Bloomington: Indiana University Press, 2009).

40. Miller, "Planning the Kitchen," in *A Book of Distinctive Interiors*, ed. Vollmer, 117.

41. Sophie R. Wakeman, "A Convenient Kitchen," *House Beautiful* 29 (February 1911): 94–95.

42. Reprint of article from *Craftsman*, June 1915, "Briarwood: A Hillside Home among the Trees," *Craftsman Bungalows—59 Homes from "The Craftsman"* (New York: Dover, 1988), 133–36.

43. Lupton and Miller, *The Bathroom, the Kitchen, and the Aesthetics of Waste*, 44.

44. Wright, "Architect, Architecture, and the Client," (1896), in *Collected Writings*, vol. 1, ed. Pfeiffer, 34.

45. After Vassar College introduced the first program on domestic economy in 1861, land grant colleges followed with home economics programs starting in 1862. Stanford University offered the first four-year home economics degree in 1896. Home economists spoke of the kitchen as being organized to perform like a machine, honoring science and the ideals of Frederick Winslow Taylor and his ideas for streamlining factory work outlined in *Principles of Scientific Management* (New York: Harper Bros., 1911). Time and motion studies of factory work, executed by Lillian Gilbreth would also be used to map every movement used in meal preparation. See Gilbreth, *The Psychology of Management; The Function of the Mind in Determining, Teaching, and Installing Methods of Least Waste* (New York: Sturgis & Walton Company, 1914). For an overview of the home economics era and women's attitudes toward cooking, see Laura Shapiro, *Perfection Salad: Women and Cooking at the Turn of the Century* (New York: Farrar, Straus and Giroux, 1986).

46. Christine Terhune Herrick, *First Aid to the Young Housekeeper* (New York: Scribner's, 1900), 23–26, 37.

47. Maria Parloa, *First Principles of Household Management and Cookery* (Boston: Houghton, Mifflin and Company, 1889), and Parloa, *Home Economics; A Guide to Household Management, Including the Proper Treat-*

ment of the Materials Entering into the Construction and the Furnishing of the House (New York: The Century Co., 1906).

48. Hitchcock, *In the Nature of Materials*, fig. 20.

49. Hoffmann, *Robie*, 8.

50. Hitchcock, *In the Nature of Materials*, fig. 59.

51. Hitchcock, *In the Nature of Materials*, fig. 129.

52. Quinan, *Martin House*, 202, 208.

53. Charles D. Waterbury, AIA, "The Efficient Kitchen," *Country Life in America* 28 (October 1915): 42–43.

54. On linoleum, see Pamela H. Simpson, *Cheap, Quick and Easy: Imitative Architectural Materials, 1870–1930* (Knoxville: University of Tennessee Press, 1999), 75–101.

55. Sidney Morse, *Household Discoveries—An Encyclopedia of Practical Recipes and Processes* (1908; 2nd ed., Petersburg, N.Y.: The Success Co., 1913), 94.

56. Marion Talbot and Sophonisba Preston Breckinridge, *The Modern Household* (Boston, Mass.: Whitcomb and Barrows, 1912), 29–30.

57. Quinan, *Martin House*, 186. Claude Bragdon, "A Way to Reduce Ice Bills," *House Beautiful* 17 (February 1905): 45, recommended building a glass-doored cupboard over a window in the kitchen or pantry, where one could store foods and open the window for cooling air in the winter. He called it a great convenience as a supplement to or a replacement for a refrigerator. Large electric refrigeration units had been available only at hotel-size before the turn of the century.

58. Hygienic Ice-box Company published in a home economics journal, the *Boston Cooking School Magazine* in 1896–97. Lydia Balderston illustrated such a refrigerator in her 1919 housekeeping advice book to show where the block of ice should be placed and how shelves should be made of open grillwork in order to encourage the flow of air through the closed box. The Herrick Refrigerator Company of Iowa produced a refrigerator with a "perfect air circulating system" that helped with keeping the refrigerator mold-free and also at the right temperature. The company's advertisement published *American Builder* in 1924 illustrated a test for demonstrating refrigerator dryness: matches could be kept in a Herrick refrigerator for several days and when taken out would still light easily. Iceboxes and electric refrigerators overlapped in time, just like cooking in both fireplaces and iron stoves had in the later nineteenth century.

59. Louise Shrimpton, "Equipping the Kitchen," *House and Garden* 23 (March 1913): 187.
60. Wright, "Architect, Architecture, and the Client" (1896), in *Collected Writings*, vol. 1, ed. Pfeiffer, 35.
61. Frank Lloyd Wright, "In the Cause of Architecture" (1908), in *Collected Writings*, vol. 1, ed. Pfeiffer, 87.
62. Wright, "In the Cause of Architecture," 87.
63. Reyner Banham, in *Architecture of the Well-tempered Environment* (2nd ed., Chicago: University of Chicago Press, 1984), analyzes Wright's incorporation of heating and lighting in the design of the Robie House.
64. "Built-in Cupboards and Sideboards," *House Beautiful* 16 (June 1904): 41; see also May Ellis Nichols, "Built-in Furniture," *House Beautiful* 19 (April 1911): 154–55. She recommends built-ins for every room in the house. Have them constructed as the house is being built, she urges; this will save money and allow you to have the finishes of the built-ins match the woodwork in the several rooms.
65. Charles Alma Byers, "A Practical and Comfortable Bungalow," reprinted from *Craftsman*, October 1912, *Craftsman Bungalows*, 78–79.
66. "A Small House with 'Lots of Room in It'" (1901), in *Collected Writings* vol. 1, ed. Pfeiffer, 76. Although in plan the Martin House spaces of library, living, and dining functions look to be joined, in experience the spaces are divided by ceiling height changes, shelving units, and velvet portieres that do a good job of separating the rooms.
67. Kenneth Ames, "Death in the Dining Room," in his *Death in the Dining Room and Other Tales of Victorian Culture*, 44–96 (Philadelphia: Temple University Press, 1992).
68. The severe rectilinear qualities of Wright-designed dining room furniture, according to historian Norris Kelly Smith, made his dining rooms "more like stately council chambers than the gathering places for . . . intimate family life. Norris Kelly Smith, quoted in Robert Twombly, *Frank Lloyd Wright—An Interpretive Biography* (New York: Harper and Row, 1973), 74.
69. Hitchcock, *In the Nature of Materials*, fig. 175.
70. Creating small houses was also an effort taken up by the American Institute of Architects and its Architects' Small House Service Bureau; see Lisa Marie Tucker, "The Small House Problem in the United States, 1918–1945," *Journal of Design History* 23 no. 1 (2010): 57–69.
71. "The Dining Room as a Center of Hospitality and Good Cheer," *Craftsman* 9 (November 1905): 229–36.
72. Illustrated in Paul Groth, *Living Downtown: The History of Residential Hotels in the United States* (Berkeley and Los Angeles: University of California Press, 1994), 84–85. For New York City apartment plans of this era, see Richard Plunz, *A History of Housing in New York City* (New York: Columbia University Press, 1990).
73. William Radford, *Architectural Details for Every Type of Building* (1921; rpt., New York: Dover, 2002), 38.
74. *New York Times* reporter Rick Marin recalled, "I grew up in a house with a sunny, closed kitchen whose small corner booth was upholstered in turquoise vinyl. . . . I spent countless hours in that booth." He wanted to replicate "the same familial coziness" when he constructed a new built-in nook in his family's 2006 house. Rick Marin, "Closed by Order of the Cook," *New York Times*, Guy Décor column (June 15, 2006): <http://www.nytimes.com/2006/06/15/garden/15guy.html>.
75. Wright, "A Small House with 'Lots of Room in It,'" 76.
76. "Comfort and Economy Combined in Small Craftsman Homes," and Charles Alma Byers, "What Two Thousand Dollars Will Accomplish in Building a Comfortable Home," *Craftsman*, February 1915, reprinted in *Craftsman Bungalows*, 125, 131.
77. Katherine Cole Stevenson and H. Ward Jandl, *Houses by Mail—A Guide to Houses from Sears, Roebuck and Company* (Washington, DC: The Preservation Press, 1986) 96.
78. Edward W. Bok, "Abolish the Dining Room," *Collier's*, *The National Weekly*, January 15, 1927: 10. Multipurpose rooms had been commonplace in tenement or working-class dwellings in the nineteenth century, and a necessity in a small house or apartment. Bok perhaps feared that his readers could only see the dual-purpose room as a lower-class rather than a modern solution.
79. John Sergeant, *Frank Lloyd Wright's Usonian House* (New York: Whitney Library of Design/Watson Guptil, 1976), 22.
80. Wright used other terms for kitchens in his

writing of the early twentieth century; for example he used the term “a working department” instead of kitchen in “A Small House with ‘Lots of Room in It,’” 76.

81. Paul and Jean Hanna, *Frank Lloyd Wright's Hanna House: The Clients' Report* (Cambridge, Mass.: MIT Press, 1981), passim. Ultimately the cost was greater, since the Hannas repeatedly added onto and changed the house, usually with Wright's participation, until the late 1950s.

82. Frank Lloyd Wright, “The Natural House” (1954) in *The Essential Frank Lloyd Wright: Critical Writings on Architecture*, ed. Bruce Brooks Pfeiffer (Princeton, N.J.: Princeton University Press, 2008), 355.

83. Frank Lloyd Wright, May 1957 taped interview by Jeffrey Aronin, transcribed in *Frank Lloyd Wright: The Masterworks*, eds. David Larkin and Bruce Brooks Pfeiffer (New York, Rizzoli, 1993), 165.

84. Hanna, *Clients' Report*, 90. The Hanna family used the dining space in their living room for several years and found it adequate for small dinner parties of eight to ten guests, but they always planned to appropriate the children's playroom for a separate dining room, and did when their children got older.

85. Hanna, *Clients' Report*, 84–90.

86. Streich, “An Original-Owner Survey,” 42.

87. Sergeant, *Usonian House*, 30.

88. “House for the Growing Family,” *Architectural Forum* 90 (May 1949): 66–101; 97, 100.

89. Fred A. Bernstein, “Living with Frank Lloyd Wright,” *New York Times*, December 18, 2005, Real Estate section, <http://www.nytimes.com/2005/12/18/realestate/18habi.html?scp=1&sq=Fred+A.+Bernstein%2C+%93Living+with+Frank+Lloyd+Wright%2C%94&st=nyt>.