

Kitchen History, Research, and Trends



The kitchen and its place in family life have changed throughout history in conjunction with the evolving lifestyles, economic conditions, values, and attitudes of its users. The overall look, feel, location, and relative importance of the kitchen in the home have been emblematic not only of the era, but also of the particular circumstances of the families they served.

So a brief walk through the history of kitchens will help the designer understand the ever-changing and complex interconnection between this room and the various roles it plays in domestic life. Research conducted by various groups has provided valuable guides for designing efficient, functional, and accessible kitchens. As the demographics and attitudes of our society change, so will the kitchen, to keep up with the needs of the users.

Learning Objective 1: Describe how evolving lifestyles have affected trends over time.

Learning Objective 2: Explain how kitchen design research has contributed to the NKBA Planning Guidelines.

A BRIEF HISTORY OF THE KITCHEN

The history of the modern kitchen begins with the need for a place of family food preparation, usually centered on a source of heat and light, which was the hearth (fireplace). This source has changed over time, but for ages the open fire in a hearth reigned supreme. It also served as the sole heat source for the home until late in the seventeenth century. This meant that most family living and activities took place in the one room that contained the fireplace.

The first known kitchen separated from the living area was in thirteenth-century Flanders, along the coast of what is now Belgium. Flemish kitchens contained tables on trestles for food preparation. Horizontal boards placed above the table provided a place to store kitchen utensils. These storage elements developed into display dressers used in fifteenth-century Flanders, where the number of shelves on the dresser was an indicator of social rank. Many of these concepts were eventually brought to North America and incorporated into the early colonial kitchens.

The Colonial Kitchen

The colonists in North America brought many ideas for kitchen design from Europe. Although eventually established as a separate room in many homes, the early colonial kitchen was equipped with perhaps the only heat source in the home, a hearth, and it served as the focus of the family activity. Because it was the most comfortable room in the home, the kitchen was often used for family bathing as well.

Role of the Hearth in the Eighteenth-Century Kitchen

The typical eighteenth-century kitchen was large, and often included a 6-foot wide and 4-foot deep walk-in fireplace (Figure 1.1). The fireplace contained massive wrought andirons with racks for toasting bread, spits for cooking meats, and iron hooks for pots, which were transferred into and out of the fire with lug poles. Beehive ovens were built into the sidewall of the hearth and were used for baking. A trestle table or bench, a storage chest, a corner cupboard, and occasionally a separate worktable were included in the kitchen. These early kitchens were dirty, inefficient, and unsafe, especially for the cook. Long skirts would brush up against the hot embers in the fireplace and catch on fire, and as a result, burns became the second most common cause of death among women, second only to childbirth.

In wealthier households, the kitchen was used only by servants and was often located on the lower level or in a separate building. A summer kitchen—common in the warmer southern colonies, where the heat from cooking was not desirable during warm weather—often consisted of a lean-to or annex to the main house, which kept extra heat out of the house. Eventually, the fireplaces developed a separate chimney, which helped exhaust the excess heat and allowed cooking during hot weather without heating up the house.

Later in the century, wood and coal cast iron stoves, which enclosed the fire and transferred heat through the metal became available. These stoves were less of a fire hazard but provided less heated area for cooking. Benjamin Franklin designed one such stove, which was built to fit into the fireplace.

Most kitchens of the period were enclosed with unadorned wood panels, but by the second quarter of the eighteenth century, paint was used—more as a preservative than for decorative purposes. As paint became more popular, stenciling, marbling, and graining techniques were used on walls, woodwork, and cabinetry to add a decorative touch to the once plain kitchen.



FIGURE 1.1 Colonial kitchens were not only messy places in which to work, but they were also dangerous because the cook was so close to the embers used for cooking.

Photo by Jack E. Boucher. Library of Congress, Prints and Photographs Division, Historic American Buildings Survey or Historic American Engineering Record, HABS VA-1422-7 (CT)

The Modern Kitchen

The modern kitchen has been influenced by two major trends that roughly coincide with the nineteenth and twentieth centuries. The nineteenth century brought industrialization with social and technological changes. In the twentieth century, standardization surfaced with a focus on work simplification and efficiency.

Houses and the kitchens associated with them changed as the country evolved into an industrialized nation. During this time, numerous new products were developed, and the role of women and family life was redefined. In addition, democracy, joined with the industrial age and the rising middle class, discouraged the formation of a permanent servant class, so live-in household help was less available or often not reliable. This meant that the woman of the home had to take on many new roles and activities to manage the house and its occupants.

The Victorian Kitchen

The nineteenth century brought the Victorian era, which coincides with the reign of Queen Victoria of the United Kingdom between 1839 and 1901. Victorian kitchens were large and often located in the rear of the house or the basement. Many homes of the wealthy included a summer kitchen behind the main kitchen, and the family often had servants to perform most of the cooking and household chores. The early Victorian kitchens were not very highly decorated and their walls were simply covered with institutional green or cream-colored enamel paint. Later, the kitchen included wainscoting, plate racks, and glass-door cabinets, but the appearance and efficiency of the kitchen was not the focus of the home. These kitchens were not very comfortable or convenient to work in.

The range, sink, and table in the Victorian kitchen were all freestanding pieces. Gas stoves eventually became available, but many cooks still preferred the wood- or coal-burning stoves (Figure 1.2). These large stoves were kept hot 24 hours a day to provide continuous hot water, instant heat for cooking and baking, a place for flat irons, and space to keep a kettle ready for hot tea. In later kitchens, the pantry, located between the kitchen and dining room, contained large, wall-to-wall and floor-to-ceiling stationary cabinets that served as both a storage area and a preparation area.



FIGURE 1.2 Gas and water are introduced into kitchens that are made up of a hodgepodge of mismatched components.

Courtesy of Keith Clark, Hamilton, Ontario, Canada

These oak “pantry dressers” housed china behind glass doors on the top, with counters and usually a sink below.

The Beecher Kitchen

Recognition that kitchens were not very functional and that servantless households were now the norm led to the work of pioneers in the field of kitchen design during the Victorian period. By 1869, Catherine Beecher and her sister, Harriet Beecher Stowe, a noted author and abolitionist, had written a book, *The American Woman's Home*, which made recommendations for addressing all the concerns of women at the time. The kitchen they advocated used a ship's galley as the model. It featured work centers and used the latest technologies. Storage was close by and compartmentalized. Open shelving was shallow to allow only one row of food items, and bins for flour and other products were planned into the design (Figure 1.3). Two work centers were present in the room for storage/preservation and cooking/serving. The cooking stove stood away from the work areas, while the other area incorporated work surfaces and shelves (Figure 1.4). Windows provided natural light, and painted walls and floors were easier to clean. They recommended placing the pantry between the kitchen and dining room to keep out noise and heat. These recommendations led to the development of kitchens that were a vast improvement over the colonial and Victorian kitchens.

The Plumbed Sink

The development of water and sewer systems in the larger cities began to change the way households functioned. Early in the nineteenth century, the kitchens contained a dry sink, but eventually households were able to hand-pump water, and then the plumbed sink appeared late in the century. The Beecher sisters' model kitchen used a plumbed faucet to distribute water. By the late nineteenth century, campaigns to improve health conditions promoted the idea of cleanliness and sanitation in the home. The ability to obtain water and remove wastewater was critical to this development. Much of the emphasis on kitchen design and materials, too, was focused on sanitation and cleanliness, and innovations and developments during the industrial revolution provided the necessary products.

The food preparation equipment of the 1800s began to reflect the emerging industrial revolution, and goods were designed with more utility and variety. These products were mass produced and made available to the emerging middle class through mail order catalogs.

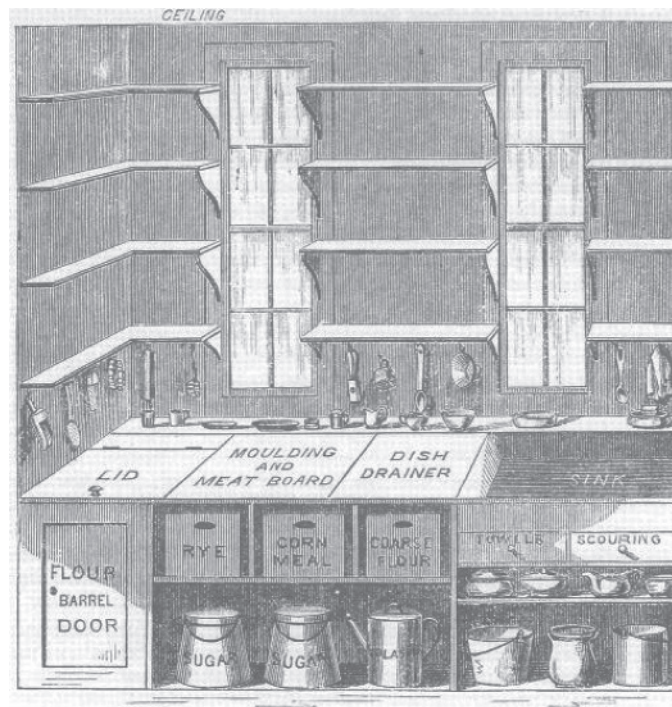


FIGURE 1.3 Catherine Beecher's intelligent kitchen design.

Beecher and Stowe 1869

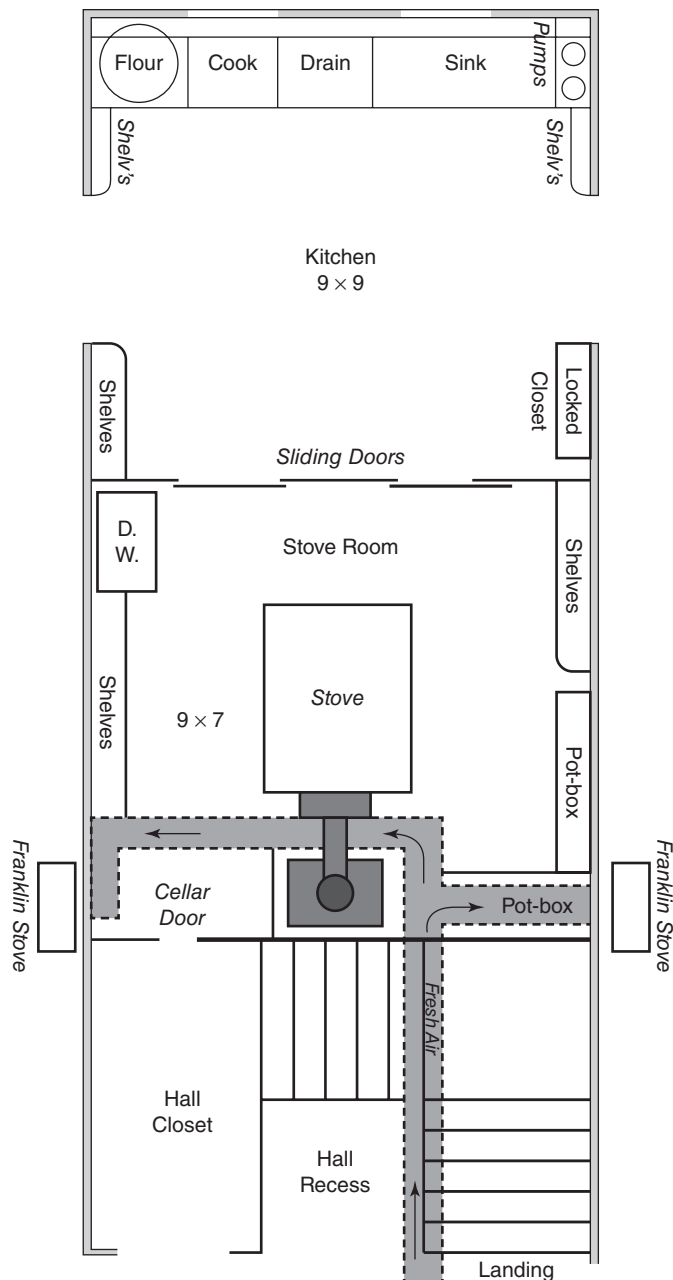


FIGURE 1.4 Here is one example of the Beecher kitchen plan that places the cooking stove in a separate room from the kitchen work area.

Beecher and Stowe 1869

The Beecher sisters encouraged the use of technology to simplify tasks and actually designed a stove that would accomplish multiple tasks efficiently. By the late 1800s, electrification was possible in many locations, but electric rates were not affordable, and most homes were not wired until the next century.

Standardization: The 1900s

Several societal, economic, and technological factors influenced the path of American women and the design of the home at the beginning of the twentieth century. The expansion of industrial jobs resulted in the reduced availability of household labor. Less help in the home was compounded in the 1930s by the economic constraints of the Great Depression. These factors, along with the introduction of improved appliances, led to the designing of more efficient kitchens that were reduced in both size and cost to accommodate the household's head cook, the housewife.

Home economists and others were involved in helping to research and study the equipment and work center concepts and in sharing this information with consumers. Many times labeled “efficiency experts,” these home economists studied housework and designed more efficient kitchens with built-in cabinets and abundant storage. These kitchen designs also focused on sanitation for food preparation. More about the development of kitchen design recommendations is presented in the next section on research.

The Laboratory Look

The new kitchens of the era, with their continuous workspace and closed storage, looked very much like a laboratory designed for one person. The concept relied on standardized components that could be bought and added from end to end to produce a kitchen of the desired length. With continuous base cabinets, a sink, and built-in wall cabinets above, these new kitchens began to resemble the former serving pantries. The popularity and demand for the assembled kitchen concept led to growth in the mass production of building materials and kitchen cabinets. The location of the kitchen, however, was still often at the back of the house, isolated from other activity areas of the home.

With electrification came the full mechanization of appliances, which allowed them to be built into the working surfaces as an integral part of this assembled kitchen. These new appliances were unfamiliar to most housewives, and in an effort to sell more electricity and familiarize housewives with the operation of these appliances, utility companies employed individuals who would go into homes to demonstrate the new appliances, as well as provide public programs and educational brochures to explain the new devices. With the increased use of these kitchen appliances, many university researchers were instrumental in studying their efficiency, accuracy, safety, and usage.

Many kitchen-planning guidelines were developed, based on the analysis of kitchen work tasks that recommended counter space and storage requirements. The work triangle concept was developed to provide an efficient arrangement of preparation, serving, and clean-up centers. It utilized the sink, range, and refrigerator to form the centers for an efficient kitchen space. The U-shaped, L-shaped, corridor, and one-wall kitchen were all layouts that could utilize the work triangle concept.

The new modern kitchen perhaps began in suburbia, where the family- and child-centered lifestyle made the kitchen into a place for family interaction. It started to become the hub of home activity, with greater attention being paid to not only usage but also aesthetics. The segregated kitchen of the past was now opening up to other rooms, including the dining and living areas. Designers today are creating kitchens that are efficient and pleasant to work in, and reflect the lifestyle needs of the household. The kitchen has truly become the “hub” of the home.

KITCHEN DESIGN RESEARCH

Creating functional kitchen storage and counter workspaces has been the focus of educators and designers for decades. As early as 1869, Catherine Beecher and her sister, Harriett Beecher Stowe, were making recommendations for homemaking, including how to plan an efficient kitchen (Beecher & Stowe 1869). Their plans included work centers and efficient storage ideas. Around 1912, home economist Christine Frederick was concerned with the efficiency of the home and published articles about home tasks in the *Ladies' Home Journal*. She borrowed the work principles of the factory and applied them to tasks in the home. This analysis of housework moved Christine Frederick to propose kitchen plans that would improve work efficiency (Frederick 1913). In the 1930s, motion expert Lillian Gilbreth studied the number of steps necessary to prepare meals within certain kitchen arrangements. She felt that appliance manufacturers knew little about the needs of housewives in the kitchen. As a result of these early studies related to work efficiency, storage, and energy, recommendations for well-planned kitchens were developed.

Early Studies

Some of the earliest known research was conducted by home economists at state universities who were funded by the U.S. Department of Agriculture's Agricultural Experiment Station (AES) to

investigate ways to improve rural housing conditions. Findings from their studies were often published in AES Bulletins and then summarized in consumer pamphlets developed by the Cooperative Extension Service. These two agencies together had a large role in developing the first guidelines for the modern kitchen.

A 1932 bulletin by Deane G. Carter reported on several studies of housing that had been conducted by this time. Her work was funded by the AES and the President's Conference on Home Building and Home Ownership. She conducted personal interviews with farm families in Arkansas, reviewed more than 1000 kitchen plans and the catalogs of 20 cabinet manufacturers in order to make recommendations for standard cabinet sizes. Some of her recommendations are tied to construction elements. For example, a wall cabinet should be as tall as a standard door height; a kitchen can have a 3-foot-wide work aisle because that allows a door to be placed at the end; counter height should be at the most "commonly preferred height."

In New York, Ella Cushman published several Cooperative Extension bulletins to encourage work efficiency and good household management techniques. Her 1936 bulletin, "The Development of a Successful Kitchen," illustrated numerous ideas that would reduce the time and energy the homemaker spent in the kitchen. In this bulletin, work centers are introduced, work surfaces are at different heights, and cabinets are divided for convenience. The bulletin even illustrated a sink in an island.

By the late 1930s and early 1940s, the work of Maud Wilson began to illustrate a scientific awareness of the study of user needs in kitchen planning. Her analysis, "The Willamette Valley Farm Kitchen" (1938) involved surveys of farm families to determine the size and arrangement of kitchens in the homes of this region of Oregon.

First, the functions of the kitchen and other work areas in the homes were identified, then the equipment and other items used to accomplish the tasks and functions were determined. An analysis was made of the items to group them according to use. Work distances were developed for completing the tasks. Finally, recommendations for the various centers were made according to this analysis. Wilson and Helen McCullough also published the bulletin "A Set of Utensils for the Farm Kitchen" (1940), which encouraged "fewer and better utensils, wisely selected, well cared for, conveniently stored."

By the late 1940s, Maud Wilson developed two reports that focused on the design and placement of kitchen cabinets ("Patterns for Kitchen Cabinets" [1947a] and "Considerations in Planning Kitchen Cabinets" [1947b]) based on her research during the past decade. She recommended workspaces beside the sink and range; various work heights, depending on the task being completed; pull-outs to provide various work heights; and various cabinet arrangements to handle the many different items stored in the kitchen.

Studies at Midcentury

Standards from the 1948 study *Functional Kitchen Storage* (Heiner and McCullough 1948) and the 1949 Small Homes Council (SHC) report, "Cabinet Space for the Kitchen" (McCullough 1949) established the early guidelines for kitchen storage promoted by the Small Homes Council. McCullough (1949) compared the Small Homes Council standards with the Federal Housing Administration (FHA) Minimum Property Standards (MPS). The MPS were based on the number of bedrooms, while the Small Homes Council recommendations were based on family size. Generally, the SHC wall cabinet recommendations were less generous than the MPS, and the base cabinet recommendations were more generous. McCullough cautioned to be sure the MPS were met.

Guides for Arrangement of Urban Family Kitchens

Heiner and Steidel (1951) examined another aspect of kitchen design in their 1951 study of kitchen arrangements. They studied cooks preparing and serving meals and cleaning up in several kitchen arrangements. Some of their findings were: the sink is the most frequently used area (Figure 1.5); the range was second in use, but most often inspected; the mix center was third; and the refrigerator, dining, and serving areas tied for fourth. They recommended keeping work areas together, but cautioned that storage and work areas must be planned into the space.



FIGURE 1.5 Research in the 1950s showed that the sink was the most frequently used area of the kitchen.

Courtesy of Moen

Energy-Saving Kitchen

A study by the Agricultural Research Service of Beltsville, Maryland (Howard 1965), developed and evaluated energy saving kitchen designs. Based on a review of numerous studies of human energy expenditures during cooking activities, three kitchens with three variations each, were developed and built so that cooks could work in them and the arrangements and storage could be studied. The kitchens included seated work areas, carts, and pull-outs, and specially designed storage features, such as revolving base cabinet shelves, slant-front wall cabinets, and floor-to-ceiling open dish storage. The kitchens were demonstrated in magazines and through Cooperative Extension bulletins.

Kitchen Guidelines

During the 1960s, the Small Homes Council continued to issue updated guidelines (Kapple 1964; Wanslow 1965) largely based on the earlier research. They concluded that the optimum kitchen space in a home would depend on a family's belongings and living habits, and be limited by the amount of space available. Thus, multiple standards based on home size (minimum, medium, and liberal) were established according to a wide variety of requirements.

In 1975, NKBA joined the Small Homes Council in issuing the *Kitchen Industry Technical Manual*, Volume 5 (Jones and Kapple 1975), which made recommendations for minimum- and liberal-sized kitchens. The 21 guidelines listed in this publication became the basis for the Certified Kitchen Designer exam. (The technical manuals were issued in a second edition in 1984.)

Kitchen Research in the 1990s

In the early 1990s, NKBA sponsored two research projects that affected their kitchen-planning guidelines. In 1992, Yust and Olsen completed a study entitled *Residential Kitchens: Planning*

Principles for the '90s. They surveyed clients of Certified Kitchen Designers about their kitchens and scored their kitchens based on the 1984 guidelines. A large portion of the kitchens scored poorly, indicating that the guidelines were not reflecting the current trends and needs of kitchen design.

The results of the Yust and Olsen study led NKBA to conduct the Utensil Survey Project (Cheever 1992), the results of which were incorporated into the guidelines used by the kitchen design industry. NKBA's project consisted of:

1. Developing a new core list of items typically found in a North American kitchen
2. Identifying the base/wall cabinet and countertop frontage required to accommodate these items
3. Comparing these new dimensional requirements with the existing information listed in the Small Homes Council *Kitchen Industry Technical Manual*, Volume 5 (Jones and Kapple 1975)
4. Developing new industry standards for acceptable kitchens in two categories: kitchens under 150 square feet and kitchens over 150 square feet

The Cheever study used only 25 households, but it found that the number of items stored in the kitchen had increased 110 percent from the number reported in the research of Heiner and McCullough (1948). The findings from both of these NKBA-sponsored studies resulted in significant changes in the *Kitchen Planning Guidelines* in 1992. The guidelines were updated again in 1996 to incorporate universal design recommendations. Although many space requirements changed, the basic recommendations for the amount and type of storage did not change from the 1992 NKBA recommendations (Cheever 1996).

Virginia Tech Kitchen Research

As the NKBA began to review guidelines in 2000, they recognized a need to reexamine kitchen use and storage requirements. The first study, *Someone's in the Kitchen* (Emmel, Beamish, and Parrott 2001), was actually a combination of several studies: content analysis, interviews, and observations of cooking activities, and a national telephone survey. The second study, *Kitchen Storage Research Study* (Parrott, Beamish, and Emmel 2003) was an inventory of items kept in recently designed kitchens.

Someone's in the Kitchen

The project had the following objectives:

1. To identify the types of foods, utensils, appliances, and products that are stored and used in today's kitchens
2. To identify activities which occur in today's kitchens
3. To determine how kitchen storage and counter space are utilized and organized
4. To classify different styles of food preparation and patterns of kitchen activities
5. To analyze work center and work flow guidelines in relation to the styles of food preparation and patterns of kitchen activities
6. To evaluate current criteria governing the use of cabinets and other storage devices in the kitchen to determine if they meet the needs of today's households

The research project designed to address these objectives had three segments: a content analysis of shelter magazines, a personal interview and cooking activity, and a national random telephone survey.

Content Analysis

One method for evaluating the design and components of contemporary kitchens is to analyze the kitchens featured in popular magazines. From a six-month period in 2000, 19 different shelter-, design-, and kitchen-related magazines were reviewed. A total of 104 articles were analyzed. The findings revealed information about kitchen design features, appliances, and activities, as well as the lifestyle of the households using the kitchens. Islands and wall ovens were two of the most common features. The content analysis provided insight into contemporary kitchen design and usage, important to formulating the interview and telephone survey questions.

Personal Interview and Cooking Activity

A two-phase laboratory activity was developed to assess how families use kitchen space. A personal interview gathered information about the participants' household, food shopping, and food preparation patterns and their present kitchen and its use related to storage, counter space, and appliances. A cooking activity was designed to assess how individuals used kitchen space while preparing a set menu of foods that represented different types of cooking activities. Demographic and anthropometrical data were also collected.

The sample for the laboratory activity was drawn from the local area of Virginia Tech. A purposive sample of males and females of varying heights, ages, and abilities, as well as different household types and cooking partners, was selected. The target sample size was calculated based on 75 menu preparations, but the total number of participants was greater because of multiple cooks sharing some preparation activities.

There were five different menus prepared in the cooking activity. Three different kitchens in the Center for Real Life Kitchen Design at Virginia Tech were used to provide variety. All cooking activities were videotaped for later analysis.

National Telephone Survey

A national telephone survey was conducted to further investigate patterns of kitchen use. The 52-question instrument gathered information about food buying, appliance usage, and cooking patterns, as well as activities that take place in the kitchen. Demographic information about participants was also collected. The survey employed a random sampling design, using a national sampling firm. Telephone interviews, approximately 16 minutes in length, were completed with 630 adults over age 18. The interviews provided a representative sample of adults residing in households in the contiguous United States with a margin of error of ± 3.9 percent at the 95 percent level of confidence.

Results and Implications

The local and national samples in these studies were similar in their demographic make-up. A majority of the respondents in both samples (over 90 percent) were from households of fewer than four people. The most common types of households were a family or adult couple. Both samples included more females than males, within a wide variety of age and income brackets. Approximately 75 percent of each sample lived in single-family residences they owned. There was not a dominance of any particular age or size of residence. The national sample was equally divided among small town, rural, city, and suburban residences.

The researchers found that kitchens are busy places, with frequent cooking and many other household activities (Figure 1.6). Key conclusions from the study can be grouped according to the following questions: What do people do in their kitchens? Who is cooking? How do people cook? What do people have in their kitchen? and What do people want in their kitchens?

What Do People Do in Their Kitchens?

- People cook on a regular and frequent basis, especially in family or couple households. For example, over 70 percent of the national sample prepared a meal five or more times a week.
- People cook, eat, socialize, manage their household, and engage in recreational activities in their kitchens. Around 80 percent talked on the telephone and took medicines and vitamins. Over 70 percent planned meals in the kitchen and had conversations with friends and families.
- Many activities in the kitchen require counter or table space and seating. Multiple people may be in the kitchen, involved in various activities, even if they are not all participating in cooking activities.
- Eating in the kitchen is a common activity (almost two thirds of participants), and most people consider it important to have an eating area in the kitchen. Even people who do not regularly eat in the kitchen consider an eating area important.

Who Is Cooking?

- The most common cooking pattern, in 67 percent of households in the national phone survey, was for one person to do most of the cooking. However, other people may be in the kitchen during food preparation.



FIGURE 1.6 Despite take-out and restaurant meals, researchers have found that people still cook on a regular and frequent basis.

Courtesy of GE

- When there are two cooks in the household, they are more likely to take turns cooking or follow the teacher-student model of cooking. Only a small minority of households (13 percent in the national sample) has members that actually cook together. This trend was reported in both the national phone survey and personal interview with the local sample, as well as being observed during the laboratory cooking activity.
- Two cook patterns of preparation observed in the cooking activity were the teacher-student model and the independent cook model. In the teacher-student model, two cooks stood side by side to work on one task together. The independent cooks worked on separate tasks in separate areas.
- Singles cook less frequently and use their kitchens less than other types of households.

How Do People Cook?

- The microwave oven is a major cooking appliance and is used frequently. For example, 63 percent of the local sample reported using their microwave oven as much or more than the

range/cooktop. The microwave oven becomes a central point in the flow of work in the kitchen and adjacent counter space is frequently used for food preparation.

- The sink is also a major focal point for food preparation. People in the laboratory cooking activity used the counter space adjacent to the sink for a variety of food preparation activities as well as for cleanup.
- Most people use and need a generous amount of counter space. Cooks observed in the laboratory typically had a primary and a secondary preparation area. Extra counter space was needed to assemble ingredients.
- The trash is frequently accessed during food preparation. People in the laboratory cooking activity wanted the trash to be centrally located, and easily accessible, preferably under or immediately adjacent to the sink. In addition, many people (approximately one third of the national sample) are storing recyclables in the kitchen.
- Hand dishwashing of at least some items is frequent, especially in smaller households (Figure 1.7). As an example, over half of the local sample did some hand dishwashing daily. Pre-rinsing dishes in the sink, before loading the dishwasher, was common to almost all study participants.



FIGURE 1.7 Hand-washing some dishes at the sink is still a frequent activity, research has shown.

Courtesy of Moen

- The types of food preparation activities were diverse. Preparing food from scratch, baking, and grilling outdoors were the most frequently cited types of cooking. Food preparation activities that were more complex or required special ingredients, techniques, or equipment were less frequent.
- Most people are frequent users of fresh produce. In the national sample, the frequent users of fresh produce were more than twice the number who were frequent users of canned or frozen produce.
- Use of convenience foods was less than might be expected. Close to one half of both samples indicated that they rarely, if ever, use boxed or frozen convenience foods.
- Also surprising was the fact that most people are only occasional users of carryout food, with over 40 percent of the national sample reporting that they “rarely” or “never” use carryout food.

What Do People Have in Their Kitchens?

- Almost every household has a refrigerator, range, and microwave oven in their kitchen.
- Dishwashers and garbage disposers are common in kitchens.
- Built-in ovens and cooktops are found in only a minority of kitchens.
- People have many small appliances (an average of 12 per household), and use some of them frequently. Some small appliances are stored on countertops (four is typical), but many people have to store them outside of the kitchen as well.
- Pantry or tall storage closets are found in over half the kitchens and are considered desirable.
- People store many items on their kitchen counters, only some of which are food preparation tools. Participants in the local sample had an average of seven items stored on their countertops, in addition to the small appliances reported above.

What Do People Want in Their Kitchens?

- People generally express satisfaction with their kitchens, even if they want improvements. People who had input into their kitchen designs, or have had an opportunity to remodel their kitchens, are more satisfied.
- Many people do not “fit” their kitchens. Some people have trouble reaching wall cabinets; others find shelves in base cabinets difficult to access. Standard counter heights may be too high or too low. Better, more accessible, and more efficient storage in the kitchen is a frequently expressed need (Figure 1.8).
- If people had a chance to improve their kitchens, they simply want MORE—more space, more storage, more cabinets, and more counter space. Efficiency and organization are also considered desirable.



FIGURE 1.8 Research has shown that consumers want more storage, efficiency, and organization in their kitchens.

Courtesy of Diamond Cabinets

Kitchen Storage Research Project

A second Virginia Tech study was conducted to help develop further background for revised kitchen storage guidelines. The purpose of this study was to investigate the number and type of items kept in recently designed kitchens and to determine the amount of shelf and drawer storage needed to store these items effectively.

Kitchen Inventory

An inventory survey instrument was developed to record information about items stored and used in residential kitchens. The instrument included questions about demographic and housing information, kitchen activities, and cooking patterns. A lengthy checklist of items stored in the kitchen was developed to identify the number, location, and frequency of use of the stored items. The inventory checklist listed 550 different items in 16 different categories, plus major appliances.

NKBA cooperated in the study by asking all Certified Kitchen Designers to volunteer to interview recent clients and conduct an inventory of their kitchens. Designers were asked to conduct an interview with a client that had a small kitchen and one that had a large kitchen. The interviews often required several hours to complete. The surveys were conducted in the winter and spring of 2003.

A total of 87 usable inventory surveys were returned. Of these, 81 percent of the respondents prepared five or more meals per week and most often, one person did the cooking (76 percent). The respondents often took medicine in the kitchen (64 percent), did major shopping once a week (63 percent), prepared food from scratch (56 percent), and planned meals in the kitchen (56 percent).

Three kitchen sizes were used in analyzing the data: small kitchen (150 square feet or less) – $n = 31$, medium kitchen (151–350 square feet) – $n = 31$, and large kitchen (over 350 square feet) – $n = 24$. The number of items stored in the kitchen increased with the size of the kitchen. There were an average of 655 items in the small kitchen, 820 items in the medium kitchen, and 1019 items in the large kitchen. As the kitchen size increased, people tended to have both a greater variety of items and multiples of the same items.

Measuring for Storage Needs

After tabulating the surveys, and identifying items stored in 25 percent or more of the kitchens, examples of these items were gathered and arranged in a 12-inch deep x 12-inch high linear mock-up space. This mock-up was used to calculate the amount of storage required for the 16 categories of items and for the total amount of storage needed in the kitchen. The mock-ups with items were photographed. Calculations were made to determine the amount of wall, base, drawer, pantry, counter, and miscellaneous storage needed in the various-sized kitchens.

The total number of linear storage inches required was: 1141 inches in the small kitchen, 1376 inches in the medium kitchen, and 1552 inches in the large kitchens. Storing food required the most space. Other items requiring significant amounts of storage were small appliances, preparation items, small utensils, pots and pans, and baking ware.

Small kitchens had noticeably fewer dishes, baking ware, and bulk storage items, while small and medium kitchens had fewer pots and pans and storage containers than large kitchens. Medium and large kitchens required similar amounts of storage for the following: small appliances, preparation items, baking ware, dishes, flatware, management/home office supplies, and miscellaneous items. Large kitchens needed more storage for food, pots and pans, and serving pieces than the other sized kitchens. Kitchens of all sizes had similar requirements for linens.

Most storage was located in base cabinets, followed by drawer storage, wall cabinets, pantry storage, and counter space. Food, glasses and drinking items, dishes, and serving pieces were most likely stored in wall cabinets. Small utensils, flatware, linens, and management/home office supplies were more likely kept in drawers. Pots and pans were also kept in drawers, especially in large kitchens. Pantries stored food and bulk items. About one fourth of the small appliances were kept on the counter, as well as small utensils, serving pieces, cleaning supplies, management/home

office supplies, and miscellaneous items. The amount of counter space used for storage was greatest in the small kitchen where there were fewer storage options. Miscellaneous storage included open shelves, carts, tables, furniture, and wall cabinets above the standard cabinet height.

Implications

Information from this study was used to calculate recommendations for storage. The Kitchen Planning Guidelines discussed in Chapter 6 reflect the findings from the study. The major change calls for the designer to prescribe storage based on a linear shelf/drawer frontage, rather than wall and base cabinet requirements. The new guidelines provide designers with flexibility to plan storage that is both accessible and located where needed. The recommendations are based on kitchen size.

MAJOR KITCHEN TRENDS THROUGH THE 2000s

Throughout the twentieth century, kitchen design evolved rapidly as lifestyles changed, and new products and technologies were developed. Elements of some of these designs are now being revived and adapted for today's kitchens. Following are some of the highlights of kitchen design from the early 1900s to the twenty-first century.

Early 1900s

Simple design: Kitchens were decorated and furnished in a simple manner. Domestic scientists of the time described the kitchen as a gleaming, light-colored laboratory.

Cabinets added: Around the turn of the century a desire and need for more efficient storage appeared and cabinets that did exist were hung high on the wall. Two new types of wooden cabinets appeared: the broom cabinet and the "linen" cabinet. The latter was used to store foodstuffs like cereals and canned goods. Sheet metal cabinets promoted by the metal industry replaced wooden cabinets. These cabinets came to be known as the "Youngstown" cabinets.

The Hoosier: The baking table evolved into a self-contained, upright cabinet work center with all the needed tools for baking. The "Hoosier" (or "Dutch") cabinets, which typically came in oak or painted white enamel, were marketed by manufacturers located mostly in northern Indiana. The list of manufacturers included such names as G. P. McDougall & Sons, Kompass & Stoll Co., the Hoosier Manufacturing Co., Coppes Brothers, and Zook.

Cork flooring: Armstrong Cork Company began production of cork floor tile in 1904 in a limited number of colors. Cork usage declined in the 1930s.

New stoves: For many homes, the fireplace was still the heat source for cooking and heating in the early 1900s. It was soon replaced, however, by coal- and wood-burning stoves and almost immediately followed by gas and kerosene stoves, as well as combination gas and coal ranges.

Electric appliances: Although a prototype of the electric kitchen was exhibited in 1893, the electric stove did not move into the kitchen until 1909. This cooking surface without a flame was quite the novelty to many. By 1915, thermostats made electric and gas stoves "automatic."

Electric lighting: Families with electric lighting were the envy of the neighborhood. If power was available, the lighting typically consisted of a bare, shadeless bulb hanging from the middle of the room on a cloth-covered cord.

The 1920s

Multi-room kitchens: The kitchens of the 1920s (Figure 1.9) were a series of awkwardly connected, dark spaces removed from the family activities with little consideration given to the cook's view. It included as many as three small rooms used for various purposes. Most cabinets and appliances were white, often giving the appearance of a sanitized laboratory.

Variety of countertops: Pine, oak, maple, and fir were favorite countertop materials. Wood was also used as a drain board for the sink. Once tile, steel, and laminate became fashionable, consumers quickly switched from wood.

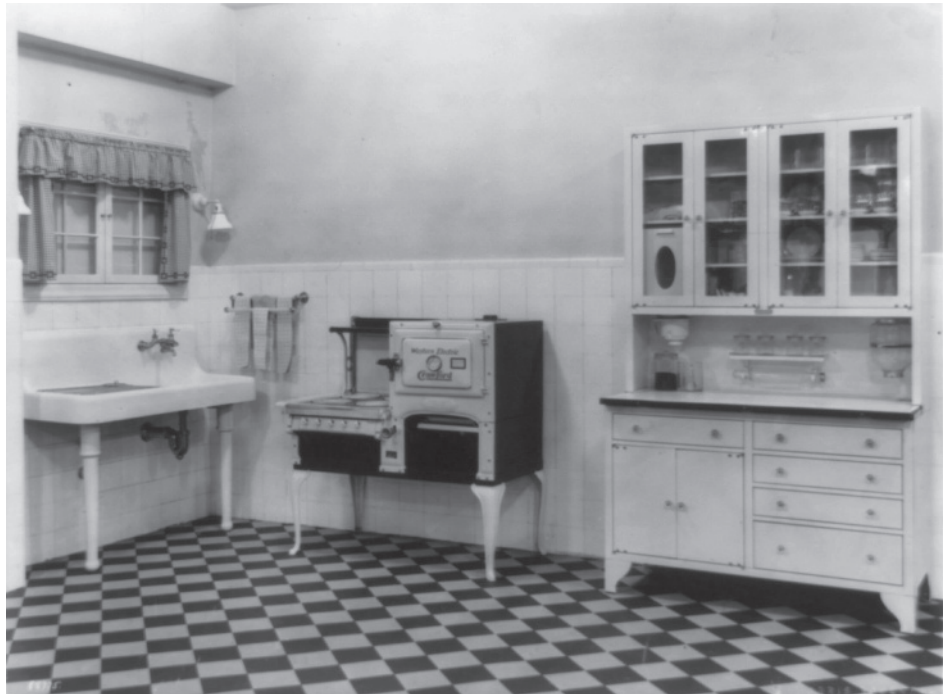


FIGURE 1.9 Kitchens in the 1920s typically included an electric range with storage and cooking surface, a dish cupboard, and console sink.

Photo by Morris Rosenfeld, NY. Library of Congress, Prints and Photographs Division Washington, D.C. 20540 USA, LC-USZ62-54770

Farmhouse kitchen: The farmhouse kitchen typically included a Hoosier cabinet, lots of open shelves, a pantry, dish cupboard, freestanding range, console sink, and large kitchen table. Countertops and work surfaces were usually covered with enameled sheet metal or linoleum. In some homes, Hoosier or other built-in baking cabinets covered an entire wall. The Hoosier was gone by the 1940s.

Domain for servants: In the homes of the wealthy, the kitchen was the domain of servants. A trash disposal chute, foldout ironing board, bell indicator, and intercom system became part of the more sophisticated kitchens.

Sinks: Cast iron sinks were the most popular, along with earthenware sinks, which were enameled white on the inside and glazed brown on the exterior. Some sinks of the 1920s were made of a copper/nickel mix called Monel, a lightweight, white metal.

Appliances: Appliances of the era included an icebox, gas stove, and the new motor-driven wringer washer. Between 1925 and 1927 ranges came in colors, including black, white, red, green, buff, blue, and gray.

Decorative kitchen: In the late 1920s, the kitchen was first included in the decorative scheme of the home, creating colorful rooms for living and not just working.

Color schemes: Color in the kitchen was attributed to two legendary merchandisers: Abraham & Straus and Macy's. From the 1920s into the 1930s, cobalt blue and silver color schemes were very popular. Black and white with pale tones of yellow and blue were also used. A yellow wall with a double band of blue just under the ceiling molding was one combination.

Linoleum floors: Floors were most often covered with sheet linoleum or linoleum tiles, usually in a black-and-white checkered pattern. Colors also ranged from beige and brown to brilliant scarlet and navy blue. Patterns included Art Deco, Modern, and Colonial Revival. Embossed inlaid linoleum became available in 1925. In 1927, the Formica Company developed its first light-colored faux-wood-grain laminate.

Tudor styling: The Tudor style was popular and included stonework, wood paneling, carvings, decorative moldings, and wooden beams.

Monitor top refrigerator: The first all-steel refrigerator had furniture-like legs for aesthetic purposes, as well as being easier to clean under. The GE Monitor top was built in 1926 and cost

\$525. The round-top design was named after the Monitor submarine. In 1929, Kelvinator turned the design into a box with no legs and a concealed compressor.

Accessories: Common kitchen accessories included the electric toaster, coffeepot, Bakelite-handled cutlery, and Clarice Cliff's "Bizarre" line of ceramics.

The 1930s

Work-centered kitchen design: A "typical" 1930s kitchen featured porcelain-topped kitchen worktables and a Hoosier cabinet. An "atypical" kitchen of the time featured the boxy, built-in cabinetry. The built-in, "continuous kitchen" design, with its sequence of workstations and unbroken activity flow, resembled the production line of the modern factory. This highly organized kitchen, beginning in 1935, was known as the "streamlined kitchen." The kitchen began to resemble a scientist's lab more than the heart of the home. Westinghouse ads showed kitchens with three designated work centers: refrigeration and preparation center, range and serving center, and sink and dishwasher center. The breakfast nook was in vogue.

Steel cabinets: Later in the decade, wall-to-wall white steel cabinets, as well as standardized prefab wooden cabinets, were backed by rectangular white tile on the walls. New Porta-Bilt built-in cabinets promoted the idea of being able to build in cabinets and then take them with you when you moved.

Tile on countertop: The introduction of nonporous materials for improved sanitation followed the cleanliness movement taking place in the bathroom. Countertops used oversized hexagonal tiles in olive green, black, and beige. Another look was the white and/or pale yellow 4-inch square tiles on diagonal with accent trim in black, dark blue, green, or maroon.

Black and white floor tile: Black and white tile remained a standard on floors. Linoleum continued to be installed in sheet and tile forms, and tile designs combining different colors began to increase in popularity.

Vinyl flooring: Vinyl made its debut as vinyl/asbestos called Vinylite, but was not widely marketed until the late 1940s.

Center room lighting: Lighting consisted of a single, flush-mount ceiling fixture in the center of the room.

Double sinks: Sinks were large and freestanding. They included a double bowl and drain board.

Pastel colors: Popular colors of the day included Art Deco bright pastels, white, cream, coral red, sky blue, pearl gray, peach, and mint green. Entering a 1930s kitchen, you might see light gray cabinets with light green panels and peach walls.

Modernized appliances: Chromium was widely used on appliances and fixtures. Although the cooling coil-crowned electric refrigerator was available, many households still used the icebox. Chlorofluorocarbon was produced under the name of Freon by DuPont. Electric refrigerators were also shown with legs to allow easy cleaning beneath. Dishwashers were portable and mostly top-loading models. The Tappan "table top" range, a combination of white-enameled range, cupboard, and worktable, was produced. Electric toasters toasted one side of bread at a time. The first electric powered ironer and food waste disposer were introduced.

Accessories: Fiestaaware and Harlequin dinnerware were popular kitchen accessories.

The 1940s

Popular colors: Popular colors were white, pale green, light gold, forest green, and gray with maroon accents.

Seamless cabinet look: Kitchens of the era included cabinets that created a seamless, uniform wall of doors and drawers above and below a continuous counter. A range and sink were incorporated into the continuous counter. These modular cabinets were available in painted wood or metal. Custom kitchen cabinets were also marketed.

Variety of materials: Stainless steel became popular for sinks. Linoleum or laminate materials covered the countertops, and linoleum continued to be used on floors. Black-and-white linoleum tile remained popular, but a range of patterns and colors, as well as cork and asbestos tiles, became available after World War II. Vinyl was heavily marketed in the later part of the decade.

Small appliances popular: Appliances in the kitchen included a rounded electric refrigerator, a dishwasher, and an electric range. Auto defrost in refrigerators was developed. In 1947, the Radarange was the first microwave on the market and was used mostly by restaurants and hotels. Disposers, mostly in the batch model, became available. The popularity of small appliances began with the introduction of the electric skillet, blender, and portable mixer.

Accessories: Colonial maple furniture and Priscilla curtains were typical accessories, often in black and white with red accents. Franciscan Dinnerware had its beginning.

The 1950s

Built-in kitchen: New housing of the time formalized the trend for built-in kitchens and often included an informal eating area.

Asbestos and glass: Colorful linoleum reigned supreme until the 1950s, when asbestos and ceramic tiles became the standard. Asphalt-asbestos tile was the most widely used resilient floor covering on the market. Semi-flexible vinyl asbestos tile was also popular. Emerging materials were fiberglass, cast aluminum, acrylics, and resins. Glass became a popular material used in glass-chip terrazzo floors and countertops. Colorful laminates were used on countertops and cabinets.

Factory-built cabinets: Steel cabinets remained popular, but the idea of the factory-built cabinet was born. Merillat Industries and Wood-Metal (now Wood-Mode) cabinet companies were founded, as was the National Institute of Wood Kitchen Cabinets in 1955. (It is now KCMA—The Kitchen Cabinet Manufacturers Association.)

Dramatic colors: Dramatic colors were introduced; among them pink, gray, pastel greens, turquoise, and sky blue.

Self-defrost refrigerators: Refrigerators were large spaceship-like units in bright colors with a top-mount freezer. Bottom freezers were also available, and Amana patented the first self-defrost model in 1954. The first ice maker was introduced in 1953 by Servel and consumed one third of the freezer space. Gas-powered refrigerators were marketed, and GE introduced the “wall refrigerator” to integrate refrigeration with the continuous cabinet look of the kitchen. All cold food storage was now at eye level.

Wall oven: The wall oven was developed, and Tappan produced the first domestic microwave wall oven in 1952. It sold for \$1295.

New cleaning appliances: Front-loading, portable dishwashers were developed, followed by built-in models of both the top- or front-loading types. Continuous feed disposers came on the market. In 1953, automatic clothes washer sales topped those of the wringer washer for the first time, and Bendix introduced its Duomatic combination washer/dryer.

Accessories: Accessories included colorful molded plastic furniture with chrome trim, Russel Wright American Modern dinnerware, and Tupperware.

The 1960s

Open kitchen design: Great rooms with an adjacent open kitchen reflected the more casual lifestyle of the time. Although “space age kitchens of the future” were publicized, they were not really taken to heart by consumers.

Pop Art: Pop Art colors, such as acid green, orange, pink, red, yellow, bright blue, black, and white were the look of the 1960s.

No-wax floors: New no-wax, sheet vinyl, and ceramic tile in bright colors and strong patterns covered floors. Brick and wood floors were also used.

Metal cabinets: Furniture designer Paul McCobb designed “Eurostyle” cabinetry with aluminum extruded legs and cabinet dividers from the Mutschler Brothers in the Midwest. Cheerful painted metal cabinets were teamed with laminate surfaces in brightly mixed colors and highly patterned wallpaper.

Self-cleaning oven: In 1963, the self-cleaning oven was developed.

Other appliances: In 1967, Raytheon, after acquiring Amana in 1965, introduced the first countertop microwave oven. By 1969, all built-in dishwashers were of the front-loading type. Chilled water and crushed ice dispensers were now available in refrigerators.

Accessories: Accessories found in the 1960s kitchen were the Smile cookie jar, Pop Art posters, and super graphic Venetian blinds.

The 1970s

Avocado and harvest gold: Colors such as brown, burnt orange, avocado green, and harvest gold were all the rage.

“Euro” cabinets: Dark wood cabinets, as well as cream laminate Euro cabinets with oak trim, were beginning to become popular.

Particleboard: Cabinet companies experimented with wood-like alternatives, and some adopted particleboard for cabinet components. In-cabinet storage accessories, such as the vertical knife holder, were becoming increasingly available.

Energy-efficient appliances: Energy consciousness was imposed because of the oil embargo and the resulting energy crisis. The U.S. government began to look at the energy efficiency of appliances and developed the Energy Guide labels to help consumers find energy-efficient appliances and equipment. Meanwhile, built-in and black glass-front appliances, the trash compactor, the over-the-range microwave oven, and the food processor were introduced. Jenn-Air launched the indoor grill, and microwave oven sales were accelerating.

Solid surface counters: Patterned laminates and butcher block were common on counters. The solid surface counter with integral sink was now available in four colors, which were thought to be the only choices consumers and designers could possibly need. Mylar wallpaper was in style.

Fluorescent lighting: Fluorescent lighting was used to save energy, and track lighting was added for flexibility and to increase the amount of light.

No-wax floors: Floors continue to be covered with no-wax vinyl and ceramic tiles. Indoor/outdoor kitchen carpeting in various patterns appeared in many kitchens.

Accessories: Accessories found in the homes of the 1970s included Styrofoam “wood” beams for the ceiling, Tiffany lamps, and antiques.

The 1980s

Remodeled kitchens: The 1980s were somewhat of a transition period and an era of difficult economic times, high interest rates, and higher energy prices. Because of this, many households were remodeling rather than building and saving costs in their kitchen projects by making cosmetic changes, such as resurfacing cabinets or changing hardware.

The open plan: Kitchens continued to open up into other rooms so that families could spend more time together. The great room became more common. Eating bars on peninsulas became popular as an informal eating space. Some kitchens included islands (Figure 1.10).

Frameless cabinets: Cabinets continued to be influenced by sleek European designs. The Euro-style, frameless cabinet was gaining popularity in the American market. Laminate cabinets with oak trim continued to be in vogue. Appliance garages began to appear. At the opposite end of the spectrum, the 1980s also saw the country look and old-world styling used.

Almond appliances: Neutral and earth tone solid colors with little texture covered surfaces, while almond joined white and black for appliance colors.



FIGURE 1.10 Islands became popular during the 1980s, along with neutral colors.

Courtesy of Wood-Mode, Inc.

Granite countertops: Glass block returned, and granite began to appear on countertops. Overall, solid surface counters gained in popularity. Color-through laminates became available for counter surfaces, and many households chose stainless steel sinks.

Induction cooking: Side-by-side refrigerators, along with ice makers, became the popular style. Trash compactors began to appear in more kitchens, but they never developed into a major trend. The microwave oven became a standard kitchen appliance. Sealed gas burners and halogen heating elements appeared on the market. Induction cooking technology was also available and promoted as the cooking method that would reign supreme, but it never thrived in the North American market.

The 1990s

Large kitchens: Kitchens continued to open up and expand. These larger kitchens accommodated more people and more family activities.

Integrated appliances: Kitchen designs on the upswing included the unfitted kitchen, a look comprised of individual pieces of furniture to replace cabinetry, each serving a specific purpose



FIGURE 1.11 A mix of painted and wood finishes and cabinetry configured to look like unfitted furniture were two style trends that emerged in the 1990s and are still popular today.

Design by NKBA member Julie A. Stoner, CKD, ASID

in the kitchen. Kitchens were also designed with many new shapes and configurations. Islands became highly desirable. The integrated kitchen with hidden major appliances was beginning to emerge.

White cabinetry: White cabinets were widely used, along with the many natural woods, including cherry, oak, maple, and hickory. A combination of painted and natural wood was also popular (Figure 1.11).

Desk work area: Numerous storage and task areas were built into the kitchen cabinetry. Consumers desired a built-in desk or paperwork area in the kitchen.

Under-cabinet lighting: Workspaces were improved with the inclusion of under cabinet lighting to illuminate work surfaces. Low voltage lighting and compact fluorescent lights provided for more flexibility because of their smaller size.

Granite on the rise: Solid surface materials were considered the ultimate in countertops and they were also incorporated into floors and cabinet panels. Granite counters became more common in high-end kitchens.

Universal design: As Baby Boomers looked toward retirement, the idea of incorporating universal design features in their homes gained interest.

Almond to bisque: Almond was a popular appliance color, but it was replaced by a new color called bisque or biscuit. White and black were still strong, with stainless steel emerging.

Drawer appliances: More households installed an additional refrigerator in the kitchen, wet bar, family room, or elsewhere. Drawer configurations were adapted to refrigerators and dishwashers. Warming drawers for residential use came on the market, along with electronic controls.

Professional-style appliances: After a move by consumers to install restaurant-grade appliances into their home, the appliance industry developed professional-style appliances to provide consumers with a safer alternative. For high-end kitchens, the professional look was extremely popular (Figure 1.12).

Retro-look: A return to the look of the 1930s, 1940s, 1950s emerged with retro-styled appliances that contained all of the technologies of modern appliances.

Energy Star: Energy standards demanded that appliance manufacturers design and build models that were increasingly more energy and water efficient. The International Energy Star program began.



FIGURE 1.12 Professional-style appliances were developed in the 1990s and remain popular today.
Courtesy of GE.

The 2000s and Beyond

Hub of the home: Kitchens were becoming larger with the open plan concept and were designed to facilitate a variety of household activities (Figure 1.13). Hobby cooking was a result of popular cooking programs on TV.

Islands a must: Kitchen islands were highly desired and could be designed to include a multitude of kitchen tasks and activities.

Look of furniture: Traditional designs, as well as cabinets and storage that resemble furniture, provided an “unfitted” look to the kitchen. The integrated look remained popular.

Feng Shui: The Asian influence was incorporated through the use of Feng Shui, which created harmony and prosperity in life through the arrangement of their environment.

Multiple appliances: The professional look continued with the liberal use of stainless steel in appliances. A second installation of some appliances in the kitchen provided the necessary equipment for multiple workstations.

Appliance drawers: More appliance manufacturers were incorporating the drawer concept. Speed-cook appliances were offered by more manufacturers.

Three-door refrigerators: The three-door refrigerator was introduced. Water filtration was common and wine refrigerators were found in the kitchen and many other rooms in the home.

Multiple sinks: A smaller salad sink was added in addition to the main sink. Farm sinks were popular, and more sink and faucet shapes were available. Faucets were wall, sink, and counter mounted.



FIGURE 1.13 This kitchen is completely open to a family room area.

Design by NKBA member Gerard Cirrarello, CMKBD

High tech: Appliances incorporated electronic control. Televisions and other electronic devices were common in the kitchen.

Granite: Granite, stainless steel, and tile were used extensively. Natural wood was popular.

Green products: In addition to more energy-efficient appliances, the use of renewable materials such as linoleum, cork, and bamboo was increasing.

Universal design: An increasing number of designers were considering and incorporating universal and/or accessible design into kitchens, especially in kitchens where older adults were present. Universal design included the use of components with varying work heights (Figure 1.14).



FIGURE 1.14 Multiple height counters include an area higher than 36 inches for eating or for workspaces for taller users.

Courtesy of American Woodmark

Multiple kitchens: A second food preparation area was often in an outdoor kitchen or an “outpost” kitchen located in a bedroom suite.

Limited wall cabinets: Fewer wall cabinets allowed for more window area and open floor plans.

Storage: Specialty storage devices came in many configurations, including the popular appliance garage, pot rack, pole storage, backsplash rails, pantries, and drawers.

DEMOGRAPHIC AND POPULATION TRENDS

A study of the demographic and population trends for North America, as well as specific population groups, provides valuable insight into market potential as well as influences on kitchen space use and design. Two major trends emerging are an increasingly more culturally diverse population and a larger number of older people. Another trend of interest would be changes in household composition. All of these affect consumer buying trends, as well as kitchen design considerations.

U.S. Population Growth

The general population of the United States continues to increase, and according to the 2010 census (Mackum and Wilson 2011), it now exceeds 300 million. The population increase from 2000 to 2010 was the third largest in U.S. history, adding 27.3 million people—a 9.7 percent increase. Historically, the highest increase in population was during the “baby boom” years of the 1950s, when the population increased 19 percent, adding 17.5 million people. This current surge in population is often referred to as the “echo-boom” generation (Gen Y), and these are the children of the baby boomers.

Household Growth

Although the general population has increased, household growth has slowed, averaging only 1.12 million households during the 2000s, a full 17 percent below the 1990s according to the 2010 U.S. census (Lofquist et al. 2012). The portion of young adults age 20–24 heading independent households has also dropped by 2.6 percent and for those ages 25–29 by 2.8 percent since 2007. This trend could be very different over the next 15 years, however, as immigration continues and a large percentage of the echo-boom generation (born 1979–2002), numbering around 80.8 million, continue to mature. Even with immigration at only half that rate, the number of these young adults will grow to 86.5 million by 2020 and will produce a higher demand for apartments and smaller starter homes during the next 15 years.

The future of household formation is uncertain. On one hand, the recent drop in home prices and a favorable rental market may encourage more employed individuals to form households of their own. In addition, those doubling up to save expenses are typically in a temporary situation and will eventually seek their own place. On the other hand, the rate of household formation among young adults may continue to decline because of sustained unemployment, home foreclosures, delayed marriage and childbearing, the increased importance of higher education, and the rising cost of going away to college. These young adults will continue to double up or live with their parents.

Not only have the economic and housing situations in the late 2000s decreased household growth, but they have also led to lower mobility. Between 2005 and 2008, overall mobility fell about 12.6 percent with the deepest decline among homeowners (Joint Center for Housing Studies 2010). This trend may continue as financially stressed households find it easier to stay in their current residence rather than experience a financial loss.

Household Composition

Another demographic change that could impact the design market includes changes in household composition as summarized in the 2010 U.S. census (Lofquist et al. 2012). Households are becoming smaller. In 2010, one- and two-person households accounted for more than 63 percent of all

households. The share of single-person households rose to 28 percent, with a higher percentage being 65 and older. Married couples, for the first time, represented less than 50 percent of the households (48 percent) and unrelated adults living together made up 6.2 percent. Married couples with children were fewer than 20 percent of all households. The largest change in household composition was an increase in households headed by women without husbands—up 18 percent since 2000.

One other prominent change in households is the return of the multigenerational family household as reported by the Pew Research Center in 2010 (Pew Social Trends Staff 2010). A record 49 million Americans or 16.1 percent of the population in 2008 lived in a household that included at least two adult generations or a grandparent. The rate was only 12 percent in 1980. Multigenerational trends include:

- In 2010, 44.7 percent of the 20–24 year olds who do not live on their own are living with their parents, along with 18 percent of the 25–29 year olds. Since 2005, an additional 1.6 million young adults live at home. Many reasons could account for this increase in adult children living at home, including difficulty with finding a job or launching a career, or they are marrying at an older age. In the 25–34 age group, more men than women are likely to live in multigenerational family households.
- The high rate of immigration since 1970 was dominated by Latin Americans and Asians who are far more inclined to be part of a multigenerational household. Hispanics (22 percent) and Asians (25 percent) are all more likely than whites (13 percent) to be a multigenerational household.
- A significant change in multigenerational composition involves older adults. Once more likely to live in such situations (57 percent of adults 65 and older in 1900), only 17 percent of older adults today live in multigenerational family households because of better health, better financial situations, and better social safety net programs. This number is increasing some in recent years due to the availability of more grown children who are informed caregivers and to recent cuts in Medicare programs. More likely to outlive their spouse, a higher percentage of women are part of this type of household.
- Some 49 million Americans live in a multigenerational family household. Of those, 47 percent are made up of two adult generations of the same family with the youngest adult at least 25 years of age, 47 percent live with three or more generations of family members, and 6 percent belong to a “skipped” generation household with a grandparent and grandchild and no parent.

Different household compositions call for specific design considerations. As designers consider the household for which they are designing, they need to keep in mind the needs specific to that type of household. In some cases, multiple kitchen areas may be warranted to handle the needs of households with multiple generations present.

Population Diversity

According to *The State of the Nation's Housing 2010* (Joint Center for Housing Studies 2010), a publication of the Joint Center for Housing Studies of Harvard University, we continue to see demographic changes because of changes in immigration and the minority populations. Minorities account for 92 percent of the total U.S. population growth between 2000 and 2010, and the growth of the population under the age of 18 was at 1.9 million, driven mostly by racial/ethnic minorities. Immigrants and minorities also account for a large percentage of the household growth in the past decade. Forty-two percent of the echo boom generation is composed of minorities and, over the next 15 years, this diverse generation, along with other minority households, will increase the demand for smaller starter homes, apartments, and remodeling projects. Statistics Canada (2010) places the percentage of visible minority residents in Canada at 16.2 percent (about 5 million people) in 2006, up from 13.4 percent in 2001.

The largest increases for the United States are among Hispanics. Since 2000, the Hispanic population in the United States has increased 43 percent and has doubled since 1990. According to the 2010 U.S. census, there are 50 million Hispanics in the United States, or 1 in every 6 residents and about 16 percent of the population. The U.S. Asian-American population increased

43 percent since 2000, but Asians still make up less than 5 percent of the total population (Humes, Jones, and Ramirez 2010).

Immigration also had a key role in the slowdown in household growth. During the 2000s, not only did the growth of the foreign-born population slow, but the growth of foreign-born households stalled because of the recession. Although the number of households headed by foreign-born citizens increased by about 200,000 from 2004 to 2010, the number of foreign-born noncitizen households declined by the same amount from 2007–2010 (Humes, Jones, and Ramirez 2010).

This increasing diversity means a wider range of lifestyles and design criteria to be considered for clients of varying backgrounds. Out-of-the-ordinary appliances and work patterns may need to be accommodated in their kitchen.

An Aging Population

The 2010 U.S. Census (Werner 2011) places the 65 and older population at 38.6 million, up from 34.9 million in 2000. The U.S. population between ages 65 and 74 is expected to increase 6.5 million over the next decade as more baby boomers reach retirement. The 55 to 64 age group is expected to grow by 3.7 million. Over the next 20 years, the share of 65 and older will rise from 13 percent of the population to 19 percent. Estimates of the Canadian 2011 Census by Statistics Canada (2010) places their 65 and older age group at 14.1 percent of the overall 2011 population number of 34,600,346, with a large portion of the over 65 group living in more rural areas.

Increased life expectancy is credited with some of the increase in this older age group. When the United States was founded, the average American was expected to live to the age of 35, but according to the World Bank, the 2009 life expectancy of U.S. citizens is 78.1 years of age, and it is 80.66 years of age for Canadian citizens.

The State of the Nation's Housing 2010 (Joint Center for Housing Studies, 2010) states that this increasing number of baby boomer retirees has dominated housing market trends for decades and will continue to have a significant impact. As they purchased their first homes and then traded up to bigger better homes, the sheer numbers of individuals in this group has shaped the housing market. Now, as they reach retirement, many are seeking housing to meet their current needs, either by making changes to their current home or by moving to a smaller home.

The number of older homeowners able to move from their current residence has declined sharply in recent years because of the nation's financial crisis, which depressed home equity and reduced retirement income. This trend will open the market for remodeling projects that allow them to "age in place." Those boomers who can relocate tend to downsize to smaller homes with fewer rooms and one-level living.

These demographic trends open up a large market of individuals who will have an increased interest in kitchens that are safe, comfortable, and ergonomically designed, and accessible design will be critical for those with disabilities. See Chapter 8 for additional characteristics of this population and design applications appropriate for them.

Health and Wellness

In today's society, we encounter many health-related issues and trends that connect to the family kitchen. Obesity is very high on the list, especially obesity among children. Storage and preparation of healthy, low-calorie foods is essential. Providing storage and easy access to these healthy foods for children may help change food habits.

In an effort to save money and eat healthier, many households are making use of a home garden or frequenting farmer's markets that provide the household with fresh and healthy foods. An abundance of fresh fruits and vegetables calls for specialized storage to maintain freshness.

A keen awareness of health also prompts consumers to consider other health measures in the kitchen. Materials that deter the growth of bacteria are desired. Households can minimize the use of chemicals in the kitchen through the selection of easy-to-clean surfaces and green cleaning products.

HOUSING TRENDS AND CONSUMER PREFERENCES

Design trends begin with general housing trends. Surveys by the National Association of Home Builders (NAHB) and Better Homes and Gardens (Sullivan 2010) provide a profile of home trends and what people want in their homes. The average home size shrank to 2480 square feet in 2009 as reported by the NAHB. Builders expect homes to continue at this smaller size, averaging about 2152 square feet in 2015. These smaller homes are not only desired by the 65 and older individuals looking to downsize but also the echo boomers interested in smaller, more affordable starter homes (NAHB 2011).

Another focus of builders and consumers alike is “green and sustainable” living. Builders are adding more green features such as insulated front doors, low-e windows, programmable thermostats, and energy-efficient lighting. Water-efficient products and energy-efficient appliances are also included (NAHB 2011). Consumers surveyed by *Better Homes and Gardens* listed their most wanted items in a home as: efficient HVAC systems, Energy Star appliances, efficient design, and natural light. As they plan their choices, consumers are taking more time to research these purchases and projects, and then prioritizing the features they want. Consumers also desire a kitchen with an everyday eating area and comfortable family-gathering space, as well as decks and patios, low-maintenance exteriors, and private backyards (Sullivan 2010).

When it comes to home purchasing, value and needs are driving the decisions, according to an NAHB spokesperson. Households want space they can really use, not spaces that just look nice. Therefore, “luxury and extravagance” are out and “authenticity and dependability” are in. Home trends from builders, as reported by the *Wall Street Journal* (Kalita 2011), are as follows:

- Grand foyers are out and “drop zones” are in. These bigger versions of the mud room serve a place where the family can drop their packs and parcels as they enter the home, and efficient storage helps organize the clutter.
- Formal living rooms are out and open family rooms are in. Little-used formal living rooms and bonus rooms are wasted space.
- A second staircase is out and space for an elevator is in. The baby boom generation is thinking of the future, when they might need an elevator to navigate floors.
- Dad’s office is out and a “lifestyle center” is in. People work all over the house, and a lifestyle center near the kitchen can accommodate the activities of many family members.
- The breakfast nook is out and an outdoor living space is in. With open kitchens that incorporate the dining area, an additional nook area is less important. Sliding doors at the back of the house open the house to the outdoors.
- Also included on the “out” list are two-story foyers, cathedral ceilings, and formal dining rooms. A ground-floor bedroom with full bathroom is in for multistory homes.

The American Institute of Architects found similar trends among the residential architects they surveyed (Baker 2010). These architects reported an increased demand for such features as outdoor living space, open-space layouts, and blended indoor/outdoor living, features that correspond to an interest in outdoor cooking and kitchens. In-home accessibility and access into/out of the home were also in demand, important features for “aging in place.”

Architects also identified key trends or demands for kitchens. Among the items found to be increasing in popularity are:

- Recycling centers by 52 percent
- Pantry space by 47 percent
- Computer work/recharge areas by 43 percent
- Integration with family space by 41 percent
- Adaptability/universal design by 28 percent
- Double island by 20 percent

Research by many groups, including the Research Institute for Cooking and Kitchen Intelligence (RICKI), Whirlpool, and Masco, has provided insight into consumer preferences and actions related to the kitchen. The RICKI (KBDN 2010b) studied consumers relative to their expenditure on kitchens.

They found that the “ultra-high-end” consumer was considerably more engaged in their kitchens, spent more money on their kitchen project, were most likely to say the look of their kitchen reflected who they were, and wanted the kitchen design to say a lot about them. This group was also more brand conscious and more likely to hire a professional designer to help with their decisions.

Whirlpool (KBDN 2010a) surveyed consumers regarding their feelings toward green products. A majority of the consumers indicated they do their best to be green as long as doing so fits their lifestyle and finances. They want the right product at the right price and will search until they find it. However, over half of those surveyed would rather spend money now to save on energy costs later. Convenience was also important because consumers want the easiest path to energy efficiency and cost savings.

A 2011 study by Masco¹ shed light on the differences between generations related to desires and needs. The three generations compared were Baby Boomer (1946–1965), Gen X (1966–1978), and Gen Y or Echo Boomer (1979–2002). (Date spans for these generations vary among sources.) They found that:

- Baby Boomers desire to age in place with a semi-open or completely open floor plan. They want storage that is easy to reach and well organized. They favor clean, uncluttered lines.
- The Gen X generation is in the middle of raising their families and plan to stay in their current location for another 5–10 years. They place emphasis on the kitchen as a multifunctional space and the hub of the home. They desire an open plan with a computer area and a great room near the kitchen for entertaining and see this as a way to keep an eye on children as they socialize and do homework. If no children are present in the household, they focus on friends, cooking and wine club dinners, and baking.
- The Gen Y or Echo Boom generation uses the Internet for advice and finding the lowest price, and they want it *now*. They prefer an open layout with a simple design that has room for entertaining. When children are present in the household they want storage for children’s needs and pull-out drawers for easy access to snacks.

CURRENT AND CONTINUING DESIGN TRENDS

Clearly, styles, designs, colors, and materials go in and out of fashion, often rapidly. New technology is constantly providing new products. Therefore, the professional designer should make a regular practice of attending trade shows, reading trade and consumer publications, and checking online blogs and sites to stay up to date with the newest products and trends. Aside from design and material trends, however, there are overarching demographic and lifestyle factors worth noting that are influencing kitchen planning in this new millennium. Today’s casual lifestyle finds more household members working together in the kitchen and carrying on a wider variety of activities. There is often a more relaxed style of entertaining and guests help with the food preparation. Both trends call for a kitchen where people can interact and where two or more cooks can work (Figure 1.15).

Kitchens of today can take on two different looks. One places the appliances as a focal point in the kitchen. Large, stainless steel or colorful appliances make a statement as you enter the kitchen space. Consumers want their high-end appliances to show off, catching the attention of those entering. The other look is the hidden or integrated look. Refrigerators and dishwashers hide behind wooden panels that blend into the adjacent cabinetry (Figure 1.16). This styling creates a simplistic or minimalist look that many households are trying to achieve because it doesn’t detract from their other decorating elements. Instead of appliances being the focal point, such things as unique furniture pieces, decorative hoods, or light fixtures attract attention.

A downturn of the economy from 2008 to 2011 has also had an impact on kitchens. As households find their budgets strained, kitchens are becoming smaller and more streamlined to reflect the current economic times. Households are more interested in incorporating function and satisfying needs rather than trying to simply make a design statement.

¹For a discussion of the Masco findings, see “Study details kitchen needs of different types of households,” at www.forresidentialpros.com/article/10345270/study-details-kitchen-needs-of-different-types-of-households, retrieved September 15, 2012.



FIGURE 1.15 Household enjoy the flexibility and connectedness of the open design. Here we see the family room and kitchen area linked by an open eating bar that also serves as a kitchen workspace on the side toward the kitchen.

Design by NKBA member Wendy Johnson, CKD, CBD

Space Usage Trends

Command central: As the kitchen continues to be the hub of home activities, the open plan concept, which combines the kitchen with a dining area, family room, and/or den into one large living space or great room remains strong. Sometimes a portion of the great room replaces the formal dining room. Often these spaces become too open and the kitchen is pushed back into a corner. Ellen Cheever, a prominent designer, promotes a new way of looking at the space, putting the kitchen in the center of the space and using walls or partial walls to create activity centers that are somewhat separate yet connected with people able to flow from one space to another.



FIGURE 1.16 With the exception of the professional range, appliances in this kitchen hide behind cabinet doors, which places more of the focal point on the cabinetry rather than the appliances.

Design by NKBA member Sandra Steiner-Houck, CKD

Islands: Consumers' desire for an island in the kitchen remains high, and today's larger kitchens can easily accommodate one. These islands vary greatly in size, shape, and usage and may include multiple levels. The island may be used solely as a prep area or contain a variety of appliances and fixtures, including a cooktop, sink, or microwave oven. One portion may also serve as an eating bar for snacks and informal meals. Double islands, two islands with each serving a different purpose in the kitchen, are also growing in popularity for larger, multi-cook kitchens that support many different activities (Figure 1.17).

Multiple-height counters: More households are becoming interested in universal design features that will help them function more easily in their home. Using multiple counter heights is one way to provide workspace for a variety of activities and users.

Multiple cooks: With the popularity of hobby cooking and shared meal preparation, the multiple-cook kitchen is designed with enough space to accommodate multiple individuals who enjoy cooking together.

More window area: A larger number of windows, as well as larger windows, increase natural light and add to the feeling of openness (Figure 1.18). However, more windows, as well as using more wall space for artwork and the open space design decrease the area available for tall appliances and wall storage.

Environmental Awareness Trends

Recycling: Whether by choice or necessity, many households include recycling in their daily routine. Because the kitchen is the source of many recyclable materials, creating space for temporarily storing bottles, cans, and the like is a growing trend.

Conserving natural resources: Consumers continue to request water- and energy-efficient appliances, and more consumers are aware of the Energy Star-qualified products and look for the Energy Star label. Consumers list energy and water savings as one of the most important factors when selecting new appliances.

Green products: More consumers are concerned about the environment and look for environmentally sound or "green" building products, including those made of recycled materials.



FIGURE 1.17 The use of double islands is on the rise, and this kitchen uses double islands to expand the workspace and incorporate an eating bar. The increasingly popular contemporary styling with its clean lines is also a prominent feature.

Design by NKBA member Laurie Belinda Haefele



FIGURE 1.18 A window wall and corner window open this contemporary kitchen to the outdoors. The beautiful view and abundance of daylight create a pleasant environment for cooks and guests.

Design by NKBA member Laurie Belinda Haefele

Care-free products: Households are seeking low-maintenance products that last longer and minimize the use of harsh chemicals for cleaning.

LED lighting: The more efficient LED lighting is being incorporated by more designers in many areas of the kitchen.

Activity Trends

Hub of the home: The kitchen remains the center of family activities and gatherings. In order to accommodate all of these activities, the space must be multifunctional and flexible.

Hobby cooking: The popularity of television cooking shows has sparked an interest in hobby cooking. Hobby cooking often involves the use of new techniques and appliances for cooking as a form of entertaining, so a large kitchen that accommodates a crowd is necessary. Multiple cooks are often involved so a variety of food preparation stations are planned into the design (Figure 1.19).

Seating areas: Seating areas in and around the kitchen are highly desired (Figure 1.20). These areas serve as gathering areas for family and friends, and can support numerous family activities close to the food preparation activities of the kitchen. Many of these areas include a fireplace and television to accommodate such activities as entertaining, relaxing, Internet surfing, and homework. Audio systems provide background music for numerous activities.

Beverage stations: Beverage stations, such as coffee and wine bars, are showing up in many of today's kitchens.

Lifestyle center: The isolated home office is being replaced with what is referred to as a "lifestyle center." Located near the kitchen, this space has a computer and other electronic equipment that allow children to do homework while being monitored by the parents. It also serves as a space for adults to work at home, pay bills, or plan household meals.

Technology: Our fascination with technology extends to today's kitchens. From improved energy efficiency and water usage to high-tech controls, today's appliances are state-of-the-art devices. Small computer-like components allow the consumer to choose from a wide variety of settings and preset start times. Appliances monitor multiple temperatures at one time, keep refrigerated food at the perfect temperature, sense when food is cooked or when dishes are clean, and even change from a cooling device to a cooking device.

FIGURE 1.19 Generous counter space and two islands in this large kitchen provide spaces for multiple family or hobby cooks to work together without interference.

Design by NKBA member James Howard, CKD, CBD



Location Trends

Outdoor kitchens: The outdoor kitchen concept goes far beyond the backyard grill (Figure 1.21). New appliances and materials allow the designer to develop a complete kitchen outdoors, including grills, burners, refrigerators, beer taps, woks, warming drawers, regular and pizza ovens, ice makers, warming drawers, and even heaters and fireplaces to make the kitchen usable for more of the year. This outdoor space can serve as a secondary dining space when the weather is nice and can allow the household to accommodate more company for holidays and celebrations.

Outpost kitchens: As part of the master or guest bedroom suite, family room, or office space, many households are incorporating a small kitchen space, often referred to as an “outpost

FIGURE 1.20 This open plan kitchen incorporates a casual seating area, as well as a seated counter area. The contemporary styling incorporates interesting shapes and lines and a vibrant color.

Design by NKBA member Tim Scott





FIGURE 1.21 As an extension of the indoors, an outdoor kitchen can expand the home space and provide a second kitchen for preparing meals.

Courtesy of Viking

kitchen” or, “morning kitchen” for preparing food and beverages away from the main kitchen. Such kitchens often include a small refrigerator, a sink, a microwave oven, and storage. Households are finding the outpost kitchen a convenient solution to the morning rush, as a support station when a family member is injured or ill, a personal food preparation space for a multi-generational household, or a means for easy access to refreshments by household members.

Appliance Trends

Second appliances: Once a common feature of larger, high-end kitchen designs, the use of duplicate appliances in a kitchen plan has diminished. With a decline in the size of today’s homes and a more conservative economic outlook, duplicate kitchen appliances are looked on as excessive. Duplicate appliances, however, might still be found in other areas of the home, especially in homes where multiple generations reside and auxiliary food preparation areas help support the individual needs of household groups.

Variety: With such a large variety of sizes and styles, little is standard today when it comes to appliances. Although many appliances still come in standard sizes, more of the newer models are appearing in both larger and smaller sizes than before.

Controls: Increasing numbers of appliances are incorporating electronic controls that only require a touch of the finger to use (Figure 1.22). Controls are also becoming more sophisticated. Some appear when you touch the surface of an appliance, and others are hidden on the edges of appliance doors. Sensor controls monitor temperatures, and lock-out features limit a child’s access.

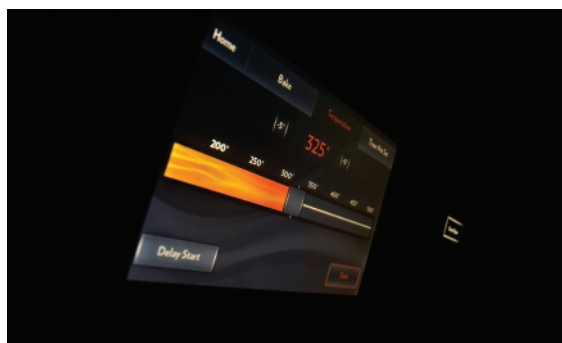
Gas: Gas is the most popular cooktop fuel in the United States, while the use of gas is on the rise in Canada. Induction is growing in popularity as a clean alternative to the gas.

Ranges: Ranges still dominate in the cooking center, but the use of separate cooktops and ovens is on the rise. Also increasing in popularity are warming drawers and double ovens. Range hoods are becoming more common in Canada, and dramatic, oversized vent hoods create a design statement in U.S. kitchens.

Undercounter appliances: As we move away from using wall cabinets, the use of under-counter appliances is on the rise. This places the appliances next to the storage that might complement their use.

FIGURE 1.22 Electronic controls on appliances provide the user with more programming and control options at the touch of a fingertip. Some controls, like the one on this Jenn-Air oven, even provide photos of foods, such as how meat will appear at various doneness levels.

Courtesy of Jenn-Air



Three-door refrigeration: The three-door refrigerator with a bottom freezer is dominating the market, but the side-by-side model is still popular (Figure 1.23). Chilled wine refrigeration is on the decline, replaced by unchilled wine storage.

Drawers: Drawer appliances, such as the dishwashing drawer, wine storage drawers, the microwave drawer, and the refrigerator and freezer drawers are becoming increasingly more popular.

Convection and steam: Convection cooking modes are almost standard in many mid- to high-end ovens. Steam is being incorporated into many different appliances, including ovens, dishwashers, clothes washers, and clothes dryers.

Disposers: Disposers' use is up, along with the use of trash compactors.

Downsized styles: The commercial or professional look is now available in less bulky models.

Cabinetry Trends

Dark woods: Darker woods and dark stain are popular in both the United States and Canada, but a shift to a medium finish is expected as a safe choice for the current economy. However, some designers are also using light-colored wood finishes extensively (Figure 1.24). With the darker-toned cabinets, homeowners are using lighter floors and counters to lighten up the room.

Wood choices: Cherry is the most popular cabinet wood in the United States followed by maple and alder wood. Mahogany and walnut are also popular. In Canada, popular woods include cherry, dark oak, birch, and maple.

Rustic look: The European farmhouse or rustic elegance look makes use of lighter, gray-toned woods, such as bleached ash, for cabinets as well as floors. These reclaimed or bleached woods add character and weathered imperfections. Mixing these rustic elements with more polished materials is also a hot trend (Figure 1.25).

Shaker styling: Traditional styling continues to be popular and may include influences from France and Sweden. A move away from the very heavily ornamented traditional designs, however, is more reflective of the current economic times where people are seeking a more simplified lifestyle. There is a strong resurgence of the Shaker style.

Fewer wall cabinets: Fewer wall cabinets allow rooms to open up and the use of more windows (Figure 1.26). All of the storage is placed in base cabinets or pantry type storage areas. A lack of or reduction in the number of wall cabinets presents a new way to look at kitchen design.

Furniture pieces: Furniture styled pieces, often with curved lines, serve as storage and work areas.

Lift cabinets: Interest in the lift-style wall cabinet door, which lifts straight up instead of out, is emerging.

Contemporary styling emerges: Geometric lines and shapes, so characteristic of the Euro contemporary style, is a popular look in today's kitchens across the continent (Figure 1.27).



FIGURE 1.23 The three-door or French door refrigerator continues to be one of the most popular refrigerator styles on the market. Newer versions of the style now have water and ice in the door and multiple drawers below that can vary as to use, from refrigeration to freezer.

Courtesy of Jenn-Air.

Elongated, horizontal elements are created with wide drawers and long handles. Cubes of cabinets, arranged geometrically, are clustered on walls. Integrated handles help emphasize the clean lines of the style.

Electronic drawer controls: Electronically controlled drawers open and close with the use of a small motor. Undermount, full-extension glide systems are used on all levels of drawer construction. Soft-close drawers are incorporated into many kitchen cabinets.

Glass shelves: Glass cabinet door panels and glass shelves are popular in Canadian kitchens.

Brushed hardware: Brushed metal hardware has stood the test of time.



FIGURE 1.24 Although dark woods are still popular in kitchen designs, mid-toned woods are making their way into many new kitchens.
Design by NKBA member Tim Scott



FIGURE 1.25 The elements of Tuscany appear in this open kitchen. The casual cabinet styling, rustic metals, and warm colors create the comfortable countryside look.
Design by NKBA member James Howard, CKD, CBD



FIGURE 1.26 Art work and a utensil storage rail replace the upper cabinets in this kitchen to create a minimalist look. Expanded window space and open plans are also reasons for eliminating upper cabinets and opting for the use of large pantries and base cabinets instead.
Design by NKBA member Friedemann Weinhardt



FIGURE 1.27 The clean lines and smooth surfaces present here are typical of a contemporary styled kitchen. European frameless and lift cabinets dominate the look.
Design by NKBA member Lori Carroll

FIGURE 1.28 Dark base cabinets are teamed with white upper cabinets to produce the increasingly popular two-toned look. Light counters help balance the dark cabinet colors, and wood flooring adds warmth to the scheme. Design by NKBA member Beverley Leigh Binns



Color and Finish Trends

Two-toned look: Canadian and U.S. designers are finding the two-tone look popular (Figure 1.28). This may include painted finishes in two contrasting colors, or a painted surface paired with a natural wood or stone surface.

White and neutrals: White and off-white are still prominent (Figure 1.29). The neutral palettes, including browns as well as beige and bone, are popular. Warm earth tones are used for counters and backsplashes.

The new black: Gray is the new black and is especially popular in Canada.

FIGURE 1.29 White continues to be a popular kitchen color choice, and this large kitchen incorporates it into traditional styling with soft lines. Wood flooring creates a pleasant contrast. Design by NKBA member Nicholas Geragi, CKD, CBD





FIGURE 1.30 The backsplash's diagonal tile pattern, the pressed tin ceiling, the subtle wall stripe, and the patterned counter all create interest through visual and tactile texture. The color gray, as used here on the cabinetry, is gaining in popularity.

Design by NKBA member Bryan Reiss, CKD, CBD

Vibrant colors: We are seeing a stronger commitment to color with dramatic “pops” of color, such as neon and jewel tones, showing up on walls, as accents, and in appliances.

Texture: Tactile and visual texture is adding interest to the kitchen through the use of line, colors, patterns, mosaic tiles, and glass tiles (Figure 1.30).

International inspiration: Inspirations from Africa, India, Peru, and Turkey incorporate bold pink, orange, turquoise, and green colors into kitchens. Bold patterns are paired with earthy and neutral accessories. Distressed finishes are on the decline.

Tuscany: Design motifs from Tuscany, with their earthy color palettes, multi-style cabinetry, and inclusion of different countertops, materials, and colors are demonstrating that not everything in a kitchen needs to match.

Material Trends

Hardwoods: Hardwoods, including tropical hardwoods, are very popular for cabinetry, furniture, and floors.

Stainless steel: Stainless steel continues to be a hot trend and is used in sinks, on appliances, and as countertops (Figure 1.31). Appliance companies, however, are looking to colors like glossy white, slate gray, and black as up and coming trends.

Natural stone: Ceramic and porcelain tiles, along with natural stone, are desired surface finishes. For the more rustic designs, honed granite or marble create a beautiful contrast against brick and raw-stone walls.

Glass: Designers are using more glass than ever and in many different applications, including glass appliance fronts, glass counters, glass tiles for the backsplash, and glass shelves in cabinets (Figure 1.32).

Antiqued finishes: Canadian designers incorporate antiqued finishes that complement the traditional styling and are moving away from stronger grained woods toward a softer look.

Easy care: Easy to clean and care for finishes are a must.

Mix and match: Designers are incorporating multiple counter materials—one for the island and a different material for the other surfaces.

Green products: Many consumers are interested in materials that are considered “green.” These materials are produced with little embodied energy, are easy to care for, durable, and perhaps made from recycled or reclaimed components.

FIGURE 1.31 The popularity of stainless steel is perhaps illustrated to the extreme with this kitchen of stainless steel appliances and surfaces. The large kitchen also has space for multiple cooks and observers.

Design by NKBA member Peter Ross Salerno, CMKBD



FIGURE 1.32 Glass is being used in numerous ways by kitchen designers. A full glass counter, glass cabinet doors, and glass accessories complete this kitchen design.

Design by NKBA member Elina Katsioulas-Beall, CKD





FIGURE 1.33 Many types, styles, and sizes of tile are used throughout today's kitchens. This particular design places large tiles on the floor, tiles in a diagonal pattern on the backsplash, and decorative tiles around the room to complete the kitchen's design theme.

Design by NKBA member Cheryl Hamilton-Gray, CKD

Countertop and Floor Trends

Quartz gaining: Granite remains the most popular countertop surface, but it is losing share to quartz or engineered stone. Solid surface is clearly in third place, and the use of laminate is on the decline. Polished concrete is also becoming popular for high-end applications.

Tile backsplash: Popular backsplash materials include ceramic, porcelain, and glass tiles, and backsplashes are lower and less conspicuous. Herringbone mosaic patterns add texture and pattern to the kitchen (Figure 1.33).

Green choices: Bamboo and cork are popular as green product material for floors. Wood flooring in kitchens is increasing in popularity (Figure 1.34).

Slate: Slate is a durable floor covering but it is a less affordable choice and requires resealing on regular intervals. Porcelain tiles are used more extensively and are a better choice for durability. Laminate flooring is also a popular choice, but there are varying degrees of quality.

Heated floors: Radiant heating of floors is popular for the kitchen as well as the entire home. Stepping onto a warm floor adds to the comfort of working or relaxing in a space.

Storage Trends

Specialty storage: Storage features are becoming unique and personalized, including such things as pet supply centers and charging stations. Consumers are looking for ways to eliminate clutter.

Workstations on wheels: Designers find pantry cupboards very popular, as well as workstations on wheels, such as islands and prep workstations (Figure 1.35).

Large pantry: Consumers continue to request pantries more than ever, but a separate, walk-in pantry located in different parts of the kitchen is the most desired style. Many storage devices that make better use of pantry space are available. Some designers see a decline in the use of tall pantries, lazy Susans, pullout racks, and appliance garages.

Barn door: Walk-in pantry areas are making use of a sliding barn-door-style covering for access. The hanging door is mounted from concealed or decorative hardware on the outside of the wall. The door slides along the hardware to reveal the opening. Such doors are also used for openings to laundry rooms or areas.



FIGURE 1.34 Wooden flooring is becoming common in many new kitchens. The lighter colored wooden floors and counter help lighten up this kitchen of dark colored cabinetry.
Design by NKBA member Chris Novak Berry

Fixture Trends

Stainless steel sinks: Stainless steel is as popular for sinks as it is for appliances.

Pull-out faucets: Pull-out faucets are in high demand, with standard and pot filler faucets coming in second. Gooseneck faucets are also popular, even in traditional kitchens. Curving high above the sink, these faucets make it easier to fill pots, and many include a pull-out spray nozzle.



FIGURE 1.35 Placing tables and carts on wheels provides a flexible workspace that can be easily moved to where more counter is needed. The dark cabinetry and open shelves are also popular design features in today's kitchens.

Design by NKBA member Jennifer L. Gilmer, CKD

Multiple sinks: Even though many designers are not including as many multiple appliances in the kitchen, many are still including an additional sink, like a salad sink in the island or in the counter workspace across the kitchen from the main sink (Figure 1.36). This supports the work of two cooks in the kitchen.

Brushed nickel: Brushed nickel and satin nickel are top choices in new kitchens, followed by stainless steel and polished chrome. Venetian bronze finishes are popular in Canada.



FIGURE 1.36 Multiple sinks are frequently designed into larger kitchen plans to provide an additional sink for food preparation activities.

Design by NKBA member Erica S. Westeroth, CKD

SUMMARY

With each subsequent era, new design trends emerged that incorporated the lifestyles and technologies of the time. Research has helped to shape the design of kitchens for many years. Approaching food preparation and cleanup as work and studying how to perform the work more efficiently has guided the study of kitchen design. The planning guidelines for kitchens have consistently reflected the findings from research and continue to keep kitchen design appropriate for the lifestyles of the times. Studies will need to be done more frequently to reflect continually changing food preparation patterns and lifestyles. Although certain styles and designs may go in and out of fashion during various periods of time, the current selection of colors, materials, styles, sizes, and textures offers the consumer and designer an unlimited array of choices for a kitchen design plan. An important part of the kitchen designers' job is to stay abreast of the ever-changing array of products and the evolving lifestyle and design trends that affect their practice. However, regardless of the trends, the designer should always consider the homeowners' desires and wishes over their own and over the trends. This information should be gathered during the initial interview process. It is the designers' role and responsibility to lead or influence their client in choosing the most advantageous approach to fit their wants, not push trends and styles on them.

REVIEW QUESTIONS

1. What role did the hearth/fireplace play in early Colonial kitchens and home life? (See "Role of the Hearth in the Eighteenth-Century Kitchen" p. 2)
2. How did the design of the modern kitchen evolve from multiple rooms to today's open floor plan? (See "The Modern Kitchen" to "Standardization: The 1900s" pp. 3–6)
3. How did the industrial revolution and standardization affect early kitchen designs? (See "The Modern Kitchen" to "Standardization: The 1900s" pp. 3–6)
4. How did the Beecher sisters and home economists contribute to the designing of more efficient and functional kitchens? (See "The Beecher Kitchen" p. 4, and "Kitchen Design Research" pp. 6–15)
5. What are some current demographic trends related to household size, diversity, and composition in the United States and Canada? How do they affect kitchen design considerations? (See "Demographic and Population Trends" to "Housing Trends and Consumer Preferences" pp. 24–28)
6. What are the general trends that have had an impact on the look and function of today's kitchens? (See "Housing Trends and Consumer Preferences" pp. 27–28)

REFERENCES

- Baker, Kermit. 2010. "Small Talk: Kitchens and Baths Do More with Less." *Kitchen and Bath Business* (May 10), 26–27.
- Beecher, C. E. and H. B. Stowe. 1869. *The American Women's Home*. New York: J. B. Ford and Co.
- Carter, D. 1932. *Studies in the Design of Kitchens and Kitchen Equipment*. Arkansas Agricultural Experiment Station Bulletin 276, Fayetteville.
- Cheever, E. M. 1992. *Kitchen Planning and Safety Standards*. Kitchen Industry Technical Manuals, Vol. 4. Hackettstown, NJ: National Kitchen and Bath Association.
- Cheever, E. M. (1996). *Kitchen Planning and Safety Standards: Kitchen Industry Technical Manuals*, vol. 4 (3rd ed.). Hackettstown, NJ: National Kitchen and Bath Association.
- Cushman, Ella. 1936. *The Development of a Successful Kitchen*. Cornell Bulletin for Homemakers 354. Ithaca, NY.
- Emmel, J. M., J. Beamish, and K. Parrott. 2001. *Someone's In the Kitchen: Summary of Findings from the Kitchen Space and Storage Research Project*. Blacksburg, VA: Virginia Polytechnic and State University.

- Frederick, C. 1913. *The New Housekeeping: Efficiency Studies in Home Management*. Garden City, NY: Doubleday, Page and Co.
- Heiner, Mary Koll and Helen E. McCollough. 1948. *Functional Kitchen Storage*. Cornell University Agricultural Experiment Station. Bulletin 846. Ithaca, NY: Cornell University.
- Heiner, Mary Koll and R. E. Steidel. 1951. *Guides for Arrangement of Urban Family Kitchens*. University Agricultural Experiment Station. Bulletin 878. Ithaca, NY: Cornell University.
- Howard, M. S. 1965. *Development of the Beltsville Energy Saving Kitchens*, Final report, Project CH 2-14. Beltsville, MD: U.S. Department of Agriculture Agricultural Research Service.
- Humes, K. R., N. A. Jones, and R. R. Ramirez. 2011. Overview of Race and Hispanic Origin: 2010–2010 Census Briefs. Washington, DC: U.S. Department of Commerce, U.S. Census Bureau.
- Joint Center for Housing Studies. 2011. *The State of the Nation's Housing 2010*. The Joint Center for Housing Studies of Harvard University. Cambridge, MA: Harvard University.
- Jones, R. A. and W. H. Kapple. 1975. *Kitchen Industry Technical Manual*, Vol. 5. National Kitchen and Bath Association and Small Homes Council. Urbana-Champaign: University of Illinois.
- Kapple, W. H. 1964. *Kitchen Planning Standards*. Small Homes Council—Building Research Council Circular Series C5.32. Urbana: University of Illinois Press.
- Kalita, S. M. 2011. "Blueprint for the New American Home." *The Wall Street Journal*, (November 2).
- Kitchen & Bath Design News (KBDN). 2010a. "Consumer Buying Trends: Study Uncovers American Consumer Attitudes Regarding 'Green'." *Kitchen & Bath Design News*, 11.
- . 2010b. "Consumer Buying Trends: Upper-end Consumers More Brand Conscious, Survey Reveals." *Kitchen & Bath Design News*, 11.
- Lofquist, D., T. Lugaila, M. O'Connell, and S. Feliz. 2012. Households and Families: 2010–2010 Census Briefs. Washington, DC: U.S. Department of Commerce, U.S. Census Bureau.
- Mackum, P. and S. Wilson. 2011. Population Distribution and Change 2000–2010. 2010 Census Briefs. Washington, DC: U.S. Department of Commerce, U.S. Census Bureau.
- McCullough, H. E. 1949. *Cabinet Space for the Kitchen*. Small Homes Council Circular Series C5.31. Urbana: University of Illinois Press.
- National Association of Home Builders (NAHB). 2011. *NAHB Study: New Homes in 2015 Will Be Smaller, Greener and More Casual*. Washington, DC: National Association of Home Builders. Retrieved on September 15, 2012 from www.nahb.org/news_details.aspx.
- Parrott, K., J. Beamish, and J. Emmel. 2003. *Kitchen Storage Research Project*. Blacksburg, VA: Virginia Polytechnic and State University.
- Pew Social Trends Staff. 2010. *The Return of the Multi-Generational Family Household*. Pew Research Center. Retrieved from www.Pewsocialtrends.Org/2010/03/18/The-Return-Of-The-Multigenerational-Family-Household.
- Sullivan, J. 2010. "Home Sizes Continue to Shrink." *Builder 2010*, National Home Builders Association. Retrieved on January 2, 2012 from www.Builderonline.Com/Design/Home-Sizes-Continue-To-Shrink.Aspx.
- Wanslow, R. 1965. *Kitchen Planning Guide*. Small Homes Council—Building Research Council. Urbana-Champaign: University of Illinois.
- Werner, Carrie A. 2011. *The Older Population: 2010: 2010 Census Briefs*. Washington, DC: U.S. Department of Commerce, U.S. Census Bureau. Available at www.census.gov/prod/cen2010/briefs/c2010br-09.pdf, accessed October 2012.
- Wilson, M. 1938. *The Willamette Valley Farm Kitchen*. Corvallis: Oregon State University Agricultural Experiment Station.

- . 1947a. *Patterns for Kitchen Cabinets*. Oregon State Agricultural Experiment Station Bulletin 446, Corvallis.
- . 1947b. *Considerations for Planning Kitchen Cabinets*. Oregon State Agricultural Experiment Station Bulletin 445, Corvallis.
- Wilson, M. and H. E. McCullough. 1940. *A Set of Utensils for the Farm Kitchen*. Oregon State Agricultural Experiment Station Circular 134, Corvallis.
- Yust, B. L., and W. W. Olsen. 1992. "Residential Kitchens: Planning Principles for the 1990s." In E. M. Cheever, *Kitchen Planning and Safety Standards: Kitchen Industry Technical Manuals*, Vol. 4. Hackettstown, NJ: National Kitchen and Bath Association.