



# Kitchen Think

*A guide to design and construction,  
from refurbishing to renovation*

by Nancy R. Hiller

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**Mary Lee and Herb.** In their kitchen on Drayton Island.

# Dedication

**T**his book is dedicated to my forebears, whose kitchens have made indelible impressions on my sense of what a kitchen should be:

To Rose and Louis Adler. Thank you for the fish and vegetables fragrant with dill, served from your tiny apartment kitchen after you retired from a lifetime serving others.

To Flora and Simon Rau, who lived in a ground-floor apartment with a modest post-war kitchen and always had a dictionary and magnifying glass in the living room. Thank you for the latkes and matzo ball soup.

To Stephanie Hiller, who lived far away, as a result of which we didn't visit her kitchen, but who always pressed pen and paper on us at restaurant tables to make sure we wrote the letters to cousins that we would otherwise not have written, and who insisted that the parsley garnish was the healthiest part of the meal.

To Arthur Adler, for taking such good care of us all, for the ceviche, and for the potato gratin.

To Esse Rau Adler, whose high-ceilinged kitchen in the Spanish Colonial Revival house on Garden

Avenue is burned into my memory, as is the more compact one on Collins Avenue, where she greeted my sister, Magda, and me, along with our cousin Jean, on Saturday mornings with frozen Sara Lee cupcakes; who, having grown up as one of many siblings on a working farm where her family made everything from scratch, loved the freedom Bisquick provided; and who relished her opportunities later in life to dine out, especially on frogs' legs or snails while in France, or, once or twice, on trout at Gravetye Manor.

To Herb Hiller, for the many generations of sourdough bread, the emphasis on quality beer, the always-innovative salads and brown rice, and for demonstrating that in extremis you can cook great meals with a kettle, toaster oven and two-burner hotplate set up on a folding table in the bathroom.

To Mary Lee Adler, for her can-do example in all things construction, as well as a life's worth of shopping, cooking and cleaning up, and for making Magda and me chip in with those essential activities from an early age; and especially for the spring onion and Gruyère quiche, and the apple crumble.





# Preface

A general note: This book is intended to be useful primarily to members of the following groups:

- Woodworkers, whether professional or not, who would like to expand their minds on the question of kitchen design, the culture of remodeling, materials and techniques used in kitchens
- Homeowners with some woodworking and home-renovation skills who would like to remodel their own kitchen, including building their own cabinets
- Homeowners who want a deeper understanding of what goes into a thoughtful kitchen remodel done by professionals
- Homeowners and others (who may not own a home) looking for design inspiration and unconventional, non-consumerist ways of thinking about kitchen design and remodeling.

I offer one method of building cabinets – the one I use regularly, which is a hybrid of methods learned while I worked in others' shops with many of my own additions. There are lots of books on kitchen design and cabinet building, as well as videos with instruction in how to build doors, drawers and other cabinet parts. I see no reason to replicate much of that material here in an effort to be comprehensive. Instead, I offer perspective on kitchen remodeling as a cultural phenomenon and driver of often wasteful economic activity, along with ways of thinking about particular aspects of kitchen design that are generally taken for granted.

If you're working on a kitchen in a turn-of-the-20th-century or early 20th-century style, read "Bungalow Kitchens" (Gibbs Smith, 2001) by the late Jane Powell. It's a systematic reference for restoring or building new in the styles that were pop-

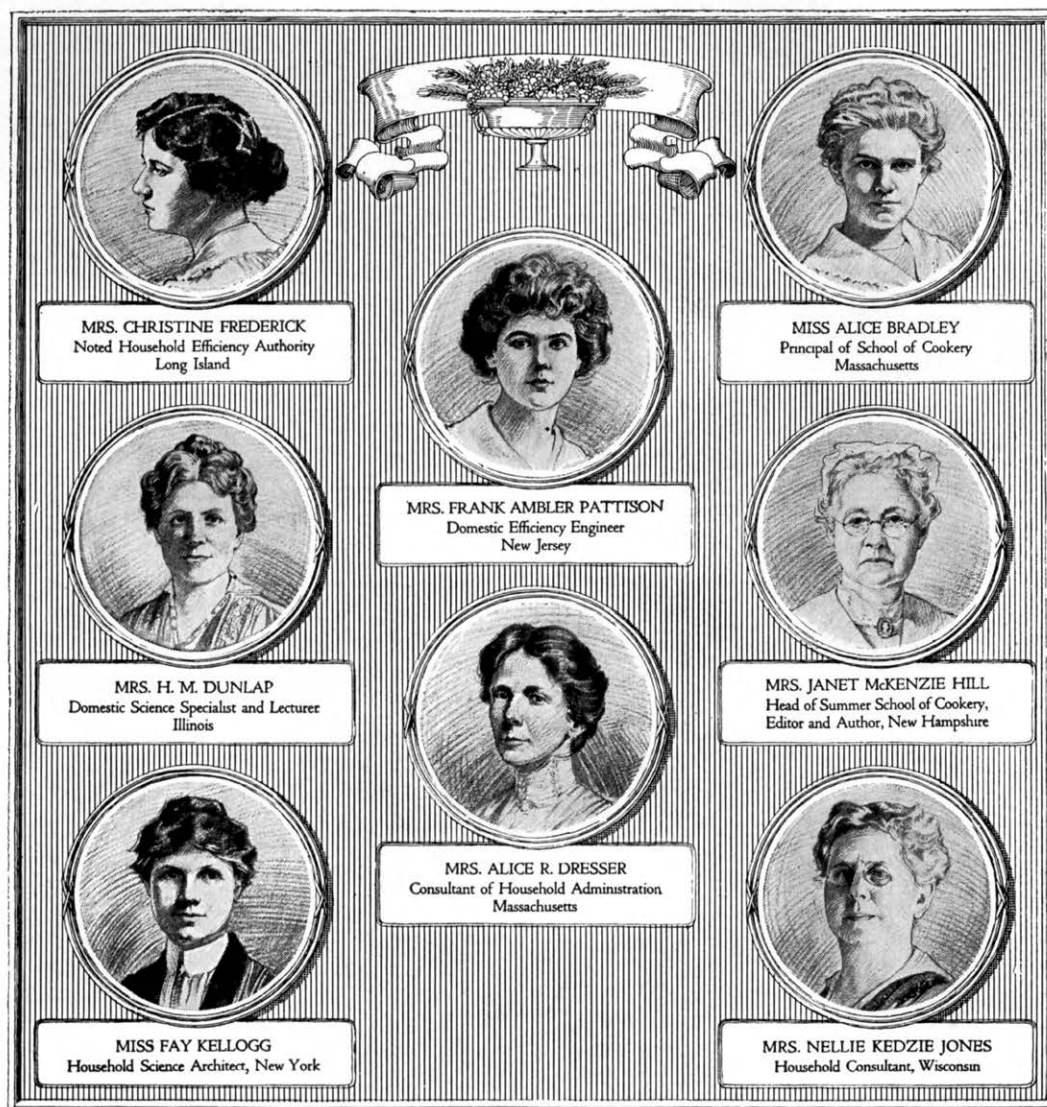
ular from roughly the 1890s through the 1920s. One of Jane's most valuable contributions to the field of period-style kitchen design is her detailed guidance in standards of period authenticity; for every aspect of the job, from appliances to cabinet hardware, she provides options for "compromise"- or "obsessive"-level work.

Another must-have reference is "Kitchen Classics" (Active Interest Media SIP) by Patricia Poore, longtime editor-in-chief of *Old-House Journal*, *Arts & Crafts Homes* and *the Revival* and other period design publications, and one of the United States' foremost authorities on residential period design. "Kitchen Classics" expands the range of period styles, beginning with Colonial and extending through mid-century modern, with big-picture historical context and practical guidance for weighing all sorts of options for period-sensitive kitchen design. (The publication is currently out of print.)

My third recommendation for references on kitchen design is a pair of books by English kitchen designer Johnny Grey. "The Art of Kitchen Design" (Cassell, 1995) and "Kitchen Culture" (Firefly Books, 2004) will get you thinking about the history of kitchens as gathering spaces for family and friends, as well as inspire you with examples of Johnny's unconventional, artistic designs.

When it comes to instruction on building cabinets, there are too many books and other resources available to be worth summarizing in a survey such as this one. As a comprehensive guide to layout, materials and methods for building cabinets of your own, I can't recommend any book more highly than Jim Tolpin's "Building Traditional Kitchen Cabinets" (Taunton, 2006).

# HOOSIER - MANUFACTURING - COMPANY



*Hoosier's Council of Kitchen Scientists  
That Aids You Every Day Through the Hoosier  
Kitchen Cabinet*

**Kitchen scientists.** From the Hoosier Manufacturing Company's 1918 catalog, "You and Your Kitchen."

COURTESY OF HENRY COUNTY HISTORICAL SOCIETY, NEW CASTLE, IND.

# Introduction

**A**mong woodworkers, kitchen cabinets are the poor step-sister of the furniture world – the homely one with a sixth-grade education who processes fish for a living and always seems to have that smell.

“He builds cabinets,” sniffed one of my wood-working friends, referring to an acquaintance a few years back. The statement was nowhere near as straightforward as those three simple words might suggest. He spoke with a pained expression, lowering his voice to a near-whisper when he got to “cabinets.” Apparently this was some kind of shameful secret; building cabinets made the acquaintance – well, you know...not a real woodworker.

“Why would I want to build plywood boxes when I could be building 18th-century highboys?” remarked another woodworking friend, this time in the late 1990s. The question was rhetorical, more a way of announcing that he’d broken into the East Coast market for period Americana and thereby escaped the obscurity of the rural workshop where he’d spent years building cabinets, millwork and furniture for his regional market.

Kitchen cabinets are the Nestlé’s Chunky Bar to the highboys’ Godiva signature truffle – a species of work beneath those with higher skills and refined taste.

This snobbery doesn’t just stem from an abhorrence of sheet goods joined with biscuits or Domino

fasteners and screws. It also reflects the residential kitchen’s longstanding identity as a woman’s realm. When it comes to work done by men outside of the home versus that done by women inside, the outside world, in public view, wins every time.

There’s no real controversy in this claim, at least as it applies to much of Europe and North America during the 19th and 20th centuries. In middle-class homes of the 19th century, especially that century’s early years, kitchen work was typically done by servants; migration from rural areas to cities in response to industrialized production and changing markets had translated to plentiful domestic help. For women of the working class it was common to combine meals and lodging with employment in the homes where they cooked, cleaned, laundered clothes and tended fires.

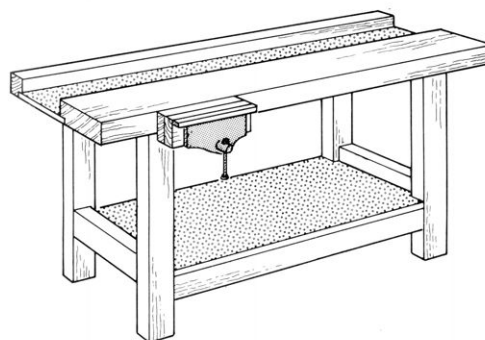
But as factories proliferated, demanding more and more workers, servants began to leave their employers’ homes. As some explained to family members and friends, factory work, however hard or monotonous, was vastly preferable to domestic work because it came with boundaries that too many housewives refused to acknowledge. There was an end to the workday, whereas domestic workers could be called on at any time, day or night, and bore the brunt of their employers’ bad moods. “A man knows what he wants, and doesn’t go beyond it,” wrote one young woman who had gone to work in a jute mill, “but

a woman never knows what she wants, and sort of bosses you everlastingly... I tell every girl I know, 'Whatever you do, don't go into service. You'll always be prisoners and always looked down on.'"<sup>1</sup> I wouldn't use this sexist quote to illustrate the flight of domestic servants to factories were it not typical of the sentiments expressed by many of the writer's contemporaries.

When servant help became hard to come by, middle-class women were forced to resume cooking and cleaning for their families – tasks that had now become not just low-status, thanks to their long association with women of the working class, but completely unfamiliar. Imagine being expected to make a dovetailed drawer when you have never used a handsaw. That's a reasonable comparison to finding yourself responsible for cooking a Sunday roast when you've never handled raw meat, let alone tended a wood-burning oven.

Many of these women newly bereft of domestic aid were educated and read widely. Through lectures and articles in women's magazines they found a champion in Catharine Beecher and her sister, Harriet Beecher Stowe, who wrote "Uncle Tom's Cabin"; the sisters came from a family of social reformers led by their father, New England Congregationalist minister Lyman Beecher. Motivated by a mission to educate women and improve the conditions in America's homes, the sisters leveraged the higher value placed on men's work in the fields of business, government and education to elevate the standing of work done by women in the home. How? Simply by pointing out that domestic labor, so easily taken for granted when it was done by cheap hired help, formed the foundation of all work recognized as valuable, not just to the family, but to local commerce, the state and even the nation.

In the preface to their 1869 book "The American Woman's Home," the Beecher sisters traced the problems faced by middle-class women to the lack of appreciation for "the honor and duties of the family state."<sup>2</sup> They had an insightful fix. Instead of assuming that women should be born knowing how to clean and boil a calf's head, prepare quince jelly or bake bread from scratch and berating them when they proved unable to do these jobs proficiently, they



**Bench basics.** The benches I grew up with were simple affairs like this one from Robert Wearing's book "The Solution at Hand."



**From the past.** A simple and solid bench, built to the plan in André-Jacob Roubo's 18th-century "l'Art du menuisier."

would share the latest advice about diet and household management based on research done by experts in Europe and the United States. They fleshed out these principles with methodical instruction for all household tasks, right down to the construction of a hydrostatic couch for the sick, a vessel with a disturbingly similar appearance to that of a coffin.<sup>3</sup>

This wasn't so different from the way Christopher Schwarz spearheaded the elevation of the workbench – in the 1970s and '80s, typically a sturdy table of simple design, fitted with a vise – into a focal point of study, expertise and craft based on research into centuries-old methods that have since garnered international interest.

The bottom line, as the Beecher sisters appreci-



ated, is that any occupation important enough to warrant formal training will be respected; the fact that people must be trained to do it validates its importance.

As the sisters and an ever-larger squadron of kitchen scientists wrote and lectured their way around the country, the building and appliance industries coalesced as major economic forces based on an understanding that the kitchen was a potentially lucrative source of business.<sup>4</sup>

Fast-forward to the 1960s, when the kitchen began to open up to family and friends. Tiny pass-throughs between kitchens and dining rooms morphed into open peninsulas with breakfast bars.

Gradually it became less uncommon for men to participate in everyday family cooking. I witnessed this shift personally. Around 1965 my mother, who did all the cooking in our house when we were little, was hospitalized for a few days with pneumonia. Our father, who worked in public relations, was left taking care of us at the end of the day. He probably took us out for hamburgers at least one night, but the only dinner I actually recall was the one he prepared at home: tuna salad.

There was just one problem with Dad cooking dinner, even allowing for the fact that tuna salad is more a matter of mixing than “cooking.” Like those 19th-century housewives who were clueless about cooking calves’ heads or shopping for sirloin, Dad did not know how to make a meal. He managed to find the can opener and a mixing bowl and spoon. He knew that tuna salad was made with mayonnaise; salt and pepper were also good guesses. But after mixing those basics together he said he really didn’t know how to make the dish, so he was going to add a little of every seasoning in the kitchen. In went a spoonful of curry powder, along with some ketchup and mustard. Soy sauce couldn’t hurt; nor could Worcestershire. Tabasco would add some zing, and he followed those with a dash of every herb and spice in the rack. It was the best tuna salad I’d ever tasted.

But by the late ’70s, our father had become an accomplished cook. After being introduced to a less gendered division of household tasks by the hippies who came to live with us circa 1968, he’d start-

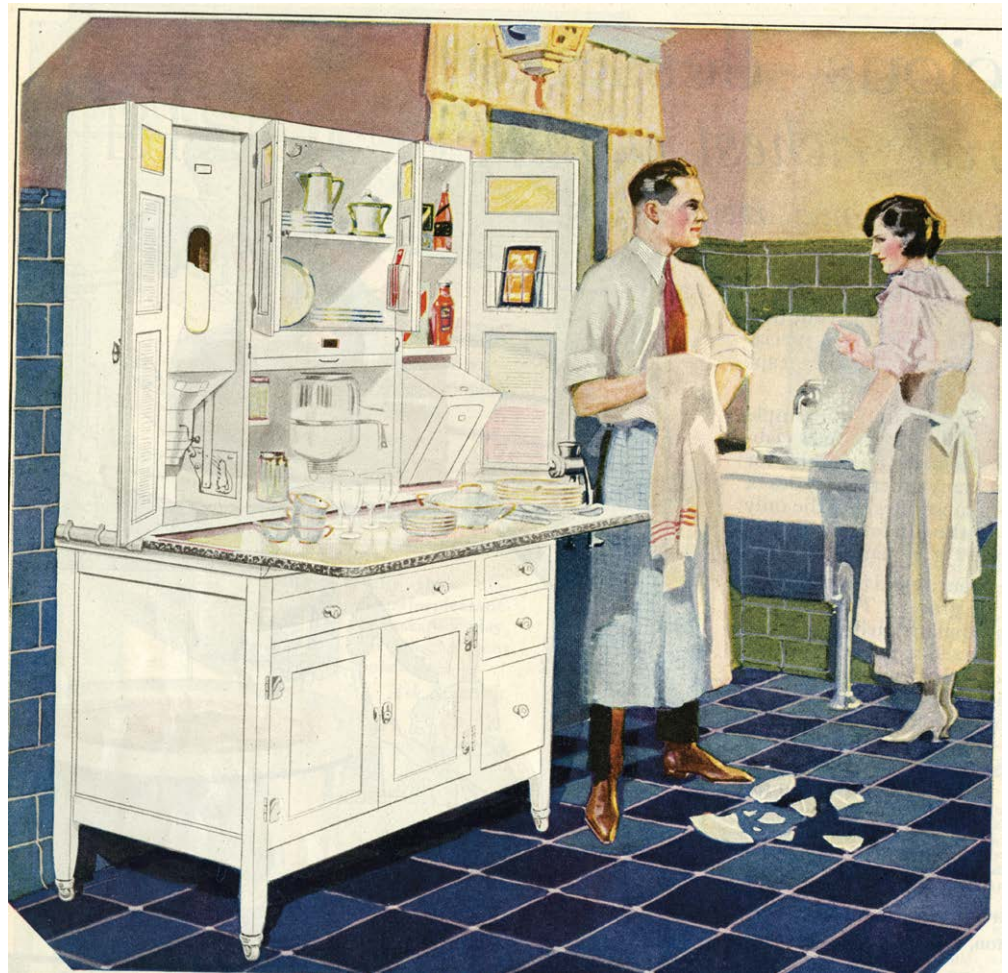
ed to bake bread and make churned ice cream from scratch. When our parents split up and our mother took my sister and me to live in England, he bought a series of international cookbooks published by Time-Life. I remember on visits home during summer breaks his pulling gorgeous loaves of yeasty bread from the oven, parchment collars supporting their lofty sides. Our mother had bought an ancient butcher’s block for \$10 a year or two earlier. It was 2’ thick, made of hard maple blocks set vertically, their edges locked together with dovetails. She’d spent weeks sanding out the deep scores and gouges in its 3’-square end-grain top. It was the centerpiece of the kitchen, where Dad chopped piles of vegetables to steam with fresh herbs and serve on brown rice. Cleaning up the kitchen after dinner – washing dishes by hand, taking kitchen scraps out to the compost pile and thoroughly sweeping the floor to control the population of cockroaches that would otherwise invade any south Florida home once the “exterminator” had been cancelled – had become one of his satisfying, self-imposed rituals.

The 1990s saw a new development: the kitchen as a sociable space completely open to the public areas of the house. Most influential in this shift was kitchen designer Johnny Grey, nephew of British cookery author Elizabeth David. Trained as an architect, Grey was brought up visiting his aunt’s kitchen and began writing about a phenomenon that many had experienced but not bothered to analyze: When guests come over, everyone wants to be in the kitchen. Grey’s 1994 book, “The Art of Kitchen Design” (Cassell), provided a history of kitchens that restored the kitchen’s centuries-long role as center of the home and relegated the shrouded kitchen of the 19th and 20th centuries to an anomalous historical blip.

Most furniture makers who build cabinets do so for the same reason as our predecessors built cofins in addition to tables and chairs: They offer a source of income that helps even out the road between freestanding furniture commissions. It’s easy to look down on built-ins when your livelihood doesn’t depend on woodworking, or when you are retired, your woodworking venture is subsidized

**Kitchen bliss.** Advertisement for Sellers cabinets in *Ladies' Home Journal*, June 1921. The accompanying text reads, "Have you pictured it in your mind, June Bride – that first tasty dinner in the new home? ... How anxiously you will prepare the good things– on your snow-white Sellers Mastercraft – the housekeeper's unfailing friend.... And then, after it is over, hubby will follow you to the kitchen to help you with the dishes. What matter a few smashed pieces?"

COURTESY OF MANUSCRIPTS SECTION,  
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by a spouse's income or you've tapped into a vein of market popularity. Not everyone is so fortunate.

How did the lowly kitchen cabinet become a friend to many who trained as furniture makers, imagining we'd spend our days hand cutting dovetails and French polishing meticulously inlaid cutlery canteens? The answer has as much to do with publishing, advertising and banking as with wood and tools. Ultimately it boils down to the commodification of the home.

Home ownership today is light years away from that of 200, 100 or even 70 years ago, when the people who owned what's now my acre of semi-rural land cut down some trees, dug up some rocks and built themselves a simple board-and-batten-sided cabin worthy of Snuffy Smith. Today a massive industry surrounds home ownership, from Realtors (that term is trademarked and officially requires

an upper-case "R") and appraisers to title companies, banks and building inspectors. There has been a radical shift over the past century in how many of us think of our homes: A home no longer simply represents shelter and a central base for family. It's the largest financial investment most of us will ever make – one that, with luck, may increase our wealth at a rate far greater than that of inflation.

As with any investment, we're urged to put ourselves in the hands of expert advisers. And there's an army of them out there. Take the wildly popular hosts of home improvement shows on HGTV – that cast of smiling, perfectly groomed characters eager to instruct you in the magical art of transforming a hovel into an "urban oasis" or liberating yourself from the corporate rat race by hitching a ride on the house-flipping bandwagon. Take the legions of salespeople at home stores, who will gladly guide

you through one cabinet display after another until you're dizzy from over-exposure to CNC-routed fretwork, dedicated mixer cabinets with lift-up stands and decorative wine racks. Take the web-based magazines with their daily examples of designer ideas to "steal" and big-name-brand "hacks" or that modern means to keep yourself forever in debt, the home equity loan, advertisements for which have long encouraged us to treat our houses as ATMs.

To be a contemporary homeowner is to feel an almost moral obligation to spend money on your house. Never mind how your friends may judge your taste on seeing you still have that Laura Ashley Dandelion wallpaper from 1983; there's a sense that if you're not religiously "updating," you may be losing financial ground.

One result of this mindset is that customers are generally more willing to shell out big bucks on something they believe will increase the value of their house than on a piece of freestanding furniture. In some locales, built-in cabinets even fall into a different category in the world of sales tax: "improvements to real estate." People rationalize them as an investment. That artisan-made sideboard? Arguably a frivolous buy in comparison.

Of course, you can only get the value of a kitchen remodel out of a house so many times. Property values in most regions don't increase at anything like the rate that would be necessary to cover the tens of thousands spent on kitchens. And then there's the troublesome fact that new cabinets installed as part of a kitchen update undertaken to help sell a house are routinely ripped out by new homeowners, only to be replaced by something more in line with their own taste. Never mind the so-called green design professional who encourages you to tear out your laminate counters and replace them with a "sustainable" composite incorporating recycled glass (or whatever the "green" product du jour may be). The preoccupation with updating results in a mind-boggling amount of waste. These are real-world caveats that some of us point out to prospective clients as we urge them to think about what they really want and need, as distinct from what other experts (and friends, and relatives) are telling them they should want.

That said, who doesn't occasionally long for a change of scene, a shift in tone? There are ways to rework your kitchen without spending a fortune or adding significantly to your local landfill. The first requirement is simply to think. In this process, context, broadly understood, is your friend – where you are in life, what resources you have access to in terms of money, interesting materials, or time, the architectural style of your home and so forth. For the past two decades I have made my living largely by working with clients turning limitations into creative opportunities. This book offers a variety of examples, in addition to guidance in designing and furnishing the kitchen.

I embarked on my woodworking career at the age of 21, expecting to support myself by designing and building custom furniture. I'd completed the first year of a City and Guilds of London Certificate in Furniture Craft and was looking for a workshop with living accommodations that would be affordable to someone who wasn't yet making minimum wage. In the course of this search I ended up working for Roy Griffiths, an artist who had started a design-build kitchen cabinet company called Crosskeys Joinery in Wisbech, Cambridgeshire. Roy quickly disabused me of the romantic notions I'd had about making a living by traditional handcraft. In Roy's shop, good design, efficient fabrication and a high-quality final product reigned supreme. Although we made our cabinets with wooden face frames, drawers and doors, and hung the doors on solid-drawn brass butt hinges, we built our carcasses from melamine-coated sheet goods, the parts joined together with shop-made plywood splines. Toe kicks were recessed. Doors and drawers were inset, with drawers running on mechanical slides. Working for Roy was a valuable education in the realities of running a business. When the cabinets for a particular kitchen were finished, fitters delivered them to the jobsite. I never saw my work again.

Roy's business placed little emphasis on the satisfactions of craft for his employees, though he made up for this in various ways – by encouraging a respectful and friendly atmosphere, expressing his appreciation and paying everyone on time.



In my next woodworking job, these values were shuffled around somewhat. This time I was working for a country workshop run by a pair of business partners. They made kitchen cabinets, but custom furniture commissions made up a hefty percentage of their business. They were no less focused on the bottom line – a necessity in any business – but their operation was smaller than Roy’s, and traditional methods of joinery and finishing were central to their brand.

In this shop we built kitchen casework out of panels made by gluing together tongue-and-groove pine made for subflooring, an attractive material that allowed the owners of the business to describe the cabinets honestly as being made from solid wood. We built our drawers with hand-cut dovetails at the front and fitted them on wooden runners with kickers supported by back rails let into the cabinet sides. Here, as at Roy’s business, toe kicks for kitchen cabinets were recessed. Doors and drawers were inset, with doors hung on butt hinges. This experience provided me with further lessons in running a professional shop.

My third experience of working in someone else’s shop was at a company in Vermont that built striking contemporary furniture, primarily for offices on the East Coast. I don’t remember any kitchen cabinetry being built while I worked there, but the casework – bookcases, desks, credenzas – was built using methods that were readily transferable to kitchens. We built case goods out of MDF panels covered with gorgeous architectural veneers and edges finished with heat-sensitive veneer banding. We joined the parts with biscuits (my first experience of biscuit joinery) and wood screws. When I started working there, we used biscuits for drawer joinery, though the foreman added router-cut dovetails to the repertoire soon after. We hung the drawers on Accuride full-extension ball-bearing slides and used European hinges for doors (my first experience of those, as well). All of our doors and drawers were full overlay, with precise architect-specified margins between them.

I mention these three shops by way of illustrating the variety of materials and methods appropriate to building cabinets. These are just three examples in

a field that supports and also benefits from the development of ever-changing equipment and joinery systems, adhesives and composite materials. There is no “right” way in this work; what’s best for you (and if you’re a professional, your clients) may strike your neighbor as laughably inefficient. My current method for building basic kitchen cabinetry, which draws on lessons learned from all of the shops where I’ve worked and goes several steps further in terms of materials and techniques, is outlined in Chapter 3. It combines materials and techniques from the world of traditional furniture making with some conventional (and some less conventional) methods from the universe of kitchen cabinet shops and allows for enormous variations in style, in addition to being adaptable to built-ins for other rooms such as offices, living rooms and baths.

And to those who consider “cabinets” an inferior species of work, I say enjoy building your Shaker side tables, Federal hunt boards or sculpted credenzas. I’ve learned to relish the diversity of styles and construction methods I’m fortunate to work with as someone who mixes kitchens with freestanding furniture commissions. It’s an honor to work with people who trust that I will listen to their ideas and create a room where they will spend time preparing meals every day.

## **A Trio of Influences on my Thinking About Kitchens**

**1978, Newington Green, London**

My boyfriend and I moved to a post-war working-class housing project where the flats had been condemned, at least temporarily, as unfit for habitation. Thanks to a housing co-op, we were allowed to rent one of the flats for several pounds a week, the only place we could afford. The flat would have been considered wretched by middle-class standards, but we were thrilled to have somewhere to live.

The kitchen intrigued me. It was a small room, I’d say no more than 6' wide (including the space occupied by cabinets) by 10' long, with a few built-in cabinets – extremely simple affairs made of plywood with plywood doors and drawer faces. There

was a small stove – tiny by American standards – and a sink with a drainboard. Most fascinating of all, the room was designed to be used without a fridge. A cupboard on the exterior wall was fitted with shelves and had a screened opening directly to the walkway outdoors – a larder! For most of the year, at least in those days, the temperature outside stayed within a relatively small range; in winter it didn't go much below freezing, and in summer it rarely got above the low 80s. A masonry building with concrete floors and walls stayed cool enough to store fresh vegetables, eggs and cheese for two or three days. Storing milk was not a problem; milkmen still routinely delivered bottles to the doorstep. We didn't worry about keeping beer cold; no one seemed to have beer at home – that was what pubs were for. Nor did we worry about keeping ice cream on hand; we bought our Wall's Cornetto at the corner shop and ate it while sitting on a park bench enjoying a rare bit of sun.

#### **1996, Bloomington, Ind.**

I stopped by a jobsite in town to visit a carpenter friend. He was part of a crew working on the restoration of a miniaturized Second Empire-style mansion built by a tinsmith in the late 19th century. The job included excavating part of a crawl space to make it deep enough for modern mechanicals, but the opening and existing headroom were too tight to accommodate any large power equipment. As a result, my friend and his fellow carpenters were digging the subsoil out by hand and removing it by the bucketful passed from one man to the next.

I was stunned. It was the last decade of the 20th century and we were in an economically thriving city in the United States. Did people really still work in such seemingly medieval ways?

As I thought about the bucket crew over the next

few days, it occurred to me that efficiency is relative. Perhaps a different contractor would have enlarged the opening and excavated the nearby ground to create an opening large enough for heavy equipment. But that would have increased the disruption of the site and might have required adding a support beam to the wall above the crawlspace opening, in addition to more work to put the side yard back together. Compounding the potential complexity, the work was taking place on a narrow lot with very limited space between the clients' house and the neighbor's.

After working in cabinet shops where the emphasis was as much on efficiency as on high standards, it hit me that in some circumstances, doing things step-by-step the old-fashioned way might in fact be most efficient.

#### **1996, Greene County, Ind.**

I drove out to the countryside on a hot summer day to see another house where my carpenter friend was part of a crew working on the restoration of a Civil War-era I-house. As he took me into the kitchen, which was nearly complete, I was transfixed by the sight of a tall, narrow, painted cabinet. It had a single door – a simple frame and flat panel – and was hung on brass butt hinges inset in a face frame.

The cabinet shouldn't have struck me as special. I'd spent several years making similar doors in English shops, then later in the shop I'd shared with my former husband when we ran our own business. But I recognized that we were relatively quixotic in a local market dominated by slab-built furniture and kitchens with raised-panel doors; my eyes were scarred by the tyranny of red-oak-everything I saw in new construction. This cabinet was a revelation: There really could be alternatives to the prevailing "professional standards" of design and construction.







# 1

## What is Custom Cabinetry?

The word “custom” gets stuck to virtually anything these days, often as nothing more than a marketing device to enhance a product’s cachet. What, for example, is custom drywall? Sure, drywall can be finished in a variety of textures, but that variety has been part and parcel of the mudder’s art since drywall became North America’s go-to wall surface in the mid-20th century. This historical fact has not

kept drywall businesses around the country from incorporating “custom” into their names. Custom running shoes? Those you can order online, selecting your preferences for lace color, tread and decorative top patterns from a wide variety of offerings. In some cases you can even upload your own images and patterns. It seems you can customize practically anything today, from candy and candy wrappers to underwear and toilet tissue – even condoms.

All such uses of “custom” are legit based on the widespread understanding of the word, which “Langenscheidt’s New College Merriam-Webster English Dictionary” (Langenscheidt, 1998) defines as “made according to personal order.” Before the mass production of practically everything we use in our homes and workplaces, it was commonplace to have clothing, toys, tools, household furniture – even houses themselves – and many other objects of daily use made by members of one’s family or community, if not to make them oneself. Since the early 19th century, more and more stuff has been made in factories, where the rigorous application of scientific management and subsequent improvements in efficiency decreased the unit cost by such dramatic orders of magnitude that it no longer made sense to make them any other way. The word “custom,” at least in this sense, came into widespread use against the backdrop of overwhelming standardization resulting from mass production.<sup>5</sup>

Most custom goods you’ll find through internet searches are themselves produced not by individual artisans, but by computerized design and manufacturing, which make changing the color of a shoelace or the logo on a label as simple as pressing a button to switch from blue dye to red, or uploading an image file to a screen.

So much for a basic definition. But if you want to get serious, the examples above are what truly custom-anything is not.

According to the “Oxford English Dictionary” (O.E.D.), our word “custom” is derived from the Latin noun *consuetudo*, a custom or habit, and its related verb *consuescere*, to grow accustomed. Note the implication of a repeated or habitual practice; this is not about one-time transactions.

Until 1681, custom was also a verb; it meant to

frequent a business. One who buys from a business repeatedly (or commissions work) is a custom-er – i.e., one who customs. To be a customer is to be part of a relationship, to do business with someone on more than one visit – perhaps even to make a habit of doing so – in the process of which customer and merchant (or service provider) learn about each other and develop mutual respect.

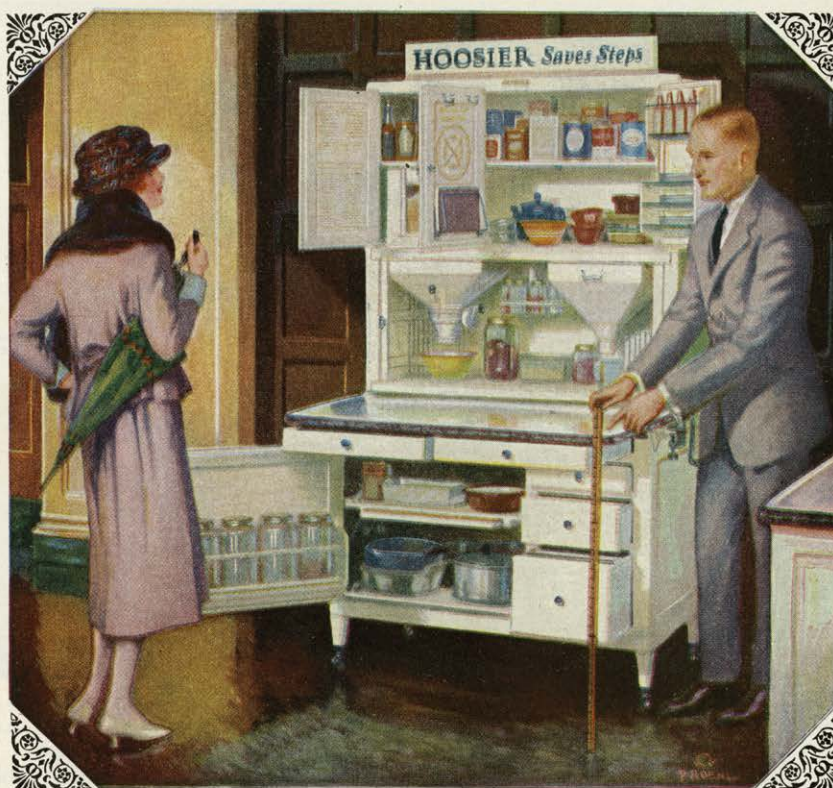
One more dimension of this word is worth mentioning in this excavation of nuance. Our word “custom” is also related to the French “costume,” derived from the same Latin roots. According to the O.E.D., a costume relates to “fashion proper to the time and locality in which a scene [in a play, for example]” is set. In other words, custom work takes into account the context for which it is done. Clearly this is a different universe from the one in which you type your preferences onto a digital order form.

Consider an old house – say, a Craftsman bungalow from the early 1920s. This is not to say that everything made for the house has to match the original millwork, but it should at least be premised on careful observation of existing fabric that defines the place’s character – and I am talking about the particular place, not some vague notion of “Craftsman style” gleaned from HGTV. As with any style (or sub-style), Craftsman was expressed in widely varied ways. Even if you decide to build something completely different from what was there originally, it’s important that you open your eyes and think about what’s around you, rather than simply imposing your ego. Sometimes this entails seeking out precedent for some detail you’d like to include; sometimes it means crafting a narrative based on available, relevant evidence, to provide a rationale for your design.

Furthermore, as with costuming or custom clothing, custom cabinetry is made to fit. Whether or not it is actually attached to the walls, floor or ceiling, it is sized with its destination in mind, not built to standard dimensions.

Beyond dimensions, custom cabinetry is customarily shaped to conform to irregularities in its surroundings by means of a process called scribing. More on this in Chapter 3.

Finally, custom cabinetry should be made to serve



## “Yes, Madam, We Have the HOOSIER in Your Height”

**How high?** Hoosier Manufacturing Company advertisement from *Ladies' Home Journal*, 1922.

the needs of its users. By this definition, incorporating a wine rack into a set of kitchen cabinets for a couple of teetotalers, as one respected designer in my town proposed to do several years ago, is not custom work; nor is designing cabinets with a counter height of 36" when your client is 6'7".

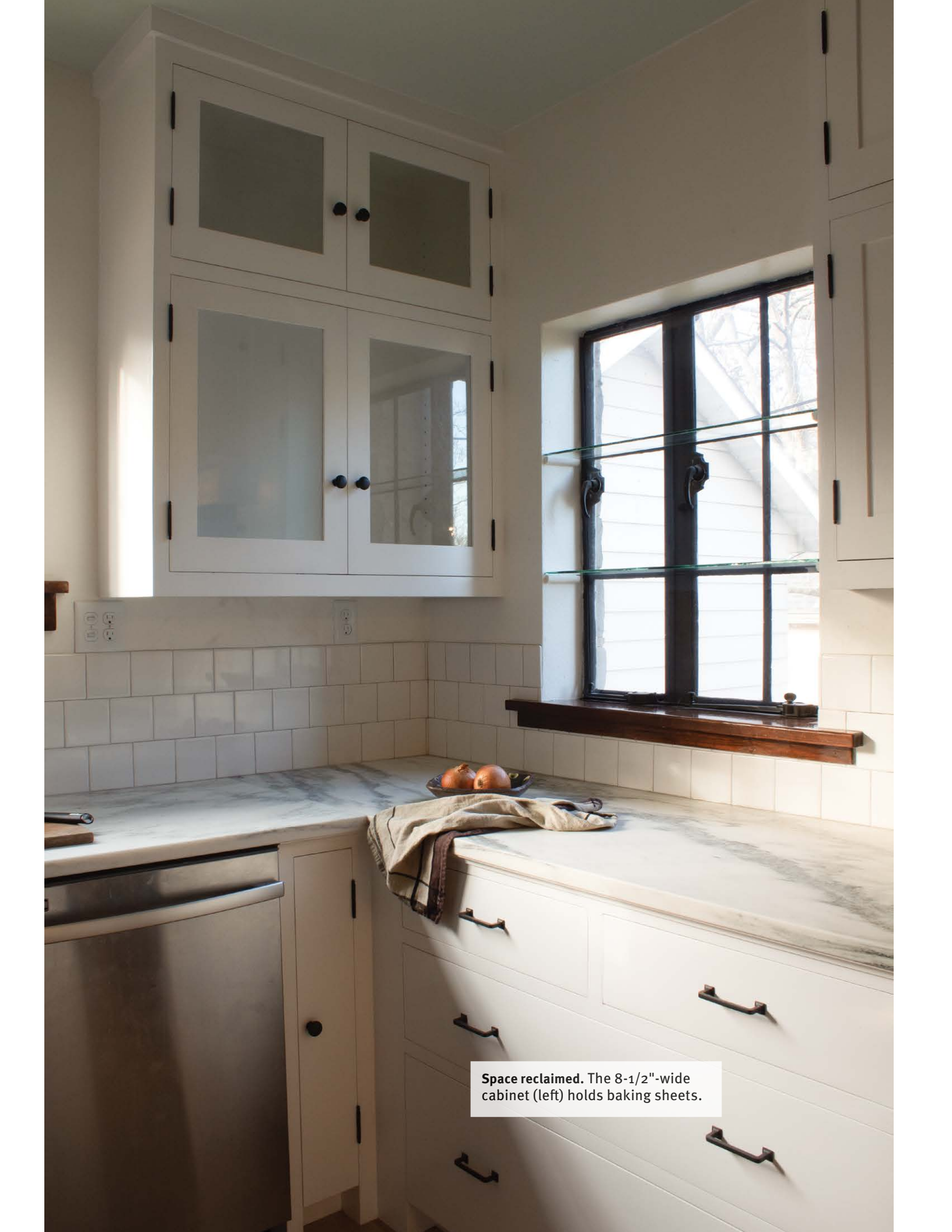
At this point you may think I am arguing for a definition of custom work so exclusive that few would be qualified to use the word. You may also infer that custom work is only for the wealthy.

Neither is true. The understanding of custom work elaborated here has deep roots in history and encompasses work done for family, love or barter. The level of care involved in genuinely custom work has made “custom” a buzzword for marketers only thanks to our contemporary backdrop of near-uni-

versal standardization. While such care takes time, close attention to a customer’s particular needs and preferences, along with details of the context for which you are working, can result in a job that costs less than some products that are not custom made.

How is this possible? Budget is a critical dimension of context. To use my own business as an example, as long as a customer’s budget is within the broad realm of possibility based on my experience (I have kept detailed records of job costs for the past 25 years), I can tailor my design for a dining table, sideboard or kitchen accordingly. While some see custom work as an opportunity to inflate their charges, others (I am one of these) want our work to be affordable to people in our own tax bracket.





**Space reclaimed.** The 8-1/2"-wide cabinet (left) holds baking sheets.

**Shared structural elements maximize usable space.**  
I combined the sink and trash cabinets in a single unit to maximize usable space by having them share the stile of the divider face frame.



### *Case Study 1.1*

## **A Truly Custom Kitchen**

A recent kitchen commission of mine offers a good example of what I call custom work. The kitchen is relatively small (approximately 10-1/2' x 11'), and the clients were intent on utilizing the space well while keeping a clean, open look. The original 1920s kitchen had been completely remodeled in the 1990s with new cabinets in cherry, full-overlay doors and drawers, all built in standard sizes. Standard sizes were not in sync with the kitchen's dimensions, so some impractical compromises had been made.





**More waste of space, now with claustrophobia-inducing extras.** The dishwasher and fridge wall before work commenced.

On the east wall, the trim for the doorway to the pantry allowed for a cabinet depth of just 16". Because the previous homeowners wanted the stove to be on this wall, they used a 45° cabinet that went from 12" to 24" deep on the right of the stove, with another on the left. The cabinets wasted a lot of space and loudly announced “compromise.” On the opposite wall, the space between the dishwasher and its neighboring cabinet was filled with a whopping 8"-wide filler strip.

When you build your own cabinets (or build for others), you can make them fit the space. No more space-wasting filler strips or purportedly ingenious pull-outs for condiments that promise more usable space than they deliver; no more 45° corner cabinets that seem brilliant but actually waste a shocking

amount of cubic footage due to their tiny openings.

Designing cabinetry for a kitchen is an exercise in weighing priorities, budget and available materials – in other words, a puzzle. In my work, aesthetics, too, play an important part; I am often designing built-ins for old houses, and matching the proportions of original millwork.

Only three of the base cabinets in this newly remodeled kitchen are a standard 24" deep. One is the sink cabinet, which has a flanking section with a pullout for trash and recyclables.

The second cabinet of standard depth is an 8-1/2"-wide cabinet for baking sheets; the clients decided they wanted it after protracted discussion of pros and cons. Considering that it replaces the 8"-wide filler strip in the kitchen's previous iteration,



**A classic example of space-wasting layout.** The east wall of Nandini Gupta and Rick Harbaugh's 1990s kitchen.

it would have been hard to argue that it was not a practical use of the available space.

The third standard-depth base cabinet is a set of large drawers to the left of the stove for silverware, kitchen utensils, pots and pans etc.

The remaining two base cabinets are anomalous. One is a 19-1/2"-deep peninsula cabinet to store bakeware, potholders and so on.

Why 19-1/2"? We wanted to keep the cabinet as shallow as possible, to avoid encroaching on the dining room. At the same time, we wanted the drawers to be as capacious as possible. My preference is for Blum Tandem drawer slides, which come in 75mm (3") increments. The drawer faces are inset, so in principle I could have used an 18" slide for a 19"-deep cabinet (allowing 18" for the slide, 1/4" for the

plywood cabinet back, and 3/4" for the applied drawer face). However, the slide lengths are nominal; I learned the hard way that the actual slide length is about 1/2" greater than the stated size. Hence the cabinet depth of 19-1/2".

Most of the cabinets in this kitchen, uppers and lowers, have face frames, doors and drawer faces that finish at 1" thick for stability. But I made the face frame and drawer faces for each of the final two base cabinets 3/4" thick to maximize the usable depth.

The final base cabinet is made to fit on the east wall, where the door trim begins just over 16" from the corner. This cabinet is 16" deep. Knowing that my clients are serious about utilizing the available space, I suggested that we use ball bearing slides here. Why? The longest Tandem slide that would fit (without excavating 1/2" from the plaster wall behind the cabinet, which the contractor was loathe to do) is 12" once you factor in the 75mm increments and the 1" sum of the drawer face plus cabinet back. (No doubt some bright spark will suggest dispensing with the cabinet back, but I have learned that a well-fitted back is important in discouraging varmints from easy access to a cozy nest filled with a ready supply of edibles. Although many rodents are capable of chewing through 1/4" plywood if they are highly motivated or desperate, its presence is at least a deterrent – another gem I have learned from experience.) The ball bearing slides I use come in 2" increments, which meant we could have drawers 14" deep. Two inches may sound insignificant, but when you consider that the interior depth (front to back) of a 12" drawer with 1/2"-thick sides, front and back is 11", versus 13" for a drawer that's 14" deep, and multiply this 2" difference by the cabinet's height and width, you're talking about roughly a cubic foot of potential space. Just as significant is the question of what the clients may wish to store; many kitchen items are more than 11" but less than 13" deep, which can mean the difference between those items fitting where you want them or having to store them in a less convenient location.

At this point, if you're paying attention, you may have some questions, so let me answer them.



**Liberated from convention.** This peninsula cabinet is a non-standard 19-1/2" deep to better fit the space.

*1. Why not move the doorway over a couple of inches?*

If this were your own home, you could certainly do so. For that matter, perhaps your customers would be game. But in this case, other important considerations were in play – one, an adjacent bathroom on the other side of the doorway, which militated against moving the doorway; two, the clients' desire to contain costs; and three, the reality that the clients were out of the country while we were remodeling their kitchen. Although we kept in touch and sent photographic updates, in addition to asking their opinion on critical decisions, there is a limit to such communication. Deadlines, budgetary constraints and the demands of our own professional schedules all argued for working within the existing limits of the basic jobsite.

*2. Why not make some of the drawer faces full-overlay?*

Doing so would have screamed "compromise," not to mention it would encroach on the adjacent door trim.

*3. If you really cared about maximizing useful space you should have dispensed with face frames on these particular cabinets.*

You can do this in your own kitchen if you like, but I wanted to keep the cabinetry looking as intentional and cohesive as possible.

*4. Why not make your own wooden drawer slides? Then you could make the drawers as shallow or deep as you wanted.*

Please see above for discussion of budgetary constraints, and let me add that full-extension ball bearing slides are a pleasure to use in a kitchen.

In our first phone call, these customers made two goals clear. First, while they didn't want to be wasteful by getting rid of their perfectly usable cabinets, they did want better traffic flow and more practical storage. Second, while they appreciate the historic character of their home, the sharp division between the kitchen and dining room did not serve their three-generation family well. Their concern to avoid waste and their respect for the historic character of their house spoke to me. These people were not just following design trends, which would typically dictate removal of the entire wall between the kitchen and dining room to create a single space.

The city's historical survey lists the house as a Colonial Revival built circa 1930, which might mean anywhere from, say 1923 to 1934 (though my money would be on 1925-30). The exterior is limestone; a pair of elegant stone columns support the roof of the porch at the entry. Inside, public rooms are spacious and light, with original oak floors (sanded and refinished to their natural pale color), lightly textured plaster and metal casement windows. The doorways are cased with dark-stained trim and a backband moulding. The baseboards are plain, with an eased top edge. The windows are recessed in plastered openings without trim. The effect is a warm, minimalist "black and white."

After several meetings, we had a plan. Here's a summary.





## 1. Respect the Windows

Windows let in natural light and define architectural character. The customers would have preferred that this window come down lower than it does; its height above the counter is probably due to the original sink, which almost certainly had an integral backsplash that came up to the underside of the trim.

The position of everything on the west wall was determined by the original kitchen-sink window. In the original architect's drawing, the sink and window were centered on the west wall, but a previous homeowner added a bump-out to augment the half-bath with a shower. The new sink, a narrow apron model, will be centered on this window. After discussing the feasibility of reclaiming that bathroom space for the kitchen and deciding that doing so would be more costly and complicated than desirable, our clients decided to work with the existing footprint.

**Windows are precious assets.** The position of everything on the west wall was determined by the original window.



**Seamless connection.** Aaron McDaniel painstakingly toothed the new rift-sawn and quartersawn oak boards for the kitchen into the existing dining room floor to minimize the visibility between old and new. (This image was shot before the floors were sanded and finished.) The ceiling fixture in the dining room is original to the house. A pair of matching sconces are on the north wall.

## 2. Regard the Home's Historic Character as a Guide

The kitchen previously had a swinging door into the dining room. Now there would be a cased opening about 8' wide. Kitchens in homes of this vintage were not open to adjacent public rooms; they were workspaces for servants or the woman of the house. We decided to use the original cased opening between the dining room's south wall and the entry hall as a precedent for the design of this one; the remaining sections of the wall would honor the original division between them, while preserving valuable space for storage on the kitchen side.

### 3. Listen to the Customer

It seems obvious, but too few builders do it: Listen to your customers. Respond with pros and cons so they can make informed decisions. Then do what they want – because it's their house, not yours.

I usually urge people to consider putting their trash can in the sink base instead of using precious cabinet space to house garbage, but many prefer to have a dedicated space. These customers wanted a pull-out that would house trash and recyclables and could be opened hands-free.

Fitting the sink and a trash pull-out into the limited available space while centering the sink on the window took careful planning. For this job, the most functional and cost-effective solution for trash was a ready-made unit by Rev-a-Shelf.

After searching for taller cans to avoid wasting vertical space (none of those available fit the width we had to work with), I broached the possibility of adding a drawer above and provided an estimate of cost. The cabinet now includes that drawer.

**Whose kitchen is it?** My preference is to put the trash can in the sink base; my customers preferred a dedicated cabinet space for trash and recyclables.







## 4. Enjoy Your Freedom

Custom work liberates you from the tyranny of standard dimensions. Sure, you still have to work with the specifications required for appliances, plumbing fixtures etc., but apart from these, you can size your cabinets to fit the space and your (or your customers') preferences. In this kitchen, the upper cabinet to the right of the sink is about 14" deep, to accommodate extra-large dinner plates behind 1"-thick inset doors.

Because the peninsula cabinet is not an authentic early-20th-century feature, it was in the "con" column of my list of pros and cons. But the customers wanted a peninsula; it would be an ideal place for their children to draw or do homework right there with them in the kitchen. We settled on a plan to make the dining room side of the cabinet more dining-room worthy and less kitchen-like in appearance by finishing the end and back. Instead of just plonking cabinet doors onto the peninsula's exposed sides, as many conventional manufacturers do, I designed the end and back panels to extend to the floor, increased the proportions of their rails and stiles so that they would appear more structural, and allowed for the two panels to be mitered at the dining room/

**Sneaky space.** I was aware of the space behind the wall (at far right here) that would go unused unless we added a recessed cabinet accessed from the dining room side. The customers decided against that. Until the builder installed the peninsula cabinet, however, I didn't realize that the area between the jamb of the cased opening and the inside corner of the peninsula (space required for the peninsula cabinet's drawers to bypass the stove and its handles) would accommodate a cabinet about 15" wide by more than 16" deep.

kitchen corner for a seamless look. Finally, instead of topping the peninsula with the same stone as the other counters, we agreed to use solid wood stained to match the house's original trim.

Once the contractor had installed the cabinets, I noticed a chunk of space I hadn't thought about before. I checked with the customers, who agreed it was worth modifying the peninsula's back panel in order to use it.

Now what appears to be the right panel of the peninsula's finished back is a door with adjustable shelves inside. We discussed adding drawers, but they would have increased the cost far more than a single door and would also have made this side of the peninsula look more kitchen-like than the customers preferred.



**Some on-site assembly may be required.** Because the face frame and finished side panel of this upper cabinet for pantry storage would extend down to the counter and up to the ceiling, we didn't install it until after the counter had been fitted. That's the only way to ensure a good fit at the counter.

## 5. Think

The 8-1/2" space between the dishwasher and cabinetry on the north wall used to be occupied by a filler strip. Now it stores baking sheets.

We discussed installing a pull-out unit to store condiments or spices. My experience with these is that they utilize less space than promised; side bars on the shelves make reaching contents relatively inconvenient and restrict the usable width, while the limited adjustability of the shelves further restricts the amount of space available for practical use. These units make sense for some applications, but this was not one of them.

The upper cabinet that would go with the still-unattached face frame (above) has a top section for pantry storage and a lower section that would be left open, housing a microwave. Because the lower sec-

tion was designed to be open, I built it separately in cabinet-grade plywood that does not have a prefinished side. This way it could be painted to match the rest of the cabinet faces. After assembling the two cabinets, I screwed them together through the ceiling of the microwave section for ease of installation.

The cabinet stands across from the fridge, so it is designed to hold the kinds of things used for storing food (storage containers, food bags, wrapping materials) and function as a tea- and coffee-making area, with a drawer for boxes of tea, coffee filters, etc. The shelf above houses the microwave. We discussed whether the microwave should be out or behind doors; given the way this family uses the kitchen, the decision was to leave it in the open, as this corner is not visible from the dining room.



*Details*  
**Bona Fide Custom**



**Use available space.** *What appear to be three static panels at the back of the peninsula are two with a secret storage cabinet behind a touch-latch-operated door.*





**Truly custom details.** *The minimal top trim is scribed to the ceiling.*

*Upper cabinets flanking the stove appear symmetrical, as well as the same depth. The cabinet right of the stove is partially recessed into the wall so that it appears to be the same 4" depth as the spice cabinet left of the stove. Why not make the cabinet 12" deep? For two reasons: First, a deep cabinet for storing spices just ends up being annoying. Most spice containers are less than 2" deep. Storing them more than one-deep means having to rifle through to find what you're looking for. Second, the customers wanted to maximize the diffusion of light from the north window across that wall and into the rest of the room. Keeping this cabinet as shallow as possible does the trick.*

*The shelves in the spice cabinet are 1/4" glass with ground edges, a material that takes up minimal vertical space and is easy to clean.*

*The 12"-deep cabinet on the right makes use of additional depth offered by a recessed alcove that housed the original cookstove. When we discussed whether to increase the cabinet's depth to take advantage of existing space, I pointed out that the cabinet's contents would be a challenge to reach once the stove and adjacent peninsula cabinet were in place. The customers wanted to go ahead anyway; space that's hard to reach can still be worth building to store items used less often, such as holiday glassware.*

*The panel between these upper cabinets conceals the exhaust vent, located in the original recess. Finally, the clients wanted to minimize the protrusion of the stove, so it is installed a few inches into the recess to make it as close as feasible to the depth of the cabinet at its left.*



**Of a piece.** *The back and end panels of this peninsula are mitered where they meet at the outside corner for a smooth, integral look. Mitering is arguably less important when cabinets will be painted, but over time the panels' stiles will experience differential movement, resulting in a difference in plane. A glued and nailed miter prevents that.*







## Techniques

# Build a Simple Island

Including the countertop overhangs, this island would be 102" long by about 40" deep. To keep the cost down, I planned it as an assemblage of basic cabinets that would be screwed to the floor, then pulled together with a back and end panel. In other circumstances I would have made the back and end with solid frame-and-panel construction, mitering the corners for a neat appearance. But plain-sawn red oak beadboard was a far more cost-effective option in this case. I suggested we run it horizontally to avoid any 1980s country associations.

I made the sink base-cum-drawer base and a separate bookcase in my shop. The clients picked them up, along with the beadboard, counter support brackets and other parts, then took them home to finish. Here are the steps I took to put everything together.

### 1. Determine the location

I measured the distance from the nearest adjacent wall to the centerline of the middle window, then measured that distance out from the same wall at the approximate location for the island, then marked the spot with masking tape. The architect had specified a distance of 48" between the edges of the counter that will go on the main wall of built-ins and the counter on the island. The cabinets that would go on the stove wall would be 24" deep, so allowing for a 1" overhang, that meant I needed to measure out from the rear wall  $25" + 48" + 1"$  for the overhang of the island counter, to determine the position of the sink cabinet's front. I marked that, too, on the floor with tape.

### 2. Mark and drill holes for plumbing pipes

Next I marked the centerline of the drain pipe in the cabinet's depth (i.e., front to back), basing my calculations on the position where the front of the cabinet would land. (See Step 1.)

Chuck a hole saw in your drill. The diameter of the hole should be slightly larger than that of the pipe. It's best to avoid making the hole too large, as mice and other pests can squeeze through and gain entry to the cabinet's interior.



**Ready, set, go.** The builder had stubbed in the supply lines and the drain pipe so the drain would be centered on the window. I marked the centerline of the sink base on the cabinet floor using a framing square.



**On target.** If you look closely you'll see the spot where the long line intersects with the short horizontal line, marking the center of the hole for the drain pipe.



**On to the supplies.** Because the drain in this kitchen was going to come up through the floor (and not through a wall behind the sink base), I was able to use the center of the drain as a reference to locate holes for the supply lines.



**Make room for supply lines.** After drilling for the drain, I used a smaller hole saw for the supplies. A lighted drill makes this kind of work so much easier.



**Parallel lines.** Pay attention to any lines in the floor, whether those of floorboards, grout lines between tile or patterns in sheet flooring.



**Through the side.** Sometimes the best way to affix a cabinet is simply to run a screw through the side and into the floor, as in this case.

Tip: Put a scrap of plywood beneath the cabinet in case your drill bit goes a little too enthusiastically through the cabinet floor.

Next I measured from the center of the drain pipe to the center of the cold supply line and marked that spot on the cabinet floor. I repeated this step with the hot supply line, then drilled both holes, using a hole saw of the appropriate diameter.

### 3. Set the sink base

Sherry and I lifted the sink base over the plumbing lines and asked the tile setter to come and guide the cabinet into place, since we couldn't see over the top of the sides into the cabinet. Depending on the kind of pipe, it's important to avoid bending or hitting water supply lines, because they can break.

Once we had set the sink base over the pipes, I measured the distance from the cabinet's back edge to the nearest floorboard joint, making sure the cabinet was parallel with the floor. Few things look worse than a cabinet that's markedly out of alignment with the joints between floorboards or tile.

I drilled and countersunk a couple of holes through each end of the base cabinet to attach it to the floor. The end visible above would be covered by the bookshelf unit. The other end would be hidden by the dishwasher.

### 4. Add the next cabinet(s)

Clamp adjacent cabinets in place to hold them securely while you drill and insert screws. Again, to keep the cost of this job as low as possible, I simply screwed through the back of the bookcase into the end of the sink base. As you can see below, I built the drawer base into the same unit as the sink, to conserve materials; the drawer base is between the sink and the bookcase.

To hide the joint between the sink base and the bookcase, and mark the transition from the working part of the island to the more leisurely end that will greet people coming in from the porch, I had a piece of simple rectangular trim milled. I cut it to length and fastened it with brads.

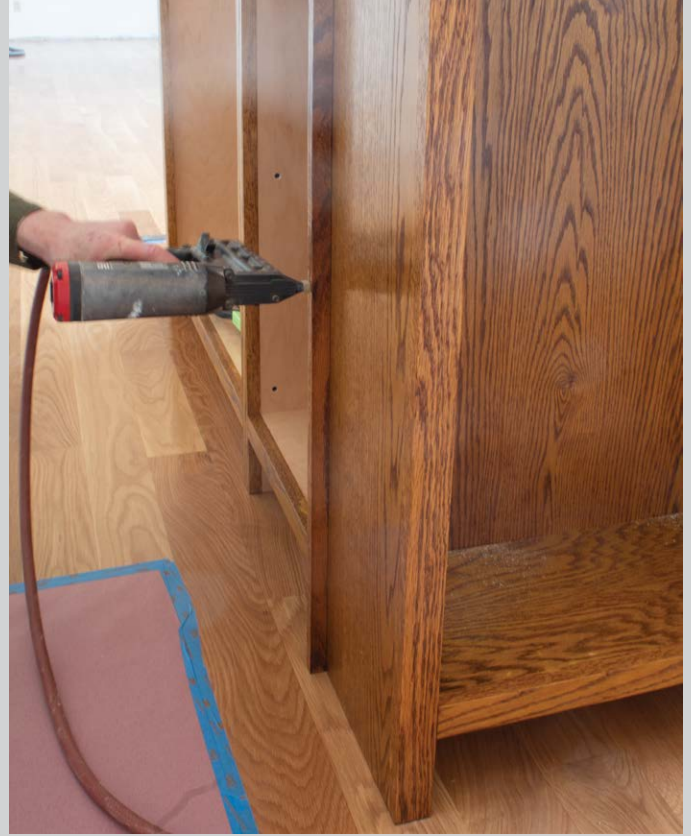
### 5. Dishwasher panel

In an ideal world there would be a wall or another cabinet to hide the dishwasher, but in this case I had





**Building blocks.** Once the sink base was in, I clamped and screwed the other elements of the island to it.



**Easy transition.** I milled square trim to hide the joint between the sink base and the bookcase next to it. On the back of the island I applied a similar-looking trim that I rabbeted to accept the horizontal tongue and groove boards; the trim also does a nice job of concealing those boards' ends.



**Hidden dishwasher.** To make a quick and simple enclosure, I fastened a matching panel to the floor with L brackets, then cut rails to hold the upper end of the panel equidistant from the sink base.



**Parallel lines, again.** A framing square ensures that the dishwasher panel is square to the flooring.



planned to install a panel. I had added a piece of face frame material to the front edge of the panel to make it look like part of the island instead of an afterthought.

Measure the width of the dishwasher and mark it on the floor. In this case I measured 24" from the protruding edge of the face frame, which created a cavity more like 24-1/2" wide. (Obviously if you have protruding trim such as this and allow just 24" between the panel and the sink base, the opening will be too small for the dishwasher to fit.)

To make the front of the dishwasher panel in line with the front of the sink base I measured from the nearest flooring joint to the front of each and marked the position on a piece of masking tape.

I used angle brackets to fasten the panel to the floor. Screw the brackets to the panel first, then to the floor.

I measured the distance from the sink base to the dishwasher panel at the floor, NOT at the top of the panel, because I know from experience that corner brackets like these cannot be counted on to hold things square. To the contrary; they tend to pull things inward at less than 90°.

I cut a piece of 2 x 4 to the measurement I had made at floor level, then wedged it into place at the upper back of the dishwasher cavity. To secure it temporarily, I shot in a couple of 2" brads.

Finally, I drilled into the 2 x 4 spacer from the interior of the sink base and inserted a couple of screws.

## 6. Finish materials tie the parts together

I milled a couple of trim pieces to finish the ends of the beadboard. Each trim piece had a rabbet into which the beadboard would slide; this made for a neat finish, in addition to holding the beadboard tightly against the cabinets. (Remember, there was not a whole lot of solid meat to nail the beadboard onto in this case.)

I cut the first piece of end trim (bottom image, right) to length and fixed it in place with 18-gauge brads. I set the end trim loosely in place at the other end so that I could measure for the length of the beadboard, then cut the beadboard for the back to length and simply laid one piece on top of another, fastening them in place with 22-gauge pins.

Next I cut the beadboard for the dishwasher end panel to length and set it in place. Another rabbeted piece of end trim would conceal the cut-off ends at the front of the dishwasher panel.



**Double check.** A straightedge (in this case, a 4-foot level) ensures that the front edge of the panel is in plane with that of the sink base.



**Ready for action.** After confirming that all the parts were where they should be, I attached the panel to the sink base at its top.



**You can't be too careful.** One final check is always a good idea, this time to ensure the panel was plumb.



**Time for trim.** *Rabbeted end pieces hide the cut ends of the tongue and groove.*



**Rough & ready.** *The trim I made to hold the beadboard in place at the dishwasher panel end is rabbeted in one direction and grooved in the other, to hold both sections neatly. I cut the rabbets and groove on the table saw.*



**Almost there.** *Shims inserted to build out the back of the cabinetry at floor level so that the beadboard would lay flat are still visible here. Final touches will include simple rectangular trim at floor level to conceal these shims and give the beadboard a more finished look.*

#### 7. Support brackets for the counter

My clients had asked the counter supplier whether additional support would be needed for the 12" overhang at the back and dishwasher end of the island. Based on the supplier's recommendation, I made up three very simple brackets that combine speed of assembly (remember: affordability!) with strength and reinforce the house's overall architect-modern take on a barn aesthetic. A Domino tenon joins the vertical and horizontal parts at the rear; the angled brace is glued and held in place with #8 twin-thread screws. I centered the brackets on the beadboard section of the back, drilled through the cabinet backs into the brackets, and inserted #8 twin-thread screws, choosing the longest screws the bracket's thickness would take.

To complete the island I made drawer boxes from 1/2"-thick Baltic birch plywood (affordability!), hung them on Blum Tandem slides and applied drawer faces. While working on the second phase of the kitchen I decided that the slab doors I'd originally proposed for affordability were not nice enough. While building frame-and-panel doors for the upper cabinets on the opposite wall I made replacement doors for the island.