The Longfellow Planbook

Remodeling Plans for Bungalows and Other Small Urban Homes

A Project of the Longfellow Community Council

By Robert Gerloff, AIA and Kristi Lee Johnson. Renderings by Peter J. Musty

Minneapolis, Minnesota • 1997

Acknowledgments

This planbook was developed and funded through the Longfellow Community Council (LCC). The LCC is the non-profit, neighborhood organization for the Longfellow, Cooper, Howe and Hiawatha neighborhoods in Minneapolis. The LCC's mission is to improve the quality of life, to develop a sense of community, and to promote the social and economic well-being of the neighborhoods it serves. The LCC is located at 4151 Minnehaha Avenue South, 612/722-4529. Copies of *The Longfellow Planbook* are available through the LCC office.

Special thanks to the following people and organizations: Minneapolis Community Development Agency (MCDA); Neighborhood Revitalization Program (NRP); City Inspections Division, Connie Fournier, Deputy Director of Inspections; Dan Callahan, Plans Examiner, Inspections; Gordon Wagner, former Minneapolis City Planner; the Minneapolis City Council; Mayor Sharon Sayles Belton; The Twin Cities Bungalow Club; Brian McMahon and Karen Swenson, The Bungalow Project; Paul Jakubovich, Historic Preservation Consultant, City of Milwaukee; Bethlehem Covenant Church; Minneapolis Heritage Preservation Commission; Minnesota Historical Society; Robert Roscoe, Design for Preservation; Preservation Alliance of Minnesota; Greg Rosenow and Deb Wagner, Northside Neighborhood Housing Services; Whole Builders; Insti-Prints; Riverview Theater; Lynette Lamb; Gene Rebeck; Jodie Ahern; Tim Counts.

The Longfellow Plan Book was written by Robert Gerloff, Principal of Robert Gerloff Residential Architects, and Kristi Lee Johnson, founder of The Twin Cities Bungalow Club. The architectural design work by: Robert Gerloff. Renderings by Peter J. Musty.

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"The Inspections Division is committed to assisting Minneapolis bungalow owners in upgrading and renovating their unique homes. We also want to assure them that their proposed improvements will meet the intent of the Building Code and provide minimum safety to their occupants. The plans in this book have been reviewed by Inspections and meet current code standards. However, each structure is unique. Even if you use one of these plans, you need to meet with a staff person from our Plan Review Section. Prior to beginning your project, you will need to obtain a building permit. This preliminary review will assure everyone that all of the necessary details have been covered before you start your project."—Connie Fournier, Deputy Director, Inspections Division, City of Minneapolis.

Why bungalows?

From 1905 to 1930, when neighborhoods like Longfellow in South Minneapolis were built, the term bungalow had come to mean nearly any type of small home—from one to one-and-a-half to even two stories. As bungalow promoter Gustav Stickley wrote in his magazine, *The Craftsman,* in 1916:

"So many of our little country houses are called bungalows that the name has come to be endeared to us. It conjures a comfortable, well shaped little house in the midst of a garden, shaded by trees, with the perfume of flowers floating in through open windows."

Planbooks at the time advertised "Tudor Bungalows," "Cape Cod Bungalows," "Spanish Mission Bungalows," and "Craftsman Bungalows." It was no wonder that by the 1920s the small homes being built were just called bungalows—a name that somehow slipped from memory after World War II.

If the bungalow in this book doesn't look like my house, can I still use the remodeling plans?

Yes. These plans are very adaptable. The 1926 bungalow used in this book represents a style built throughout Longfellow. Over 50 percent of the houses in Longfellow use this floor plan; there is a good chance your house does too. But if your house isn't exactly like this one, you can still adapt many of the plans for your home. This book was created to address the problems found in most older homes: a single bath, a small kitchen, a one-car garage on a small lot, and an unfinished basement and attic. The plans in this book offer solutions to many old-house problems, regardless of style.

Neighborhood History

It was 1914, and Minneapolis—or "Mill Town," as it was often called in those days—was booming. In August of that year, an article in the *Minneapolis Journal* proudly announced that "Minneapolis leads every city but San Francisco" in housing starts. A new, sophisticated streetcar system was in place (rides cost a nickel), and the city used those streetcar lines to expand beyond the downtown area to undeveloped land along the river. As these areas became built-up, meat markets, bakeries, mom-and-pop grocery stores, laundries and five-and-dimes sprang up along the lines and at major intersections—most of your shopping could be done within the distance of a short walk. Residents often used their streetcar line as a kind of address—"*We're on the Interurban line.*"

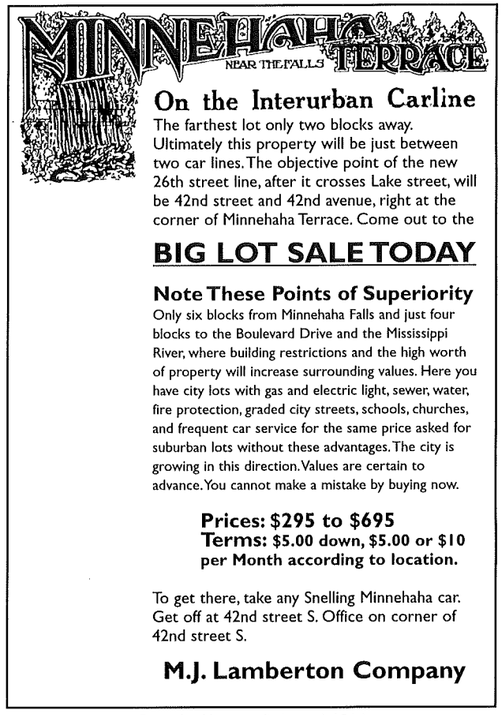
Developers acquired land on newly laid-out city grids and touted their developments to prospective buyers. In 1914, you could buy a lot in "Minnehaha Terrace," "Seven Oaks," or "Falls City." The names of these developments are forgotten today—all have become part of the Greater Longfellow Neighborhood. The original plans for most of these local developments looked very grand on paper. "Seven Oaks Highway," a tree-lined boulevard much like the Minnehaha Parkway, was slated for 45th Avenue South; a magnificent bridge was proposed to connect St. Paul's Summit Avenue to 34th Street in Minneapolis. Neither were ever built, though 34th Street is still on the books as a highway.

Those tree-lined parkways and bridges linking neighborhoods were part of the "City Beautiful" movement. Not only were houses to be built and sold, but there was an effort to make neighborhoods beautiful and functional. Residents of the new Seven Oaks development, for instance, would be able to walk only a few blocks to the post office, corner grocery or local movie theater. They could hike along the Mississippi River or admire the formal gardens at Minnehaha Park. They could attend a local church and send their children to a nearby public school. It was thought that a well-rounded community helped create well-rounded citizens, and that beauty was a vital part of life.

The Minneapolis Park System and its chain of lakes lured the wealthy, who built their magnificent homes on lots designed to take advantage of lake locations and the view of downtown Minneapolis. In the Longfellow Neighborhood, houses were constructed on a smaller scale for a new breed of homeowner—the working class.

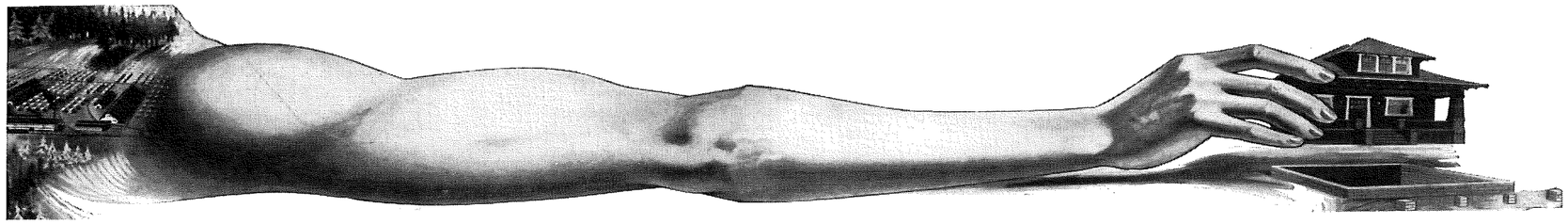
Lots were less expensive in Longfellow because it was considered quite far from the center of town. And looking back, it's easy to see why the Mississippi River was not regarded in the same light as Minneapolis lakes. The river was viewed as an industrial worker: It floated logs and barges down river, it ran the mills, and it carried off all the waste dumped into it. When Mill Town got big enough and sophisticated enough to install a sewer and water-treatment system, the river regained its dignity. Communities bordering the river then became very desirable places to live.

And the river was a wonderful backdrop for bungalows, which were designed to blend in with their surroundings rather than dominate them. It was a lucky break for homeowners of more modest means. In cities all across the country, the most scenic locations in town were settled by the wealthy, who built large, expensive homes with formal gardens. But here in Longfellow, some of the best scenery in the city was still available, and could be had for as little as $300 a lot.



From the Minneapolis Journal, 1914

SEVEN OAKS
(NEAR AND ON THE MISSISSIPPI RIVER)
Xtra! Xtra-ordinary Sale of Lots!
Seven Oaks Highway, Lake St. and 45th Ave. S.
No waiting for improvements. Sewer, Water, Gas, Electric light. Both phones already there waiting for YOU. Streetcar every 5 minutes. Fare 5 cents, St. Paul or Minneapolis. These lots are of generous size, 40 and 50 feet frontage and are restricted to residences costing $2,000 or more. No portion of this Wonderful City of Ours shows what money can do more than Seven Oaks. We have the River Drive which, with its new waterway, will bring visitors from all parts of the world to view the Aquatic Sports it is sure to invite. We have the Town and Country Club across the river. We have every modern convenience known to the Sybarite and the most perfect piece of ground that I have ever platted. Trees are planted on the lots, in the parkway and along the streets. Each lot is staked and numbered. Our Lake Street Office is on this land. Prices range from **$400 to $500 Only Terms $25.00 down, $10.00 a month 6% interest**
YOU!
YOU have the opportunity to put your money into modernized land with all the improvements at your side—churches, schools neighbors, shops—and that
Glorious!Wonderful!Mississippi River!
Edmund G. Walton



Bungalow Communities

The construction of bungalow communities like Longfellow centered around efficient, inexpensive streetcar service and a park system that was the envy of the nation. But the houses themselves—though small by today's standards—were real design standouts. Call it the trickle-down theory of house design. Famous architects like William Gray Purcell and George Elmslie, William Drummond, and Frank Lloyd Wright had turned their attention to a whole new class of homeowners: the working men and women who were helping to build America. Important magazines like *The Western Architect, Keith's Magazine, Better Homes and Gardens* and *The Craftsman* were all proponents of the new housing style and provided hundreds of plans and photographs. Their influence is reflected in the homes of Longfellow.

But what got Longfellow built was pairing that architectural interest with the new concept of mass production, with its standardization of parts and economies of scale. Local lumberyards provided not only the lumber for the job, but books of house plans, blueprints, a catalog for interior fittings, even paint suggestions. You could even order a house through the mail. While Sears Roebuck & Co. was the largest of these mail-order companies, there were hundreds of smaller businesses providing the same service.

The homes that came out of this movement tied the aesthetic to the practical. And they were:

• **Uniquely American.** While the British built holiday bungalows based on structures they had seen in India, architects in the United States adopted the style in distinctive ways and promoted it as a year-round home for "everyman." The typical bungalow was a story or story-and-a-half, with an open front porch, a wide, overhanging roof, exposed rafter tails, and decorative brackets. It was constructed using natural materials like brick, wood shingles, stucco and fieldstone.

• **Affordable**. The bungalow used as the basis of the floorplans in this book was built by a North Minneapolis contractor/carpenter for streetcar driver Joe Poss in 1926. The cost was listed at $3,000. Joe Poss picked the house from a booklet of home plans provided by Minneapolis lumber company Sawyer Cleator (whose motto was *"A square deal in lumber"*). The firm provided the materials and a list of recommended carpenters. Lumber was loaded up at the yard on Washington Avenue North and came down Lake Street via horse-drawn wagon. The lumber was cut on site.

• **Priceless**. And what wood it was! Virgin forests of the finest old-growth white-pine logs the earth had ever produced were cut to build bungalow neighborhoods in Minneapolis and St. Paul. The logs were hot-branded by lumber companies and put into the Mississippi by the millions to float down to Minneapolis, where they were identified by brand, fished out of the water, and hauled up the banks to one of the dozen saw mills that lined the river just north of downtown. It was a seemingly endless supply of premium wood, with the river providing free transportation. This lumber was so strong, and so resistant to rot and insect damage, that to match its durability today you would have to use steel. Even after 70 years, the framing in this bungalow still has at least a hundred years' worth of service left.

• **Expandable.** To keep costs down and get more home for the money, bungalows were built with expansion spaces. The attic and basement could be finished if the homeowners needed more space.

• **Sophisticated.** These small houses—even the ready-cut kit homes—were designed by architects. With the plethora of planbooks available, most of the original architects did not get credit for their sophisticated designs. A 1918 *Sears Roebuck Home Catalog* came closest to an attribution when it called "The Carlton," its substantial, mail-order prairie-style home, "a prominent architect's conception of what a 20th century residence should be." It sure looks like a Frank Lloyd Wright. The entire cost? $5,118, including a completely finished interior.

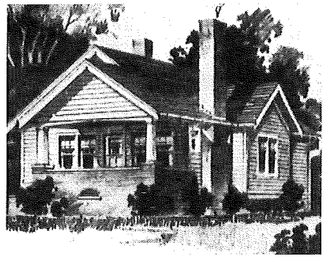
• **Natural vs. artificial**. Bungalows were designed to fit in with their natural surroundings. They looked different from the styles that came before them for a number of reasons. Most importantly they were a rebellion against the fussy, overstuffed, expensive Queen Annes of the Victorian period. Instead of the artificial, they promoted the natural. The homes—both inside and out—were designed to fit in with the oaks and pine trees and the cottage gardens that grew around them.

• **Democratic**. While the wealthy Victorians were complaining about "the servant problem" in the early 1900s, former members of the "servant class" were finding jobs and building their own homes. As Minneapolis writer Evelyn M. Watson put it in a 1916 issue of *Keith's Magazine*:

"The bungalow is progressive, adjusting itself to the needs of people in all circumstances. It seems to speak for the future of American democracy, for a time when the poor man will not have to feel that his neighbor's place is different from his little cottage—for a time when the houses of the rich will be recognized to have the same fundamental lines as the homes of the poor—just as rich men are now being recognized as being constructed as individuals along the same lines of their less favored brothers."

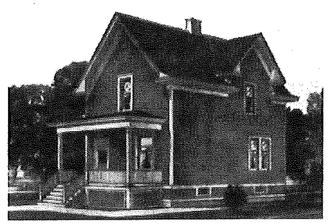
Longfellow Housing Types

The Bungalow



A one- or one-and-a-half story house built with extra charm, featuring open front porches (now mostly enclosed), overhanging eaves, exposed rafter tails, and decorative supporting brackets. The interiors of even the most modest bungalows can offer stunning examples of Craftsman woodwork and detail.

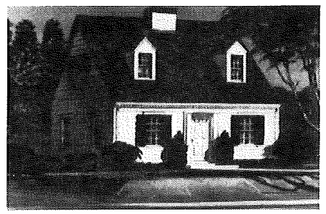
The Gable-Front



The gable-front is a one-and-a-half or two-story home with a steeply pitched roofs and is very common throughout the city. These houses lack a formal name, and many architects list them as "folk" houses. This means they were a traditional style widely used across the country. Gable-front houses were well-suited to smaller city lots. Their interiors may be Queen Anne or Craftsman, or mixture of the two.

The Cape Cod, a small Colonial revival house, has been popular since the mid-1800s. In the Longfellow Neighborhood, most of these houses were built in the late 1920s through the early 1950s. Fashions change, and in the search for something new, builders turned from bungalows to older housing types for inspiration. It is generally a story-and-a-half house, featuring two front dormers and a center door flanked by two pairs of windows.

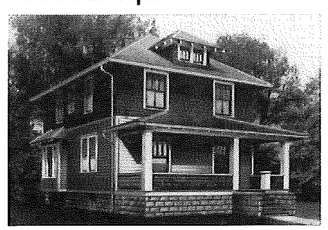
The Cape Cod



The Dutch Colonial

A larger Colonial-Revival style home with a gambrel roof containing nearly a full second story. Like the Cape Cod, this home also sports a center doorway and decorative shutters.

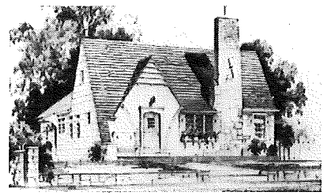
The Four-Square



Four rooms up and four rooms down gave this two-story its name. An extremely popular housing style built at the same time as the bungalow for a somewhat wealthier clientele. Their exteriors were divided visually between the first and second floors in a "shirt-waist" style. The first floor was typically clapboard, in a lighter color than the second story, which was often shingled. Their interiors may have stunning examples of Craftsman woodwork.

The prairie four-square also has a low-pitched roof with overhanging eaves, but the exterior focus is on horizontal facade detailing with a distinct line between upper and lower stories. The houses were typically a cream color, with the facade trim painted a dark brown.

The Tudor



Like Colonial Revival houses, this style looked to the past for inspiration. In Longfellow, it is typically a stucco-clad, one-and-a-half or two-story home, with a massive chimney and pitched pointed roof and decorative half timbering. Doorways may be arched.

The Rambler or Ranch House

This post-World War II house was a complete break from the Tudor and Colonial houses that preceded it. Ramblers were the modern houses of the fifties and sixties, one-story houses with low-pitched roofs and large front picture windows. If lot size permitted, some were built with attached garages. The Ranch house was able to really stretch out and ramble on large suburban lots. Ranch houses maximize facade width, and instead of a front porch, have a patio in back.

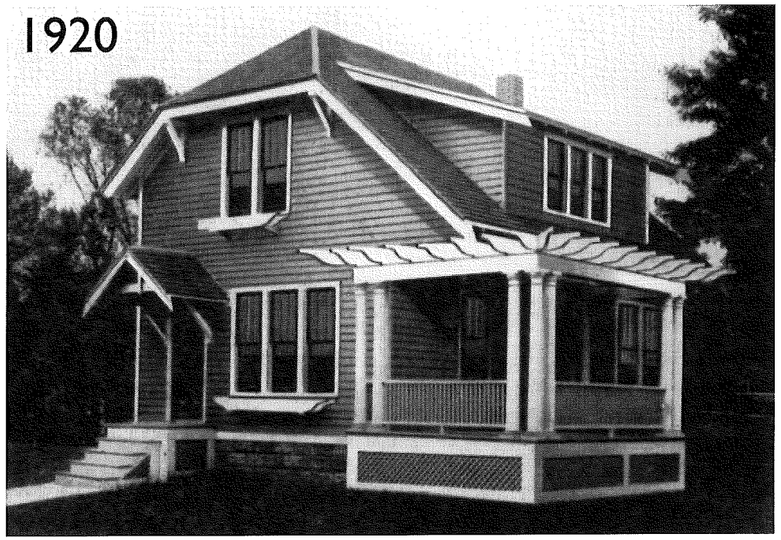
Keeping Your Home's Character

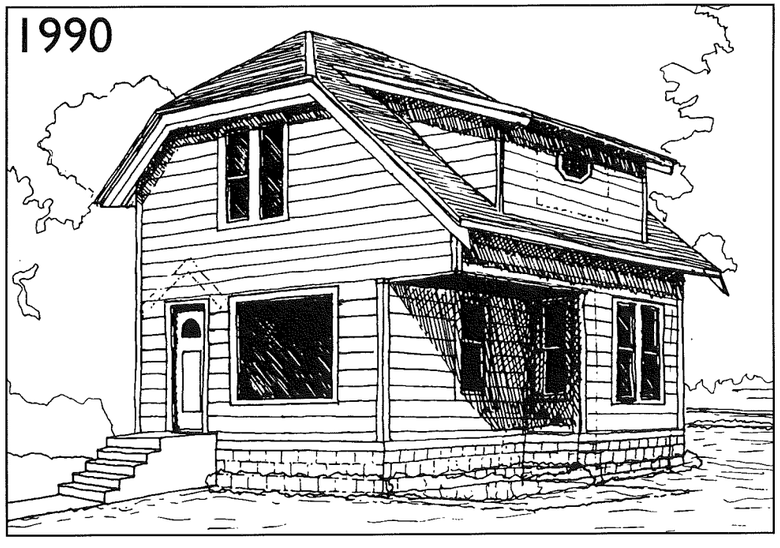
All the designs for renovation and expansion in this book strive to be historically accurate. That means that while updating the home, the plans also preserve the home's distinctive original features—its **character**. Too often, older homes suffer through a series of well-intentioned but hapless remodelings and insensitive "modernizations" that gradually erode their beauty and value.

Why preserve an old porch that's leaning off to one side? Why not just pull off the decorative brackets and cover up those peeling rafter-tails under a shiny new vinyl fascia-and-soffit system? Why bother stripping old paint off an old oak front door with beveled glass instead of just replacing it with a plain prefab steel door? Here's what Paul Jakubovich, historical consultant for the City of Milwaukee, has to say:

"Try to think of your old house as a single unit with no removable parts. Every change you make chips away at the integrity of your house. The cumulative effect of lots of small changes—such as blocking down original window openings to accept smaller, stock-sized windows, or substituting wrought-iron for original wooden porch posts—is a loss of character and, in today's old-house real estate market, often a loss of resale value as well."

As you make improvements to your house, remember that many people will pay more for an older house that has retained its original features than they will for a "modernized" older house that has lost its built-in china cabinet, distinctive windows, and wood interior trim. Even claw-foot bathtubs and old light fixtures have their value. If you doubt it, take a trip to an architectural-salvage business and price those 1920s tubs, buffets and light fixtures. You are bound to be surprised by what you find.





Take a careful look at these two pictures. The first shows the home as it looked the year it was built in 1920. Note the decorative roof brackets, the flower boxes, the open pergola porch on the side, and the little roof over the front door.

As houses age, owners are inclined to pull down decorative features instead of replacing them. By 1990, this house had been thoroughly "modernized." It has a large, featureless, picture window and no flower boxes. The dormer windows have been reduced to a single hexagon under the guise of "energy savings." Its wooden steps have been replaced with cement, and the beautiful front door traded for a standard steel exterior model. Its side porch pergola, in need of rebuilding, was simply torn off. Wide vinyl siding replaced the original narrow clapboards.

Today this house looks as if it were missing something. Its original architecture has been removed bit by bit, and with it has gone this house's charm.

Researching Your Home

The first step in researching your Longfellow home is a trip to the Minneapolis Building Inspections Division to look up your home's building permit. Permits are listed by year and address on microfilm. A copy machine will allow you to print your home's original building permit directly from the roll of microfilm. For readability, it may be easier to reverse the copy, which makes the background black and the lettering white. From the date of construction to the present, building permits contain the building and remodeling history of your home.

Researching your home can be fascinating. You might find out a few things you never suspected. For instance, I knew the year our bungalow was built, but I was surprised to discover that it was the second house on this lot. The first building permit was pulled in June 1906, when Nels Nordstrom built a 24-by-32-foot stone foundation for $65, and moved in a wooden frame house from an address listed as 4321 Dorman Ave. So there was a house on this lot for some 20 years before the bungalow was built!

But what had happened to it when construction on this bungalow began June 26, 1926?

The permit, and careful study of the house's current condition, allowed me to make some guesses. J.M Bertels was the carpenter/builder of the bungalow, and his customer, Joseph Poss, had to sign off on the permit to build outside of the city fire limits. To find out more about the owner and the builder of this house, I went to the Minneapolis Public Library and got out the City Directory for 1926. This directory offered more information than today's phone book, listing occupation as well as the name and address of all Minneapolis residents. In the 1926 directory, Joseph Poss was listed as "motorman." A streetcar driver.

In March 1927, just a few months after moving into his new house, Poss built a single-car garage at the back of the lot. This garage was constructed of salvaged clapboards, and if you look closely, you can still see that many of them were charred by fire. Based on this observation, it appears that the 1906 structure must have burned, and Poss, being a thrifty man, used the salvageable wood to build his small garage.

The building permit will also list your home's architect. In our case, under "architect" was written "Sawyer Cleator," a local lumberyard. Poss picked out this particular model from the lumberyard's planbook. Most of the bungalows in Longfellow were built this way.

Want more information? The Minnesota Historical Society and the downtown Minneapolis Public Library each contain a photo library. You might find a picture of your house if it was located next to a business that paid to have a promotional photo taken. It is difficult to dig up a photo of small, private home in a such a collection, but you will certainly find fascinating photographs of your neighborhood.

Your house and its grounds can give you other clues about its history. A rhubarb patch may reveal the location of an old vegetable garden. Old newspapers and magazines may have been used for attic insulation. Just digging in your garden or around your foundation can turn up marbles, skeleton keys, rusted iron toys, coins.

When I began work on this book in 1996, I made a surprising discovery in our bungalow. While in the basement to do the laundry, I spotted a shiny copper coin on the floor and picked it up.

It was a Minneapolis streetcar token.

How to Use These Plans

You may photocopy and use any of the following plans without concern about violating copyright. You may not reproduce and sell them, separately or as part of another publication. —The Longfellow Community Council

Most contractors have their own way of doing things, so make sure their way will be sensitive to respecting the historic fabric and architectural character of your house and that they understand that you are not looking for a standard "remodeling" job. Above all, do not settle for the response, "You can't get that kind of work today."

You can.

In recent years, there has been a veritable renaissance in the manufacture of traditional building materials and a significant increase in the number of restoration-conscious tradeworkers. Rehabbers and contractors today do not have to rely mainly on architectural salvage dealers for old house parts as was the case fifteen years go. The list of companies that make building products designed for the restoration and reproduction housing market has grown tremendously over the past several years. You may have to catalog shop by mail for some architectural items, but in the old days architects and homeowners did the very same thing to get architectural features for their houses.

This planbook will help you familiarize yourself with the characteristics of the architectural style of your house. It is important to pay special attention to the small details that contribute so much to an authentic appearance, such as the precise dimensions of the lumber and the quality of the original materials. Carpenters of years ago were familiar with the architectural styles of their times and could often independently design and build architectural details, such as a porch, to match the style of the house. Most carpenters today do not have that ability and are not familiar enough with historic building styles to design new features that will fit in with the architecture of an old building. Nevertheless, if they are skilled, they are capable of following architectural plans like those that follow.

Once the job starts, you need to be understanding of the contractor's problems. Rehabilitation is a nerve-wracking business fraught with difficulties ranging from bad weather, workers or subcontractors who don't show up at the appointed time, materials that arrive late, and the little surprises sometimes encountered in working with old buildings because of quirks in old-time construction practices or hidden problems. A little sympathy and understanding on your part will probably go a lot further toward ensuring a successful job than perpetual nagging or accusation. As Paul Jakubovich, historic preservationist for City of Milwaukee, suggests: "Above all, stay calm and keep your sense of humor!"

The plans in this book have been reviewed by the Minneapolis Inspections Divisions and approved in concept. However, in order to obtain final plan review approval and the necessary building permit to begin work, final construction plans are needed. Construction plans need to consist of the following:

- Foundation and floor and roof plans, with framing size and direction, window sizes and room names shown
- A building section showing materials to be used
- A site plan with proposed setbacks indicated if project includes an addition
- Elevations, if needed.

Several bulletins are available at the Inspections Division that may help in preparing construction drawings within the requirements of the state building code. Following this process will help speed plan review and approval of a building permit. In addition, complete plans will help the applicant in determining materials costs, reduce the number of problems that arise due to incomplete plans and in general make the project go more smoothly.

In the Twin Cities area, Whole Builders has agreed to provide cost estimates for the projects that follow. *See "Resources," page 31.*

1/9 FRONT (EAST) ELEVATION

1/8" = 1'-0"

The house we have selected for the Longfellow Bungalow Expansion Project is located at 2940 43rd Avenue South in Minneapolis. It is the home of Kristi Lee Johnson and Gene Rebeck.

We selected this particular bungalow because it is the quintessential South Minneapolis bungalow. Thousands of bungalows of this type were built in South Minneapolis, with slight variations to the basic pattern of a front porch, two main level bedrooms sandwiching a bath, living and dining rooms separated by a stock woodwork colonnade or bookcase, a tiny kitchen separated from the living room by a swinging door, unfinished expansion space upstairs, and a one-stall detached garage accessed through the alley.

The Johnson/Rebeck bungalow is also ideal for this study because it has remained relatively untouched through the years. It has not been updated or expanded--the kitchen wasn't remodeled in the 1970s and the expansion space remains unfinished--and its original windows, trim, and woodwork are largely intact.

You will need to know some basic architectural terms to read this book:

A **perspective** is a two-dimensional drawing that attempts to show what a room would look like in three dimensions if you were standing in it. The purpose of a perspective is to give a sense of what a room would look and feel like.

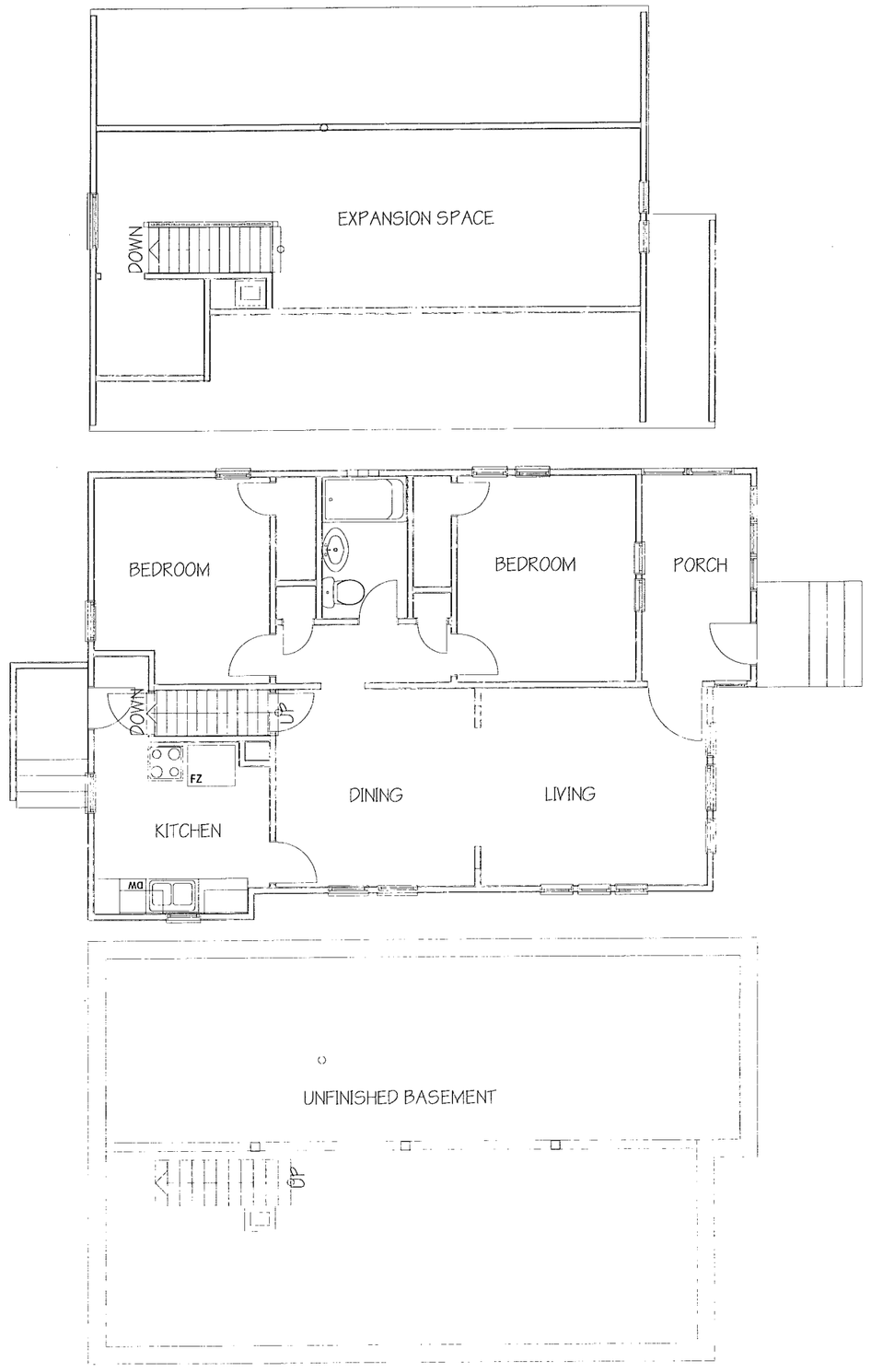
A **plan** is a two-dimensional drawing, drawn as though you were looking down into the house. Its purpose is to show the relationships between parts of the house.

An **elevation** is also a two-dimensional drawing looking at a wall. Its purpose is to show the relationships between parts and the exact size of individual parts, such as cabinets.

A **section** is a drawing that shows the innards of either a whole building (a building section) or a wall (a wall section) as though you cut the building apart with a huge chainsaw. Its purpose is to show the intricacies of construction.

On this page are a front elevation and plans of the existing house. You can flip back and forth between these plans and the renovated plans to see what work is being done in each section.

The drawings were prepared on a Power Macintosh platform using ArchiCAD 5.0 computer aided design (CAD) software.



2/9 UPPER, MAIN AND LOWER LEVEL PLANS

1/8" = 1'-0"

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Remodeling Plans for Bungalows and Other Small Urban Homes

A PROJECT OF THE LONGFELLOW COMMUNITY COUNCIL

9

The role of the kitchen in American family life has come full circle over the past century.

On farms, where most of our grandparents were raised, the kitchen was the center of family life. It was where garden produce was canned, bread was baked, meals were eaten, and clothing mended. In the winter its stove was the warm core of family life.

In Victorian times the dining room became the center of family life. Food was prepared in the kitchen (by Mother) but meals were "taken" in the dining room. An evening meal (presided over by Father) was the defining family ritual. The kitchen was a functional afterthought, intentionally built small "to save steps" and isolated from the rest of the house by a heavy, swinging oak door to help control "cooking smells."

Today's kitchen is once again the center of family life. With both parents working outside the home, family members come and go, lingering in the kitchen to visit while catching a bite on the run. A kitchen that doesn't allow space for family members to socialize while preparing a meal isn't functional at the end of the 20th Century.

The nature of food preparation has also changed substantially. Our grandparents baked and cooked their meals; we microwave and unwrap ours. Their limited cabinet space stored only the basic ingredients: flour, baking soda, molasses, sugar, etc. Our cupboards, by contrast, overflow with a cornucopia of countless name-brand products and specialty foods.

We also clutter our kitchens with appliances: coffee makers, bread machines, mixers, blenders, woks, juicers. Together these appliances demand much more storage space--cabinets or cupboards or shelves--than bungalow architects of the 1920s ever imagined would be necessary.

A kitchen remodeling is the single most popular bungalow renovation project.

rendering by Peter J. Musty

1/10 PERSPECTIVE THROUGH RENOVATED KITCHEN TOWARD MUDROOM

NO SCALE

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A Project of the Longfellow Community Council

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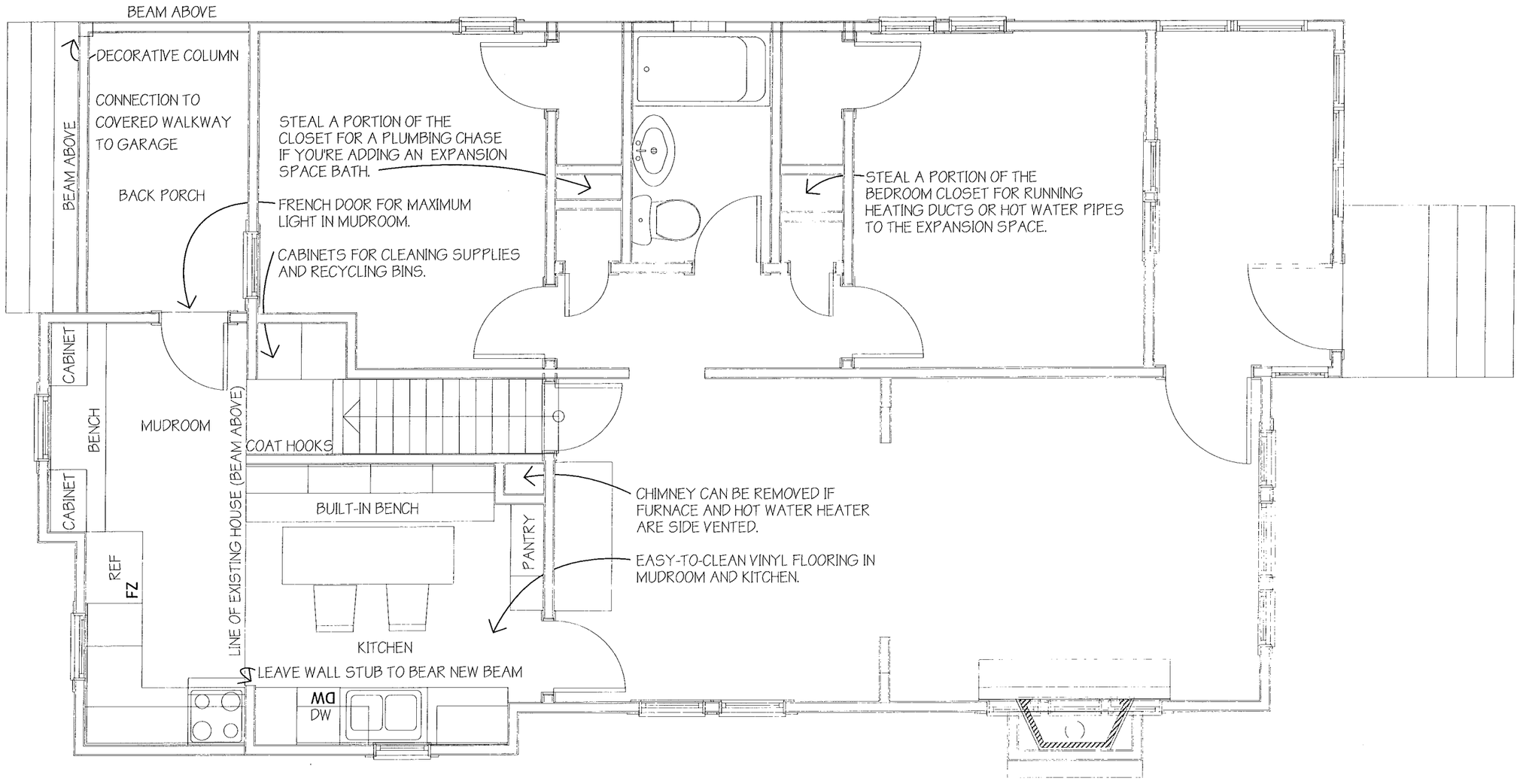


1/11 REMODELING THE KITCHEN AND ADDING ON A MUDROOM/REAR ENTRY

1/4" = 1'-0"

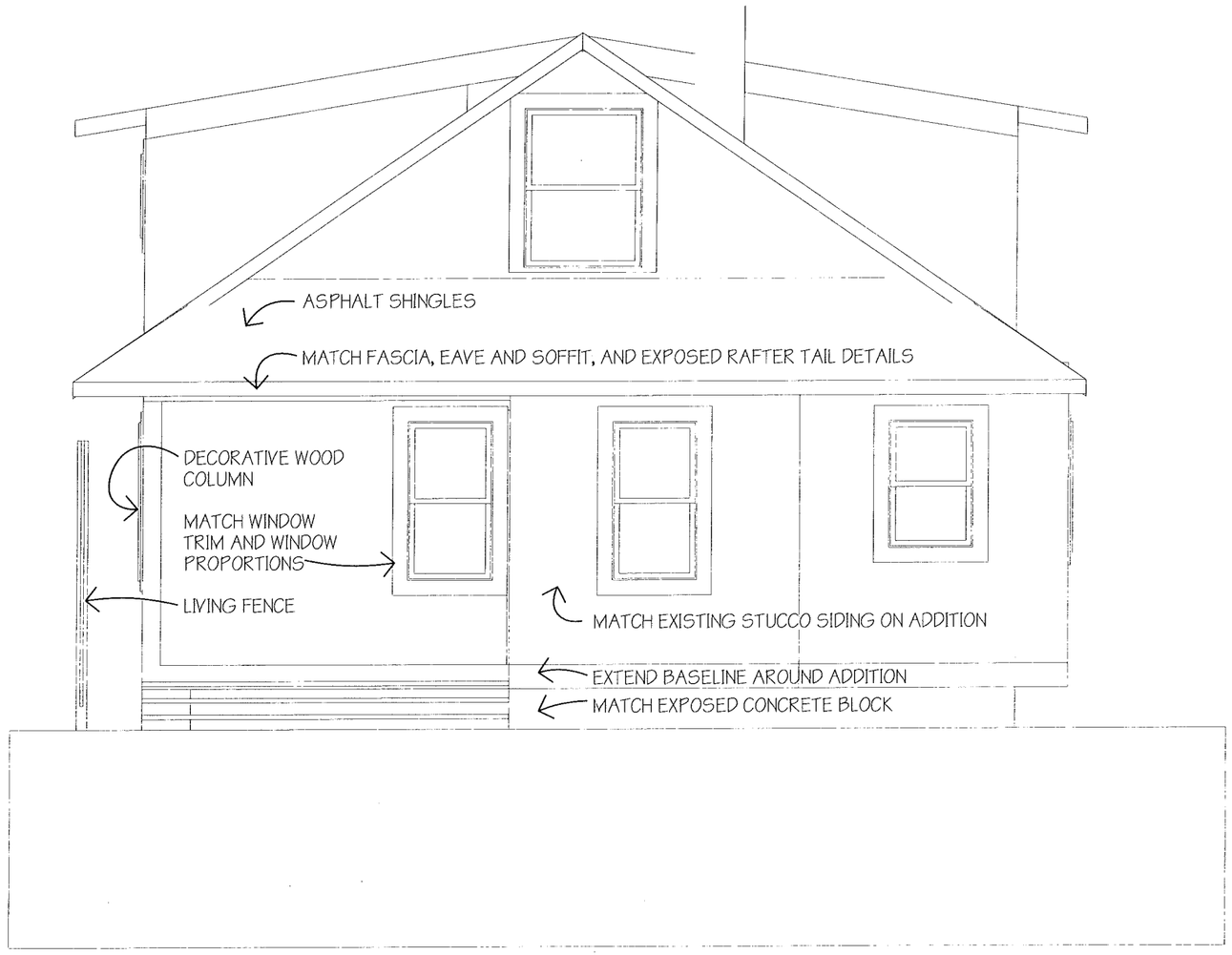
One of the biggest single changes in life between 1926 and 1996 is the pure volume of stuff people own. Most of this stuff enters your bungalow on a path from the garage through the back door. Bags of groceries, 12-packs of Coke, volleyballs, piles of mittens, hats, winter boots, and gloves, a briefcase or two... where does it all go? How do you avoid being buried in this avalanche of **stuff**?

One of the great inventions of contemporary housing is the mudroom, a decompression zone just inside the back door. A mudroom typically has a low-maintenance floor so the spring mud, autumn leaves, and winter snow that you inevitably track in are easily cleaned up. A mudroom also typically has baskets, cabinets, or lift-up benches, places to stow away all that stuff of modern life.

Another cultural change is the explosion of recycling. A decade ago there was one simple receptacle in a kitchen: the trash can. Today we recycle almost half our waste stream and need to provide storage on a two-week cycle for newspapers, office paper and junk mail, cardboard boxes, aluminum cans, glass bottles, glossy magazines, and plastic. Recycling gobbles up and enormous volume of space and can overwhelm a small kitchen.

This project expands and opens up the bungalow kitchen and grafts a 1990s mudroom onto the 1926 plan. The mudroom opens off a covered back porch, which in turn overlooks the back yard and can connect to a covered walkway to the garage. In the mudroom space are built-in storage cabinets for winter clothing, booths, hats, athletic equipment, and all that stuff. There also is a bench with a lift-up top, a place to set bags of groceries or briefcases while removing winter coats. A row of coat-hooks faces a large broom closet for storing cleaning supplies and recycling bins.

A large window in the kitchen overlooks the backyard and the counter-space is substantially expanded. Friends and family can hang out at the built-in bench and the kitchen table. The table can also double as extra work space. A large, shallow pantry cabinet provides convenient, easily accessible storage for food and dishes.



1/12 MUDROOM WEST ELEVATION

1/4" = 1'-0"

HELPFUL HANDOUTS FROM THE CITY OF MINNEAPOLIS:

- "ROOM ADDITION: SINGLE FAMILY DWELLING."
- "EXTERIOR WALL SECTION FOR WOOD FRAME CONSTRUCTION."
- "WOOD DECKS: ONE AND TWO FAMILY DWELLINGS."
- "CONVENTIONAL FOUNDATION CONSTRUCTION."
- "FOUNDATION DRAINAGE SYSTEM REQUIRED."

FOR A DETAILED GUIDE TO EXTERIOR MATERIALS AND FINISHES, READ "AS GOOD AS NEW: A GUIDE TO REHABILITATING THE EXTERIOR OF YOUR OLD MILWAUKEE HOME" BY PAUL J. JAKUBOVITCH (AVAILABLE THROUGH THE TWIN CITIES BUNGALOW CLUB).

Adding on a kitchen/mudroom space immediately raises a question: should we try to match the character of the existing bungalow or try to make our addition new and unique and modern?

We believe that any new construction should be sympathetic to the existing bungalow style, if only for the simple fact that **historical character has value**. Today's "modern" renovation is tomorrow's avocado shag carpeting. The Longfellow neighborhood has a reputation as a classic "bungalow neighborhood"; a rash of unsympathetic additions will only dilute this asset.

There are four components to a sympathetic addition:

1. Suitable Materials: Bungalows were built as affordable housing, but were constructed from top-of-the-line materials like brick, stucco, stone, and lap siding milled from old-growth white pine--materials that age and weather beautifully. Since we're extending existing walls in this addition, we're specifying that owners should try to match the existing stucco. Otherwise painted woods, either lap siding or cedar shingles, would also be suitable.

2. Appropriate Construction Technology: Construction technology has changed substantially during the past 70 years. The windows in this bungalow are wood while the windows in most new construction are aluminum-clad; the roof is hand-framed with 2x4's while most new construction uses computer-designed, pre-manufactured wood trusses. In this addition we're specifying wood windows so they can be painted to match the existing windows. Since the roof is so small, it is probably most easily hand-framed.

3. Period Detailing: Architects know that "God is in the details." Efforts to replicate the seemingly small details of bungalow construction--exposed rafter tails, exact trim profiles, decorative brackets--make additions blend in seamlessly.

4. Harmonious Proportions: Pay attention to proportions. Bungalows are generally squat and heavy. Elements such as window trim or columns are overscaled. If, like a good dancing partner, new construction follows the lead of the existing house, the new design can't go wrong.

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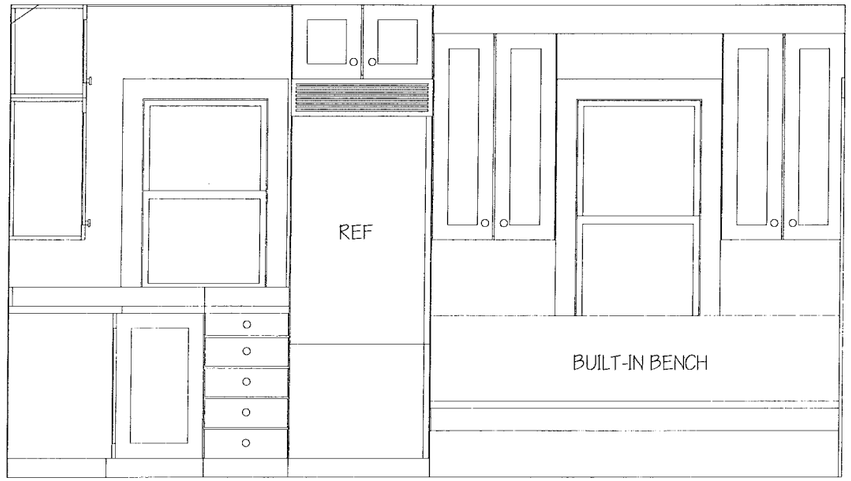

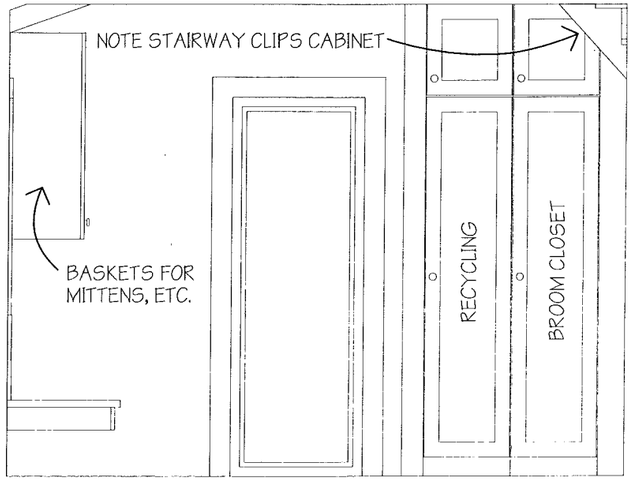

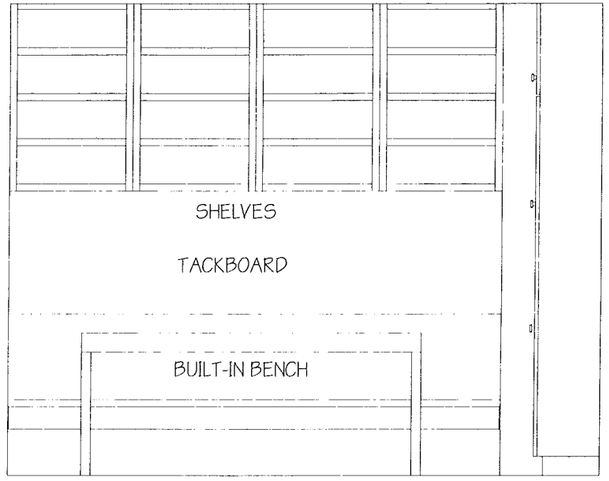

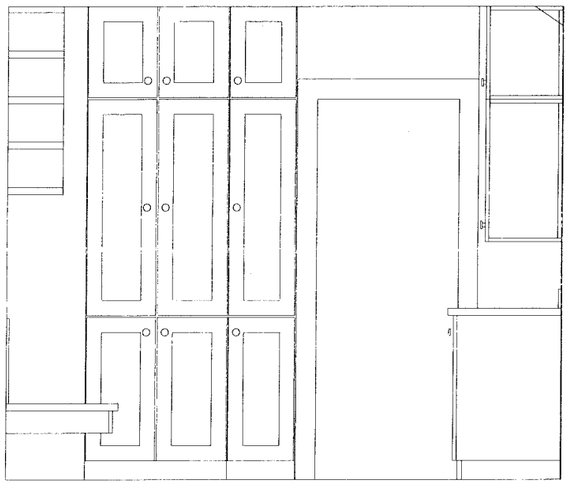

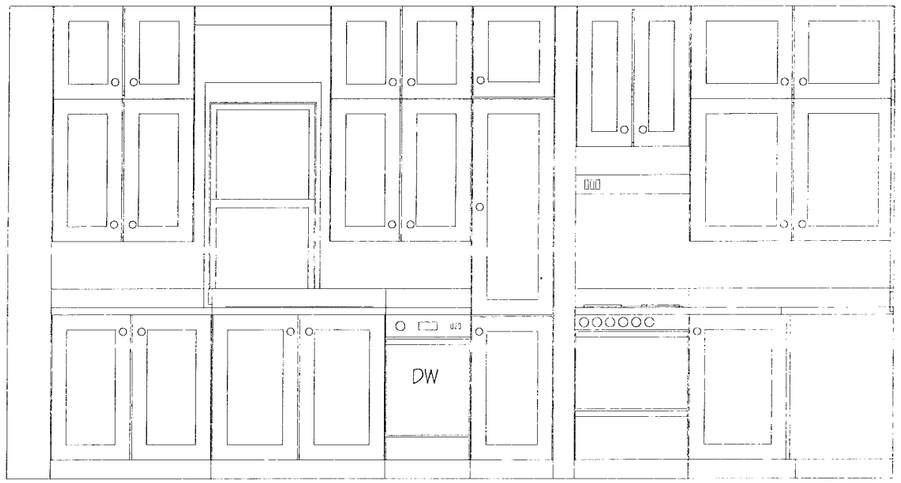

NOTE THAT THE CEILING HEIGHT IS 8'-3 1/2" IN BOTH THE EXISTING HOUSE AND THE ADDITION. CABINETS RUN RIGHT TO THE CEILING.

NOTE THAT IN SEVERAL INSTANCES STAIRS OR THE ROOF STRUCTURE WILL ENCROACH ON THE CEILING HEIGHT, FORCING CABINET BOXES TO BE CLIPPED.

EXISTING CABINETS THAT ARE PAINTED CAN BE STRIPPED. ALSO BIRCH OR MAPLE CABINETS THAT HAVE DARKENED BY YEARS OF VARNISH CAN BE CLEANED TO RESTORE THEIR ORIGINAL GLOW.

NOTE THAT THE EXISTING UPPER CABINETS ARE TYPICALLY 14" DEEP RATHER THAN THE 12" THAT IS TYPICAL TODAY.

YOU CAN HAVE A BUILT-IN DISHWASHER AND KEEP YOUR EXISTING CABINETS. SEVERAL MANUFACTURERS MAKE 18" APARTMENT-SIZE DISHWASHERS THAT WILL FIT UNDER THE EXISTING COUNTERTOP.

NOTE THAT IN THE 1920'S CABINETS WERE OFTEN BUILT DIRECTLY IN PLACE AND CAN BE DIFFICULT TO REMOVE AND REUSE.

1/13 KITCHEN & MUDROOM CABINET ELEVATIONS (NORTH, EAST, SOUTH, WEST)

3/8" = 1'-0"

Interior materials should also be sympathetic to the character of the existing house. All the materials we're specifying take their cue from the original 1926 palette.

The original cabinets (some of which remain) were made of birch. The style of the cabinet box is called an "exposed face frame"; the "flat panel" door style is called "inset frame and panel" or "stile and rail." Since we're expanding the kitchen, we'll keep and reuse the existing cabinets while new cabinets will be built to match.

Unfortunately, since exposed face frame cabinets require a precise, labor-intensive fit between door and box, they are more expensive. Two other cabinet styles are less expensive. A "reveal overlay" cabinet shows the face frame but overlaps the door (that is, door and box are in different planes) while a "flush-overlay" (or "European") cabinet has no face-frame.

Much of the warmth of old cabinets comes from the wonderful golden glow of the varnish or shellac finish. We will replicate this finish by either using shellac or by adding color to the final spray (either water-based poly or lacquer).

Hardware is the detail that makes cabinetry sing. The existing cabinetry has black wrought iron catches (also known as "turns"), pulls, and butt hinges. Matching hardware can be difficult to hunt down. If we can't track down reproductions through specialty manufacturers around the country, then we still have several options: find the same hardware in another finish and paint it black; use the same style of hardware in a nickel or chrome finish; or find another style hardware also in black.

The original countertops and floors were linoleum, a material popular around the turn of the century because it was virtually indestructible. Today's flooring of choice is vinyl, though linoleum is making a comeback for environmental reasons (pure linoleum is manufactured from four environmentally benign materials: powdered cork, linseed oil, wood resin, and wood flour). We, however, are specifying plastic laminate countertops and sheet vinyl flooring. Dollars saved here can help buy more important components, like the cabinet hardware.

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Bungalows were built at a time when the evening meal in the formal dining room was the defining ritual of family life.

In this bungalow (as in most) the dining room, the **symbolic** center of family life, is also the **physical** center of the floor plan. It is the crossroads of circulation. All roads lead through the dining room.

Family life has changed in the past 70 years. Today's two-income family eats on the run and rarely uses the formal, sit-down dining room. Informal eating and gathering space in the kitchen, whether at island counters, built-in booths, or tables, is the true focus of family life.

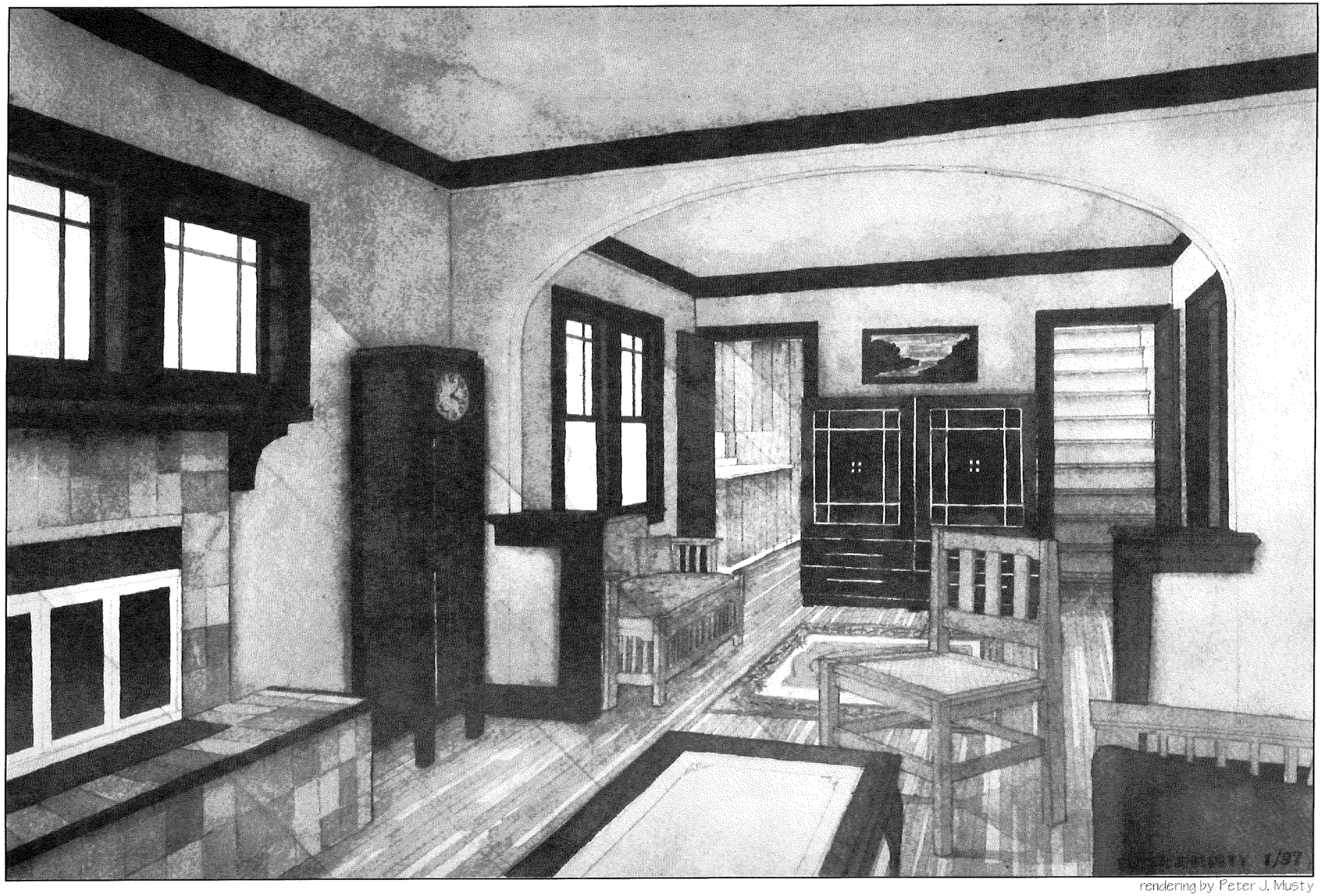
But where does the family gather outside the kitchen? And assuming the kitchen has been remodeled to provide a space for informal eating and gathering, what can people do with the once-venerated dining room?

Many bungalow owners keep the dining room intact for special occasions. Some keep the table up as a work-space for paying bills, battling homework, or playing games. This perspective shows two projects that help create more family gathering space:

Project One is adding a fireplace in the living room. A fireplace, a hearth, is the traditional focus of a home. Once the source of heat as well as the means of cooking, the hearth today is paired with the "electronic hearth" or television.

Project Two is converting the dining room into a family room. The kitchen can be integrated with the living portions of the house by the simple step of removing the kitchen door (be sure to store it in the basement for future use!). Within the family room is a cabinet for the television.

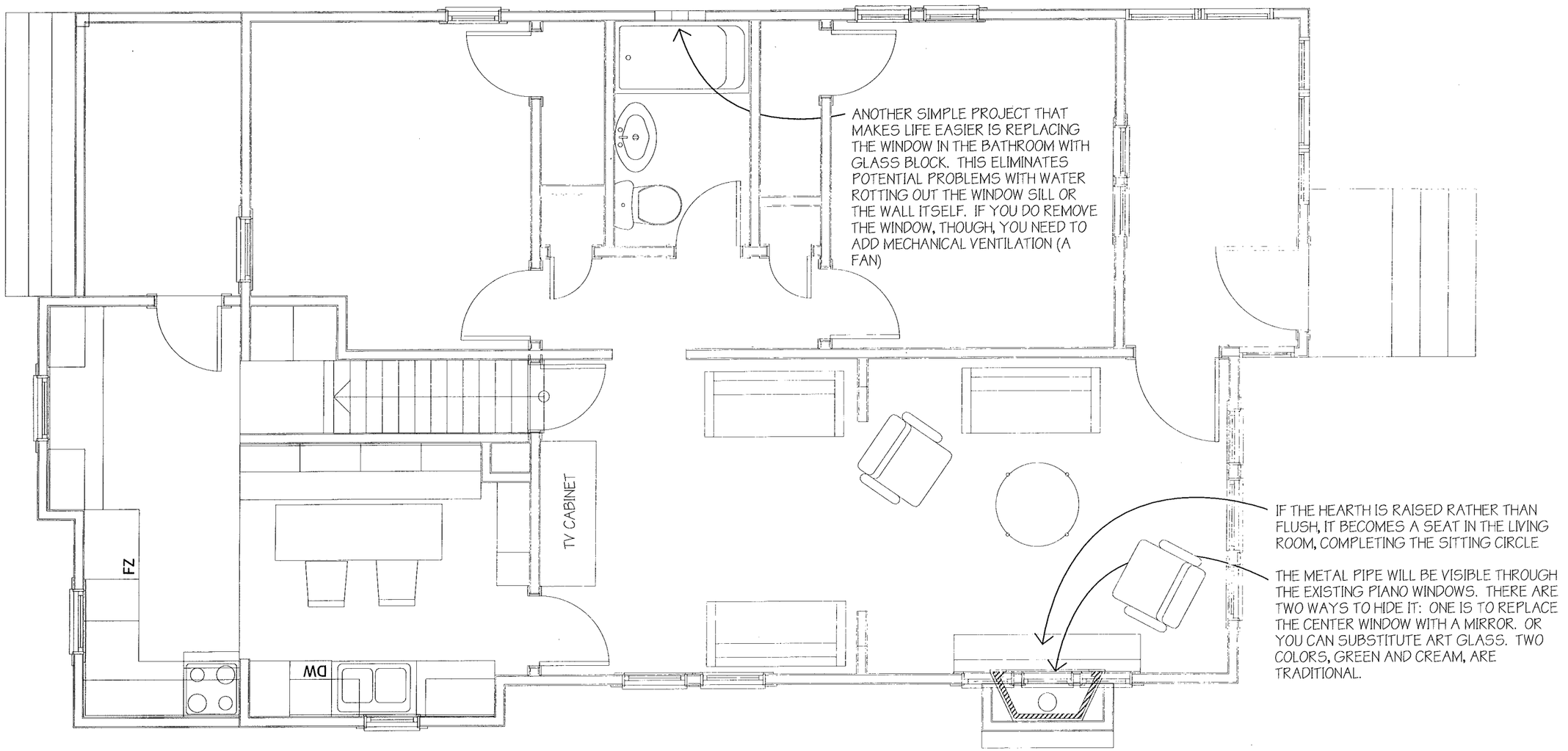
These two projects together expand usable livable square footage of the bungalow, and creating a living area with two sitting circles.



rendering by Peter J. Musty

1/14 PERSPECTIVE FROM LIVING TOWARD KITCHEN SHOWING FIREPLACE AND CONVERTED FAMILY ROOM

NO SCALE



1/15 CONVERTING DINING ROOM INTO FAMILY ROOM AND ADDING A FIREPLACE PLAN

1/4" = 1'-0"

A major bonus of bungalow living is the quality of interior materials and finishes.

Oak was the wood of choice in bungalows for its solid, masculine, no-nonsense quality. Walls are genuine plaster (not wallboard) and most bungalows (though not this one) have extensive oak built-ins. For the Arts & Crafts-influenced designers and builders who created bungalows, quality materials were far more important than extra square footage, and the dollars that we today invest in maximizing square footage (believing "bigger is better") they invested in quality materials (believing "quality over quantity"). Any renovation work should respect and continue this tradition.

For the new built-in tv cabinet we are replicating the solid, square, masculine design motifs common in the era and building it of solid oak rather than veneer plywood (see p. 15). We believe this is the place to invest.

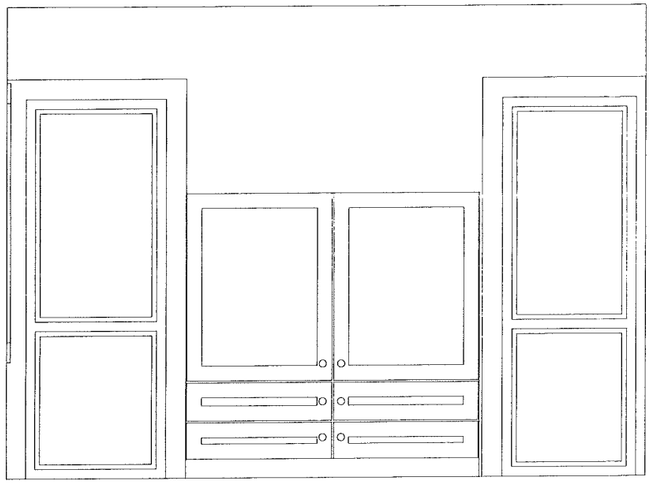
Plaster is an ideal material for walls. It is tough and can sustain a lot of abuse, yet it's easily repaired and repainted. Any homeowner with a drill can easily hang a picture; spackle and sandpaper are all you need to repair an old nailhole. Walls were originally painted, often with a special (and problematic) flat paint called "Kalsomine" (see the "Small Home Gazette," Fall 1996, p. 2).

Oak woodwork often looks dark and muddy with white walls. We will specify colors from the "Roycroft Arts & Crafts" family of colors within the "Preservation Palette" manufactured by Sherwin Williams. Although identical colors are available from other companies, Sherwin Williams has handily grouped sympathetic colors into an identifiable family.

If any woodwork needs to be added or replaced, use standard plain-sawn Red Oak. Quarter-sawn oak was used in more expensive houses, but is a special-order item today and will probably cost three times more than plain-sawn. Less expensive birch and maple were often used in kitchens, bedrooms, and the expansion space to save money.

The ideal Arts & Crafts wood finish was beeswax rubbed in by hand. This painstaking, labor-intensive finish is similar to today's standard wood finish: a low-gloss water-based polyurethane.

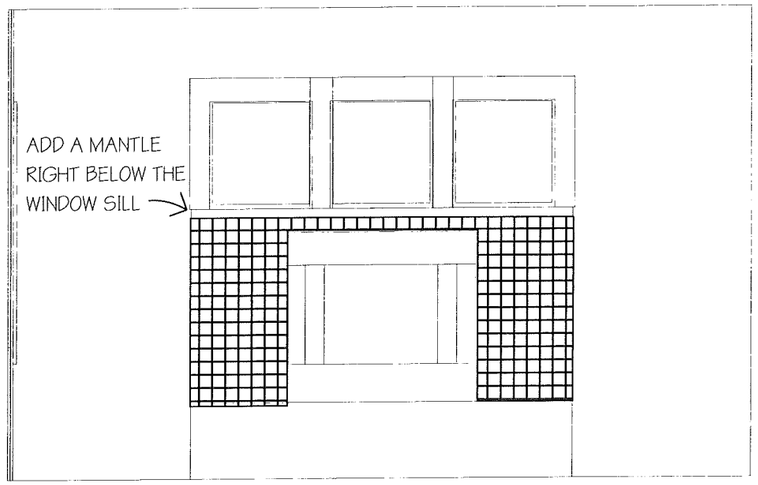
GENERALLY TRY TO MATCH THE NEW FAMILY ROOM CABINETRY (SUCH AS THIS TV CABINET) TO THE TYPE OF WOODWORK IN THE DINING AND LIVING ROOM, WHICH IS TYPICALLY A DARKER, HEAVIER OAK.



1/16 TV CABINET ELEVATION

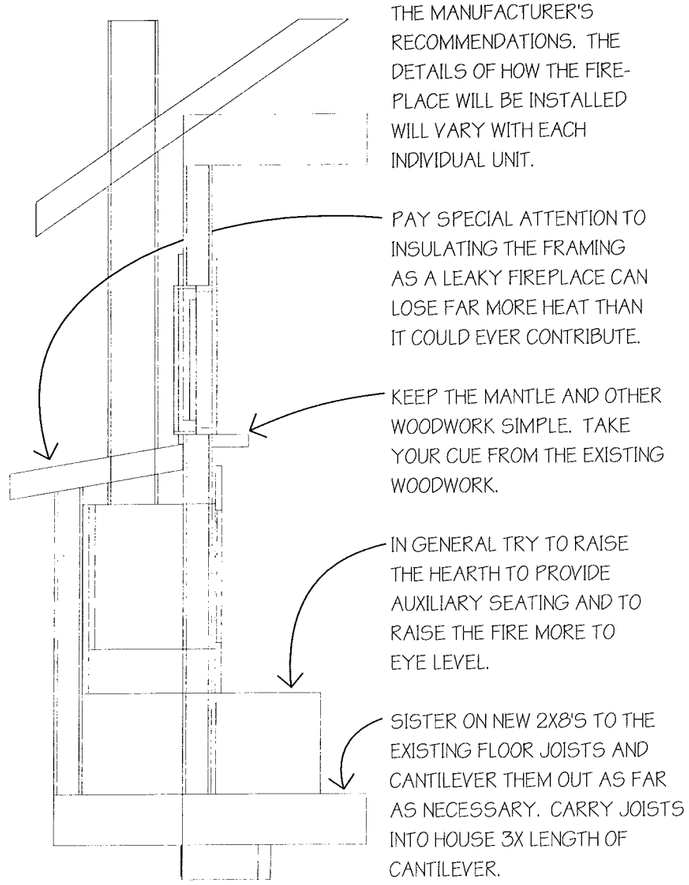
1/2" = 1'-0"

ARTS & CRAFTS BUNGALOWS TYPICALLY HAD A TILE SURROUND. UNGLAZED TILES, SUCH AS PORCELAIN, ARE MORE APPROPRIATE THAN GLAZED TILES.



2/16 FIREPLACE BUILDING SECTION

1/2" = 1'-0"



3/16 FIREPLACE ELEVATION

1/2" = 1'-0"

No renovation project adds to property value as reliably (and predictably) as adding a fireplace.

Luckily, the mechanics of adding a fireplace have grown increasingly simple in recent years. Back in 1926 all fireplaces were built from solid masonry. A concrete block core was sheathed in brick and only an expert mason could craft a fireplace that drew properly.

Retroactively adding a masonry fireplace is extremely expensive. Today we have "zero clearance" units, steel boxes that are framed in by carpenters. The range of consumer choice is staggering. Dozens of manufacturers market wood-burning and gas models (some with remote controls) of all shape and size. "Direct Vent" gas units can be vented horizontally to the outdoors, eliminating the need for costly chimneys.

Building codes are exceedingly strict on fireplaces, so keep the following issues and dimensions in mind:

Hearth Extensions: A non-combustible hearth must extend a minimum of 16" from the front of the firebox and 8" from the side (if the firebox opening is less than six square feet) or 20" from the front and 12" from the side (if the firebox opening is greater than six square feet).

Fireplace Surrounds: Non-combustible material must surround a firebox for a minimum of 6". That dimension must be expanded 1" for every 1/8" projection of a combustible surround (such as a wood mantle) up to a maximum of 12".

Combustion Air: should come directly from the outside.

Chimneys: Must rise a minimum of 2'-0" above any roof or wall within 10'-0". A chimney must also be separated from any combustible materials by a minimum of 2".

Setbacks: If a box is cantilevered from the house (as we are doing) be sure to call Minneapolis Zoning to confirm it's within the side-yard setback (often it can cantilever into the setback zone, but be sure to check).

We selected to add a wood-burning unit purely to enjoy watching the logs burn. Though environmentally less defensible than a gas unit, logs have a romantic quality that gas lacks.

One of the great hidden assets of bungalows is their attic-level expansion space.

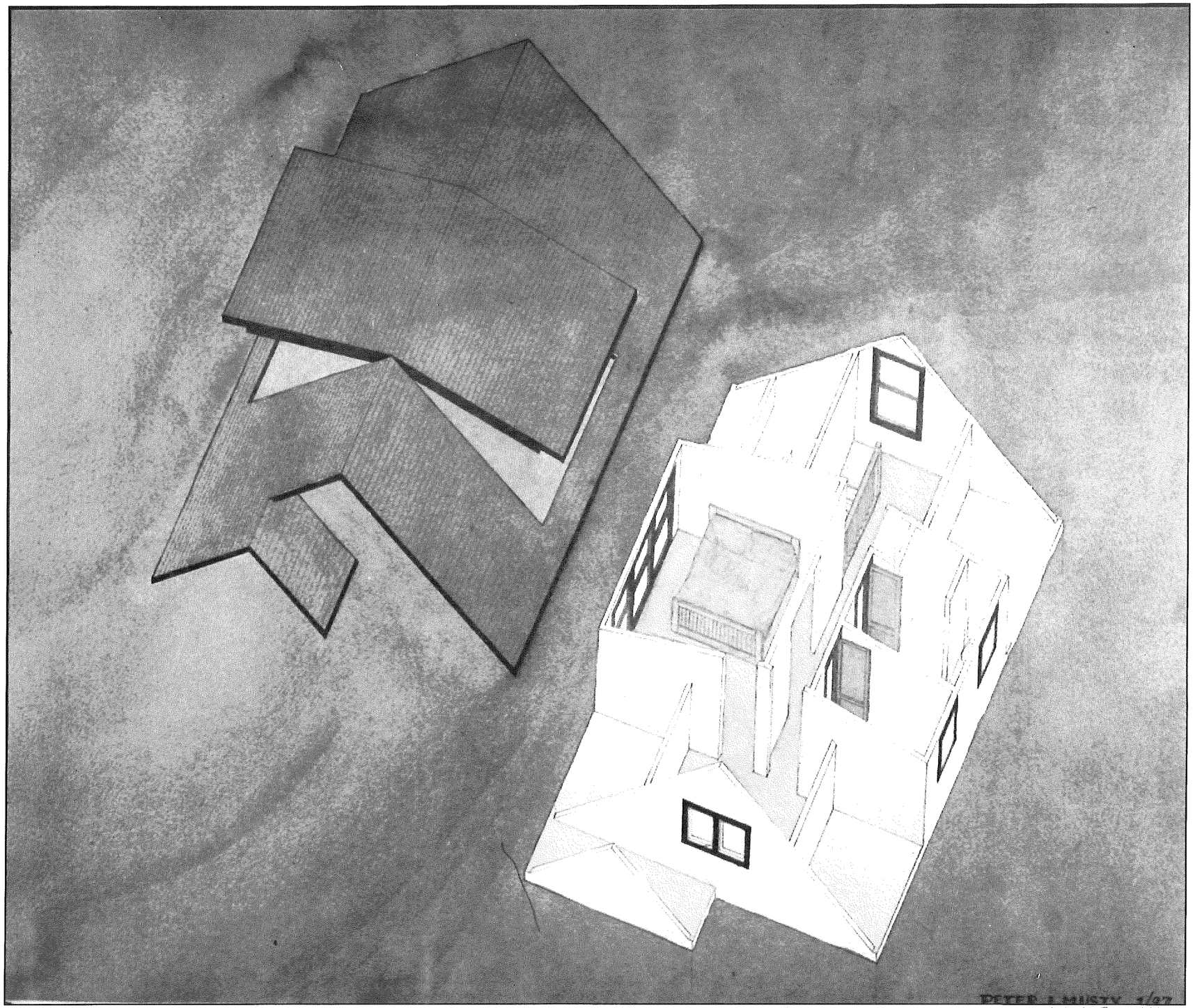
This extra space can be converted into a master suite, a home office, or extra family space. It can serve as a play area for children, a retreat for teenagers, or a refuge for the elderly.

Very few houses built today include this sort of planned internal expansion space, reflecting a change in attitude: in the bungalow era a family typically stayed in one house for decades, adapting it as their needs changed. Today's families plan on moving every few years. A typical pattern is that couples first buy a smaller, older home in the city, then move to a bigger home in the suburbs to raise their children, downsize to a townhouse after the kids move out, retire to another location, and finally move into a retirement home.

Neighborhoods pay the tremendous social cost of this mobility. Constant turnover destroys the social cohesion that makes neighborhoods safe, stable, and secure. Often families don't maintain or improve their homes, knowing they will be moving on in a few years. This weakens the neighborhood fabric.

Changes in building codes over the past 70 years have made finishing bungalow expansion spaces problematic. But today the City of Minneapolis Inspections Division is focused on helping homeowners with their bungalow remodelings, realizing how important it is to help stabilize city neighborhoods.

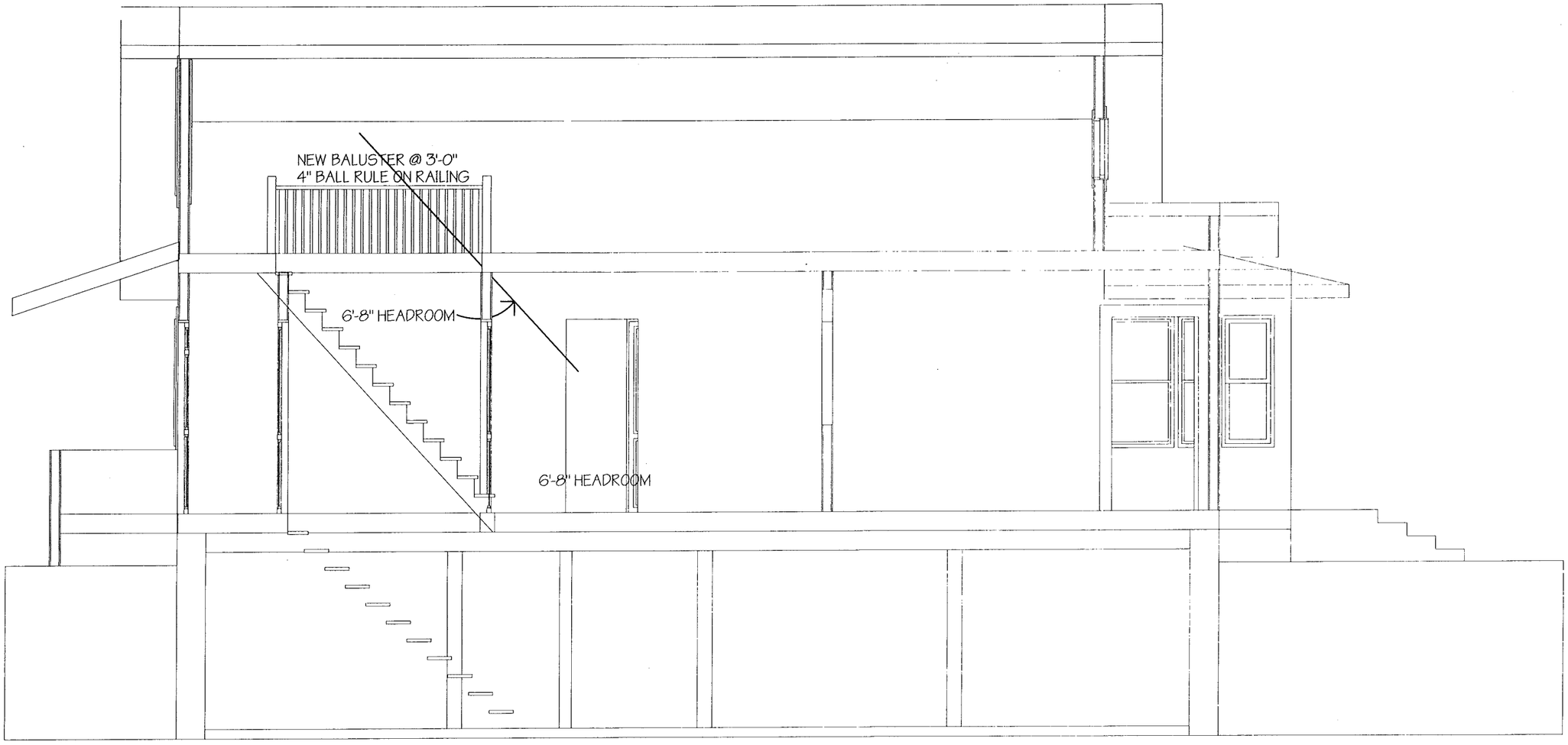
Some specific issues of finishing expansion spaces that we'll explore in the next few pages are minimum head height, stair rise & run, and headheight, structural requirements, Minnesota's energy code, and egress windows.



rendering by Peter J. Musty

1/17 PERSPECTIVE OF ATTIC EXPANSION SPACE

NO SCALE



1/18 BUILDING SECTION SHOWING STAIRWAY TO ATTIC

1/4" = 1'-0"

Building codes are quite strict about several components of stairways:

Rise and Run: This bungalow has a "rise" (the vertical component of a step, or riser) of 7.68" (floor-to-floor in inches divided by the number of risers) and a "run" (the horizontal component of a step, or tread) of 7", giving an angle of 48 degrees. Generally any riser higher than 8" or any angle steeper than 45 degrees makes plan reviewers nervous, but there is no magic number beyond which the City will demand you rebuild the stairs.

Stairway Width: The City will not allow stairs narrower than 30". Since this stairway measures 31-1/4" wide, we're wider than the cut-off dimension and are fine.

Headroom: Code demands a continuous minimum headroom of 6'-8" (measured above the stair nosings). We have a door header that drops into this zone, giving us a headroom of 5'-7" at that point. While technically in violation of existing code, since the stairway was approved in the city when built, it will be grandfathered in.

Riser Variation: There should be no more than 3/8" variation between any risers across the height of the stairway. This is intended to prevent people from stumbling, tripping, or being thrown off balance. If the stairs feel "smooth" you're probably fine.

Landing: There needs to be a landing area at the top of the stairs. At minimum it should be as wide as the stairs, but the city won't force you to rebuild a stairway just to get a landing.

Handrail & Guardrail: A handrail is required for the length of each stairway. It must be 34" to 38" above the nosings. The grip must be a minimum of 1-1/4" and a maximum of 2" around and project no more than 3-1/2" from the wall. Guardrails must be 36" above the floor. The space between floor and guardrail must be filled in such a way that a 4" ball can't be passed through. This rule is to prevent babies from putting their heads between balusters and strangling.

This stairway is grandfathered in under the existing code. To finish off the expansion space we just have to add a handrail and build a new guardrail, saving us time and effort. Every staircase is unique, however, and must be approved on a case-by-case basis.

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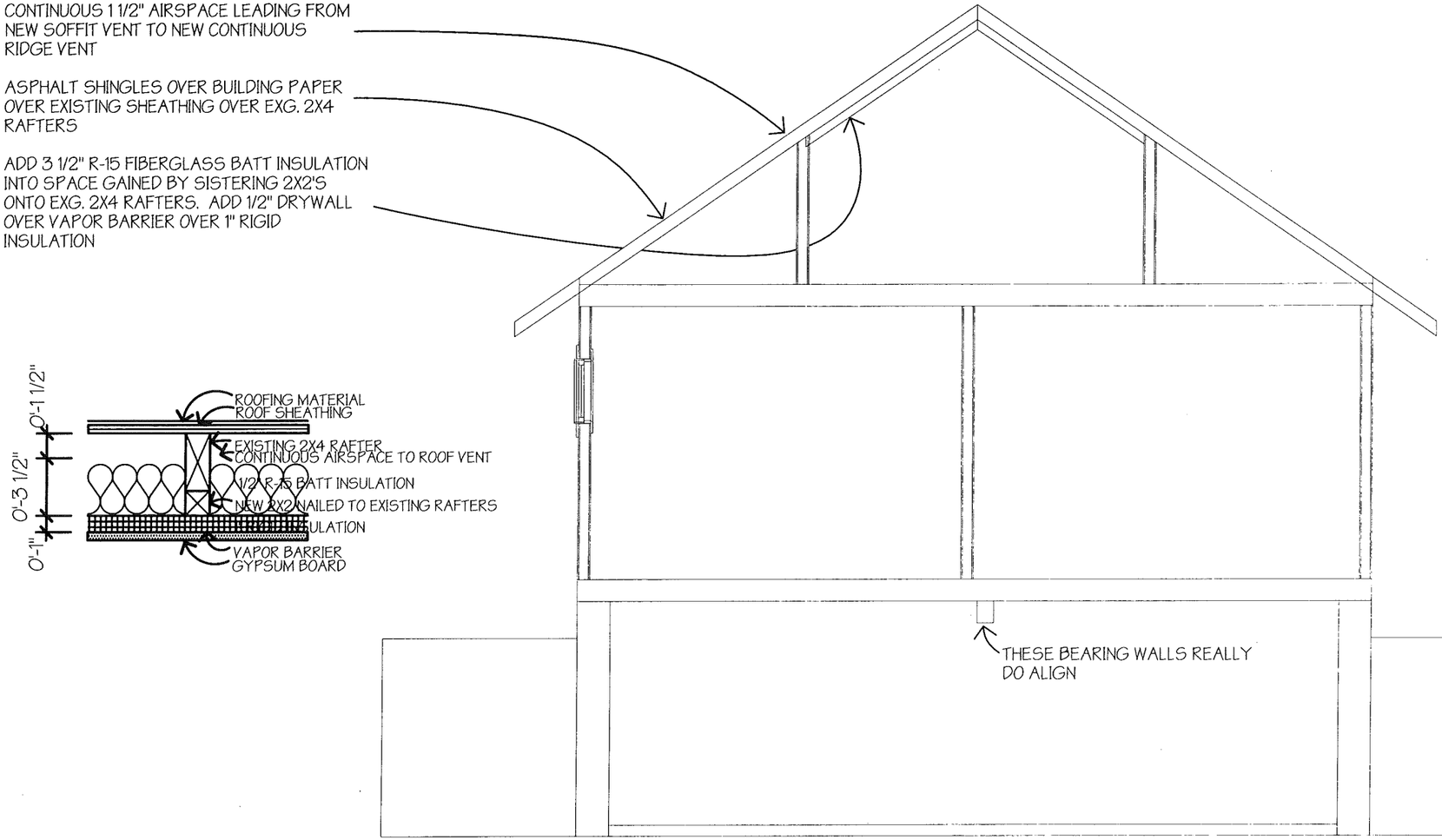


1/19 BUILDING SECTION SHOWING INSULATION AND VENTING

1/4" = 1'-0"

HELPFUL HANDOUTS FROM THE CITY OF MINNEAPOLIS:

- "VENTILATION/INSULATION EXISTING RAFTERS (MINIMUM REQUIREMENTS)"
- "EXTERIOR ENVELOPE ENERGY REQUIREMENTS: MINNESOTA ENERGY CODE."
- "SECOND FLOOR ATTIC BEDROOMS: SINGLE FAMILY DWELLINGS."
- "STAIR BUILDING: INTERIOR."

QUESTIONS ABOUT THE MINNESOTA ENERGY CODE CAN BE ANSWERED THROUGH THE DEPARTMENT OF PUBLIC SERVICE INFORMATION CENTER AT (612) 296-5175 OR (800) 657-3710.

Minnesota has a strict energy code. All new construction must meet certain minimum standards of energy conservation to receive a building permit. In general the energy code requires a minimum performance of R-19 for walls and R-38 in ceilings... in new construction.

What performance the Minnesota energy code requires for additions and remodelings is less clear.

For an attic renovation, the City of Minneapolis will allow the minimum insulation shown in the drawing above.

Insulation in a renovated attic must also be "vented." Venting attic insulation is standard practice in new construction--not just because it's required, but because it's good practice. Venting the insulation space prevents moisture from building up in the insulation. Wet, soggy insulation retains no heat whatsoever.

There are three components to venting insulation: one is the soffit vent (aluminum insets, continuous vents, or fascia vents); two is a continuous 1-1/2" air space on the cold side of the insulation, and three is a ridge vent (continuous or intermittent). Dry air enters from the soffit vent, rises through the air-space, and exits at the ridge vent, carrying excess moisture along with it. If the air space or either vent is blocked, the natural ventilation breaks down and moisture can build up, lowering your R-value. Gable vents may work if soffit venting is a problem.

Venting the insulation space also helps prevent ice dams in winter. Ice dams result when warm air rising from the house melts snow on the roof; melted snow runs down the roof until it reaches the unheated overhang, where it freezes, damaging shingles and eaves. Venting keeps the roof cool so snow doesn't melt until spring. After a big snow, a roof rake may be helpful.

Venting also keeps houses cooler in summer by removing internal heat gain and preventing solar heat gain on the roof from radiating into the finished attic space.

A good, tight vapor barrier is an important component of contemporary energy-efficient construction. It should **ALWAYS** be installed on the warm side of the insulation to prevent moisture build-up from condensation. To help protect the integrity of the vapor barrier, try to avoid installing recessed fixtures (cans) in insulated ceilings.

1/20 BUILDING SECTION SHOWING DORMER ADDITION AND STRUCTURAL ISSUES

1/4" = 1'-0"

HELPFUL HANDOUTS FROM THE CITY OF MINNEAPOLIS:

- "INFORMATION NEEDED TO ISSUE DORMER PERMIT."
- "SECOND FLOOR ATTIC BEDROOMS: SINGLE FAMILY DWELLINGS."
- "ROOFING BULLETIN."
- "REQUIREMENTS FOR SMOKE DETECTORS."

ACCORDING TO THE INSPECTIONS DIVISION, SMOKE DETECTORS ARE PROBABLY THE MOST IMPORTANT COMPONENT OF THE RESIDENTIAL BUILDING CODE. SMOKE DETECTORS MUST BE RETROACTIVELY INSTALLED ANY TIME THE VALUE OF RENOVATION WORK EXCEEDS $1000. AT MINIMUM THERE MUST BE ONE SMOKE DETECTOR ON EACH LEVEL (INCLUDING THE BASEMENT), ONE IN EACH BEDROOM, AND ONE IN THE HALL LEADING TO THE BEDROOMS.

SMOKE DETECTORS MAY BE BATTERY POWERED WHEN ADDED TO EXISTING CONSTRUCTION, BUT IF THE FRAMING IS EXPOSED DURING A RENOVATION THE SMOKE DETECTORS MUST BE HARD-WIRED WITH A BATTERY BACK-UP.

A finished expansion space must also meet minimum structural and head-height requirements.

For attic floors, Minneapolis building officials typically look for a minimum of 2x8 joists @ 16" on center (o.c.) for the 12'-14' spans typical in bungalow construction. This bungalow was originally built with 2x8 joists @ 16" o.c. so we don't have to upgrade our attic floor system.

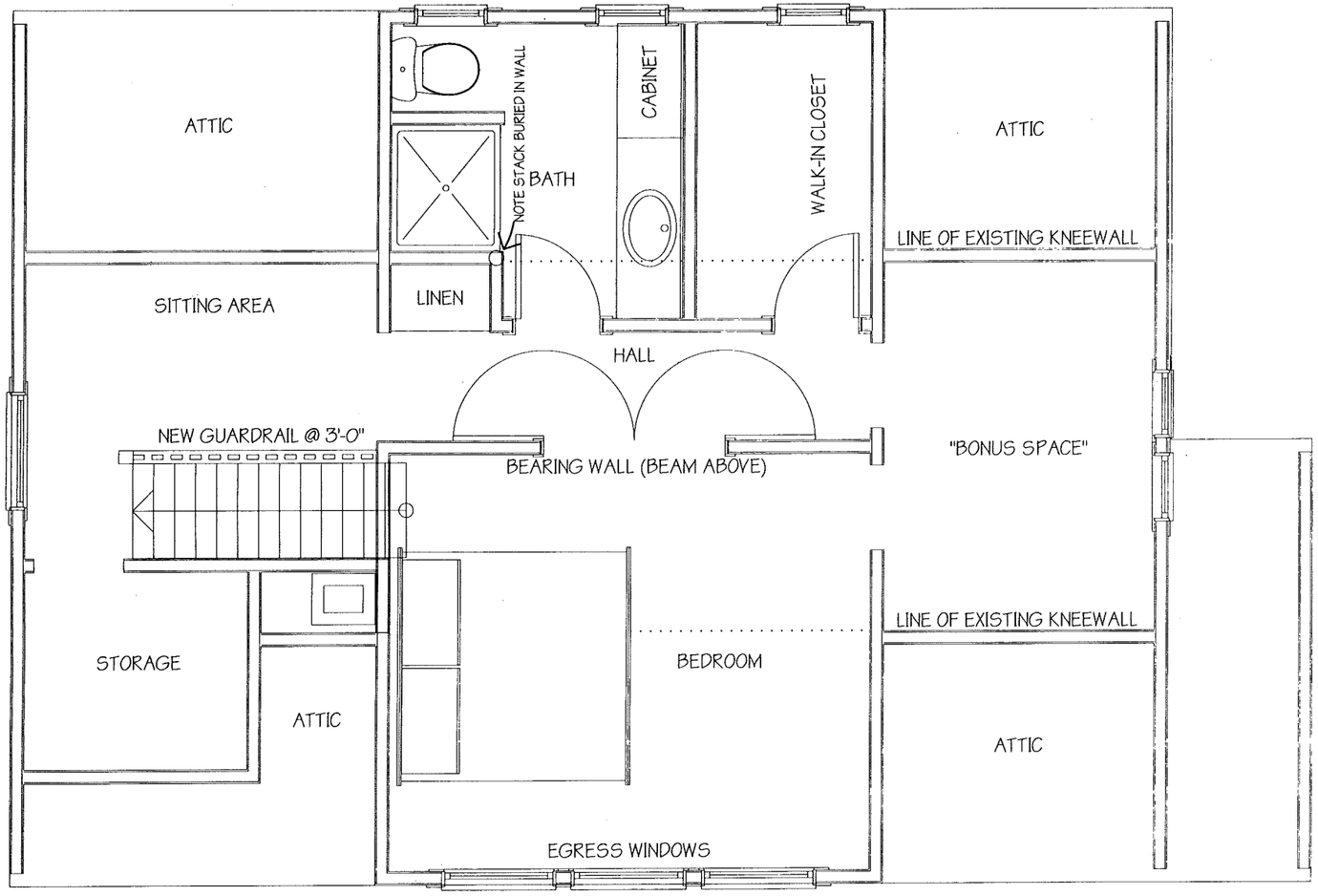
Many Longfellow bungalows, however, were framed with 2x6 joists @ 16" o.c. and will probably need to be upgraded (particularly in areas where dormers are added). There are two options: One is to remove the existing 3/4" floorboards and "sister" new 2x8's onto the existing 2x6's, then add new 3/4" tongue-and-groove (t&g) plywood subflooring. A simpler option is to add new 3/4" t&g plywood over the existing floorboards, both gluing and screwing the two together. This spreads the load across more floor joists, strengthening the entire floor system.

If for structural reasons you need to upgrade the attic floor, note that this will throw off the stairs. Remember that there shouldn't be more than a 3/8" variation between risers within a stairway. If the floor depth is increased from 2x6 to 2x8, most often the stairs will need to be rebuilt. If the floor depth is increased only by the depth of subflooring, often this can be finessed by eliminating subfloor at the landing area or sloping the subfloor.

To increase usable area in the expansion space we have chosen to add a shed dormer. We are framing the dormer with 2x10 rafters @ 16" o.c. to gain insulation depth. They bear on a new bearing wall that is centered over the main level bearing wall so that new structural loads will transfer through the existing structural system and we don't have to add any new footings or tear up the existing main level.

Note that we are setting the shed dormer at the same height as the existing roofline to maintain the integrity of the existing style.

If the attic expansion space is to be used as an office, family room, or tv room then there are no restrictions on head-height. But if it's to be used as a bedroom then it must have a minimum head-height of 7'-0" over 50% of a minimum bedroom area (7'-0" x 10'-0") or 35 s.f. See diagram above.



EVERY HABITABLE ROOM IN A HOUSE (HABITABLE ROOMS INCLUDE BEDROOMS BUT NOT BATHROOMS OR KITCHENS) MUST HAVE AN AREA OF WINDOW EQUAL TO 10% OF ITS HABITABLE FLOOR AREA. HALF OF THIS WINDOW AREA MUST OPEN FOR VENTILATION.

PROVIDE ACCESS PANELS TO ALL ATTIC SPACES.

1/21 ADDING DORMER/BATHROOM TO ATTIC EXPANSION SPACE PLAN

1/4" = 1'-0"

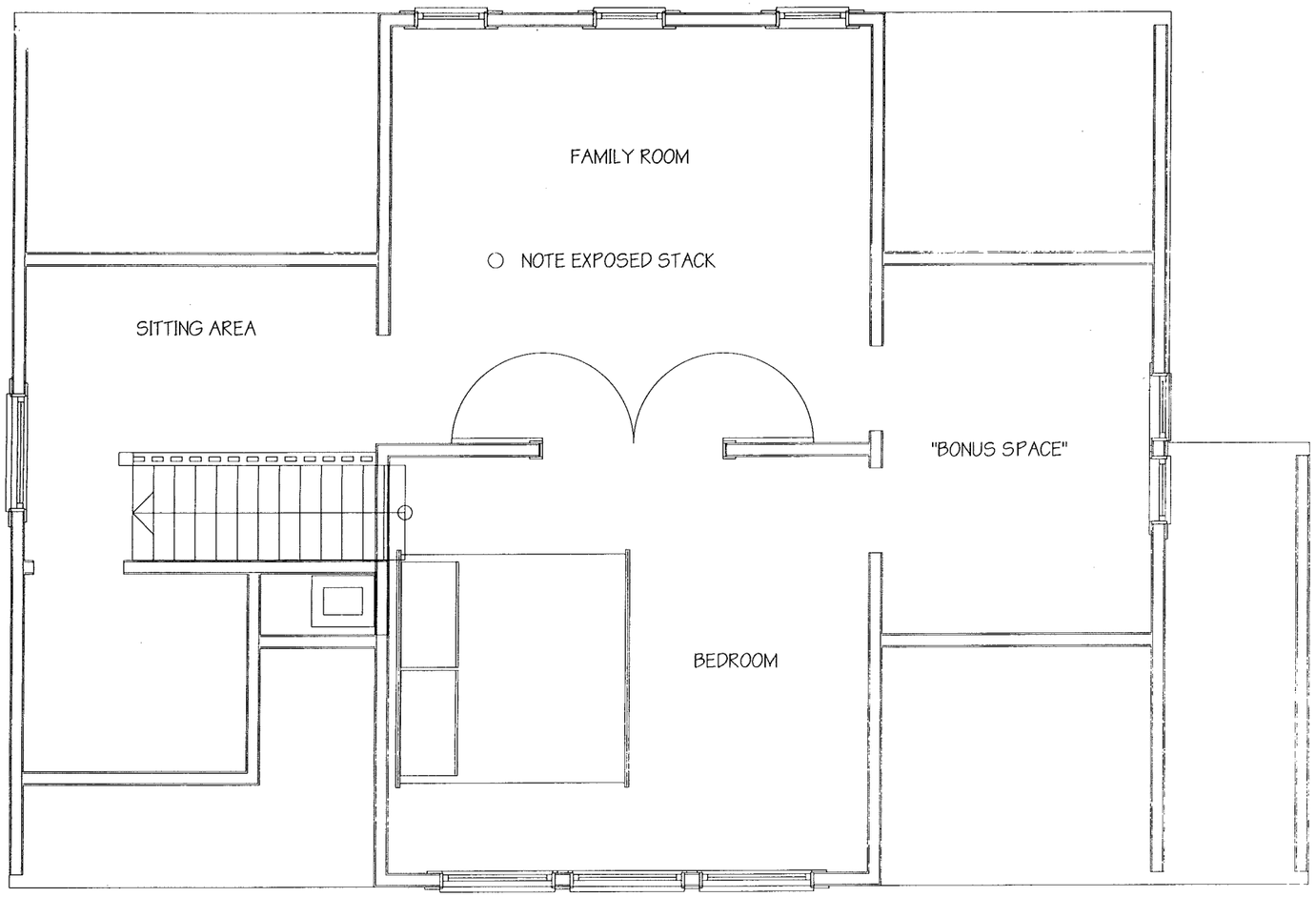
Indoor plumbing was still newfangled technology back in 1926. A separate bathroom just for the parents was an unheard-of luxury. Today master bathrooms are standard issue in the suburbs, and it's quite common to renovate bungalow expansion spaces into a second-level master suite with a sleeping area, walk-in closet, full bath, and sometimes even a sitting room or study.

Our first step in designing the attic renovation is to locate the existing 5" cast iron waste stack, which rises through the house from the bathroom below. We designed the bathroom around this stack (that is, over the existing main level bathroom) to make it easier to tie into the existing plumbing lines. Hot and cold water pipes need to come up from the basement and a waste stack needs to drop down to the basement. We will carve a vertical "chase" for the pipes from extra space in the bedroom closets (see plan p. 10).

It's often tricky in bungalow attic bathrooms to get enough headroom for a decent shower. A tub, if used only for soaking, doesn't require much headroom, but a shower requires elbow room to shampoo and rinse your hair. Our shower slopes from 7'-0" at its high end to 6'-3" at the low end. Also note there needs to be sufficient headroom to stand in front of the stool. We have clearance of only 6'-0". 7'-0" is the minimum, but since this is a second bath the city won't enforce that requirement.

We intentionally oriented the bedroom to the south to bring in more light during the day. Large double-hung windows go right to the floor, making the room feel larger. There is a legal minimum size for a bedroom: 70 s.f. with one dimension being no smaller than 7'-0" (though in actual practice it's best not to make a bedroom any narrower than 8'-0"). This entire area must have a ceiling higher than 5'-0" and 50% of that area must be 7'-0" or higher.

Large French doors add a touch of elegance to the space and prevent the hallway from feeling claustrophobic. Since suburban houses always have "bonus" space, we included space that can be used as a study, nursery, tv space, reading room or, most likely, as closet, for the amount of clothing people own has exploded since 1926, and there's the potential for a large amount of closet space where headroom is not an issue.



1/22 ADDING A FAMILY ROOM TO THE ATTIC EXPANSION SPACE PLAN

1/4" = 1'-0"

NOTE:
CLOSETS IN BEDROOMS ARE NOT REQUIRED BY BUILDING CODES. THEY ARE, HOWEVER, REQUIRED BY LENDING INSTITUTIONS SUCH AS THE FHA. DON'T COUNT ON GETTING ANY SORT OF BANK LOAN WITHOUT CLOSETS.

NOTE:
A RECENT CHANGE IN THE BUILDING CODE REQUIRES THAT WINDOWS ON STAIR LANDINGS WITHIN 5' OF STAIRS MUST ALSO BE SAFETY GLASS. THIS APPLIES TO EXISTING CONSTRUCTION ONLY IF THE WINDOW IS NEW OR REPLACED. ALSO NEW WINDOWS WITHIN 24" OF DOORS MUST BE SAFETY GLASS.

Bathrooms are expensive. Shown here is another plan for finishing the attic expansion space without adding a bathroom.

This plan creates one potential bedroom, while the remaining space could be used for multiple functions. It could be a family room, a lounge for watching tv or a space dedicated to computers. It could be a home office for adults, a play area for children, or a homework zone for schoolkids.

An important component of any project is to plan for the future. Even if a bathroom or bedroom aren't in the plans immediately, try to set the design up so future renovations are easier. For example, consider building in a bathroom fan and a bedroom egress window. Thinking ahead and planning for future additions is far more cost effective than modifying the renovation in the future.

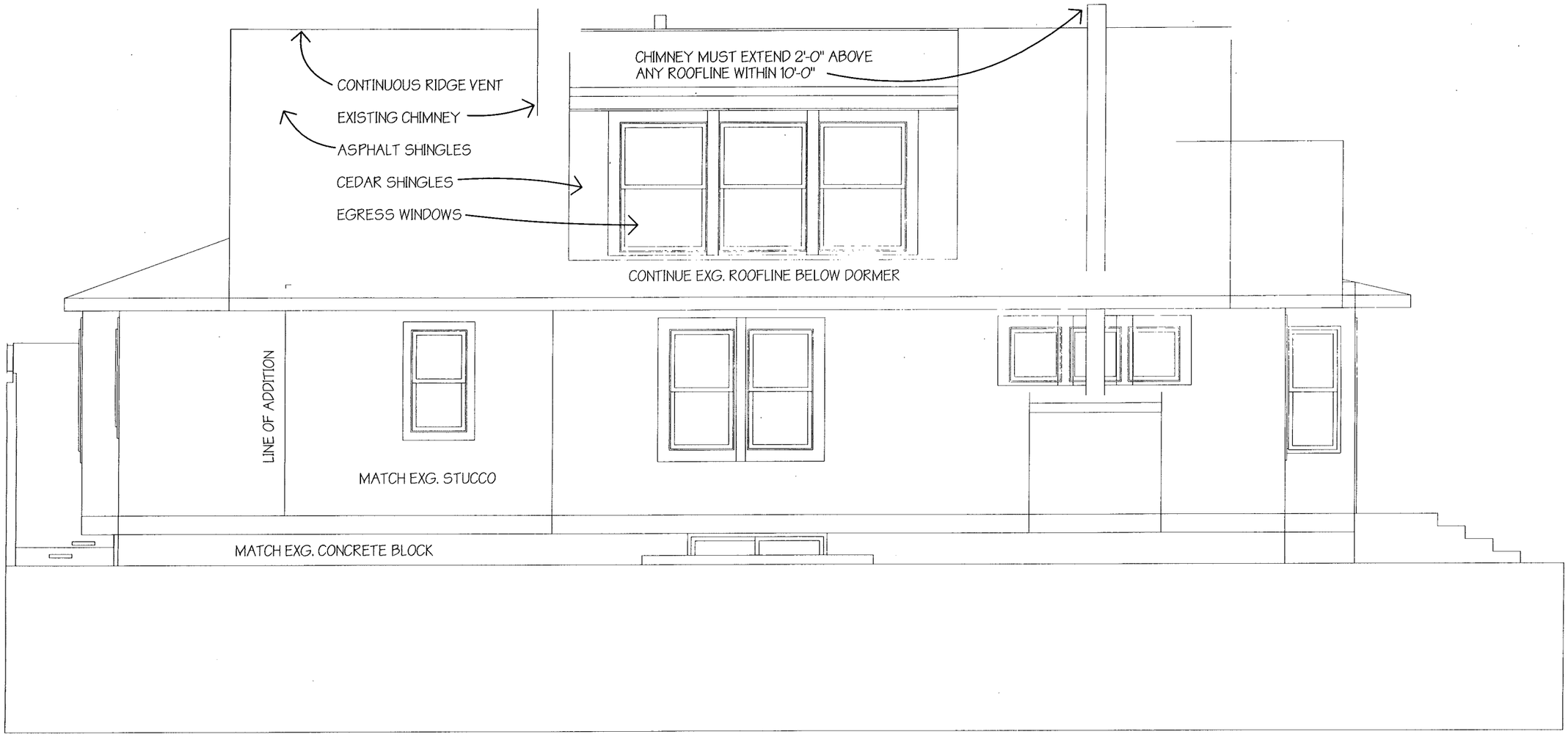
Because glass in the future bedroom's windows comes within 18" of the floor, it should be "safety glass," that is, special glass, either tempered or laminated (like that used in automobile windshields), that will crumble rather than shatter if broken. Safety glass is only required by code when the sash is nine square feet or larger.

Integrating an expanded heating system into the attic expansion space can be tricky, though the degree of complexity is different between hot water radiator systems and forced air systems.

Hot water radiators have a boiler in the basement that pumps hot water through radiators scattered throughout the house, typically below windows. Adding additional radiators in the expansion space involves connecting pipes to the existing system and running them up to the attic, typically through a closet space.

Forced air systems involve larger sheet-metal ducts which must run into the attic (again, typically through a stolen corner of a closet) and then branch out to vent hot air, again ideally beneath windows. Forced air takes up a larger volume of space but has the advantage of making air conditioning easy to install.

Existing houses vary widely in the quality of their heating plants and whether heat was planned for (and thus extended into) the expansion space.



1/23 SOUTH ELEVATION SHOWING NEW DORMER AND NEW EGRESS WINDOWS

1/4" = 1'-0"

We have designed the exterior of the dormer to complement the bungalow's existing character.

The existing siding is stucco with painted wood trim, but rather than siding the dormer with stucco, we have specified cedar shingles. Stucco is installed by specialists; shingles are installed by a carpenter. One way to minimize construction cost is to minimize the number of different trades on the site. Finish will be paint.

One absolutely inflexible requirement in building codes is that every sleeping space have two means of exit (or "egress"). One exit is through the interior door; another has to be through a door or window directly to the exterior. Typically this requirement is satisfied by having an "egress window," an opening large enough to allow a firefighter wearing an oxygen tank and carrying a child to crawl through during a fire.

A window, to meet egress code, must satisfy the following requirements:

1.) it must have a minimum net clear opening of 5.7 square feet.

2.) it must have a minimum vertical opening of 24".

3.) it must have a minimum horizontal opening of 20".

4.) the sill must be no higher than 44" off the finish floor.

Note that 20" x 24" does not equal 5.7 s.f. Either the vertical or horizontal component must be larger.

Window manufacturers typically identify specific windows within their lines that meet egress requirements.

Also note that existing windows are grandfathered in; we don't have to go back and upgrade the existing main level bedroom windows to satisfy current code. Only new or renovated construction has to satisfy current standards.

We are specifying wood windows in the new dormer. As in the kitchen, our goal is to match the existing bungalow's character. Wood windows are more historically accurate than aluminum windows, and we can paint them to match the existing windows. We're specifying double-hung windows in the bedroom and small casement windows in the bathroom. It is also possible to match mullion patterns in windows and to find traditional storm and screen sashes (if you're historically minded).

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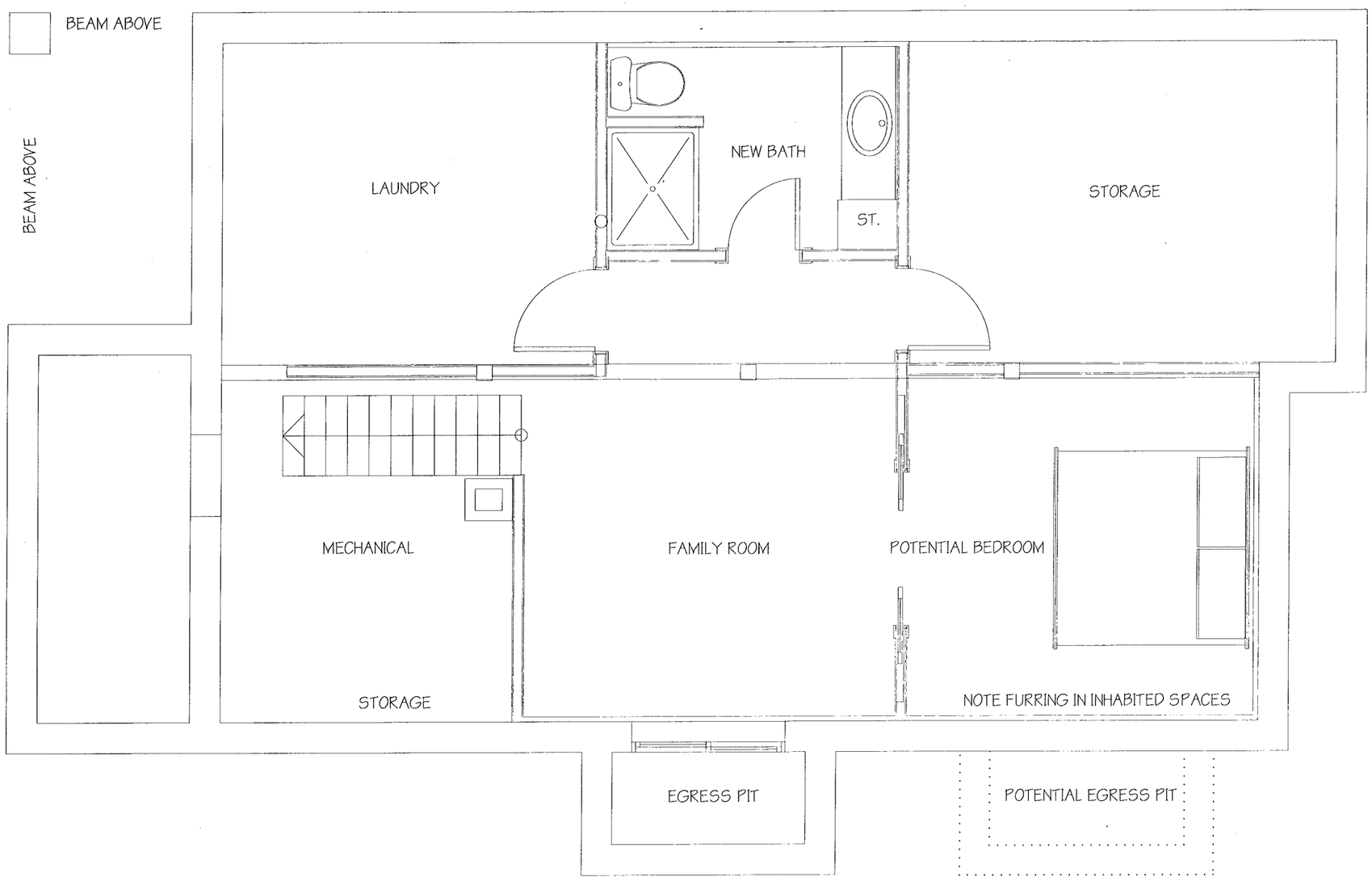

1/24 ADDING A BATHROOM AND/OR BEDROOM TO THE BASEMENT LEVEL PLAN

1/4" = 1'-0"

NOTE:
IT IS NOT POSSIBLE TO ADD A LEGAL BEDROOM TO THIS BUNGALOW BASEMENT DUE TO THE LACK OF HEADROOM. HENCE WE HAVE LOCATED OUR EGRESS PIT IN THE FAMILY ROOM, WHERE THE SUNLIGHT WILL BE MOST APPRECIATED. IF YOU HAVE ENOUGH HEADROOM IN YOUR BASEMENT TO INSTALL A LEGAL BEDROOM, THEN NOTE THAT THE EGRESS WINDOW MUST BE IN THE BEDROOM ITSELF.

ALSO NOTE THAT IF THE FIREPLACE IS ADDED AN EGRESS PIT CANNOT BE BUILT DIRECTLY BENEATH THE FIREPLACE CANTILEVER.

More living space can be found in the bungalow basement.

For basement space to be habitable, it needs to be insulated. Soil below the frost line maintains a constant year-round temperature of 55 degrees; concrete foundation walls stabilize at that temperature. In the summer warm, moist air condenses on this cool concrete, making the basement damp and potentially mildewy.

Basement bedrooms are not of the highest quality, and mildew raises potential health concerns. But adding bedrooms to a bungalow can create emergency living space for families with pressing needs.

We have chosen to "furr out" the concrete block foundation wall with treated 2x2's @ 16" o.c. and fill in between furring strips with 1 1/2" of R-10 rigid insulation. A vapor barrier is installed over the insulation (remember the vapor barrier **ALWAYS** goes on the warm side of insulation) and sheetrock over the vapor barrier. Rigid insulation can give off toxic fumes during a fire, so it must be sealed in sheetrock for protection.

We have once again located the new bathroom directly beneath the existing main level bathroom to maximize the efficiency of the existing plumbing lines.

This means that living areas will be located on the south side where they will gain more direct sunshine, making them feel less basement-like.

In this bungalow basement we run into an insurmountable problem with ceiling height. To be legally called a bedroom a space must have a minimum ceiling height of 7'-0" in over 50% of its area. The ceiling height in this basement (measured to the bottom of the main level floor joists) is 6'-9 1/2". Heating ducts (in a home with forced-air heat) will eliminate even more headroom. Hence no room in this remodeled basement can be called a bedroom for legal or resale purposes.

But the space is still useful, and it can still be used as sleeping space as long as an egress window is added (see p. 18). We are adding the egress window well on the south side of the bungalow. It would look awkward on the front (or east) elevation, and a south window will pull in more light during the winter months, making the room feel less basement-like.

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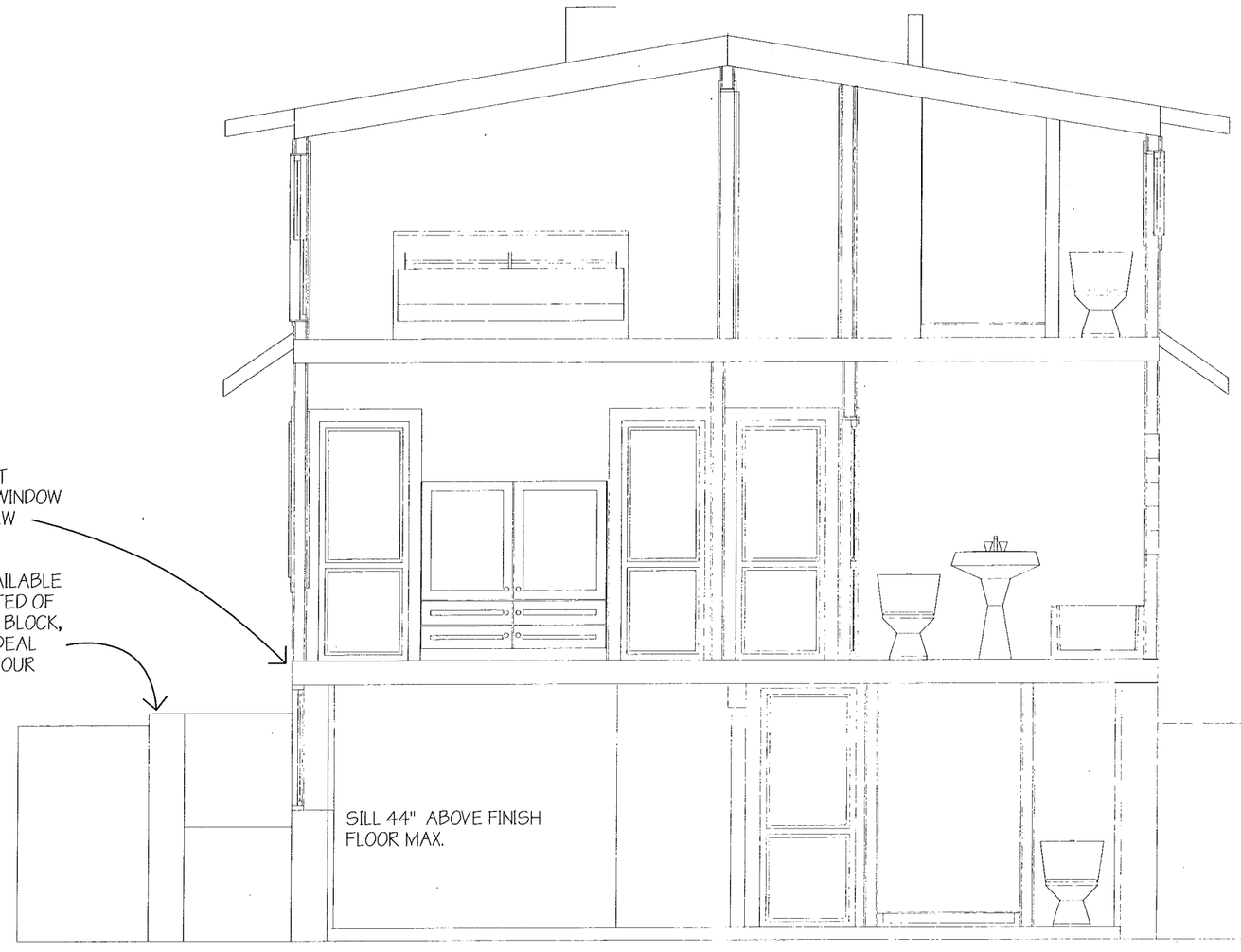


1/25 SECTION THROUGH BASEMENT LEVEL SHOWING EGRESS WINDOW

1/4" = 1'-0"

Code requires that any finished basement space or basement bedroom have a second means of egress. In theory this second exit can be either a door or a window. In practice, it is almost always an egress window (see p. 22 for minimum egress window requirements), and since this window will be below grade, it needs to open into an "egress pit."

This pit must extend at least 3'-0" from the house, at least 6" below the window, and at least 6" from either side of the window (with a minimum area of 9 s.f.). Also note that a person must be able to stand up in the pit, so it can't be located beneath a cantilever (such as the kitchen or fireplace).

The pit depth is set by the window sill height, which in turn is set by the code requirement that the sill of an egress window cannot be any higher than 44" off the finished floor.

The window we specified is called a "slider." A slider is essentially a double-hung window installed on its side, so that its sashes slide left/right rather than up/down. This gives us a large amount of horizontal glass and removes the possibility that something in the exit pit (for example snow or plant growth) will block the window from opening, making the entire effort moot.

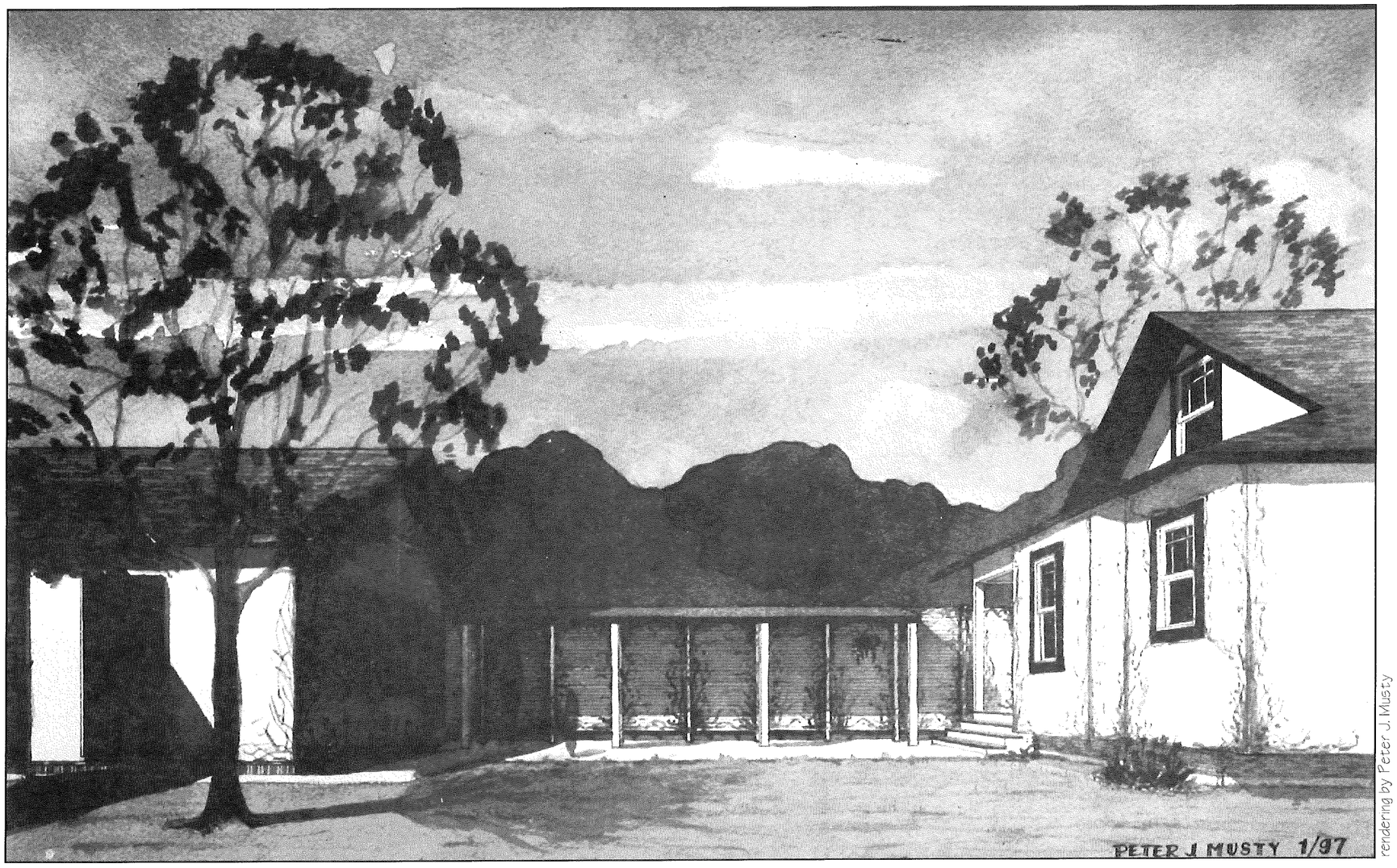
Escape pits can be a security concern for two reasons:

One, they create a pit that people and animals can fall into, injuring themselves. Adding a guardrail at the top, however, makes them harder to use in case of fire.

Two, they can create a perfect route into a house for burglars. Yet adding steel security bars, which would defeat the burglars, also defeats the purpose of an egress window. The City of Minneapolis will allow bars on windows IF they are equipped with panic hardware that can be operated from the inside without the use of a key or tool (see "Minneapolis Fire Prevention Policy #45"). Mill City Ornamental Iron, 2611, Second St. North, Minneapolis, MN 55411, 612/521-0604 offers a quick-release system with their steel security bars to pair basement security with fire safety.

HELPFUL HANDOUTS FROM THE CITY OF MINNEAPOLIS:

- "TIMBER RETAINING WALLS"
- "12" BLOCK RETAINING WALLS"
- "MINNEAPOLIS FIRE PREVENTION POLICY #45" ON PANIC HARDWARE FOR BASEMENT EGRESS WINDOW BARS.
- "FINISHING BASEMENTS WITHIN EXISTING DWELLING UNITS"
- "REQUIREMENTS FOR SMOKE DETECTORS."



rendering by Peter J. Musty

1/26 PERSPECTIVE OF BACKYARD SHOWING NEW TWO-CAR GARAGE AND PERGOLA CONNECTION TO HOUSE

no scale

Nothing differentiates an urban house from a suburban one more sharply than its garage.

Suburban houses are built around their garages. The dominant image of most suburban houses is the big, two-car (or three-car) garage. Many suburban houses look like garages with houses attached.

In contrast, most bungalows were built at a time when people traveled regularly by foot or streetcar and automobiles were still a bit of a luxury. Houses were primarily homes for people, not warehouses for cars. And while most bungalows were built with garages, they were single, detached garages accessed through the alley and invisible from the street.

Automobile ownership has mushroomed over the past 70 years. A typical family today owns two if not three cars, and people expect to reach their car without getting rained or snowed on.

In addition, the number of items stored in a typical garage has skyrocketed. Today garages are packed solid with tools and toys. A snow shovel takes up a fraction of the room a snowblower requires, and that competes for space with the lawnmower, the leaf-blower, the canoe, the kayak, the bicycles (both street and mountain), and countless other items.

This project adds a two-stall garage to our prototypical bungalow with extra space for storage or a workshop. The garage is connected to the house via a breezeway which, while open, will protect a homeowner with bagful of groceries from rain and wind. Ideally this combination will create suburban convenience with urban community.

HELPFUL HANDOUTS FROM THE CITY OF MINNEAPOLIS:

- "ZONING REQUIREMENTS FOR PRIVATE DETACHED GARAGES."
- "FENCE ORDINANCE."
- "DETACHED GARAGE FOUNDATIONS AND SLABS."

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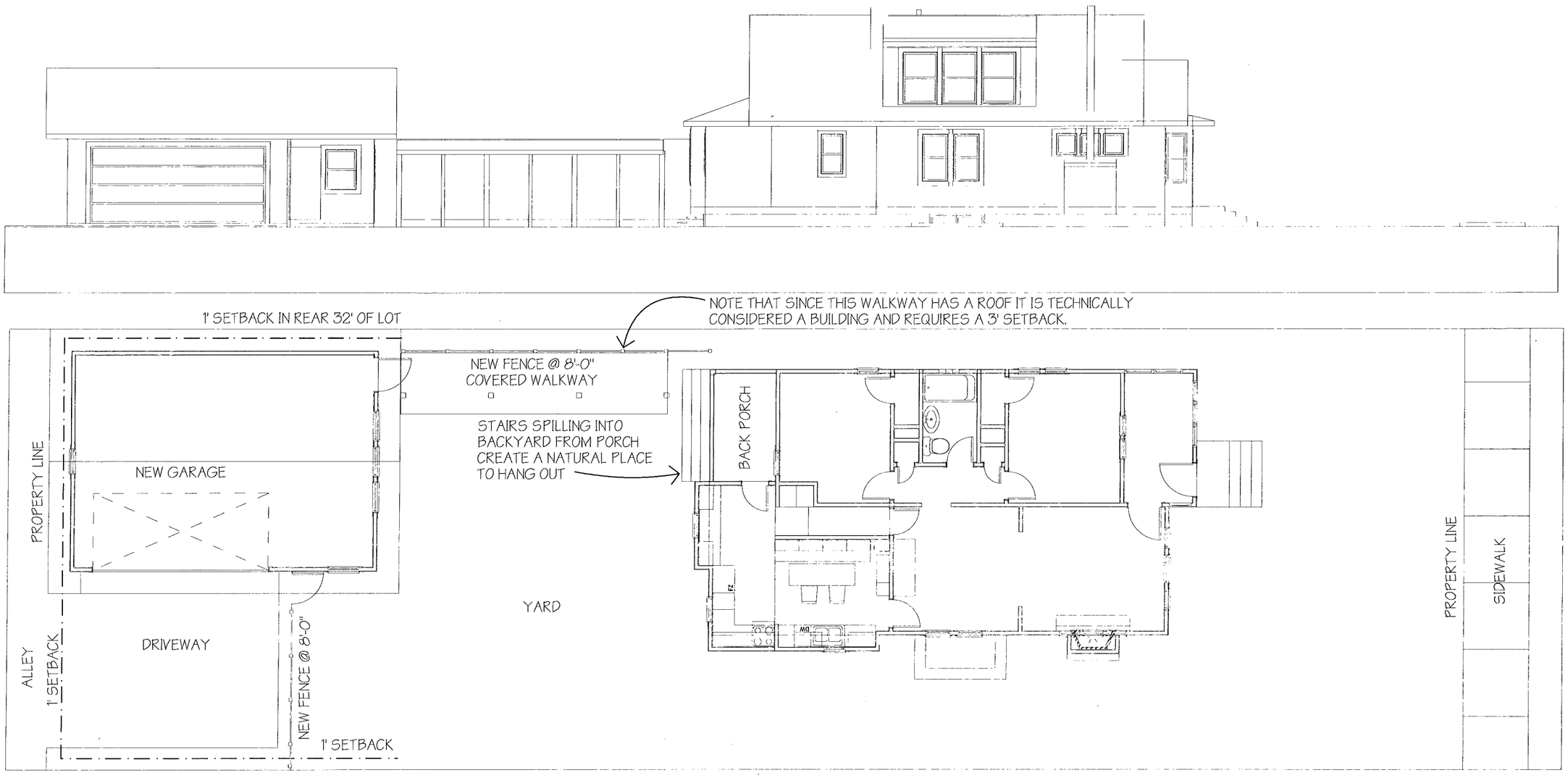

1/27 ADDING A TWO-STALL GARAGE TO HOUSE SITE PLAN AND SITE SECTION

SCALE 1:10

The first step of any garage project is to locate the property lines.

The only accurate, reliable, and legally recognized method of locating property lines is to have a legal survey prepared by a licensed surveyor. A less expensive (and less reliable) method is to pick up the "Property Line Kit" for your site from the City of Minneapolis GIS Print Room (call 673-2431 for more information).

This kit contains a plat map, a sheet that shows all the relevant setbacks for your lot (and helps you locate the corners from landmarks such as sidewalk edges), and handouts titled "Fence Ordinance" and "Zoning Requirements for Private Detached Garages."

Setbacks for a garage are completely different than setbacks for a house. If we build our garage within the rear 32' of the property, we're allowed to build within one foot of the property line on both the alley and sideyard (though note that roof overhangs may be no closer than 6" of the property line).

Other than the garage door there are no doors or windows on the alley side for security's sake. Large windows light up one end of the garage, which can be used as a workshop, potting shed, or bicycle repair shop.

Mature trees add great value to a site. Many bungalow lots are blessed with magnificent oaks carefully preserved during the original construction. Unfortunately, oaks are one of the trees most susceptible to construction damage. Soil piled on top of root systems can suffocate a tree while disease-bearing insects can enter a tree through construction-damaged roots. Trees don't die immediately from construction damage, and often will look healthy for several years after a project is complete.

As a general rule of thumb, you want to avoid any construction within the dripline of a tree. For further advice, read "Protecting Trees from Construction Damage: A Homeowner's Guide" available through the University of Minnesota Extension Service (fax#: (612) 625-2207) Or call the "Dial U" service of the University of Minnesota Extension at (900) 988-0500. Or call the "Master Gardener" program of Hennepin County Extension 374-8400.

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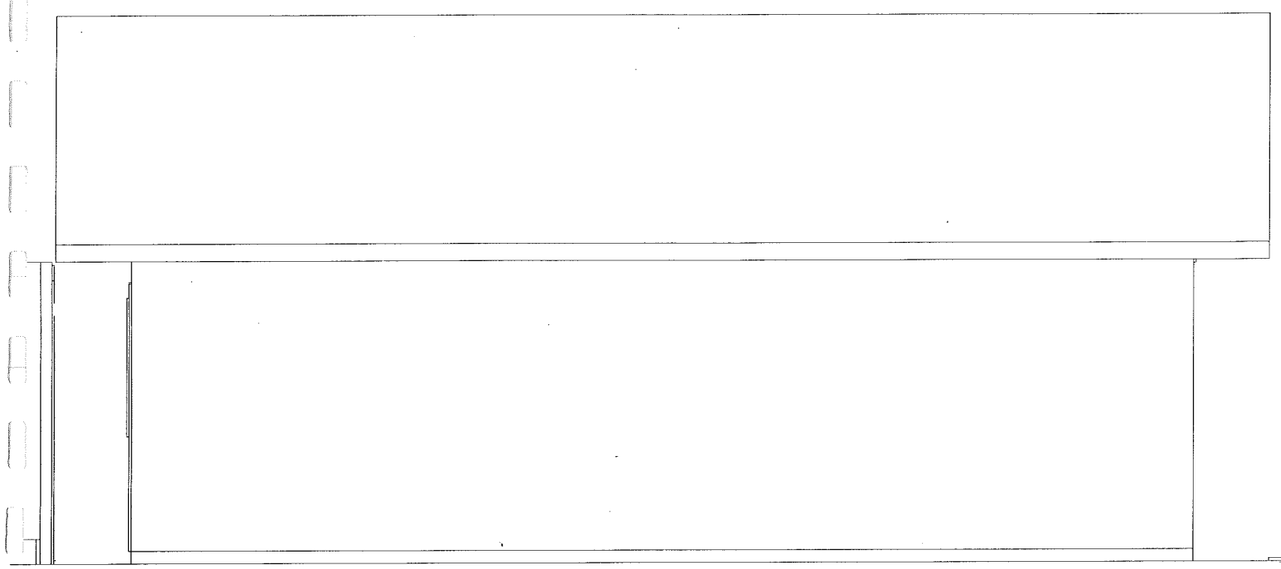
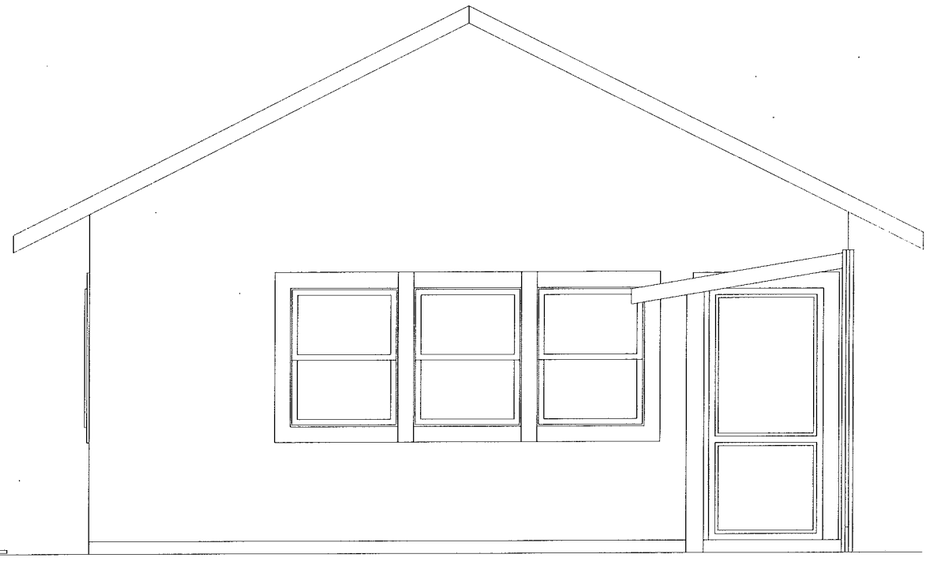
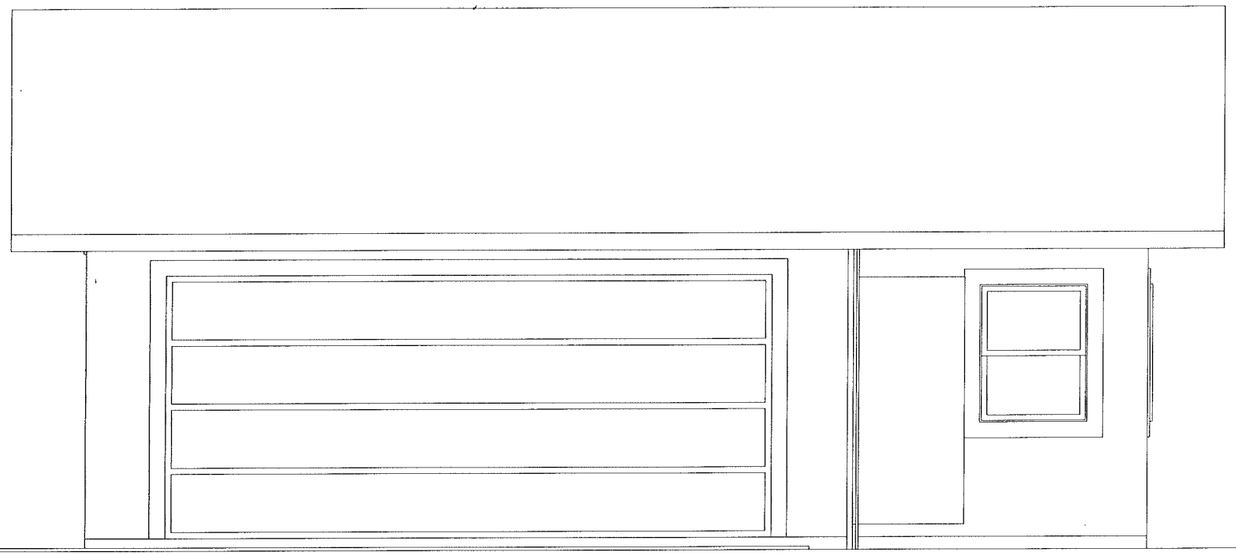
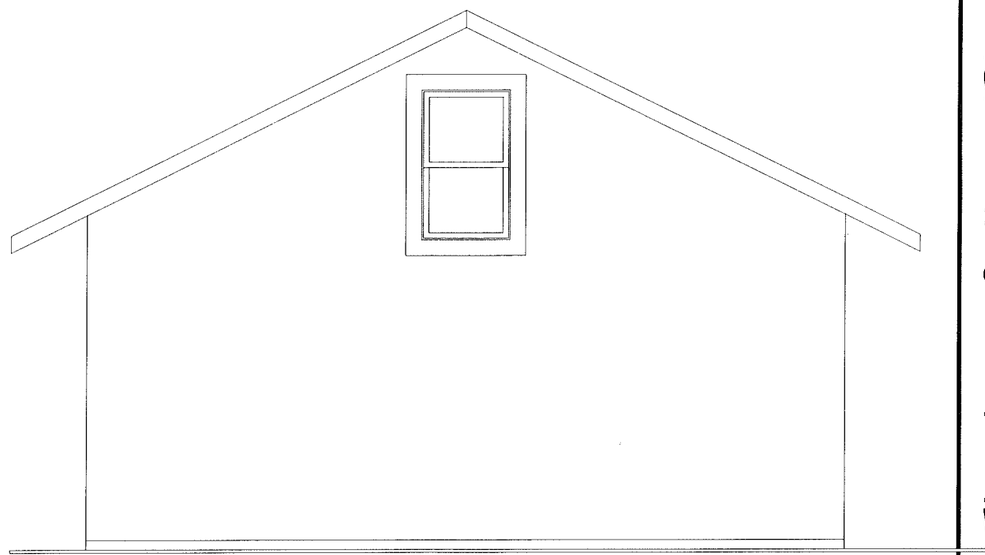








1/28 GARAGE ELEVATIONS (EAST, WEST, NORTH AND SOUTH)

1/4" = 1'-0"

We have chosen to keep the garage design extremely simple to help keep it affordable, yet by adding a few architectural touches we can easily make it sympathetic to the existing bungalow.

First, the siding will be stucco in a color and pattern that matches the existing house. Stucco has a higher up-front cost than other sidings but it's low-maintenance. And since the garage is a one-story building, the stucco contractor won't have to put up scaffolding, thus keeping the price competitive with wood and other sidings.

The windows we selected are double-hung units in proportions that match windows on the existing house. As with windows on the house, we specified wood windows so they can be painted to match colors on the house. They will also be surrounded by matching 5" painted wood trim.

The roof is framed with computer-designed, factory-fabricated wood trusses (again to keep costs down) but the overhangs are deeper than normal to complement the existing house. The roof pitch is slightly lower than the existing house (6/12 for the garage vs. 8/12 for the house) to keep the garage within the 12'-0" height limit (note that this height limit is measured at a point halfway between the eave and the ridge line).

At 20'-0" deep the garage is shallower than normal to help save the backyard oak tree. But at 28'-0" the garage is wider than normal, creating space for two cars plus a workshop area.

We specified the 16'-0" double door rather than two single doors to make the tight turn from the alley into the garage easier. They are oriented to the south to help use solar energy in the winter to melt ice and snow.

Nothing makes suburban living look more comfortable to bungalow owners than the oftentimes cold, wet, windy walk to the detached garage.

While there is no reasonable way to attach a garage directly to this bungalow, we have connected house and garage via a covered walkway we've designed. We call it "The Living Fence."

This fence is 8'-0" high (the legal limit) and runs along the north property line. Note that we can build a fence directly on the property line with no setback (though obviously all the fence posts and other fence material must be on this property) but the moment a roof is added--even if the roof is open underneath--then either the minimum setback must be observed or a variance applied for.

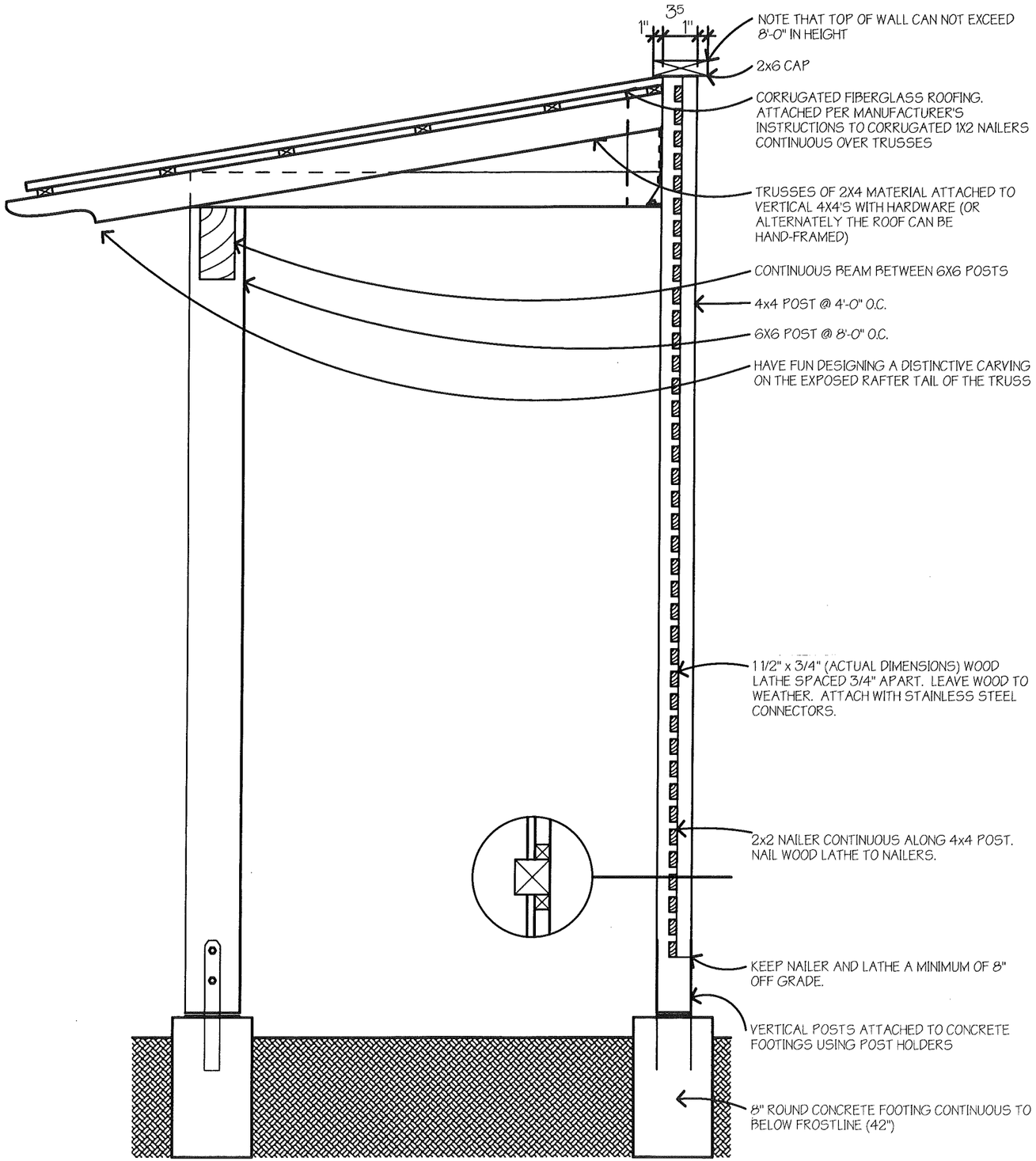
In this case we believe strongly enough that it's important to gain the extra 5'-0" of yard and so would fight for a variance. Zoning variances are granted by the Zoning Board of Appeals and the zoning office or your council member can give you further information about the application process.

We call it the "living fence" because nailed to the vertical posts is horizontal wood lathe, which will be left to weather. This open mesh can support ivy and other vines, the ideal Arts & Crafts plantings, which as they grow will create a green wall: the "living fence."

Off the posts hang mini-trusses that support a roof of molded fiberglass, just enough shelter to keep off the rain and snow.

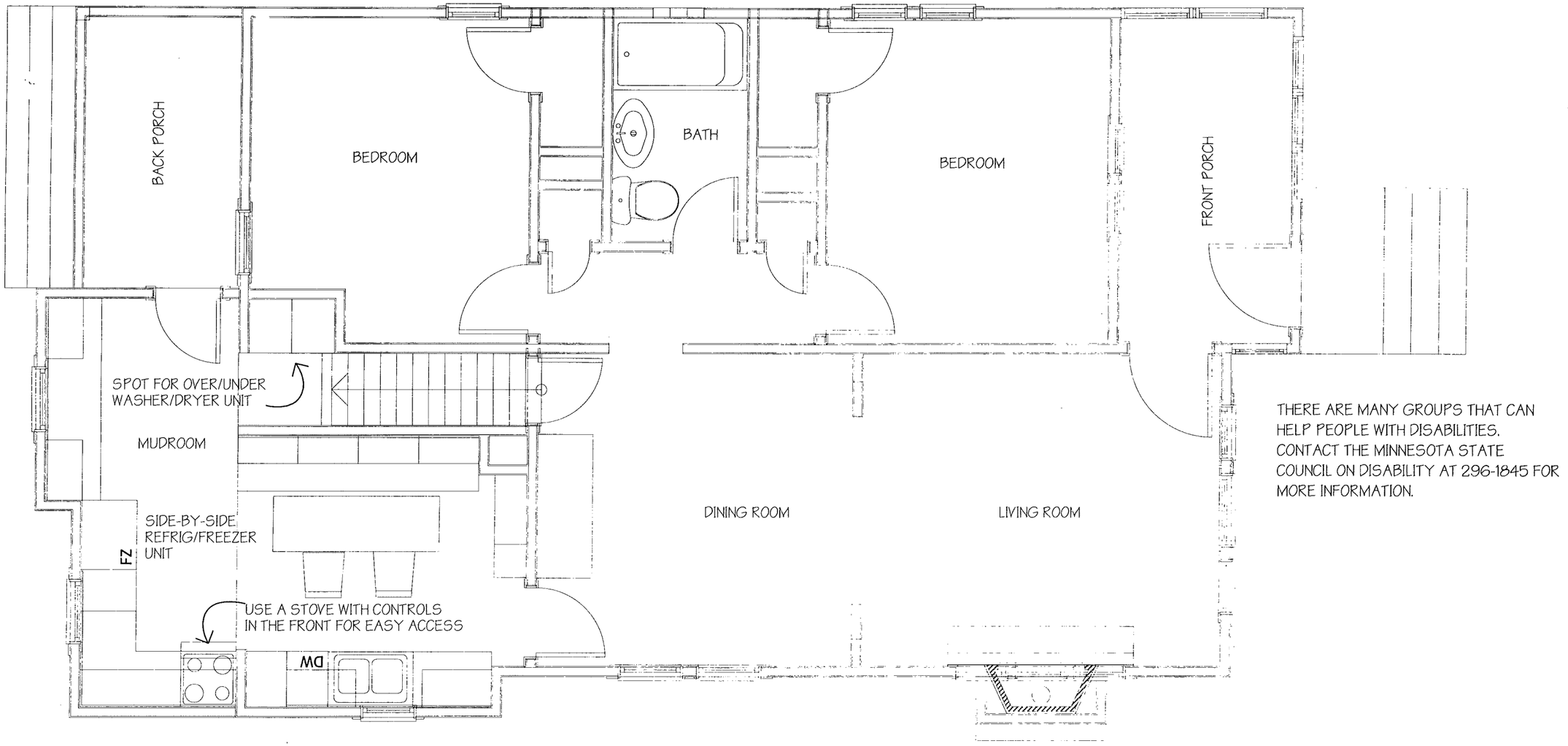
Another line of posts 8'-0" o.c. defines the inner yard, giving the enclosed yard space the feel of a classical colonnade.

Attractive flowering vines that would be appropriate in this setting include: clematis, climbing honeysuckle, climbing hydrangea, climbing roses and trumpet vine. Also consider grapevines which, while not known for their flowers, create dense vegetation and fruit.



1/29 "LIVING FENCE" SECTION AND DETAILS

1" = 1'-0"



THERE ARE MANY GROUPS THAT CAN HELP PEOPLE WITH DISABILITIES. CONTACT THE MINNESOTA STATE COUNCIL ON DISABILITY AT 296-1845 FOR MORE INFORMATION.

1/30

MAKING THE BUNGALOW FRIENDLY TO PEOPLE WITH DISABILITIES

1/4" = 1'-0"

Back in 1926 designers simply didn't plan for the variety of ways people with different physical capabilities inhabit a house. Retrofitting a bungalow such as this is not easy, and a retrofit will only be partially successful at best. But a broad range of minor adjustments can certainly help ease the day-to-day difficulties of living with physical limitations:

Ramps: Stairs are the biggest single obstacle to getting in and out of a bungalow. Building a ramp can help an elderly person or someone in a wheelchair navigate the elevation change between grade and the main level floor. The maximum slope of an interior ramp is 1:12. The maximum slope of an exterior ramp is 1:20 (though if it's not required the city will allow a ramp of 1:12). Provide a handrail on at least one side and curb the ramp a minimum of 2" to prevent a wheelchair from sliding off. Provide a 5'-0" landing at the top and bottom of the ramp.

Doors: Make door sills and thresholds flush wherever possible to prevent tripping or stumbling. Make exterior doors 3'-0" wide (if they aren't already). Retrofit interior doors to be 2'-10" wide if wheelchair access is important.

Showers: Showers with a low (or flush) threshold are easier to get in and out of than a tub. Consider removing the existing tub and building in a shower with grab bars, handicap shower hardware and a fold-down seat.

Toilets: Build in grab bars beside and behind the toilet. Install a higher-than-normal 17" stool, which is easier to get on and off of.

Sinks: A wall-mounted sink with space below is important for wheelchair accessibility. Accessible faucet hardware will make the sink easier to use. Lever-handle or electronic "touch free" faucets are widely available.

Kitchens: The typical kitchen counter is 36" off the finish floor. A height of 30" is more easily accessible to someone in a wheelchair. Provide space underneath the counter by the sink and other work areas. Install slide-out drawers in the cabinets for easier access. Install the microwave at counter height. Use a side-by-side refrigerator/freezer unit.

Laundry: Consider moving the laundry into the kitchen and using over/under front-loading appliances.

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Resources

(All telephone numbers listed here have 612 area codes unless otherwise noted.)

Getting Started

Price Breakdowns for Each Plan in This Book: Contact Whole Builders, 824-6567. Ask for *Longfellow Planbook* pricing.

Starting Your Remodeling Project: Call the Zoning Office, 673-5836 for information on required set-backs.

Remodeling Plan Review: Call Inspections Division, 673-5831. Inspections is located on the 3rd floor of the Public Health Building, 250 S. 4th St., Minneapolis. Walk-in hours are Monday through Friday, 9 am to 3 pm. Bring two copies of your plans. Homeowners and contractors will also need a permit to do electric, plumbing or heating work.

How to Hire a Contractor: This informative free brochure is available through the Department of Licenses, 673-2080, or write Department of Licenses, 350 S. 5th St., Minneapolis, MN 55415.

This Old House Tax Break: When you secure a building permit, the City Assessors Office will automatically send you an application for a "This Old House" tax incentive for the improvement of older homes. It offers a tax exemption for owners of older homes that make improvements that increase their home's value—for up to 10 years. The exemption covers owner-occupied single family homes, duplexes and triplexes, with no income limits. Homes between 35 and 70 years old receive a property tax exclusion equal to one half of the increase in value up to $25,000. A house over 70 years old will receive a complete exclusion to a maximum of $50,000. Call the City Assessor, 673-2382, for more information.

Financing Through the MCDA: The MCDA's basic Home Improvement Loan provides up to $15,000 to qualified homeowners with incomes up to $44,000. Interest rates range from 2 to 8 percent. For Minneapolis residents with low incomes, the MCDA offers deferred loans for basic repairs. Those with incomes below $27,000 can borrow up to $15,000 for home repairs. You pay back the loan only if you sell your home within seven to 10 years.

Energy Loans: The MCDA offers Energy Loans up to $5,000 with 8-percent interest for energy-related repairs. There is no income limit, and home equity is not required.

Homebuyers Tax Break: If you are planning to buy or sell a home, the Homebuyers Tax Break program offers tax breaks on homes in designated areas of south Minneapolis stretching from the Mississippi River to Lake Harriet. Eligible home buyers can deduct up to $15,000 from their state income taxes for five years. If you are selling a home in the designated area, you can use the tax break as a selling point. For information on the Homebuyers Tax Break, call the City Assessor, 673-2382. For information on the other MCDA programs, call 673-5286.

Ask NSP: NSP offers 200 messages on just about any energy-related topic, including insulation; ventilation; weatherization and selecting energy-efficient appliances. Call 282-1200.

Minnegasco: Minnegasco provides free energy audits for homeowners. Call 321-5011 to schedule an audit. The company also provides budget plan information and fact sheets on topics ranging from indoor humidity levels to energy-saving ideas.

Sources

Paint—Exterior and Interior: Sherwin Williams offers its "Preservation Pallet" brochures for interior and exterior colors. What is unique about the Sherwin Williams collection is that it offers paint color groups by housing style and by period, with color illustrations. The exterior colors include Victorian Romanticism, Classical/Colonial, Roycroft Arts & Crafts and Postwar colors. Bungalow colors are listed under the Roycroft Collection. The Preservation Pallet makes picking colors much easier. Available at Sherwin Williams dealers.

Architectural Salvage: Architectural Antiques, 801 Washington Ave. N., Minneapolis, 332-8344.
Bauer Bros. Inc. 2500 Elm St. S.E., Minneapolis, 331-9492.
Northwest Architectural Salvage, 981 Selby Ave., St. Paul, 644-9270.
PPL Shop, 850 15th Ave. NE, Minneapolis, 789-3322.
The Reuse Center, 2216 Lake St. (Hi-Lake), Minneapolis, 724-2608.

Saving Trees During Construction

Dial U: 900/988-0500.

Planting a Courtyard Garden

The Minnesota Landscape Arboretum offers a variety of classes in gardening, 443-2460.

The Longfellow Garden Club, 722-4529.

Books

As Good as New, by Paul Jakubovich, $12.95. Perhaps the best book available for planning exterior work on older homes; it's also a guide book to materials and architectural styles. A wealth of information and lots of photos. Available through the Twin Cities Bungalow Club, 729-4712.

A Field Guide to American Houses, by Virginia and Lee McAlester, $21.95. Think of it as the Roger Tory Peterson bird guide for houses. Very informative. Published by Alfred A. Knopf Inc.

Sears, Roebuck Catalog of Houses, 1926, $11.95. A complete reprint of a mail-order home catalog. Published by Dover Publications.

The Bungalow: America's Arts & Crafts Home, by Paul Duchscherer, $29.95. Loaded with beautiful color photos of California-style bungalows. Published by Penguin.

Magazines and Periodicals

American Bungalow, 800/350-3363.
Old House Journal, 800/234-3797.
This Old House, 800/898-7237.
Preservation, the magazine of the National Trust for Historic Preservation, 800/944-6847.

Organizations

The Longfellow Community Council,
4151 Minnehaha Ave. S., Mpls., MN 55406
(612) 722-4529, www.longfellow.org
longfellowcc@worldnet.att.net

The Twin Cities Bungalow Club,
3529 43rd Ave. S., Mpls., MN 55406
(612) 729-4712, kjbungalow@aol.com.