

HOMES IN APARTMENT TOWERS

A NOTEBOOK OF IDEAS
FOR INDIVIDUALS AND COMMUNITIES

by
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TECHNOLOGY
JUNE, 1975

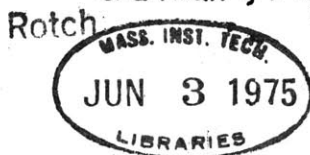
"There is hope in honest error, none in the icy
perfections of the mere stylist."

.. D C.R. MacIntosh

Signature of Author Department of Architecture
May 9, 1975

Certified by Thesis Supervisor

Accepted by Chairman, Departmental Committee
on Graduate Students



ABSTRACT

HOMES IN APARTMENT TOWERS:

A NOTEBOOK OF IDEAS FOR INDIVIDUALS AND COMMUNITIES

By John Kevin Ruedrsueli

Submitted to the Department of Architecture on May 9, 1975 in partial fulfillment of the requirements for the degree of Master of Architecture.

Many problems in our cities are related to individuality versus community (to what is private, and what is public, towards who the community is, and who the individuals consider the community to be, towards where the responsibility for the community lies.) In terms of communities there is too much individuality, and in terms of individuals there are too few.

In the housing field larger communities are being built more quickly. There is a need for people to work as communities to make these instant communities livable, physically and socially. There is also an increasing need for people to express themselves in a world that is making them more and more alike.

This paper suggests some ideas and ways in which people can work both collectively and individually to improve the physical and social environments of their neighborhood communities and their homes.

Thesis Supervisor: Jan Wampler, Associate Professor
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who was always available for advice;

And To:
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INTRODUCTION

This notebook of ideas is meant to stimulate some thought. It is specifically for people who live in apartment towers, and who want their buildings to be homes, but it can generally be applied to any place where people live.

Money is not the prime ingredient for making a home, though magazines and advertising try to make us believe it is. How do people live comfortably with little money in places all over the world? To understand what a home is will help answer the question. In simple terms, a home is an extension of the self, and also of the community around it. It is a place within a place. It takes on the attributes of the people who live in it and it is part of a larger community. Two extremes are homes in the wilderness and homes in an apartment tower.

Historically cities grow over great periods of time. Each new generation builds on the previous generations' work. Often the people know each other, care about each other, their homes, and community. There is pride and strength. A beautiful community requires constant maintenance. A rapid change in population is often reflected in rapid physical and social decay of the community. Industrialization is one cause of this. When the job market fluctuates we go where the jobs are. Soon we don't know our neighbors, because we come and go too quickly. We rent apartment after apartment. We are nomads. We are like campers who take everything but their trash. Our apartments are not our homes but camping areas. Our streets and neighborhoods are the responsibility of the city.

We have forgotten that we are the city. The problems grow worse, and we become confused, frightened, lost, forgotten.

The home inside is a place to call your own, a place with memories, and roots, a private place, a place to be yourself, a place to entertain, a place for a family or one person, a place for shelter. Many people have forgotten about homes. There are people who remember, though, and want others to remember as well.

There are repeated stories about people who decided to begin to cooperate with each other. In a New York City housing project a few people wanted to redecorate the halls in their building. Their idea spread to encompass everyone in the building. Each person did what he or she could do best. The manager supplied materials. Some people hung wallpaper, some painted, some hung pictures, some laid tiles. In the process they became friends and neighbors.

In Cambridge a citizens committee secured nearly seven million dollars in federal funds, and worked voluntarily to rehabilitate 1000 homes. Another citizens group prevented a developer from building a luxury apartment complex. They eventually became partners with that developer and built mixed income housing on the same site.

There are problems that keep people apart. The same problems inhibit the growth of communities and homes within communities. Some of the problems are related to our attitudes. We have not learned to be successful nomads. The entrepreneurs are cashing-in on our mobility. The housing industry is geared to making profits not to making homes. A very few are reaping tremendous profits. Building managers are caught in the middle, between the owners who want profits, and the residents who require their services.

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The result is that though managers and residents should be working together, they are forced to be at odds with each other. We are all somewhat myopic and find it difficult to see the problems we are within. We fight the people who should be our allies. We fear our neighbors. We worry about "what they would think". We see our homes not as our own but only temporary places to stay.

If we can change our attitudes, if we can realize that we are the community, if we can stop blaming others, if we can work together, if we can begin to treat our homes and communities as our own, then there will be progress.

We now have more leisure time than ever before. One constructive use of this time could be to work together to improve our physical environment and, in doing that, improve our social environment. One reason that modern buildings are so plain is that labor is expensive. But this gives us the opportunity to make our buildings the way we want. Though it means more work for us, we will be paid back many times over by what it does for us.

The changing of the attitude of a majority of the people could have ramifications beyond our experience. Owners, legislators, architects, and builders will have to respond to those changing attitudes. One possible change might be that buildings will be built for permanence. Another change could be a law that would lower mortgage rates on buildings that meet certain specifications. A new architect may evolve, the family architect.

The family architect could handle the personal building needs of the people who will live in the buildings built tomorrow. Citizens committees could take part in the planning of buildings and set aside money to cover work

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to be done after the building is inhabited. Once the building construction is finished, the family architect could work with the tenants to begin the growth process of the building with the money already made available. Concrete walks could be bricked, gardens and trees planted, corridors transformed from alleyways into streets. The building would take on the qualities of the people that it homes. This process, as previously shown, is already taking place. All that was necessary was an idea and the desire to see it.

The family architect can be anyone who can help organize and who is knowledgeable about building. He or she could be a contractor, hardware store worker (or owner), a carpenter, or a handy person. Ideally the building manager or superintendent would have these qualities.

This notebook is meant to help us begin. It has considered, as much as it will, the political and sociological problems connected with it. Some of the ideas are only a matter of buying or finding a few things. Others are complex and will require some practice before they can be done. Anybody can learn to do these things. Everybody needs ways to express themselves. Everybody needs to do things with their hands. Everybody needs to make things for themselves. It is time to begin.

PART 1: FOUR BUILDINGS

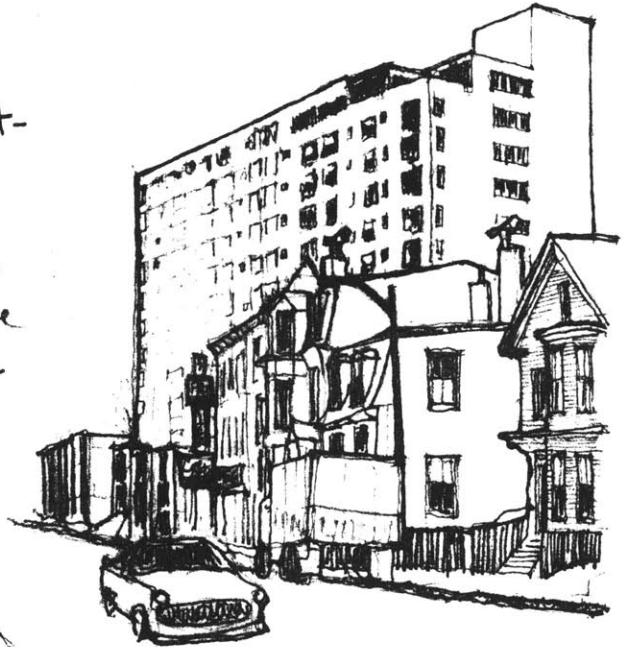


"The March of Modern Improvement - Destruction of Old Buildings
in Upper New York, 1871"

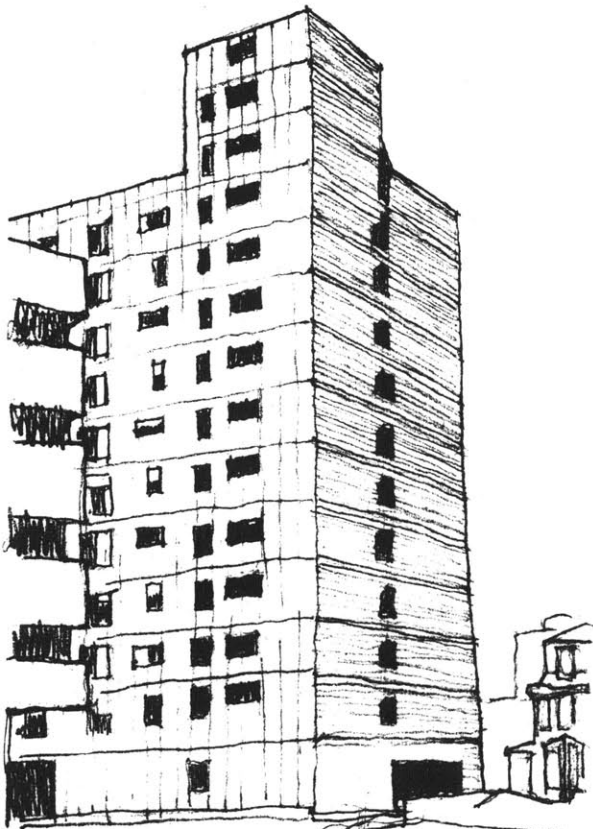


An increasing number of us will be living in apartment complexes in the years ahead. The pictures in this section are of real places and situations. The first picture contrasts where we used to live with where we will live.

The old houses were brick, or wood. The furnace, the water heater; the meters, the fuse box, the collection of junk, the workshop, were all in the cellar.



CONTRAST BETWEEN THE NEW AND THE OLD

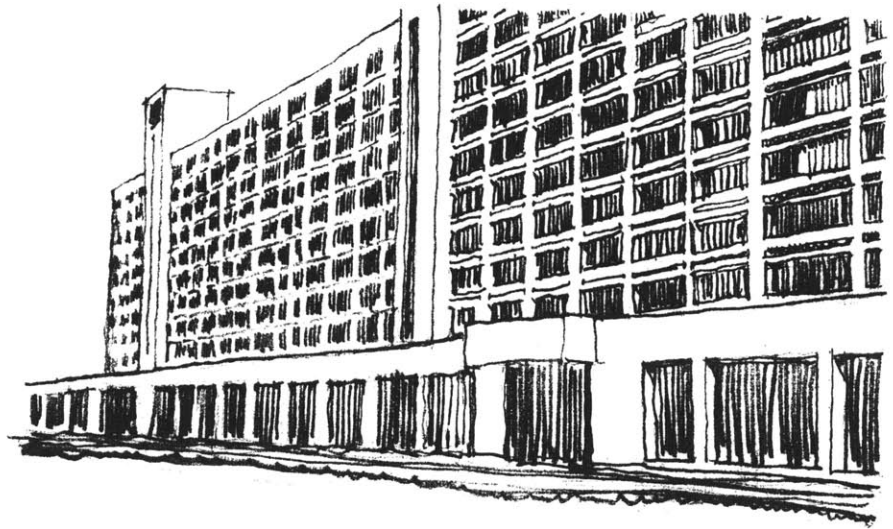


HOME OR "CREMATORIUM"?

The walls were plaster and wood. The floors were wood. There was trim around the doors and windows. That was also wood. Many houses had stained glass in the entry areas, or dining room, or stairway.

The houses were small compared to the apartment towers of the 1970's.

The plans at the back of this section refer to the buildings in these pictures.



The new buildings are meant for one hundred rather than two or three families. They are made of concrete and steel and occasionally brick. There is little or no wood. The building superintendent worries about heat, hot water, electricity, gas, and oil.

These buildings are an outgrowth of industrialization. Labor is expensive, and mass produced, prefabricated parts reduce labor costs. These buildings look mass produced. Often all the floors and all the

apartments are the same. It is easy to become confused or lost.



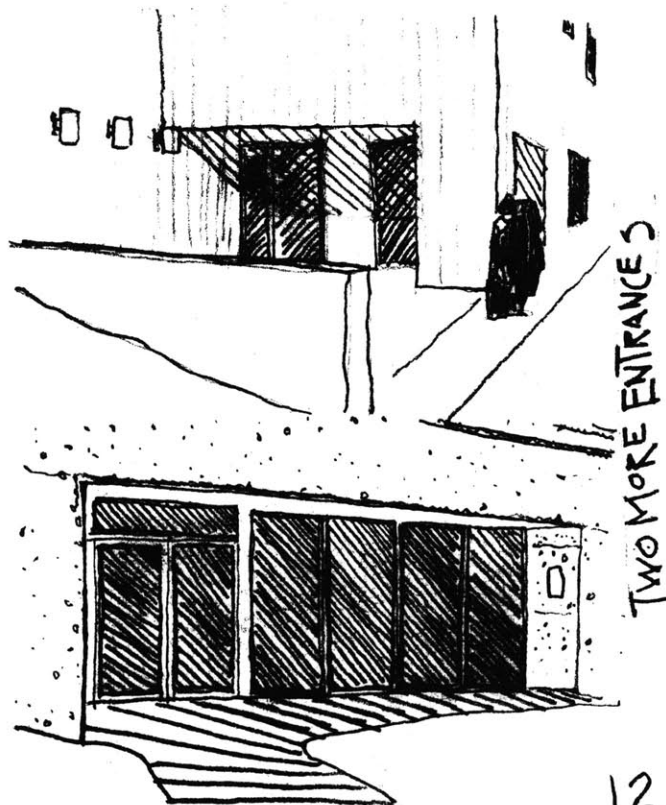
The greatest problem with these buildings is that it is difficult to make homes in them.

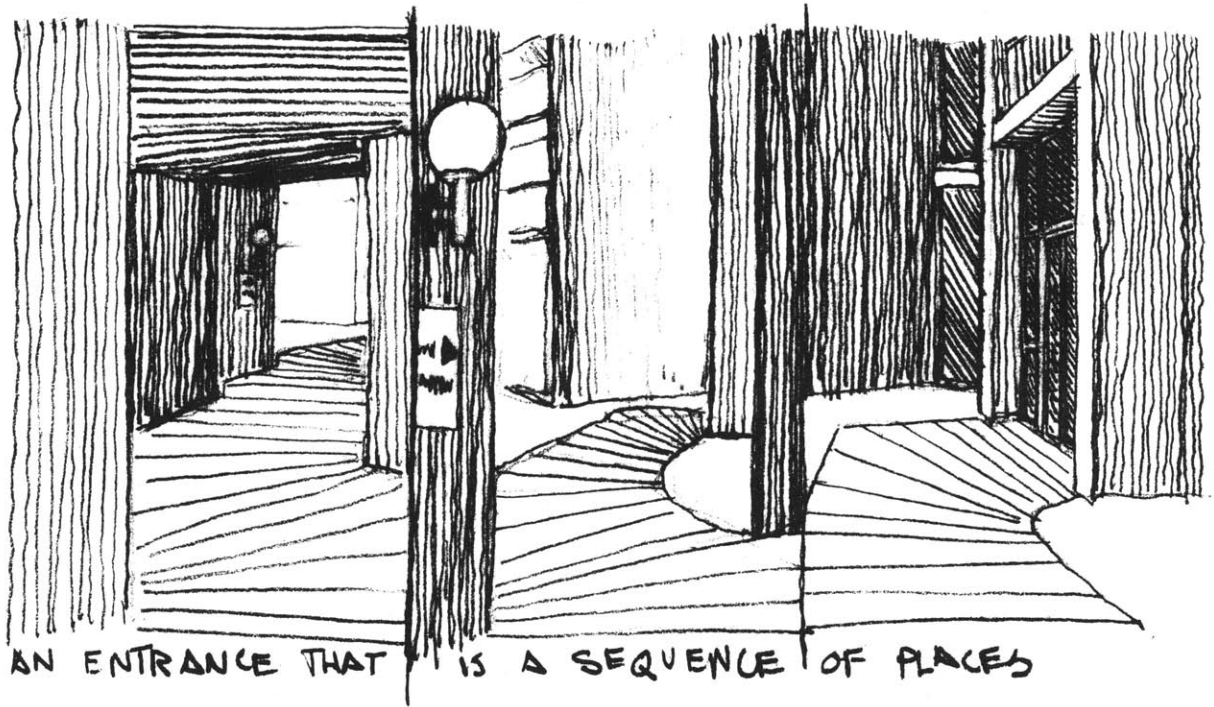
A home is a personalized house. People personalize their homes by decorating them. We choose and arrange furniture, use throw rugs (in a living or bedroom), lay linoleum (in a kitchen), hang paintings, pictures, curtains, or wall paper, paint walls, display things (plants, pottery, knick-knacks, books, china).

Many houses are the same, but homes are as different as the people who live in them.



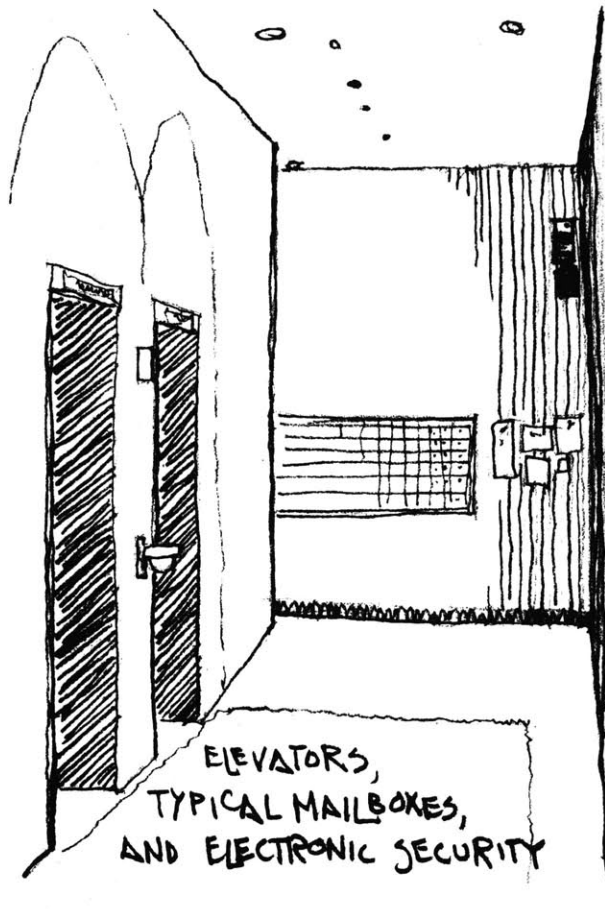
AN ENTRANCE





AN ENTRANCE THAT IS A SEQUENCE OF PLACES

Materials, construction methods, and rules limit our ability to decorate. Rules say "Don't paint walls, or hang wallpaper, don't drive nails, or use tape on walls..." The construction of the materials gives the building an institutional look. There is no wood. Wood is warm, nails and screws can be driven into it, it is of the earth, and we understand it. Apartments in large buildings have an entrance into a common corridor on one side, and a view on the other. The corridor is an empty alley that leads to the elevator, which in turn leads to a lobby and the outside.

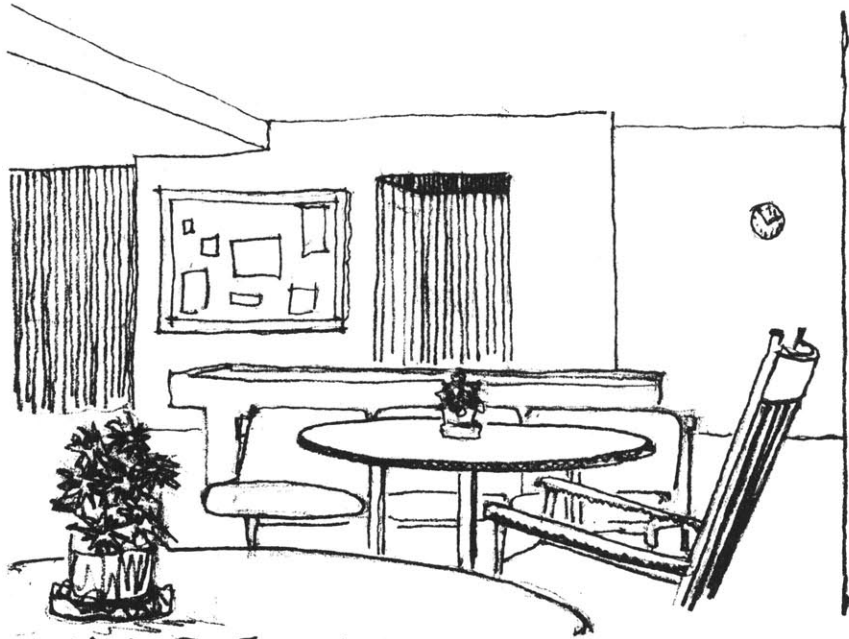


ELEVATORS,
TYPICAL MAILBOXES,
AND ELECTRONIC SECURITY

In the apartments there is too little storage space. Kitchens and bathrooms are only large enough for one person at a time. The floors are either tiled grey or carpeted with gold carpet. The walls are white. The windows are bigger than standard size curtains. The balconies are only large enough for a solitary chase lounge, if there are any balconies at all. Apartments are, in general, small.

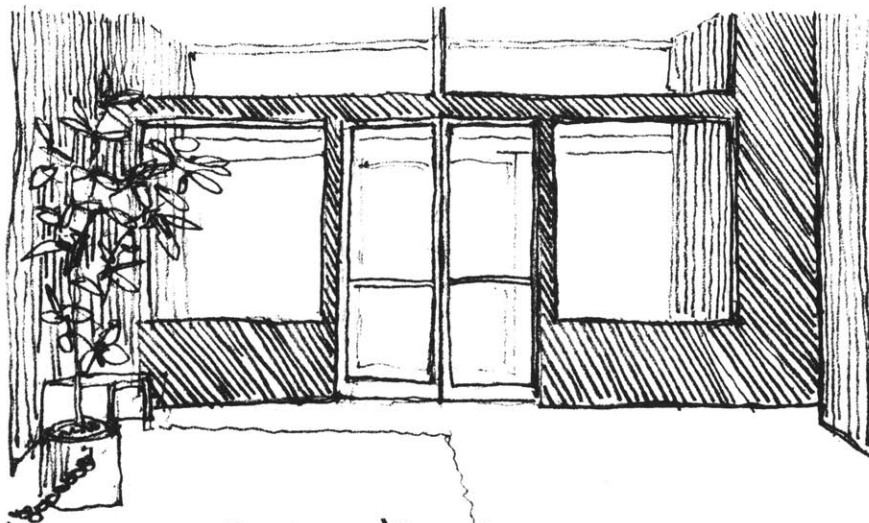


AN AMPLE BUT UNDERDEVELOPED LOBBY

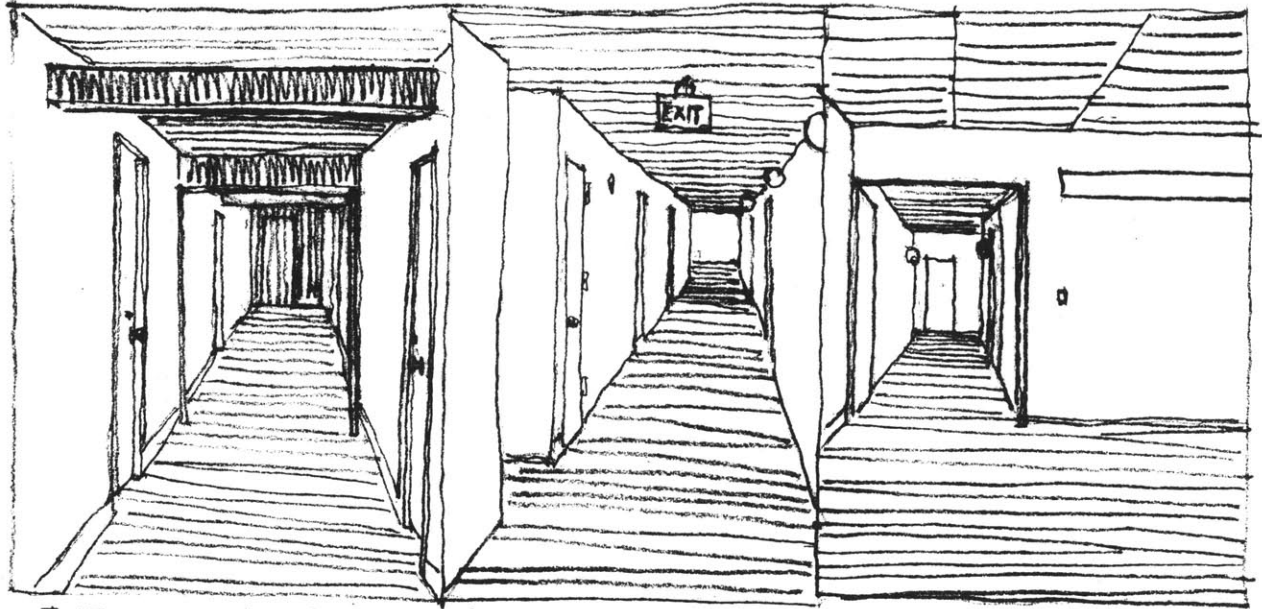


A LOBBY THAT IS USED

Besides difficulty in personalizing apartments, loss of contact with the ground, and plain, uninteresting public areas, apartment dwellers suffer other frustrations. They worry about the loss of the security deposit. They have no place to do messy jobs. They also live closer to more neighbors and must worry more about noise than people in less dense areas.

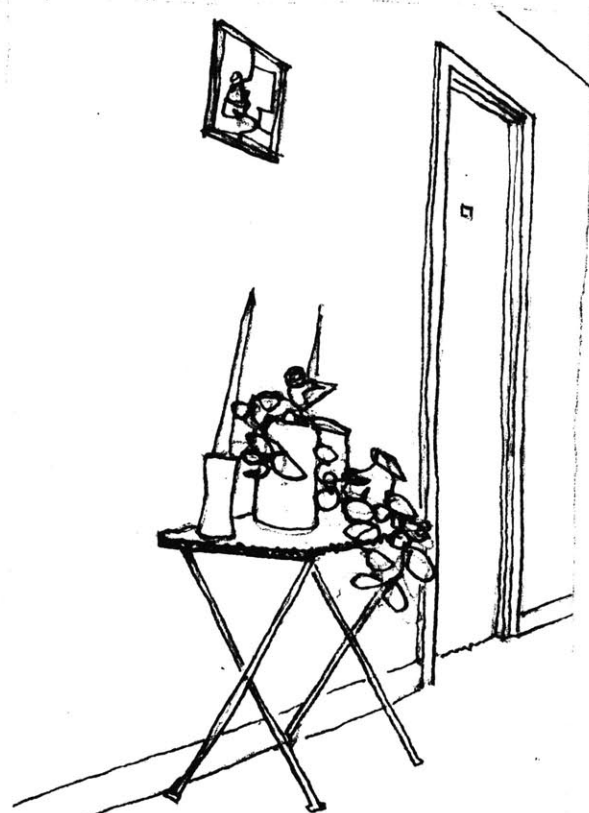


A LOBBY THAT ISN'T USED



THREE ALLEYWAYS

Most of these problems are solvable. The problem of loss of contact with the ground can be reduced by the careful use of all the ground around, and all the public areas within the building. Everybody could help to decide how to use these areas, and take part in executing building projects within them. Playing, gardening, sitting, and working areas are basic ideas for consideration. Working and playing areas are especially important because the size of apartments limits these activities there. There should be, for example, a place where someone can go to paint a chair.

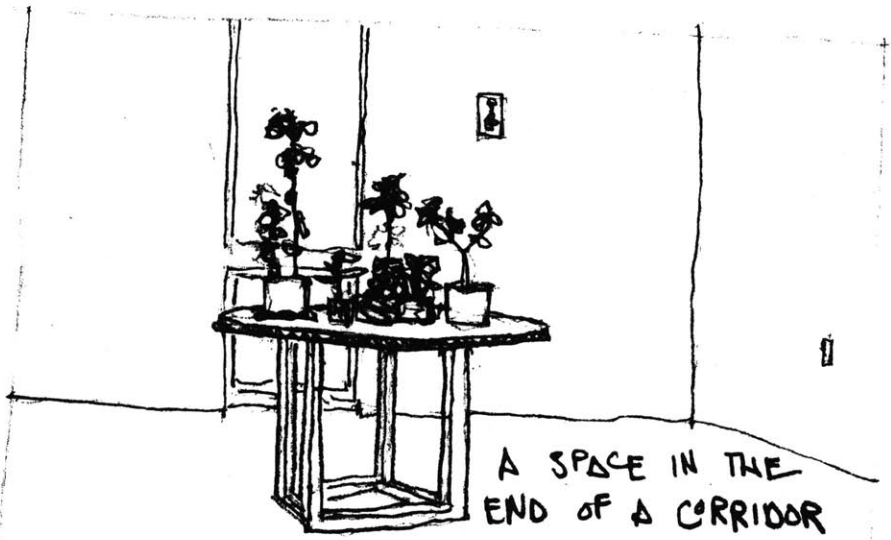


A SIGN THAT SOMEBODY DOES LIVE HERE

Building managers could encourage people to make the building their home.

They could use this concept as a selling point. This immediately makes the building manager a partner with the residents rather than an adversary. People, encouraged to decorate, may worry less about security deposits, and become more concerned about their apartments as their homes. Rules that used to be prohibitive could be translated into guidelines for decorating, and improving apartments. Buildings that

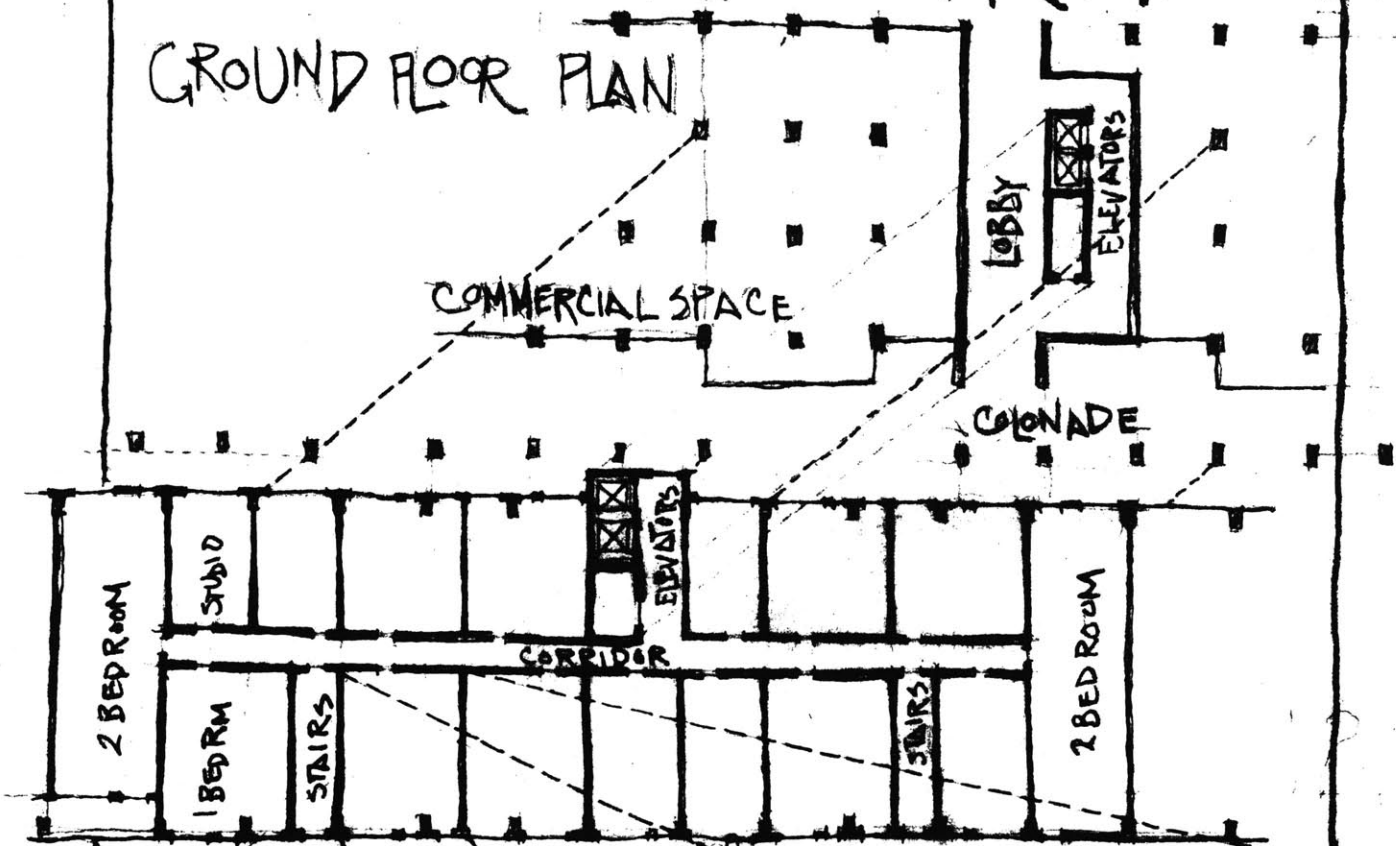
are now plain would slowly be transformed into places to be remembered, instead of forgotten.



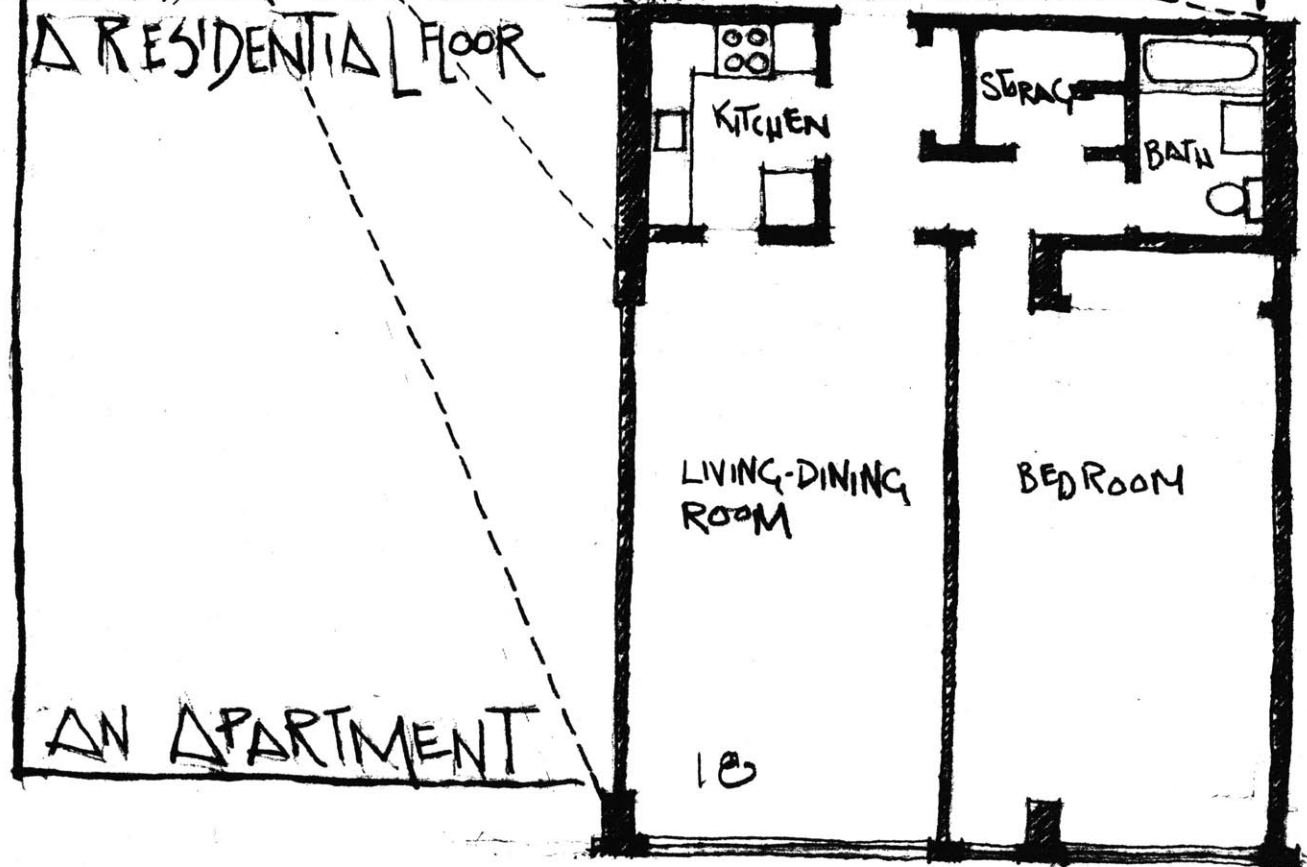
A SPACE IN THE END OF A CORRIDOR

ALL IN A ROW

GROUND FLOOR PLAN



RESIDENTIAL FLOOR

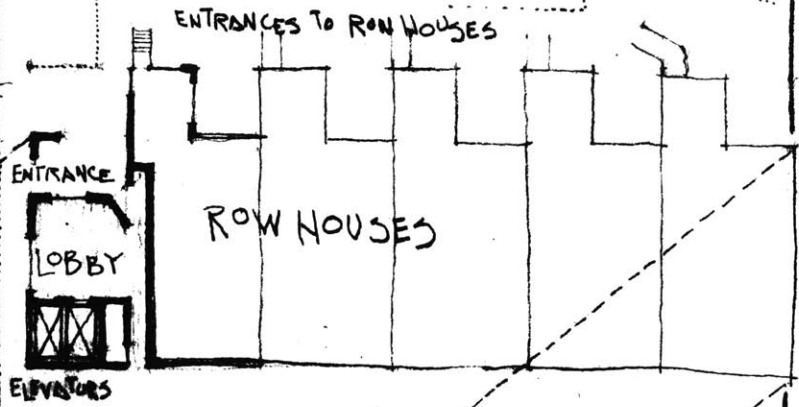


AN APARTMENT

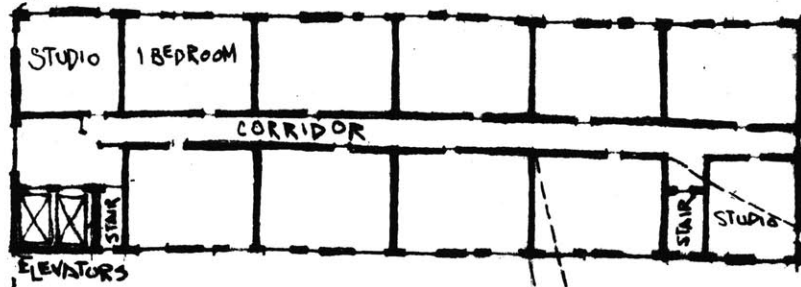
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ROW HOUSES UNDER TOWER

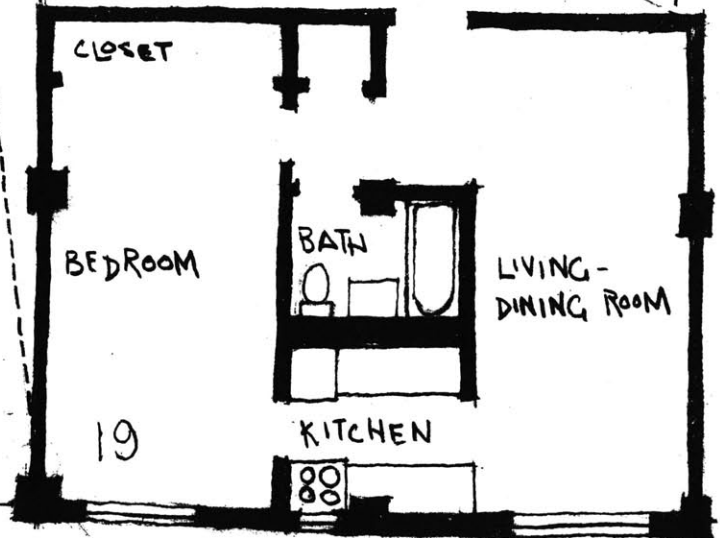
GROUND FLOOR PLAN



TYPICAL UPPER FLOOR PLAN



MR. BROWN'S HOME



AN APARTMENT TOWER

NORTH →

GROUND FLOOR PLAN

PARKING

LOBBY

ENTRANCE

ELEVATORS

RESIDENTIAL FLOOR PLAN

CORRIDOR

STUDIO

1 BEDRM.

ELEVATORS

NOOK AT END OF CORRIDOR

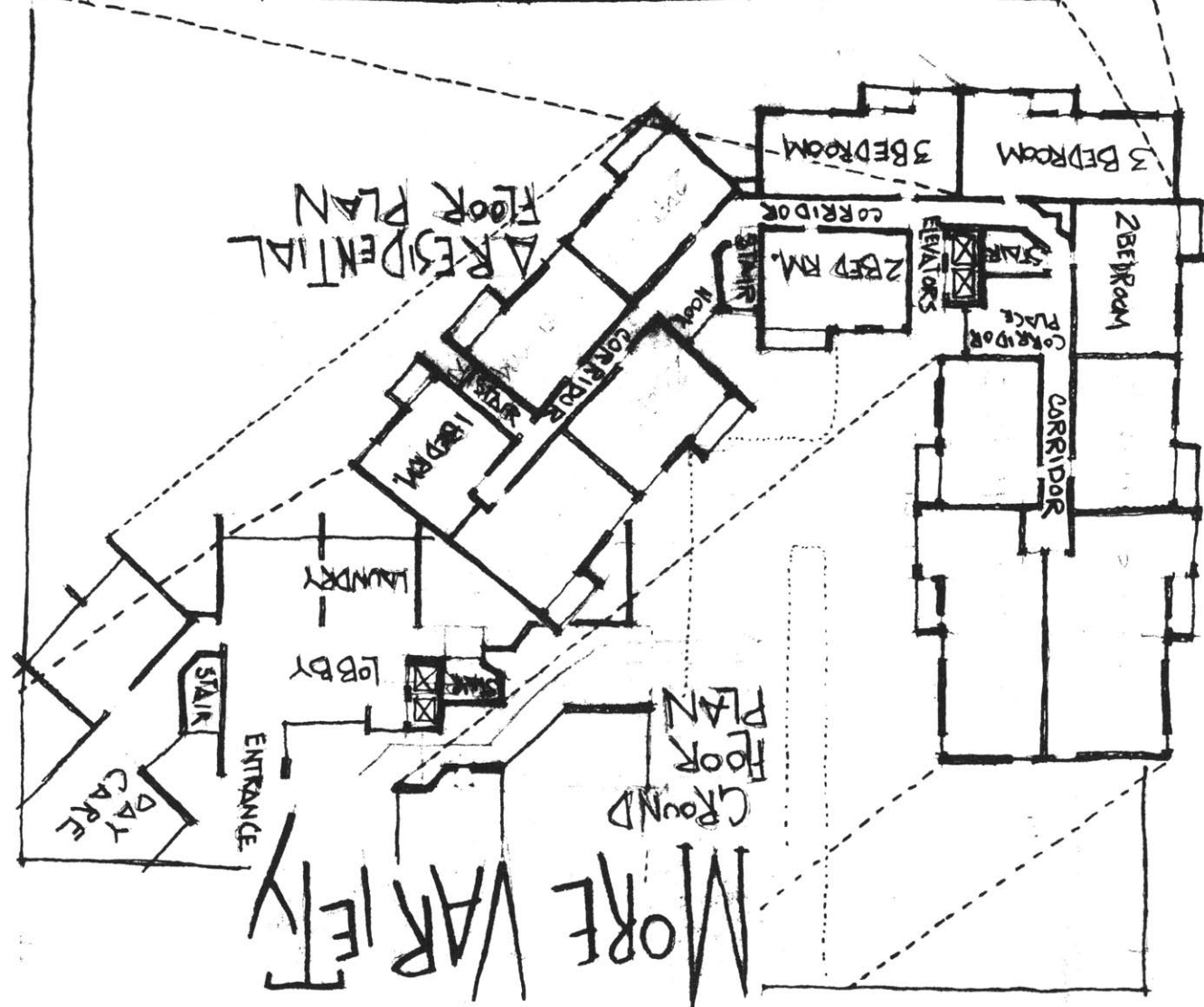
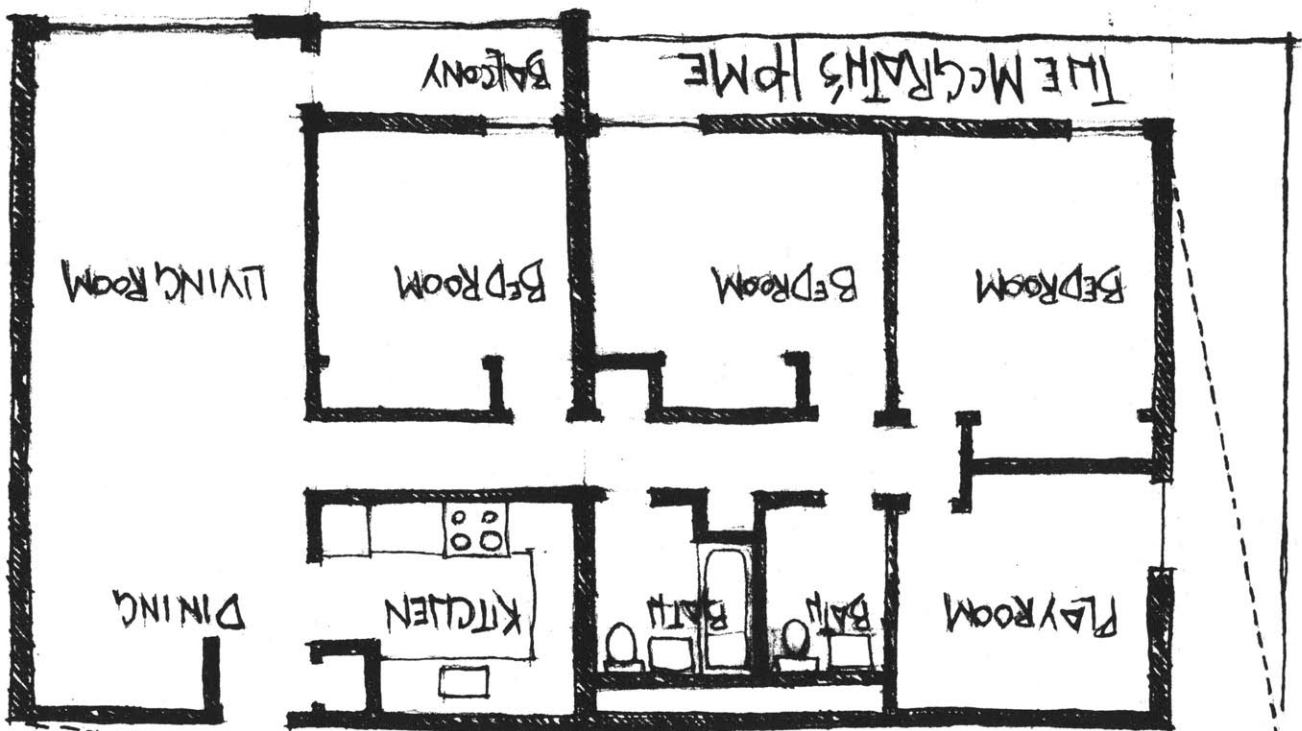
MADELINE SULLIVAN'S HOME

KITCHEN

BATH

LIVING ROOM

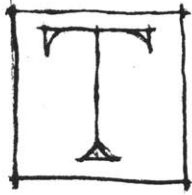
BEDROOM



PART 2:
COMMON
AREAS



"Saint James Street" by Whistler



The old fashioned residential city block, the townhouse lined street, is gradually disappearing. The old blocks were full of sidewalk activity; from kids playing, to teenagers growing to adulthood, to adults visiting, working, and supervising children, to old people sitting back to watch it all. People spent their entire lives on these blocks. There were more than homes. There were a food store, a bar, a restaurant, a laundromat, a tailor, a cobbler, a barber shop, a florist, a tobacconist. Many of these old neighborhoods are boarded-up.

Out of the ashes, new apartment towers that occupy entire blocks are rising. People who would have lived in townhouse apartments now live stacked in one building. One front step now serves everyone. Public areas are so public that nobody uses them.

People need outside space. Land is so precious that every inch of it should serve a useful purpose. People who live in these buildings could decide (alone, or with a family architect) how to use the land. They could work together to build plazas, play areas, gardens, walks. Because of the savings in labor cost (if some work normally done by a contractor can be eliminated) they could use brick, or mosaic, or cobblestone where asphalt or concrete are normally used. In Allston, Massachusetts the residents of a housing project are building a park and playground in this manner. They have laid brick walks, made mosaics, painted murals, set up play areas.

Since the front step is common to so many more people, it is more important than any one step used to be.

People used to be able to identify with their front step. One way to do this in an apartment tower, that has been suggested, is to first have a front step that can hold a group of people - big enough for a gathering. Next a system could be developed so that each person could have an area (about three feet square) into which to place bricks, cobblestones, old tiles, pieces of colored glass however he or she chose.

The entire sequence of public spaces from the outside through the entrance doors, into the lobby, and up throughout the corridors could give clues about the people who live in the building. The entrance door could be a specially selected antique of carved wood, or a new door painted with flashy colors, or made of solid oak with great cast iron hinges. Each door evokes a different feeling about the building.

The vestibule is a place where people fumble for keys, or wait to be let in, or take-off or put-on a coat, or open or close an umbrella. The vestibule should respond to this situation by having a place to sit or put a package temporarily. The vestibule is also the gateway to the building. A welcome mat might be an idea.

The lobby is like a village square in many ways. Everybody passes through the lobby. Often, the laundry room, the manager's, and superintendent's offices, and the mail room are nearby. The lobby is a place of chance meetings. The lobby is a place to wait for a taxi, a bus, a friend, your laundry. It might be decorated during holidays. It might be the center of community

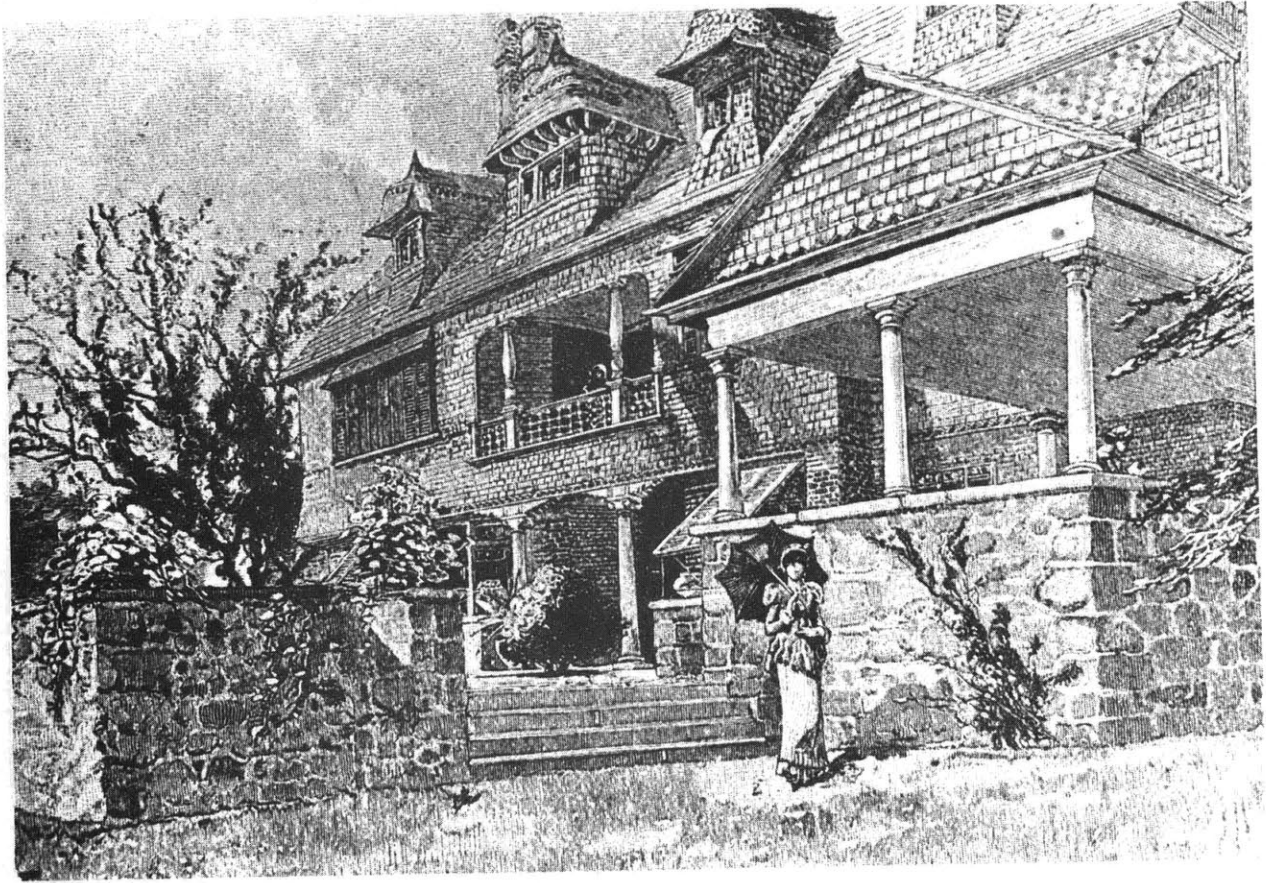
in the building.

One way that a corridor is like a sidewalk is that a row of homes opens onto it. Corridors could be more like sidewalks. Their size inhibits activities like playing. However, the walls could be decorated by the people in the adjacent apartments, like a row of gardens along the sidewalk. One idea would be to make the corridor like a gallery by hanging paintings, photographs, prints and posters. Another thought is to decorate the area outside the elevator on each floor; a bulletin board, a bench, a picture, a mirror, some plants. There could be a sign with the names of the people on that floor. Also the carpet could be taken up and a wood floor put down in one area. Corridors often end in windows. This also could be a special place; plants, books, magazines, a seat, some stained glass, or even a bay window. One of the four buildings shown in the plans has areas where the corridor widens into a space. These could be work areas, like a sewing room, or a lounge, or play areas for specific or general age groups.

One final idea is to transform an apartment into a hobbing area where a person could do the messy job of painting, or using a saw.

These ideas are of a collaborative nature. They are larger, more expensive, more complicated than the ideas in the next section (Apartments). They are ideas that could be realized slowly one after another. Each idea will be executed better than the previous one as individuals become used to tools, and each other.

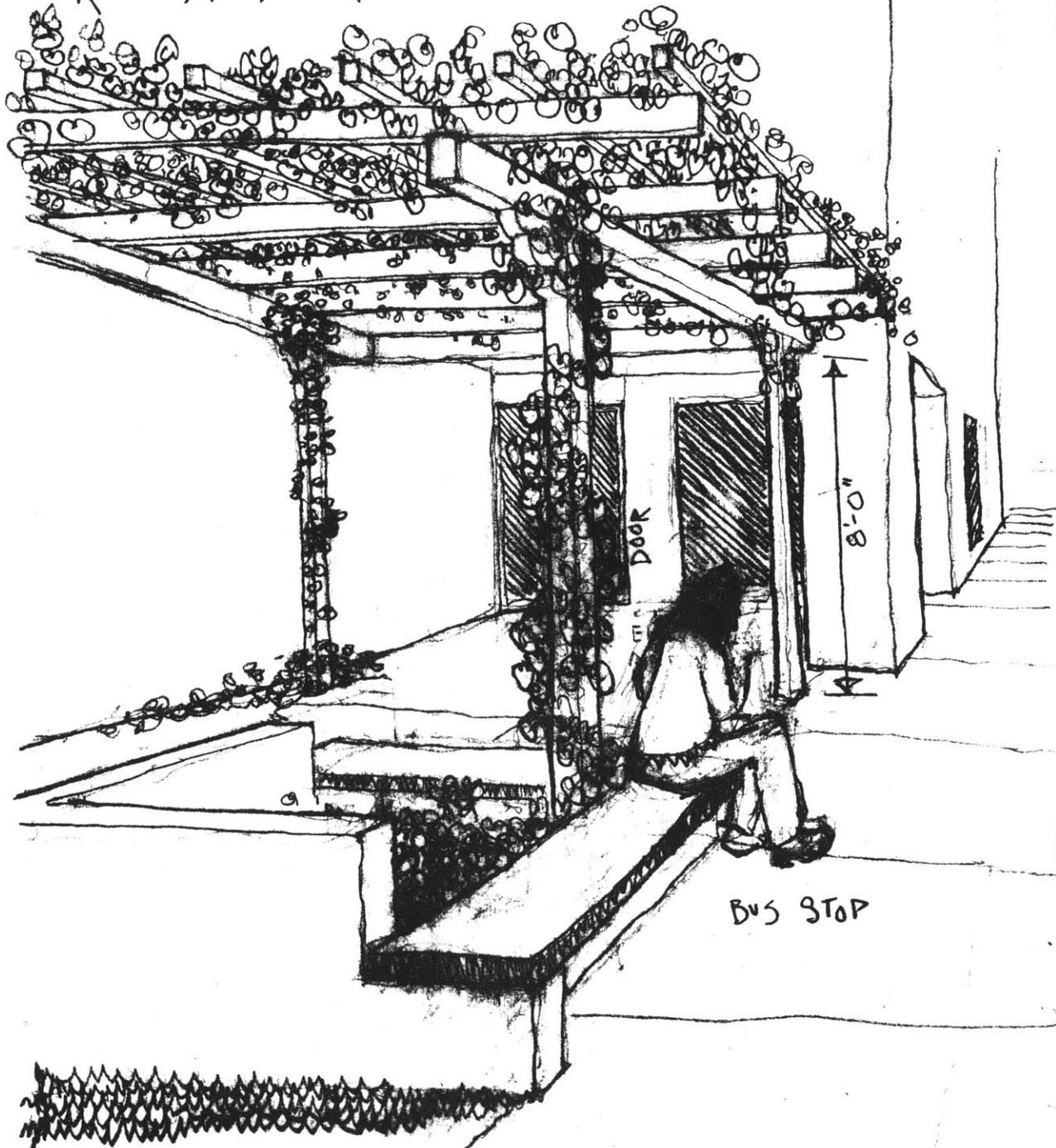
ENTRANCES



An Entrance is More Than a Door.

WOODEN TRELLIS

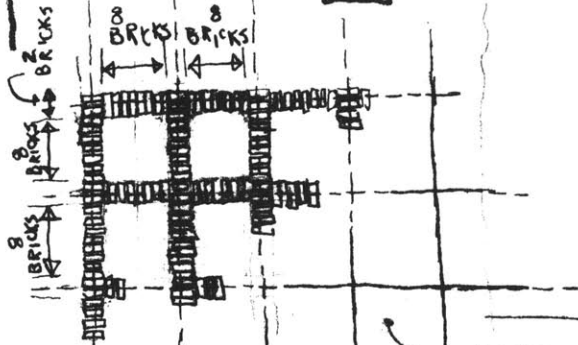
ROSES, IVY, OR GRAPE VINES



BUS STOP

WINTER SUN AND SUMMER SHADE

ENTRANCE PAVING



PLAN OF A PAVING GRID

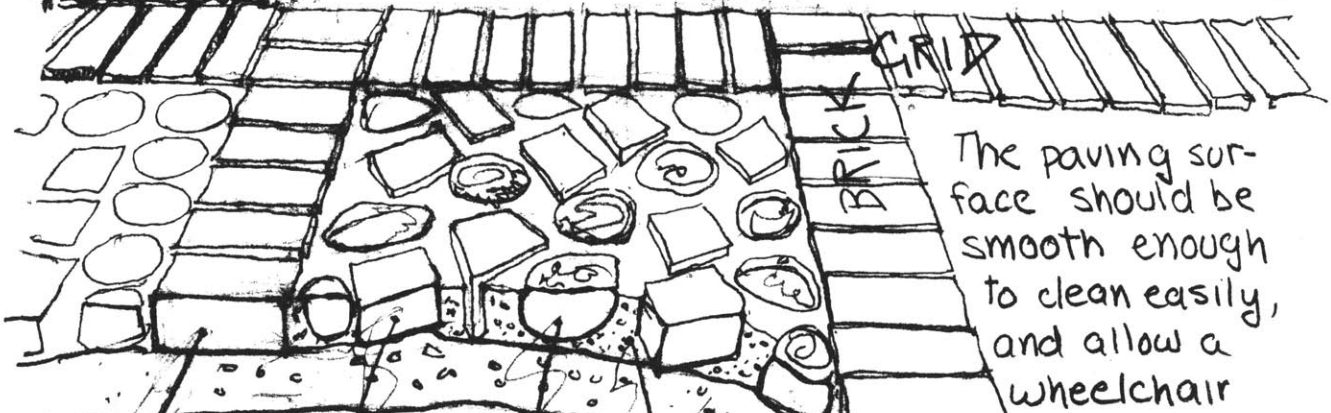
PAVING ADDS CHARACTER.

This idea uses a grid of bricks. The squares are filled with broken bricks and stones.

Each person could do a square.

You don't have to use brick. Glass, sea shells, tiles, or railroad ties are other ideas.

DOOR



CROSS-SECTION VIEW

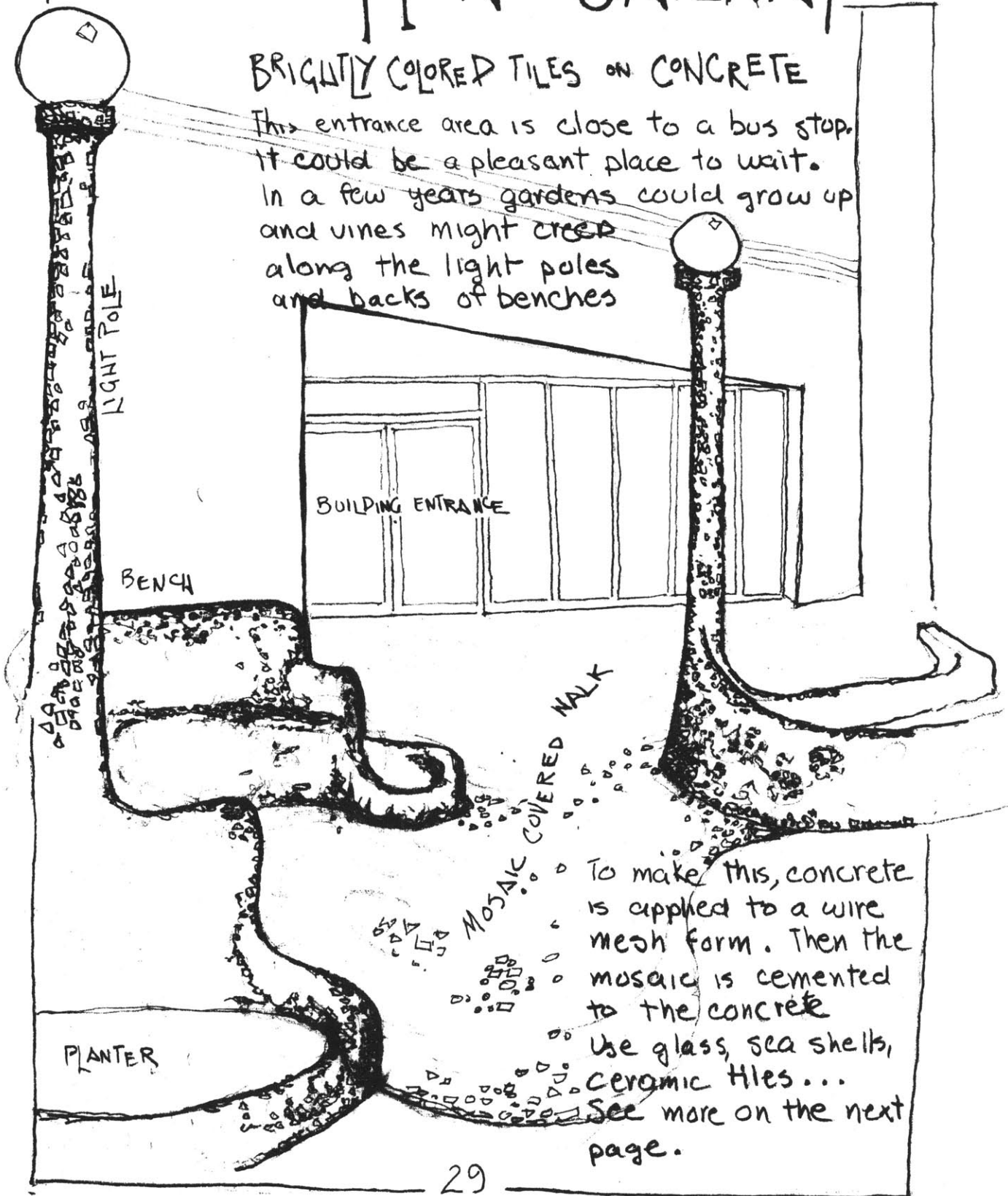
The paving surface should be smooth enough to clean easily, and allow a wheelchair to cross.

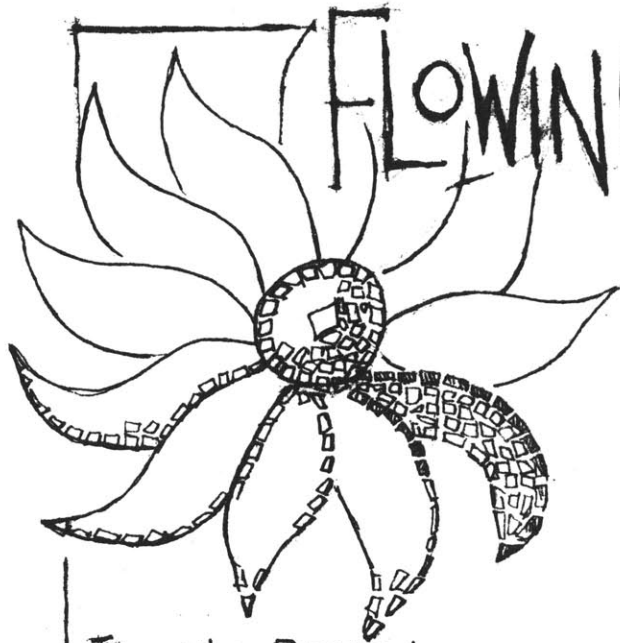
This is not an easy project. You should plan ahead, and be sure of the construction details.

MOSAIC GATEWAY

BRIGHTLY COLORED TILES ON CONCRETE

This entrance area is close to a bus stop. It could be a pleasant place to wait. In a few years gardens could grow up and vines might creep along the light poles and backs of benches.





FLOWING BENCH

A MOSAIC GARDEN

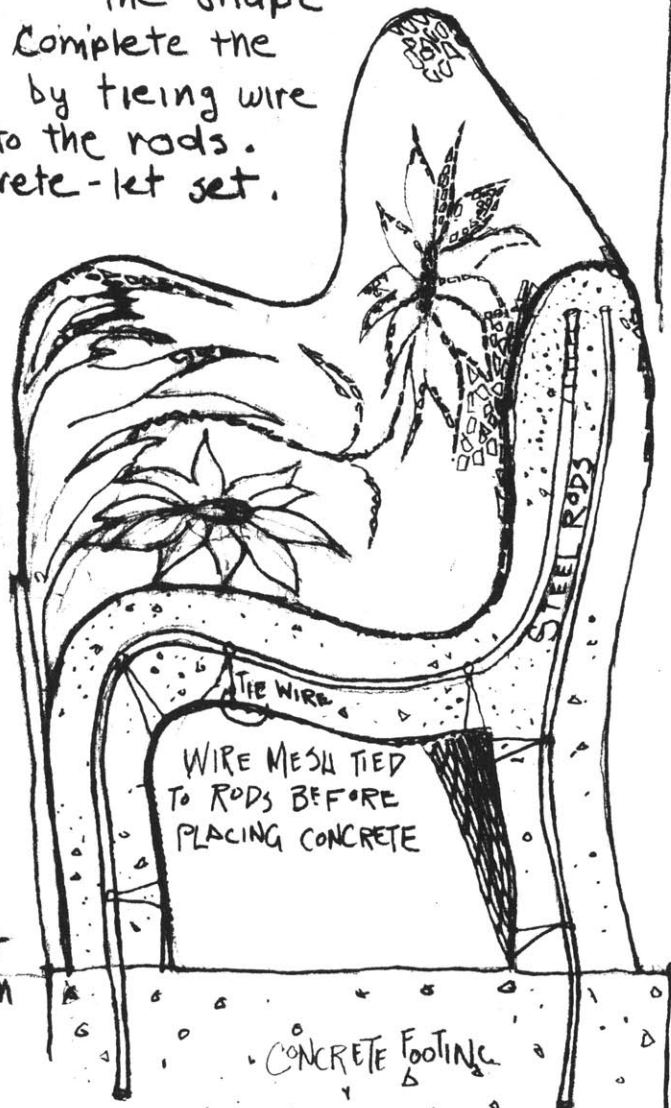
The Concrete:

- ① Make a foundation for the bench or wall with reinforcing rods embedded in the concrete.
- ② Bend the rods to form the shape
- ③ Complete the shape by tying wire mesh to the rods.
- ④ Trowel on the concrete - let set.

TILES ON A PATTERN

The Mosaic:

- ① Draw patterns on brown paper (limit size of pattern for handling ease)
- ② Place tiles on pattern
- ③ Place clear contact paper over pattern and lift off brown paper.
- ④ Trowel tile cement onto bench.
- ⑤ Press contact paper with pattern (pattern first) into the cement.
- ⑥ When dry, lift off contact paper, and regrout between tiles.



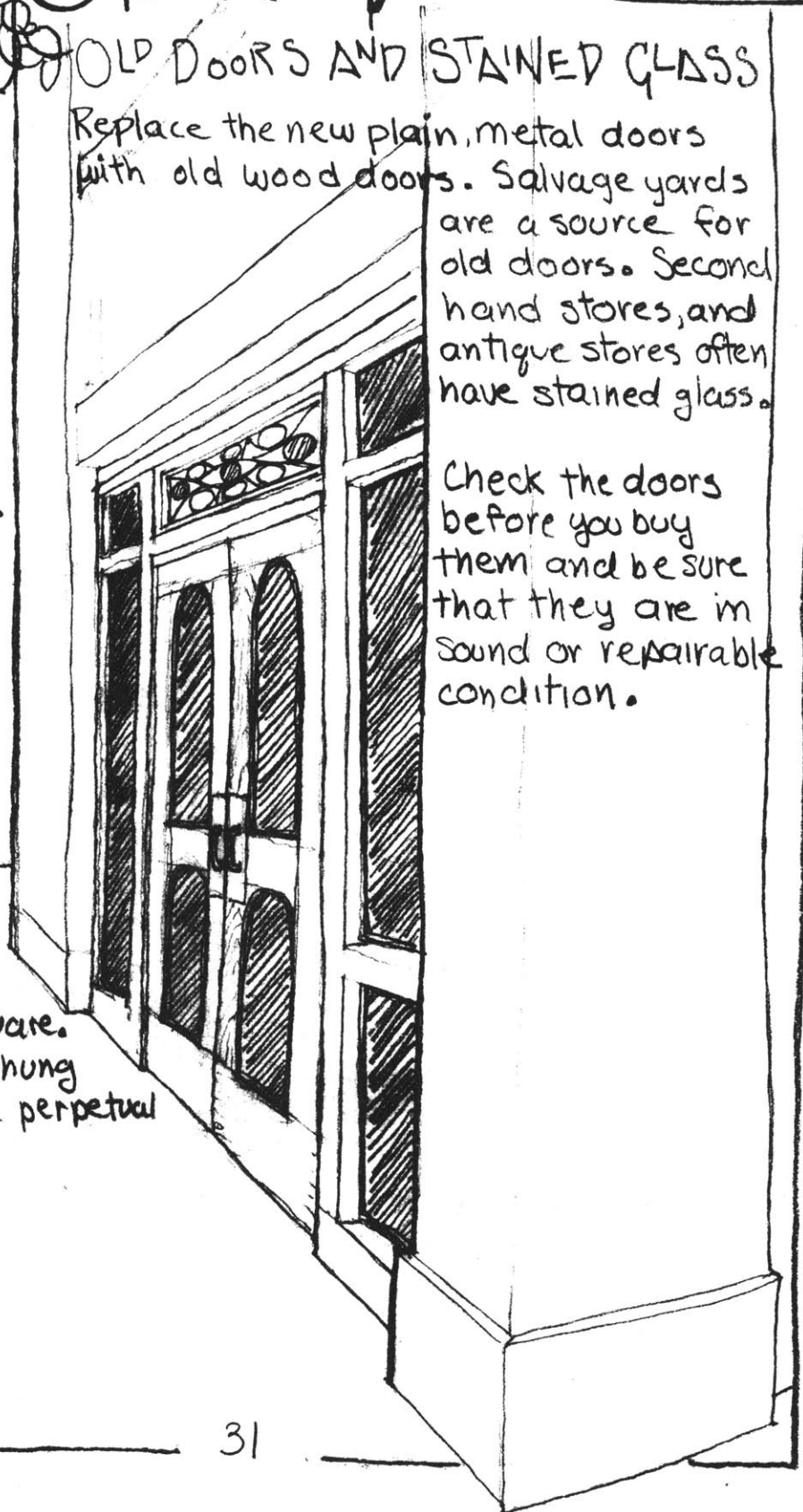
SPECIAL DOORS

OLD DOORS AND STAINED GLASS

Replace the new plain, metal doors with old wood doors. Salvage yards are a source for old doors. Second hand stores, and antique stores often have stained glass.

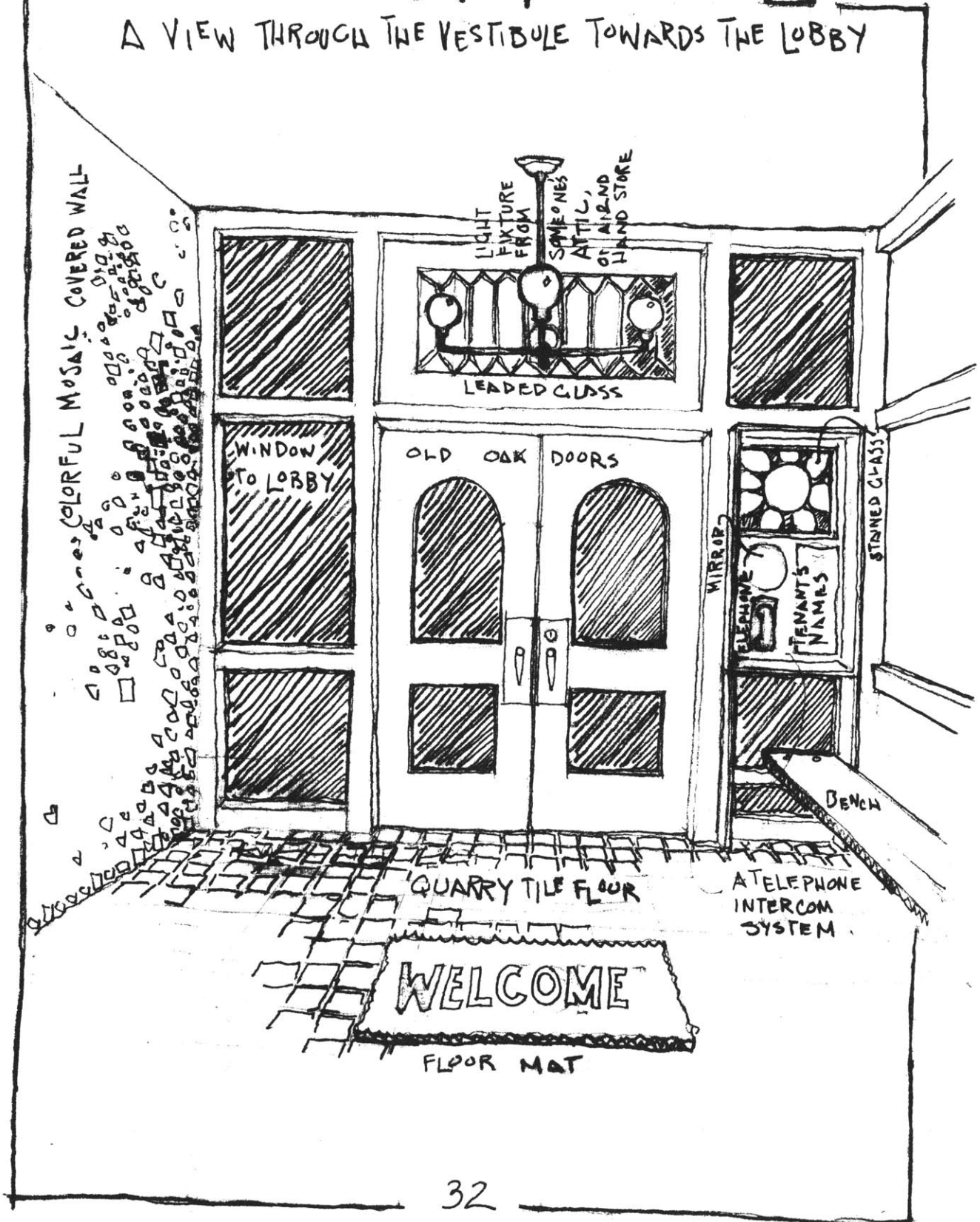
You will be lucky if you can find doors that fit the existing frame exactly. Doors should not be trimmed excessively, because they may become weak. Use your ingenuity to rebuild the frames. Be careful! The frame edges should be square. An improperly hung door will be a perpetual headache.

Check the doors before you buy them and be sure that they are in sound or repairable condition.

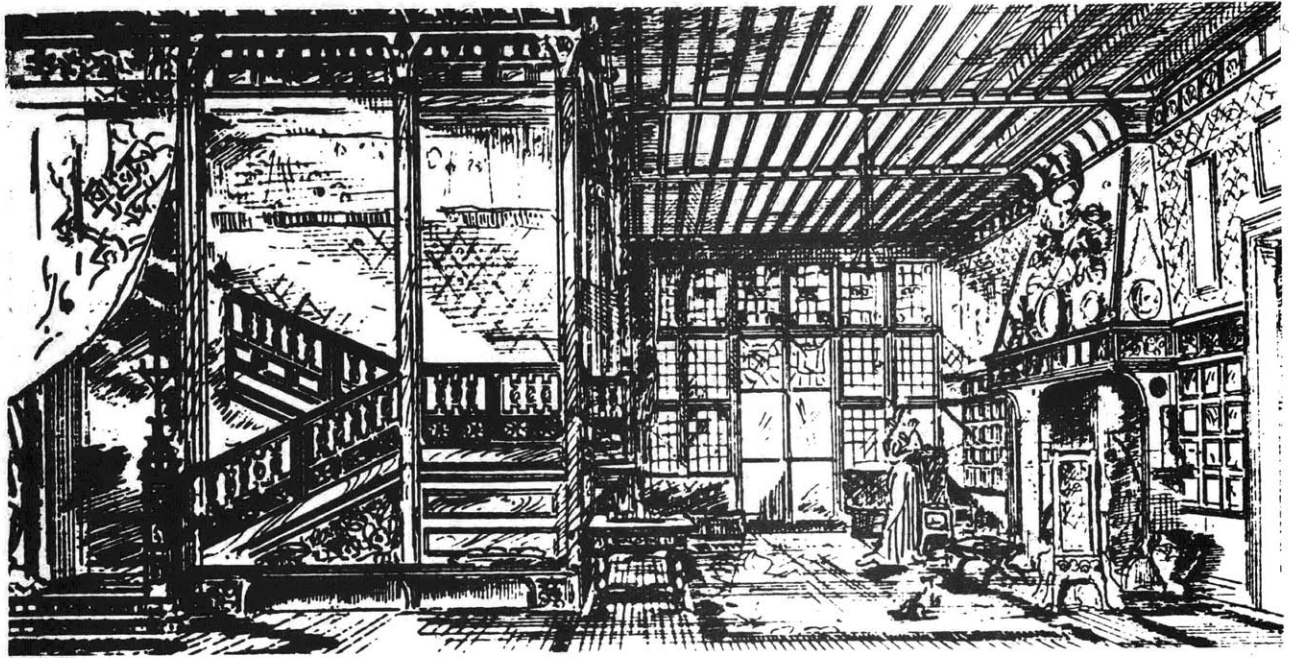


THE VESTIBULE

A VIEW THROUGH THE VESTIBULE TOWARDS THE LOBBY

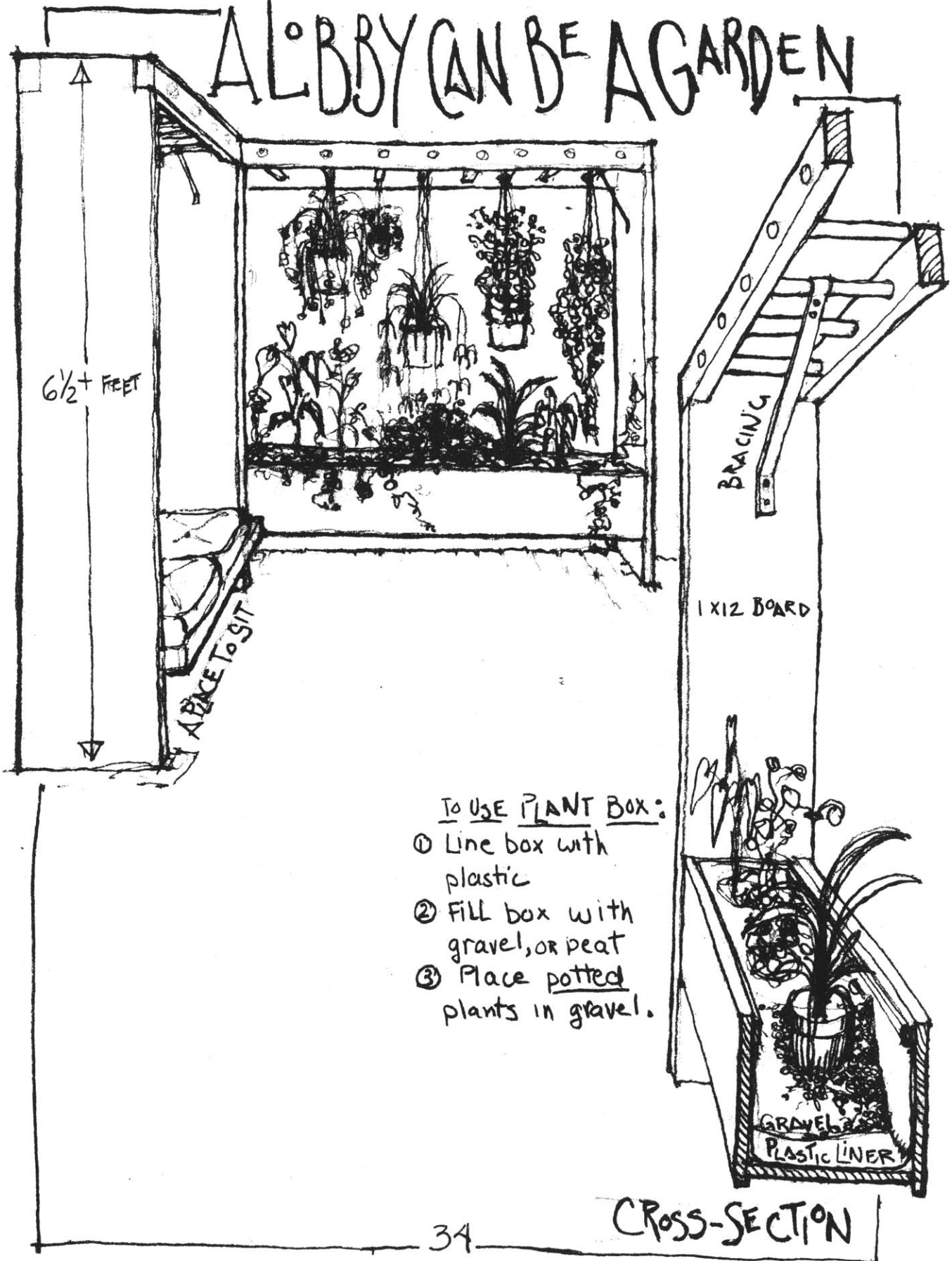


LOBBIES



A Center for Activity in the Building

ALBANY CAN BE A GARDEN

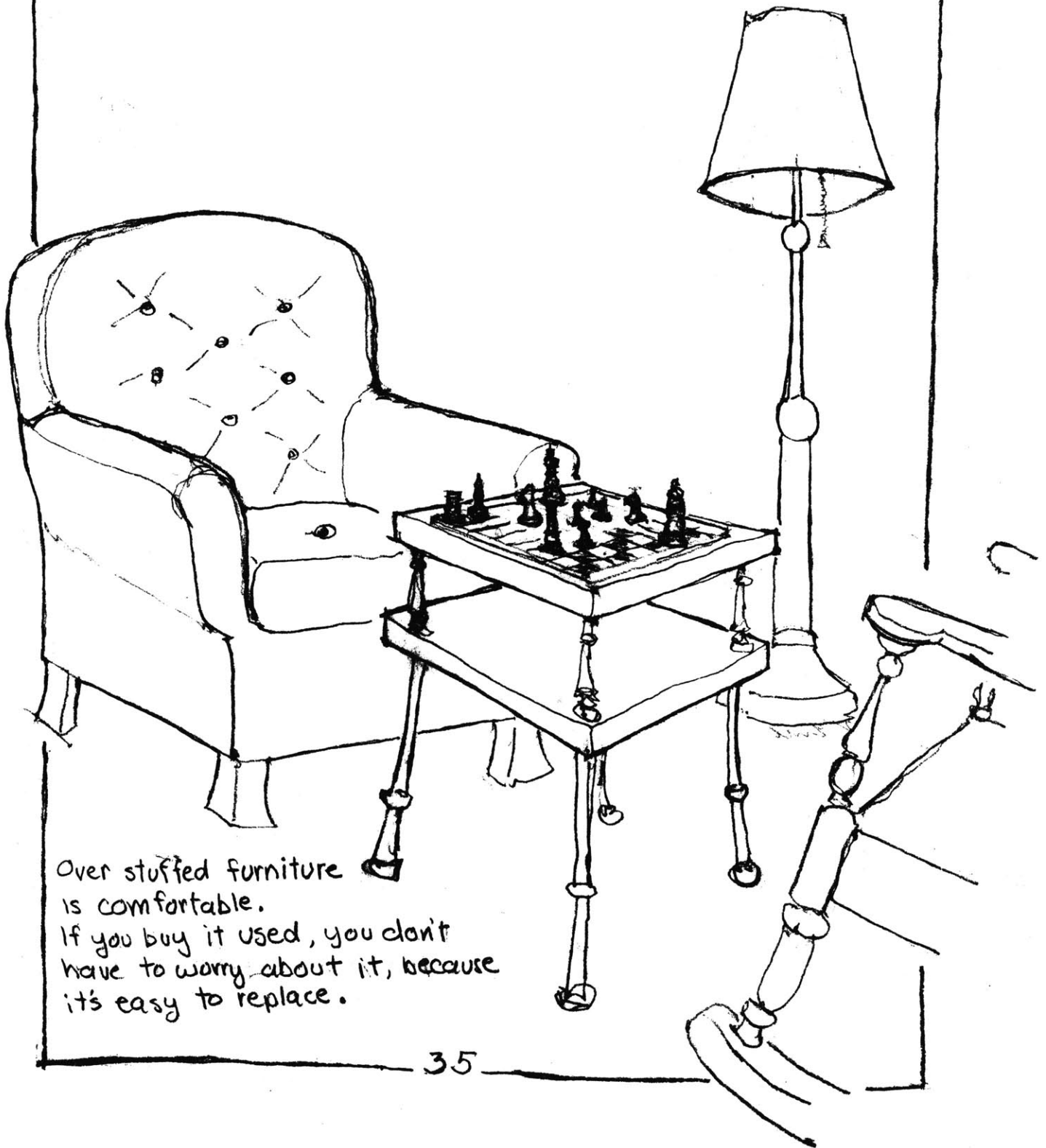


TO USE PLANT BOX:

- ① Line box with plastic
- ② Fill box with gravel, or peat
- ③ Place potted plants in gravel.

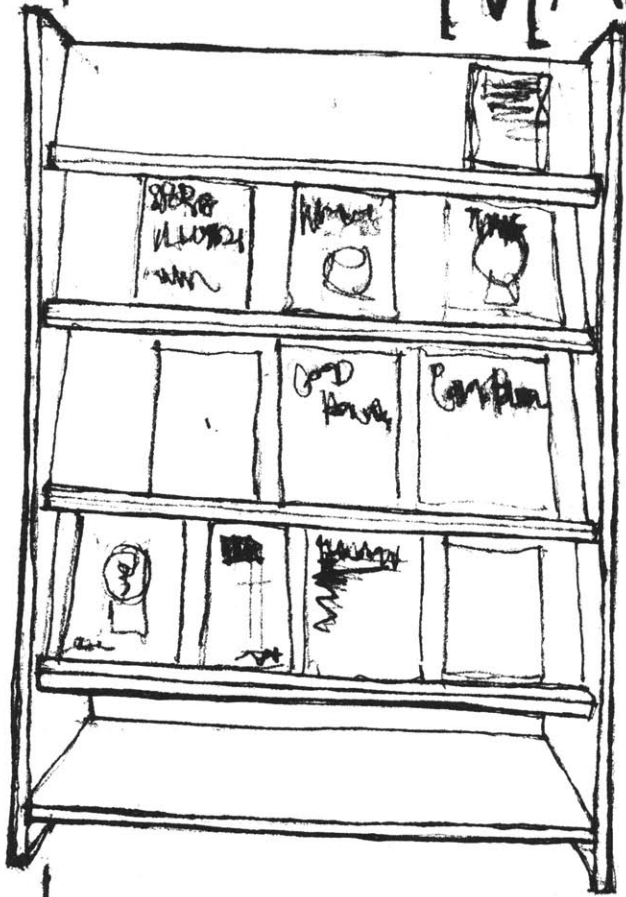
SIT & RELAX

BUY SOME NEW OR USED FURNITURE



Over stuffed furniture
is comfortable.
If you buy it used, you don't
have to worry about it, because
it's easy to replace.

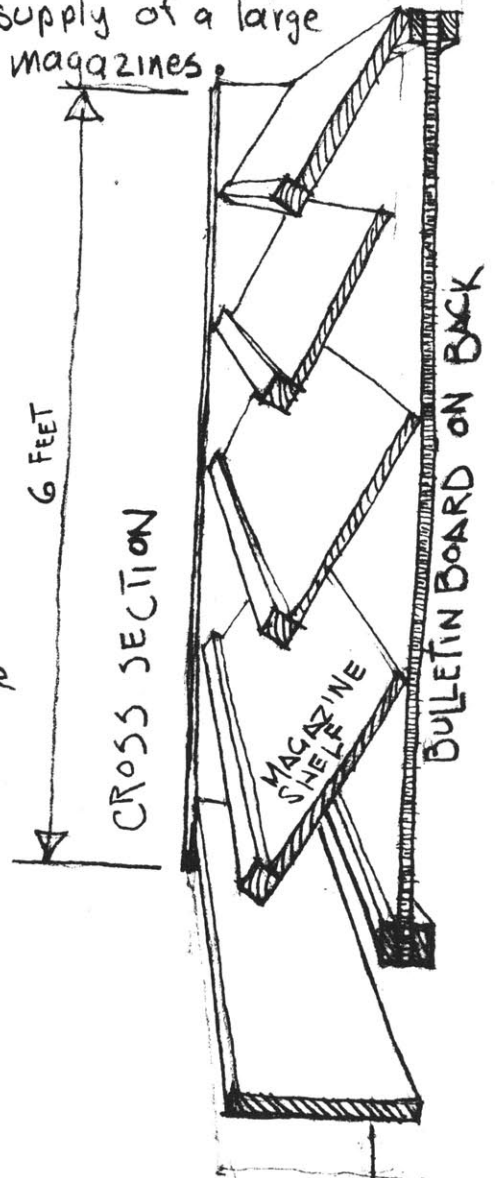
MAGAZINES



SUBSCRIBE COLLECTIVELY

Have more magazines for less money. If everybody contributed you could have a constant supply of a large variety of magazines.

This is just a standard magazine rack. Look at a few in the library, or book store to see how to make it.

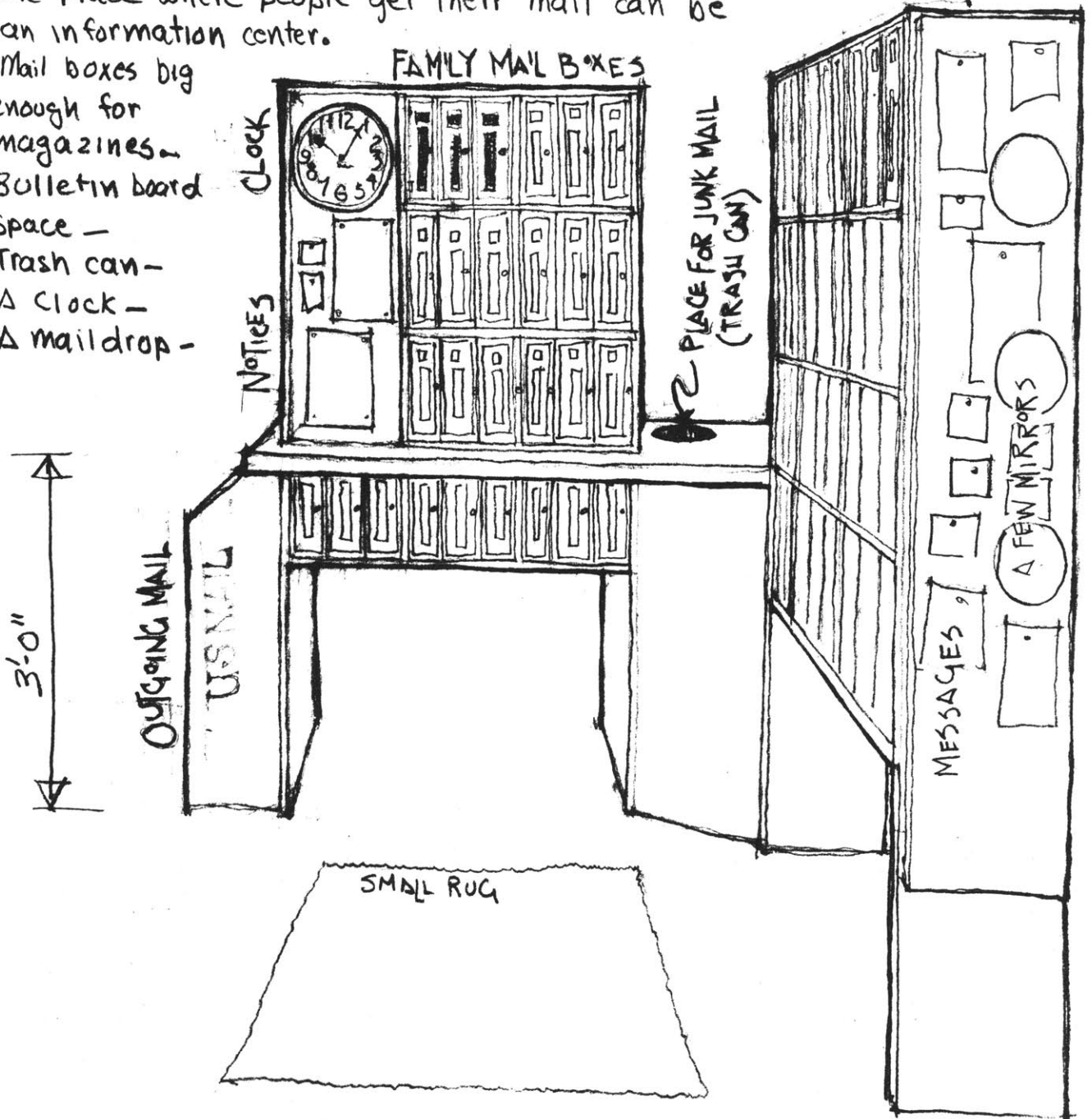


INFORMATION CENTER

CHECKING YOUR MAIL IS A DAILY CEREMONY

Mail boxes are often too small and stuck off in a corner. The place where people get their mail can be an information center.

- Mail boxes big enough for magazines.
- Bulletin board
- Space
- Trash can
- A clock
- A mail drop

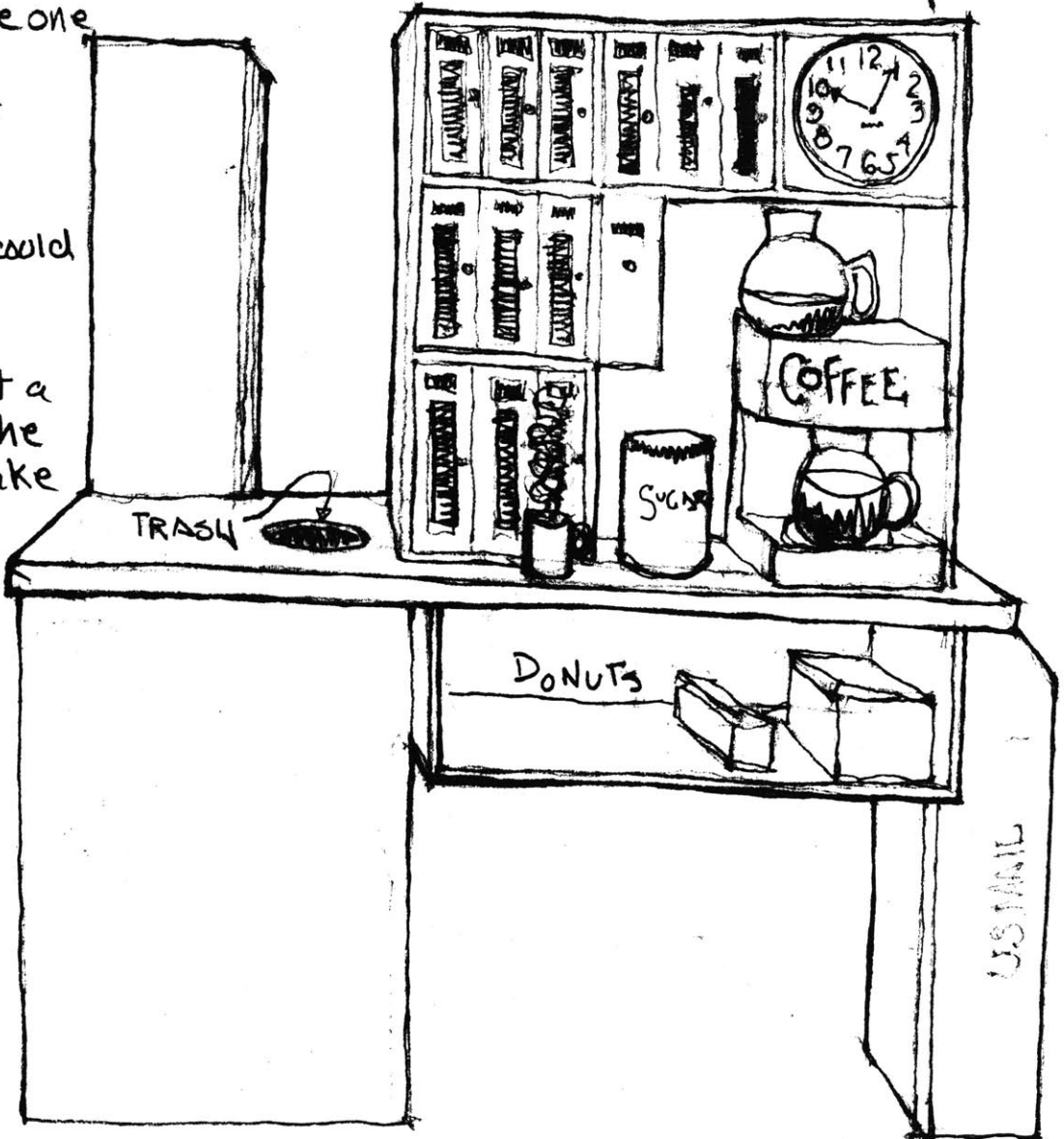


COFFEE & DONUTS

STOP FOR COFFEE AND DONUTS

Talk to someone else who is getting their mail.

Each person could pay for the coffee and donuts. Put a quarter in the jar and take a coffee and donut.



A LOOKOUT

FOR KIDS

To guard the entrance while their parents are busy with other things nearby



Use Baltic plywood for flat surfaces. Cut holes, with hole saw, or sabre saw. Use oak or pine for trim. Columns are balusters.

A PLACE JUST BIG ENOUGH FOR LITTLE KIDS

LOBBY WALLS

PHOTOGRAPHS AND
PAINTINGS

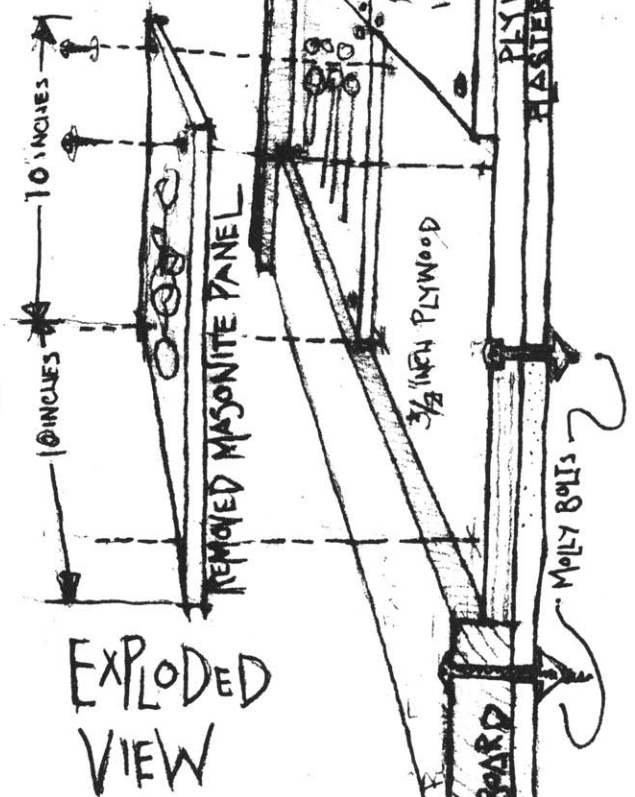
Pictures by or of people
who live in the
building, or every-
one gets a square,
or prints of Monet,
Rembrandt, Picasso,

LIKE A PATCHWORK QUILT

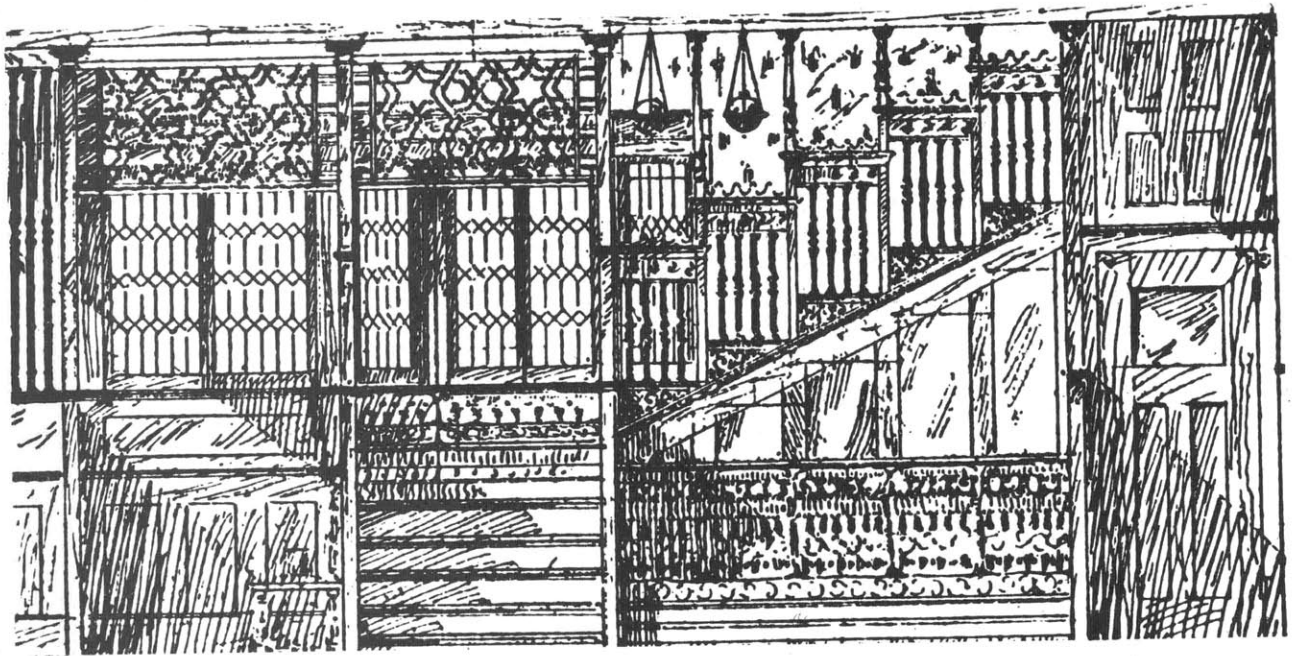
Use a grid system to set a
pattern for adding more art.
leave some panels blank.

Make frame of 1x3's and
2x6's. Nail frame to
1/2 inch plywood backing.
Bolt to wall.

Cut masonite panels to desired
sizes. Attach to plywood
with 5/8 inch # 6 round head
screws.
Mount pictures on removed
panels.



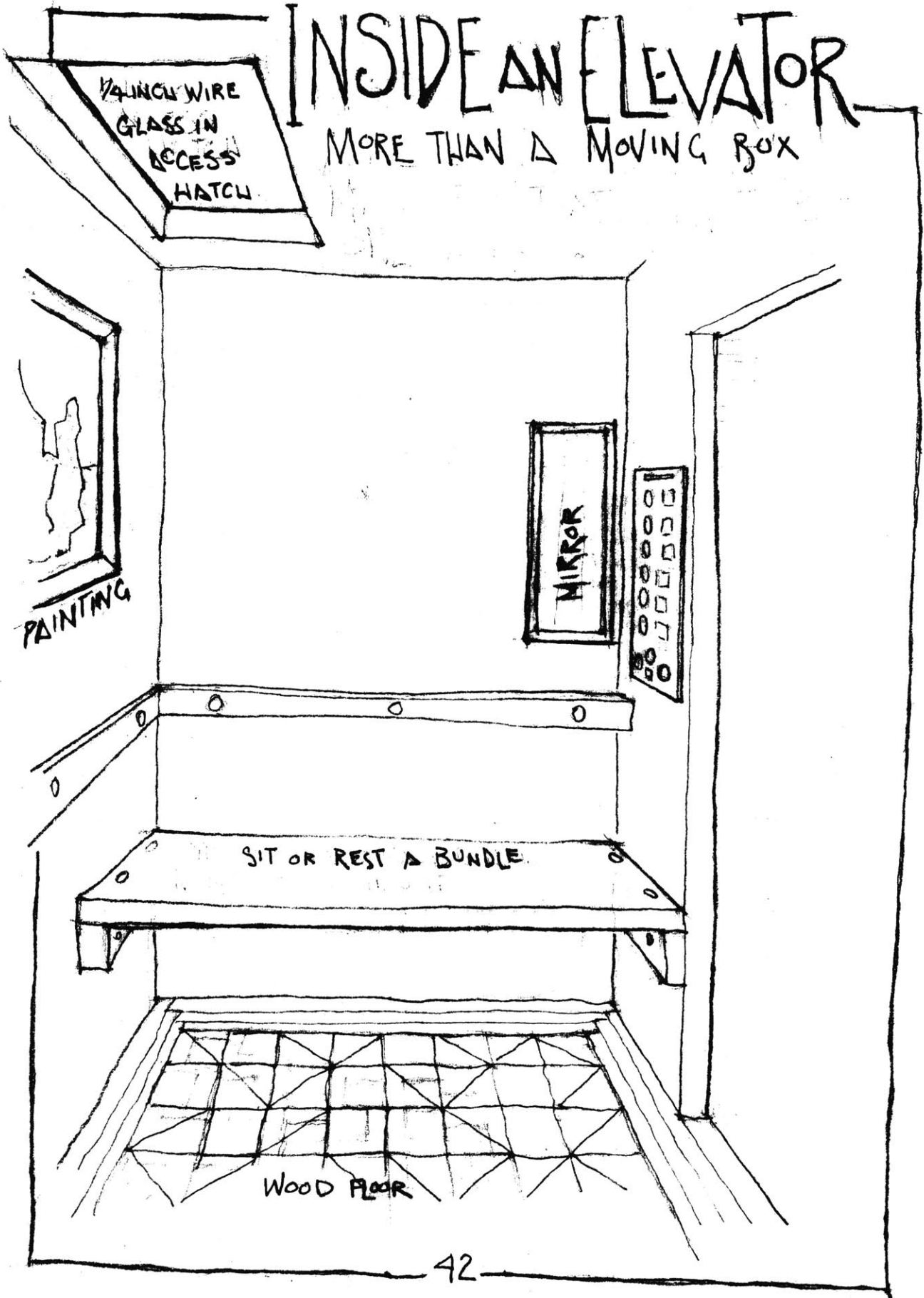
ELEVATORS AND CORRIDORS



Textures

INSIDE AN ELEVATOR

MORE THAN A MOVING BOX

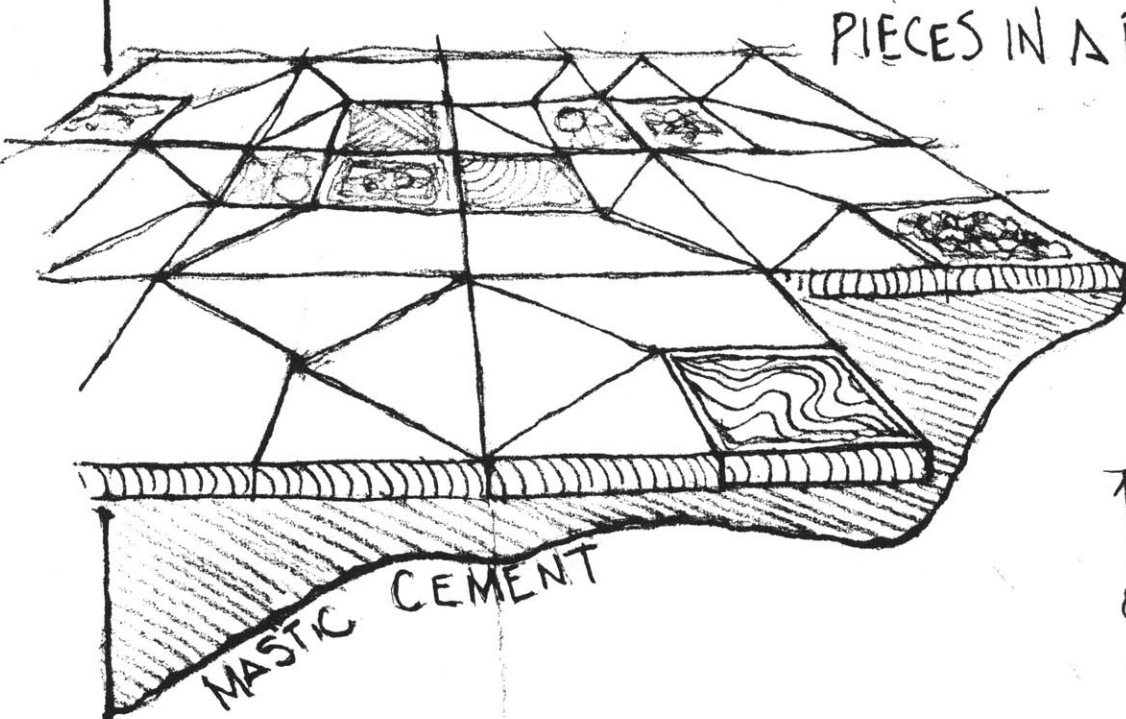


OUTSIDE the ELEVATOR

A PLACE TO STOP FOR A MINUTE



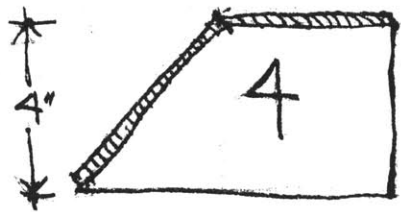
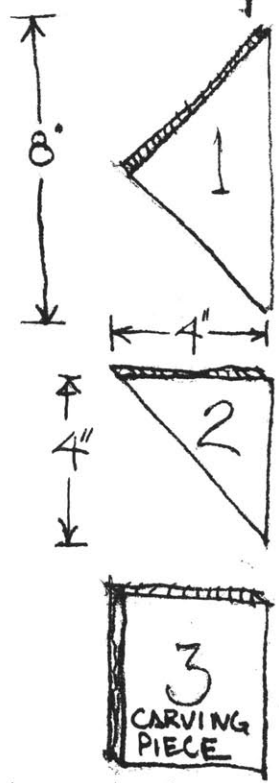
A WOOD FLOOR



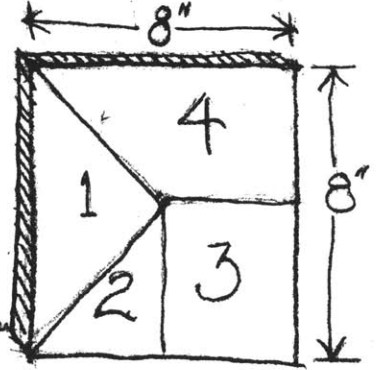
PIECES IN A PUZZLE

MASTIC CEMENT

Invent a set of pieces.
 Cut them out of hardwood - oak or maple.
 Everyone can take a piece home to
 carve a design in it, and then return it
 to put it into the floor.
 This is a way everyone can take
 part in making the floor,
 while only a few
 actually assemble it.



A SET OF PARTS
 That can go together
 in many ways.



44

CORRIDOR LIBRARY

A FEW BOOKS WILL MULTIPLY
TO BECOME A LIBRARY



The nook in the corridor from pages 17 and 20

This idea for a library has worked before. Someone put a few books out for others to borrow and instead of disappearing, the numbers multiplied.

Choose furniture for comfort rather than style.

GALLERY

FILL A LONG CORRIDOR WITH PICTURES, MIRRORS
STAINED GLASS, PLANTS

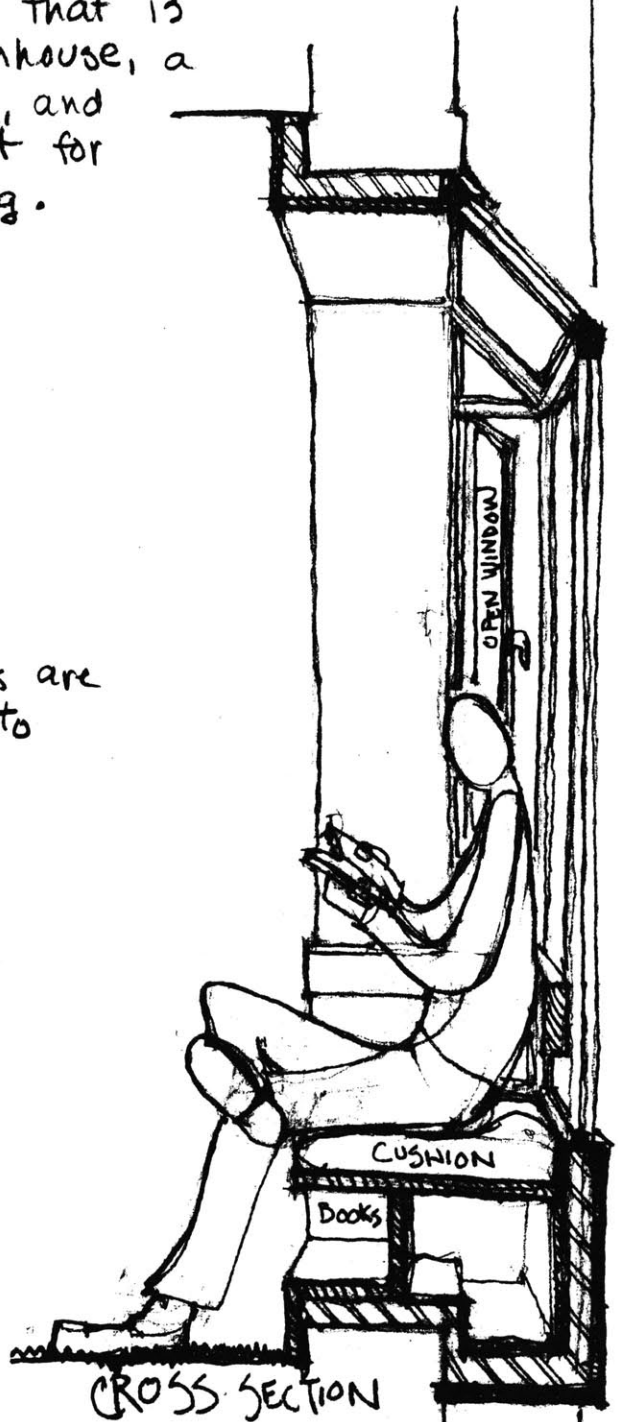


BAY WINDOW



At the end of a corridor,
A place that is
a greenhouse, a
library, and
a seat for
reading.

Bay windows similar to this are
sold ready to be fitted into
a window opening.



CROSS SECTION

WORK AREA

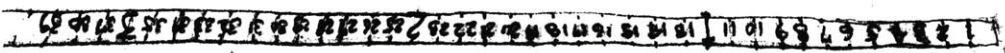
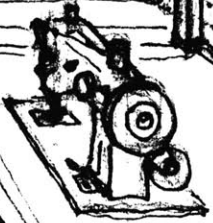
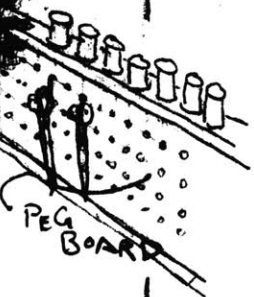
A PLACE TO SEW



WINDOW

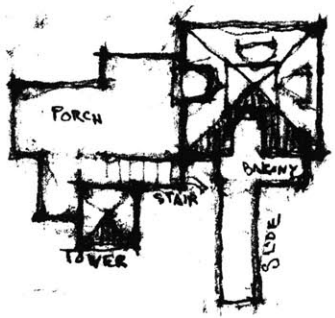


NARROW SHELF

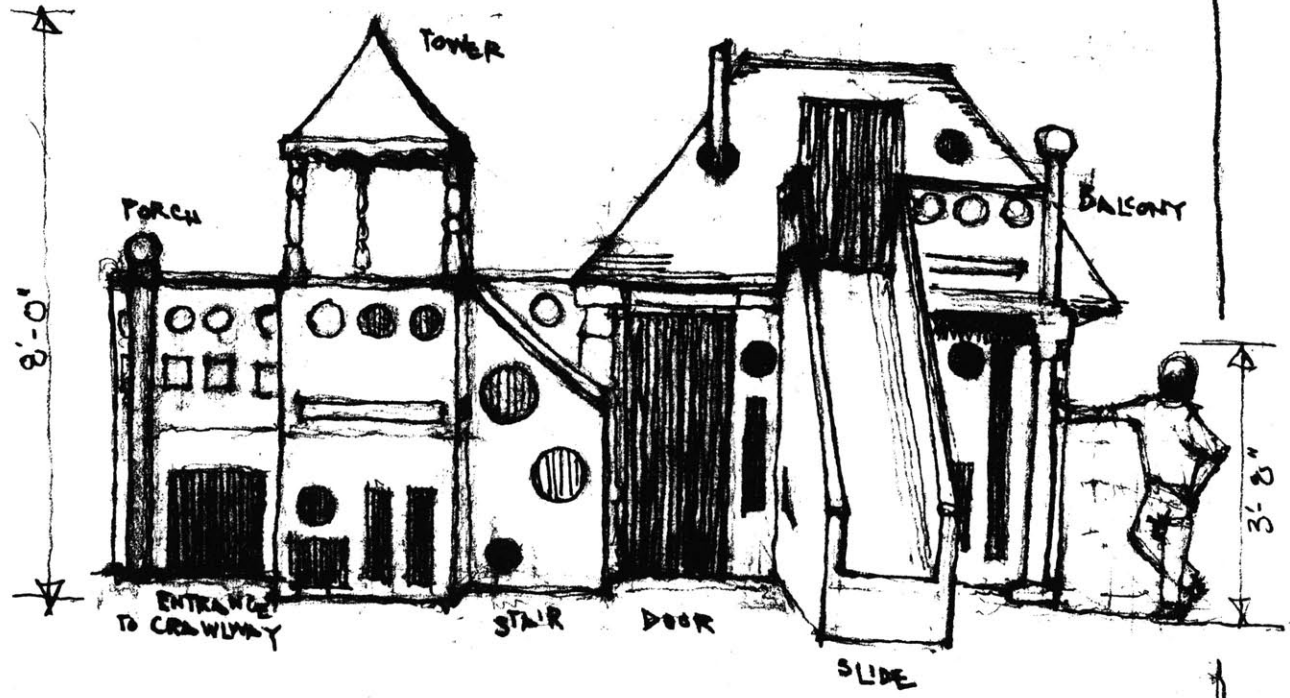


MEASURING & CUTTING TABLE

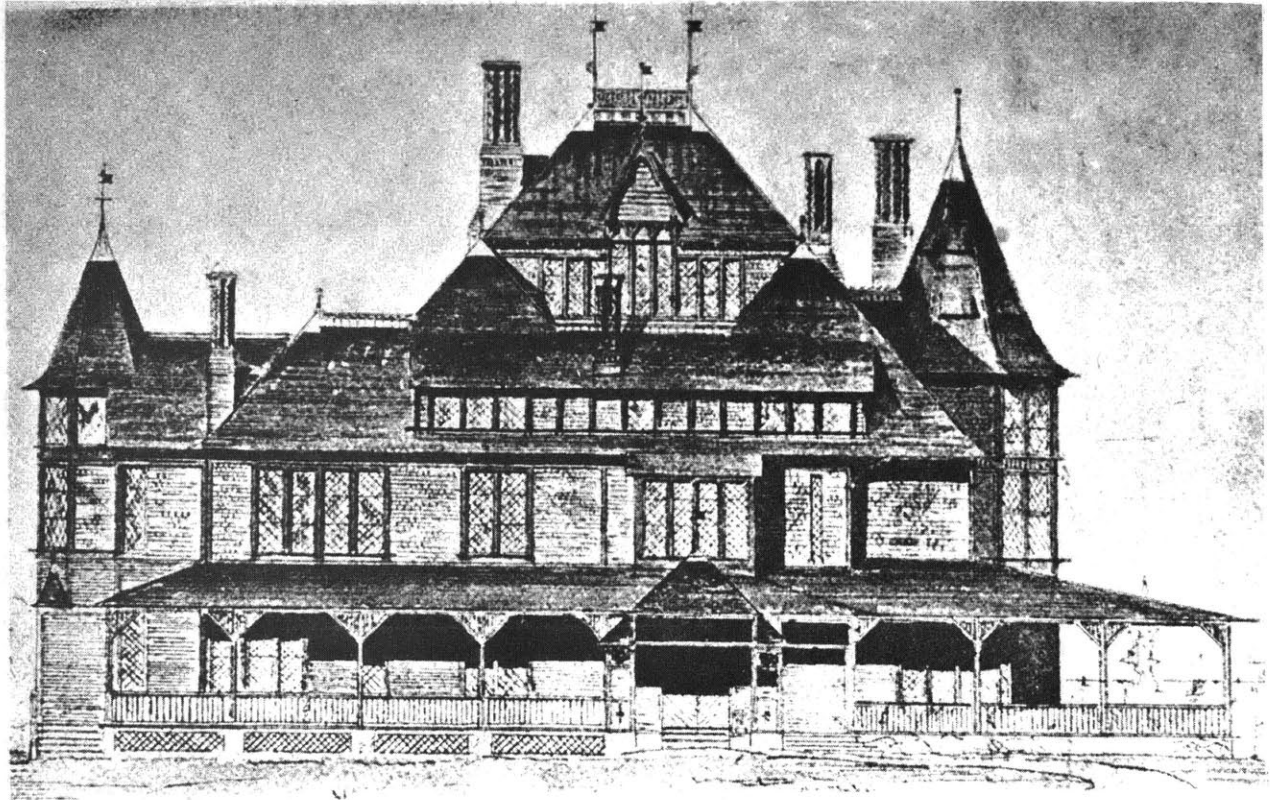
PLAYHOUSE



Either inside in a community room,
or a wider part of a corridor, or
outside.



PART 3: APARTMENTS



People have forgotten how to work with hand tools. We have forgotten about repairing and making things for ourselves. People used to build their own homes, and furnishings. The things they bought were made to last. We have convinced ourselves that we all should be alike, that, in order to be like everyone, we must have certain things (need them or not), that we can't do anything for ourselves, and that consumption in the throw-away society is healthy. We all might be better off if we began to think the opposite.

This section is about being yourself; about building things for yourself; about what it is possible to do in an apartment.

Your apartment is a place to be excited about, because it is your home. Whether you move often or stay in one place, whether you have little or much money, whether you have skill with your hands or not, it is possible to make your apartment your home.

The problem of skill stands in most of our ways. Skill is rarely an inborn trait. Skill takes practice. The hardest thing about learning to do something is setting aside your pride, and being willing to make mistakes.

The ideas in this section deal with doors, windows, walls, kitchens, bathrooms, and balconies. They are not at all comprehensive. I could have included sections on furniture, floors, and floor coverings, and sections on paint, wallpaper, and tiles. There are thousands more ideas than the four dozen here.

The problems I approach are how to get more out of

small apartment spaces, especially how to increase storage. This is always first on this list of apartment dwellers' complaints.

The second problem is about self expression. An example is that people used to paint flowers on their walls as decoration. Many very old farmhouses in Scandinavia have beautifully painted walls that were done by the farmers themselves. Now-a-days we use wallpaper that someone else has designed and printed for us.

DOORS

Entrances to private worlds
within worlds
child's bedroom world
family's apartment world.

Painted a sunflower
Initialed our door.

Built a place there
around our door
to see ourselves
 in the mirror
 show ourselves
a functioning place
hang coats
 muddy shoes
come off
leave the message
wait
and explore
 for a moment.

The old bell clanged
Someone is outside.
(found that bell last special summer)



DOOR DECORATING

PAINT YOUR NAME



DOORS within or into an apartment.

Doors to corridors are metal in order to meet fire code requirements.

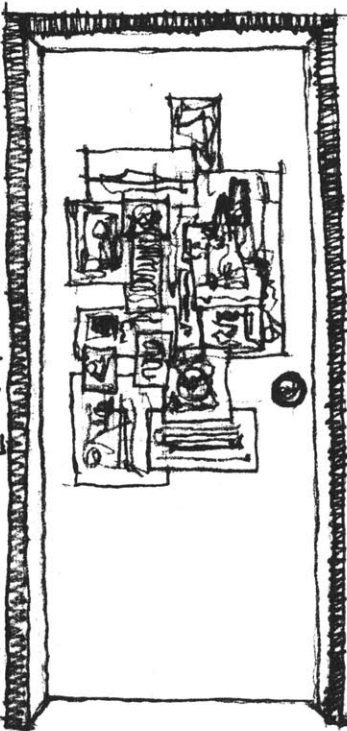
To paint a metal door prepare the surface by sanding the gloss of the present finish. Repaint with paint meant to be used on metal.

Masking tape can be used to get straight edges.

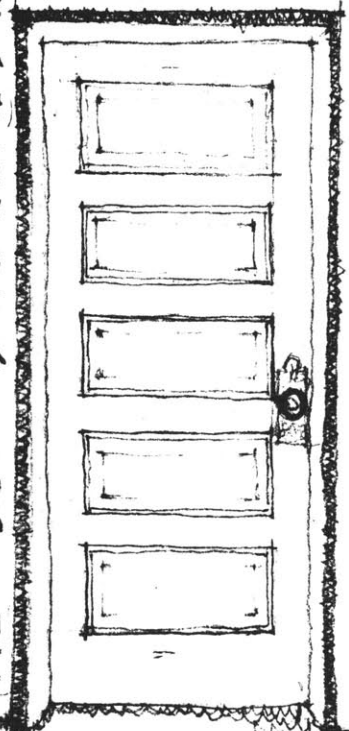
PAINT A SCENE OR DESIGN



MAKE A COLLAGE



REPLACE BEDROOM DOOR WITH AN OLD DOOR



DOORWAY TO A HOME

FAMILY
PICTURE



Philip
Mary
Paul
Susan
BROWN

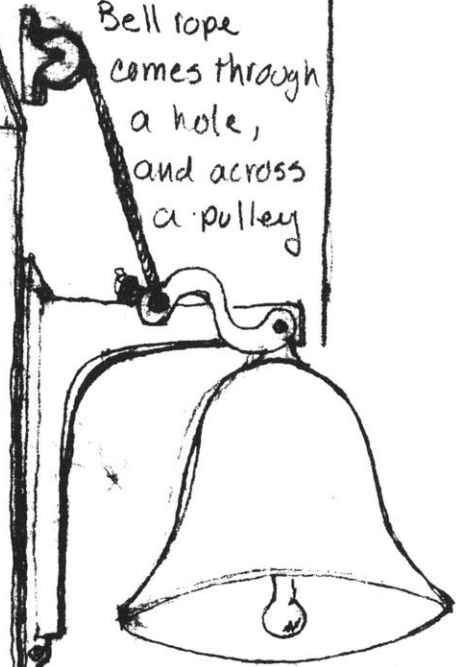
NAMES

PLANT



BELL ROPE IN CORRIDOR

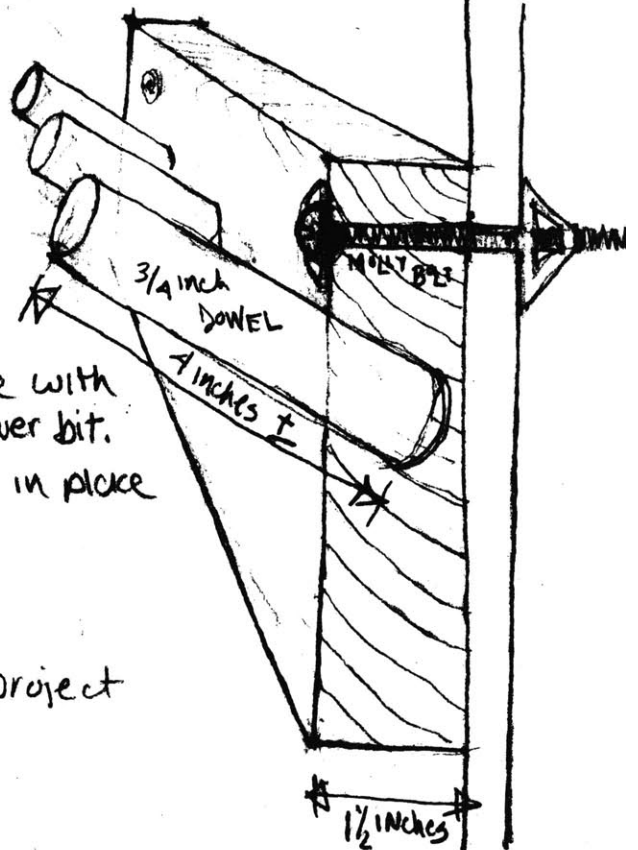
Bell rope
comes through
a hole,
and across
a pulley



DOOR BELL
inside the
apartment

a moderately easy
project - Requiring
TOOL KIT (B)
& A few hours.

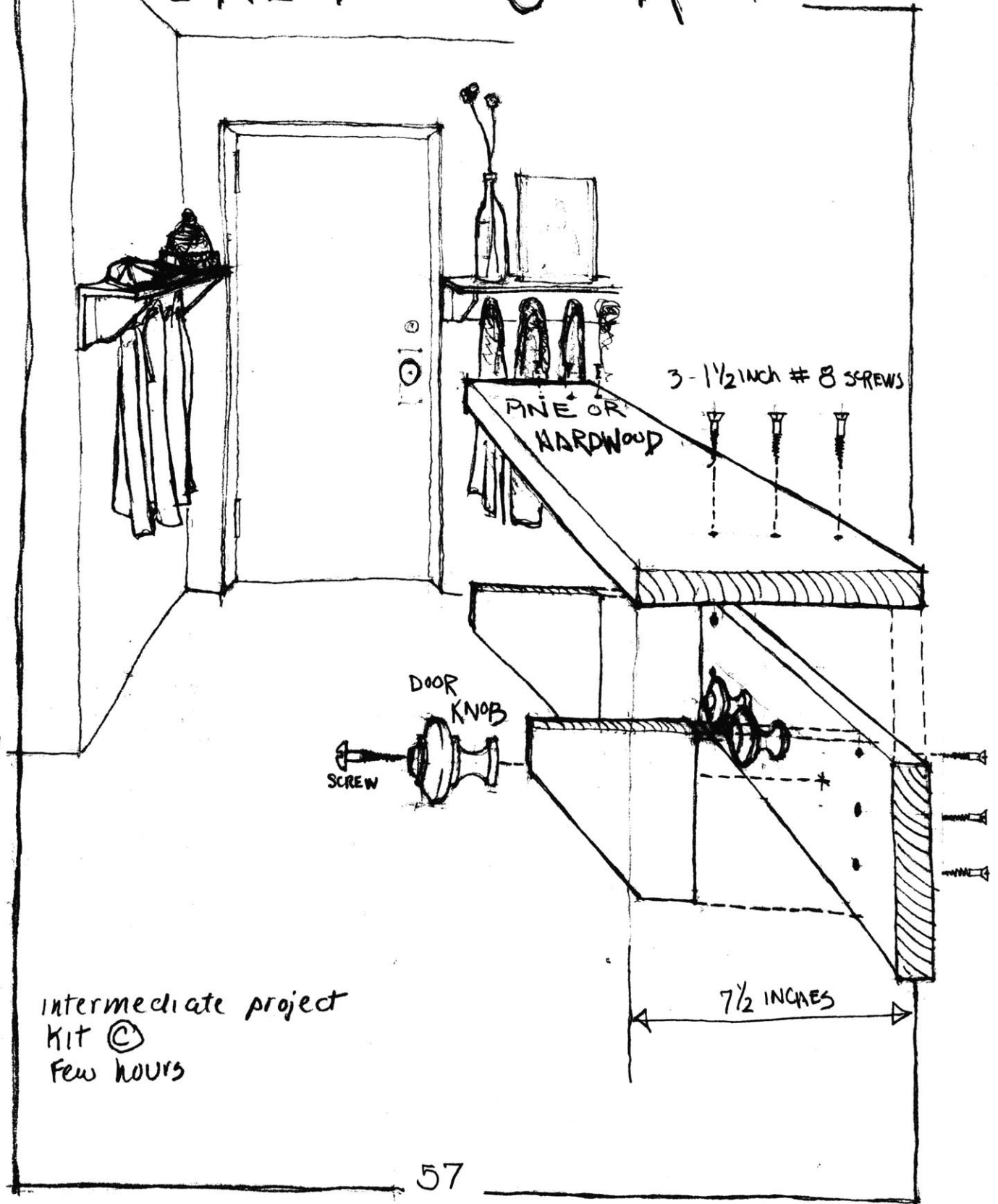
SIMPLE COAT RACK



Drill the hole with
a 3/4 inch power bit.
Glue dowel in place

an intermediate project
Tool Kit ©
A few hours

SHELF AND COAT RACK

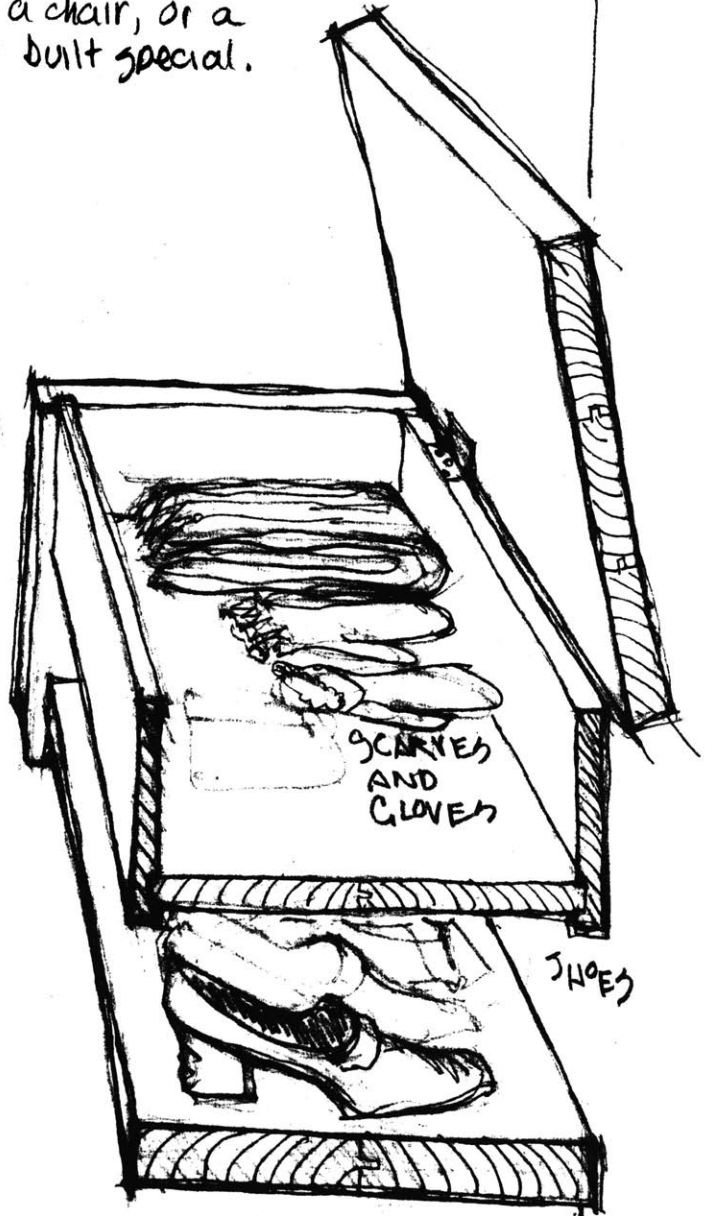
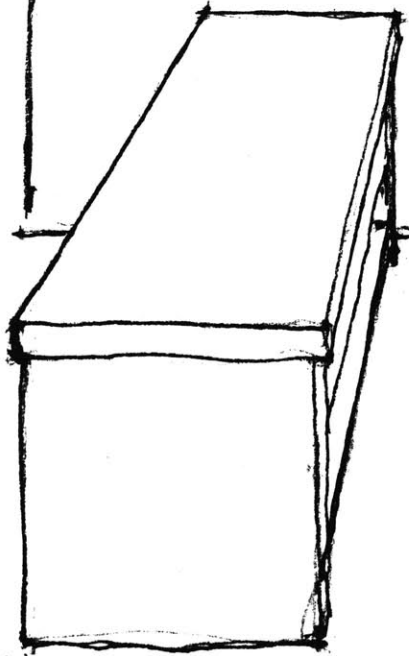


Intermediate project
KIT ©
Few hours

BENCH BY THE DOOR

PLACE TO SIT
AND REMOVE
MUDDY BOOTS OR SHOES

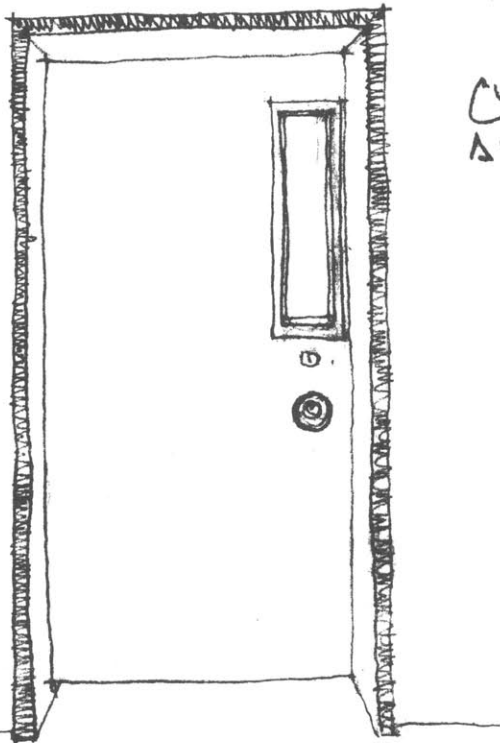
Might be a chair, or a
trunk, or built special.



advanced project
KIT (H)
few days

CROSS SECTION

DOOR WINDOW



CUT A HOLE
AND MAKE A WINDOW

Use a sabre saw with a metal cutting blade to cut the holes
leave three inches between the hole
and the edge of the door!

DOOR FRAME

CROSS SECTION OF WINDOW

FIRE CODE REQUIRES 1/4" WIRE GLASS

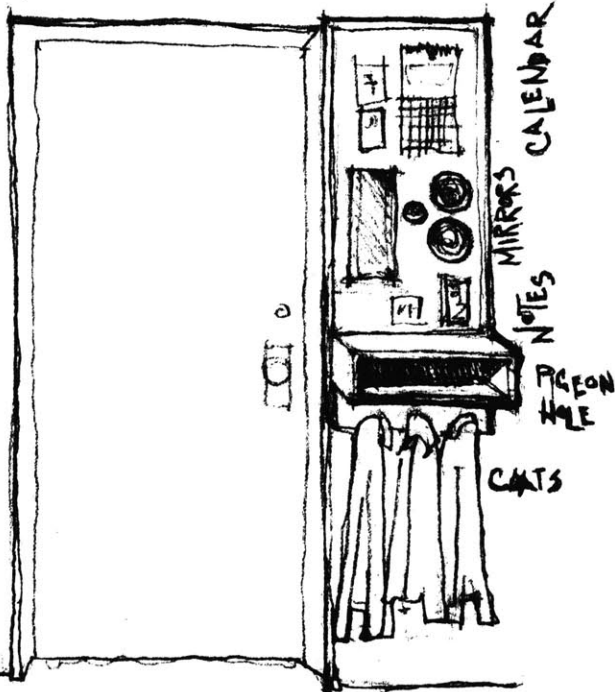
advanced project
KIT (F)
one day

OAK FRAME
NAILED TO BLOCKING
THROUGH DOOR

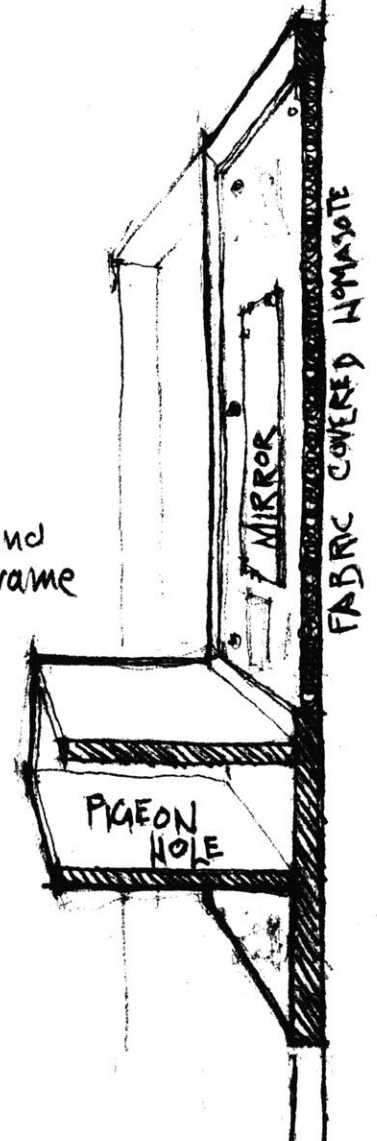
DETAIL
OF WINDOW
FRAME

BLOCKING
WOOD
CUT TO FIT
INSIDE DOOR-
FRAME WINDOW
OPENING

MESSAGES



Bolt homesote
to the wall and
build the frame
around it.



Intermediate project
Kit ①
few hours

ELABORATE ENTRY

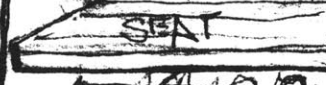
WINDOW TO CORRIDOR

DOOR TO THE OUTSIDE CORRIDOR

LIGHT SWITCH NOTES

UMBRELLA STAND

DOORBELL



SHOES

RUG.

Everything that an entrance area needs.

Plenty of places to put things

CALENDAR

MIRROR

COATS

Built in, or a piece of furniture

advanced

KIT (H)

Long term project

WINDOWS

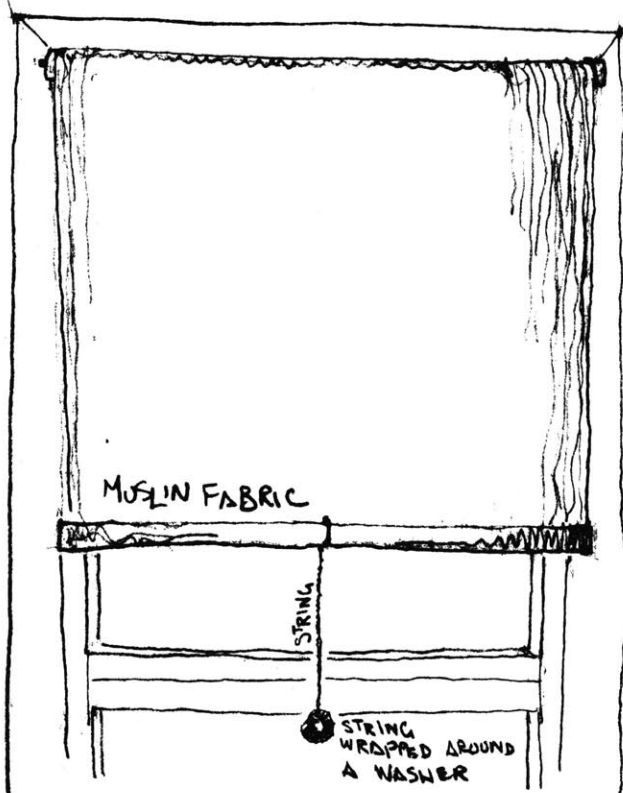
The eyes of a building
inside and outside.

Sun travels,
sparkles in amber glass
moves across floors
walls
different day by day
A calendar

Another place to build
to sit
watch: children play
cars flow by
feel that sun
to read
to grow gardens of plants
of china dolls
of memories
of little things for yourself



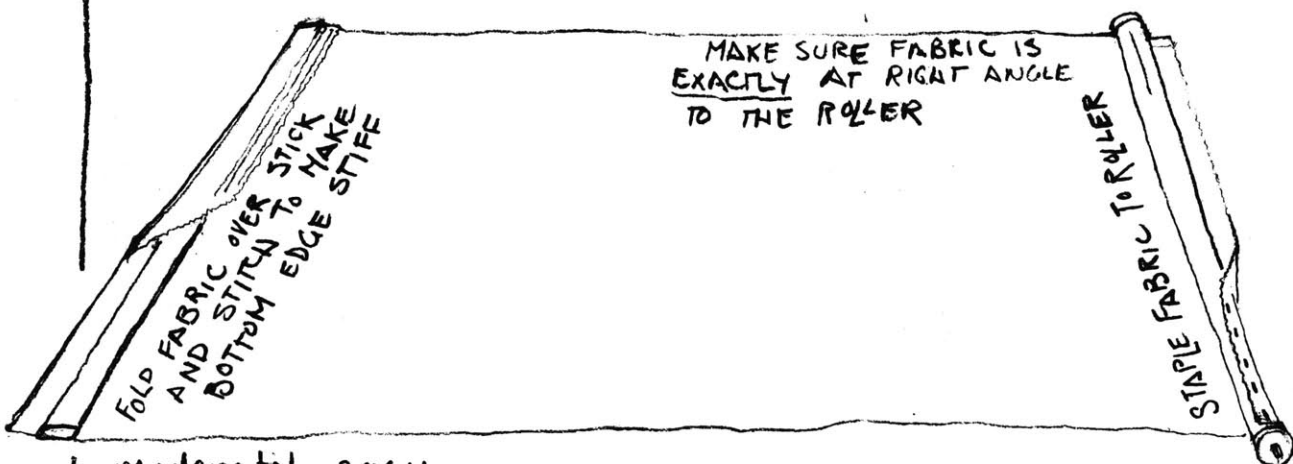
FABRIC WINDOW SHADE



SAVE OLD WINDOW SHADES

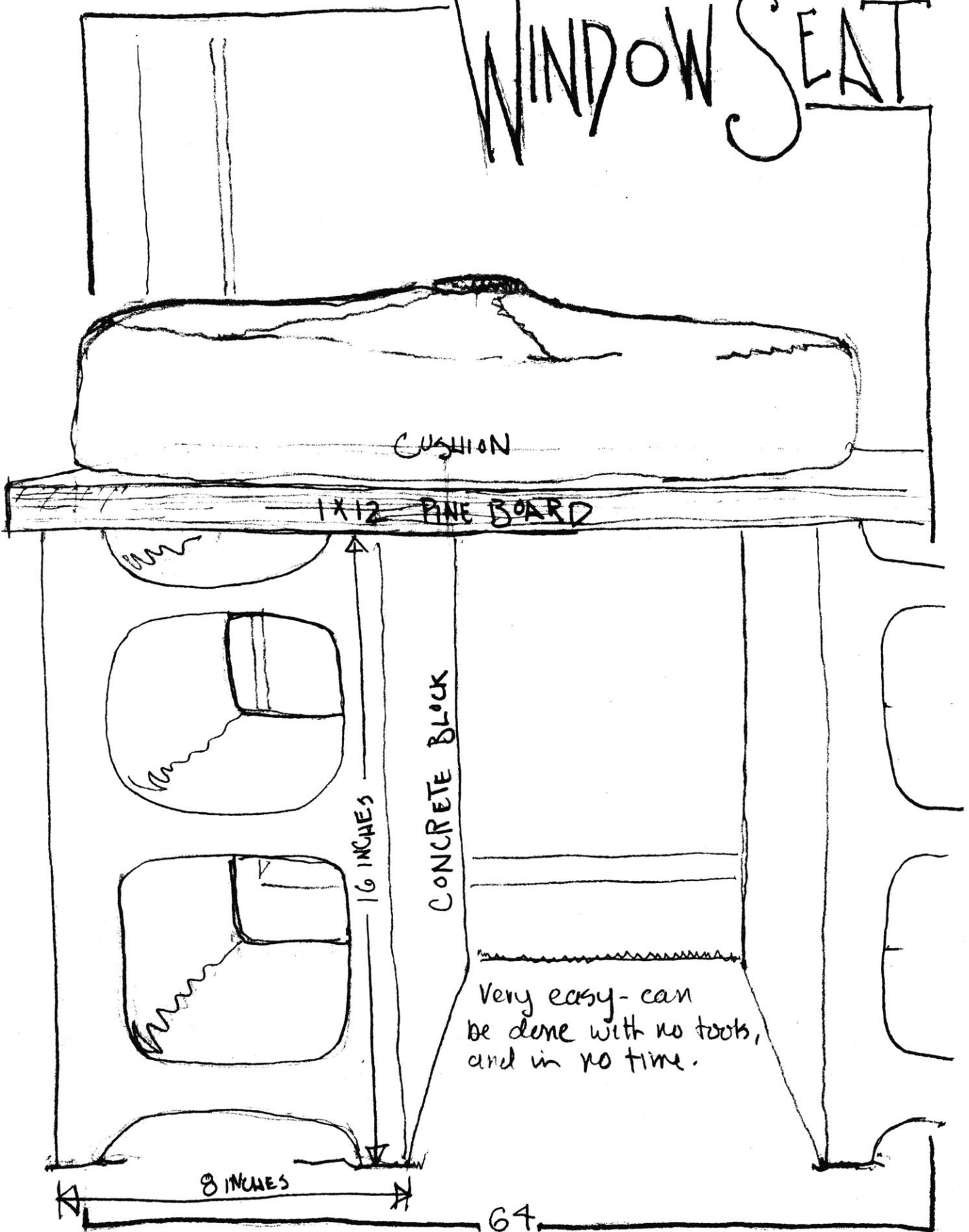
You can replace the shade material with fabric. (printed or plain)

Unbleached Muslin costs 70 cents a yard in Chinatown. (\$3 per yard in Cambridge)

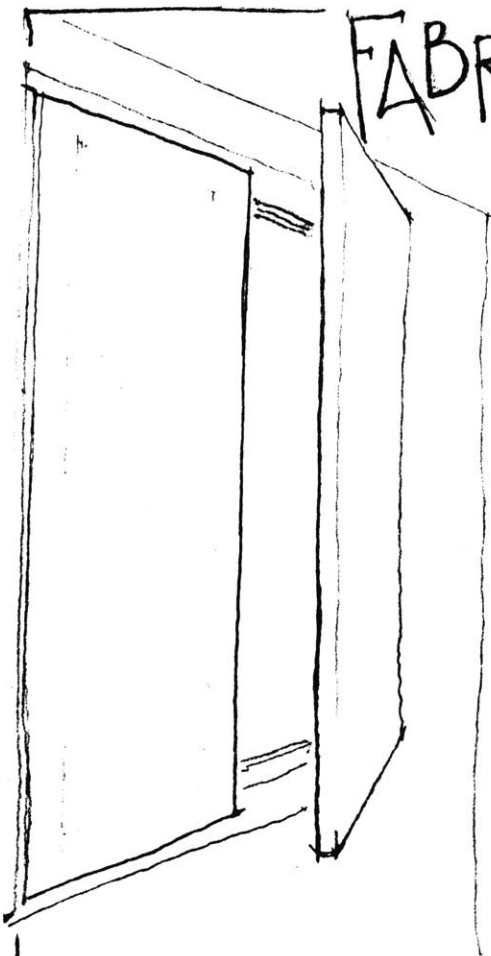


Moderately easy
Kit Ⓐ - a quick project

WINDOW SEAT



FABRIC WINDOW SCREEN



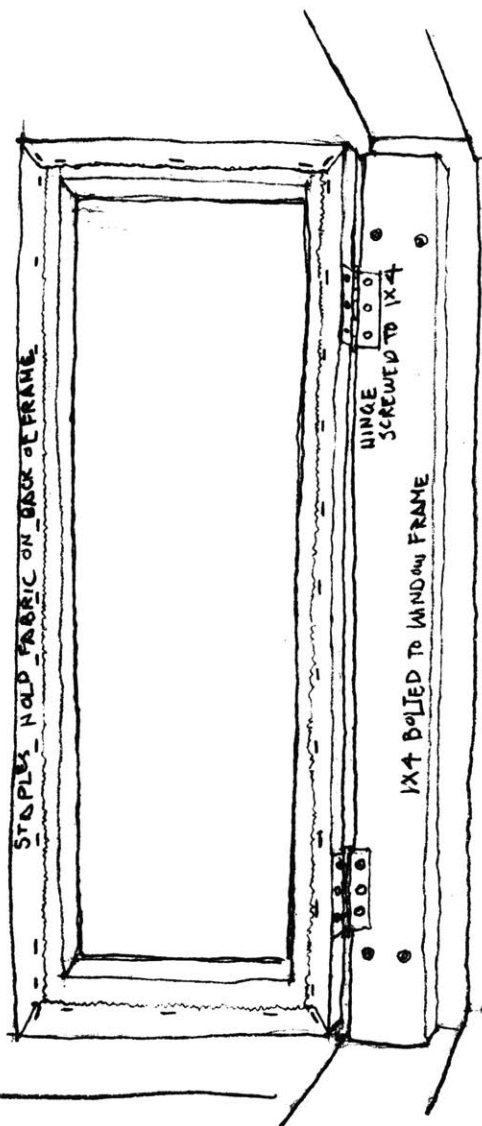
An inexpensive and simple alternative to curtains.

Buy canvas stretchers in an art store. Stretchers come in pre-cut sizes that slip together to make a frame.

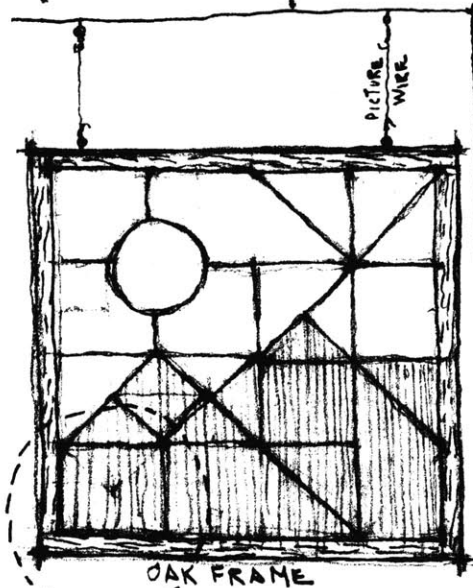
Buy some material - either plain like muslin or a print. Staple material to back of frame.

Hang stretched material in the window with picture wire, or use hinges.

moderately easy when done without hinges,
Kit **A**
one hour



HOMEMADE COLORED WINDOW



OAK FRAME

DETAIL BELOW

Rich colors can be achieved in plexiglass by layering two colors.

Buy some scraps from a plexiglass dealer.

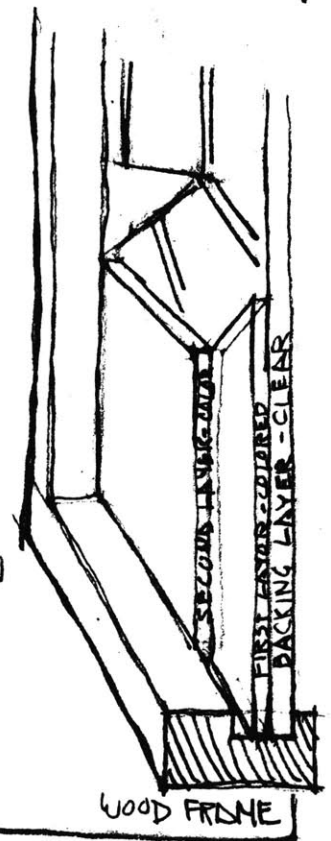
INVENT A PATTERN

Use clear 1/4 inch plexiglass as a backing. Brush acetone onto the edges of pieces to be applied to the backing. Glue the next layer in the same way.

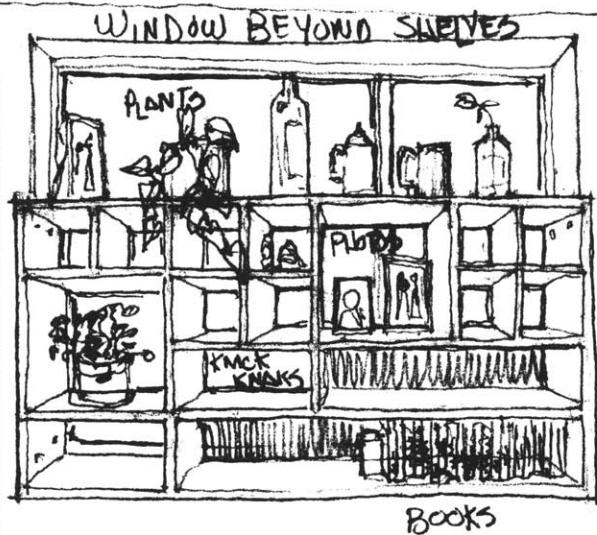
The colored window will be strong enough to hang in a window without any frame.

intermediate—advanced
need a table saw

CROSS-SECTION
DETAIL



SHELVES



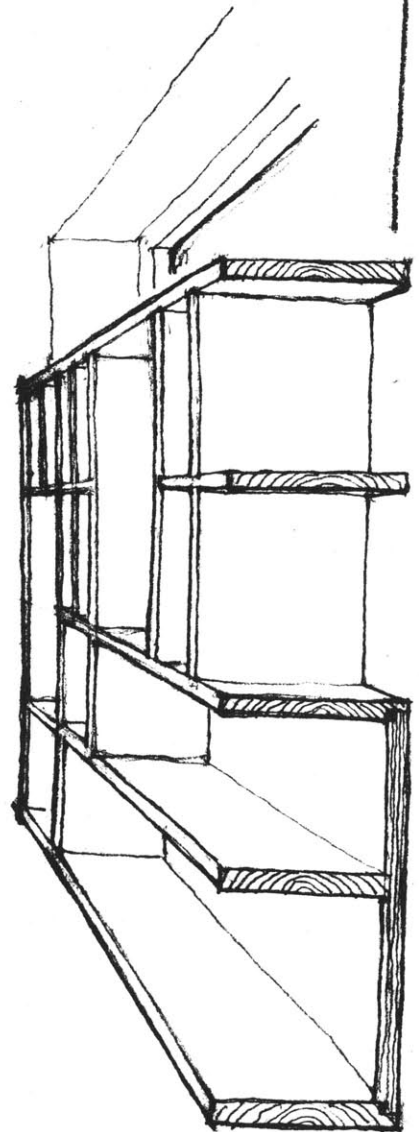
Shelves can provide privacy, and a place to put Knick-Knacks, plants, photographs, books. Glass will reflect sunlight into the room, across the walls, as the sun passes.

Design it with shelves to fit what will be put there. Leave some shelves without backs, some with backs. Leave space to reach and open the windows. Books shouldn't be stored in direct sunlight.

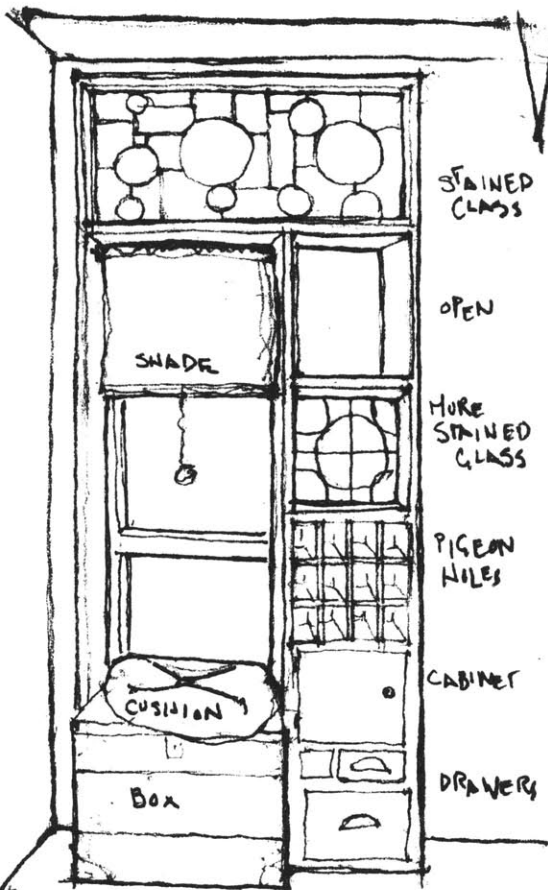
Shelves could be oak, Baltic plywood or pine. Wood connections could be butted or dadoed, glued, and screwed, or nailed with finishing nails.

Attach it to the window frame with molly, or expansion bolts.

advanced
Kit (H)
A few days



WINDOW in a WINDOW

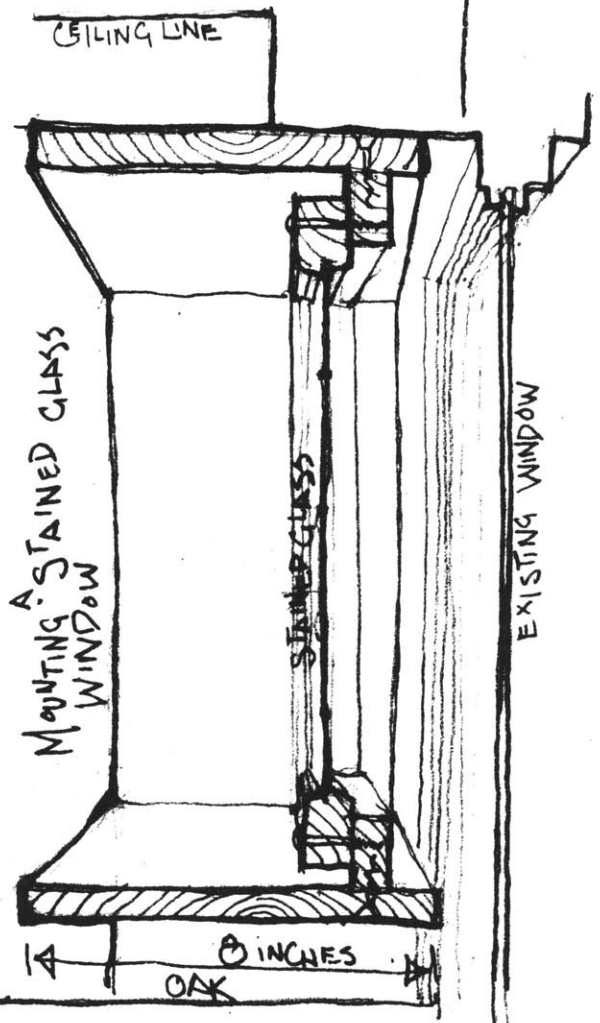


The existing window is hidden behind A WINDOW THAT IS A PIECE OF FURNITURE.

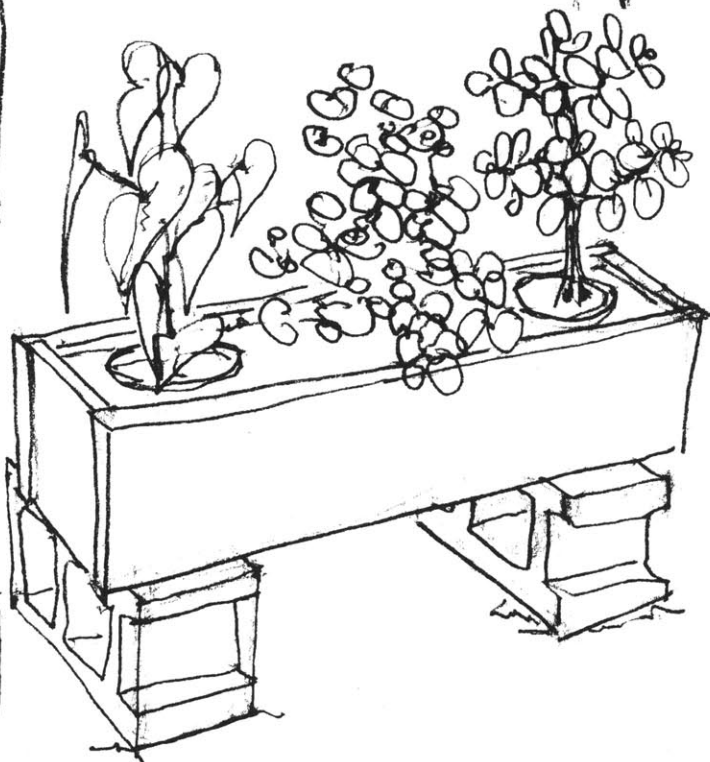
Could be made using a collection of old boxes, drawers, doors, stained or leaded glass.

Could be made to be permanent, or free standing.

advanced
kit (H)
long term



WINDOW BOX

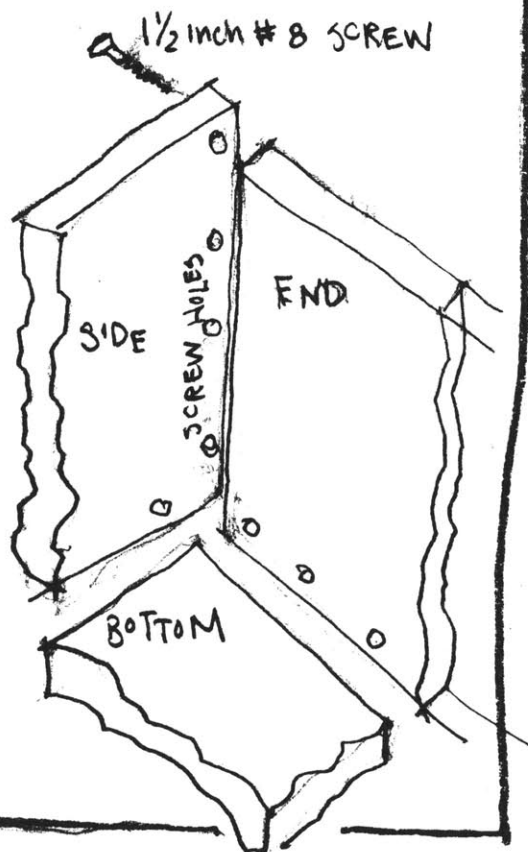


A FLOWER BOX

Improves the growing conditions for plants. It reduces watering frequency, and water evaporation will help humidify the apartment, prolong the life of the plants.

Plants need good drainage. Drill holes in the box bottom. Add a layer of stones, a layer of leaf mold (peat moss), and the rest is potting soil. This will require a tray to catch dripping water, and the wood will eventually rot.

Another method is to line the box with a sheet of plastic, and fill it with gravel, or sphagnum moss. Plunge potted plants into the gravel or moss.



WINDOW ROD

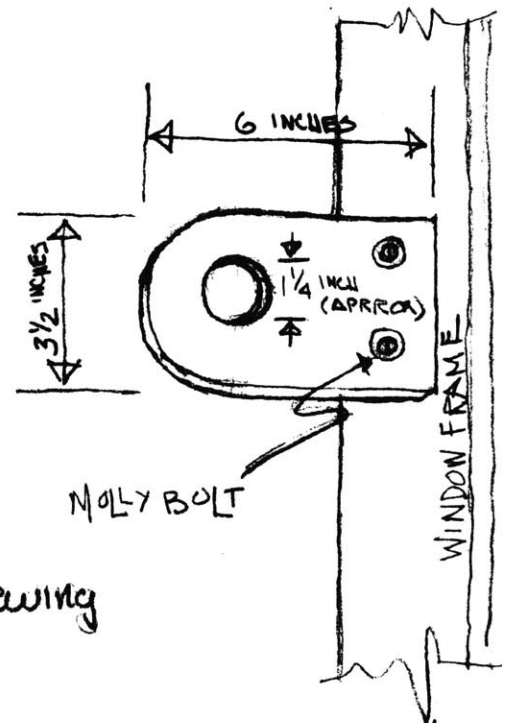


Lumber Yards and hardware stores sell closet poles in a variety of lengths. They serve as lasting and inexpensive rods for hanging curtains, plants, a mobile.

Cut the bracket from a 1x4 board. Drill the hole with a hole saw in an electric drill. Attach the bracket to the window frame with an appropriate fastener.

Trim the ends of rod by screwing wooden knobs to it.

Moderately easy
Kit ©
few hours



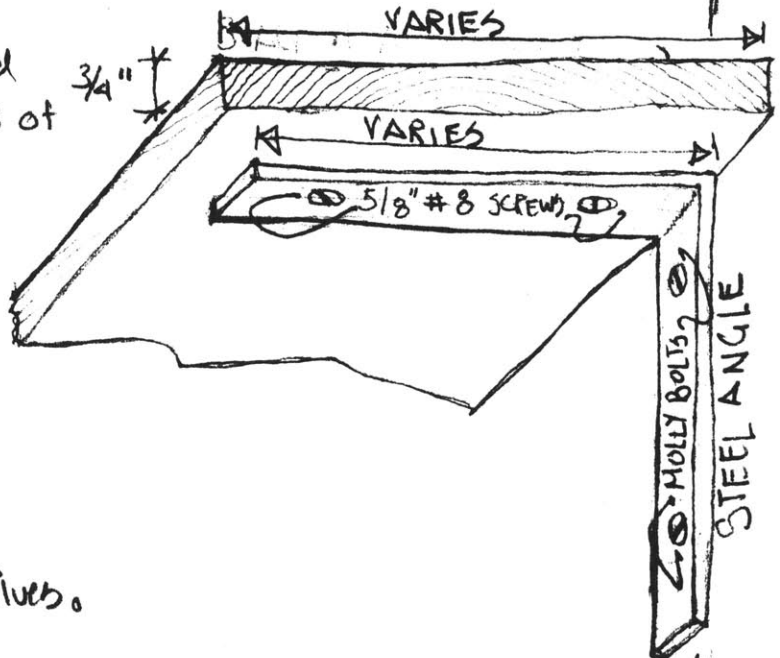
SHELVES IN WINDOW



Plants, bottles, a radio,
books, pencils, ash tray,
Something special —

The shelves are boards of varying width. Use steel angles, or cast iron shelf brackets. Second hand stores have old shelf brackets.

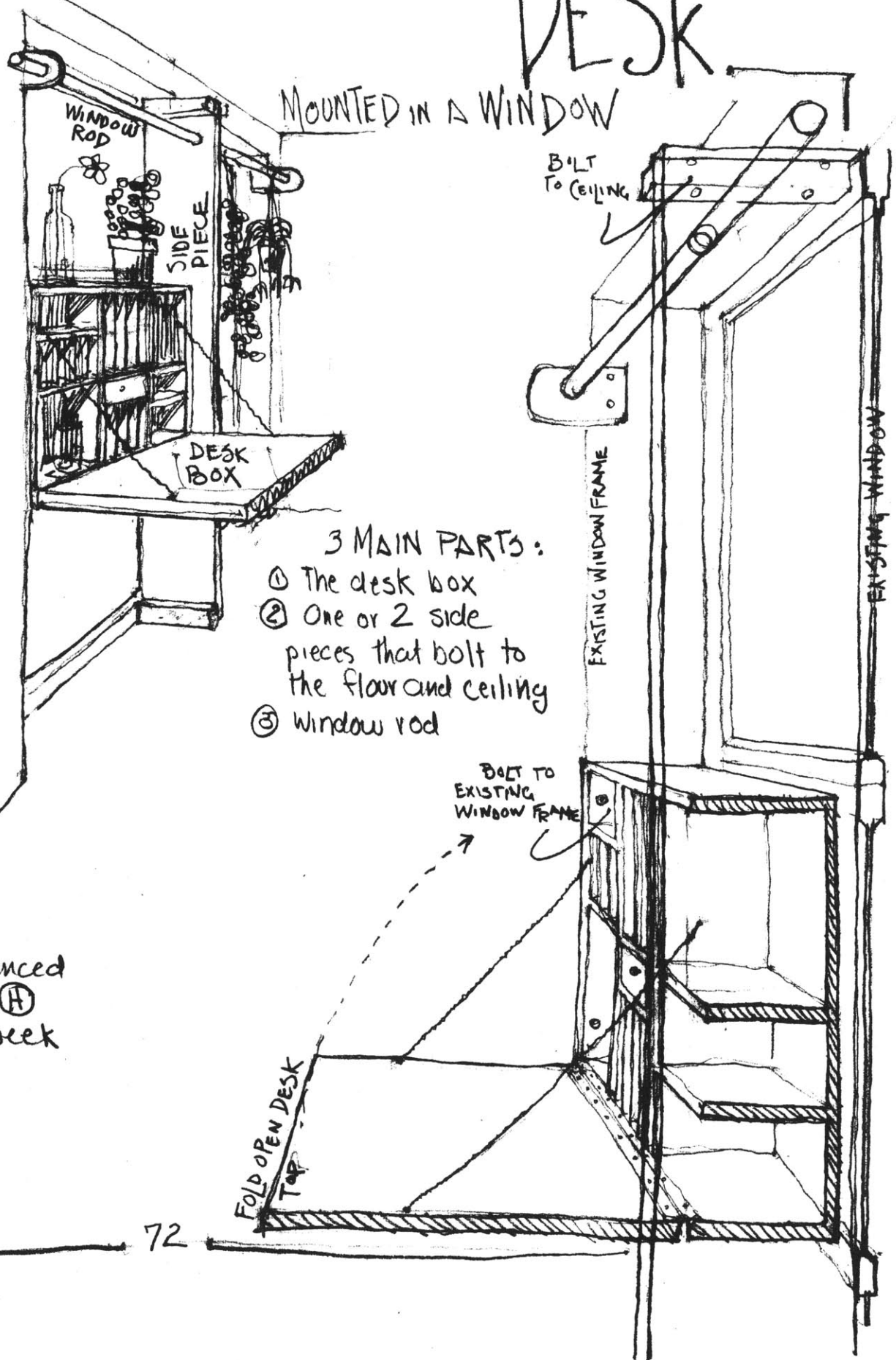
Spend time and be sure that pairs of brackets are set at equal heights. A slight difference will show.



moderately easy
Kit (B) or (C)
quick or slow depending
on the number of shelves.

DESK

MOUNTED IN A WINDOW

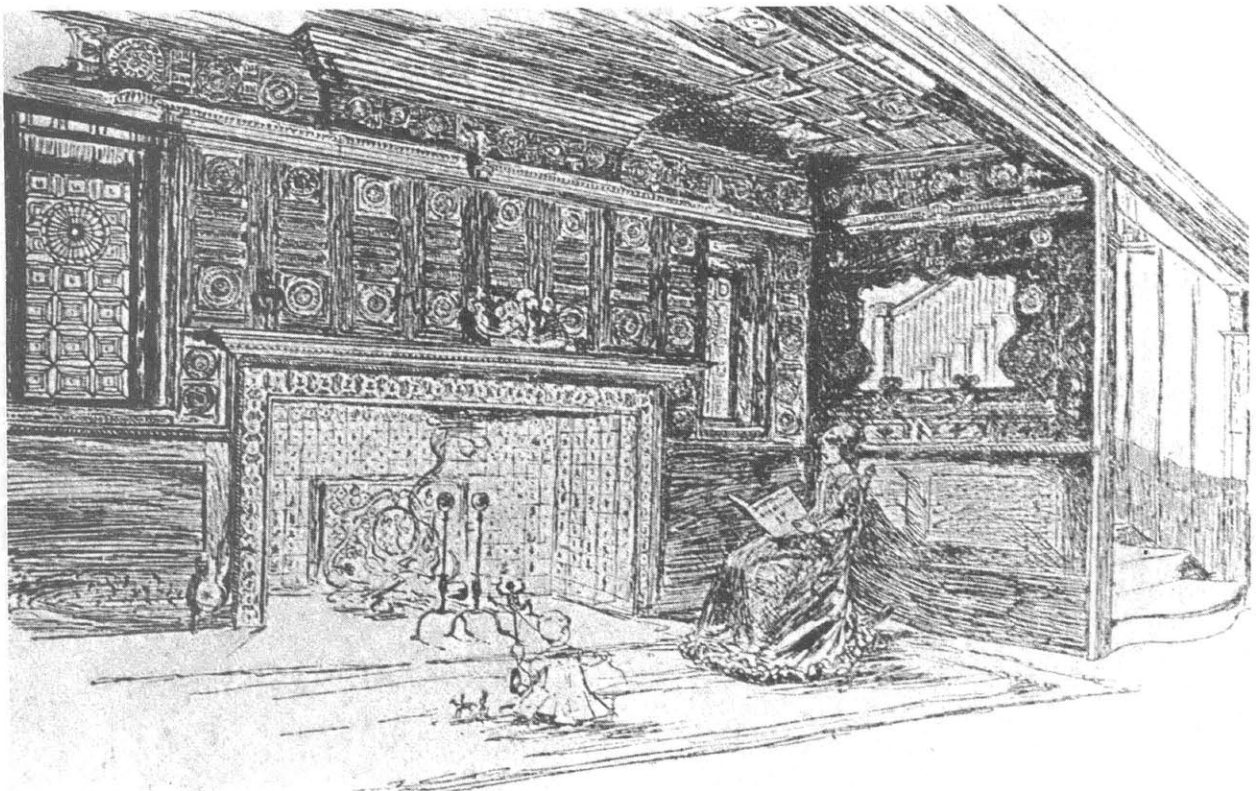


- 3 MAIN PARTS:
- ① The desk box
 - ② One or 2 side pieces that bolt to the floor and ceiling
 - ③ window rod

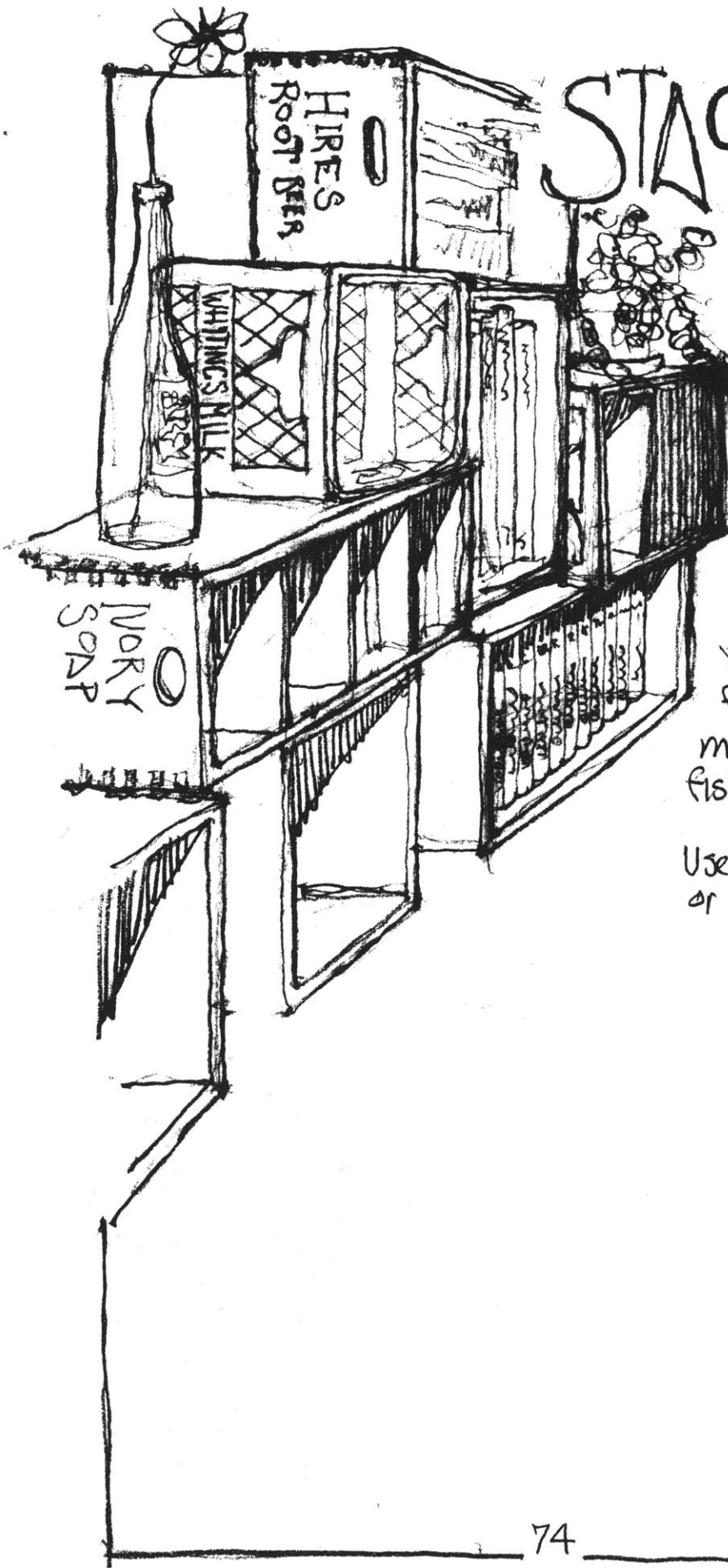
advanced
KIT (A)
A week

WALLS

oak on plaster
pictures hang
(a venerable photograph)
boxes, blocks stacked
hooks and coats
notes and thoughts
yesterday's
things on shelves
each in their place.



Stacked Boxes



BOXES CAN BE
SPECIAL

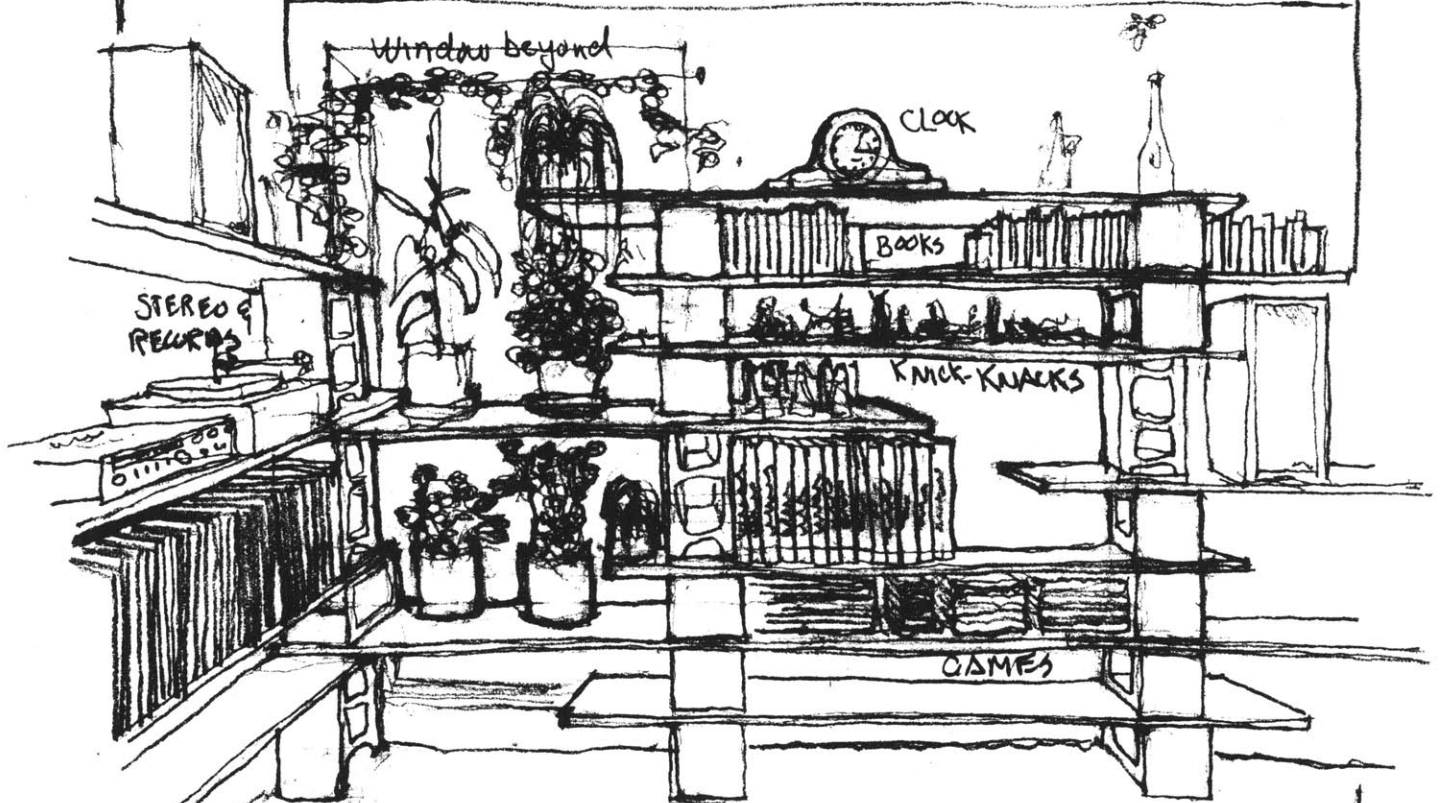
A well made box will
last for years.
The joints at the
corners are important.

You can use old
fashion soap cases,
milk cases (wood or plastic)
fish crates, bakery boxes.

Use them as they are,
or refinish them.

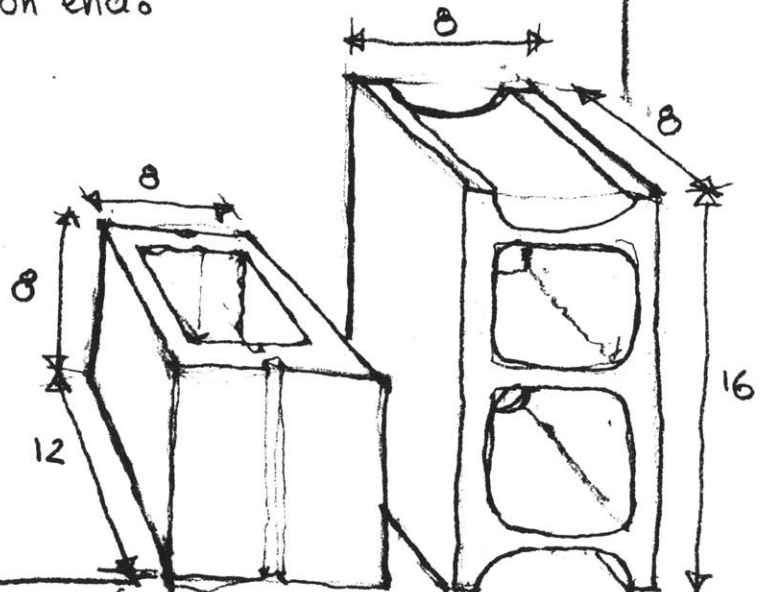
STACKED BLOCKS

VERY EASY

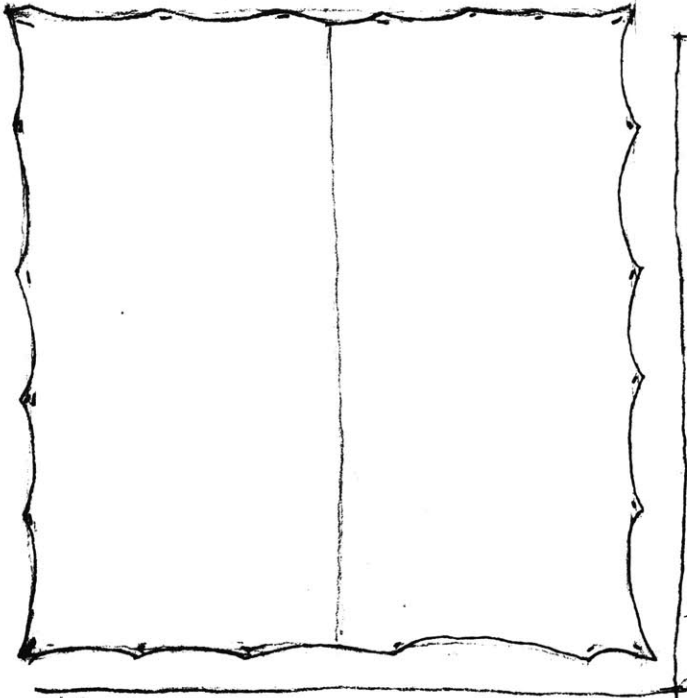


Intricately stacked concrete blocks and 1x12 boards.

NOTE: Two blocks turned on their sides equals the height of one block on end.



STAPLE FABRIC TO WALL

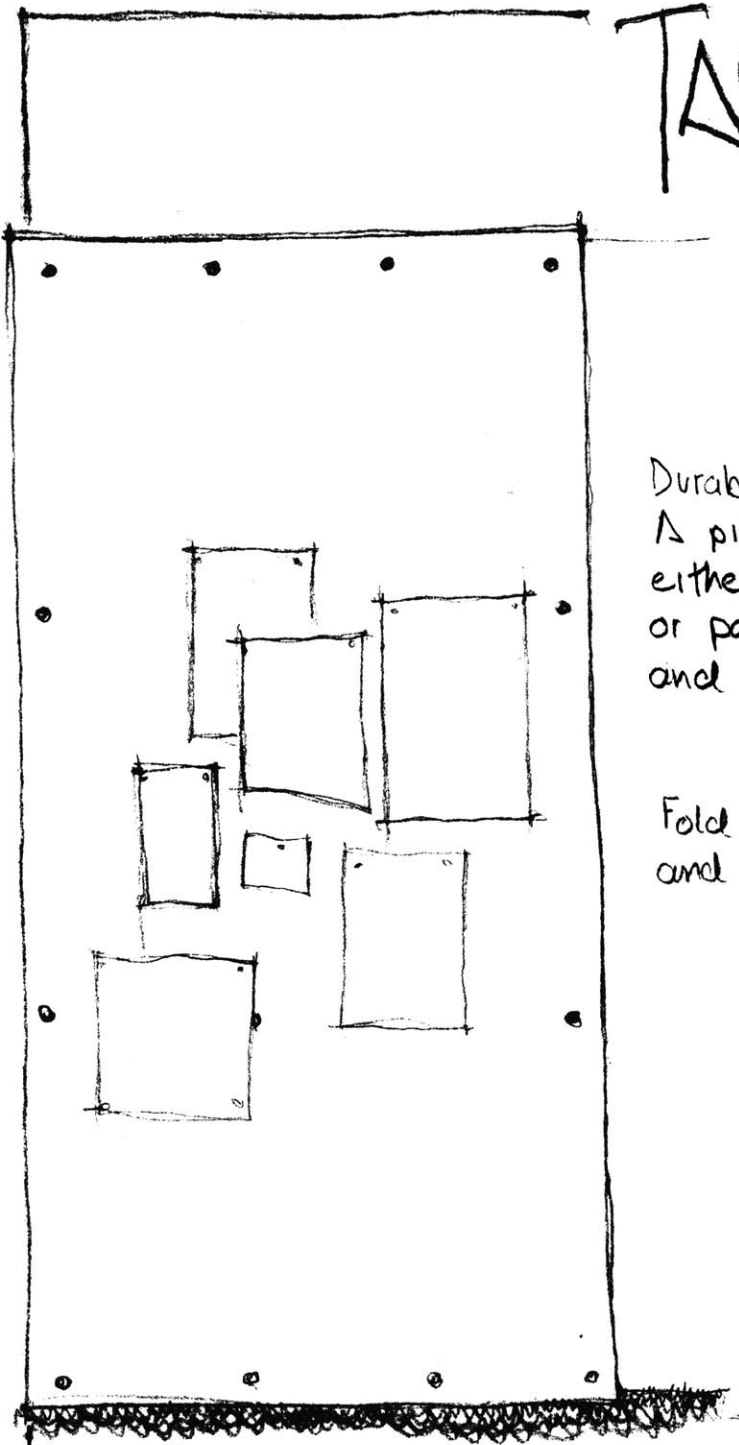


If the wall is plasterboard (drywall), staples will penetrate it easily without chipping it.
A plaster wall might chip.

Start in the top middle and work out.
Do bottom edge second
sides last

Easy
Kit 
1 hour

TACK BOARD

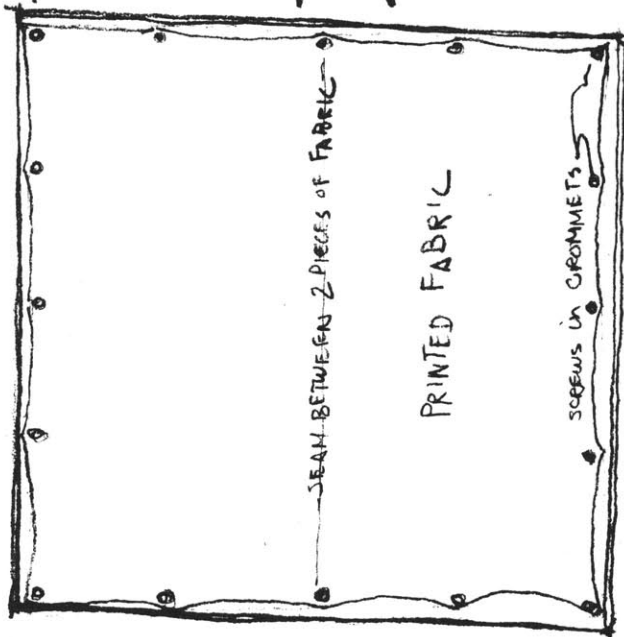


Durable and inexpensive
A piece of homasote
either covered with fabric,
or painted with latex paint,
and bolted to the wall.

Fold fabric around the edges
and staple to the back.

Moderately easy
Kit (B)
A few hours

FABRIC ON A WOOD FRAME



WALL DECORATION

COLORFUL FABRIC
ON A WHITE WALL

Attach the frame to the wall with molly bolts.

Set grommets in the fabric.

Use round head screws to attach the fabric to the frame.

Start with the top middle, and move left and right along the top.

Stretch fabric down, and attach the bottom in the same way as the top.

Next do the sides.

Intermediate

Kit ①

Δ day

BOTTOM CORNER OF FRAME

DOUBLE FABRIC
ALONG THE EDGE

GROMMET AND
ROUND HEAD SCREW

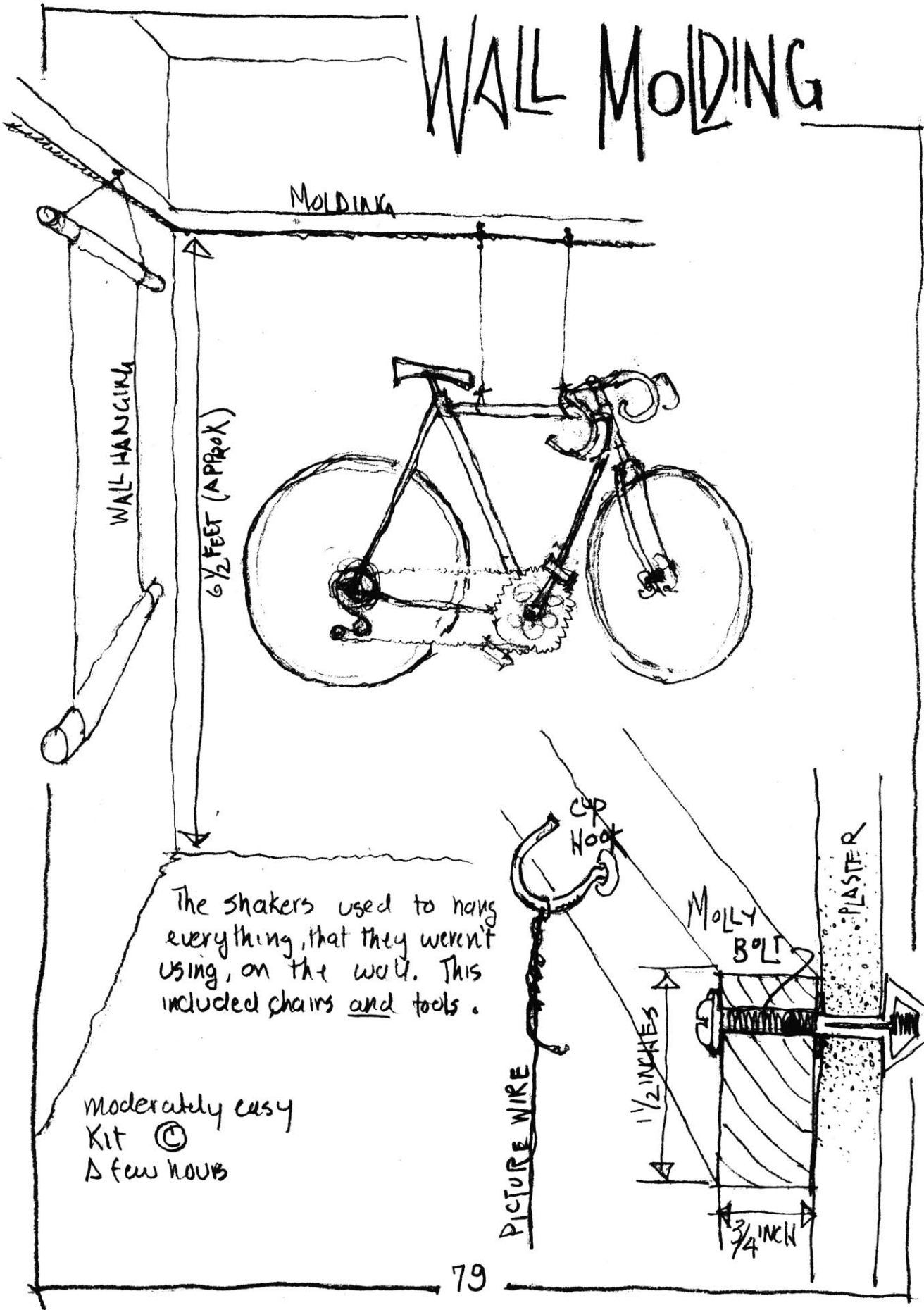
2 3/4 INCH

1 1/2 INCHES

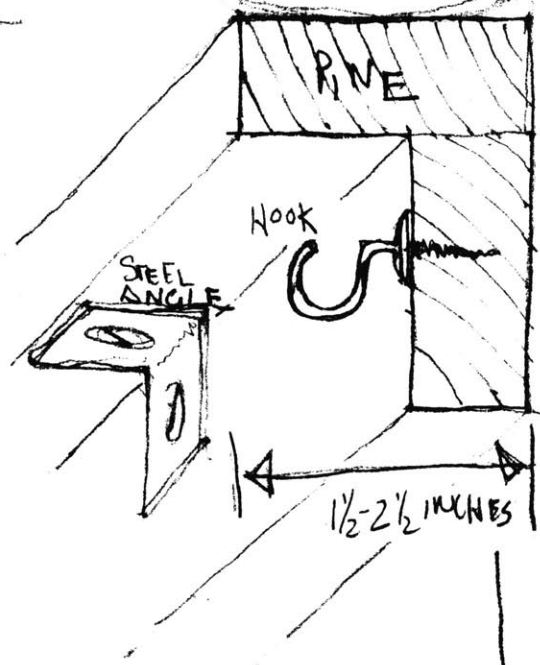
PINE FRAME EDGE

MOLLY BOLT HOLDING
FRAME TO WALL

WALL MOLDING



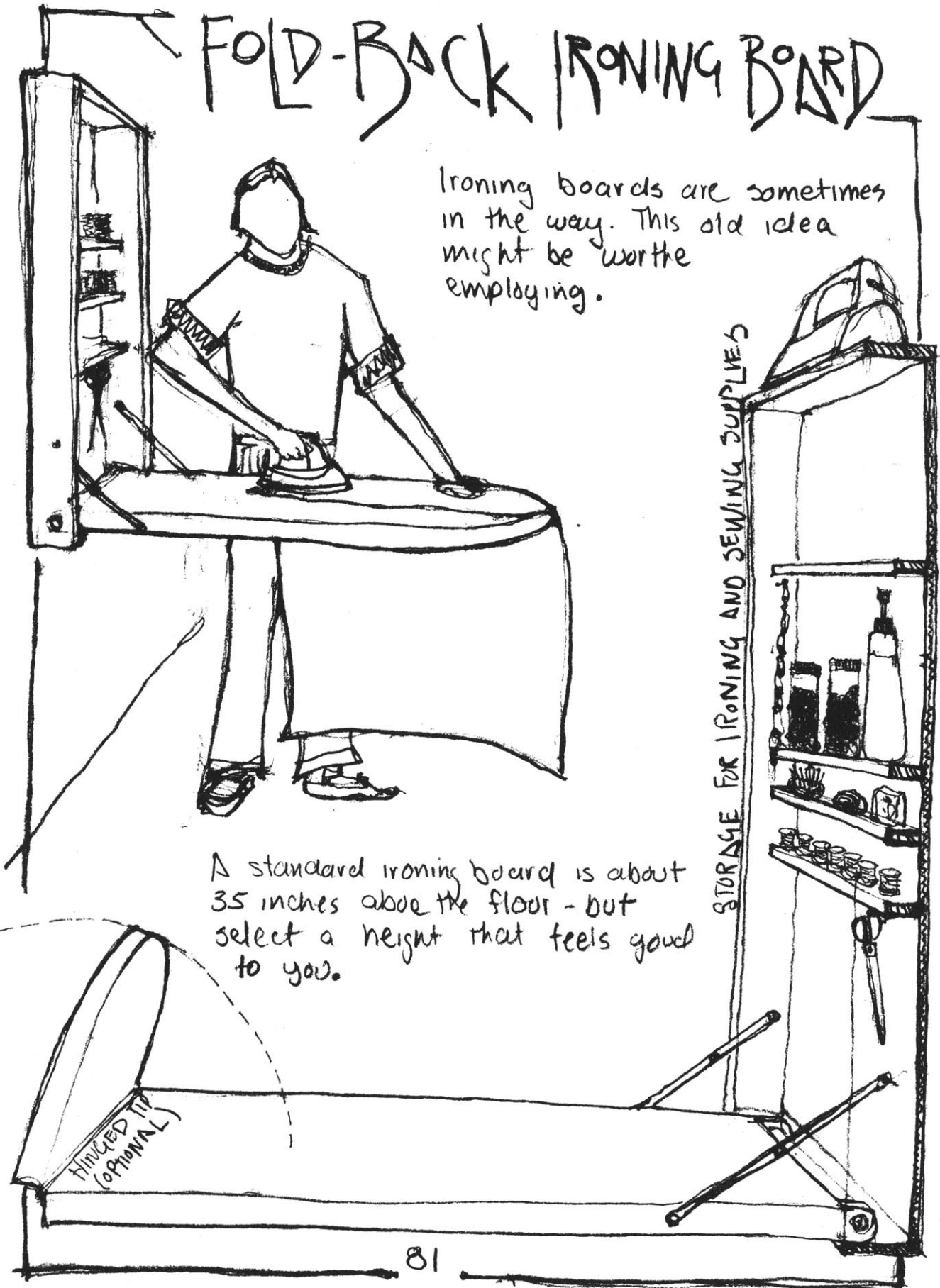
NARROW SHELF



intermediate
kit ©
A day

FOLD-BACK IRONING BOARD

Ironing boards are sometimes in the way. This old idea might be worth employing.



A standard ironing board is about 35 inches above the floor - but select a height that feels good to you.

STORAGE FOR IRONING AND SEWING SUPPLIES

HINGED TIP
(OPTIONAL)

81

STORAGE WALL

ONE IDEA -

CAN ALSO BE
A ROOM DIVIDER

Increase storage -
Make shelves for
stereo, books, linen,
blankets, clothes, or
use Plastic tubs
for drawers. Attach
a closet pole -

VERTICAL SUPPORT

1x12
PINE
SHELF

PLASTIC
TUB

BOLT TO CEILING

CONSTRUCTION OF VERTICAL SUPPORT

VERTICAL SUPPORTS:

Screw to boards that
have been bolted to
floor and ceiling.

Shelves are made able -
only rest and are not
attached to vertical supports.

The 1x2's and 1x3's that make
the vertical support are bolted with
2 1/2 inch stove bolts. Shelves are
1x12's and 1x8's.

1x12

BOLT TO FLOOR

PINE 1x2

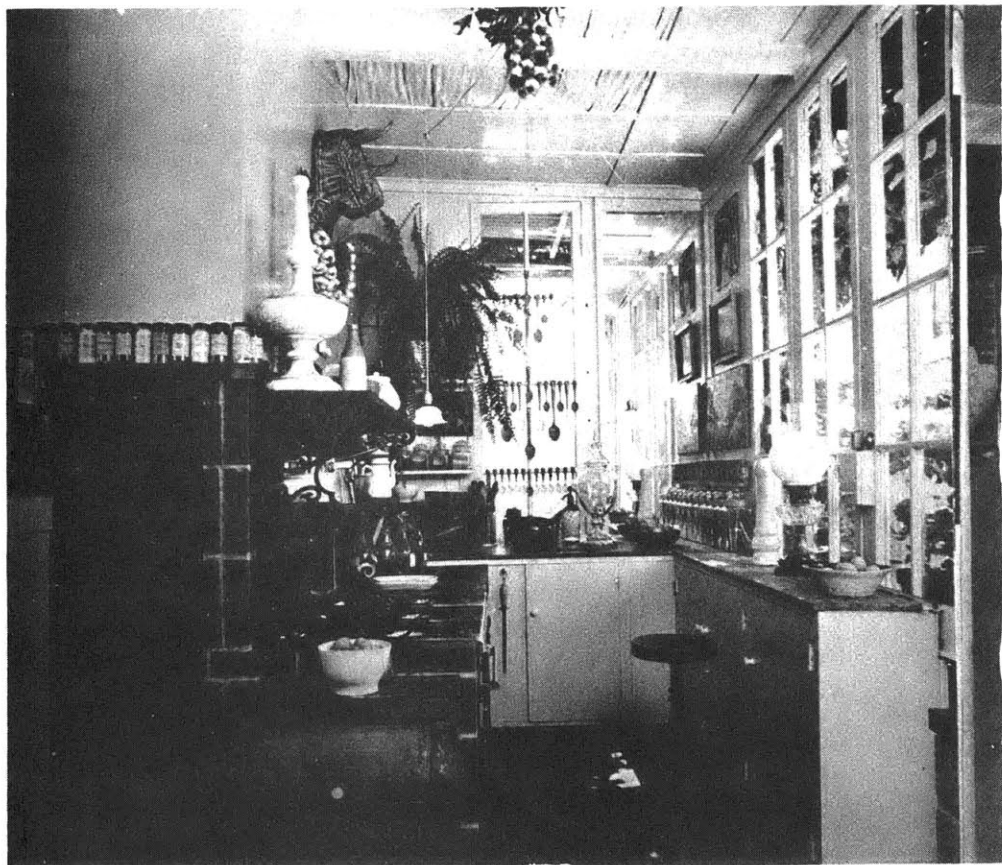
PINE 1x3

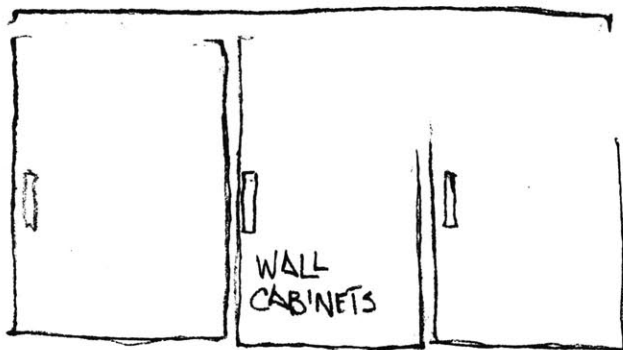
12 INCHES

2 1/2"

KITCHENS

I remember my grandparents' kitchen, biggest room in their house, with a pear tree outside always full of robins and grackles. We ate breakfast there with the sun, and scrappy birds, and pear tree, and the vegetable garden beyond. They canned vegetables and put them up in the pantry, long and narrow with wide white shelves that went up to the ceiling. The dishes were on the left above the white porcelain sink. On the right were all the dry and canned goods. Everything had its place. They also had a closet in the kitchen. It was full of assortments of brown paper bags, rubber bands, string, wire, nuts and bolts, tools, band aids. The sink was twenty feet from the refrigerator, and there wasn't a single cabinet. Efficiency and closed cabinets don't make a kitchen a good place. The personal touch is what does it.





CUP HOOK



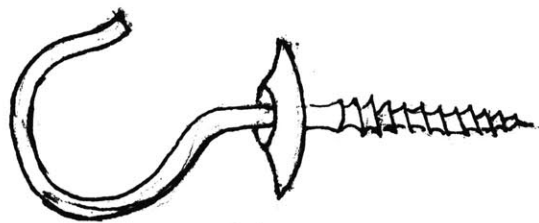
HANG:

- Drinking mugs
- Measuring cups
- Measuring spoons
- Pot holders
- Spatula, spoon, ladle

COUNTER.



IF the cabinets are wood, screw hooks into bottom,
IF metal, bolt strip of pine 1x2 to cabinet bottom or wall.



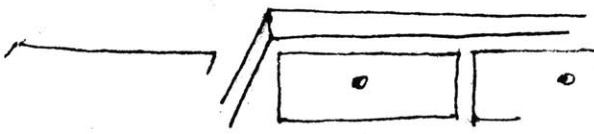
CUP HOOK

(TWICE ACTUAL SIZE)

SPLASH BOARD SHELF



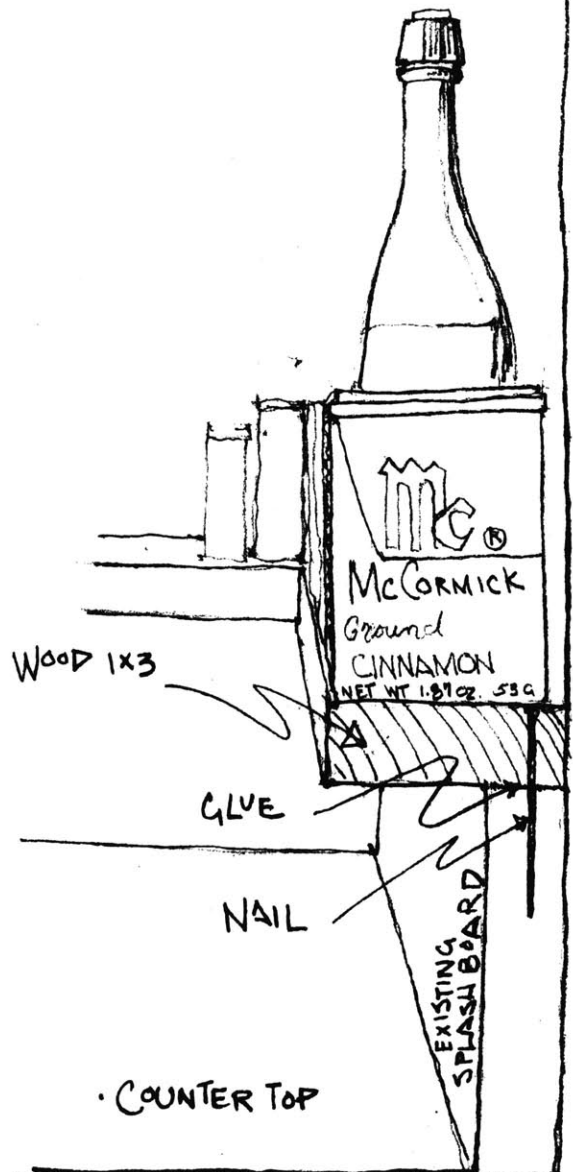
SPACE FOR SPICES
AND CONDIMENTS



A 1x3 is wide enough to hold
a bottle of Ketchup.

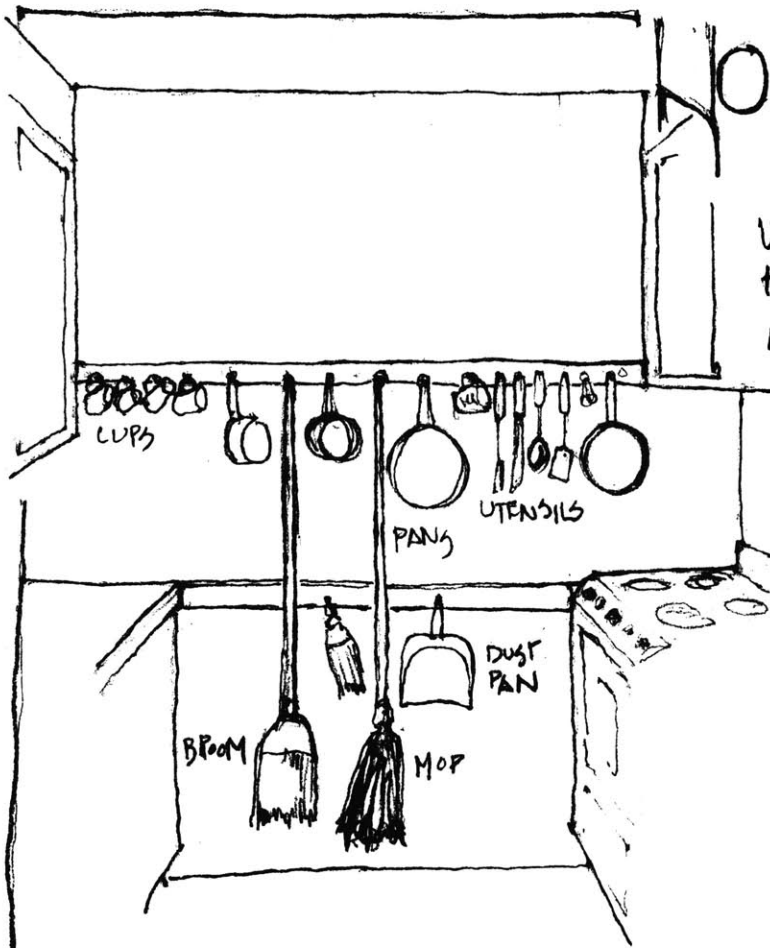
Nail and glue the 1x3 to the
top of the existing splashboard

If board is wider use steel
angles for added support.



HOOK RAILS

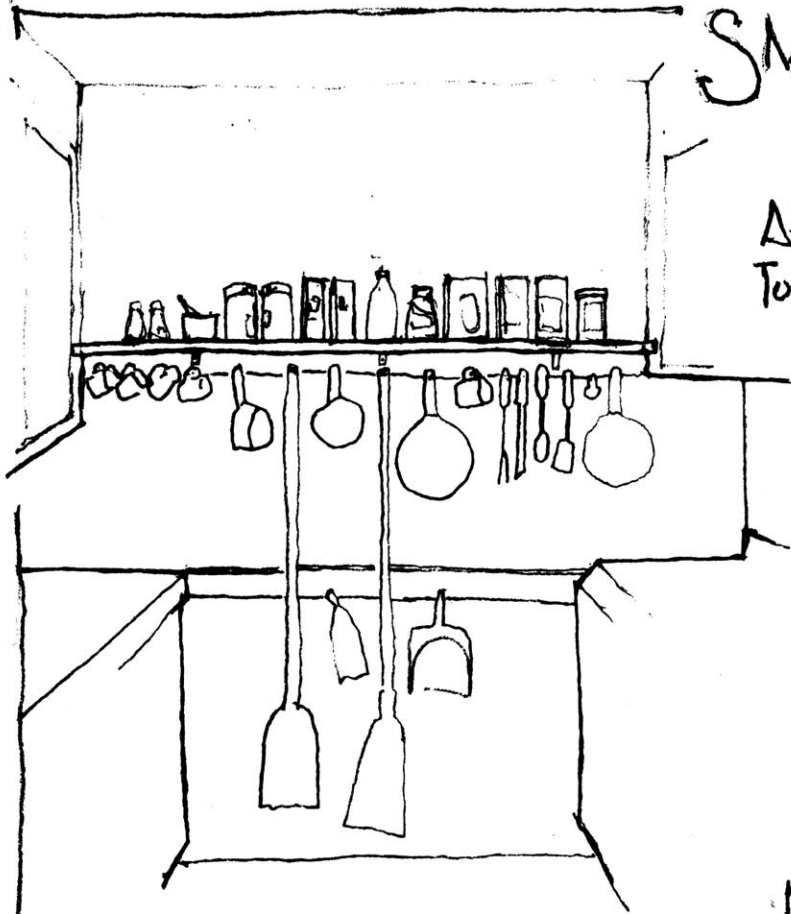
Use blank wall space
to hang things that
need to be in easy
reach.



Bolt a 1x3 to the wall
Attach nails or cup hooks.

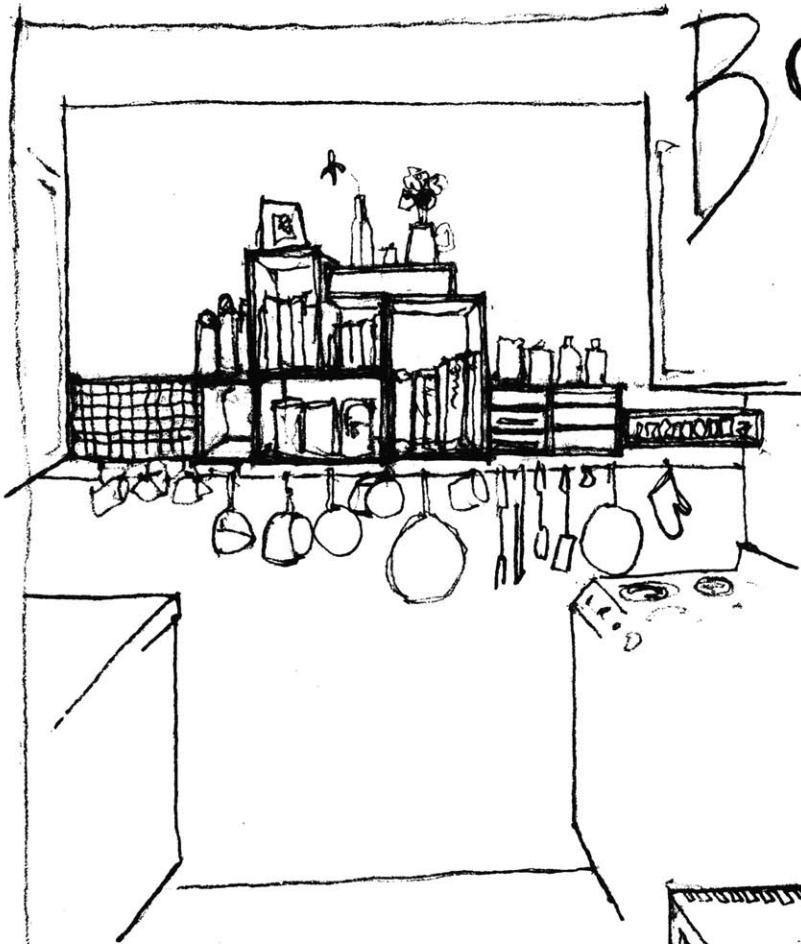
SMALL SHELF

ADD A SHELF
TO THE HOOK RAIL

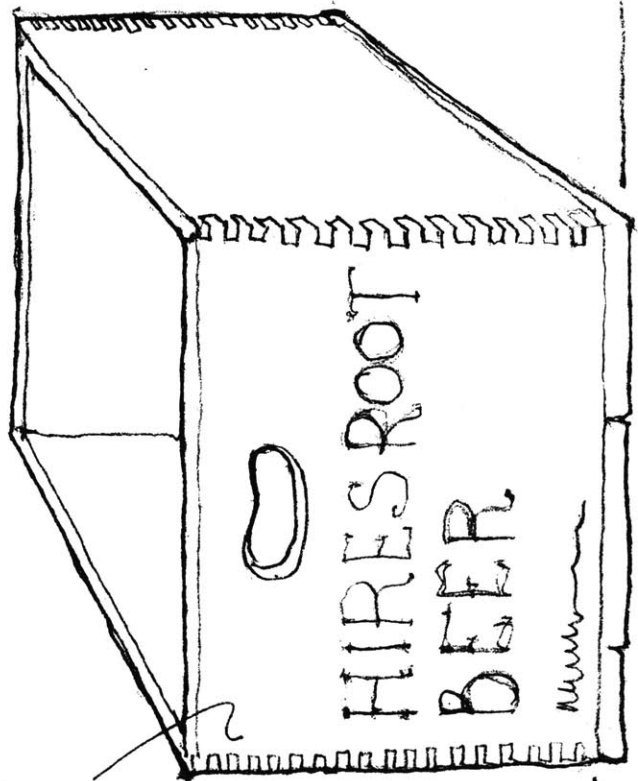


BOXES

Recipe books, canisters,
spices, cereal, things
to display.



Bolt each box to the wall.



Notice CORNER JOINTS.

BUTCHER BLOCK

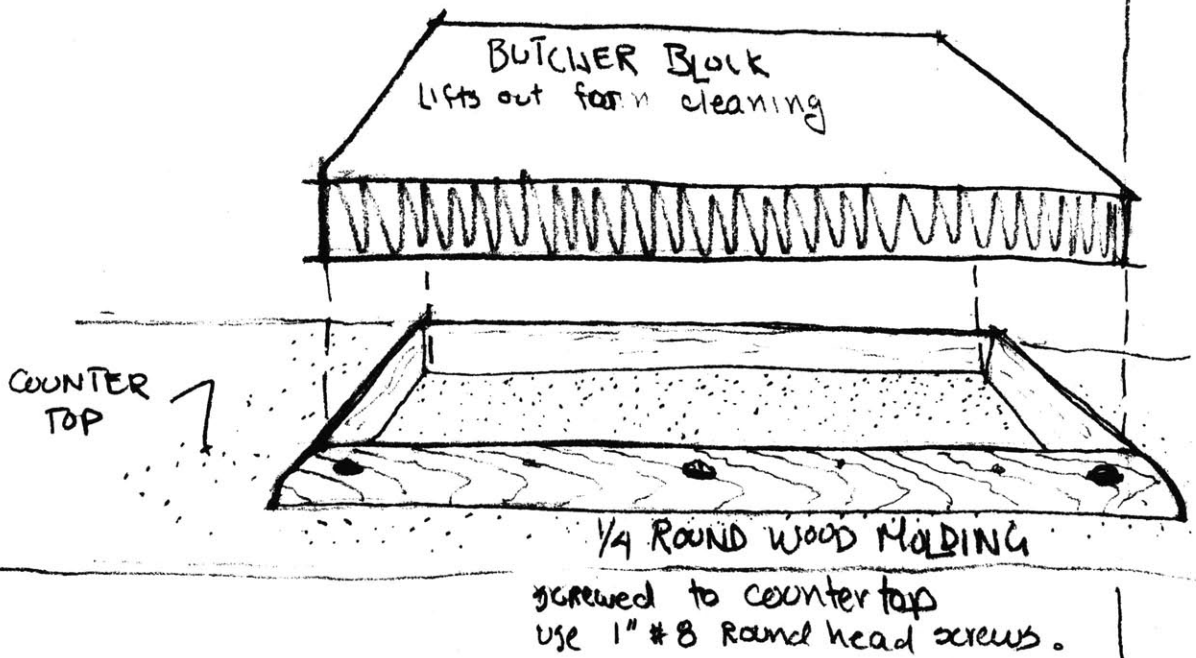
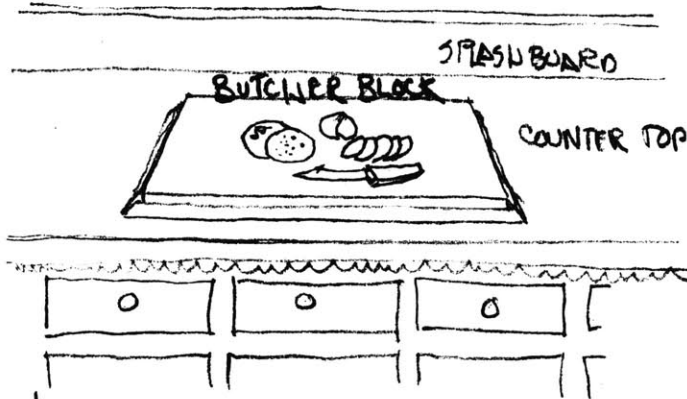
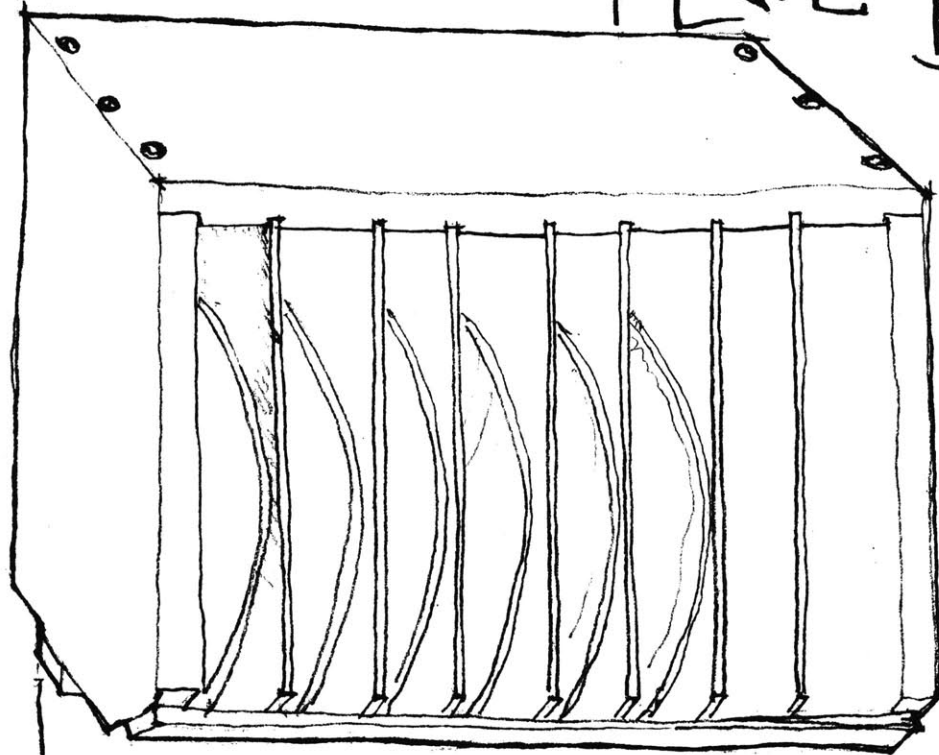
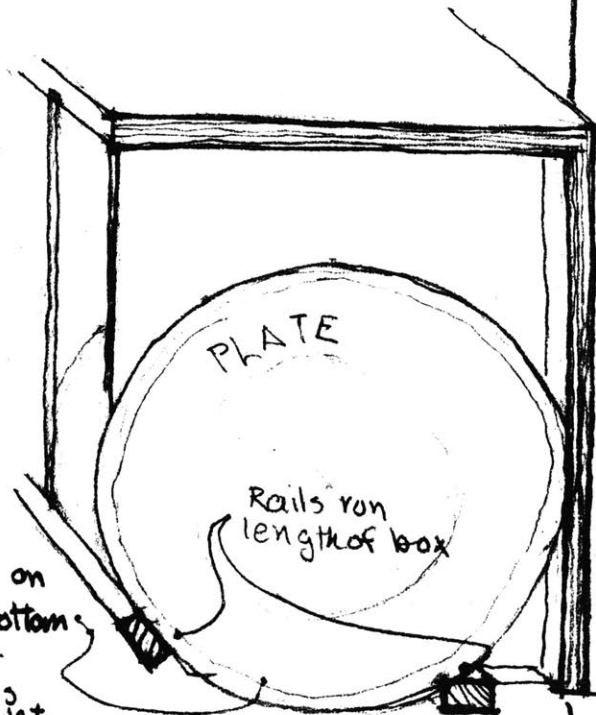


PLATE BOX



Box made for storage of wet china. Just wash it and put it away in its own slot. Box(es) hangs on wall near sink.

Cut Box sides, back, and top from 1/2 inch Baltic plywood. Dividers are meconite.



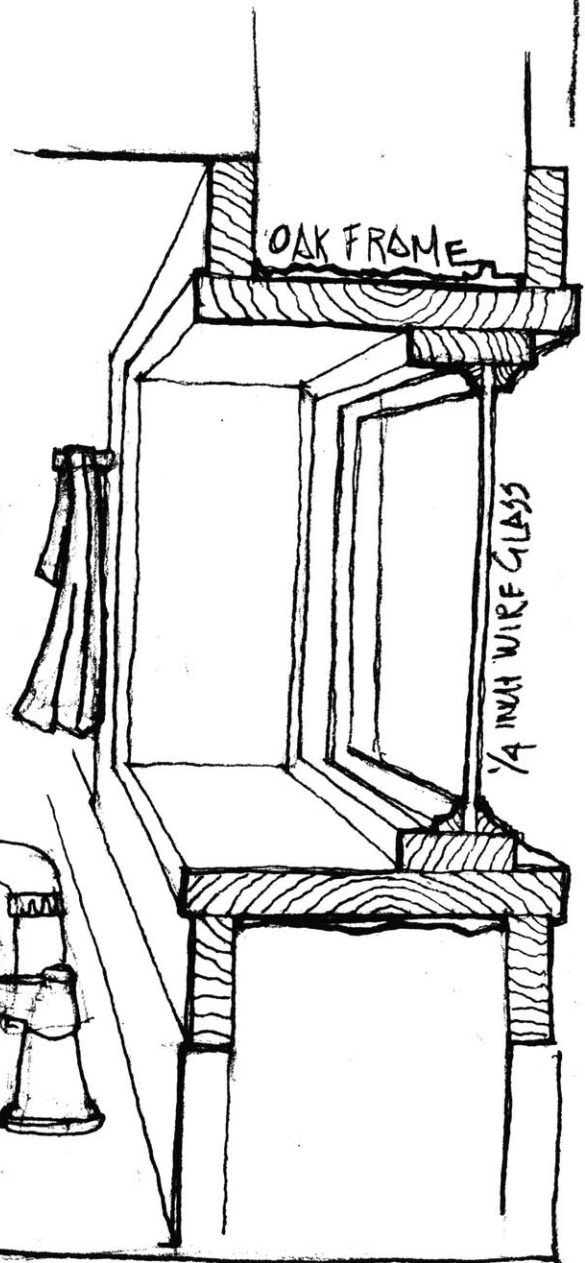
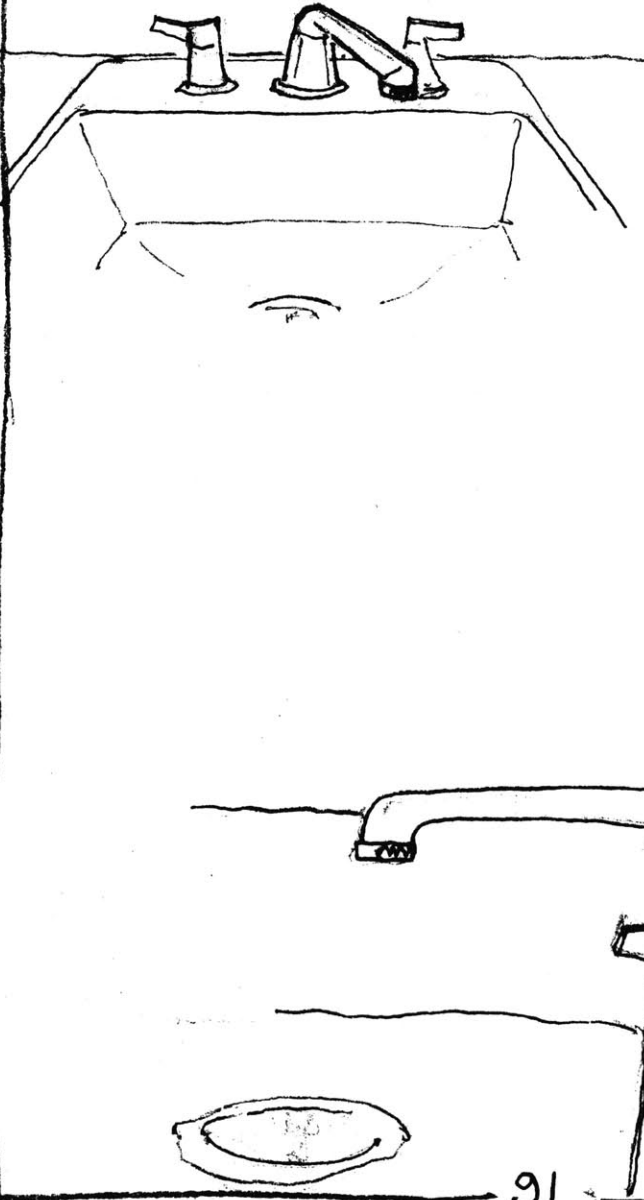
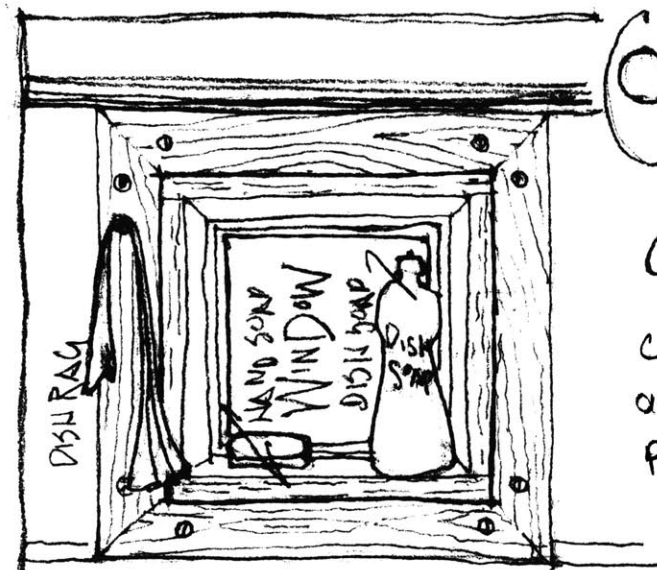
Box open on the bottom. Water draining off wet plates

CROSS-SECTION

CORRIDOR WINDOW

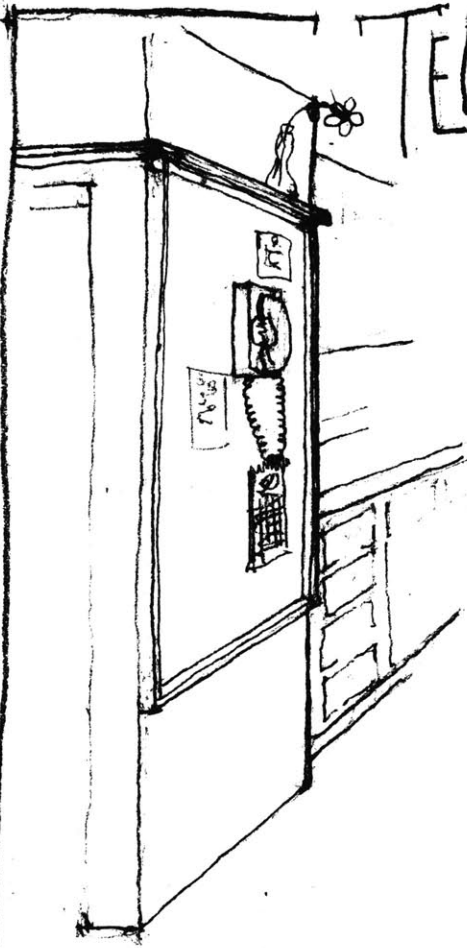
OPEN THE KITCHEN

Cut a hole between the kitchen and the corridor or another part of the apartment itself.

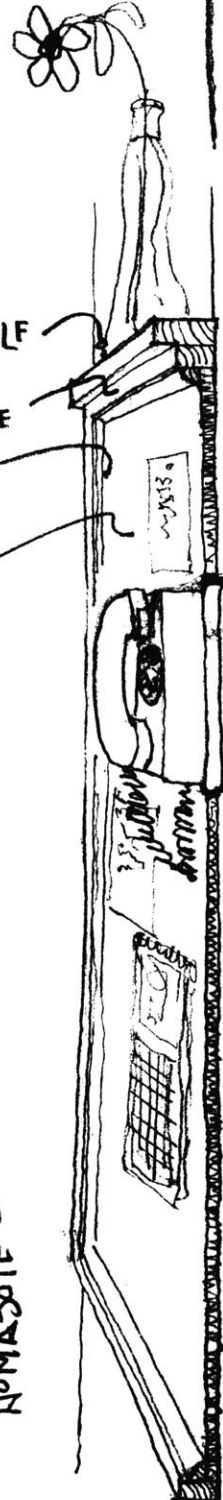


TELEPHONE & NOTES

Put a tack board around the telephone.

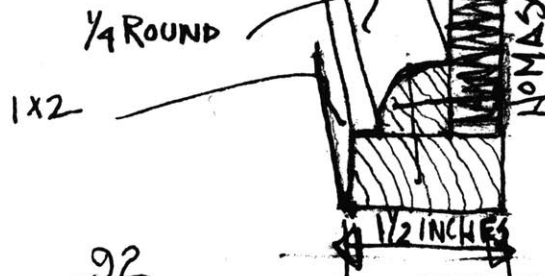


1x3 SHELF
1x2 FRAME
1/4 ROUND
FABRIC ON NOMASOTE



Cut hole for telephone with sabre saw.

DETAIL OF
FRAME AND
NOMASOTE



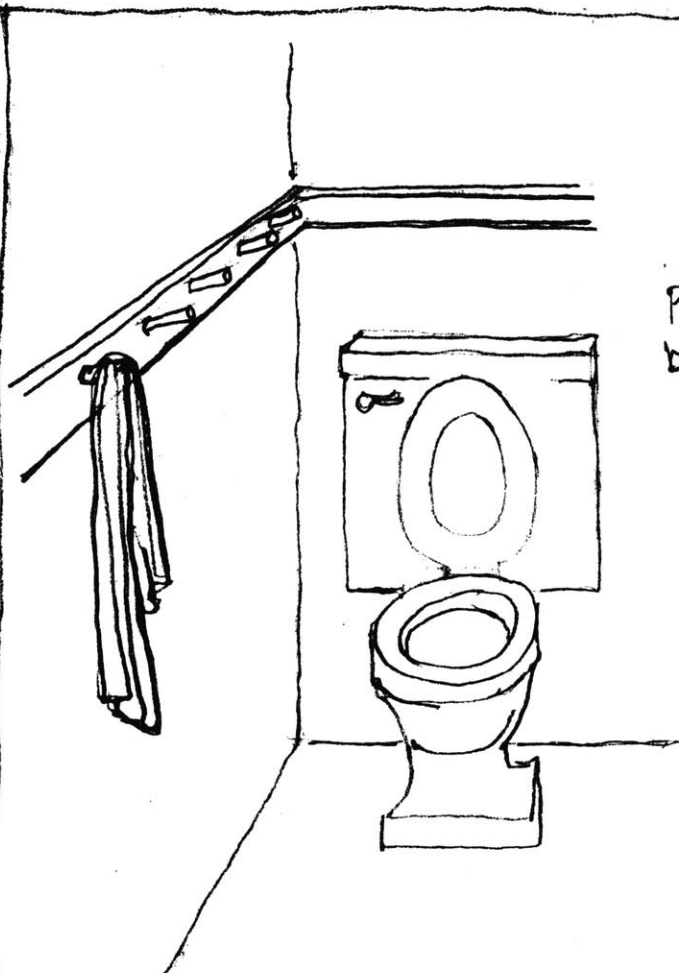
BATHROOMS

Why shouldn't a bathroom be a pleasant place to bathe?

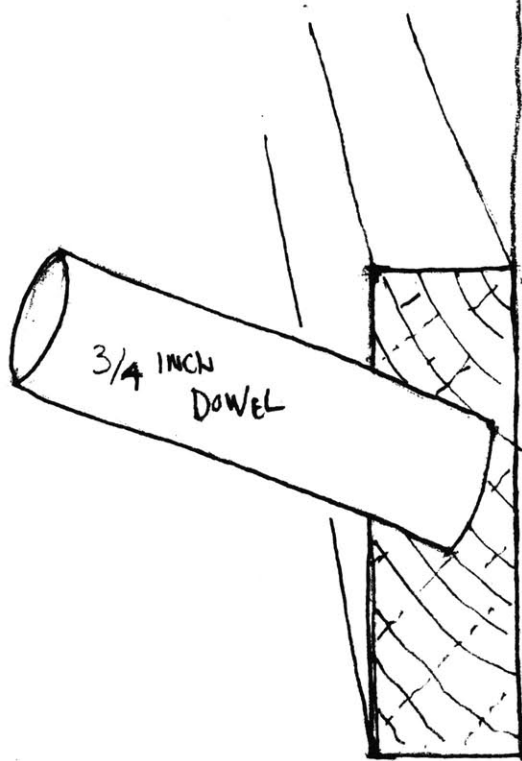


PEGS

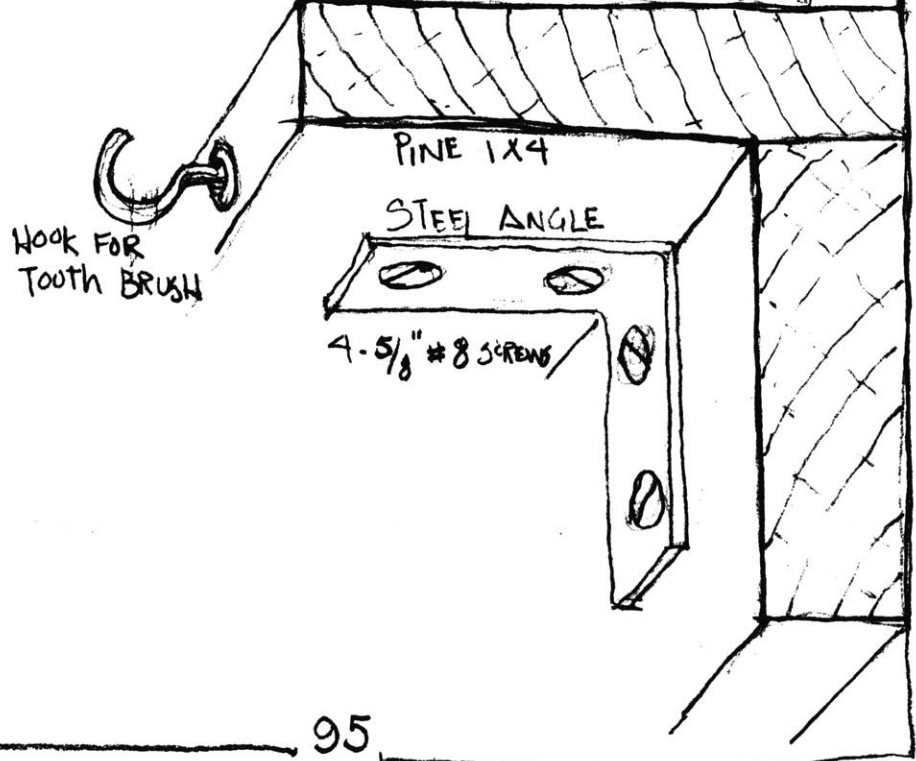
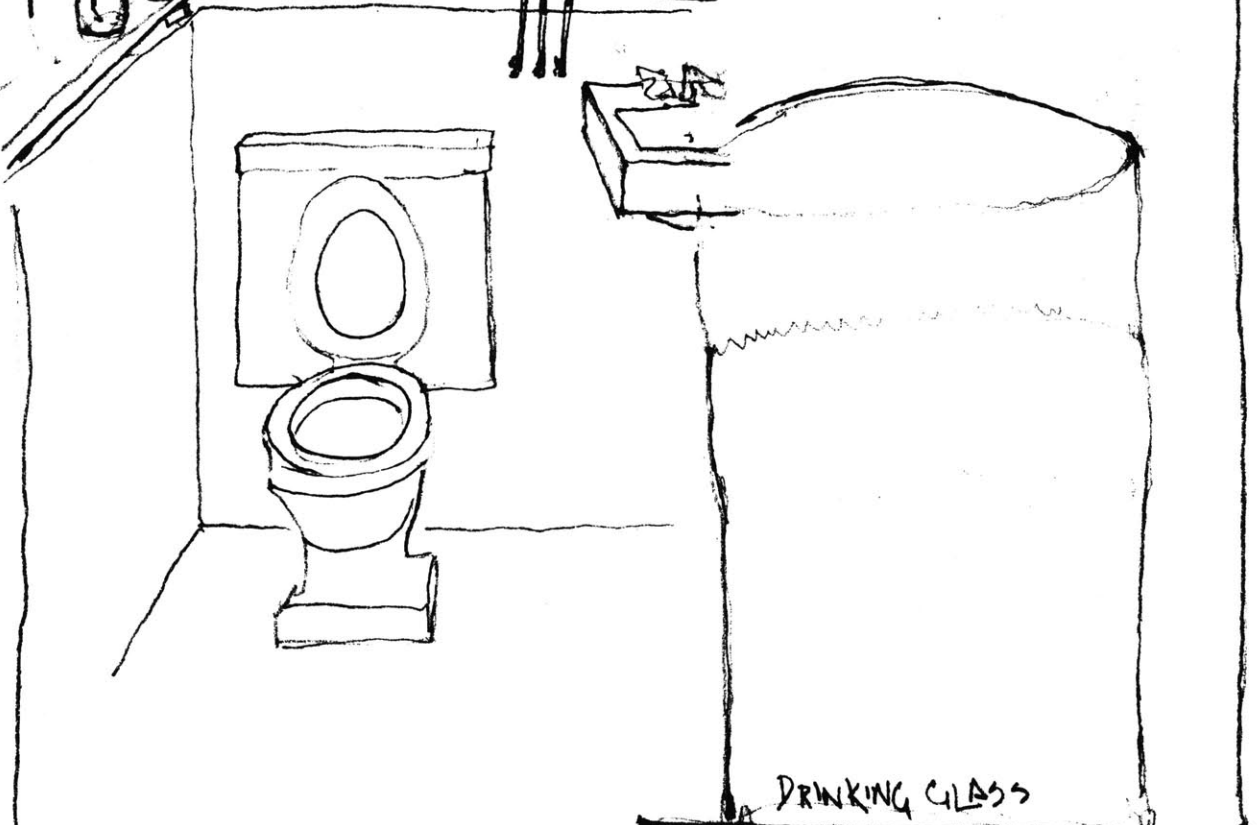
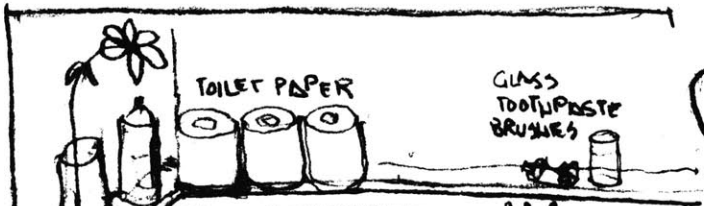
Pegs to hang towels, clothes, bathrobes.



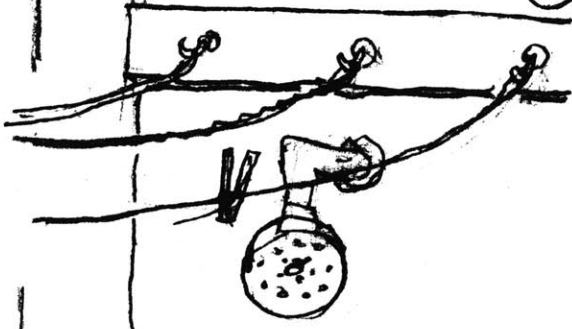
Bolt 1x4 to wall.
Drill hole with 3/4 inch bit
Glue dowel in place



SHELF

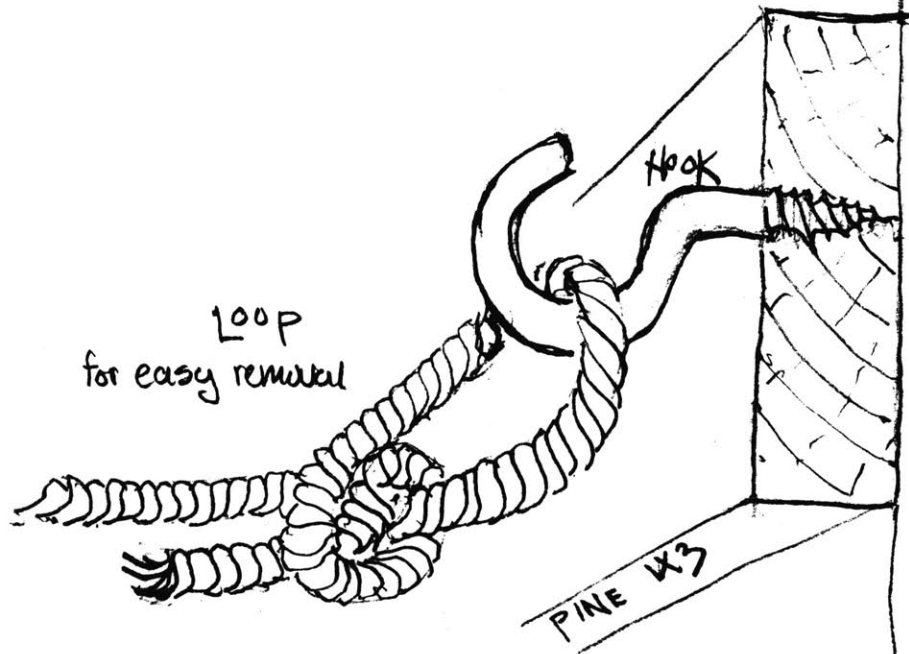


CLOTHES LINE



IN THE SHOWER
Dry underwear, stockings, socks,
handwash clothes.

Bolt 1x3 to the wall.
Screw hook into strip.



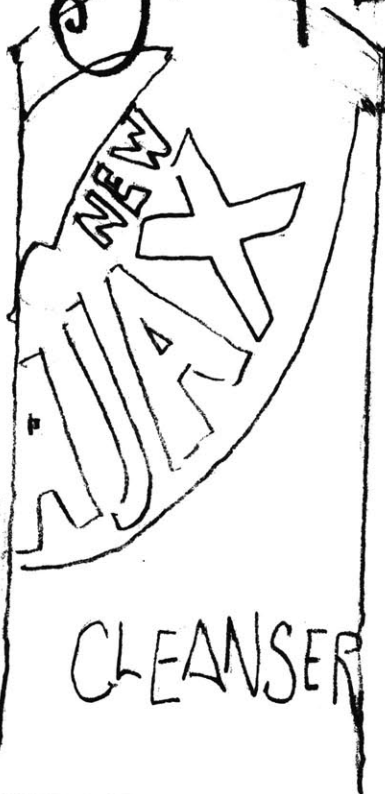
HIGH SHELF



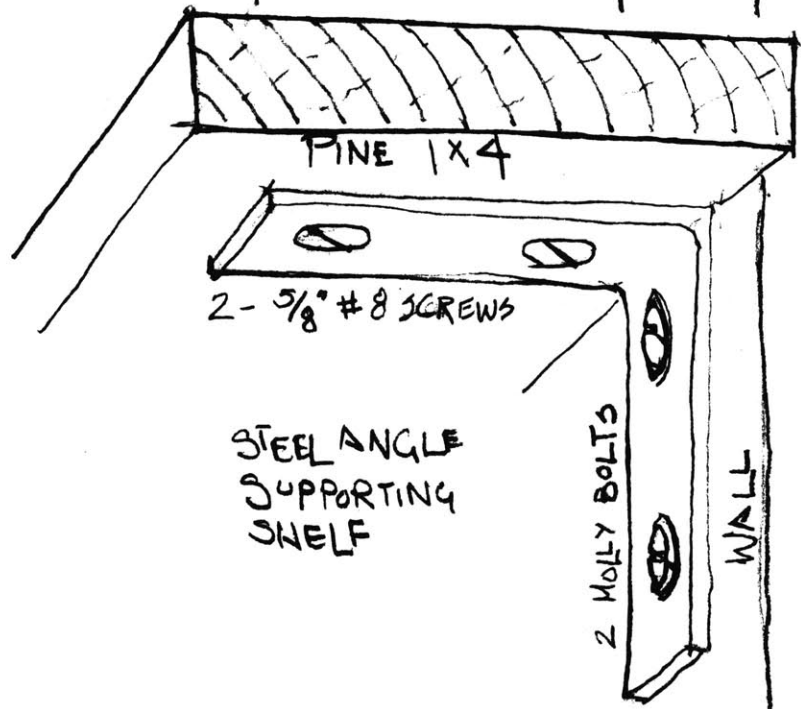
HANDY,
BUT OUT
OF THE WAY.

DOOR

BATH TUB



CLEANSER



PINE 1x4

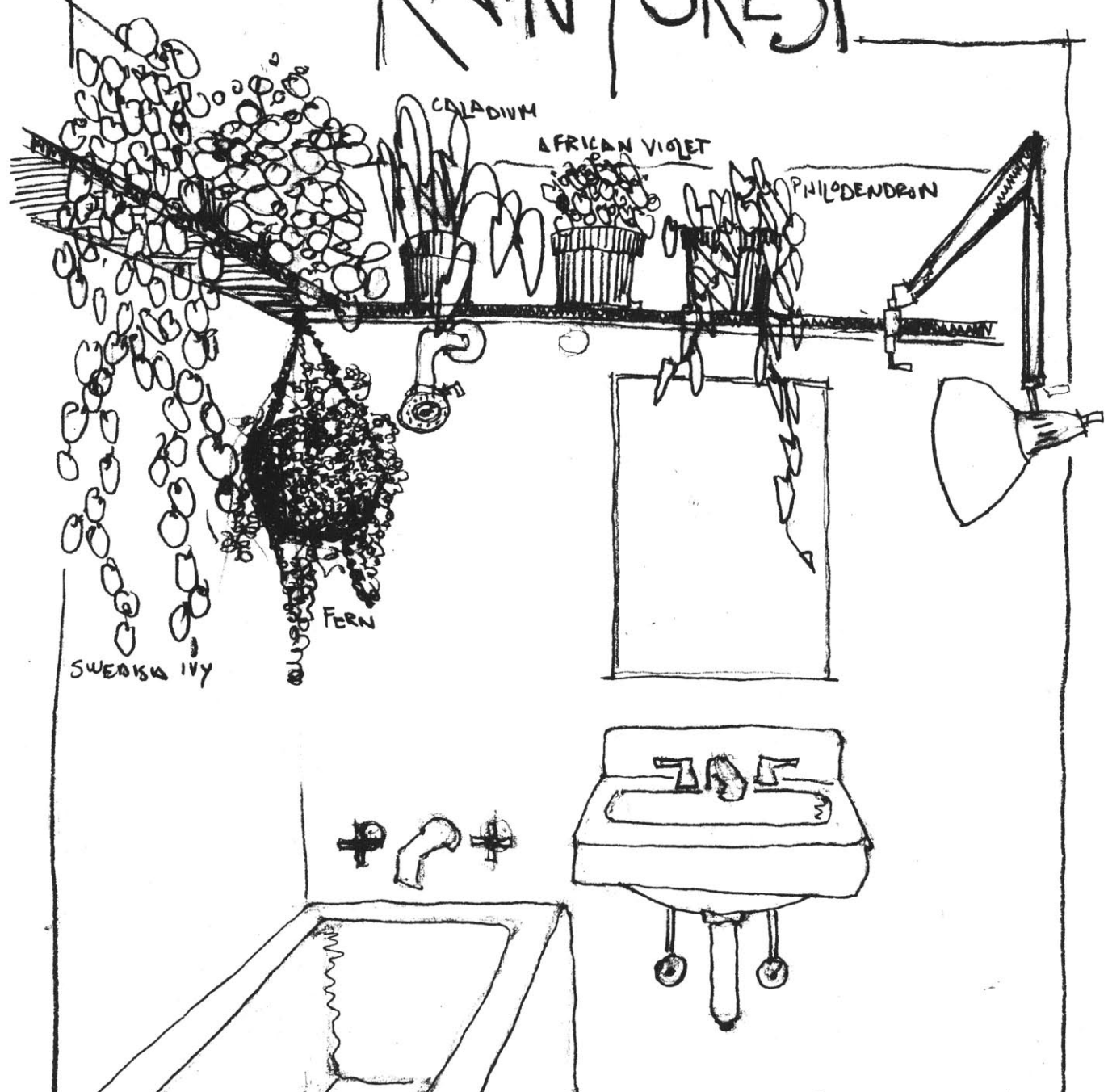
2 - 5/8" #8 SCREWS

STEEL ANGLE
SUPPORTING
SHELF

2 MOLLY BOLTS

WALL

RAIN FOREST



SWEDISH IVY

CALADIUM

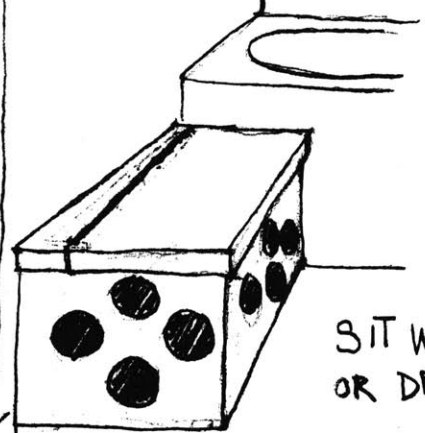
AFRICAN VIOLET

PHILODENDRON

FERN

Plants like humidity from the shower.
Shade plants will grow well if you leave the light on in the bathroom during the day.

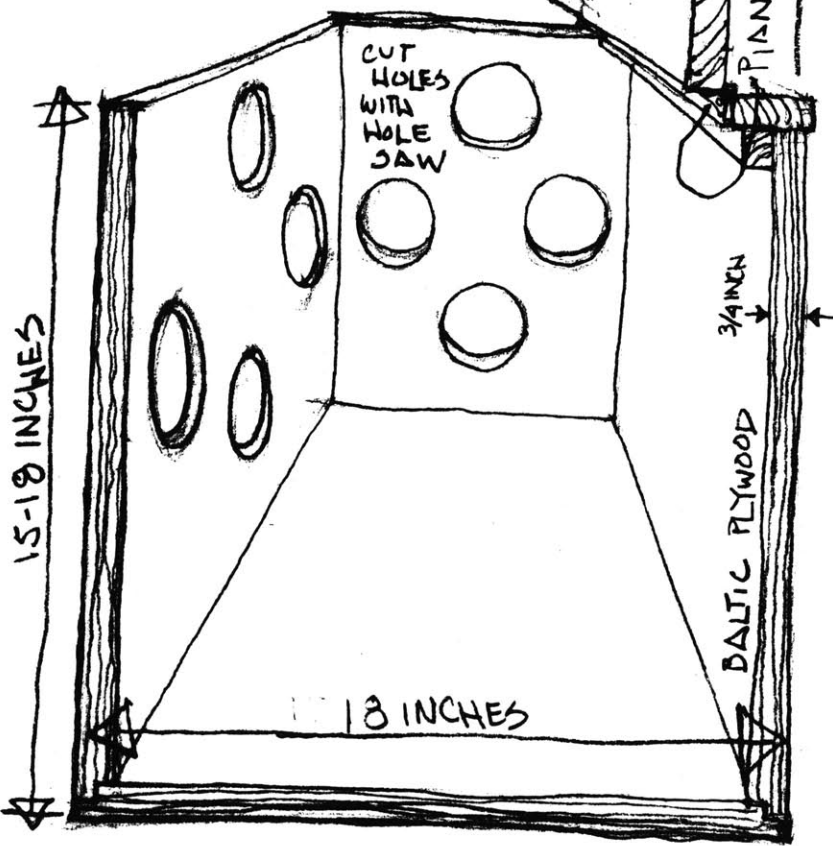
CLOTHES LAMPER



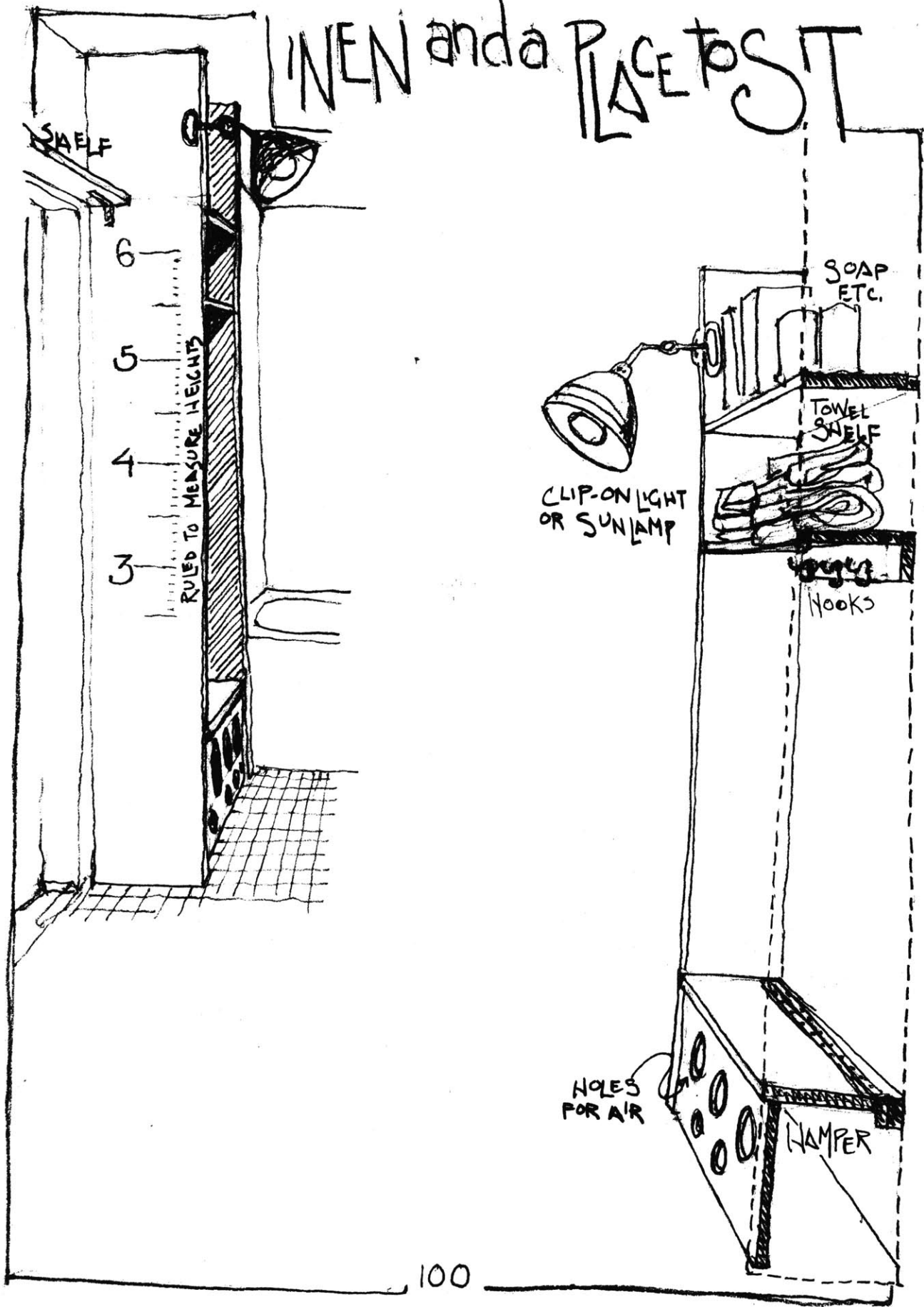
SIT WHILE DRYING
OR DRESSING

LIP-GLUED OAK.

PIANO HINGE



LINEN and a PLACE TO SIT



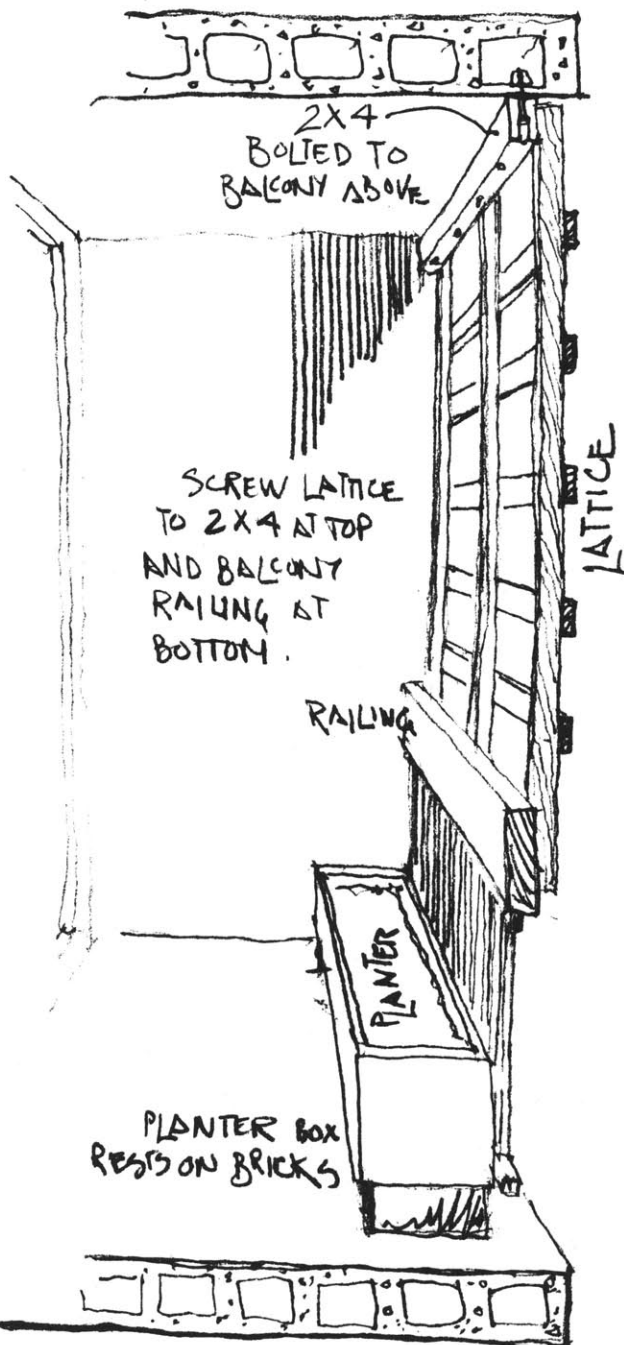
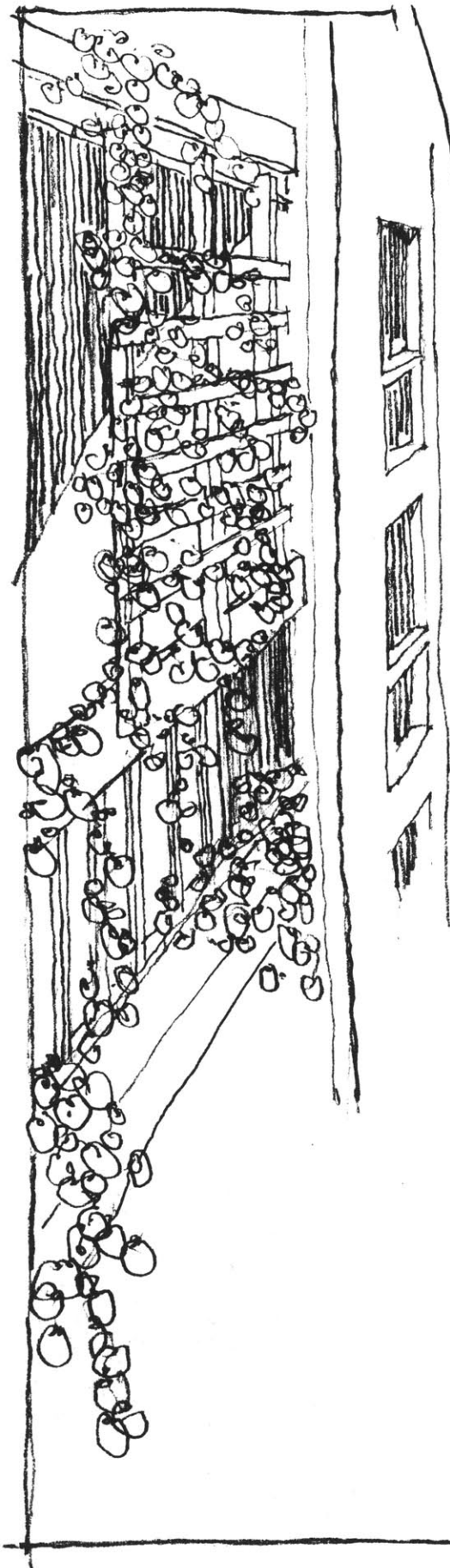
BALCONIES

Just because they are so small,
and because they have great possibilities

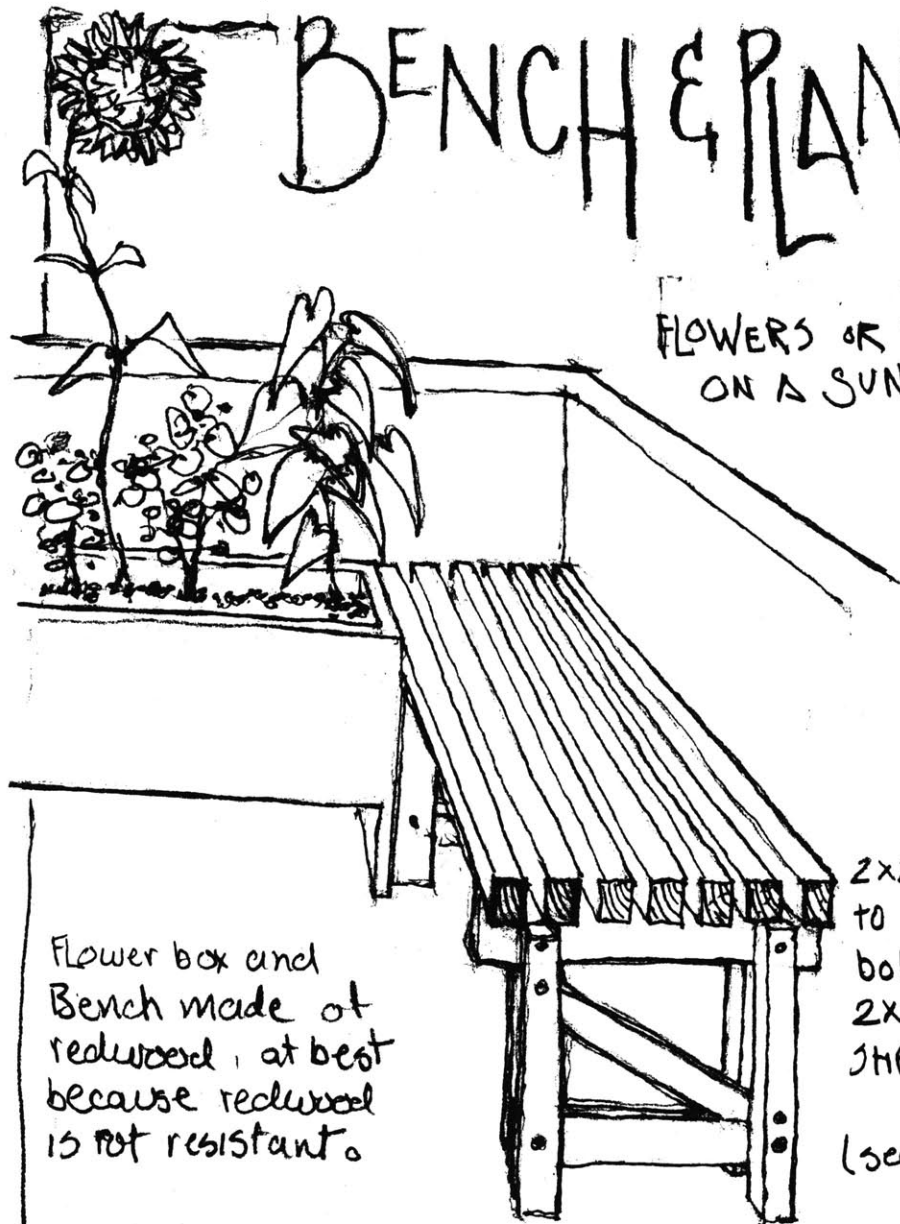


VINED BALCONY

Balcony partially enclosed with a wood lattice work and vines.



BENCH & PLANT BOX

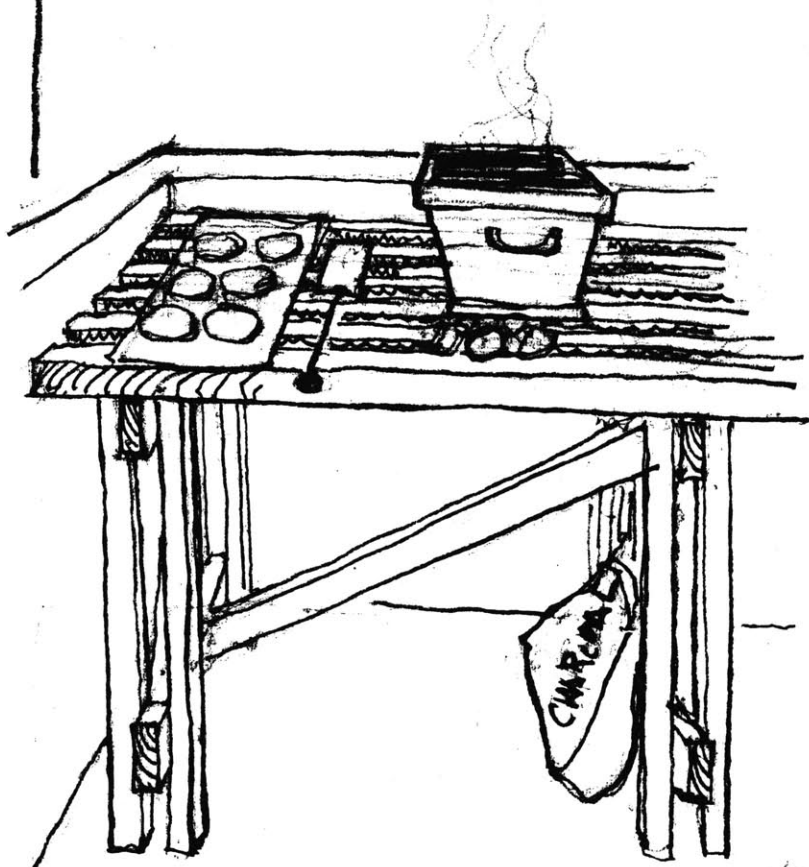


FLOWERS OR VEGETABLES
ON A SUNNY BALCONY

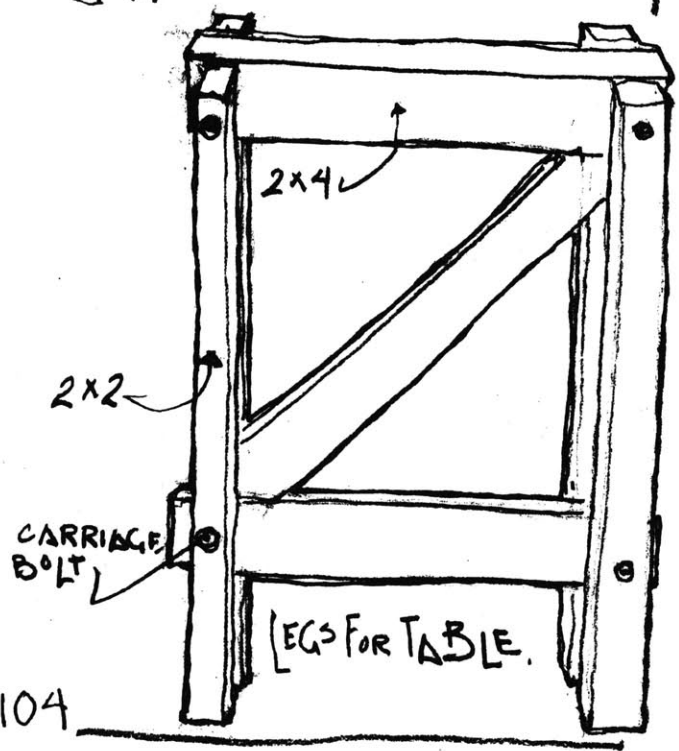
Flower box and
Bench made of
redwood, at best
because redwood
is rot resistant.

2x2's nailed or screwed
to 2x4 support
bolted between
2x2 legs
stiffened by
cross-bracing
(see next page)

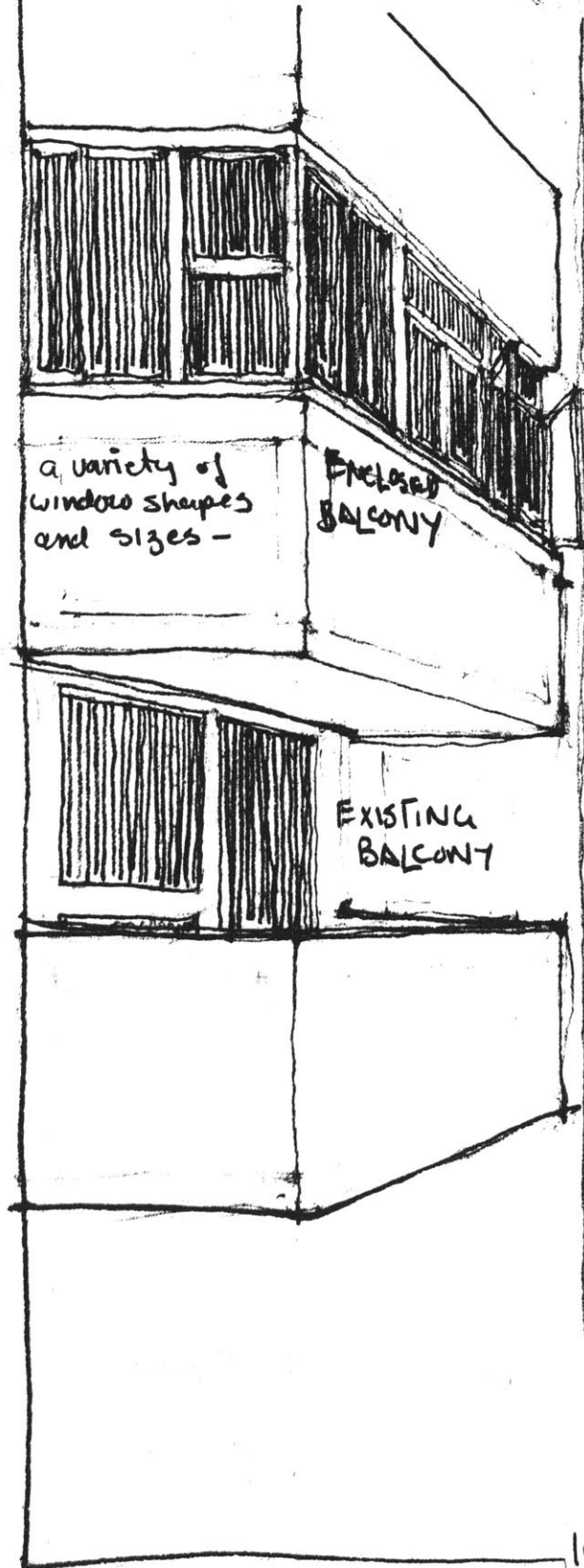
BAR-B-QUE TABLE



Same construction as bench on previous page.

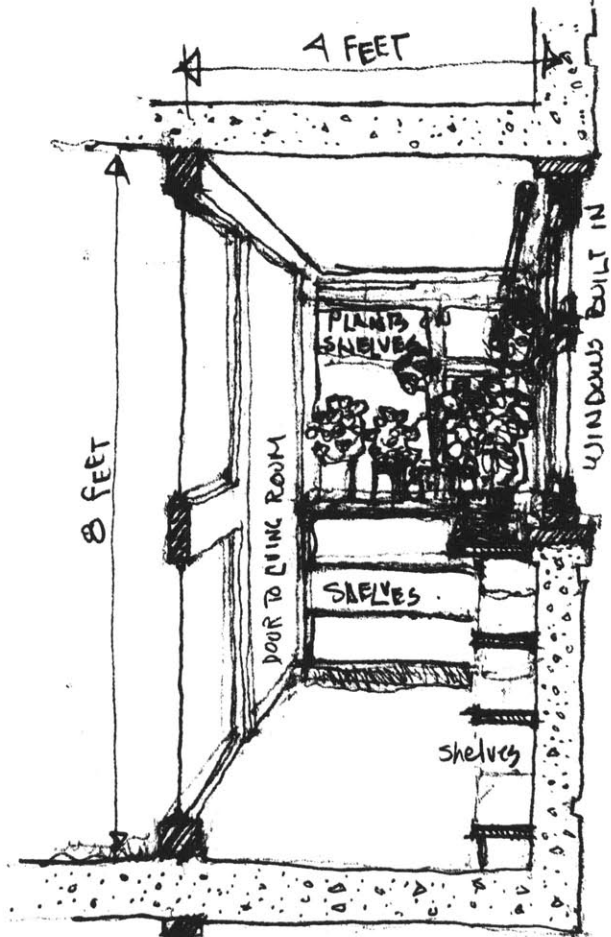


ENCLOSED BALCONY



- > Increases space that can be used year round.
- > Increases privacy
- > Makes living room warmer during winter.

Could be a green house, breakfast room, playroom, storage area, extension of living room.

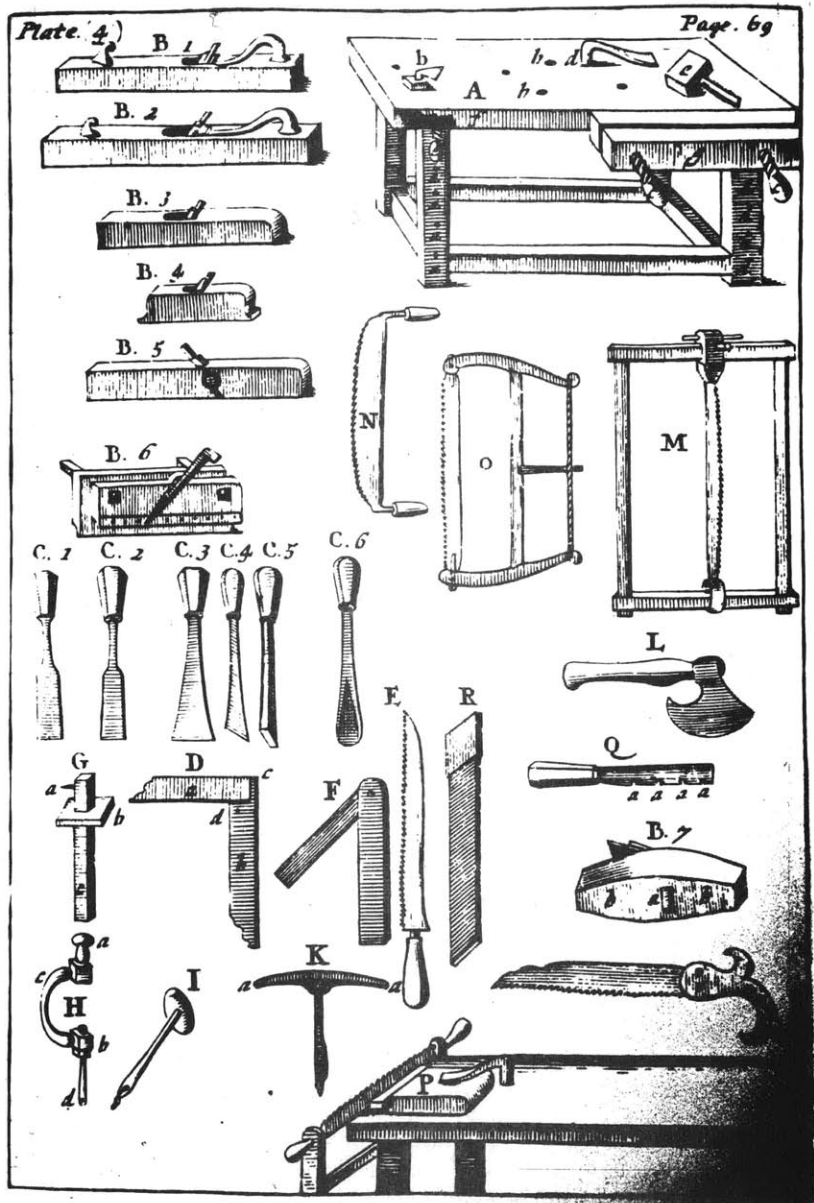


CROSS SECTION

Enclosed as plantroom & storage.

APPENDIX

SUGGESTIONS ON HOW TO BEGIN



Joiner's Tools of about 1700

WOODWORKING TOOLS

Most of the woodworking tools in use today have remained basically unchanged for 2000 years (the hammer, saw, chisel, drill, level, rule, and plane).

Hand tools fall into three broad categories:

- ① Shaping (chisel, plane, saw)
- ② Manipulating (pliers, hammer)
- ③ Measuring

Power tools do the same jobs that hand tools do, but make them easier and quicker.

There are cheap, medium, and expensively priced tools. Cheap tools are not dependable. They wear out quickly. Expensive tools are meant for heavy duty use. They suit the needs of the professional craftsman. Medium priced tools are generally the best bet for household use. (Sears sells mostly cheap and medium priced tools) A cheap tool may be appropriate for the occasional task.

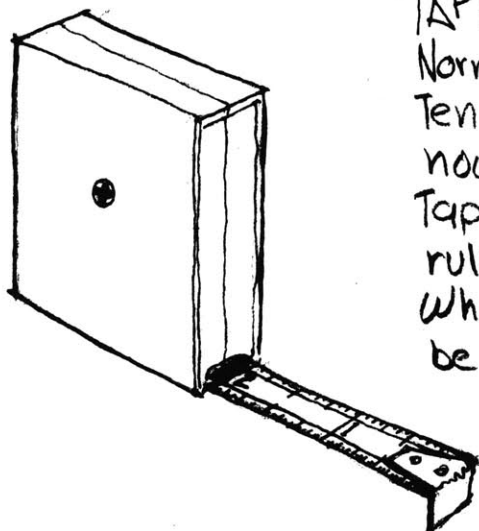
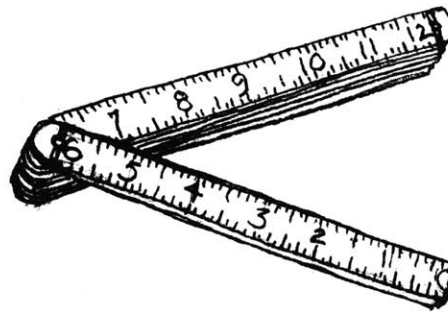
Dull tools are dangerous. It takes more effort to use a dull tool and it performs the job poorly. Tools can be sharpened inexpensively and quickly at many hardware stores.

Power tools can be rented at hardware stores.

Power tools are dangerous when not properly grounded. Many of the newer power tools are double insulated and don't need to be grounded.

MEASURING TOOLS

ZIG-ZAG OR FOLDING RULE :
 Normally six feet long with increments of $\frac{1}{16}$ inch.
 Made of wood.



TAPE MEASURE :

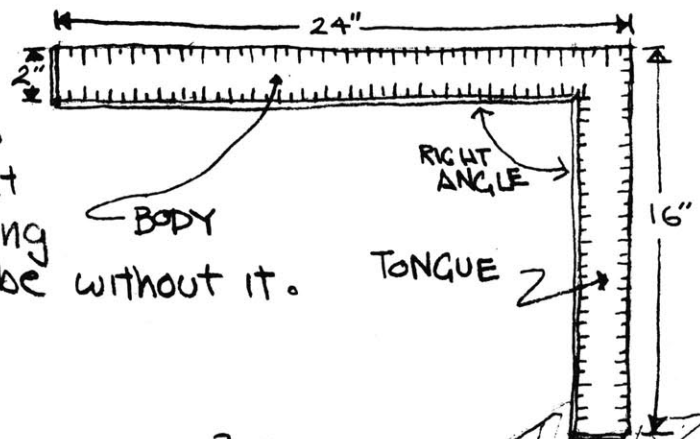
Normal lengths - 6, 8, 10, 12, & 50 feet
 Ten foot rule is most useful for household use.

Tape is less cumbersome than folding rule.

When buying one check the hook to be sure it is strong.

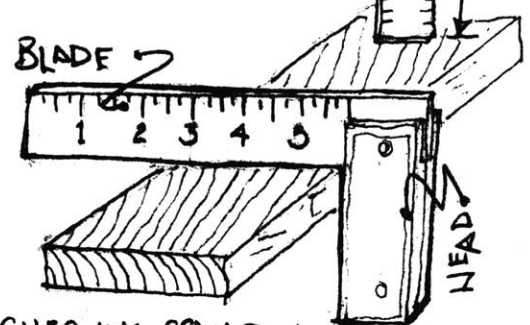
STEEL or FRAMING SQUARE :

When you know how to use its wealth of tables and scales it is the most versatile measuring tool. A carpenter wouldn't be without it.



TRY SQUARE :

Used for checking squareness of boards. This is a simple type. The **COMBINATION SQUARE** has a sliding head.

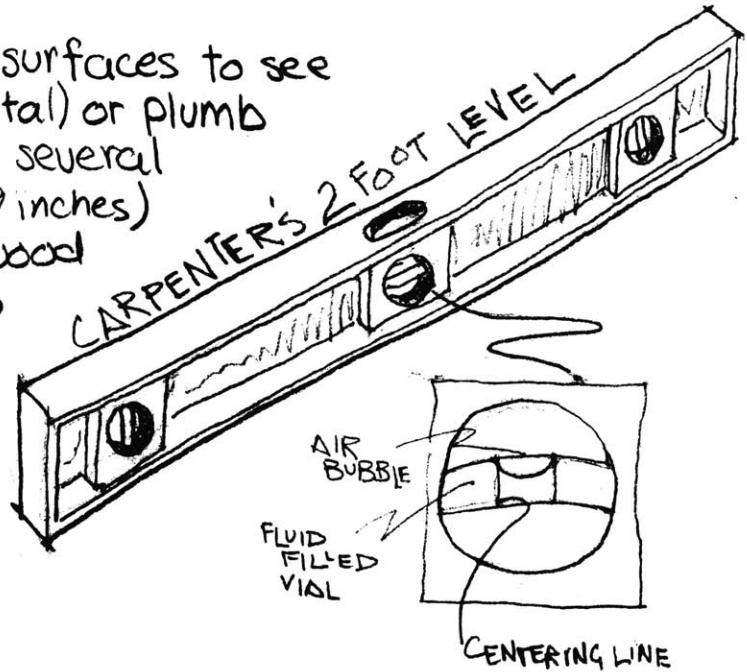


CHECKING SQUARENESS OF A BOARD

LEVELS :

Level is used to check surfaces to see if they are level (horizontal) or plumb (vertical). They come in several sizes from hand level (9 inches) and larger. Made of wood

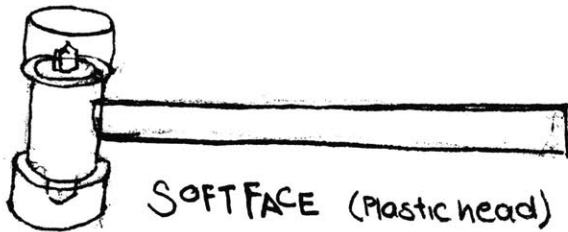
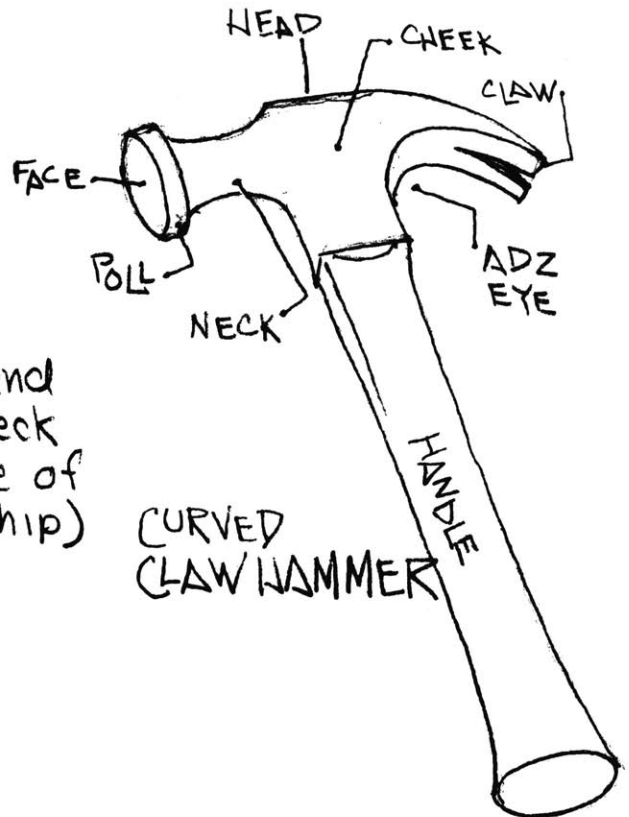
aluminum or magnesium. A metal level is more expensive but will last longer. Metal levels usually have replaceable vials.



HAMMERS

There are a dozen types of hammers or more. Hammers differ in their faces, claws, handles, size, and material.

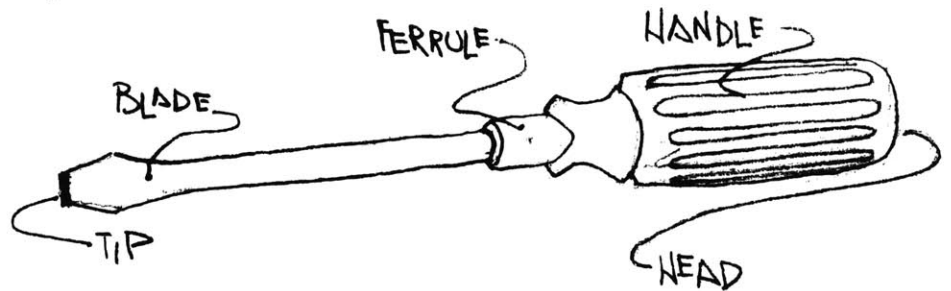
When buying a hammer, heft it and see if it feels good. Also check to see that the head is made of drop-forged steel. (Cast heads chip)



Use a soft face hammer when working a chisel



SCREW DRIVERS



Screw drivers differ with respect to size and blade tip. Blade tips are made to fit the various screw types and sizes. (See section on wood screws)

- MAKE SURE The SCREW DRIVER FITS the SCREW you are USING:
- ① That the blade tip fits snugly into screw slot
 - ② That the blade tip is about same width as head of screw.
 - ③ That the blade tip is not worn rounded

Use the largest screwdriver possible for any job - it will work more easily.

Screw drivers come in short lengths for tight places. You can also get offset drivers to work around corners.

SAWS



As is true of many tools, saws vary widely. Besides general shape and form of saws their most important differences are the number, size, shape, and direction of teeth. The number and size of teeth determine the fineness of the cut. Saws are sold according to the number of points, the number of teeth per inch of blade. The more teeth, the finer the cut.

Other things to look for :

- ① Metal should be tempered spring steel
- ② Handle should be hardwood - test the feel of it too.
- ③ Good saw is flexible - bend the blade back till it almost touches the handle. It should spring back to its original straight position.
- ④ Cutting edge should be thicker than the rest of the blade
- ⑤ Blade surface should be ground and polished.

CROSSCUT AND RIPSAW:

These saws are what people think of when you say "saw". But most people can't tell them apart. Their differences are found in their teeth - size, number, shape, and set. The rip saw is less common in the household. It has fewer and larger teeth than the crosscut - $5\frac{1}{2}$ or 6 teeth to the inch. It is meant for cutting wood along the grain, and will not cut across the grain (it will bind when used that way).

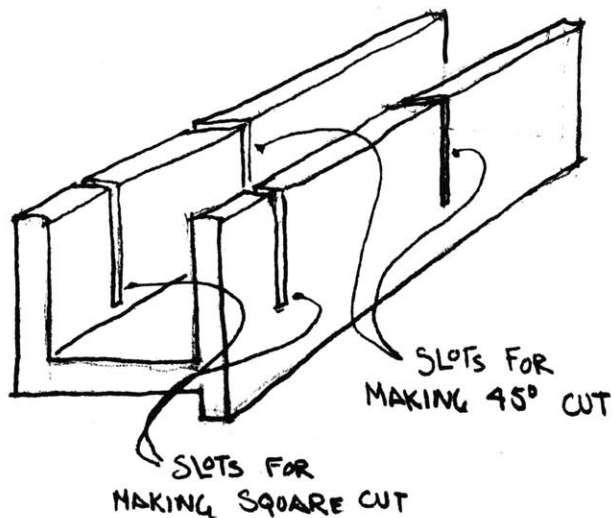
The crosscut saw is meant for cutting across the grain of wood. I prefer to use a cross cut saw with 10 or 12 points, though they are sold with as few as 7 or 8 points, because it gives cleaner cut.

Both saws are sold according to length and number of teeth per inch. A 26 inch saw is a good household size.

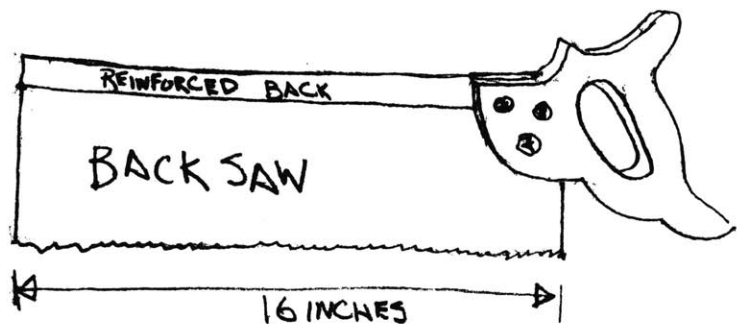
BACKSAW:

This is a fine-toothed crosscut saw with a reinforced back. It is used to make short, precise cuts - as in mitering for a picture frame.

It is often used with a mitre box. A mitre box will guide the saw at a particular angle while you cut the wood.



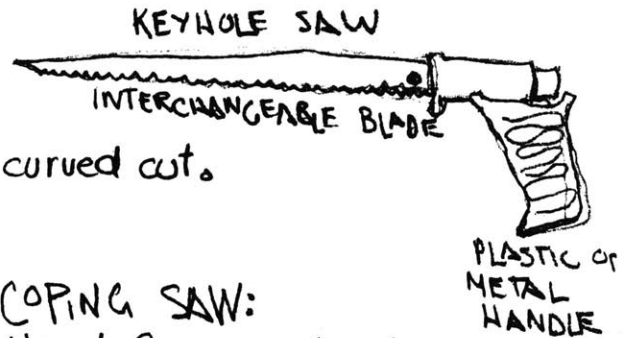
SIMPLE WOODEN MITRE BOX



A FEW OTHER SAWS :

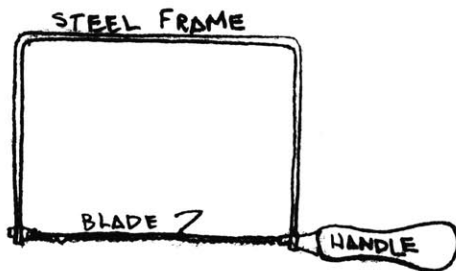
KEYHOLE SAW:

The narrow tapered blade is made to fit into tight places. The saw will finish a long cut, or make a fine curved cut.



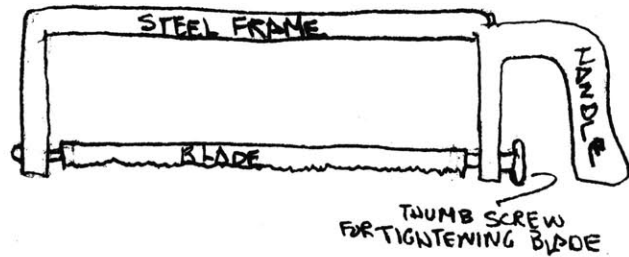
COPING SAW:

Used for curved cuts in thin wood. Many different blades. When used with a vise the teeth should point towards the handle, when used without a vise the teeth should point away.



HACKSAW:

A fine toothed saw made to cut metal. Good at home for shortening bolts, cutting nails, or pieces of pipe.

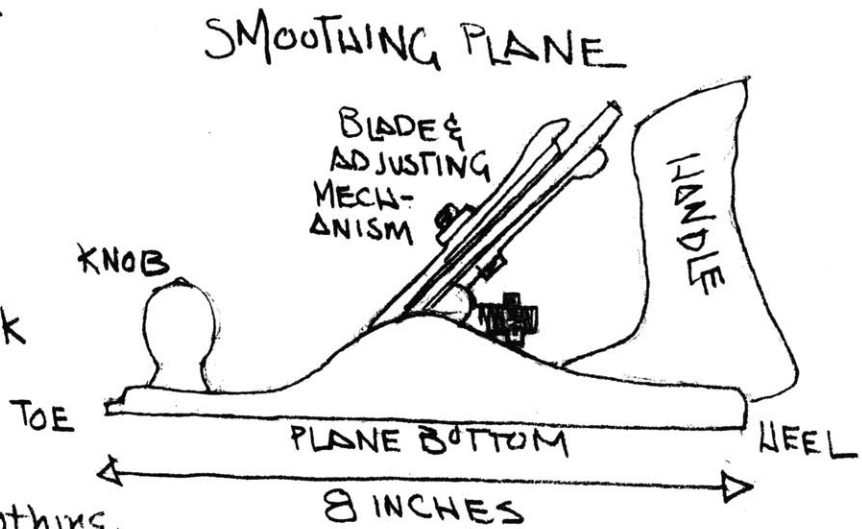


OTHER HAND TOOLS

PLANES:

One of the oldest tools. It used to be impossible to work wood without a plane.

Planes used to be for trimming, smoothing, and shaping wood. Planes were made to perform certain types of cuts in making moldings. Today the plane has been largely replaced by power tools.

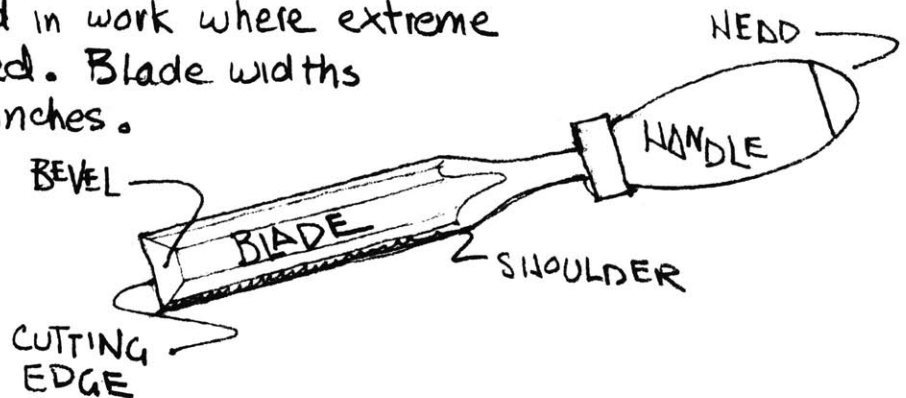


Planes are still used for trimming and smoothing, but not often for shaping. There are more than 20 types of planes. Three are useful in the home. The block plane is a small hand held plane. It is used to smooth end grain. The smoothing plane is about 8 inches long. It is the most versatile plane in the home. It is used to smooth boards. Wood is rarely flat and square. Both the smoothing and a jack plane can be used to square and flatten boards. Jack planes are about 14 inches long. Other planes may be as long as 22 inches, and are meant for work that is larger than normally done in the home.

CHISELS:

Chisels can be used in work where extreme accuracy is required. Blade widths vary from $\frac{1}{8}$ to 2 inches.

A one inch chisel is right for most home chores.



Chisels are used for cutting chips or sections of wood. A chisel can be worked by hand in soft wood. But for hardwood you may have to use a soft-face hammer to force the chisel into the wood. Don't use a hammer with a hard head. Chisels should be kept sharp. A dull chisel is extremely dangerous, because you will have to apply more force, and will be more likely to lose control.

SURFORM TOOLS:

This is a relatively new tool used for shaping and smoothing. It comes in a variety of forms, but they all have a characteristic blade similar to a fine vegetable grater. A packet size surform is probably best for the home.

THE VISE:

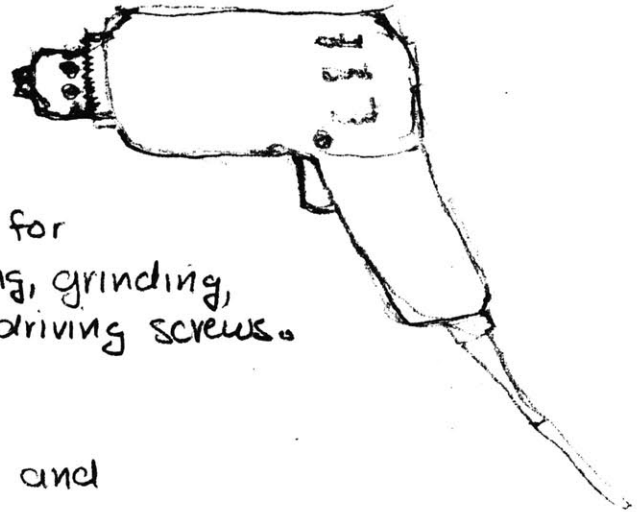
Fastened to a bench a vise will hold a piece of wood while you work it. A vise with a $3\frac{1}{2}$ inch opening is large enough for most home jobs. The problem with a vise in an apartment is finding a table you can clamp it to.

ELECTRIC TOOLS

PORTABLE DRILL :

This is probably the most popular electric tool: IT's:

- ① Easy to use and safe
- ② Inexpensive
- ③ Versatile - can be used for drilling, buffing, sanding, grinding, wire brushing, polishing, driving screws.



DRILL BITS :

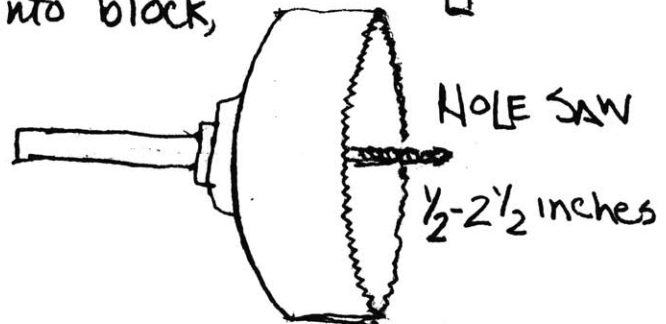
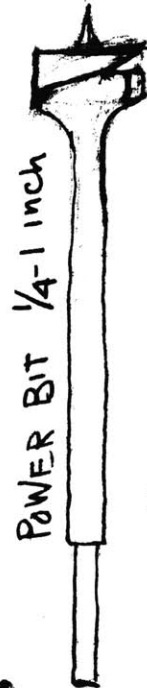
Drill bits are sold individually and in sets.

Twist drills normally come in sets including drills from $\frac{1}{16}$ to $\frac{1}{4}$ inch in diameter. The sizes increase by $\frac{1}{32}$ or $\frac{1}{64}$ inch. Sets containing drills smaller than $\frac{1}{16}$ or larger than $\frac{1}{4}$ are also available.

While the twist drill will cut metal as well as wood the power bit and hole saw will not. These are used only for wood.

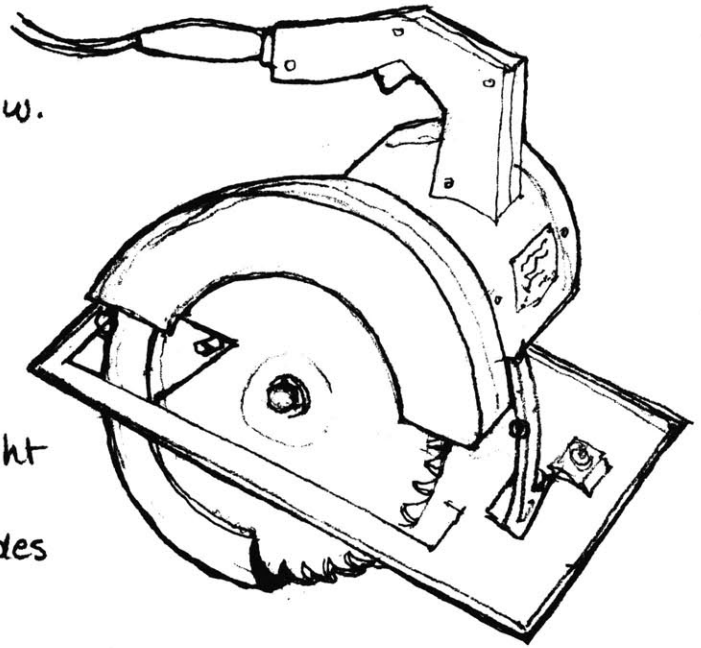
Masonry drills will drill holes in plaster, concrete block, brick, and mortar.

You should not use anything but a masonry bit when you drill into block, brick, or mortar.



PORTABLE POWER SAW:

- ① Muscle and time saver
- ② If used properly it will make a finer cut than a hand saw.
- ③ Guides can be bought or homemade, for improving accuracy.
- ④ Saws sold according to blade diameter: 6 inch saw is small, and 10 inch saw is large. 7 inch saw is right for home shop.
- ⑤ There are a variety of blades for different jobs:
 - ripping
 - crosscut
 - combination
 - plywood
 - mitre
 - metal, masonry, and others.

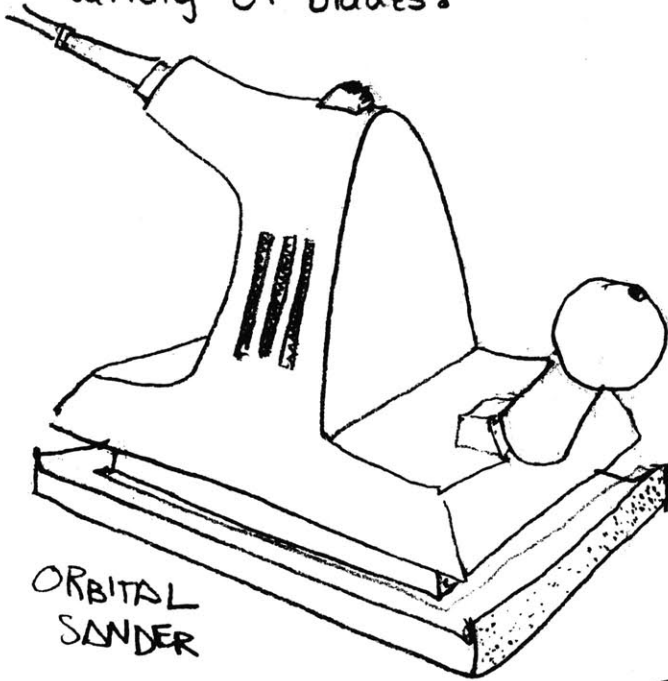


Unless there is a majority of 1 kind of cut the combination blade is best. The plywood blade should be used only for plywood. The mitre blade gives an especially fine cut.

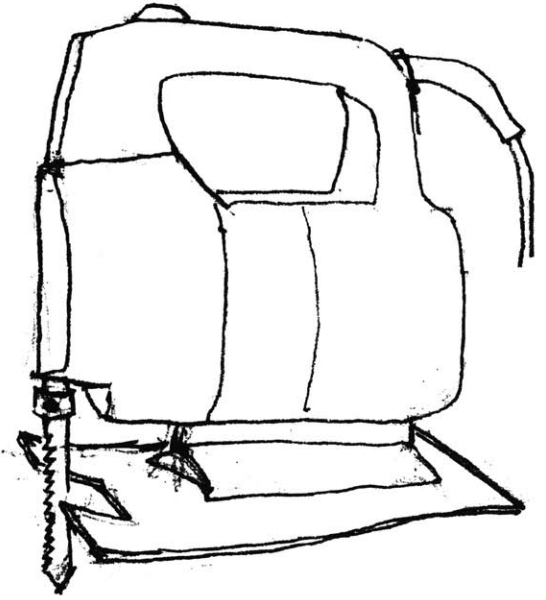
- ⑥ It takes practice to use this tool well, but it is easy to learn.
- ⑦ It is the most dangerous power tool used in the home shop.

SABRE SAW:

This is a portable jigsaw. It can make both straight and curved cuts. It is not as versatile as the power saw, but it is easier and safer to use. Like the power saw it can use a variety of blades.



ORBITAL SANDER

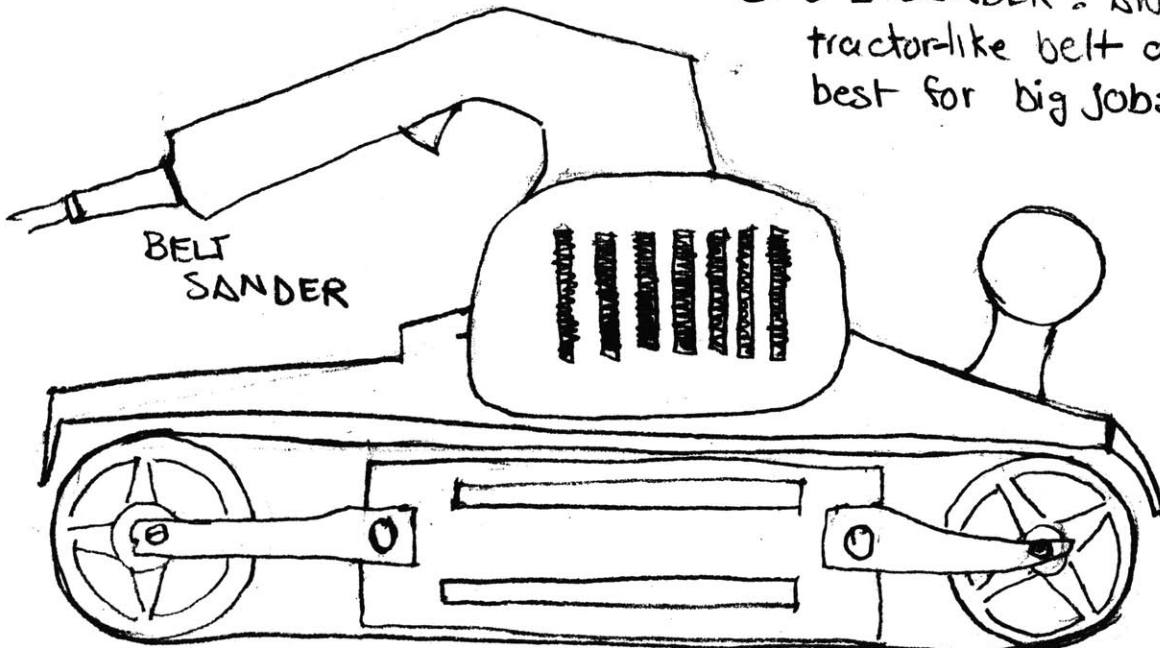


PORTABLE POWER SANDERS:

There are 2 basic types

① ORBITAL SANDER: A rectangular platform holds a piece of sandpaper - moves back and forth - good for small jobs - furniture

② BELT SANDER: An endless tractor-like belt of sandpaper - best for big jobs.



BELT SANDER

TOOL KITS

KIT (A) Tape measure
square
Needle & thread
scissors
staple Gun

KIT (B) Electric drill & bits
Assortment of 3 or more screwdrivers
Adjustable wrench
Tape measure
level

KIT (C) Kit B plus:
Crosscut saw
hammer
square

KIT (D) Kit C plus:
mitre box

KIT (E) Kit D plus:
plane
vise

KIT (F) Kit E plus:
SABRE Saw

KIT (G) Kit E plus:
Portable Power saw

KIT (H) Kit F plus
portable power saw
2 or more 4" x 4" clamps
Carpenter's square.

LUMBER

Lumber is divided into two broad categories, hardwoods, and softwoods. Hardwoods are deciduous trees (oak, maple, birch, mahogany, walnut, cherry). Softwoods are coniferous trees (white pine, spruce, hemlock, cedar, redwood). Lumber is also categorized according to grades. However it is probably simpler to tell the salesperson how you plan to use the wood. The salesperson may suggest a few options to choose from. Look at and compare what is available.

Lumber is sold by the board foot (board measure), or by the lineal foot (linear, or running foot). By the lineal foot is simply according to the length of the piece. Board measure is according to the number of square feet contained in a piece. A board said to be one inch thick, 12 inches long, and 12 inches wide is one board foot. A board 2 inches thick and 12 inches wide has 2 board feet per linear foot.

Dimensions of wood are based on size before curing and milling. Wood is cured in kilns to drive-off moisture. Wood that is not cured will warp, shrink, and crack. A piece of wood is milled to be smooth and square for sale at the lumber yard. Wood called one inch thick is actually only $\frac{3}{4}$ inches. Greater dimensions are $\frac{1}{2}$ inch less (2 inches is $1\frac{1}{2}$ inches, 4 inches is $3\frac{1}{2}$ inches, etc.).

Be finnickly when buying wood, because it doesn't come with a guarantee.

MANUFACTURED WOOD PRODUCTS

A few manufactured lumber products are plywood, pressed fiber board, homasote, and masonite. Plywood is made of thin layers (plys, or veneers) of wood glued (laminated) in a sandwich fashion with the grain of each layer turned 90 degrees from adjacent layers. The result is a large panel that is strong in all directions. Most plywood comes in 4 foot by 8 foot sheets. The thicknesses range from $3/16$ inch to $13/16$ inches. The outside layers are called faces, or face and back. The grading is:

- N: "Natural finish - free of open defects
- A: Smooth & paintable - neat repairs in the faces
- B: Solid surface - Circular repairs (plugs) and tight knots
- C: Knot holes to one inch with a few larger
- C plgd. & improved "C"
- D: Knots to $2\frac{1}{2}$ inches.

Each sheet of plywood is stamped with the grades of the face and back. It is also labeled exterior or interior. Exterior grade plywood is meant to withstand weathering. The easiest way to decide what you need is to tell the salesperson how you will use it. The finest plywood available (not sold at all yards) is Baltic plywood. It has more plys than standard plywood, and all the plys are of solid wood. The edges are clean and can be left exposed. Baltic plywood is sold in 5 foot by 5 foot sheets. Because of its cost it is also sold by the square foot.

Homasote is a soft, pressed, cardboard like substance. Like plywood it is sold in 4 x 8 sheets. It is $1/2$ inch thick. It is not pretty, but is an excellent tack board surface. Its appearance can be improved by painting, or covering it with fabric like muslin, or canvas.

Masonite and fiber board are manufactured by pressing fibers of wood into sheets. Masonite is hard and brittle. It has a dark brown color. Like plywood and homasote it is sold in 4x8 sheets.

MISCELLANEOUS

Lumber yards also sell a variety of moldings and shapes. Moldings are sold by the foot. Two useful moldings are picture molding and quarter rounds. Quarter rounds are for covering joints where two pieces of wood join. Picture molding is specially shaped so that when fastened to a wall, pictures can be hung from them with picture hooks. This eliminates the worry of damaging the wall when hanging something on the wall.



A QUARTER ROUND
COVERING A PLYWOOD JOINT.

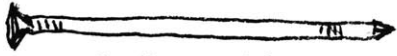


PICTURE MOLDING
AND HOOK

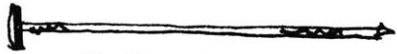
Novelty wood items are used to trim and decorate. They also include wood knobs, and balls. Blotner Woodcraft (in Lawrence Mass) sells novelty wood by the pound (for small items), and by the piece (larger items). They buy large stocks of seconds. Their store is a great place for kids, or for adults.

HARDWARE

NAILS



COMMON NAIL - For general construction



BOX NAIL - general construction



FINISHING NAIL - finish work

There ^{are} nails for every special purpose as well - concrete, masonry, flooring, wallboard, roofing, shingles, fiberboard -

SIZES range from 2d (penny) to 60d. Penny originally referred to the cost of 100 of a size of nail. 60d nails are about 6 inches long. 2d nails are one inch long. Nails called brads come in lengths shorter than one inch.

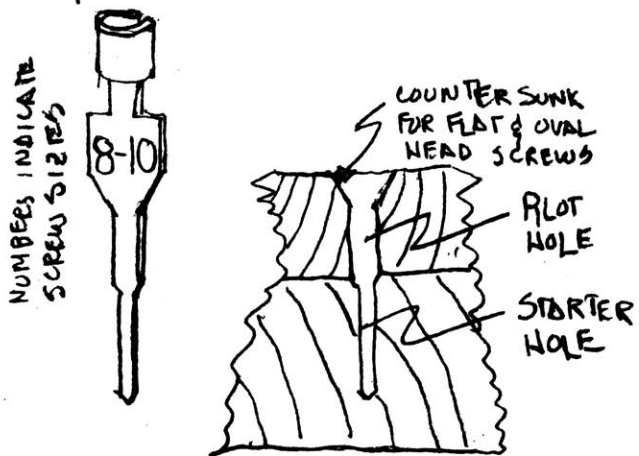
NOTE: Pre-drill a hole (smaller than the nail) when driving a nail into the edge or near the edge of a board. This will eliminate splitting. Pulling the point of the nail by striking with the hammer also helps.

WOOD SCREWS

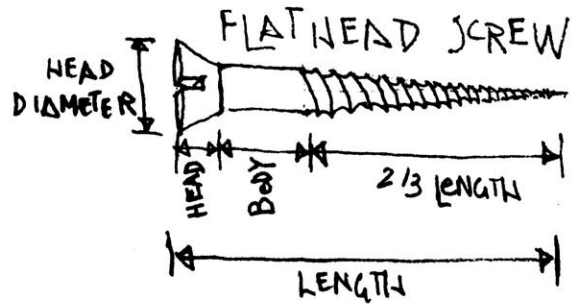
There are two basic types of wood screws - flat head and round head. Similar to these are the oval and fillister head screws.

Wood screws come in lengths from 1/4 inch to 6 inches. They are sold according to an arbitrary set of sizes that ranges from one to 18. The number refers to the relative thickness of the screws. A number one is thin. Each size comes in a variety of lengths. Numbers 6, 8, and 10 are normal household sizes.

DRILL



HOLE MADE BY DRILL



OTHER TYPES

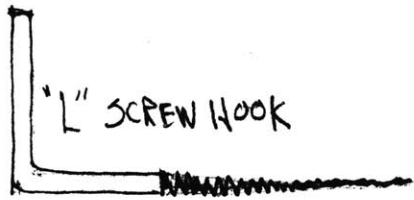


SLOTS



Wood screws require predrilled holes. The hole should be slightly smaller than the screw. An attachment is made for electric drills that drills holes for wood screws. (see sketch) This attachment comes in sizes that correspond to screw sizes. Flat head screws must be countersunk. Put a washer between the head of a round head screw and the wood.

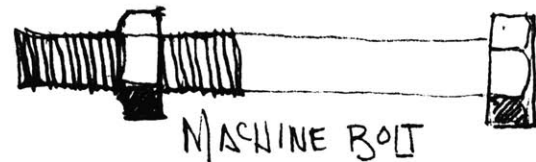
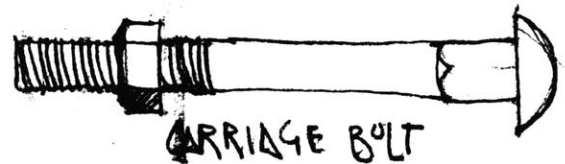
OTHER SCREW DEVICES



BOLTS

The sketches show a few types of bolts. Carriage and machine bolts are larger than stove bolts.

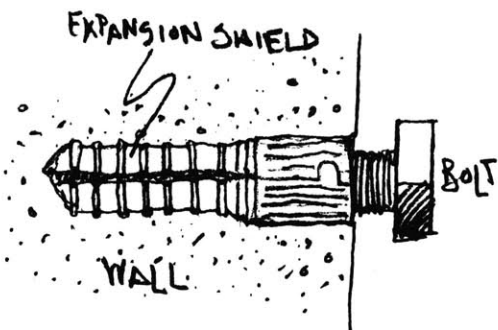
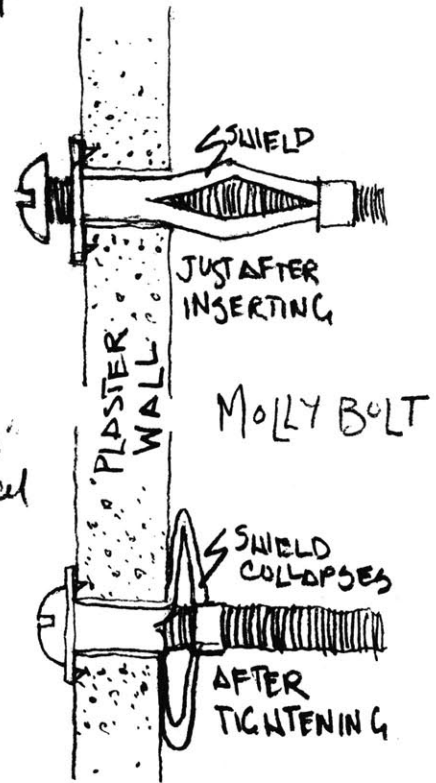
Always use washers with bolts. Put a washer between the nut and the wood as well as between the head and the wood. In the case of the carriage bolt, however, the square shoulder under the head is meant to fit snugly into the wood.



MOLLY BOLTS

Molly bolts are used to fasten things, heavier than a few pounds, to hollow walls.

To install: Drill a hole big enough to insert shield, and insert shield - tighten bolt till stiff - the shield is now permanently in place, and the bolt can be removed and reinserted as you please. A molly bolt will hold 200 pounds of weight. They come in sizes from XS to XL ($\frac{3}{4}$ inch - $3\frac{1}{2}$ inches) An "S" is about right for general household use.



EXPANSION BOLTS

Used to fasten things to solid plaster or masonry walls.

Drill a hole and insert the shield and loose bolt.

Tightening the bolt forces the shield to spread and grip the sides of the hole.

Caution: expansion bolts will pull out if force is applied away from the wall. Only apply downward force - (force along surface of wall)

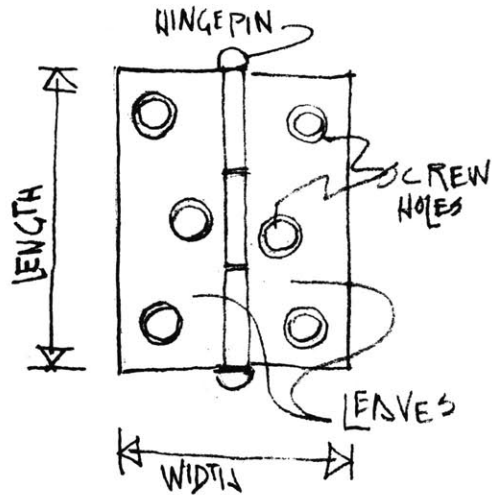
MISCELLANEOUS HARDWARE

HINGES

Hinges come in many sizes, and shapes, as well as different metals, and qualities.

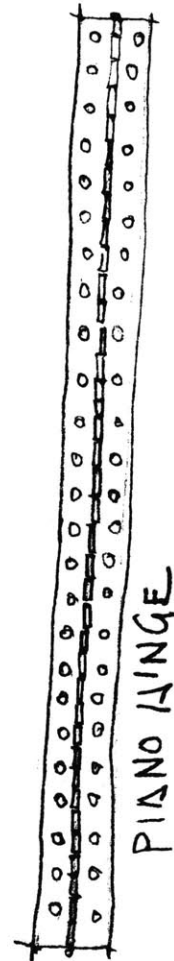
One hinge is made of two leaves. The selling dimensions are shown in the drawing.

They often are sold with appropriate screws. If not be sure to buy hinges and screws of the same ^{metal} (different metals corrode each other when they come in contact). Hinges are sold in pairs (two hinges & four leaves).

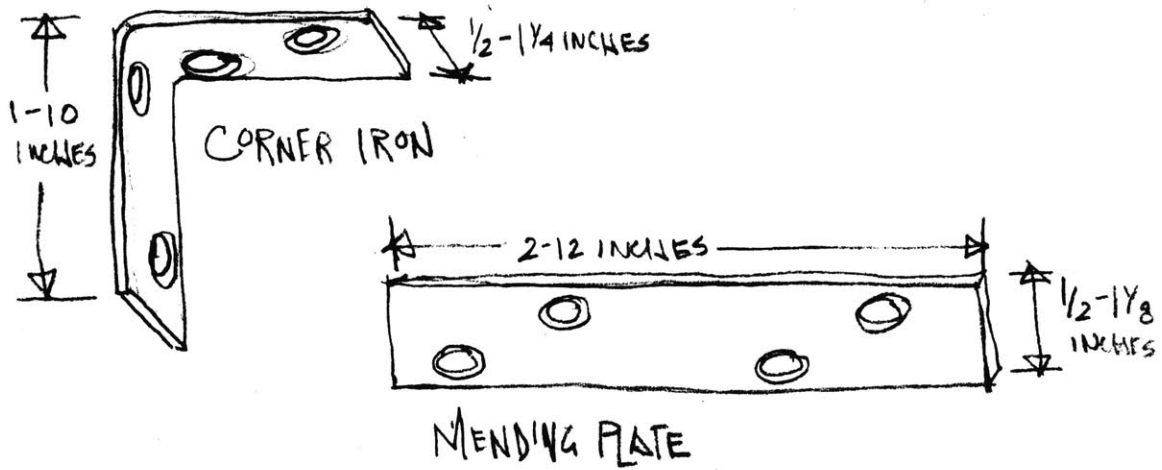
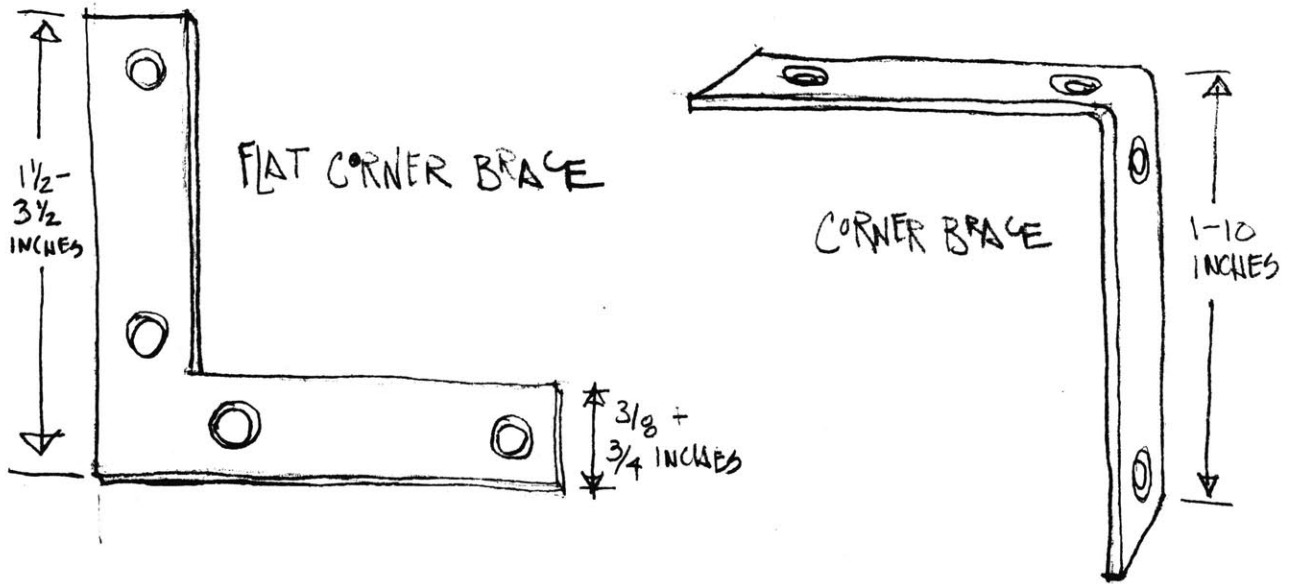


A special hinge that sometimes is useful is the piano hinge. Piano hinges vary from about one foot to several feet in length.

Solid brass hinges won't rust, which is why they are used so much. (Be careful when driving brass screws because the metal is soft and they run easily.)



BRACES AND PLATES

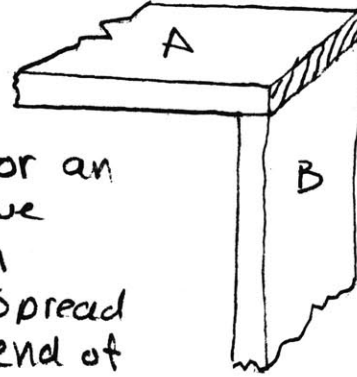


Hardware stores have hardware for every task. These are only a few of one sort of hardware.

CONNECTING WOOD

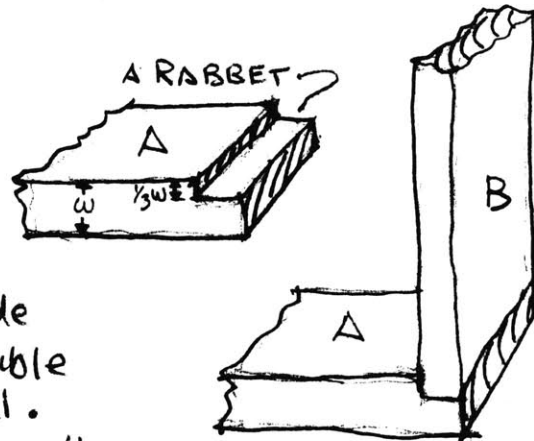
BUTT JOINT

The easiest connection to make. Board A is connected to board B by means of nails or screws. Glue can be added for an even stronger joint. Use a wood glue such as Titebond® available in hardware stores and lumber yards. Spread a heavy layer of glue onto the end of board B. Drive nails or screws. Glue should squeeze out along the edge of the joint.



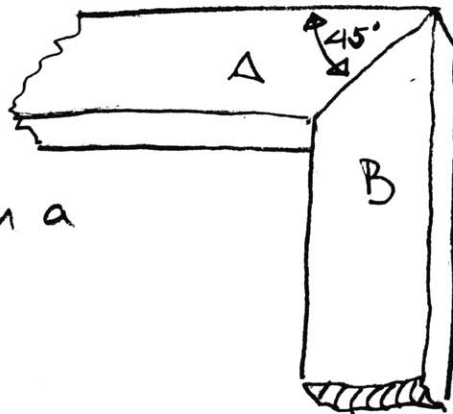
RABBET JOINT

A rabbet is a groove cut along the edge of a board. This cut is most easily made on a table saw, but it can be made with a handsaw, or portable power saw, and a chisel. This is a stronger joint than the butt. Use nails, or screws, and glue.



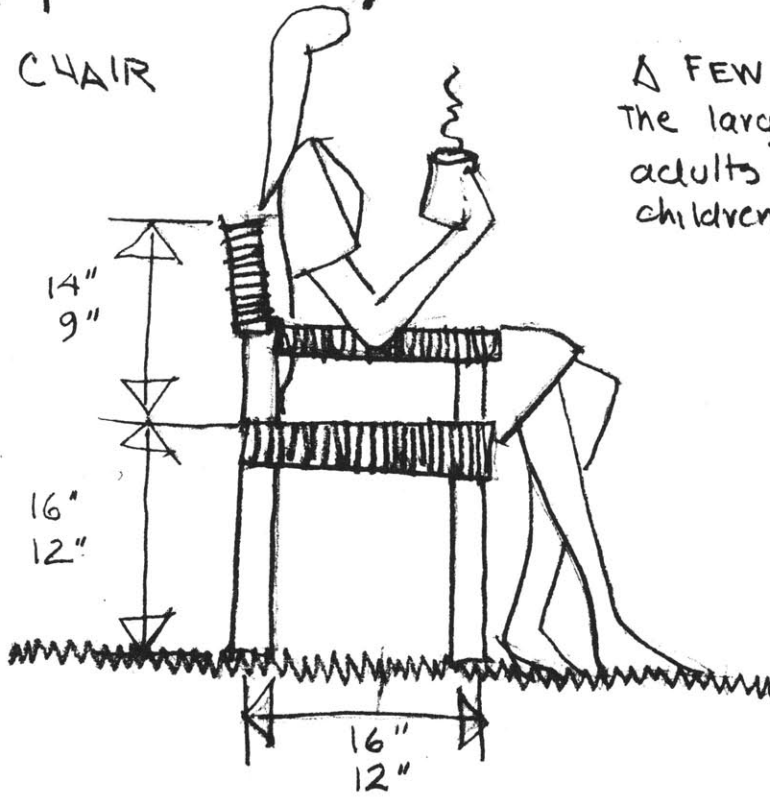
MITRE JOINT

A mitred joint turns the corner without showing any end grain. The cut can be made easily in a mitre box.



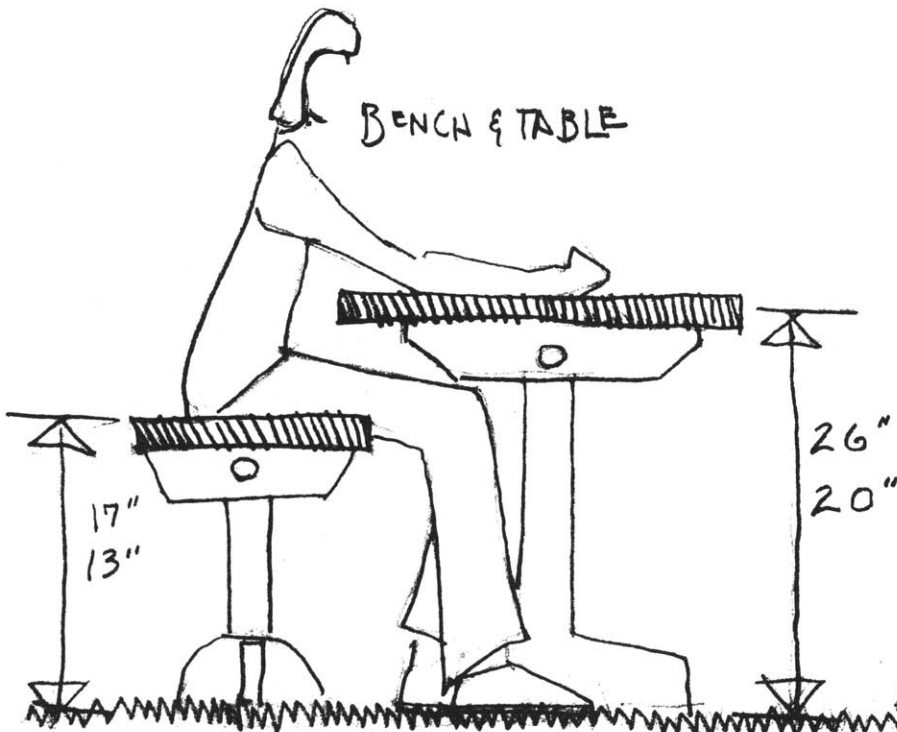
HUMAN DIMENSIONS

CHAIR

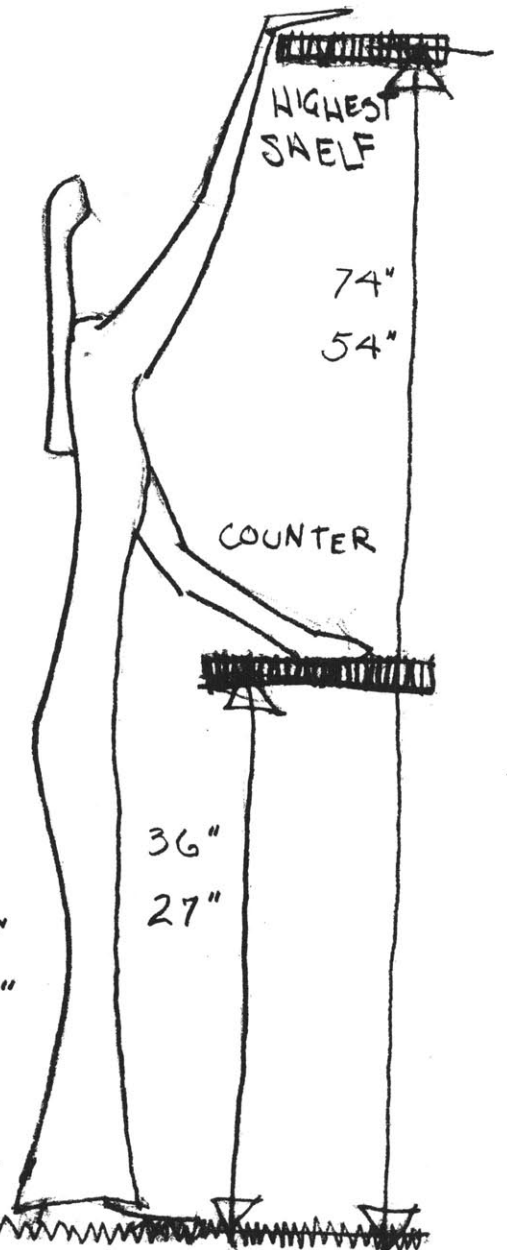


A FEW APPROXIMATE DIMENSIONS
The larger dimension is for
adults the smaller for
children (8 years old).

BENCH & TABLE



HIGHEST
SHELF



SHOPPING HINTS

Knowing where to get supplies is an important part of any project. Materials and tools may be purchased in hardware stores, department stores, flea markets, second hand shops, lumber yards, and salvage yards. The Yellow Pages are an important source book. Another source for materials is the streets.

People who work in hardware stores are generally knowledgeable, and are often interested in helping shoppers. They will answer questions and suggest solutions to problems. However, there are at least as many salespeople who are the opposite. Many people, recalling bad experiences in hardware stores hesitate to shop there. Like any other type of shopping hardware shopping requires practice and experience. It is worth it to shop for a hardware store and a salesperson who can be a friend. The shopper pays a little more in a hardware store and should expect better quality and service.

Department stores have some advantages over hardware stores. Tools are often of comparable quality at lower cost. Browsing is easier and what items they have are easily found. The salespeople are less knowledgeable than those in the hardware store. Many people agree that Sears is the best department store for hardware and tools. Sears' Craftsmen tools come with a lifetime guarantee. Other department stores may have lower prices, but the quality is questionable. A cheaper item may not be cheaper if it has to be replaced repeatedly.

Lumber yards prefer dealing in large quantity sales. Like the hardware store salespeople, lumber yard people often have little patience with non professional shoppers. Knowing the lingo will help the casual shopper. Another thought is to look at what they sell. Compare quality and prices in a few yards, as well as salespeople. It helps to develop a friend in a lumber yard who will be willing to spend some time answering questions. There are some dealers who cater to household shoppers. They should be considered in the same light as department stores.

Salvage yards, flea markets, and second hand stores are places to be explored. Things won't be dressed in pretty packages. They may be heaped in piles, or covered with dirt, or layers of peeling paint. Imagination is the important tool in these places. Old things are marked with the histories of their owners, but if well built, as good as the day they were bought. The well-built junk will be mixed with the real junk. It will take practice and a sharp eye to learn to pick the good from the bad. Many things can be reused for purposes entirely foreign to their original uses. (door knobs for coat hooks, boxes for shelves,) Duane's, in Quincy is the largest salvage yard in the Boston area. The Morgan memorial and the Salvation army are the largest second hand shops. Flea markets are plentiful. Shopping at any of these places is a pleasant excursion. There are small salvage yards and second hand stores in every community. Each has its own special character.

That kind of shopping is becoming increasingly popular as people become more aware of how wasteful they are. (as the ecology movement grows). Scavenging is also growing in popularity, and should not be thought of poorly. Much that appears to be rubbish is not rubbish at all.

Wood picked out of a junk pile or off the roadside, or out of an abandoned building can be cleaned, and reused. This is especially true of hardwood, and worthwhile considering the skyrocketing costs of these woods. An observant person can collect most of the materials he, or she needs without costs

SUGGESTED READING

Books on the shelves of stores currently —

ALLAND, G., WASKIW, M., & HISS, T. : Know-How: A Fix-It Book for the Clumsy, but Pure of Heart; Little Brown & Co., Boston, ©1975, \$6.95

BLACKBURN, Graham : The Illustrated Encyclopedia of Woodworking, Hand Tools, Instruments, and Devices; Simon & Schuster, N.Y. ©1974, \$8.95.

ABRAHAM, George, "Doc", & Katy : Raise Vegetables Fruits and Herbs Without a Garden; A. B. Morse Co, Countryside Books, Barrington, Ill., ©1974, \$2.95.

CLARK, S. & LYMAN, D., EDITS. : The Incredible Illustrated Tool Book; Pathmark Publications, Boston, ©1974, \$2.50.

FRIEDBURG, M. Paul : Handcrafted Playgrounds; Vintage Books, Division of Random House, N.Y., ©1975, \$5.95.

HENNESSEY, J. & PAPANEK, V. : Nomadic Furniture; 2 Volumes, Pantheon Books, Division of Random House, N.Y., ©1973, \$3.95.

LENVITT, Jerome : Carpentry for Children, Sterling Publishing Co., N.Y., ©1959.

MAGER, H & CAMPBELL, R.: How to Work with Tools and Wood; Pocket Books, N.Y., @ 1965, \$1.25.

EDITORS OF POPULAR MECHANICS: Master Shop Guide; Hearst Corp. @ 1969 Sears Catalogue number 9-2911.

EDITORS OF READERS DIGEST & Complete Do It Yourself Manual; Readers Digest, Pleasantville, N.Y., @ 1973, \$15.95.

SCHULER, Stanley: The Illustrated Encyclopedia of Carpentry and Woodworking Tools, Terms, and Materials; Random House, N.Y. & Pequot Press, Chester, Conn., @ 1973 \$1.95.

ZARCHY, Harry: Fix It Yourself; Golden Press, N.Y. & Western Publ. Co, Inc., Racine Wis. @ 1973, \$3.95.

SLOANE, Eric: A Reverence for Wood; Ballantine Books, N.Y., @ 1965, \$2.00.

SOURCES OF PLATES & PHOTOGRAPHS

COVER: The frontpiece from The Modern Architect, By Edward Shaw - Publ. by Dayton & Wentworth, Boston, © 1854.

"MARCH OF MODERN IMPROVEMENT": Bricks AND Brownstones, Charles Lockwood, McGraw Hill Co., N.Y. © 1972, Pgs 246-247.

"SAINT JAMES ST.": From Realism to Symbolism Whistler and His World, Exhibition organized by the Department of Art History and Archaeology of Columbia Univ., N.Y. & the Philadelphia Museum of Art, © 1971 By the Trustees of Columbia Univ. - Plate # 40.

An entrance: The Samuel Coleman House, By McKim, Mead, and White, The Architectural Heritage of Newport, Rhode Island, Antoinette F. Downing, and Vincent J. Scully, Jr., Harvard University Press, Cambridge, © 1952 - PL 206.

LOBBIES: The Sherman Watts House, By Richardson, and White, The Architectural Heritage of Newport Rhode Island, pl. 189.

CORRIDORS: Isaac Bell house - The Architectural Heritage of Newport Rhode Island, PL. 205.

APARTMENTS: F.W. Andrews house, by H.H. Richardson, The Architectural Heritage of Newport Rhode Is., PL. 186.

DOORS: Beautiful Houses, Louis H. Gibson, Thomas Y. Crowell & Co., N.Y. © 1895 pg. 326

WINDOWS: Andrew Wyeth, Museum of Fine Arts, New York Graphic Society, Greenwich, Conn. © 1970 PL. 104

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KITCHENS: Kitchens and Dining Rooms, Mary Gilliatt,
Viking Press, N.Y. © 1970 pg 39.

Bathrooms: Bathrooms, Mary Gilliatt, Viking Press, N.Y.,
© 1971 pg. 26.

APPENDIX: The Eighteenth Century Houses of Williamsburg,
Marcus Wiffen, Colonial Williamsburg Publ. © 1960
Pg 33.