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NORTHWEST ARCHITECT

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MINNESOTA ASSOCIATION OF
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DULUTH
(The Air-Conditioned City of
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August 22-23

RE: SELF-IMPOSED BLACKOUTS

A LONDON radio news commentator recently mentioned the concern British officials have for the public morale during blackouts.

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Editorial Comment

THE AMERICAN FAMILY GARAGE AND what you can do about it comes up for serious discussion this month under the title "More Doors." This architectural foray into a happier and more comfortable future is certain to produce considerable controversy. It is so intended. "Where are you going to put little Alexander's wagon and scooter?" "What about the garden tools, and all those papers and magazines for the Salvation Army?" Then, there are all the garden tools, the wheelbarrow, stepladder, storm sash, and . . . so . . . on. We admit it is surprising that there is still space for the car in most of our garages — but this article is not intended to give all the answers. That's up to you, but if there is a need such as Mr. Purcell outlines in "More Doors" there will be found as many good answers as there are different kinds of people and clever designers to satisfy them.

The amazing 1941 automobiles are still kept in reconditioned 1921 carriage sheds, so if you too have made a useful contribution to this world on wheels let us hear from you.



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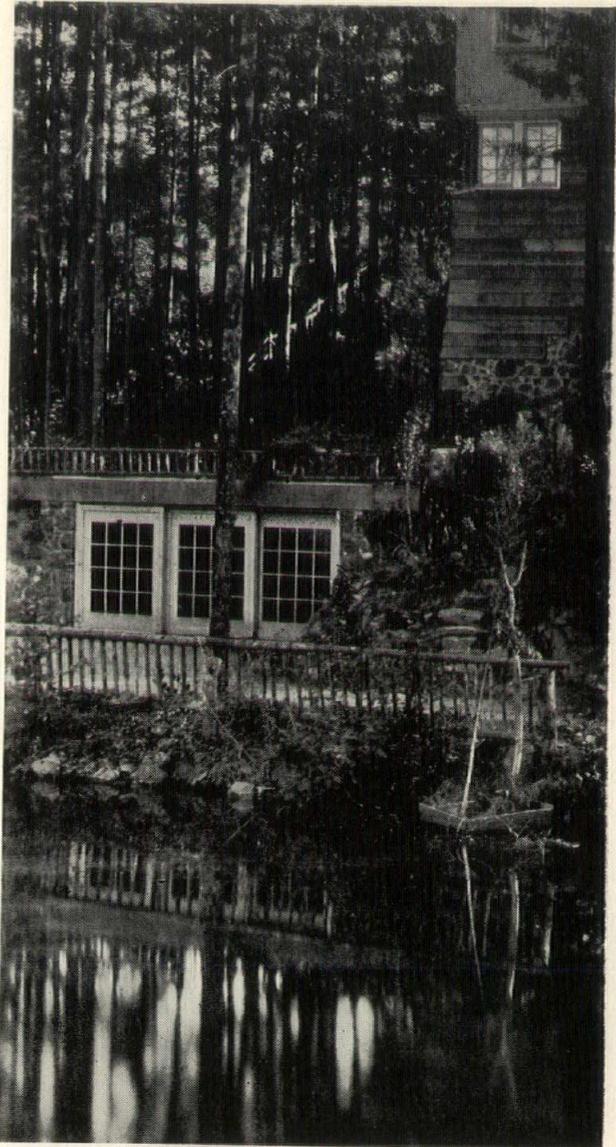
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See "More Doors" on pages following.



This illustrates clearly the three unit sliding closure for 15'-6" garage doors. The lintel is a stick of fir 8"x16"x24'. Each obscure glass door is 5'-4"x6'-6". Each laps the 6'-4" in-clear-height door opening by 2 1/2" at top, and laps 2 1/2" on rubbing strips with its neighbor. Each door slides on a separate track. Each door has 3/4"x2 1/2" rubbing strips screwed on both sides. The system is good for garages close to alleys as the normal two unit 10'-8" opening gives plenty of leeway for side drift while turning in.

Garage of Mr. Harry S. Bastian, M.E., Lake Oswego, Portland, Oregon, 1927.

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MORE DOORS

By WILLIAM GRAY PURCELL

★ There is certainly every reason why we should never again ask the guests arriving at our homes on some inclement evening to get out of the automobile in their dress clothes and step into the midst of a lot of lawn mowers, garden hose, baby carts, fire wood, and other junk. There even was a time when the corner of the old pioneer's kitchen not occupied by the table where the family ate their meals, was a repository for farm equipment. But we can hardly claim such habits as a tradition worth further continuity in the modern home. In order to mend our disordered ways in the American garage we hope to see readers of the Northwest Architect persuade their clients to provide really dignified apartments for the family car, carefully furnished and beautifully equipped home foyers that will meet the basic analysis which is outlined in part below.



WHAT IS A DOOR?

The hole? . . . or what stops it?

Can you have a door without what's around it?

Perhaps the posts and lintel are the door, you couldn't have one without them. And you can't have a door without some living thing that wants a door. The door is probably Man's first realization of himself as a Person, his first tangible idea of impersonal Good, and his most honored symbol in religion, government and home.

"I am the door."

"Lift up your heads, O ye gates; even lift them up, ye everlasting doors."

The Anglo Saxon called a door "duru," say it quick, that is "(d)ru" or "(th)ru," for the Saxons took up the "th" fashion after they met the Britons. And how do you account for the fact that the Greeks and the Britons were and are the only peoples using this strange lispy "th" sound. Well, that's a long story — anyway, Webster says, "Door . . . passage, means of access, a door way — in other words, "entrance." From the Latin — "in traho" to draw in. A neighborly idea of warm welcome colors this fine old word.

The Eskimos know so well the deep meaning of "door" that they have a more complete name for it — many door names. An Eskimo girl said to the explorer Amundsen, laughing at his request for the Eskimo word for a "hole" which he'd torn in his parka, "Why silly, there is no such thing as just a plain hole, because every hole has to be *in* something — like (speaking Eskimo) "holeinthecoat," "holeinacan," "hole-intheroof." So as "Doorhole-in-the-snow-house," they said it for door. An Eskimo man or dog passing from safe shelter to cold death had considerable meaning.

Natural, simple, primitive people are not materialists. Their *Doing* is the life's joy. This we too, must somehow recapture, and here our great profession has an obligation and an opportunity, for the architect is the foremost recorder and interpreter of life, and he has more "fans" than the speaker, or writer.

Good Plans Not Enough

If our buildings are to be living and lively, we must think in terms of action instead of possession.

"A true noun does not exist in nature."

"Things are only the meeting points of actions."—Ernest Fenalosa.

Fiddling about on the drawing board, with the aesthetics of panels and pilasters, proportioning plinths

and pediments is just shooting blank cartridges at an imaginary bird. We can't make the first single move to create a door until we begin to think about what the door does, and to those hard, materialistic designers, the mechano-functionalists, to whom a door slam is sweet melody, I assert that what a door does to a man's spirit and to the hearts of his friends and neighbors, is a lot more important than its construction or the baffling of thieves and cold winds. And so, not the *extent* of its service but the *quality* of its contribution to daily living is the true base of any good house. Certainly there is no repetition so filled with possibilities as approaching one's own fireside after a hard day's work, with graciousness and dignity. It is one of the most important and significant of minor dramas in the home. In this day of canned and predigested entertainment, adults must also learn to "let's pretend" like children — to dress up, both manners and costume *for each other*. There is no permanent satisfaction in having one's costume party pictures in the paper. And self-consciously to "put on an occasional show" for others, means missing the best of all the fun. The only genuine satisfaction to guests is a share in something beautiful and gay that they realize from its naturalness *is the permanent program in your home*.

What's Behind the Door

So, before we try to record in building materials the up-and-doing-ness which is a door, especially one so highly specialized as our new world garage door, for example, let's try to discover the inner nature of this meeting place of all the actions that concern cars which go and come, and the people getting in and out of them.

In stormy weather people going home drive directly into the garage as a matter of course no matter where their so-called "front door" may be, or how arranged. But mental habit, how strong it is — and it often appears to tie so much into a package which actually has nothing inside. You *think* of yourself as always dropping your guests at your beautiful front door while you continue on into the garage with the car, but that isn't the way it really works. That procedure breaks the continuity of the immediate social picture. Human relations will always overcome æsthetic ones.

So into the garage all of you go, eighty per cent of the time with guests, ninety-nine per cent of the time when by yourselves. The garage entrance *is* the entrance to your home, isn't it now? The back hall or the kitchen

invariably has the first word and fixes every first comer's feelings, satisfying or unfavorable. You never let yourself even think of taking your guest through the kitchen — but then, "it's raining" — or "all this luggage I can't let him carry" — so it's, "O, well," and you apologize for the dishes in the sink. But that never changes the exposure instantaneously fixed in the film of feelings. First impressions strike into the mental emulsion, will not bleach away.

So here we face so basic an axiom, that people's lives are "made" by daily repetitions of very small matters. What people do and the way they do it every day should govern all that we as architects can do for any house.

Now the most important thing people do with a house is to come home to it and since the great majority leave and return by automobile, the garage door becomes the real entrance of the modern house, and furthermore the automobile being the most significant and luxu-



★ Here an old 7'-6" high hole-in-the-house type of garage doors was reduced to a 6'-6"-in-the-clear car entrance by means of a long unifying 6" x 8" beam, with pergola rafters which are notched over the beam and spiked under the old lintel which still shows, now as a sort of frame above them. When the Hoover rose carries its cherry amber glow of blossoms across to meet the blue plumbago, then this car port will be just an agreeable place when the house isn't. In remodeling this house the lobby-library-study-reception room, the New Day unit, which I am building in this analysis, opens off the garage inside at the left, with french doors on a level with its own private garden toward the west.

rious object we own, our family car should occupy an apartment of commensurate dignity with the rest of our house.

Practical Psychology

Consider for example, one of the frequent houses built on a sloping site so that the garage entrance is in the basement. It was not sufficient, O plan-drawer, amateur or professional, that as you planned it, one would not have bumped his head on the way up from the basement. This cellar to kitchen "back" stairway of yours with its approach through the basement hall, and its pokey landing above, must now be given the most respectful reconsideration in order to secure comfort, dignity, peace, and freedom from mechanical atmosphere. From the time the car moves up to the garage door, until you expand your soul in your heart of home, you must definitely plan and complete your project so that your happy homecoming shall not be distracted with merely practical doors, dark trippy halls, ill-considered furnace and plumbing pipes, steep clattery stairs, tight stair widths and head room, perchy landings, and . . . so . . . on! To accomplish just that with form, light, and color is architecture and nothing else is, especially not aesthetics which is a philosophy of appraisal and has no part in creation.

But more and more the two and three bedroom house is built all on one floor, and the long suffering garage overcomes its ancient heritage from the horse barn by moving up to the front of the lot and being made a

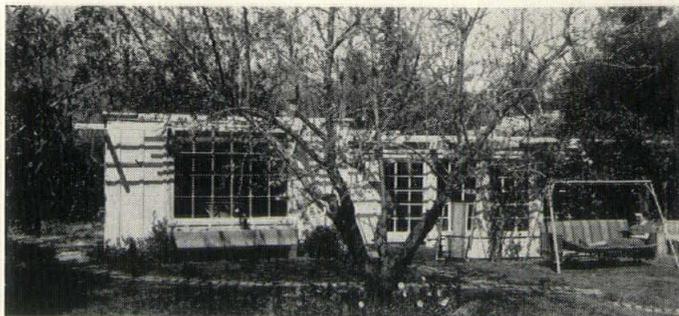
unit in the plan and construction of the house itself. Thus the garage has become the largest single element in the principal facade of houses and a continuous headache for the sensitive and conscientious designer. Even when it is in the rear of the lot the hard, gray concrete driveway is an inescapable pointer which leads the eye directly to the garage wherever it is.

Garage Design

The difficulty with the design of most garage doors comes from the fact that the architect worries about this large, mechanical spot as a trouble maker in his "design" so he tries hard to make the garage door "look nice" — brings all his designing sense to remove the curse. But the more clever and beautiful he makes them the worse they get, because the real trouble is their infernal conspicuousness and to do nothing at all to them but help them to be just as inconspicuous as possible in both pattern, color and location is both procedure and objective.

In my first article on doors I explained why I thought all of them were too large and that the first thing and the best that can be done for the garage door is to bring it into scale with its use and setting.

The next move is to secure some sort of a line or form with resulting shadow above them to bind the door lintel into the substance of the house. Indeed, the long low lintel of a 15'-6" x 6'-4"-in-the-clear double garage door provides at no extra cost an architectural design element that can be very useful. Another method of design approach is to organize the project as a whole so that the place where the car goes in is not a door-hole-in-the-house at all but just a place where there isn't any house for the time being. Like driving your car under a far spreading tree. One can then find a way to give this natural domestic cavern a welcome, shelterly feeling and make it tight against the elements with some not too obvious lift or sliding type of door. But in heaven's name don't try to prevaricate with placing a living room window or two right in the



★ This is a view from the side yard of an unusual type of "double double" garage in Banning, California. The car entrance, coming in from the street, is at the far right around the corner. The side of the car-parking room shows in the picture as four glazed sash in right unit of this building group, so designed to keep the customary shed-like garage wall from giving a "back-yard" flavor to the patio.

In this double-double the extra unit (left), with the large window, is behind the car-parking unit and is used as a studio and occasional guest room. Entrance to studio at center in L corner behind tree — see brick path, with four casement windows in far corner to left. It is more than adequately heated with a tiny "Franklin stove" fireplace.

lift-up door itself!! . . . All complete with curtains! which is the prevailing fashion just now in Pasadena.

Another approach to garage design, and one which not only may include all the others, but which is indeed the objective of this article will be found in a specification at the bottom of page 6. As this completely new unit in house and home has as yet been given no name

the reader will have to supply the necessary mental momentum to carry him from my label words to the new tool for living which I am here trying to picture.

"Fashions in Garages"

You will be interested in the latest garage development here in Southern California. It is what is called the "double double" garage. The standard back yard double garage is a building 20' x 20' with a 16' x 7' lift up door. A "double double" is 20' x 36' with two 16' doors in front and a partition down the center. The extra unit has an ordinary door with a broad casement window on either side facing toward the side yard. This garage unit is offered to the prospective home buyer as a room which may be used as the children's play room, for billiards or table tennis, for work shop, laboratory, den or library or even fitted up as an extra guest room. These back yard houses begin to appear at the \$6,000.00 price range and progressive builders of houses for sale advertise as an inducement to buy "A double double garage with floodlighted badminton court complete for only \$195.99 additional."

Laboratory Data Needed

All architects are grateful for the dimensioned details made by the "Architectural Record" under the

title, "Time Saver Standards." A way must be found to continue this service to architects in its original ready reference format. Much of the very valuable later material is now buried in periodical files too difficult of access. Our offices are all too pressed with detail to cut out accurately, and preserve pages as the Record now suggests. With the unbelievable volume of silly and useless direct mail advertising material hurled at us architects some way should be found to make this great expenditure produce permanent results. Could not those details form an encyclopaedic volume of Sweets Index with cross references printed on the details referring to the advertiser and in the catalog section referring to the details. The editors of "The Record" doubtless felt that they had about exhausted each subject, and it must be said that they did a swell job, but when I reviewed their excellent details on garages it appeared to me that they had merely opened vistas in an enormously large subject. I could continue with this matter of garage doors to a point where any but the most enthusiastic laboratory mind would be completely bored, but I hope that the various suggestions made here will encourage other architects to approach their garage planning with a mental lightheartedness which will for a time, at least, put their past habits in cold storage and thus open up some new satisfactions in car ownership.

★ Recommended garage for the small home to provide a complete architectural answer to the needs of the American Family of 1941 as actually demanded by average and really universal daily habits.

It is to be a completely finished and furnished room, in character with the living rooms of the house. It should be at least 19'-6" wide and the car should stand close to the side away from the house, leaving a usable space. It should have two entrance doors, a glass car entrance door, and beside it the principal pedestrian "front door" of the house so that this garage room would become in fact the reception "Hall" of the dwelling in the old feudal sense of the word. This domestic lobby would have a hard wood or linoleum floor, with insets of tile for the wheel tracks and at the point where the engine will come to rest. There should be proper three-way light switches conveniently accessible from the seat of the arriving and departing car before and after the headlights are turned off. The car entrance door may, but need not, have remote control, for I think that we may be carrying this world of push-the-button convenience too far, turning ourselves into soft automatons.

However, as I see my ideal garage, this room would have rugs on the floor, pictures or other decorations on the walls, a long mirror, a table and comfortable chair or two, with books and magazines. I hear some one say, "Who in the world would want to sit down to read in the garage?" But any husband who has heard—"I'm absolutely ready, will be there in just a minute," knows how much good reading he could get in every evening if he were only comfortable. And how about Joan and Bill coming home from the dance — are they forever to park out at the curb in rain and snow? This old time Hall for new world habits should have very careful lighting, not dramatic, but homelike, suitable garment closets, and other not too obvious fine storage compartments, inconspicuously arranged. There would be a pair of obscure leaded glass doors leading directly into the living room, and another utility door, preferably leaded glass, to service hall or kitchen. This home foyer should not be made special in character like game or rumpus rooms, but should quietly take its place in sequence with other family rooms, and form a true introduction to the spirit of the home and the family. Such an addition to the small home plant, and comparable to it in finish and furnishings, means a very slight change in one's point of view and none in conventional habits. The added cost would be but a fraction of the cost of a new automobile — and a very small fraction of the cost of owning and operating a sequence of four or five cars over a ten-year period. Let's try one and have some fun.



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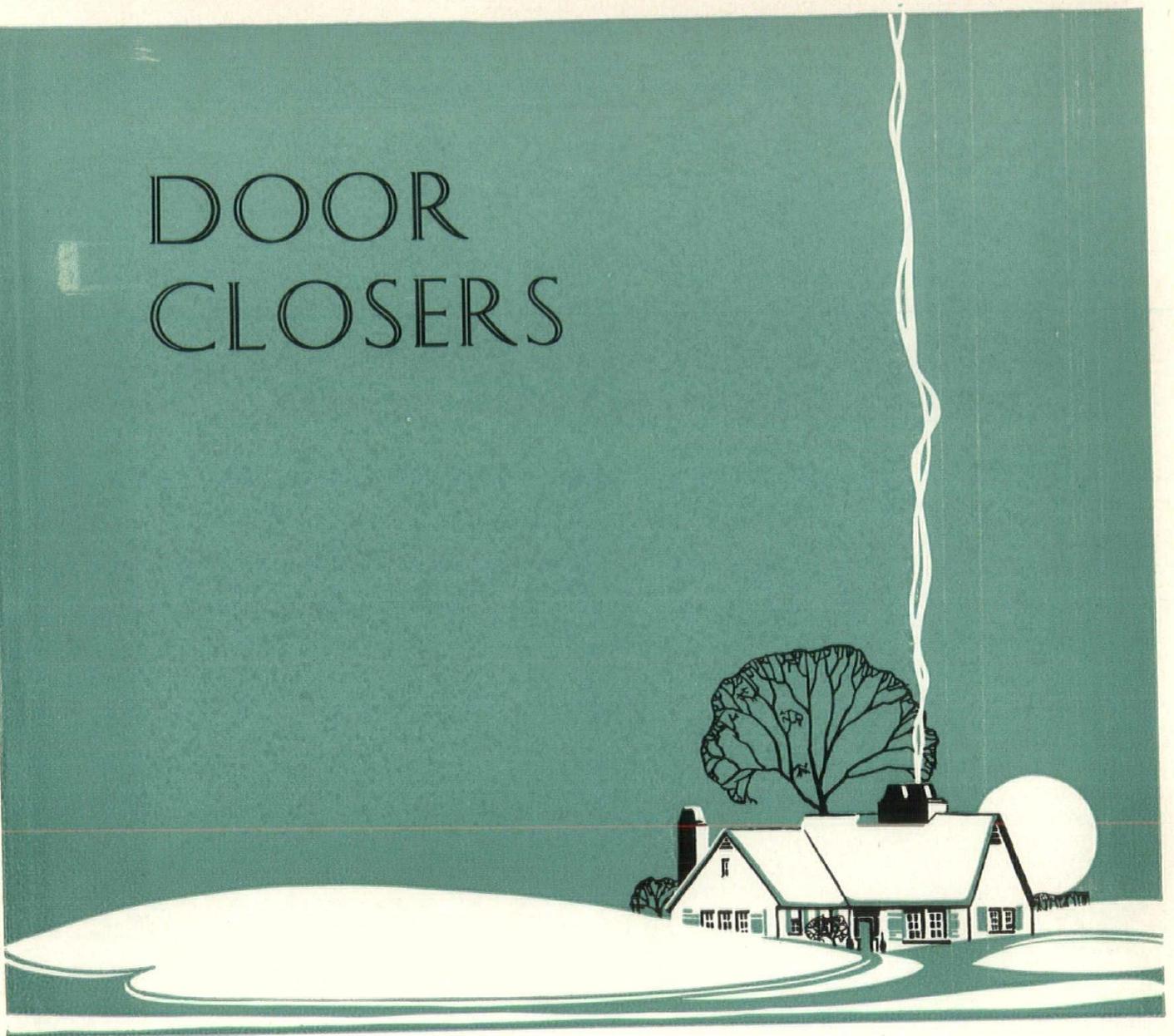
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JANUARY-FEBRUARY, 1941

DOOR CLOSERS



A DOOR Closer is a piece of hardware which has been in use for controlling the movement of doors for the past sixty years. The idea was originated by a mechanic who was employed as carpenter foreman on the famous Trinity Church of Boston at the time of its erection. The young rector, later destined to become the famous Bishop Brooks, was much disturbed by the slamming of his vestibule doors, caused by the drafts developed when the large gothic main entrance doors were opened for religious services.

He complained to the young carpenter that they annoyed him and that their slamming must be stopped. Many devices, including rubber tubing, were tried without success—the heavy thud was still very noticeable. One day, after a series of disturbing developments, and in somewhat of a huff, the carpenter threw his kit of tools into a “slop sink” closet and slammed the door shut. Quite to his surprise, there was no “bang” of the door, and, in fact, it did not really close completely.

Immediately he began to reason out why the door did not slam, keeping in mind his problem with the vestibule entrance doors. He decided that the compression of air in the closet prevented the slam and reasoned that, if he could bottle up some air and

harness it to the door, he could control its movement and prevent its slamming. He began to work out this idea in his own basement and, with his heating furnace for a forge, evolved the first successful door closer. The irony of it was that, while this first closer was made for the great Trinity Church, it was really designed from a beer pump.

Early Closers

In those early days buildings, in general, were comparatively low with only limited draft conditions. On new building contracts, closers were only standard on the few main entrance doors, toilet doors, and on those of a few preferred tenants. All other installations were extras and called for special sales efforts to procure this business. Contrast this with the tremendous demand for closers today and that their use is now standard on almost every door on all modern office buildings, public buildings, et cetera, and it is an indication of the truly useful purpose they serve.

Present Problems

The advent of the skyscraper building presented new problems in the successful control of these doors as a tremendous draft condition is developed in these

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buildings. They are like chimneys—the higher the building, the greater the drafts.

In these skyscrapers many varying conditions exist. On main entrance doors the strong draft is exerted to blow the doors shut—only a little spring power is required to close the doors, but much checking power is needed to prevent their slamming and having a quiet action at the closing point. On the store entrance doors, just the converse is true—the draft helps to open the door but often exerts a tremendous force to blow the door open, just as it nears the latching point. In this case only a little checking action is needed but a very great amount of spring power is required to close the door through to its latching point. The modern metal fire-proof door in fire tower stairways presents again a different problem, while the customary door on the penthouse on the rooftop is often a problem of still another type.

When one adds to these conditions the problems of the Coupon Booth doors in Safety Deposit Vaults, the Telephone Booth doors so controlled as to provide ventilation when booth is not in use, Hospital Patient Room doors with their three-point hold-open needs and an exceedingly quiet closing action, the operation of school and public institution exit doors equipped with Panic Bolts or Exit Locks, the special requirements for railroad passenger car doors, screen doors with their desirable quick closing action, etc., one begins to see what a problem is faced in this field. Added to this is the problem of hold-open attachments for holding doors open; furnishing a Back Check action to slightly check or retard the opening movement of a door as it nears a 90-degree open position and prevents its opening violently against a wall, show case, or other obstruction at this point; the special problem of operation of heavy refrigerator doors with latching mechanism loaded with frictional resistance; the operation of heavy fire-proof doors with hold-open attachments, but equipped with fusible links for automatic closing in case of a fire hazard. A separate class all by itself is the control and operation of steamship doors.

When one considers that there are hundreds of different locks to meet the various conditions one has to handle and that only one regular closer, in a range of six sizes with some additional attachments, is made to meet all these conditions, one can realize how elastic a closer must be in its performance to successfully meet these various problems.

General Principle

In a door closer there are two different functions in its operation. One is a spring which exerts its power to close the door and of itself, because of the compound arm levers, would slam the door shut with tremendous power. The other is the checking power which prevents slamming of the door and gives a regulated closing speed.

Spring Power

This is a very important factor. It is so designed that, functioning with compound levers and the closer located well out on the door, it exerts increasing closing power as the door nears its closed position although the pressure of the draft to blow the door open keeps increasing because of the constant reduction of its free passage. Though the force of the spring is becoming weaker and weaker in its unwinding, as the door closes, it *pushes the door closed with increasing power*—the compound lever arms play a very important part in this result.

The spring should be adjustable in power to meet the variable loads required under different conditions. If a draft is to *blow the door closed*, only a slight amount of spring power is required to start the door closed when it opens wide. Too much spring power, in that case, simply adds to the draft load and helps make the door hard to open. If the draft exerts a pressure to *blow the door open*, then much more spring power needs to be exerted to successfully close the door to its closed position.

In the earlier models all springs were, in general, of the flat ribbon type of spring, tightly wound up and banded around the outer circumference. This type of spring has a nice wide range of adjustment of its power, but has to be handled—sembled in closers to handle only a right or left hand door respectively without considerable disassembly and reassembly of parts to properly function for the other hand. When in action, an uneven load is exerted on the various coils and those near the center assume the greater burden and considerable breakage is the result. The spring can be wound in the wrong direction and thereby become ruined and can be overwound. In taking off hardware lists on contract work, it is necessary to note the hand of the door and order the closer accordingly, or use much time on the job “changing the hand” of the closers when applying them to the doors. The dealer, moreover, either needs to carry a double stock (of rights and lefts) or also spend valuable time making the change.

After many years of use of this type of spring, a door closer mechanic succeeded in developing a spring which is rolled out from round rod stock into a flat spring and made up into a helically-wound spring which has fast increased in favor in its use as a door closer spring. Because of its being rolled thin, many coils can be wound into it to make it a very flexible spring. It is universal in its action—will permit of right or left hand action without changing any of its parts. Because of its action, every coil takes an exactly even load when under pressure and, consequently, breakage is reduced to a minimum. It cannot be wound in the wrong direction, cannot be overwound nor abused, and is, consequently, quite fool-proof. It simplifies the labor in taking off hardware lists and the problem of dealers' stocks and “over the counter” sales.

Checking Action

The checking action is secured, in most cases, by means of a plunger moving back and forth in a cylinder with some checking medium exerted against the plunger or piston head which retards the closing stroke of the plunger as the door moves to its closed position. By regulating the escape of this checking medium from in front of the plunger head, by means of a controlled escape or by-pass, the closing speed or speeds of the door are obtained.

The original checking mechanism was obtained by the use of air. But, because of the elasticity of air under pressure, an unpleasant rebounding movement of the door in closing was necessitated. It was also difficult to construct a piston head, which must be comparatively free from friction, so that it would not soon cease to function properly, permit the air to pass freely by the piston head, and thus permit the door to slam shut.

In later days a hydraulic checking action took the place of the pneumatic action and, except in the case of light screen door closures, this is now the general

checking medium. It provides a powerful, non-elastic checking medium which permits of a very smooth closing movement of the door. This liquid is so compounded as to permit it to keep the same gravity when exposed to high heat or a very low cold test.

From the time of the early development of the door closer up to today, a tremendous amount of engineering thought has been given to the construction of door closers. The patent office is loaded with patents on all kinds of designs and movements. Many principles have been employed for the movement of the piston head, ranging from the air "dash pot" action of the original closer; that of crank and pitman movement; eccentric action; friction governor controlled movement; friction brake-band action; heart-shaped cams; inclined gears; beveled gears; worm gears; vane movement (like in some automobile shock absorbers made today); rack and pinion movement; and many others too numerous to mention.

In modern practice these movements have been reduced to about two movements—the engine crank and pitman movement and that of the rack and pinion.

The crank and pitman movement, in well-constructed closers, gives reasonably good control of a door where there are not strong drafts to blow the door shut and thus require a strong checking action. It is the least expensive in its manufacturing cost and there is very little frictional resistance in its action. However, the movement of the piston head is very uneven in relation to the movement of the rotating shaft which operates it—for a time it does not move at all as the spindle is rotated because the crank is in a dead center—at another point, when the door is about

30 degrees from closed, its movement is fast and then, as the door nears its closing point, its movement is gradually decreasing in relation to the movement of the door and checking control is gradually becoming reduced.

The rack and pinion movement is fast becoming the popular movement. In this action the piston head moves at a uniform speed in relation to the movement of the rotating shaft (either during the entire closing movement of the door as used in some designs of closers or from a 90-degree open position of the door as developed by other closers) and so the liquid is in movement during all of this closing travel and the control of this moving liquid gives a perfect control of the movement of the door. As the door nears its closed position, there is just as much piston head movement as at its 30-degree closed position, so that there is plenty of liquid movement at this point and permits a very fine control of the door as it nears the jamb at its closed position.

On all up-to-date closers the control of this liquid escapement is broken up into two separate controls. The first controls the movement of the door from its open position to within about five inches from the closed position. The second controls, independent of the first control, the movement of the door during the last few inches. Both of these controls are adjustable. In this way a door can be made to close smoothly and at medium speed during its first closing travel and then change to a much slower or a quick "jump shut" action at its latching point.

(Continued on Page 14D)

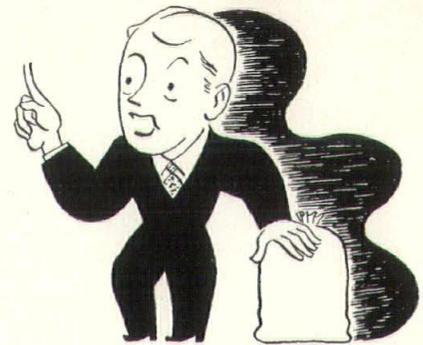
SPEAKING OF SPECIFICATIONS, are you familiar with the U. S. Government Specifications SS-C-181b for masonry cements? The Type I specification is not so difficult to meet; but the Type II specification—which covers masonry for general use—is the most demanding on record. The best recommendation we can offer for Hawkeye

Masonry Cement is that it meets the Type II specification. This superior product is consistent with the policies of an organization which, for more than thirty years, has established a record of dependable performance with Hawkeye Portland Cement.



Hawkeye

**PORTLAND CEMENT CO.
DES MOINES, IOWA**





1941 to See Residential Work

Increase, Survey Shows

The year 1941 promises to show the greatest activity in private residential construction since 1928.

That is indicated by a study of "Housing and National Defense" just made public by the Commercial Research Division of The Curtis Publishing Company which estimates that the annual residential housing construction and maintenance market amounts to \$4,000,000,000 and that there is an accumulated backlog of more than \$10,000,000,000.

"Rising national income, increases in marriages, widespread reemployment and low vacancy ratios are expected to increase residential building activity by 15 to 20 per cent over 1940," the study says.

"Construction costs for both labor and materials, although moderate now, will have a tendency to rise as the full impact of the construction program is felt. This, however, is not expected to have a major influence on construction activity unless extreme price increases develop. The defense program provides a large and unpredictable factor. In case of great shortages of materials or labor, a temporary rationing or priorities system might be set up by the government. This action probably would serve only to postpone construction activity.

"The USHA program of slum clearance and low cost housing, rural re-housing and defense housing will reach a peak in 1941."

The housing shortage which already has developed near army posts, navy yards, arsenals and plants manufacturing defense goods are cited as an indicator of what will occur in many other sections of the country as the defense program is expanded.

The nation entered the present period with a large accumulated deficit in housing, in spite of the fact that the number of units built each year has increased steadily since 1933.

Where a 5 per cent vacancy is considered healthy, recent estimates have shown that urban residences have been 95 per cent or more occupied every year since 1934 and we entered 1940 with an estimated occupancy of available units of 98 per cent, the Curtis study says.

Annual Requirements

Discussing the market for housing, the report estimates that 500,000 units are required annually to take

care of population growth, demolition and obsolescence. This minimum figure allows less than 200,000 new units yearly to take care of obsolescence on the 26,000,000 non-farm dwellings. This is a rate of less than 1 per cent and would require the average dwelling to remain habitable for more than 100 years.

"When construction falls below the required 500,000 units per year there is a deterioration of the level of available housing accommodations," says the study. "This situation has obtained every year since 1929 and a housing deficit of 2,000,000 dwelling units now exists. If each needed dwelling unit cost an average of \$4,000 to produce, this would create an \$8,000,000,000 market for goods and services. This expenditure is in addition to the \$2,000,000,000 required to construct the 500,000 units needed annually.

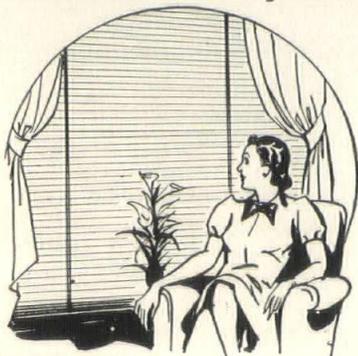
"Repair and maintenance of the existing 26,000,000 dwelling units, assuming a very low investment value of \$100,000,000,000 for these homes and a depreciation and maintenance cost of 2 per cent, probably totals \$2,000,000,000 annually. That the market for upkeep of homes is at least equal to that for new home construction is a fact not often appreciated. Adequate figures are not available showing the backlog of repair work accumulated during the depression, but it is estimated to amount to at least the equivalent of one year of maintenance, or \$2,000,000,000.

"Thus, minimum estimates would place the annual residential housing construction and maintenance market at \$4,000,000,000 with an accumulated backlog of more than \$10,000,000,000.

"An important factor impeding more rapid progress in the development of home building is the lack of available information concerning the technical progress of the industry. The general public is uninformed with regard to the tremendous strides which have been made during the past decade to home construction. Improvements in plumbing, heating, insulation, lighting fixtures and labor saving devices have combined to give the prospective home owner more for his housing dollar.

"A major educational effort will be required to fill this gap. This work has been undertaken to a limited scale by several governmental agencies, but large-scale private auspices are required to provide the necessary scope to such a project."

Modern Styling Calls For Warren Venetians



Housewives today want more than Modern Styling—more than just Utility. They want neatness, simplicity, character, modern styling—in their Homes. WARREN VENETIANS are the accepted answer to many a housekeeper's wish-thoughts regarding her window treatment. They have Economy, Utility and Modern-ness. They solve daylight and ventilation control to a remarkable degree.

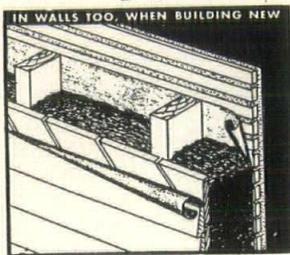
On your NEXT set of specifications, therefore, why not include WARREN VENETIANS? Fourteen soft pastel tints allow wide choice. Ease of installation and operation are well known. Our engineering department will gladly cooperate with you.

WARREN VENETIAN BLIND COMPANY
2907 E. Hennepin Ave. Call GL. 5935 Minneapolis, Minn.

PALCO INSULATION WOOL

Trade Mark Reg. U.S. Pat. Off.

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PALCO WOOL is a "natural" for modern houses. Packed in the air spaces in the walls and between attic joists it stops winter heat loss and keeps out summer heat. By plugging up these wall "flues," it also acts as a fire retardant.



Made from durable Redwood bark



PALCO WOOL is durable, nonsettling, vermin-proof and distasteful to rodents and insects. Its efficiency is unexcelled by any other practical insulation. Easy to install.



FREE—16-page Insulation Manual

PALCO WOOL comes in bales easy to handle. Available at Lumber yards everywhere.

CANTON LUMBER SALES COMPANY

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5501 Portland Ave. Ph: LOcust 2661 Minneapolis

Architect Designs Signboard House



When an architect and an advertiser work together on an outdoor advertising display, something very special is bound to result. Proof of that statement is the attractive outdoor advertising unit placed on a busy Minneapolis traffic artery by the B. F. Nelson Manufacturing Company.

What the advertiser wanted was a display drawing attention to the part played by the modern roof in a home's color scheme. To display a roof effectively, of course, requires a house under it, so Louis Bersback, Minneapolis architect, was called in to design one. Mr. Bersback responded with plans for a 5/6 scale model home that met every requirement. Tied into a streamlined, painted signboard, this appealing little house with its opal blend Nelson Master Roof doubles the effectiveness of the sales message.

With color the keynote of the display, the architect specified white side-walls and trim, a wine red door and gray blue shutters. Flowered curtains with a light yellow background were chosen for the windows.

Everything possible was done to increase realism. The site was carefully landscaped. In summer, lawn and flowers are cared for daily. In winter, the walk is kept properly shoveled. At night, a lighted lamp in the front window and a porch light beside the door lend homelike warmth.

So successful has been the original unit, thanks in large part to the attractively architect-designed model home, that the B. F. Nelson Company recently erected a duplicate display in St. Paul. Minneapolis location is Hennepin Avenue between Summit and Lincoln; St. Paul location—West 7th Street at Forbes.

SOMETHING WORTH READING AND KNOWING ABOUT NAILS

Three principal factors determine the efficiency of a nailed joint, namely:

- The wood.
- The nail.
- The conditions of use.

The harder woods hold nails better than the softer woods, although they are more difficult to nail and have a greater tendency to split. Wood that is green or not thoroughly dry may lose most of its nail-holding power when it dries after the nails are driven. This is one of the reasons why green wood is not recommended for building construction. The resistance to withdrawal is higher when nails are driven into the side grain than when driven into the end grain of the wood, and therefore side grain nailing is always to be preferred.

NORTHWEST ARCHITECT

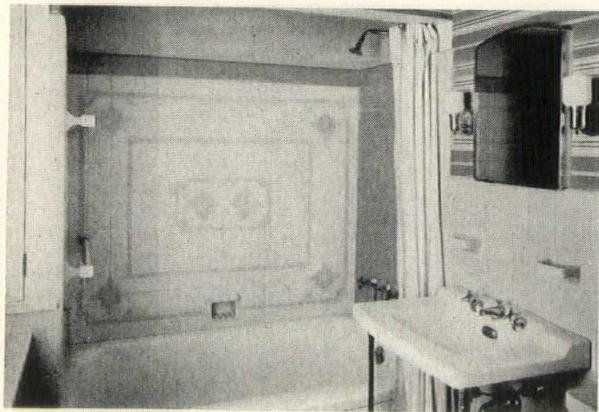
The common wire nail has attained by far the widest use of the many types developed. By varying the number and size, the kind of point, and the type of surface, the common nail can be adapted to cover a wide range both of every-day and of exacting uses.

The resistance to withdrawal of common nails increases directly with the depth to which driven and increases almost directly with the diameter or surface area; that is, if the diameter of a common nail is doubled, the holding power is doubled, provided, of course, that splitting of the wood does not occur. The *resistance of nails to side loads* (lateral resistance) *increases nearly 1½ times as fast as the diameter*, that is, if the diameter of a common nail is doubled, the lateral resistance is nearly three times as great. The development of the maximum lateral resistance of a nail requires a depth of penetration into the member receiving the point of from not less than one-half the length of the nail for dense hardwoods to two-thirds the length of the nail for the softer woods.

The softer woods are often preferred for construction purposes because of their greater ease of nailing—the lack of nail-holding power being compensated for by the use of additional or larger nails. For example, in tests of diagonally sheathed panels an *increase of about 40 per cent in strength* (resistance to racking forces) was obtained by *nailing with three, rather than two 8d nails at each stud crossing*. In tests of wall panels made of a soft pine, a *30 per cent increase in stiffness and 40 per cent increase in strength* was obtained with horizontal sheathing by *increasing the size of nails from 8d to 10d*.

The nail-holding power of wood can be increased by changes in the surface condition of the nail. One of

(Continued on Page 20)



Architects recognize **THREE ESSENTIALS** for PERFECT TILE INSTALLATIONS

FIRST

The quality of material

SECOND

Proper selection of color and design to specifications

THIRD

and most important — Skilled Installation

It is our policy to adhere strictly to

ALL THREE

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CARNEY
BUILDING
PRODUCTS



Power Plant,
Hamline University,
St. Paul

Contractor: J. S. Sweitzer & Son, St. Paul
Architect: Slifer & Cone, St. Paul
Ready-Mix Concrete: Shiely Co., St. Paul

CARNEY CEMENT FOR MASONRY, one of the Carney building products used in the Hamline power plant, has proven its merit in 58 years of use. Carney Cement for Masonry offers easy workability, high water retaining capacity, plasticity, accurate set, and unusual strength.

Carney Cement for Masonry has been approved for work in all government departments.

CARNEY NATURAL CEMENT for blended concrete was also used in the Hamline power plant. Carney Natural Cement, when

added to portland in the ratio of 1 to 4, produces a tougher, more plastic, frost-resisting concrete.

Its superior workability features tend to reduce bleeding, segregation of the aggregates, and honeycombing in the walls.

Write the Carney Company for further information on Carney Cement for Masonry and Carney Natural Cement.

CARNEY
BUILDING
PRODUCTS

Carney Cement for Masonry—Carney Natural Cement for blended concrete—Carney Rockwool for Insulation—Industrial Insulation—Insulation Cement—Cord Rock—Rip Rap—Crushed Stone.

THE CARNEY COMPANY

MANKATO, MINNESOTA

St. Paul, Chicago, Des Moines, Omaha, Fargo,
St. Louis, Detroit, Milwaukee

PRODUCERS' COUNCIL CLUB HOST TO ARCHITECTS



Guests at Hotel Radisson Dinner Told of Growing Influence of Modern Alloys in Architecture

★ The growing influence of modern alloys such as Monel and other high nickel alloys upon architecture was traced at a dinner meeting of the Producers' Council Club of Minnesota in the Gold Room of the Hotel Radisson, Minneapolis, on Tuesday, January 21, by Frank A. Sansom of New York. Mr. Sansom, representative of The International Nickel Company in the national Producers' Council Club, Washington, D. C., also outlined the purposes of the organization.

More than one hundred members and guests attended the dinner — including over 80 architects from the Twin Cities Area. J. J. Harris, Vice President of the Minnesota Club presided in the absence of President D. S. Knapp.

In outlining the purposes of the organization, Mr. Sansom pointed out the influence of Producers' Council in improving ethics, furnishing architects with better

information on building products, and aiding national defense.

In connection with his talk on modern metals, Mr. Sansom showed sound motion pictures dealing with the mining, smelting, refining, and production of Monel in commercial forms. He also told of the discovery of nickel by Saxon miners in the middle ages — a discovery which gave nickel its name, "Kupfernickel," or "old Nick's copper," was their term for some ore which they accused the devil of having bewitched because it would not yield to their accustomed method of smelting and refining. It was not for several hundred years that the element in the ore which had bothered these ancient miners was identified as nickel.

Mr. Sansom also told of the discovery of nickel bearing ores in the Sudbury district of Ontario in the last quarter of the 19th Century. He outlined how the

INDUSTRY LEADS DEFENSE PROGRAM

The Twenty-Second Annual Convention of the Associated General Contractors of America, just concluded last month at Houston, Texas, was characterized by addresses from ranking officials of the Army and Navy Departments and the Office of Production Management.

While these national leaders did not minimize difficulties attending the construction phase of the defense work because of inadequate planning and unfortunate weather conditions, the highest compliments were paid the construction industry for the way in which it had carried forward the initial defense effort of the program.

Sharing in these compliments were not only the general contractors to whom the remarks were specifically addressed, but also included were architects, engineers, sub-contractors and material suppliers, all of whom have contributed to the outstanding record of the construction industry.

The industry may take justifiable pride in the record it is making and will bend every effort to continue to make.

(This and our subsequent advertisements in the Northwest Architect are sponsored by the following members of the Building Contractors' Division, ASSOCIATED GENERAL CONTRACTORS OF MINNESOTA)

Adams Construction Co.
Anderberg, O. R. Co.
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Steenberg, Paul Constr. Co.
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SKILL



INTEGRITY

RESPONSIBILITY

metal in its unalloyed and alloyed forms enters the daily life of everyone in a great many ways such as in the preparation of foods, drugs and cosmetics, in the equipment used for the processing and dyeing of clothing, in automobiles and other forms of transportation.

Specifically, Mr. Sansom traced the growing use of Monel—an alloy containing approximately $\frac{2}{3}$ nickel and $\frac{1}{3}$ copper, as well as an engineering material. He described and illustrated the use of Monel for various purposes such as Monel roofing on the Pennsylvania Railroad Station, New York, the New York Metropolitan Museum, and New York's Aquarium, and also in such items of household equipment as Monel hot water tanks. Actual samples of Monel equipment were displayed. These included a kettle used by Admiral Byrd for melting snow in the Antarctic, a pickle crate used for the cleaning or pickling of other metals in hot acid solutions, and such items as toilet flush valves, water meter parts and the like.

Charles Parkhouse, domestic equipment engineer for Excel Metal Cabinet Company of New York, was another speaker. He told of the development of the modern kitchen with steel cabinets, Monel sinks, and Monel-topped ranges. Several of these units on display attracted particular attention among the architects.

Speaking of Books

TAKING THE MYSTERY OUT OF BUILDERS' HARDWARE, by Adon H. Brownell, 220 pages, 606 illustrations. Published by "Hardware Age," 100 East 42 St., New York, N. Y. (\$3.00)

For the first time in hardware history there appears a book dealing with the technic of properly specifying, selling, and installing builders' hardware. Written by a man with more than 30 years' experience in selling, buying, and manufacturing builders' hardware, it fills a definite need in a field which forms the basis of every good hardware business.

Wisely dividing his material into three distinct sections—elementary, intermediate, and advanced builders' hardware—the author gives clear, practical instructions on equipping all types of buildings, from the modest average home to schools, hotels, office buildings, hospitals, apartments, churches, and even airports.

In addition to the usually complete discussion of how to correctly specify such things as mortise locks and door stops, the author enlarges the scope of his subject to include many worthwhile ideas and suggestions for the average hardware man, architect, and contractor. He shows, for instance, how to cultivate the property owner for replacement and "follow-up" sales, how to read blue prints and specify jobs, how to set up a model builders' hardware department, and how to actually bring prospects into the store.

Supplementing the easy-to-read text are more than 600 fine illustrations and diagrams—plus nine valuable comparative charts which show how to match identical hardware items made by different manufacturers. Also included is a working blue print, size 25 x 11½ inches with which to work throughout the course, and a helpful glossary of more than 300 technical builders' hardware terms.

Intended either as a text for the beginner or a handy reference volume for the expert, this book is sure to meet with enthusiastic welcome in the trade.

About the author: Adon H. Brownell is numbered among the most outstanding builders' hardware men in the country. In addition to 30 years' actual experience in this basic hardware line, he has conducted many schools of instruction to equip young men for a career in builders' hardware. From this rich background, Mr. Brownell has drawn the wealth of helpful material which he presents in this book.

JANUARY-FEBRUARY, 1941

Actual Cost Figures Prove

Why
Architects
Favor
GAS
HEAT



IN Minneapolis today, 95 per cent of all new homes with automatic heat enjoy Gas Heat.

Full information on gas heat equipment and operating costs is available, without charge, to architects and engineers. Simply phone our new House Division.

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Nu-Shelf Improved"

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Laundry Tray

- With Integral Shelf and Built in Wash Board
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FURNACES • AIR CONDITIONERS

OIL — GAS or COAL — burning

A Correct Size for Any Home

WATERBURY meets individual home requirements, personal preferences and cost limitations. Correct engineering and quality construction assure greatest efficiency, economy and comfort.

The outstanding performance of WATERBURY Furnaces and Air Conditioners has been demonstrated in all climates—in all sections of the country. See Sweets Catalog File.

Factory engineering service to architects without charge. Dealers throughout the Northwest.



For SMALL Homes—2300
Oil-fired Air Conditioner

The **WATERMAN-
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Manufacturers of
**Artistic Face Brick, Common Brick and
Structural Building Tile for
Every Purpose**

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**General Sales Offices
906 Foshay Tower
Minneapolis, Minnesota**

If It's New IT'S NEWS



A new "Saferized" flame-proof process for treating the Redwood bark fibres from which Palco Wool insulation is made has been announced by The Pacific Lumber Company, San Francisco. The new process, according to Edric E. Brown, manager of the insulation division, augments the inherent fire-resistant qualities of the bark of the redwoods, which have withstood the ravages of fire and nature for centuries, to become the world's oldest living things. It is expected to meet the most exacting requirements for flame-proof materials.

Blow-torch tests to which the new Saferized Palco Wool has been subjected show most satisfactory results, Brown stated. "When a sample is held in the hand and the flame blown directly into it, no fire results when the torch is removed."

That the new Saferized process will prove a definitely favorable factor in increasing the sales of Palco Wool is indicated by the enthusiastic reaction from dealers and distributors throughout the nation, Brown pointed out. "One of our distributors has already placed commitments for 1941 based on an anticipated volume double that which he sold in 1940."

Palco Wool was first generally introduced to the trade a decade ago when research engineers of The Pacific Lumber Company perfected a process for removing the wiry resilient fibres of redwood bark from the solids in which nature had imbedded them. Its success since that time has been one of the romances of American industry. First adopted by the cold storage industry, its use has spread rapidly to the domestic field, one community alone, the Twin Cities, having installed it in over 300 houses during the past year according to reports from dealers.

The installation of Palco Wool as a fill insulation has been greatly facilitated by the recent developments in mechanical application. A new blowing machine has been perfected which transports the material from the point of unloading to the point of application and at the same time automatically fluffs it uniformly for maximum efficiency and economical installation. Where the blower-applicator is not used, an electric fluffing machine is available for expanding the material from compressed bales for uniform application.

Especially designed machinery and equipment have been installed in The Pacific Lumber Company plant at Scotia, California, where all insulation now being shipped is subjected to the Saferized process as a regular step in its manufacture.

NORTHWEST ARCHITECT

NEW DRAFTING MACHINE

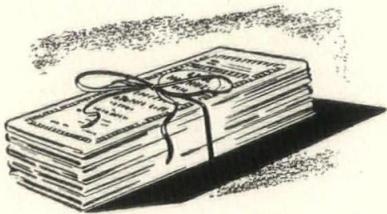
The Drafto Company, 216 Walnut Street, Cochran, Pa., announces production of a new, low-priced drafting machine, designated as the "Master-Drafto" Model No. 60, which takes a maximum size sheet 24 x 36 inches.

Light in weight for ease of operation, the Master-Drafto is solidly built to stand hard use. The arms are constructed of seamless steel tubing, fitted with solid bearings. The scale blades are designed so that any scale, either boxwood or aluminum, can be inserted. These scales will fit tightly into the blades without deviating from the necessary 90 degree angle. For center counting the machine on a drafting board or table, a cast aluminum bracket is used, containing a screw for leveling the scales parallel to the drafting surface.

POR-CE-LOK SHEETS

Por-Ce-Lok sheets, a product of Porcelain Enamel Steels, Inc., Cleveland, Ohio, is a new product made available to architects and builders of industrial structures. Joel F. Jackson is Northwest distributor.

Por-Ce-Lok has a new type of lock joint recently developed insuring weather tightness without danger of chipped enamel. The new sheets eliminate the need for either interior or exterior painting, as they come in white porcelain enamel on one side and in a limited range of colors on the other side. It comes in sheets 24 inches in width after interlocking and in standard lengths ranging from 5 to 10 feet.



Builders Show Opens March 15

Several thousand northwest home owners and prospective home builders will turn their attention to home modernization and construction during the tenth annual Builders show, Home Beautiful Exposition and Flower show in the Minneapolis auditorium, March 15 to 22.

More than 150 exhibitors will display new and improved lines in building materials and home appliances with many of the appliances making their 1941 debut at the show.

In the lower exhibition hall, 50,000 blooming flowers will be arranged in an acre of picturesque settings ranging from rock gardens and home landscaping to wedding scenes, rustic bridges and woodland scenes.

Scores of features, including a twice daily stage show, horticultural lectures, bathing beauty contest, door prizes and miniature models of new homes, will be presented.

Members of the Minneapolis Builders Exchange, comprised of 230 building material and construction firms, head up the show committee of which H. H. Cory is manager.

JANUARY-FEBRUARY, 1941

Balsam-Wool INSULATION



SEALED

Tested in the most rigorous of climates—proved by performance in 250,000 homes—Balsam-Wool Sealed Insulation, applied by the Famous Minnesota System—is the SURE way to insulate. Write for information about the DOUBLE advantages which Balsam-Wool provides.

Nu-Wood Kolor-Fast

INSULATING INTERIOR FINISH

Exclusive style and beauty—harmonious FADE-PROOF colors—plus insulating and acoustical value—put Nu-Wood Kolor-Fast Insulating Interior Finish in a class by itself. Write for full information—and ask about Sta-Lite, a new reflective board with 76% light reflection.

WOOD CONVERSION COMPANY

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Davidson Facilities
offer a latitude which enables the architect to design freely in a wide range of sizes, shapes and colors.

Davidson Equipment
permits the manufacture of building parts that cannot be produced satisfactorily or promptly by ordinary methods.

Davidson offers the service of a trained, experienced architectural and engineering staff to assist in obtaining unusual effects and exclusive designs at minimum cost. Write today for a copy of the Davidson book on porcelain enamel.

DAVIDSON ENAMEL PRODUCTS, INC.
Lima, Ohio

JOEL F. JACKSON

Northwest Representative
803 PENCE BUILDING, MINNEAPOLIS, MINN.

News of MINNESOTA ASS'N OF ARCHITECTS

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Standing Committees for 1941

The following committees have been appointed by President Tusler to serve the Association during the year. Committee Chairmen and members alike share the responsibility of seeing to it that their committees meet and function.

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John Jager	A. O. Larson

BOARD OF DIRECTORS MEETING

FEBRUARY 28

★★ The Board of Directors of Minnesota Association of Architects held its regular meeting at the Curtis Hotel February 28.

Committee Reports Indicate Progress

Reports of the standing committee submitted by the chairman indicated that committee chairmen are active and that the committees' work so far and plans for the future will bring a reaction on matters vital to the interests of every architect in the state.

Duluth for 1941 Convention

The Duluth Society of Architects invited the association to hold its annual convention in Duluth and the invitation was accepted by the board. The dates of August 22 and 23 were set. General convention plans were discussed and will be reported on more fully in the next issue.

Reports by our attorney on certain matters before the board of registration were discussed and action taken. In the next issue of NORTHWEST ARCHITECT complete reports of the various standing committees and their work to date will be published which will show the membership what progress is being made.

★★ On October 12, 1939, the Board of Directors of the Minnesota Association of Architects approved a proposed Code of Practice in reference to Bidding and General Procedure on Contracts. On March 8, 1940, the Directors of the Associated General Contractors of Minnesota likewise approved the Code.

Pursuant to these approvals the Code was published by the architects in NORTHWEST ARCHITECT September-October 1939, Vol. IV Number 1, and by the Contractors in pamphlet form and both given wide distribution.

There have been a number of departures from this mutually adopted code and all architects are asked to study this code upon which a lot of study and thought was given. It is sincerely believed that adherence to all sections will be to the best interests of the industry.

DEFINITION OF THE PRACTICE OF ARCHITECTURE

★★ The practice of architecture includes any professional services such as consultation, investigation, planning, design, or responsible supervision of construction, alterations, repair or other building operation in connection with any public or private building structures, equipment, or projects wherein the safeguarding of life, health or property is concerned, where such professional service requires the application of the principles of architectural design and construction, and where the consultant charges for knowledge and skill and *has no prejudicial interest in the project either as owner or contractor or producer or seller of materials.*

The SHARP Pencil

Following is an open letter sent to the Governors of the 48 States by Kenneth Reid, Editor of Pencil Points.

Send in your
"Sharp Pencil"

To His Excellency, the Governor of _____ :-

As chief executive officer of a great commonwealth, responsible for the welfare of its people, you must inevitably have been taking thought of the possibility, however remote, of air attack by a foreign foe. We all hope that such attack may never come, yet so long as there is any chance that one year, two years, five years hence there may develop such an emergency, it would seem prudent to be prepared to handle it without having to improvise methods on the spur of the moment.

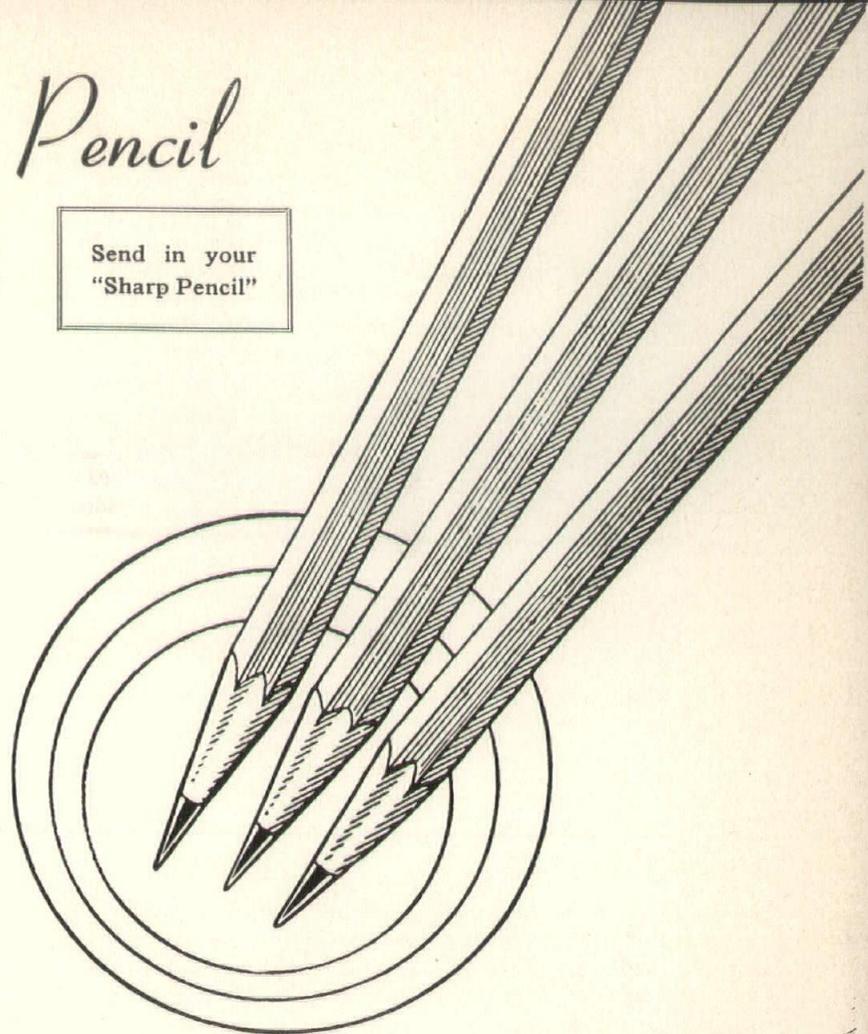
England's experience has taught that it takes much time and careful planning beforehand to prepare for the efficient organization of the civil population for its own protection. For several years prior to the outbreak of war, Air Raid Precautions were the subject of active study and work by the technical planning professions—architects, engineers, city and regional planners, landscape architects, etc. Their work was hampered and made less effective than it should have been because of the reluctance and slowness of some public officials to back them up and act upon their recommendations. As a result, there was considerable unnecessary loss of life when the attacks did begin. We cannot afford to have that happen here.

We urge you, therefore, to recognize and encourage the efforts of these professional men who are organizing committees for civilian protection in various cities of our land and voluntarily assuming the responsibility of accumulating data and making plans. Their committees should be attached to your own advisory staffs and provided with funds for carrying out the surveys and studies needed as a basis for intelligent and efficient action when, as, and if the time should ever come. The expenditure of public funds for this purpose will not only pay dividends in public safety in the event of attack but will provide much highly useful planning data directly applicable to the future improvement of the human environment in our land even if no emergency ever arises. To fail to undertake such expenditure now is to run an unjustifiable risk.

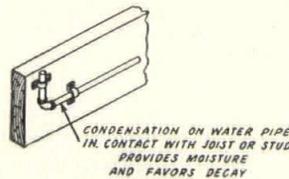
KENNETH REID
Editor, Pencil Points

Thank you Mr. Editor.

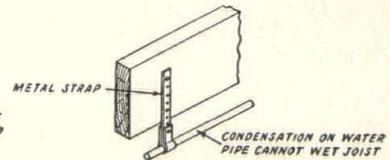
A good wife is a woman who stands by her architect husband in troubles she wouldn't have had if she hadn't married him.



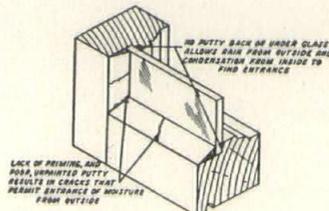
POOR PRACTICE



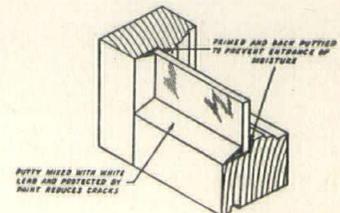
GOOD PRACTICE



POOR PRACTICE



GOOD PRACTICE





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**SOMETHING WORTH READING AND
KNOWING ABOUT NAILS**

(Continued from Page 13)

the common methods of surface treatment is the so-called "cement coating," which, if properly applied, may double the resistance to withdrawal in the softer woods, the increase dropping off for the denser woods, like hard maple, birch, or oak, to no advantage over the plain nail. All cement-coated nails on the market are not subjected to the same treatment, so that nails may sometimes be obtained that will show only a slight initial advantage over the plain nail. The increase in holding power of cement-coated nails is not permanent, dropping off about one-half after a month or so for the softer woods. Because boxes are usually built for short-time service, cement-coated nails have been used extensively in their construction.

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Sometimes in nailing it is found that the wood splits with the ordinary sharp-pointed nail. One way of preventing splitting is to use blunt-pointed nails. Blunt-pointed wire nails may be obtained on the market, or if only a small quantity is needed, the points of common nails can be blunted, a handful at a time, on a grindstone or emery wheel. While blunt-pointed nails have a smaller tendency to split wood than do sharp-pointed nails, too much blunting results in a loss of holding power. Another way to reduce splitting is to use nails of smaller diameter, increasing the number, if necessary, to give the required strength. For special purposes, holes may be bored that are of slightly smaller diameter than that of the nail to be used.

When used under conditions favorable to corrosion, a nail of special material or coating is desirable. One of the most common types is the zinc-coated nail.

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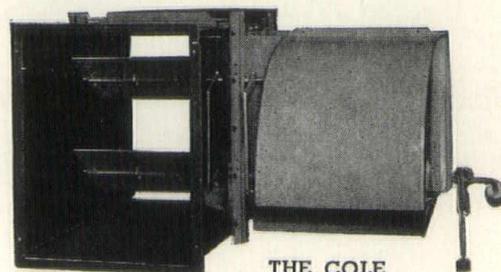
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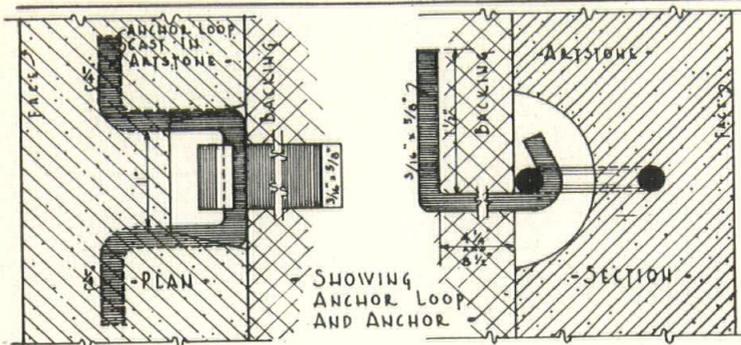


FIGURE 1

Showing most common application for anchoring Artstone in back at any desired spacing or location. Similar provisions are ordinarily made on top of all larger Artstone to serve for hoisting and setting loops. Other means of anchoring are resorted to meeting all requirements of any other or special conditions. Galvanized anchor loops shown are cast in as required. Standard design galvanized anchors (as shown) are carried in stock and can be quoted and shipped with the Artstone.

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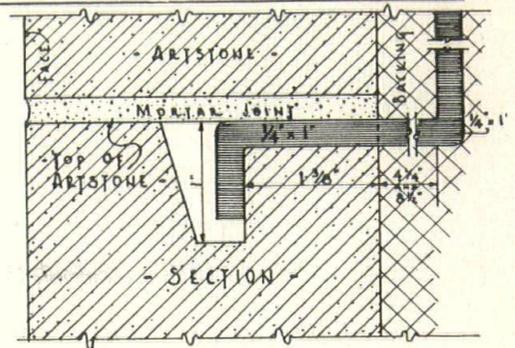


FIGURE 2

Showing most common application for anchoring Artstone at the top. Other special anchoring provisions are always made to best meet requirements. Galvanized anchors of design shown are carried in stock and can be quoted and shipped with the Artstone. All anchors are galvanized after rendering. All larger size Artstone are provided with counter-sunk loops for hoisting and setting purposes.

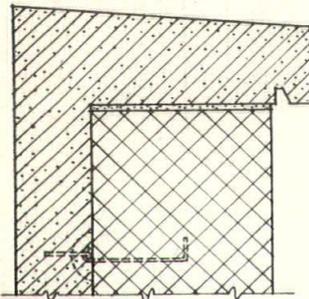


FIGURE 3

Simple means in common use with our Artstone coping for forming leak-proof horizontal lap joint.

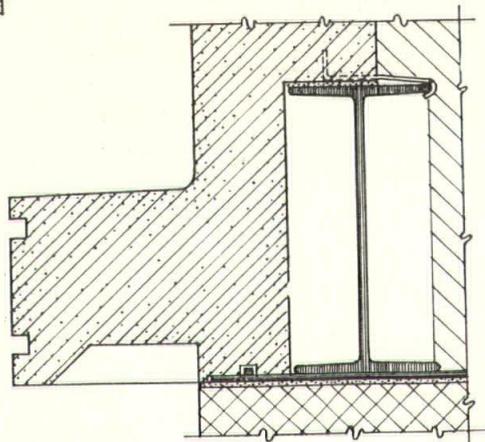


FIGURE 4

Canopy and awning bar formed in one with ashlar slab for store fronts and otherwise comes in our ordinary daily run of Artstone work.

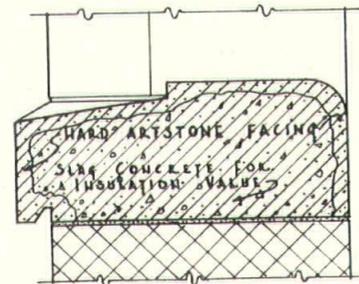


FIGURE 5

Combination sill and stool, is available made of a crushed slag aggregate to give insulation value, it is hard Artstone surfaced in finish and color to match joining work and to meet required service.

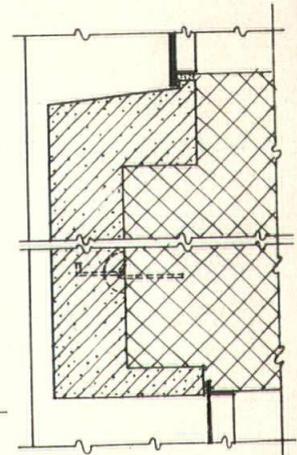


FIGURE 6

Self-supporting one-piece spandrel with window sill and head comes under the ordinary daily run of our Artstone production.

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