

OPPORTUNITIES IN REMODELLING

EVERYWHERE are innumerable buildings that should be remodelled. Either the growth of the city has changed the character of the neighborhood to such an extent that these buildings should be remodelled to serve a purpose in keeping with the new character of the section, or the ravages of time and the changes in taste in design have left them as unattractive and unprofitable relics of a by-gone day. Too often such buildings are carried along by their owners without adequate profit and allowed to fall gradually to pieces when they might be made suitable to present day needs and attractive with a comparatively small outlay. The increased revenue from the property would soon reimburse the owner.

It will pay the architects of this country to keep their eyes open for such opportunities as they go about their own towns. It will also pay them to devote special attention to the means of remodelling buildings. Many modern building materials are especially applicable to alteration work, as, for instance, the possibilities that lie in the overcoating of old clap-boarded structures with stucco having metal reinforcement, and the laying of new roofs over old ones.

The matter goes further than this, however, and includes the re-planning of the interior of buildings to fit them for new uses and the installation of new fixtures, hardware, flooring, etc.

The alteration of buildings sometimes is radical. For instance, the Knickerbocker Hotel at Broadway and Forty-second Street, New York, was turned into an office building some years ago. The Manhattan Hotel, also on Forty-second Street, was converted into an office building with a bank on the ground floor. At the present time the work of altering a church is under way at Seventy-first Street and Broadway, New York. The entrance lobby and other projecting portions of the front have been removed and, in their place and on the ground that was formerly a small lawn in front of the church, an office building has been erected and is nearing completion. Apparently it is the intention to make the entrance to the church through what would correspond to one of the transepts of a larger church. An existing door at the side street opens on the street. Several of the most prominent hotels are undergoing alterations that will convert the lower story in each case into stores to be rented.

The need for new store fronts is one of the most fruitful sources of alteration work. Some stores need the kind of show windows that present an unbroken surface of glass, some need deep show windows between which the entrance to the store extends for a considerable distance. Stores selling ready-to-wear clothing find this type of window especially profitable. Other stores which now have windows of single sheets of plate glass should have windows cut into panes of moderate size by heavy leading or metal muntins, in quaint effect, such as those adopted by an exclusive shop for men's hats on Fifth Avenue.

Some stores need as much clear glass as possible, others should have the effect of old time English shop windows. It is a question for the architect to study. Restaurants and tea rooms that lack atmosphere could do more and better business in some cases, depending upon the clientele they are prepared to serve, if they were decorated effectively in an architectural way. There is a lunch room in one of the smaller cities near New York that has a remarkably well designed enclosure of glass and wood of the old English type just inside the entrance door and well treated windows that give distinction to the place. The cost was evidently no greater than a commonplace treatment and the effect upon the business is undoubtedly excellent.

There is many a house that is depressing and unsightly when it might easily be made cheerful and attractive by remodelling at a moderate cost. Usually the really old houses should be left as they are, or carefully restored to their original condition. But there are many buildings that belong to that unfortunate period in which taste was at a low ebb and they need remodelling for the sake of appearance if for no other reason. The old New York brown stone front houses are gradually giving way before a general remodelling into homes of modern appearance and equipment and small apartments.

There is plenty of work of this kind for the architect to do in the suburbs and country. In an article on "Alteration Work," in this issue of PENCIL POINTS, the method of converting a former country residence into an up to date fraternity house is used as an example. The way in which the architects went about their problem in this particular case is justified by the results.

PENCIL POINTS



*Drawn for "Pencil Points" by Harry C. Wilkinson, Harkness Memorial, Yale University.
James Gamble Rogers, Architect.*

SILHOUETTES OF AMERICAN DESIGNERS AND DRAFTSMEN, I

HARRY C. WILKINSON

In the series of articles entitled "Master Draftsmen," Mr. Francis Swales has written of those eminent architects and artists whose success was founded on their ability to draw. In this new series it is our intention to present the work of artists of ability who from choice or because of circumstances have specialized in one or another of the arts auxiliary to architecture.—Ed.

MANY successful men who have had all the advantages afforded by an education in the best schools seem to consider this training unimportant. They feel that their success is due to other things—application and perseverance in their work. The writings of Joseph Pennell, the greatest of living pen-and-ink artists, display that feeling. Others who have succeeded without school training often regret their lack of opportunity to obtain it. Still others regard all work as schooling, and the schools of experience and adversity as the best teachers. Experience brings a man in contact with other men whose ideas he absorbs and combines with his own. The subject of this sketch is an example of the office-trained designer who has acquired his skill by self-training and office experience. His progress from office boy to one of the outstanding delineators of the day has been the result of his own serious application.

Harry C. Wilkinson, when a boy, lived about ten miles from Poland, Maine, and during the summers he worked at the Poland Spring Hotel as a bell hop. Through this employment he became acquainted with Mr. E. P. Ricker, the senior member of the firm of Hiram Ricker & Sons, the owners. This association was to serve Wilkinson later on in his work.

After a year's experience in a small architectural office in Lewiston, Maine, Wilkinson took a Civil Service examination, passed and went to Washington to become a draftsman in the office of the Supervising Architect of the U. S. Treasury Department. During his free time, principally in the evenings, he studied pen-and-ink rendering, using the portfolios of D. A. Gregg, the books of Charles D. Maginnis, Joseph Pennell and plates by Herbert Railton as guides.

He soon developed an excellent quality of line and an understanding of simplicity of composition. The opportunity came to make some perspective drawings for the Supervising Architect with the result that during the next twelve years Wilkin-

son rendered nearly all the perspectives made in that office, which in addition to Post Offices and other buildings, included the perspective drawings of the Government portions of the St. Louis Exposition, the Portland, Oregon, Exposition, and the Buffalo, N. Y., Exposition. We do not believe that it is an overstatement to say that Wilkinson's pen drawings published during the years of 1899-1911, have had an important influence upon the work of the whole present generation of draftsmen who render in pen-and-ink.

While Wilkinson was employed in the Supervising Architect's office, Mr. Ricker, of the Poland Spring Hotel, gave him the commission to design the spring house and bottling works at Poland. Wilkinson also did a new hotel and several additions to the present Poland Spring House. This work was all done while he was employed in the office of the Supervising Architect in Washington.

At about this time there was an economy streak in the Administration and Wilkinson, together with eighty other men, was laid off. This proved to be a good thing for him for he found employment as a designer and went ahead faster than if he had remained with the Supervising Architect.

Upon leaving Washington, Wilkinson came to New York and found a position as perspective draftsman in the office of Francis S. Swales, who later took him to Montreal where he spent about a year, returning to Washington for a short time. He then rejoined Mr. Swales in Canada, at



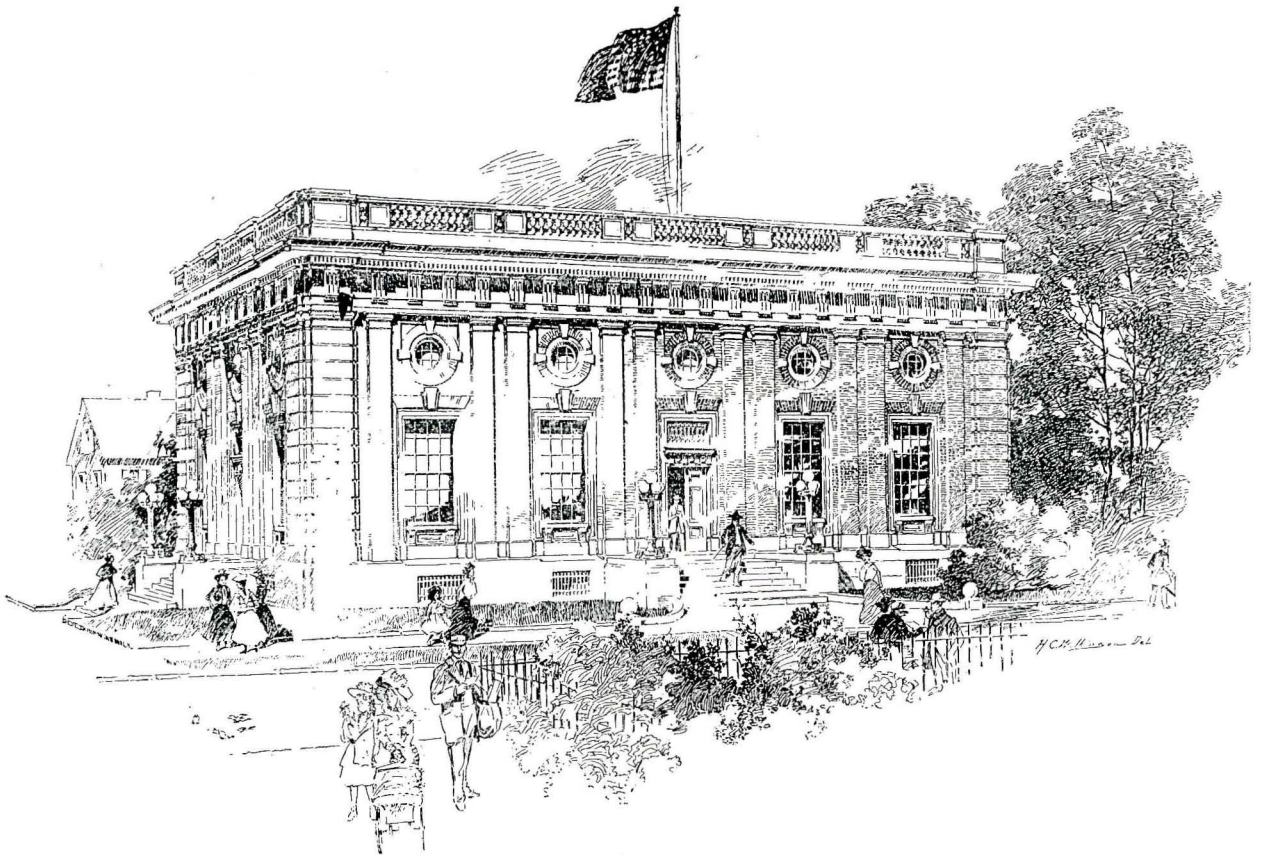
Harry C. Wilkinson

PENCIL POINTS



Drawn for "Pencil Points" by Harry C. Wilkinson, Harkness Memorial, Yale University. James Gamble Rogers, Architect. Portion of Drawing at Actual Size of the Original.

PENCIL POINTS



*Pen and Ink Drawing by Harry C. Wilkinson. U. S. Post Office, Rome, N. Y.
James Knox Taylor, Supervising Architect.*

Vancouver, B. C., where he remained three years. The work there, Wilkinson feels, was a great help to him in increasing his knowledge of architectural styles and detail.

From Vancouver he went to Toledo then to Baltimore, working a short time in each of these cities, then he returned to the city he regards as his home, Washington, and there entered the office of Clarke Waggaman where he was engaged in designing and making perspectives. He ably assisted Mr. Waggaman in the design of the unique and beautiful "St. Mark's Café". This charming bit of garden architecture attracted nation wide attention and was mentioned in Sinclair Lewis's novel "Main Street" in these words—"She took them to St. Marks for dinner. . . . She was proud to point out a Senator and explain the cleverness of the canopied garden." The high standard maintained by Mr. Waggaman gave further help and inspiration to Wilkinson. During the war, while in this office, he worked on the designs for the Navy Yard Housing. After the death of Mr. Waggaman he remained with Mr. Waggaman's partner, George N. Ray, who carried on the general practice of architecture on the same high plane as that maintained by Mr. Waggaman. At about this time Wilkinson designed the interior decorations for a theatre in his free time, using the reference works in the Congressional Library. Mr. Roberts, in charge of the

Art Department of the Library, becoming interested in Wilkinson's work and, always endeavoring to make his department of the greatest practical use to designers, invited Wilkinson to make his drawings in the Library. This he did producing several water colors of the theatre decorations there.

Wilkinson joined the staff of J. H. de Sibour where he was one of the latter's chief designers. From this association he gained still further knowledge and skill in design. During this time Mr. de Sibour often called upon Wilkinson to go upon the staging and paint the decorations directly upon the walls. An example is the beautiful Pompeian Room in the new hotel, the Lee House in Washington, where Wilkinson painted the various Pompeian figures, small birds, animal forms, etc., in oils. After about two years and a half with Mr. de Sibour, Wilkinson came to New York and joined the organization of James Gamble Rogers, by whom he is now employed.

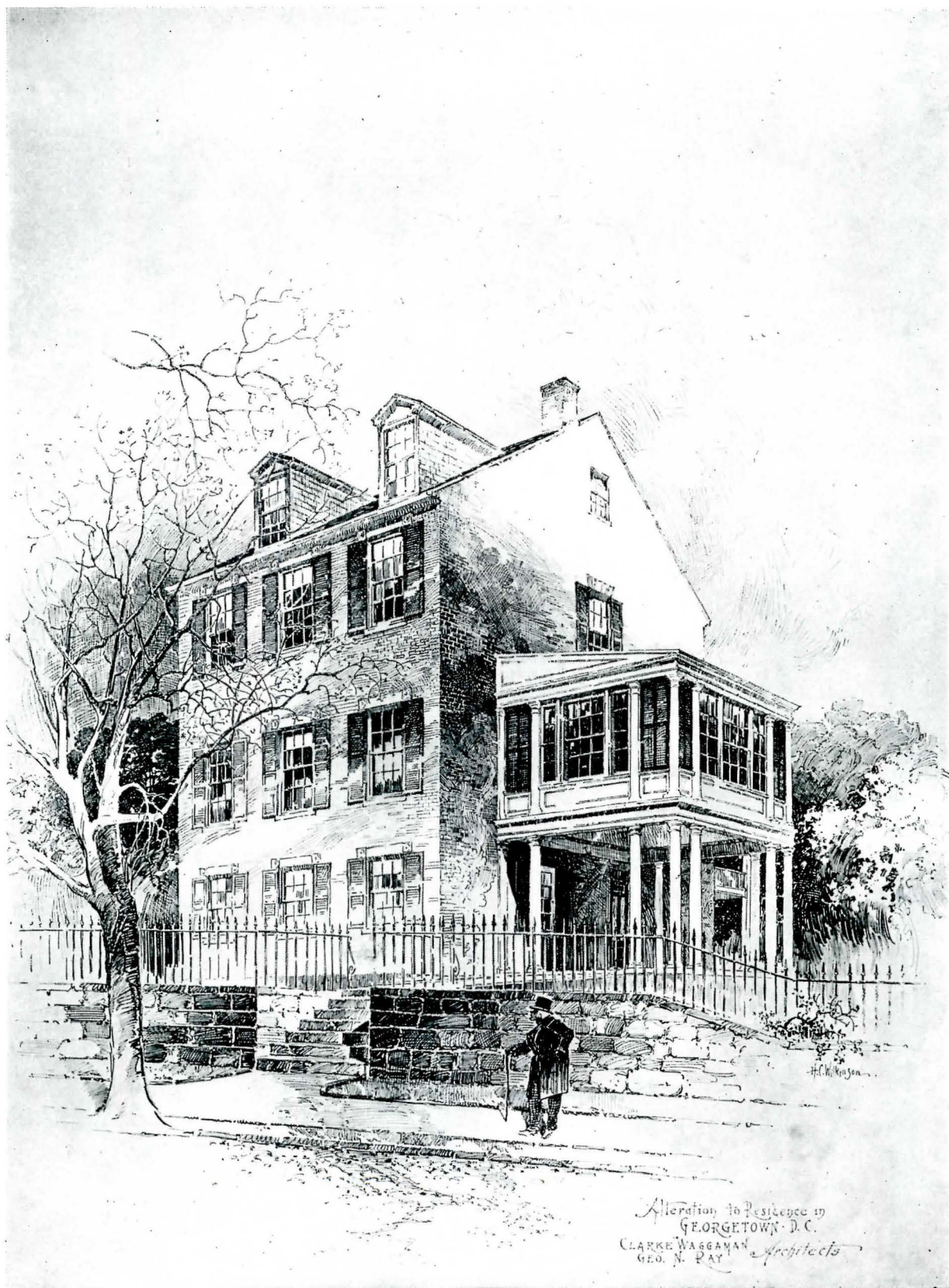
It is interesting to note the persistence with which Wilkinson has pursued his purpose. While in the first architectural office in which he worked in Lewiston, Maine, a report from the Supervising Architect's office in Washington came to the office and fell into his hands. He noted that it was profusely illustrated with drawings by Charles D.

(Continued on page 53)



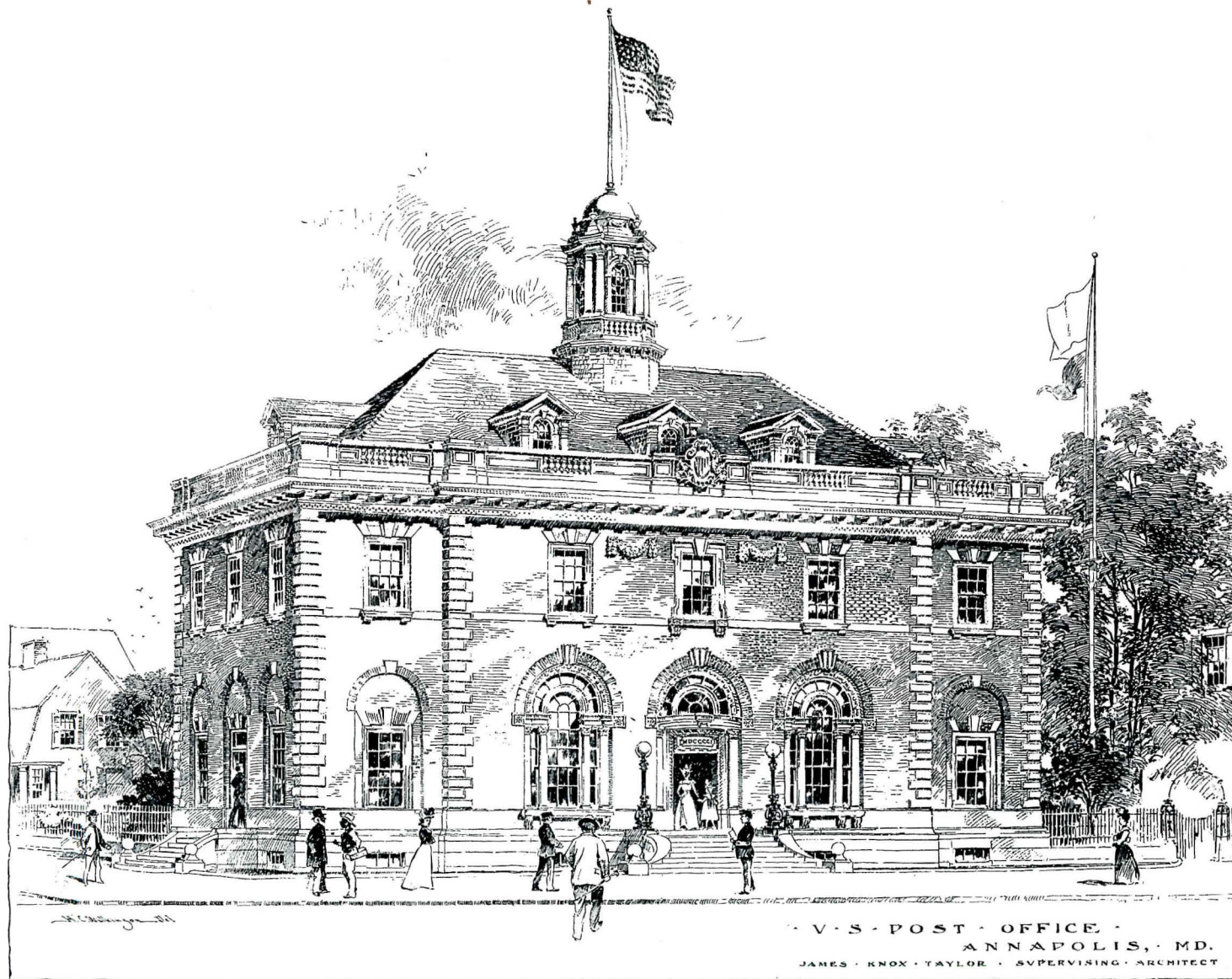
Drawing by Harry C. Wilkinson. Wilson House near Mt. Vernon, Va. Clarke Waggaman and George N. Ray, Architects.

PENCIL POINTS



Alteration to Residence in
GEORGETOWN, D. C.
CLARKE WAGGAMAN
GEO. N. PAY Architects

Drawing by Harry C. Wilkinson. Old House in Georgetown, D. C.

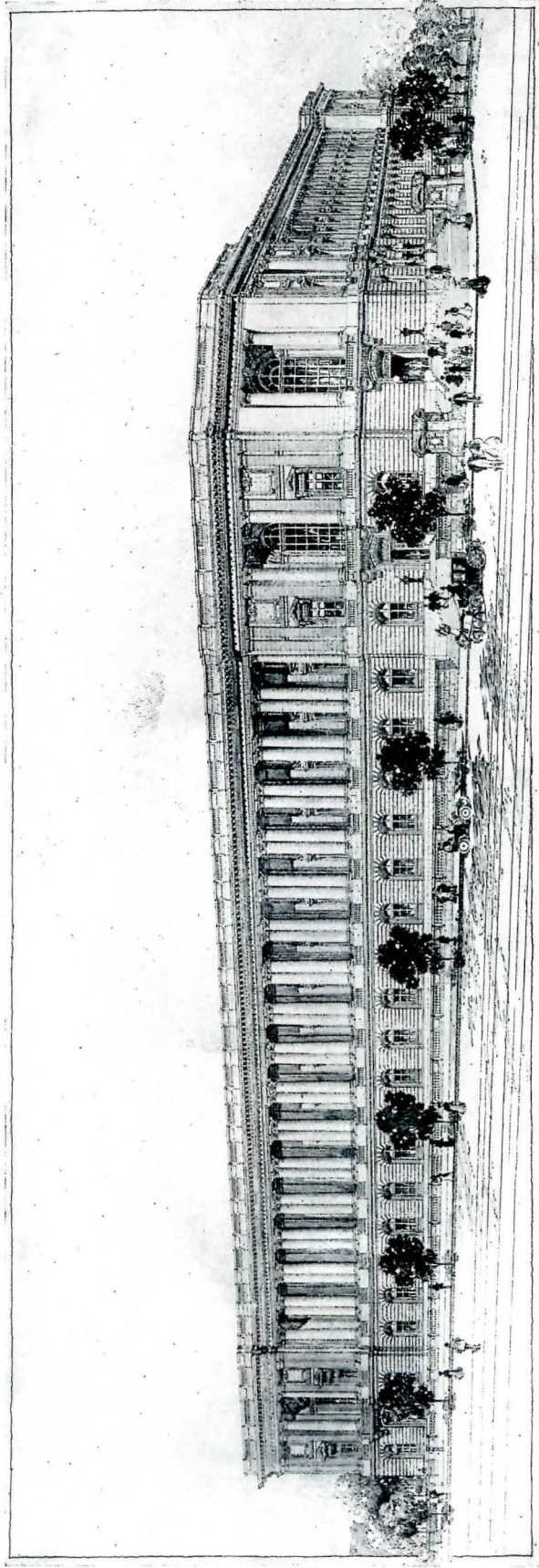


Drawing by Harry C. Wilkinson.

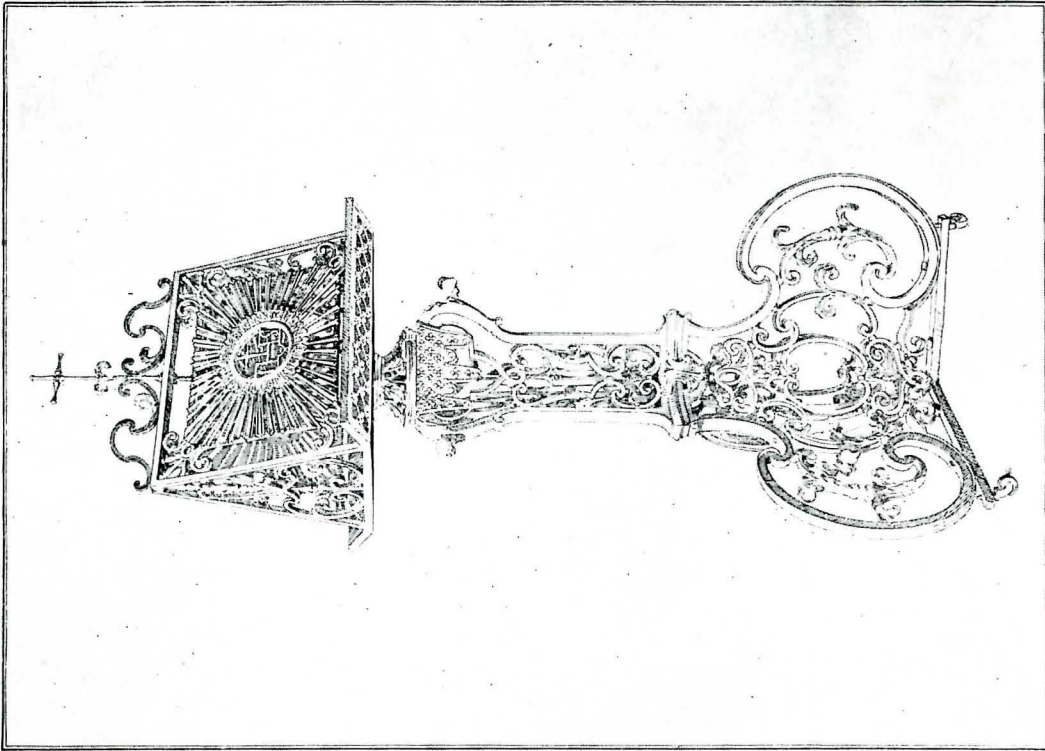
PENCIL POINTS



Drawn by Harry C. Wilkinson.

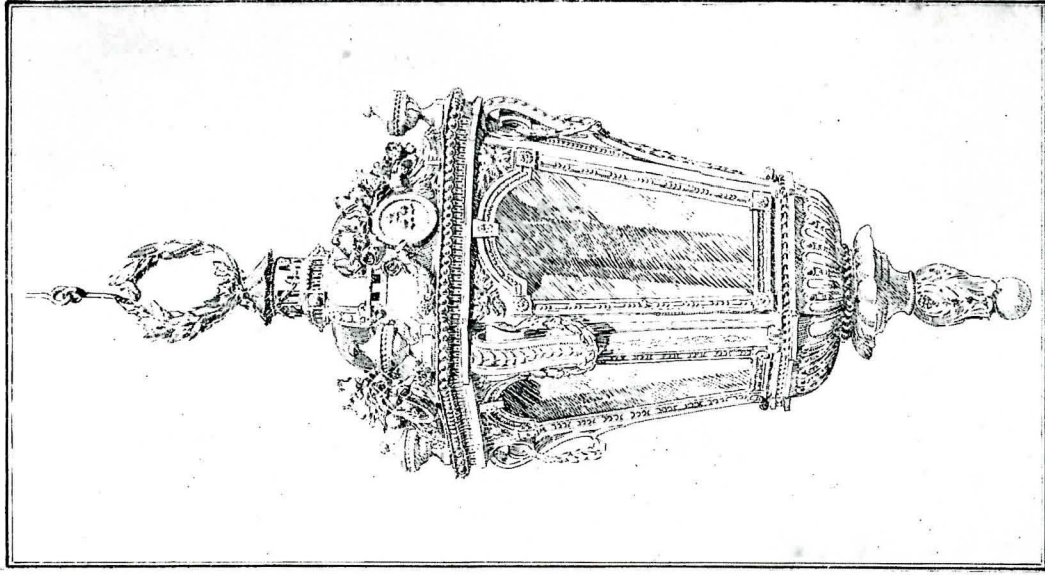


Pen and Ink Drawing by Harry C. Wilkinson, U. S. Senate Office Building, Washington, D. C.



Wrought Iron Lectern.

Drawn by Harry C. Wilkinson.



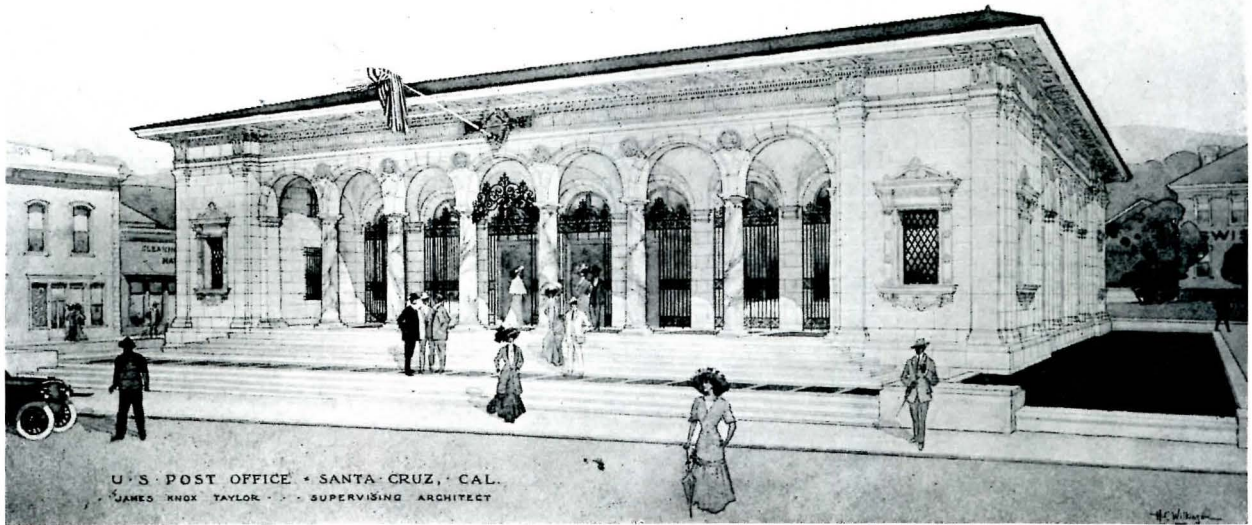
Cast and Wrought Bronze Lantern.

PENCIL POINTS



Composition Drawn for "Pencil Points" by Harry C. Wilkinson. Lee Mansion, Arlington, Va., with Sheridan Monument in Foreground and table-like Monument to L'Enfant at the Right.

PENCIL POINTS



Drawing by Harry C. Wilkinson

(Continued from page 45)

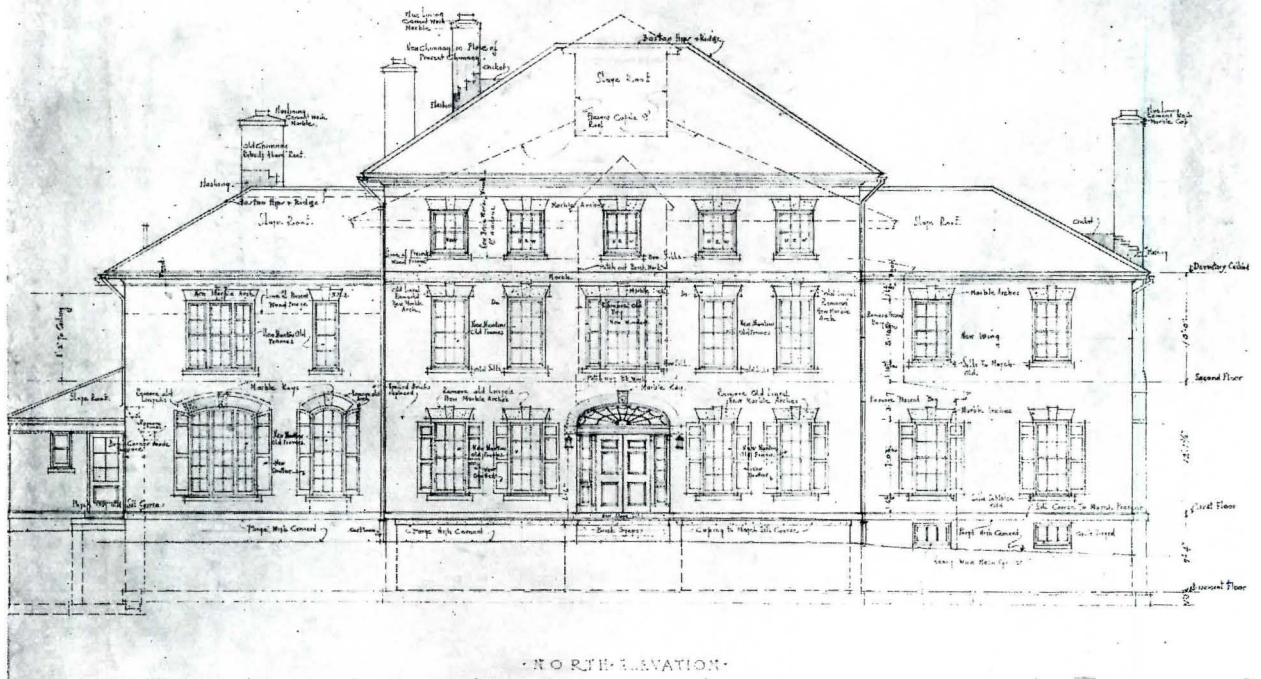
Maginnis and this gave him the idea that perhaps the Supervising Architect might be able to use a man in his office who could do pen-and-ink drawing. Therefore, he sent to Washington for the papers and when the sample examination paper came he made a point of studying to qualify himself in the subjects required. He had already begun the practice of pen-and-ink drawing, working from illustrations in the architectural magazines.

He passed the examination and went to Washington where he worked in the office of the Supervising Architect with a number of well trained designers. This association taught him much, particularly the

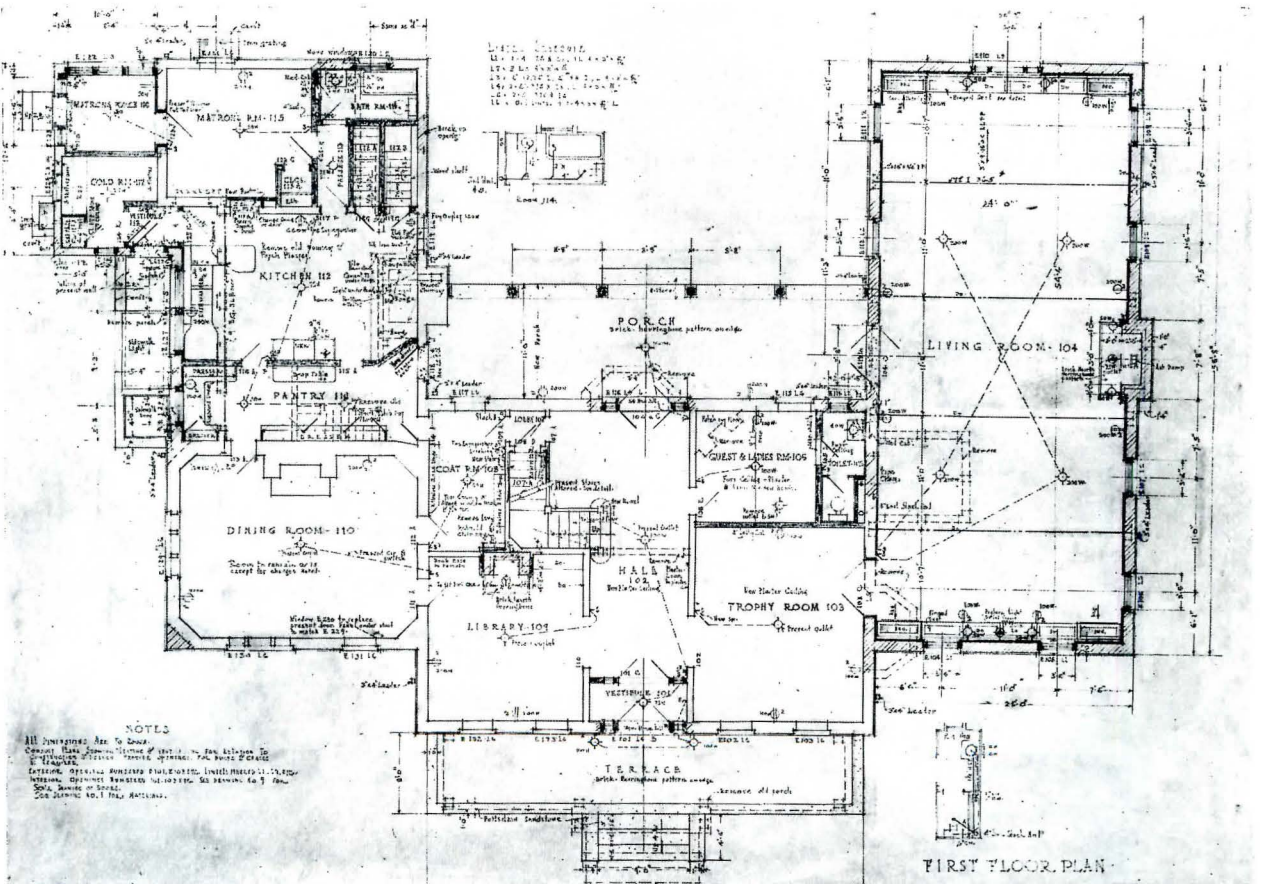
proper architectural values of projections. It is regarded by Wilkinson as the beginning of his development in design. Since he left the office of the Supervising Architect his work has been almost entirely confined to design, and he has done only occasional perspectives for the architects by whom he has been employed.

It is notable that Wilkinson has made his way from a little office in a small town to a number of the best offices in this country through office training, home study and the consistent and intelligent use of the free libraries. It is also to be noted that he showed excellent judgment in always connecting himself with architects who were themselves able designers.—E. C.

PENCIL POINTS



North Elevation



First Floor Plan

Alterations to Fraternity House for Alpha Omicron Chapter, Alpha Tau Omega Fraternity, Inc.,
Canton, N. Y. Bastow & Way, Architects.

DRAFTING ROOM PRACTICE, PART II

ALTERATION WORK

BY HAROLD D. WAY

OF THE varied types of work falling to the lot of an architect, that most full of pitfalls is the alteration job.

It is common experience to find as work progresses that too meager information was had as to the existing building and too indefinite information was imparted to the contractor by drawings and specifications. In the nature of things we cannot get rid of these inherent difficulties, but we can reduce them to a minimum, leaving only those things undetermined that come to view as work is uncovered at the job.

There are, as we all know, these two distinct yet interrelated features of our problem; that of securing complete essential data at the existing building in so far as is possible and that of proper presentation of this data to show clearly the new and the old work.

The first step is fundamentally the reverse process to preparing drawings and specifications for a new building and not nearly as pleasant. But if attacked in the spirit of doing a real job of it, the odium is for the most part dispelled.

Just how much data should be obtained for the preliminary sketch stage and how much left for the working drawing stage depends upon circumstances—including the architect's temperament in leaving things to chance and the certainty of the job going ahead. At the beginning, however, the data should be noted in such form that additional information may be easily added. The making of a drawing of a building "as is", is more than an office boy's job. It is a simple matter to make a note that the "contractor is to verify all measurements at the building" and it is necessary, but at the same time the architect should take pains to give accurate dimensions in order to avoid unpleasant surprises.

The drawing illustrated was made at the job by plotting on cross-ruled co-ordinate paper tacked down on a small light drawing board. The sketch was drawn to scale with a surprising degree of accuracy. Dimensions are, where possible, given as running dimensions, that is, they are referred to the same datum. For instance, both jambs of a window are fixed by measurements from each to the corner of the building. It is not a new or novel idea, but one not always followed.

In this way the troublesome accumulative error is avoided. The overall dimensions were taken first, the exterior walls plotted, giving the whole periphery, going completely around the building back to the starting point as a check. Minor dimensions

were then filled in, in systematic order and, wherever possible, given as running dimensions. If not so given, any deviation from the general rule should be clearly noted.

The heights should in the same way be referred to the top of the watertable, first floor level or some definite datum. Sill heights and heads of openings can then be referred to the nearest floor level.

The stone courses or brick courses, pitch of roofs or heights to ridge must be determined. The details of cornices, belt courses, sills, door and window frames and reveals, all mouldings and the like must be obtained. Location and size of leaders, size of beams and direction, size of soil lines and location are obvious items, of course. The essential thing is to get all of them and to title them or key them up to the general plans and elevations.

A survey should be insisted upon and should be complete, showing elevations or contours, location, kind and caliper of trees, presence of rock, location of old wells, level of water because of liability of causing seepage and possibility of necessitating waterproofing. Grades at the building should be checked by the architect by measurements taken to the watertable, or whatever datum the architect has selected.

A camera used with a normal and a wide angle lens is a wonderful help and saves several exasperating excursions to the site. Views taken straight on to approximate elevations, accompanied by other detail photographs of both exterior and interior, are most useful. In the work illustrated a goodly number of photographs were taken of the interior and exterior. They were not only an assistance, but a prime necessity because of the distance of the job from home in comparison with its size. Photographs help one to remember. What is even more important, they may be enlarged, sketched over in pencil or ink directly on the print and the image on the print may then be bleached, wholly or in part, as desired, to show the drawing.

Of equal importance to the data for the drawing are the notes as to materials and finish, as well as notes on electrical work, plumbing, heating and the like.

On the exterior of the building there are the problems of the kind and condition of masonry materials; spalled brick and stone that may need to be replaced; broken or cracked stone, settlement; condition of wood trim and painted work—should the old paint be burned off; materials and settlement of driveways and walks.

On the interior of the building it will be found most convenient to list the materials and finishes of

Architectural floor plan of a building, likely a hospital or institutional facility, showing various rooms and their dimensions. The plan includes the following rooms and features:

- MATRONS PORCH 116**: Dimensions 10'-0" x 8'-4".
- MATRONS' R.M. 115**: Dimensions 10'-0" x 8'-4".
- COLD R.M. 117**: Dimensions 10'-0" x 8'-4".
- KITCHEN 112**: Dimensions 10'-0" x 8'-4".
- PANTRY 113**: Dimensions 10'-0" x 8'-4".
- DINING ROOM 110**: Dimensions 10'-0" x 8'-4".
- COAT R.M.**: Dimensions 10'-0" x 8'-4".
- BATH R.M. 114**: Dimensions 10'-0" x 8'-4".
- VESTIBULE 118**: Dimensions 10'-0" x 8'-4".
- DRESSER 116 A**: Dimensions 10'-0" x 8'-4".
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Proposed Fraternity House
for
The Alpha Omicron Chapter
of
The Alpha Tau Omega Fraternity
Canton, New York
Barton & May, Architects.
15 E. 40th St. New York

North Elevation

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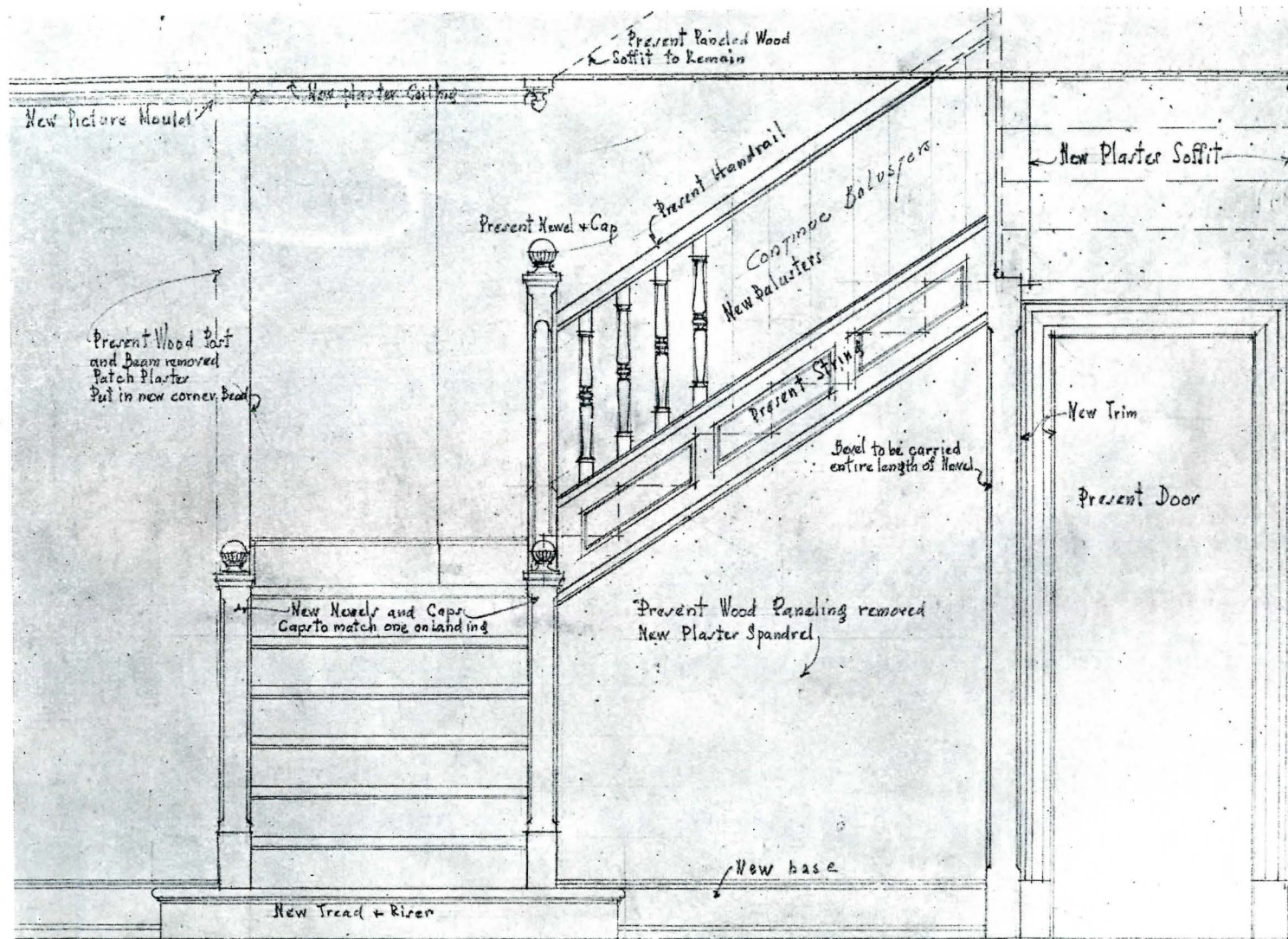
58

rooms separately, including also the electrical fixtures and hardware. First there is the material, finish and condition of flooring, width and direction of flooring; notes as to borders; material and finish of trim, making sure that a detail of trim, and paneling of doors has been made; plastering of walls and ceiling; kind and condition of plastering; notes as to papered and painted surfaces; design, dimensions and condition of electric fixtures and in the same way notes on hardware.

Inquiry should be made as to cost and supply of materials in the local market. It is always

The outline just given is suggestive and will, we trust, stimulate simplification or elaboration as may be necessary for the best results in any particular case. They should be arranged in tabular form to be most useful. Of course a checking list of this sort might be made too cumbersome and this would defeat its purpose. The notes given are to be considered as basic and illustrative rather than final.

The walls and floors and all material shown in plan or section is logically shown in outline for old work and the hatching and material indicated for new. Old work to be removed must be shown but for clarity is dotted and accompanied with a note that it is to be removed. This applies to elevations as well as plans. Copious notes should be provided



3/4" SCALE ELEVATION OF MAIN STAIR

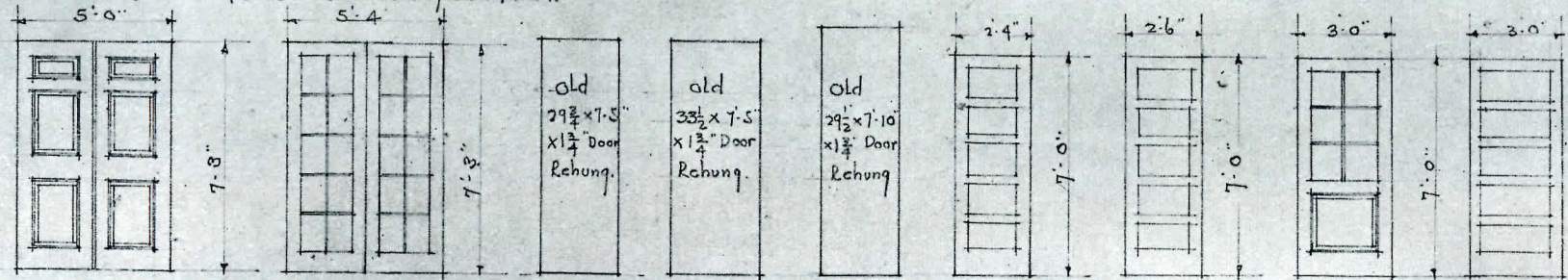
Elevation of Main Stair—Alterations to Fraternity House for Alpha Omicron Chapter, Alpha Tau Omega Fraternity, Inc., Canton, N. Y. Bastow & Way, Architects.

| SCHEDULE OF MATERIALS & FINISHES | | | | | | | | | | | | | | |
|----------------------------------|------------------|---------------|----------|----------|--------------|----------|-----------------|------------|----------|---------------|----------------------|------------|--|--|
| ROOM DESIGNATION | | FLOOR | BASE | WAINSCOT | WAINSCOT CAP | WALLS | PICTURE MOULD'G | OTHER TRIM | DOORS | CEILING | SASH & WINDOW FRAMES | | | |
| BASEMENT | STORAGE RM NO. 1 | CEN. SEE NOTE | — | — | — | — | — | — | MC. | P.T. SEE SPEC | — | PT-3 | Patch Cem. Floor. | |
| | STORAGE RM 2 | EARTH | — | — | — | — | — | — | MC. | P.T. SEE SPEC | — | PT-3 | Pl = 1 brown coat. | |
| | STORAGE RM 3 | CEN. SEE NOTE | — | — | — | — | — | YP | PT-3 | YP | PT-3 | — | | |
| | COAL RM. 4 | — | — | — | — | — | — | — | PT-3 | — | — | PT-3 | | |
| | BOILER RM. 5 | CEN. | — | — | — | — | W-W | YP | PT-3 | MC Y.P. | PT-3 | PL W-W | PT-3 | |
| | STORAGE RM 6 | CEN. | — | — | — | — | W-W | YP | PT-3 | MC Y.P. | PT-3 | PL W-W | PT-3 | |
| | STORAGE RM 7 | CEN. | — | — | — | — | W-W | YP | PT-3 | YP | PT-3 | PL W-W | — | |
| | STORAGE RM 8 | CEN. | — | — | — | — | W-W | YP | PT-3 | YP | PT-3 | PL W-W | PT-3 | |
| STORY | VESTIBULE 101 | Q-T | Q-T | — | — | — | PL CTX | BCH ST-W | BK ST-W | W-P BCH | ST-W | PL PT-W WP | ST-W | |
| | HALL 102 | PM WAX | CH WAX | — | — | — | PL CTX | CH WAX | CH WAX | ST-W. CH | PL PT-W | WP ST-W | Patch plaster walls, new ceiling. See detail | |
| | TROPHY RM. 103 | PM WAX | PM WAX | — | — | — | PL CTX | PM WAX | PM WAX | CH WAX | PL PT-W | — | New pl. ceiling - patch plaster. | |
| | LIVING RM. 104 | OAK WAX | OAK WAX | OAK WAX | OAK WAX | PL PT | OAK WAX | OAK WAX | OAK WAX | PL PT-W | — | PT-G | Wood cornice, oak, chimney breast, oak | |
| | TOILET 105 | TILE | TILE | TILE | TILE | PL PT-3 | — | BCH EN | PM EN | PL PT-3 | — | PT-G | See spec. for Marble work. Furred Ceiling | |
| | GUEST RM 106 | PM WAX | PM PT-3 | — | — | — | PL | PM PT-3 | PM PT-3 | PM PT-3 | PL | — | PT-3 | Furred ceiling. |
| | LOBBY 107 | PM WAX | PM WAX | — | — | — | — | — | PM WAX | PM WAX | PM | — | — | |
| | STAIRWAY 107-A | YP PT-3 | YP PT-3 | — | — | — | PL | — | — | PM | PL | — | — | 1 1/8" treads, 1/2" risers etc., painted 3 coats |
| | COAT RM. 108 | BCH WAX | PM WAX | — | — | — | PM | — | PM WAX | PM WAX | PL | — | PT-G | Furred ceilg. Patch plaster. Shelving. |
| | LIBRARY 109 | PM WAX | PM WAX | — | — | — | PM | PM WAX | PM WAX | PM WAX | PM | — | PT-G | See drawg #11 for new mantel. |
| | DINING RM. 110 | PM WAX | PM WAX | — | — | — | — | — | PM WAX | PM WAX | PM | — | PT-G | |
| | PANTRY 111 | LIN. WAX | PM BLD-S | — | — | — | PL BLD-S | — | PM BLD-S | PM BLD-S | PL | — | BLD-S | Patch floor. Oiled counter shelves. See Spec |
| | KITCHEN 112 | LIN. WAX | PM BLD-S | — | — | — | PL BLD-S | — | PM BLD-S | PM BLD-S | PL | — | BLD-S | Patch plaster where wainscot is removed etc |
| | STAIRWAY 112-A | YP ST-W | YP ST-W | — | — | — | PL | — | YP ST-W | YP ST-W | PL | — | — | |
| | STAIRWAY 112-B | YP PT-3 | YP PT-3 | — | — | — | PL | — | YP PT-3 | YP PT-3 | PL | — | — | |
| | PASSAGE 113 | CGYP ST-W | YP PT-3 | — | — | — | PL | YP PT-3 | YP PT-3 | YP PT-3 | YP PT-3 | PL | — | — |
| | BATH RM. 114 | LIN. WAX | YP EN | — | — | — | PL | — | YP EN | YP EN | PL | — | EN. | |
| | MATRONS RM 115 | BCH WAX | YP PT-3 | — | — | — | PL | YP PT-3 | YP PT-3 | YP PT-3 | YP PT-3 | PL | — | PT-3 |
| CLOS. 115-A | BCH WAX | YP PT-3 | — | — | — | PL | YP PT-3 | YP PT-3 | YP PT-3 | YP PT-3 | PL | — | — | |
| MATRONS PORCH 116 | BCH WAX | YP PT-3 | — | — | — | PL | YP PT-3 | YP PT-3 | YP PT-3 | YP PT-3 | PL | — | PT-3 | |
| COLD RM. 117 | CGYP ST-W | YP PT-3 | — | — | — | PL | — | YP PT-3 | YP PT-3 | YP PT-3 | PL | — | PT-3 | |
| GARAGE OR CLOS 117-A | TIN PT-3 | — | — | — | — | TIN PT-3 | — | TIN PT-3 | TIN PT-3 | TIN PT-3 | PT-3 | — | — | |
| CLOS. 117-B | YP | — | — | — | — | — | — | — | YP PT-3 | FL | — | — | — | |
| VESTIBULE 118 | CGYP ST-W | YP PT-3 | — | — | — | PL PT-3 | — | YP PT-3 | YP PT-3 | YP PT-3 | PL | — | — | |
| 2ND | STUDY 201 | PM WAX | PM ST-W | — | — | — | PL | — | ST-W PM | ST-W PM | PL | — | PT-G | |
| | STUDY 202 | BCH WAX | PM ST-W | — | — | — | PL | — | ST-W PM | ST-W PM | PL | — | PT-G | |
| | DORMATORY 203 | BCH WAX | BCH ST-W | — | — | — | PL PT-W | BCH ST-W | BCH ST-W | BCH ST-W | PL | — | PT-G | |
| | TOILET 204 | TILE | TILE | TILE | TILE | PL PT-3 | — | YP EN | PM EN | PL | — | EN | Furred ceiling. See spec. for slate & m | |
| | HALL 205 | PM WAX | PM WAX | — | — | — | PL | BCH WAX | PM WAX | PM WAX | PL | — | PT-G | |
| | SHOWER RM. 206 | TILE | TILE | TILE | TILE | PL PT-3 | — | YP EN | PM EN | PL | — | EN | Furred ceilg. See spec for slate & m | |
| | STUDY 207 | BCH WAX | PM WAX | — | — | — | PL | — | ST-W PM | ST-W PM | PL | — | PT-G | |

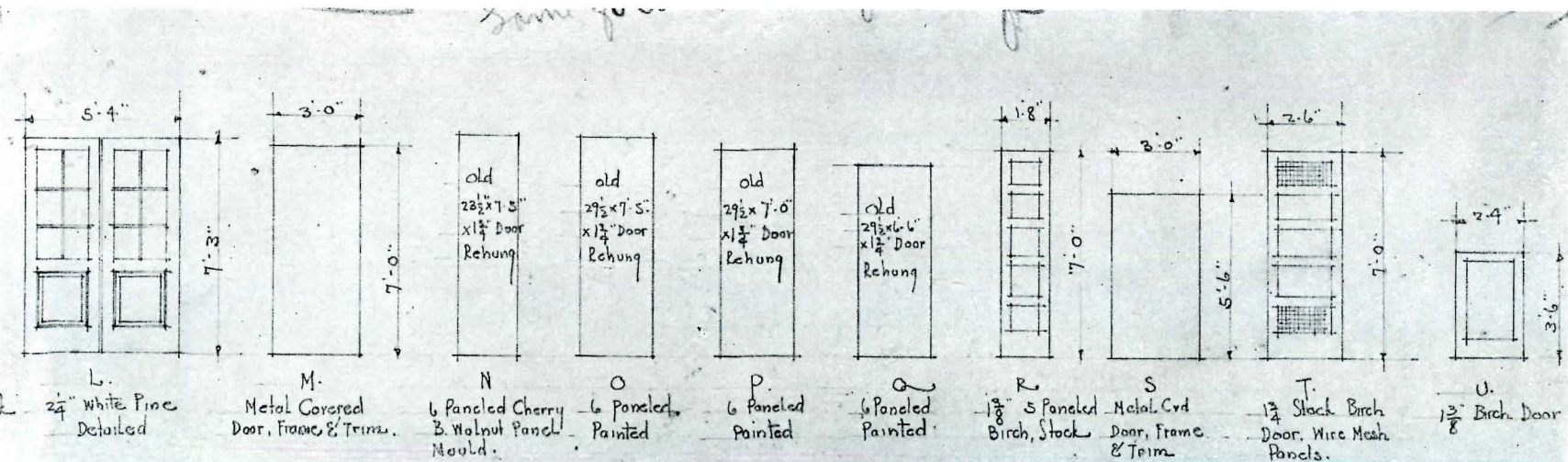
Schedule of Materials and Finishes. Alterations to Fraternity House for Alpha Omicron Chapter, Alpha Tau Omega Fraternity, Inc., Canton, N. Y. Bastow & Way, Architects.

DOOR SCHEDULE.

A. Present Doors To Remain in position



B. 2 1/4" White Pine Detailed
C. 1 3/4" White Pine Detailed.
D. 6 Panel Cherry Door B. Walnut Panel Mould.
E. 6 Panoled Cherry Door B. Walnut Panel Mould
F. 6 Panoled Painted
G. 1 3/8" 5 Panel Birch Stock Door.
H. 1 3/4" 5 Panel Birch Stock Door.
J. 2 1/4" White Pine Detailed
K. 1 3/4" Birch Stock Door.



L. 2 1/4" White Pine Detailed
M. Metal Covered Door, Frame & Trim.
N. 6 Panoled Cherry B. Walnut Panel Mould.
O. 6 Panoled Painted
P. 6 Panoled Painted
Q. 6 Panoled Painted
R. 1 3/8" 5 Panoled Birch, Stock
S. Metal Cvd Door, Frame & Trim
T. 1 3/4" Stock Birch Door, Wire Mesh Panels.
U. 1 3/8" Birch Door

Door Schedule—Alterations to Fraternity House for Alpha Omicron Chapter, Alpha Tau Omega Fraternity, Inc., Canton, N. Y.
Bastow & Way, Architects.

PENCIL POINTS

calling for bonding of new to old work, and underpinning where required.

The shifting of doors from one position to another is often taken care of with notes and long distance arrows but this is, to say the charitable thing, confusing. The scheme of putting this information in a door schedule, as illustrated, works out very well.

Materials and finishes are taken care of by a schedule simplified for this particular job. Old material is noted by an abbreviation and the number of coats of paint which varies on old work is noted by Pt. 4 or Pt. 2. The schedule of materials and finishes simplified the writing of the specifications, as it always does, besides giving a good check on their completeness. Schedules have sometimes been criticized because they are difficult to read but they are really not much different in this respect from the average specification and are certainly easier to prepare than the lengthy description.

The problem becomes, in the ultimate analysis, that of putting oneself in the other fellow's shoes, to think out in advance what information will be required by everyone connected with the work.

Again photography comes into play by enabling one to supply photographs to accompany the plans and specifications for the taking of bids. No trick should be omitted that will serve to lessen the uncertainty and the gamble of the alteration job.



Detail of Stairway Before Alterations. Alpha Omicron Chapter, Alpha Tau Omega Fraternity, Inc., Canton, N. Y.



Alpha Omicron Chapter, Alpha Tau Omega Fraternity, Inc., Before Alterations.

These photographs, for instance, are of service to the estimator, supplementing his visit to the site and making the problem more concrete in the mind of the contractor; thus, we have immediately removed some of the gamble for the owner and probability of annoyance and loss of time for the architect.

It had been the writer's aim to give a listing, under the various heads, of items that need to be looked out for but to be complete such a list would have to fit all types of construction and city and country work, being probably as uninteresting as it would be difficult to prepare. However, there have been a number of checking lists published from time to time that would be helpful in outlining such a thing for one's own use. This may be done with a degree of elaboration that is in accord with the particular type of work in hand and with conformity to the tradition of the office with respect to system or lack of it.

Those items that apply equally well in new work do not call for more than a passing reference here. The listing of general information required for the various engineering features of the problem has already been mentioned. Then there is the information that the architect should turn over to the engineer. For instance, the use to which rooms are to be put is of prime importance to the heating engineer. One might go a step further in this matter of checking lists by preparing one on those items that should be taken up with the owner and things to watch out for in the early stages of design, including such uninspiring problems as removal of ashes.

These lists have value in that they make for clear thinking right from the beginning, both in the matter of collecting data and of presentation of work contemplated. Those opposed to system might argue against such lists but if ever system is required it is for the alteration job.

WASTE

A PLEA FOR A BETTER AND MORE ECONOMICAL SYSTEM OF ESTIMATING

BY RAOUL C. GAUTIER

"Not very long ago, the United States Chamber of Commerce formulated a code of business ethics, where the following may be found: Waste in any form,—of capital, labor, services, materials or natural resources,—is intolerable, and constant effort will be made toward its elimination."

THE father of quantity surveying in this country, G. Alexander Wright of San Francisco, in expressing his hopes for a better system of estimating than that prevalent at the time (1914) said: "Happily we are a progressive people and things are not done today as they were twenty or thirty years ago."

Yes, we are a progressive people, and yet what progress have we made in our methods since 1914? What has been or is being done to eliminate this intolerable waste of labor and services? Nothing, since Architects and Engineers are still making plans often incomplete, writing specifications often indefinite, and Contractors are still estimating in the same manner, wasting every year hundreds of thousands of dollars in "taking off quantities" in the same old way.

Few Architects, Engineers or Owners realize the extraordinary amount of work and energy entailed by the making of an estimate, particularly in the short time usually granted to the Contractor. Neither do they realize the stupendous amount of money thus spent.

It is our purpose to illustrate by means of a concrete example, the amount of work done and the amount of money spent on the making of an estimate.

Not very long ago, bids were wanted for an industrial building having a large area of working space, a large showroom and offices, and plans were sent to thirteen general contracting concerns. It was necessary for the general contractor to make or obtain a structural design for reinforced concrete work, to take off quantities for same as well as for the work he intended to handle himself, to obtain prices from material concerns, and in addition, to obtain and analyze proposals from sub-contractors to make sure that they had taken off all that was required, all in ten days, the length of time allowed to prepare the bids.

The number of sub-bids received for each of the thirty-two (32) main sub-divisions is shown below:

| | |
|---------------------------------------|---|
| 1. Wrecking | 3 |
| 2. Excavating | 6 |
| 3. Shoring & Underpinning | 3 |
| 4. Reinforced Concrete (Design) | 4 |
| 5. Masonry | 2 |
| 6. Waterproofing | 3 |
| 7. Granite | 4 |
| 8. Limestone | 8 |
| 9. Structural Steel | 2 |

| | |
|-------------------------------------|---|
| 10. Steel Sash | 4 |
| 11. Hollow Metal Windows | 4 |
| 12. Store Fronts | 3 |
| 13. Glass & Glazing | 6 |
| 14. Marble & Slate | 4 |
| 15. Terrazzo | 7 |
| 16. Miscellaneous Iron | 5 |
| 17. Wire Partitions | 7 |
| 18. Steel & Glass Partitions | 3 |
| 19. Mill Work | 2 |
| 20. Lathing & Plastering | 4 |
| 21. Kalamein & Tin clad Doors | 6 |
| 22. Hollow Metal Doors | 4 |
| 23. Elevator Doors | 3 |
| 24. Roofing & Sheet Metal | 5 |
| 25. Painting | 8 |
| 26. Ventilators | 2 |
| 27. Heating | 6 |
| 28. Plumbing | 4 |
| 29. Sprinklers | 5 |
| 30. Electric Wiring | 4 |
| 31. Elevators | 6 |
| 32. Dumbwaiters | 7 |

Altogether 144 sub-bids or an average of 4.5 per trade.

The building in question was estimated by local contractors only, and naturally, several general contractors received bids from the same sub-contractors.

If we assume, for the sake of argument, that each of the sub-contractors figuring on the job sent his proposal to one-half of the general contractors, we find that approximately 300 sub-contractors had to take off and list quantities. This operation, including the overhead thereby incurred, costs as much as \$200.00 for some of the trades and as little as \$10.00 for others. We shall assume the average to be \$25.00, and the general contractor's average cost for taking off his own quantities and analyzing the sub-contractor's bids shall be assumed at \$200.00.

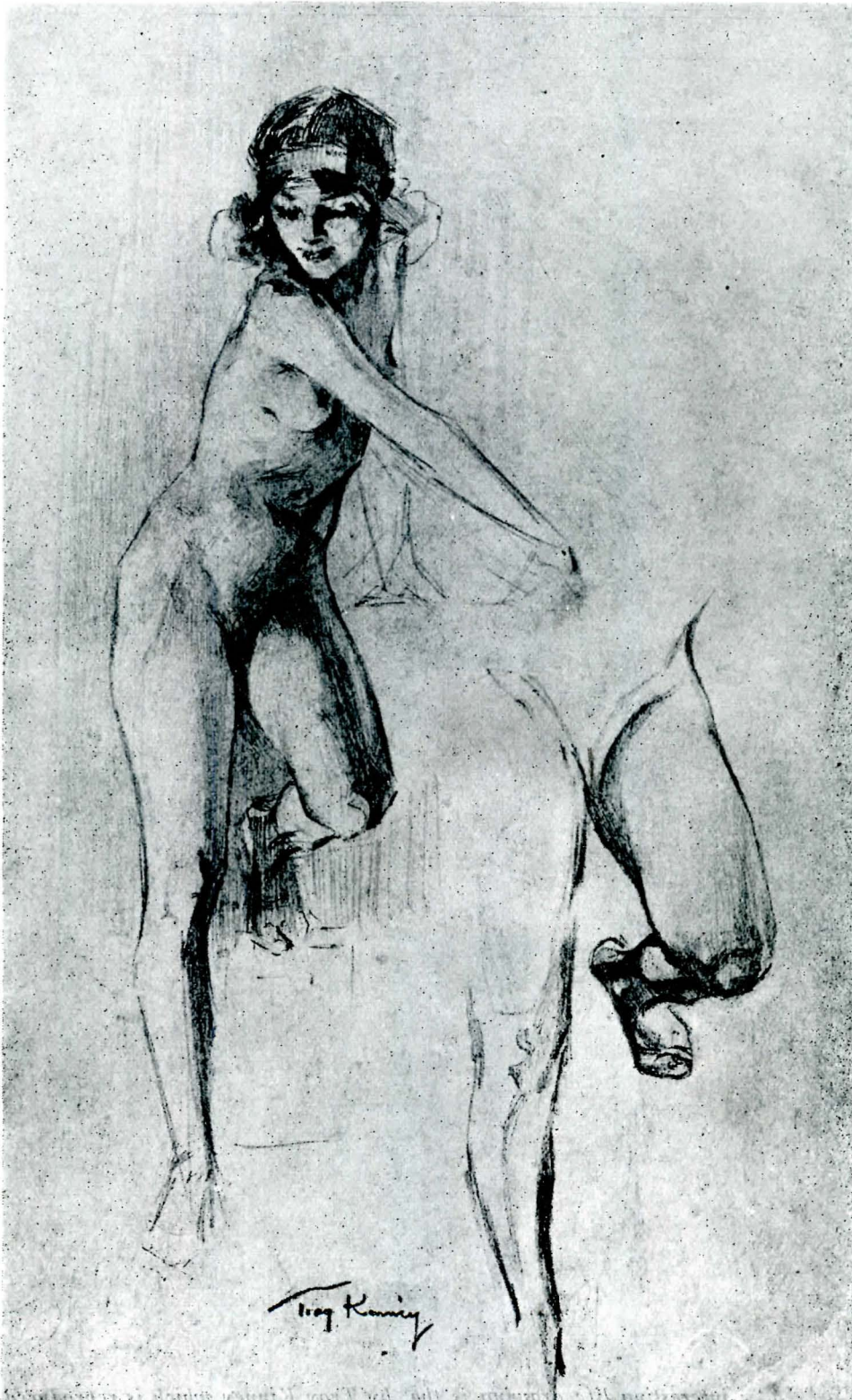
Under these assumptions, the total cost, not of estimating, but merely of taking off quantities and listing them, runs as follows:

| | |
|---------------------|------------------------|
| Sub-contractors | 300 @ \$ 25.00—\$7,500 |
| General Contractors | 13 @ 200.00— 2,600 |

TOTAL \$10,100

For a job costing in round figures \$400,000.00, this totals approximately 2.5% of the cost of the

(Continued on page 90)



Courtesy of Kennedy & Co.

PENCIL STUDY BY TROY KINNEY FOR HIS ETCHING

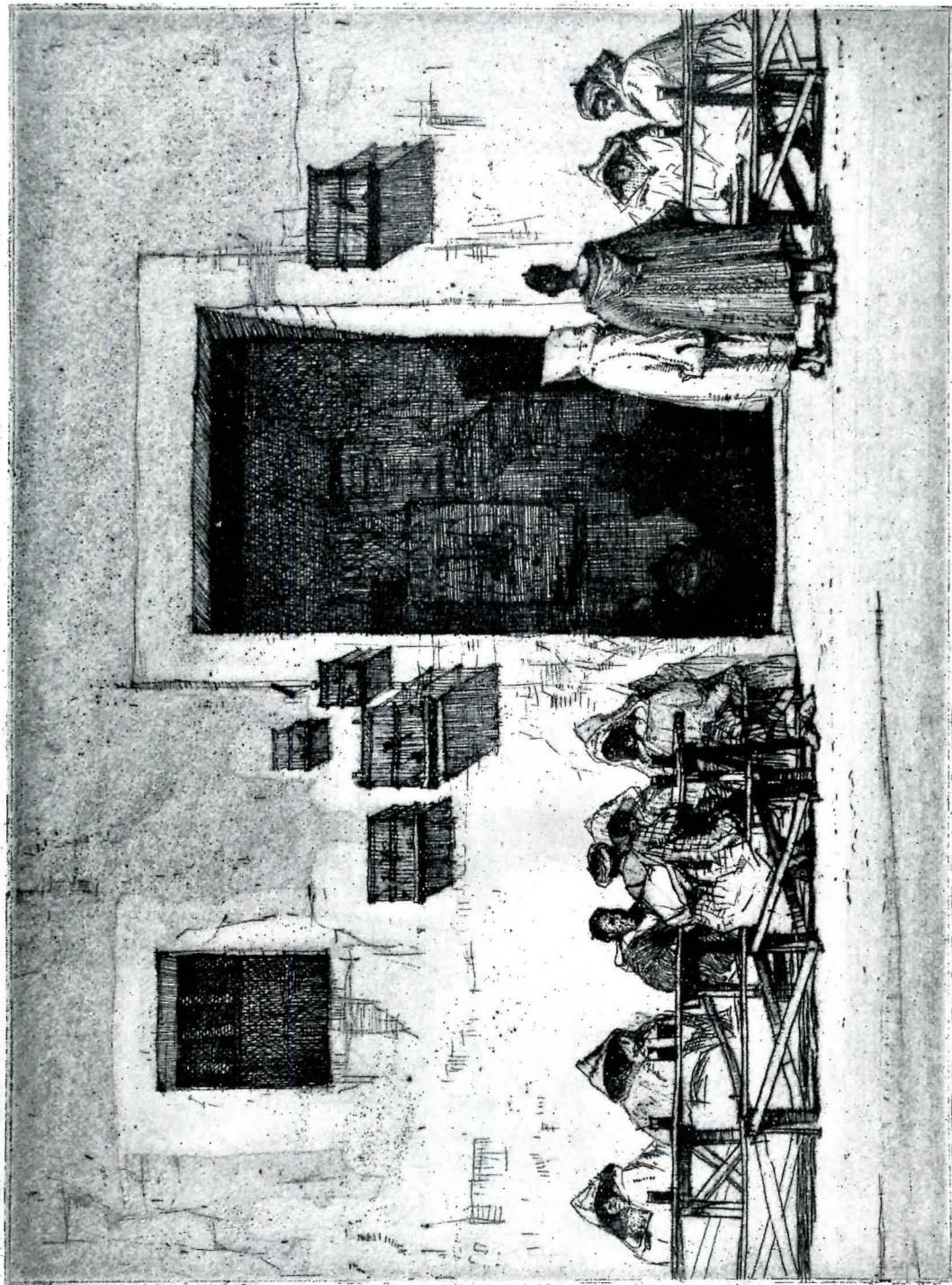
"SUMMER DAY."

An unusually interesting life drawing is that by Troy Kinney which is reproduced on the other side of this sheet. The tenderness and freedom of the rendering of the subject is remarkable and the technique by means of which this result is accomplished is well worth studying. It will be noted that the outlines vary greatly, width and density giving much of the expressiveness to the drawing. While the shading is done largely in distinct, simple pencil strokes there is nothing of the mechanical or rigid about it, but always a sensitive facility that indicates both an appreciation of the characteristics of the subject and a mastery of the pencil.



PENCIL DRAWING BY ERNEST D. ROTH
FONDAMENTO RIELO, VENICE.

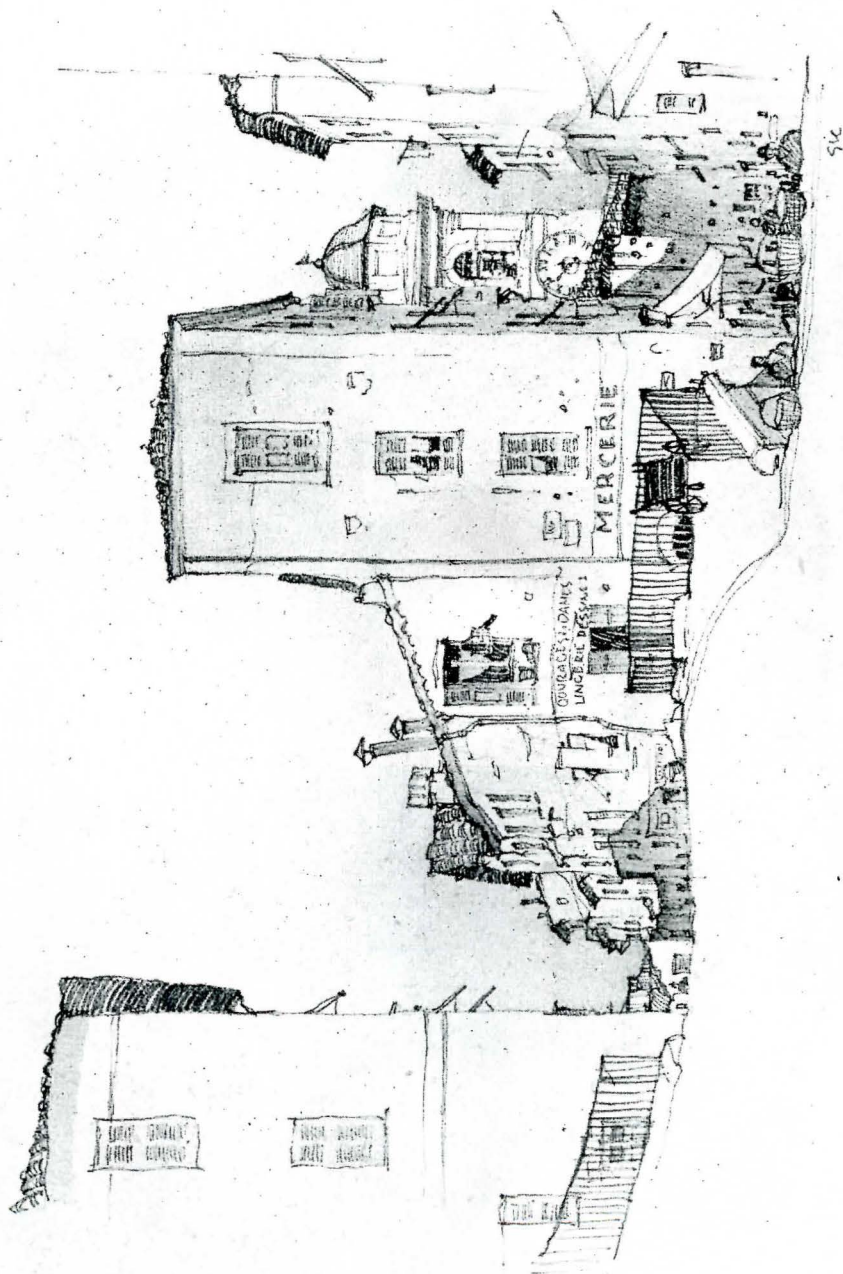
A delightful interpretation of a bit of Venice is seen on the other side of this sheet where one of Ernest D. Roth's pencil drawings is reproduced. Throughout the drawing the various portions of the architecture have been rendered in such a way as to give them the quality of ornament, for instance the tiled roofs. The boats in the foreground have been properly subordinated by the slightest kind of indication. The lightness of touch in the pencil work gives this drawing much of its sense of life and gaiety.



Courtesy of H. C. Dickens

ETCHING BY LOUIS C. ROSENBERG
ARAB COFFEE HOUSE, TANGERS.

The strong sunlight and deep shadows of North Africa, with the illumination provided by strong reflected light, have given Louis C. Rosenberg a problem in the rendering of tones that he has handled well in the etching, "Arab Coffee House," reproduced on the other side of this page. The characterization in the figures is excellent and the sense of life and verity as well.



A drawing by Samuel V. Chamberlain that indicates a further development of this artist's excellent technique is reproduced on the other side of this page. Not only is the indication in line good, but the suggestion of tone values is well managed. This sketch is one of many made by Mr. Chamberlain during an European trip from which he has recently returned.

ARCHITECTURE AND THE CONTOUR OF THE BUILDING SITE

AN AID which the architect might well more often insist upon having before he begins the study of the problem of designing a country house, or a group of institutional buildings, is a contour map of the plot of ground upon which the building is to be placed. Without a contour map the proper placing of the building is more or less a matter of guess work, an element that often causes much serious trouble, involving both unsatisfactory results and unnecessary expense to the client.

A contour map must be made ultimately if the landscape treatment of the grounds is to be carried out with any degree of success and it is much better to have it made at the outset.

Innumerable cases might be cited where the house has been so placed on the grounds that satisfactory landscape work has been impossible and the house has never appeared to the full advantage. There are many other cases in which the contour of the ground has been properly studied before the location of the house has been decided upon and excellent results have been obtained. For example, there is an estate on Long Island where the ground is level in the main but slopes gradually at one point and has a shallow valley running obliquely down the slope. In this case the architects studied the ground before designing the house and made it fit the site. Since the approach was to be across a level expanse—the house is large and necessarily tall as well as long—it was evident that it would tie in best with its surroundings if it were set just beyond the edge of the slope so that its apparent height would be reduced. This gives a sloping garden below the terrace on the garden front. It was also evident that by placing the dining-room wing at such an angle to the main building that its axis would coincide with that of the oblique valley a view down the valley could be commanded by the windows in the end of the dining-room. This placing was adopted and the valley was treated as a garden. The effect is admirable.

There are many cases in which the placing of the house a little farther in one direction or another would have produced a much better effect than that resulting from the haphazard procedure followed. When the house is badly placed expedients are adopted, such as the special arrangements of terraces that are intended to cure the trouble, but seldom do. Very often one of the bad features is an unduly high retaining wall for the terrace on the garden front, expensive and very often not particularly sightly. Then, too, when the contour of the ground is not carefully studied in advance of placing the house there are likely to be very unpleasant surprises when the road by which the house is to be approached is laid out. It often happens that in order to construct a road to approach the house in the way the architect intended involves fills and cuts that are unnecessarily expensive and usually ugly.

It often also involves the destruction of trees that should be preserved and that might have been saved as ornaments to the property if their location had been carefully indicated upon a map studied at the time the house was being planned and placed. When a house is a misfit on the land it occupies much of its potential beauty and effectiveness is lost. Also, as has been pointed out casually above, the contour of the ground often inspires the architect with an idea that gives distinction and individuality to the plan of the house and adds to the enjoyment of the owner and his family.

Carefully planned views are appreciated by the owner.

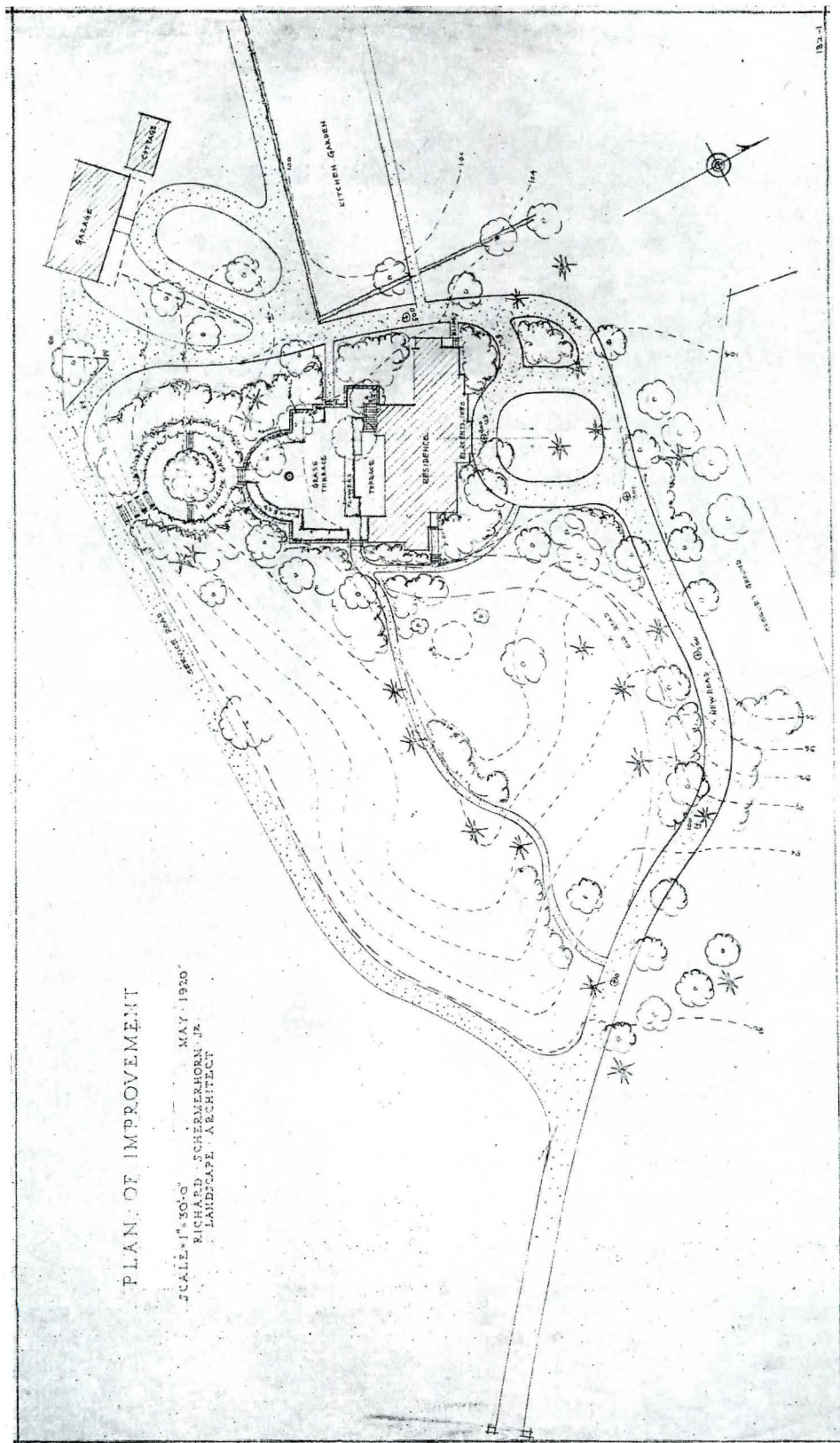
When the contour of the ground is not thoroughly studied before the house is built there is almost a certainty that the earth removed during excavation will have to be moved twice when once might have been sufficient, for unless the earth from the excavation can be placed in the first instance where it is needed, it must be handled at considerably extra expense in constructing terraces and doing grading.

Of course, if the contour map is regarded as something belonging particularly and exclusively to the landscape architect's province, and the landscape architect is not called into conference with the architect at the very beginning, there is sure to be a lack of harmony between the work of the architect and the landscape architect which it is difficult to overcome. But there is no need to regard the contour map as exclusively an instrument of service for the landscape architect or to defer the choice of a landscape architect. These two should co-operate from the very beginning and the architect should more often take an interest in the contour map of the property upon which he is to build.

The simpler the indication can be made upon the contour map the better. The practice generally taught of indicating both the old and the new grades of the contour map, distinguishing the old grades from the new by the character of the lines, is considered unsatisfactory by some landscape architects and there seem to be sound reasons for this view. The use of the two sets of lines on one map may easily confuse the contractor and at the same time it complicates the drawing. The practice of indicating the old grades on one contour map and showing the new grades on another has much to recommend it. Often the landscape architect's map shows only the old grades and the proposed gardens, roads and planting, leaving the definite information as to the new grades to be given on a supplementary map if at all. Sometimes the new grades are simply marked in figures enclosed in circles, while the old grades are indicated by lines of the contour. At other times the new grades are shown on squares drawn in pencil and figured in pencil, the old contours being indicated in ink. This is a very good method.

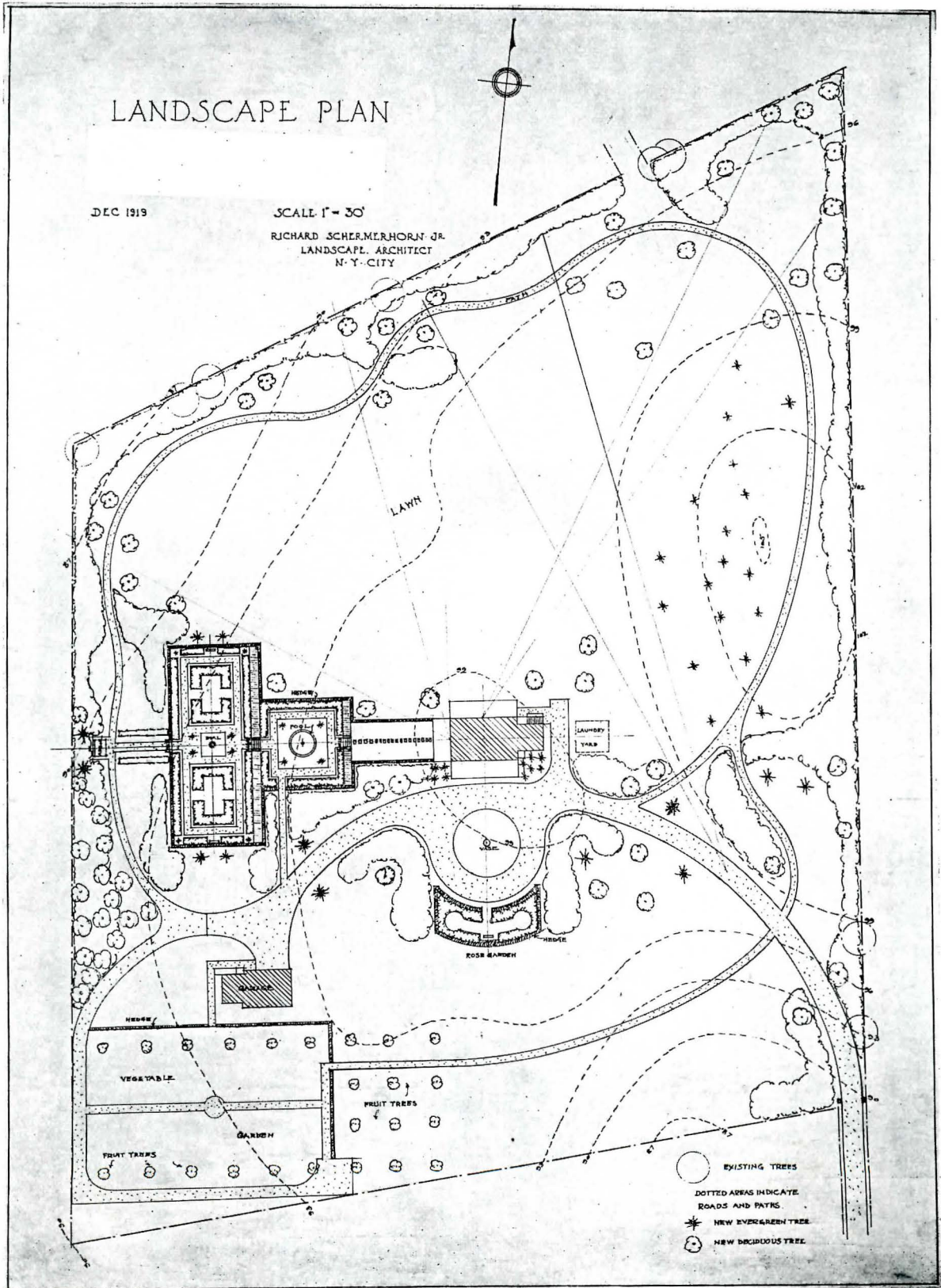
The main point that enforces itself upon one

(Continued on page 83)



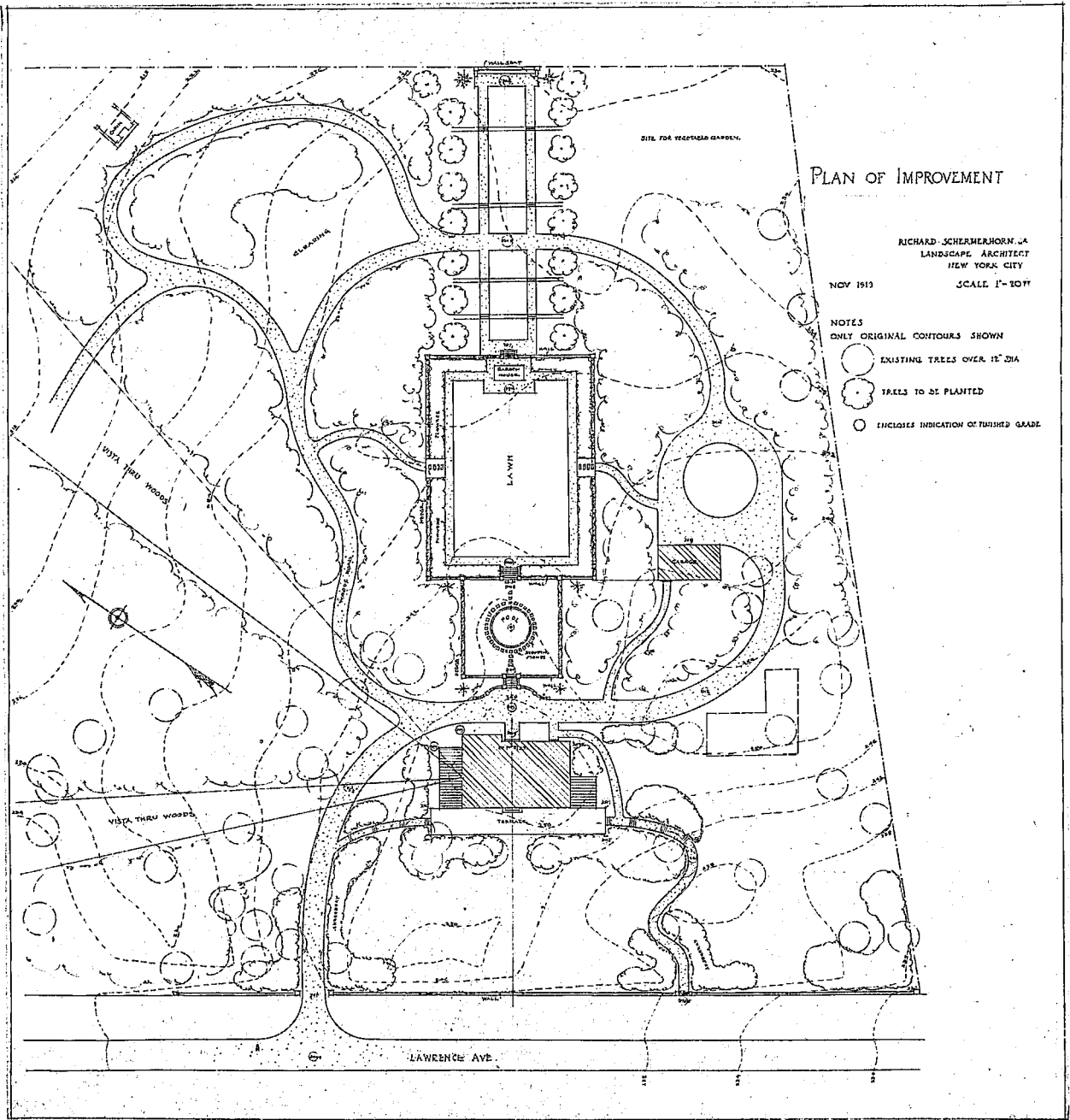
Plan of Improvement for Country Estate, Richard Shermerhorn, Jr., Landscape Architect.

PENCIL POINTS

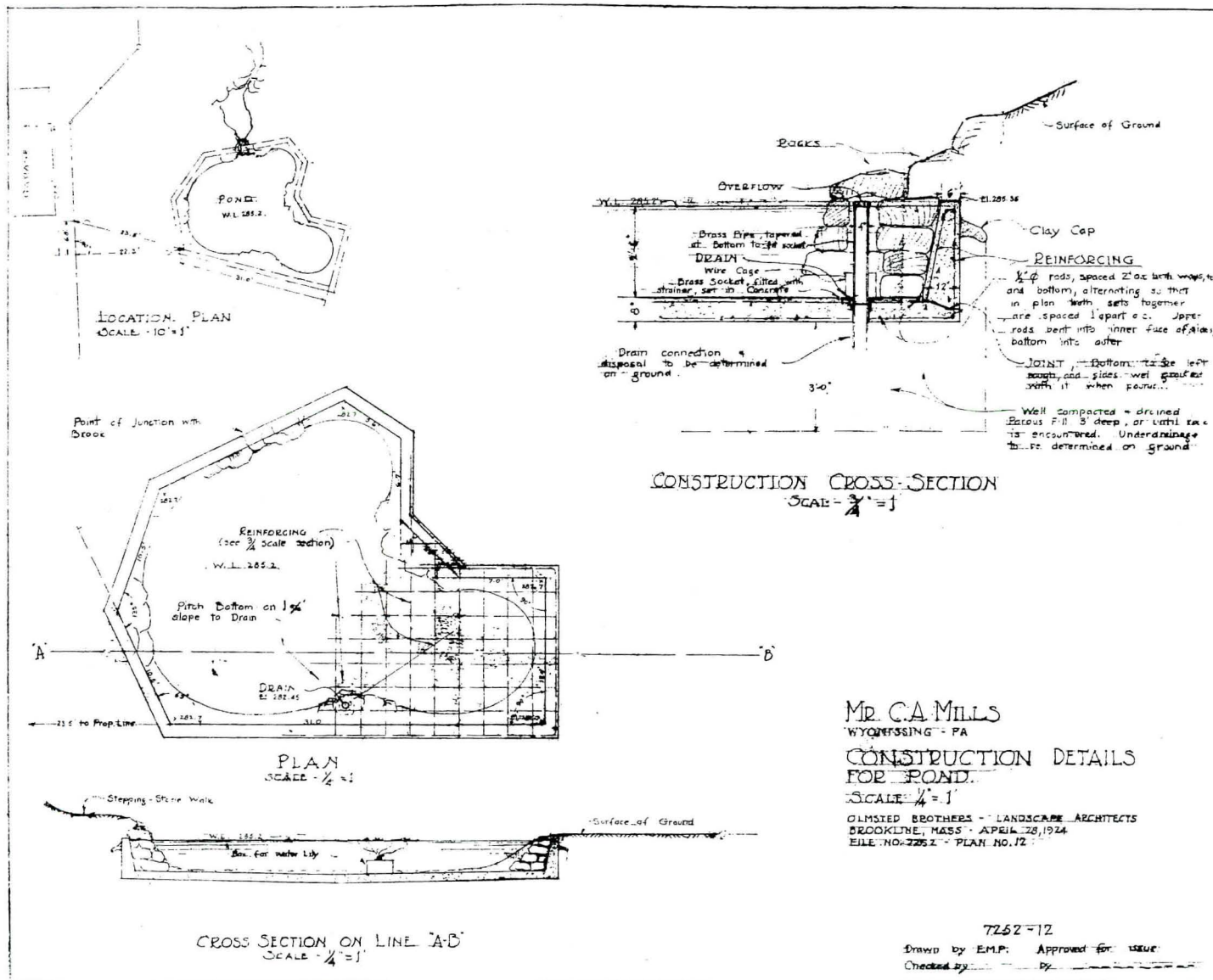


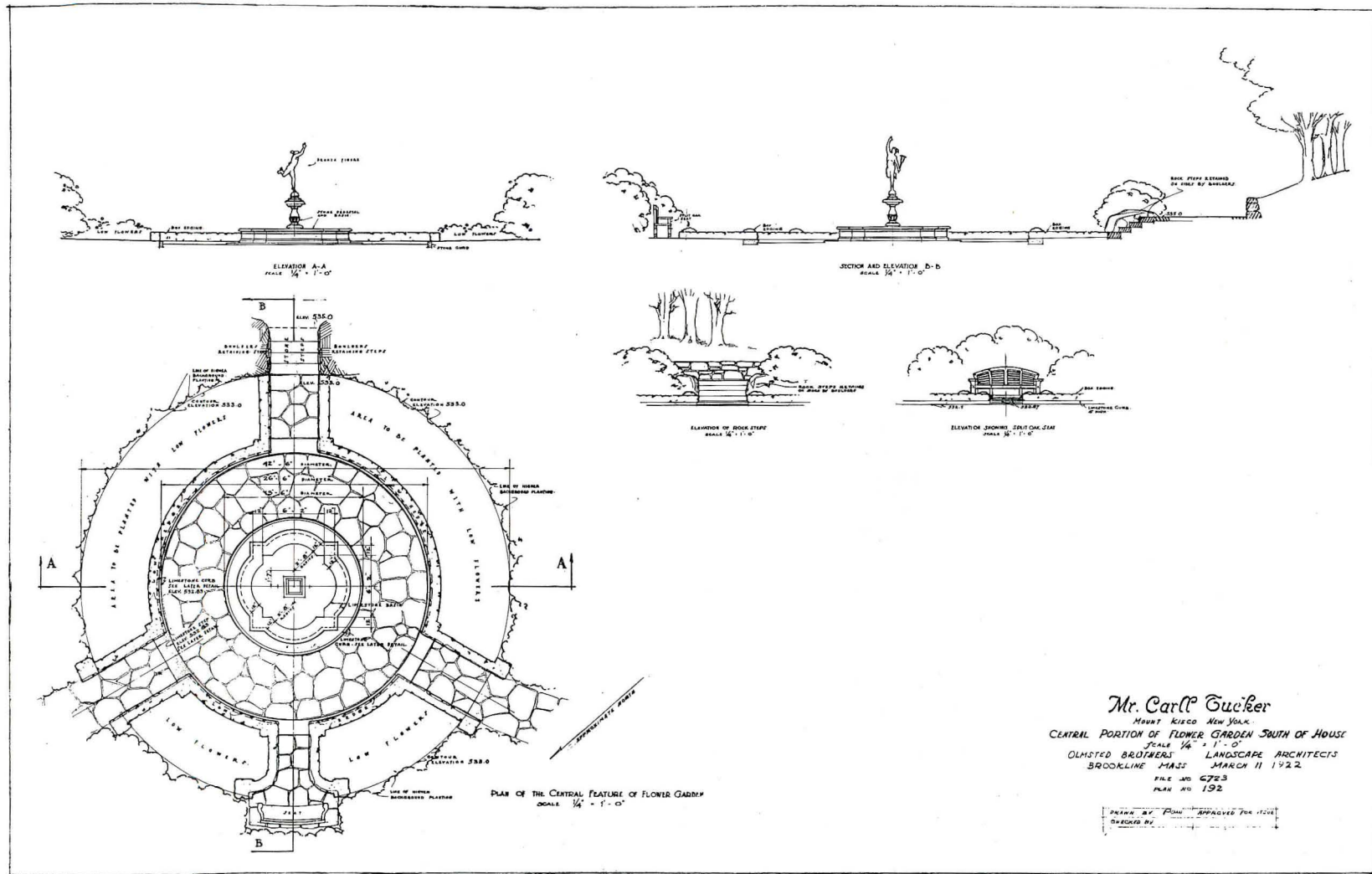
Landscape Plan for Country Estate, Richard Schermerhorn, Jr., Landscape Architect.

PENCIL POINTS



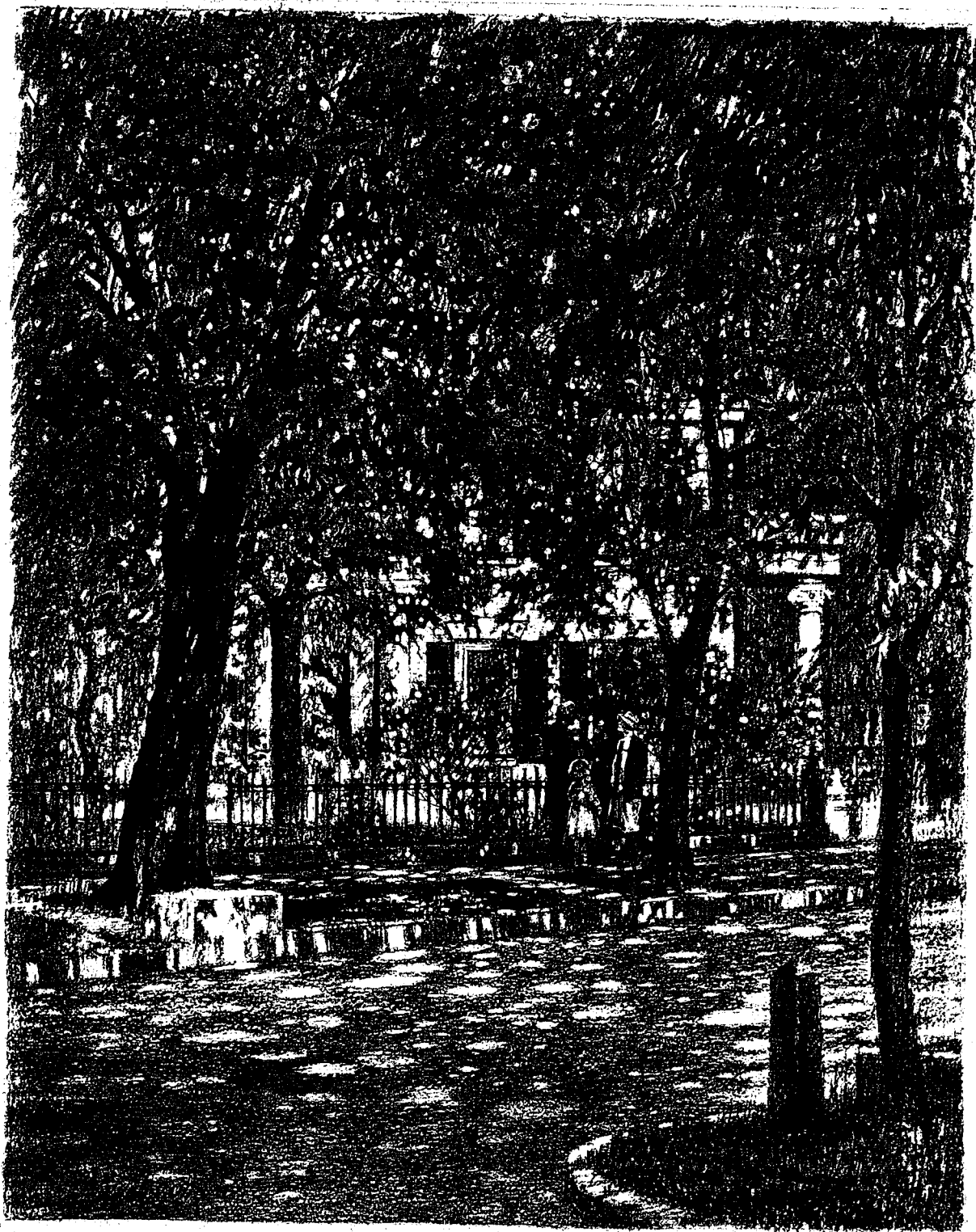
Plan of Improvement for Country Estate, Richard Schermerhorn, Jr., Landscape Architect.





Details of Construction—Central Portion of Flower Garden South of House of Mr. Carll Tucker, Mt. Kisco, N. Y.
 Olmsted Bros., Landscape Architects, Brookline, Mass.

PENCIL POINTS



Sketch by Clifford Ulp.

PENCIL POINTS

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THE AMERICAN ACADEMY IN ROME.

FROM a letter recently received by C. Grant La Farge, Secretary of the American Academy in Rome, from Gorman P. Stevens, Director, we quote the following:

"One more registration is to be recorded, this time in the School of Classical Studies: a newly-appointed Fellow of the School at Athens is to be with us until October first.

"Mr. W. Symmes Richardson, one of the junior members of the firm of McKim, Mead & White, feels greatly honored with his appointment for next year as Annual Professor in the School of Fine Arts.

"Composer Elwell has just finished a delightful Ballet, full of variety and interest, and he starts in a few days for Northern Italy and the musical festival at Venice.

"Professor Showerman reports a registration of 54 in the Summer School. He is greatly pleased with the earnestness and enthusiasm of every one of them.

"Professor Frank has been hard at work reading the proofs of Professor Curtis' book on the Jewelry of Sardinia, and looking over the material for our various forthcoming publications. He is now taking a two weeks' vacation in the Dolomites.

"Mrs. G. L. Hendrickson, of the Garden Clubs of America, writes that her clubs are to subscribe for three years to the Fellowship in Landscape Architecture.

"Dr. Paul Cret, the architectural advisor of the American Battle Monuments Commission, has been in Rome and examined the various possibilities for a monument not only to commemorate the 70 odd American soldiers and sailors who died in Italy during the great war, but also to record in suitable form the many Italian citizens who fought in the American armies in France.

"A famous Italian archaeologist has died, namely, Senator Giacomo Boni, the excavator of the Roman Forum and the Palatine. The present law, which requires all burials to be made outside the city walls, was put aside, and Boni now lies at rest on the Palatine itself, which he loved so dearly."

THE NEW YORK ARCHITECTURAL CLUB, INC. THE ARCHITECTURAL BOWLING LEAGUE SECTION

THE Architectural Bowling League of New York opens its nineteenth year on October 1st, with ten of its twenty teams getting under way simultaneously on Joseph Thum's famous White Elephant Alleys. The League has contracted for the use of the entire fourth floor, consisting of eleven alleys in this renowned recreational establishment, for every Thursday evening, to continue for approximately thirty-six weeks.

To judge from the enthusiasm of the players, it would

seem that every man is inspired by the hovering rumble of phantom thunder created by past stars in this ancient sport, and occasionally cocking a belligerent eye at the shining records hung up by the past masters, advance determinedly to the foul line, to smash all records to smithereens, or,—try again some other time. Be that as it may, the main attraction for the men in these tournaments is the opportunity they afford to meet each other on the common ground of good fellowship and friendly rivalry. As such it is a huge success, which is amply proven by the expressions of good natured badgering, encouragement, and sympathy (?) when "robbed", that are heard all over the alleys while the games are in progress. Besides, no man would stoop so low as to roll up a 300 score. That would be a gross affront to the rank and file of the League. But should such a sad calamity befall a player, without a doubt he would confine himself to 98 scores for the balance of the season, in justified self-imposed punishment. Yes he would,—

The following offices have teams in this season's tournaments:

Cass Gilbert
Donn Barber
Alfred C. Bossom
McKenzie, Voorhees & Gmelin
Warren & Wetmore
McKim, Mead & White
W. L. Stoddart
James Gamble Rogers
Schultz & Weaver
Shape, Bready & Peterkin
Schwartz & Gross
Guilbert & Betelle
Benjamin Wistar Morris
Starrett & Van Vleck
Peabody, Wilson & Brown
Holmes & Winslow
Thomas W. Lamb
J. E. R. Carpenter
Andrew J. Thomas
Allen & De Young

We regret that several of last year's teams were compelled to drop out for various reasons, but they remain our friends nevertheless, and hope that next year they will again appear in the line up.

Although a number of applications was received from offices that desired to enter the Architectural Bowling League, the executive committee found it to be impracticable to handle a schedule of more than twenty teams this season.

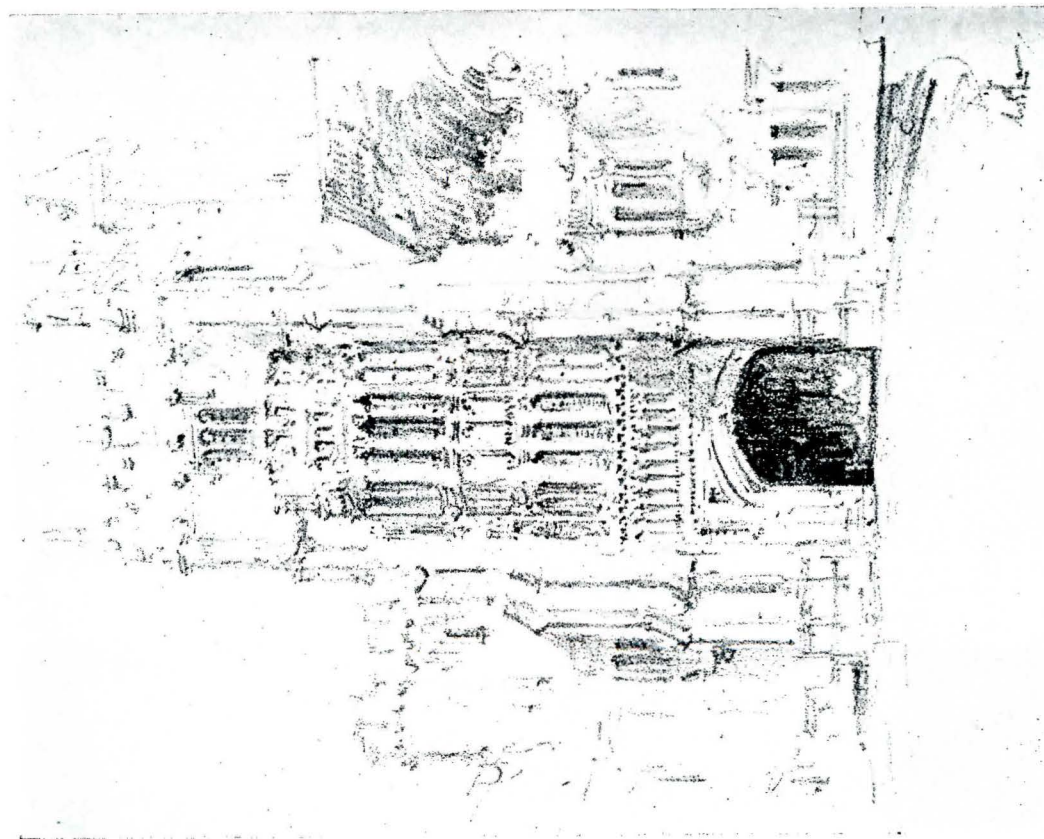
Henry Sasch, Secretary

COMPETITION FOR AUSTRALIAN WAR MEMORIAL

THE Commonwealth of Australia is inviting competitive designs for the Australian War Memorial at Canberra. "The Memorial is intended to take the form of a monumental building comprising a 'Hall of Memory' to those Australians who died as a result of service in the Great War, and courts and galleries suitable for housing the war relics forming the Australian War Memorial collection, part of which is now displayed at the Exhibition Building, Prince Alfred Park, Sydney." The competition is limited to architects who are British subjects resident or domiciled in Australia, or born in Australia and living abroad. The competition closes at 12 noon on Wednesday, March 31st, 1926. Conditions regulating the submission of designs may be obtained upon application from the Secretary, Federal Capital Commission, Canberra, and from the Official Secretary to the Commonwealth of Australia in the United States of America, 44 Whitehall Street, New York.

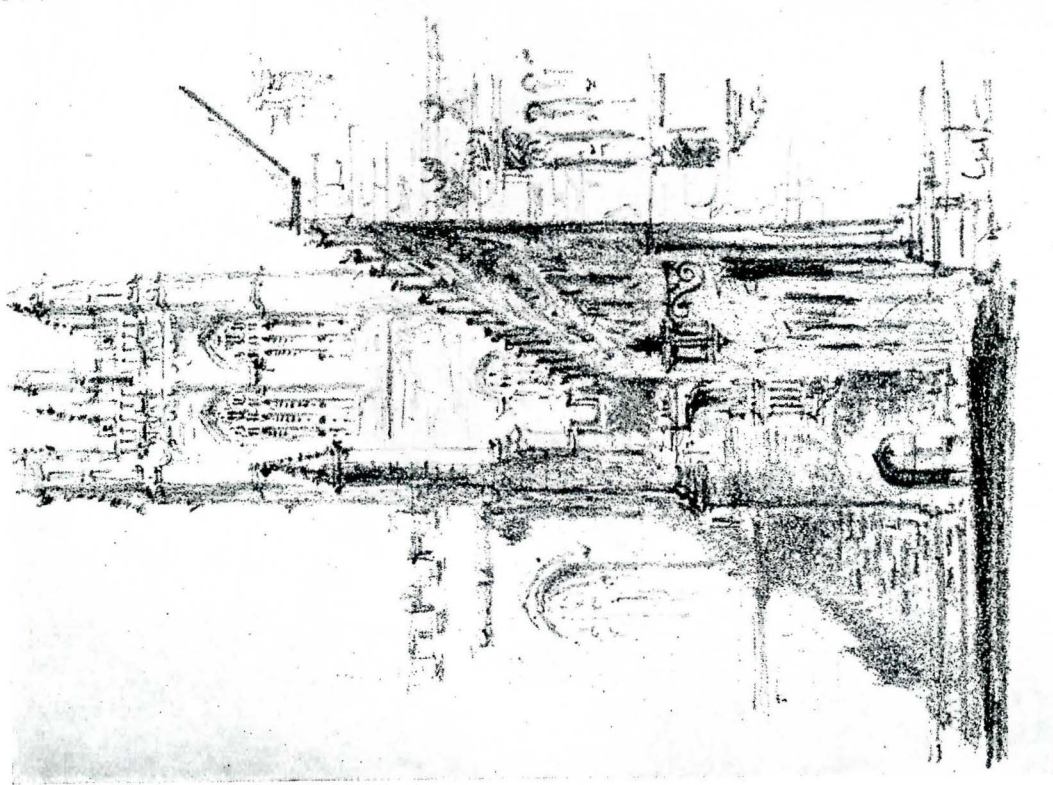
EMIL GINSBURGER

EMIL GINSBURGER, Architect and Teacher, died at his work on September 19th, 1925, of heart failure, an illness from which he had been suffering for four months. Mr. Ginsburger devoted his life to architecture and taught for many years at the DeWitt Clinton Evening High School. He was a member of the New York Sketch Club and for the past ten years had been in the employ of Schwartz and Gross, Architects. His passing on will be keenly felt by his many friends, pupils and associates.



Entrance to the Cloisters.

Lithographs by W. P. Lawson, Leaside, Ontario, Canada. Magdalen College, Oxford.



The Bell-Tower.

PERSONALS

W. HOLMES CROSBY has taken his brother, RALPH M. CROSBY, into partnership. The firm will be known as Crosby-Crosby with offices at 31-33 Beers Bldg., Oil City, Pa.

HUBERT MARION GARRIOTT and WILLIAM GREGORY RAMMEL have severed connections with the firms of Allen and Garriott, Indianapolis, and Allen, Garriott and Rammel, Logansport, Ind., and will continue to practice under the name of Garriott and Rammel, Architects and Engineers, with new offices at 1151-52 Consolidated Bldg., Indianapolis, and 4 Masonic Bldg., Logansport, Ind.

MUEHLMAN & FARRAR, Architects, have removed their offices to 2231 Park Boulevard, Detroit, Mich.

CROMBIE & STANTON, Architects, have removed their offices to 2231 Park Boulevard, Detroit, Michigan.

LEHMANN & WUEHRMANN, have dissolved partnership. William G. Wuehrmann will continue to practice at 505 Two Republics Bldg., El Paso, Texas.

JOSEPH P. JOGERST and ALFRED J. SEELER have formed the firm of Jogerst & Seeler, Architects, with offices at 1916-17 Ford Bldg., Detroit, Mich.

ARTHUR C. SANDERS, Architect, has removed his offices to Paseo de las Flores, Santa Barbara, Cal.

SALVATORE J. GRITTI, Architect, has removed his offices to 1032 South 55th Street, Philadelphia, Pa.

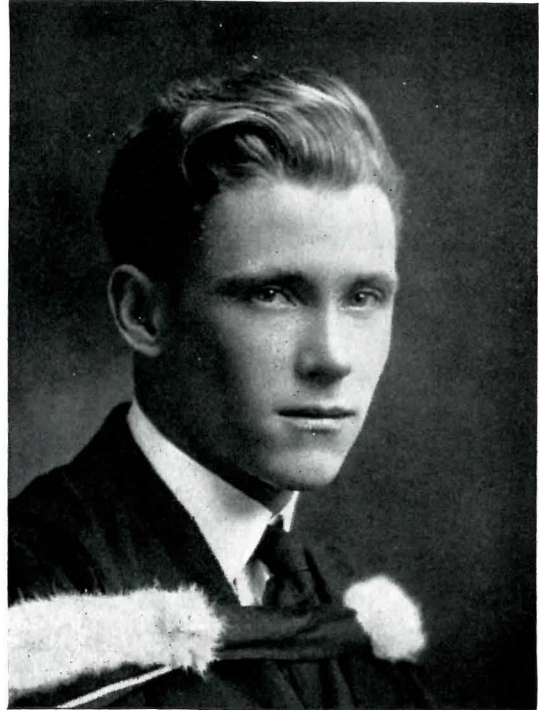
HUGH T. KEYES, Architect, has removed his offices to 635 Free Press Building, Detroit, Mich.

CARL E. SEGERBERG, ARCHITECT, has opened an office for the practice of architecture at 78 Court St., Middletown, Conn.

RAYMOND MILES STOWELL, ARCHITECT, has opened an office at 184 Boylston St., Wauban Bldg., Boston, Mass.

R. KENNON PERRY, ARCHITECT, formerly a member of Robert & Co., Inc., Atlanta, Ga., is now practicing under his own name with offices at 1001 Wynne Claughton Bldg., Atlanta, Ga.

FRED E. SLOANN and ELMER A. JOHNSON have opened an office under the firm name of Sloan & Johnson for the general practice of architecture at 161 East Erie St., Chicago, Ill.



WENDELL P. LAWSON

WENDELL P. LAWSON was graduated from the University of Toronto, Department of Architecture, in 1924, and was awarded the Province of Ontario Government Scholarship for a year's architectural study abroad. In the summer of 1924, Mr. Lawson worked in the office of Sir Edwin Lutyens in London and the following fall he spent in an atelier of the *Ecole des Beaux Arts* in Paris. The past spring and summer, Mr. Lawson was travelling in France, Italy, Austria, Switzerland and England. On the opposite page are shown two of the many interesting lithographs made during his travels. These sketches were done on a transfer paper with wax crayons and were printed from stone in Paris. The technique is very similar to pencil work and at first glance drawings made in this way are often mistaken for pencil sketches. Mr. Lawson is practicing at Leaside, Ontario, Canada.

AN ANSWER

WE HAVE received the following communication from R. N., 717 Mills Bldg., San Francisco, in answer to the anonymous letter printed on page 91 of the September issue. We shall be glad to hear from other PENCIL POINTERS on this subject.

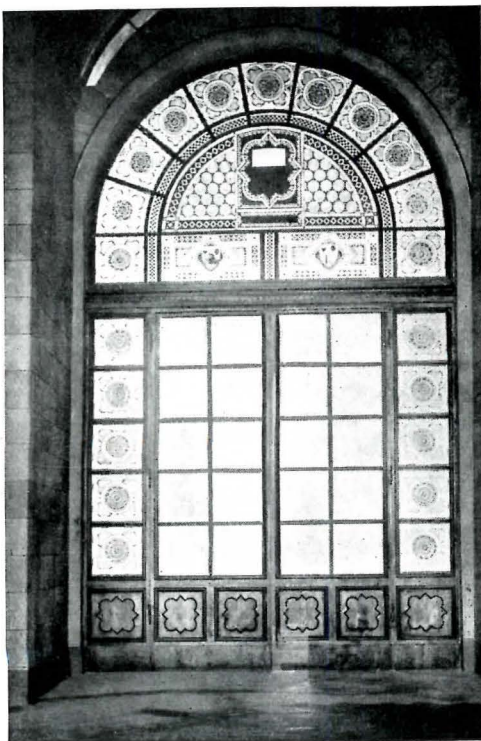
"In answer to your September number, page 91. The best training for a draftsman to know what is needed to handle a job satisfactorily is to obtain permission from the architect that he may be working for to unofficially take a set of plans and specifications and inspect buildings under construction and keep in touch with all developments of the different segregated contracts. In that way he will learn of things which are never brought into the drafting room, but which are very essential to successfully complete a building. The benefits of such procedure are too numerous to mention here. But it must be made clear to all contractors that his inspection is without authority. Otherwise any statement he may make while on the building may lead to confusion."

ARCHITECTURE AND THE CONTOUR OF THE BUILDING SITE

(Continued from page 73)

through experience is that the contour of the site is not a matter that can be left safely to guess work during the designing of the house and taken up only when the question of landscape treatment comes up at some later time.

A number of maps of landscape improvements which show the importance of careful study of the contour of the land are published in connection with this article. In these maps will be found a considerable variety of method of conveying the required information and many interesting conditions are shown. They are well worth studying.



A Measured Drawing by Herbert Lippmann of this Doorway is Reproduced on Page 91

PENCIL POINTS

AN AID TO THE ART OF FREE-HAND LETTERING

By Frank Bentley.

NEAT, regular, and even free-hand lettering either with the pencil or pen is indeed the draftsman's pride, but many of the craft with years' of experience have found it to be a difficult accomplishment.

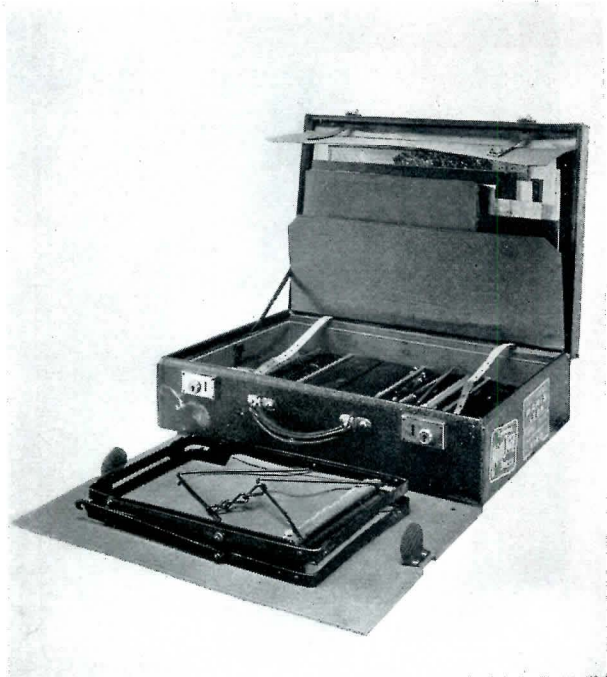
The perfect letter is not the result of forming it with care in occasional notes or explanations, but the stroking of it even hundreds of times in patient repetition.

A great many practice over the drawing board in hours away from the office, where most of the endeavor takes place, but under circumstances which render the gaining of facility a physical impossibility. Seated before a board no matter how convenient the level or height, the body soon tires and the arm with it. Fingers and eyes fatigue and the time spent is to no avail.

Take a small piece of soft pine, about 12" x 12", and finish on either one or both sides. Tack the guide line paper with the strip of practice cloth or paper to it. The small board can be laid on a table, the arm of a chair, or any other place and in a convenient position to work over it. No matter what posture soon tires the body, a slight shift into another position eases it. A little turn of the small board and practice continues.

Fine lettering is but a matter of delicately trained finger muscles, which soon become very steady, hard and enduring if the body and eyes do not give away first. The small board enables practice to be carried on under a reading glass held by the left hand. The work can be continued pleasantly for periods that develop perfection.

A few months of such practice, taking one particular letter a day for the subject of practice will produce some really wonderful results in removing this stumbling block of the craft.



Travelling Case which Mr. Richmond had made to carry his Drawing Materials.

ROTCH SCHOLAR RETURNS

ISIDOR RICHMOND, Rotch travelling Scholar for 1923, has just returned from his travels in Europe. He came in to see us and we were very much interested in a travelling case which he had made for his drawing materials. We reproduce a photograph of it above and also a list of the materials which Mr. Richmond carried in it:

Flap in Cover:

Folder for completed sketches

Note book for measurements

2 water color blocks

2 pencil sketch books

Upper part of tray:

Folding sketching stool

Lower part of tray:

Compartments for the following:

Water-color box

Pencils, pens, rubbing wax, erasers, etc.

Drawing instruments

Water-color brushes

Tin flask for water

Steel tape

Scale and rule

On the opposite page is one of Mr. Richmond's sketches made during his travels in England, France, Switzerland, Italy, Sicily, Algeria, Morocco, and Spain. Mr. Richmond is opening an office at 248 Boylston Street, Boston, where he will practice architecture.

ROOSEVELT MEMORIAL COMPETITION.

THE competition to select a designer for the Roosevelt Memorial to be erected in Washington, D. C., south of the White House, closed October 1st. The prize of the competition is the Commission to Design the monument and the winner will be expected to make any further studies necessary to meet the requirements of the Roosevelt Memorial Association. The designs submitted will be hung in the Corcoran Art Gallery in Washington and will be judged on October 3rd and 4th by the jury, namely, Messrs. Paul Cret, Herbert Adams and Louis Ayres. Each competitor will receive an honorarium of \$2,000. Announcement of the award will be made in the November issue.

THE WOMEN WANT AN ATELIER.

AS FAR as we know there is no atelier in New York that admits women. There is a movement under way to start such a place and a number of students and drafts-women are already making plans toward this end. We shall be glad to forward inquiries from anyone who may be interested in an Atelier for Women. Address E. L. C., care of PENCIL POINTS.

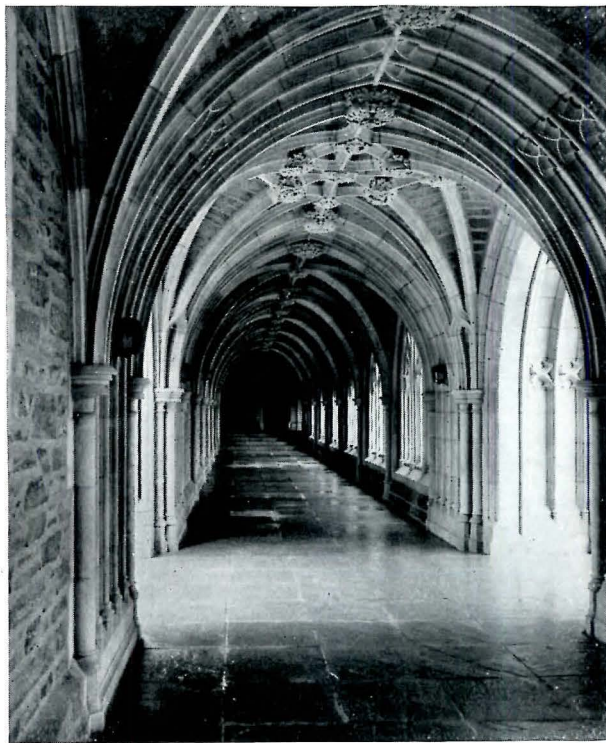
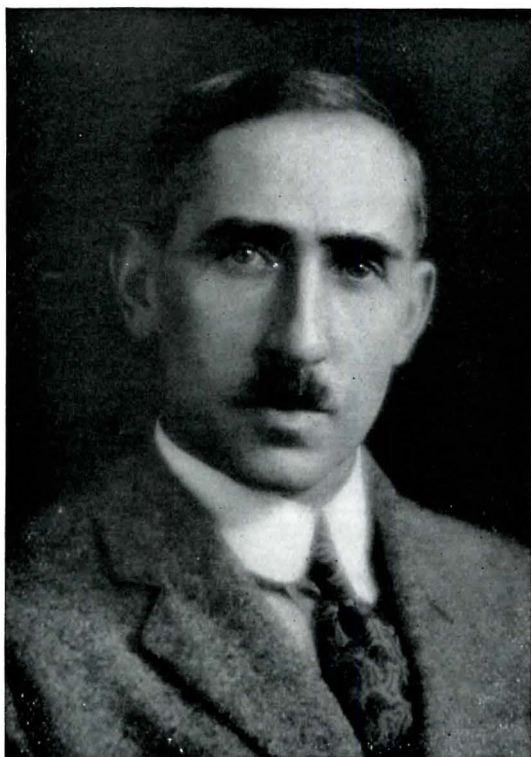


Photo showing Cloister Vaulting, Princeton University. Day & Klauder, Architects. Plan and Details of this Vaulting appear on page 88.

PENCIL POINTS



ERNEST D. ROTH

ERNEST D. ROTH has recently returned from Italy and brought with him a number of very interesting drawings. He was born in Stuttgart but came to this country when he was five years of age and was brought up and educated in New York. He studied art at the schools of the National Academy of Design and etching under Mr. James D. Smillie. For a number of years Mr. Roth has practiced and studied in Italy and Spain, visiting France, Germany, Austria and Turkey. Mr. Roth is perhaps best known for his etchings which have a clarity and beauty that cannot be over-praised. His pencil sketches are equally delightful and through the courtesy of Mr. Roth we have reproduced one of these on page 67 of this issue.

JACOBSON ANNUAL COMPETITION FOR 1926.

JACOBSON & COMPANY are offering prizes amounting to \$1,000 for a "Design for an Architectural Club." The competition is open to architects, draftsmen, students and others. Prizes to be awarded as follows:

| | |
|-----------------|-------|
| 1st Prize | \$500 |
| 2nd Prize | \$300 |
| 3rd Prize | \$200 |

The competition closes April 1st, 1926. A full announcement appears elsewhere in this issue, or information may be obtained from Jacobson & Company, 241 East 44th Street, New York.

LEHIGH PORTLAND CEMENT HOME COMPETITION

THE Lehigh Portland Cement Company is holding a competition for the architectural design of moderate-cost fire-safe, concrete masonry houses and bungalows. Prizes to be awarded as follows:

| | |
|-----------------------------------|---------|
| Grand Prize | \$1,000 |
| First Prize, Class A..... | \$500 |
| First Prize, Class B..... | \$500 |
| Second Prize, Class A..... | \$300 |
| Second Prize, Class B..... | \$300 |
| Third Prize, Class A..... | \$200 |
| Third Prize, Class B..... | \$200 |
| Fourth Prize, Class A..... | \$100 |
| Fourth Prize, Class B..... | \$100 |
| 10 Mentions, Class A (each) | \$50 |
| 10 Mentions, Class B (each) | \$50 |

The competition closes at noon, November 10, 1925. An announcement of the competition is published elsewhere in this issue or may be secured from *The Architectural Forum*, care Lehigh Portland Cement Home Competition, 383 Madison Avenue, New York.

COMPETITION FOR WALLPAPER DESIGN.

A COMPETITION open to all architects, artists, decorators, designers and students resident in the United States is being conducted by The Arts-in-Trades Club of New York. Designs are requested for a wallpaper to be used in the living room of a moderately-sized, detached, suburban dwelling with a medium natural light exposure. Through the courtesy of Mr. Robert Griffin, who has placed a generous sum at the disposal of the Club for this purpose, prizes will be awarded as follows:

| | |
|--------------------------------|---------|
| First Prize | \$1,000 |
| First Honorable Mention | \$200 |
| Second Honorable Mention | \$100 |

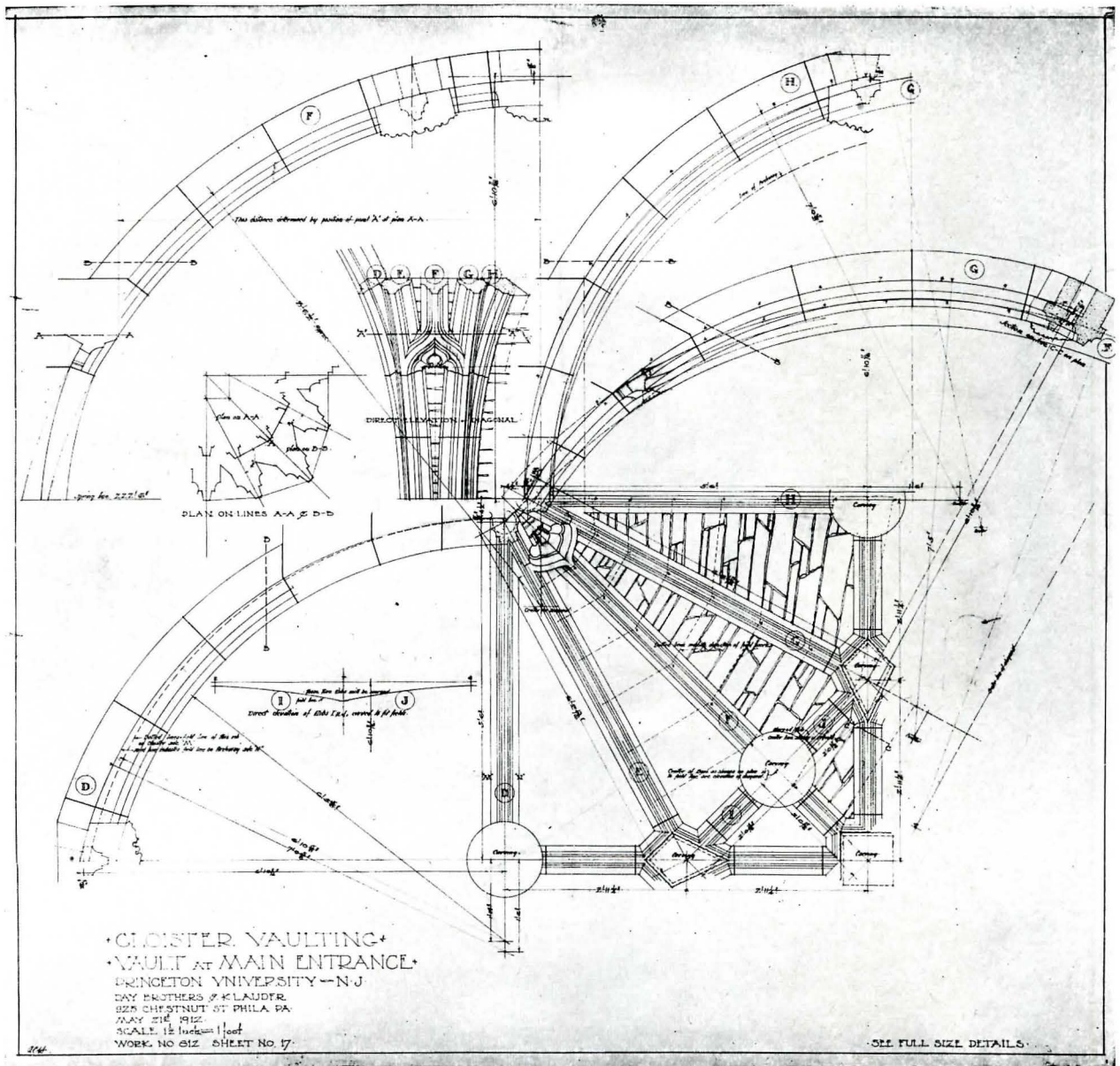
Designs to be submitted in the competition should be sent to George E. Clark, Secretary of the Exhibition Committee, Art-in-Trades Club, 34 East 38th Street, New York, between February 15th and February 20th, 1926. A public exhibition of the designs will be held at the Club from March 1st to March 20th, 1926.

AMERICAN HOSPITAL ASSOCIATION MEETING

THE meeting of the American Hospital Association will be held in Louisville, October 19th to 23rd. The Hospital Library and Service Bureau will show plans of approximately eight hundred hospitals, sanatoriums, nurses' homes, medical schools and allied institutions. Another feature will be a sample of the way in which the Bureau has indexed the hospital journals—*The Modern Hospital*, *Hospital Management* and *Hospital Progress*. The office of the Hospital Library and Service Bureau is at 22 East Ontario St., Chicago, Ill., Donelda R. Hamlin is Director.

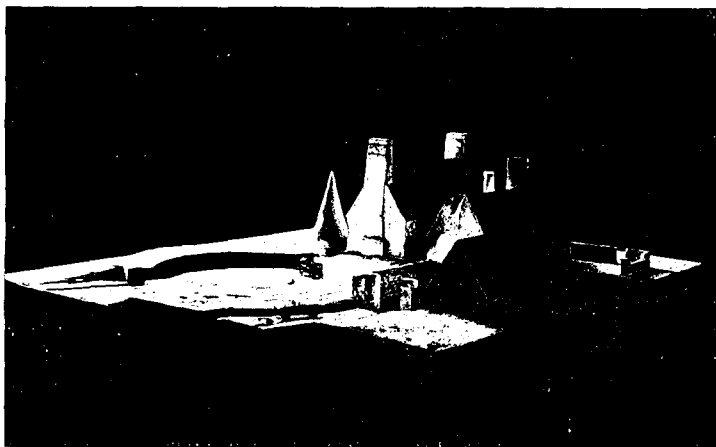
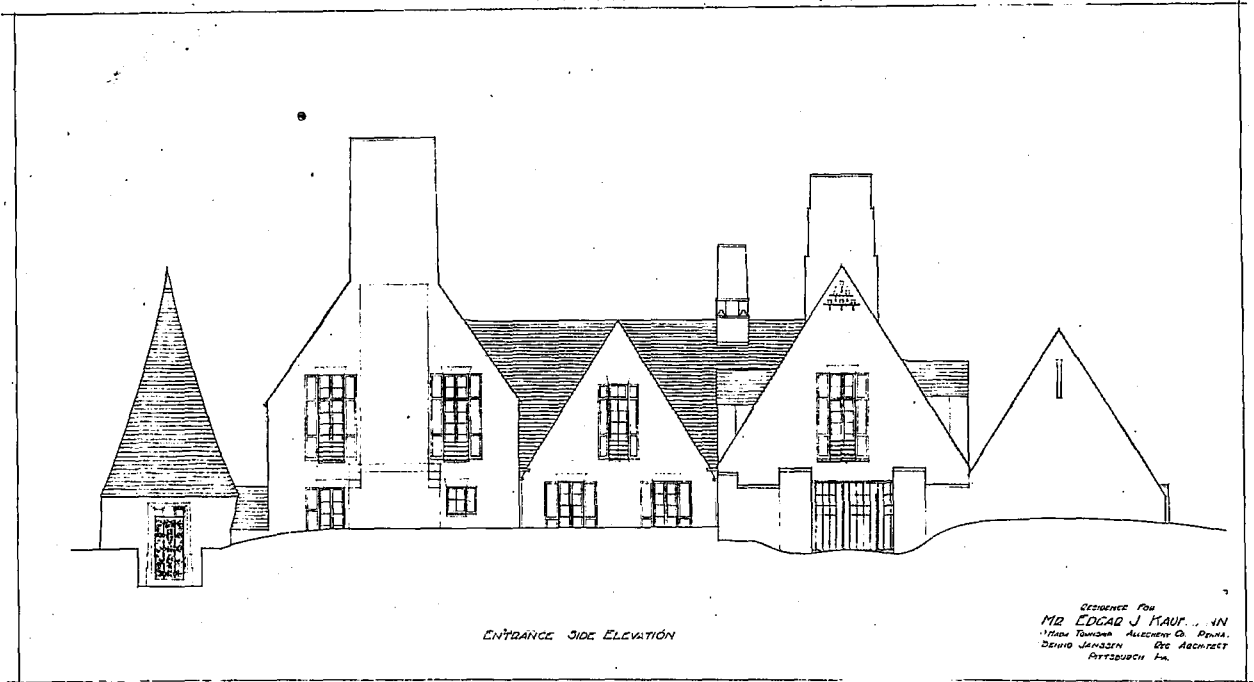


Drawing made in Rome by Isidor Richmond.



Details of Construction—Cloister Vaulting, Vault at Main Entrance, Princeton University. Day & Klauder, Architects, Philadelphia, Pa. (A photograph of the completed cloister appears on page 84.)

PENCIL POINTS



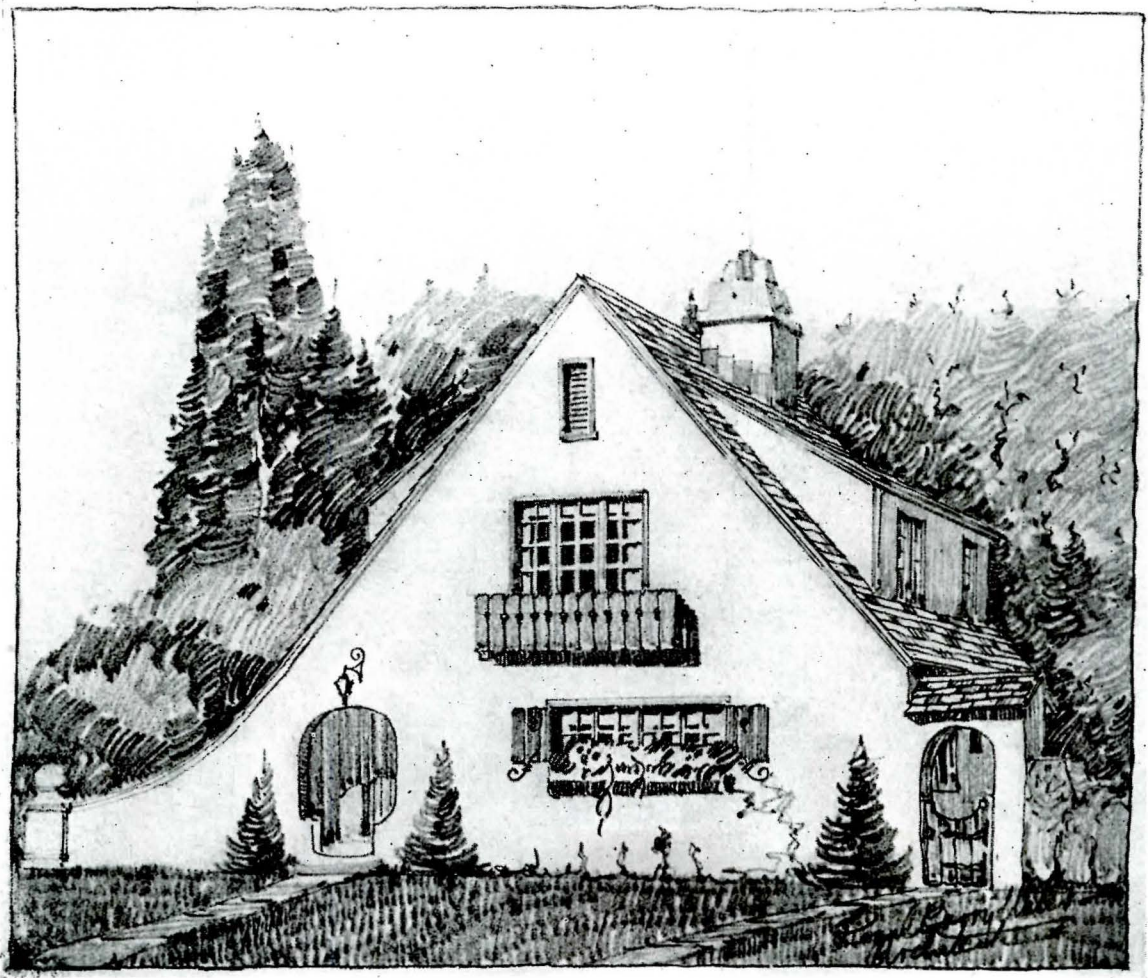
Above—Mr. Janssen's Original Sketch.

Top—Working Drawing Showing Development of Entrance Side Elevation

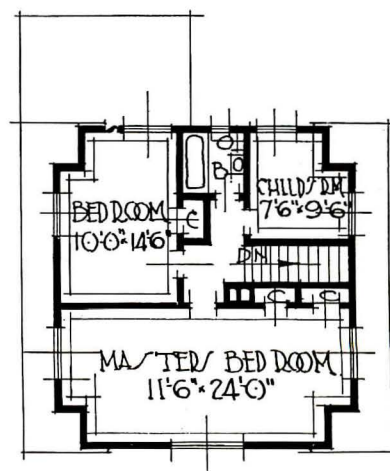
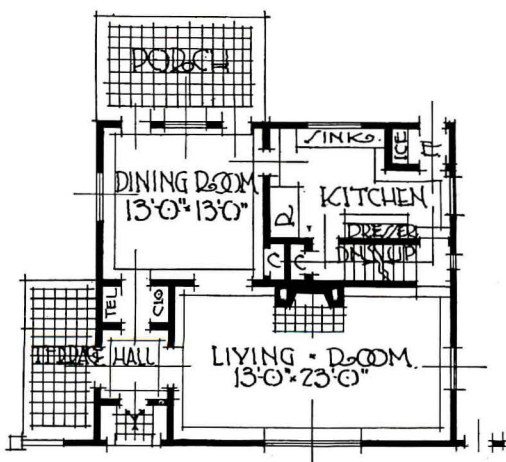
Left—Model for Study of the House.

Country Residence for Mr. and Mrs. Edgar J. Kaufmann.
Benno Janssen, Architect, Pittsburgh, Pa.

PENCIL POINTS



Rendering by Royal Barry Wills.



Design for a Small House, Royal Barry Wills, Architect, Boston, Mass.

PENCIL POINTS

WASTE

By Raoul C. Gautier

(Continued from page 64)

building. Whether he knows it or not, and it is assumed that he does not, the owner pays the bill, a bill which is far too large, since he pays for doing the same operation a number of times, instead of paying for it once. It is waste, pure and simple—intolerable waste.

And yet we have at our disposal a method: the quantity survey system,—which it is true does not eliminate all the evils of estimating, but which has at any rate the following advantages:

(a) Since it is impossible for the quantity surveyor to make a complete survey of the quantities without having complete plans and specifications, the Architect or Engineer is compelled to make his plans complete and his specifications definite.

(b) The Contractor is not then placed in the embarrassing position of deciding whether the Architect means one thing or its equal, or another, or to assume full responsibility for conditions which the Architect is either too lax or too lazy to investigate thoroughly, such as the nature of the ground, the probability of water in the excavation, the possibility of having to underpin adjacent buildings and a thousand other items which are responsible for a higher price when bids are asked from competent contractors on incomplete or indefinite plans and specifications.

(c) Incompetent and unreliable contractors who do not know how to take off quantities and who leave out of their estimate all that is not absolutely definite, hoping to get by later, and gamblers, are eliminated from the field, thereby making contracting a more desirable business.

(d) The Architect's task is thereby rendered much easier and "extras" due to omissions or errors reduced to a minimum.

(e) The Contractor's mind being absolutely at rest as to "quantities" he can devote all the time granted him for the preparation of the bid to the study of the best and most economical way of handling the job, the obtaining of better prices and finally his own pricing which too often is done in the last minute rush.

(f) This system works successfully in other countries and is used in this country for public and railroad work and there is no reason why it should not be successful in all branches of construction. We believe that trained men could take off and list the quantities on a job such as mentioned above for one-half percent or less with a corresponding saving of at least \$8,000 on such a job as that under consideration. It is an easy thing to figure a proportional saving on \$5,000,000,000; an approximate estimate of the amount spent annually for construction in the entire country. The result, \$100,000,000, is staggering.

It is not proposed that the cost of quantity surveying be borne by the Architect. God knows, his fee is small enough as it is. No, it is part of the cost of the building, just as much as the plans, or the heating for that matter, and it should be borne rightly by the Owner. How to make him pay is a question to be decided by the parties interested, and an Architects' campaign in this direction would undoubtedly help greatly.

At any rate, it seems to the writer that there is no reason why quantities could not be taken off by somebody appointed by the Architect and the surveyor's fee reimbursed to the latter by the successful Contractor. It is suggested that a clause reading as follows might be incorporated in the specifications:

"The Bidders shall allow in their estimate the sum of \$.....to cover the cost of quantity surveying. This sum shall be reimbursed by the successful Contractor to the Architect immediately upon the awarding of the contract."

There is not very much more to be said except perhaps that besides the advantages enumerated above, the adoption of quantity surveying would probably eliminate from the field incompetent members of the architectural profession who, because they prepare incomplete plans and specifications, are able to take commissions for much smaller fees than the more competent and more conscientious architects.

ADDRESSES WANTED

ANYONE knowing the correct addresses of the following will confer a favor by sending them to this office, Pencil Points Press, Inc., 19 East 24th Street, New York City.

ALABAMA: Robert Liary, Auburn.

CALIFORNIA: Olive K. Chadeayne, Berkeley; S. T. Alexander, John Ferrier, Everett R. Harman, Emil A. Lehti, Samuel P. Lipschitz, Henry F. Starbuck, D. P. Thomas, Alonzo Warden, Los Angeles; F. W. Brauer, Mill Village.

COLORADO: H. Z. Sanders, Boulder.

CONNECTICUT: D. W. Braumer, S. Coolidge Haight, S. Lee Hinman, E. Munizaga, W. R. Stone, New Haven.

FLORIDA: H. D. Davis, Arthur J. Pohle, Miami; H. S. Singley, Orlando; Miss Marie Ballet, West Palm Beach; W. C. Baughman, St. Petersburg.

GEORGIA: C. M. McGarvey, J. J. Whitfield, Atlanta.

ILLINOIS: P. B. Byrne, Champaign; Lee Atwood, Lloyd H. Dittich, J. B. Lindquist, T. Rissman, J. Wm. Sievert, Emil Zunkeller, Chicago; Charles F. Ellis, Oliver Stepan, Urbana.

IOWA: C. H. Perisho, Bloomfield; Eugene F. Gier, Conrad; V. O. French, Des Moines.

KANSAS: John W. W. Thompson, Wichita.

MARYLAND: Howard C. Sullivan, Cottage City.

MASSACHUSETTS: Richard A. Butler, P. DiSalvo, E. E. Dobbins, Boston; A. D. Badour, John Walter Wood, Jr., Cambridge; Harry B. Greene, Worcester.

MICHIGAN: W. G. Chan, Wayne H. Laverty, Miss Margaret Ward, L. M. Wetzel, W. B. Wiener, Ann Arbor; Howard L. Farley, Verne H. Sidman, Arthur Y. Smith, Detroit.

MINNESOTA: C. Odlin, Brookside; Alvin J. Jansma, E. Neagoe, I. W. Silverman, S. C. Wong, Minneapolis.

NEW JERSEY: L. W. Pickering, Newark.

NEW YORK: William C. Hespelt, Albany; T. Schmidt, Brooklyn; Joe McCoy, New Rochelle; Walter H. Babcock, Elmer Babitsky, Martin Beck, Valerio Giorgini, James P. Huget, Kieswitter & Hamberger, M. McDowell, Edgar D. Tyler, New York City; P. E. O'Brien, Waterloo.

NORTH CAROLINA: R. C. Brown, D. R. Pace, Raleigh.

NORTH DAKOTA: T. Avery Chadwick, Fargo.

OHIO: C. Y. Wong, Canton; Harry McMorris, Cleveland; George H. Birch, K. E. Dumbauld, C. D. Robb, Columbus; Niel Meehan, Dayton; James Lane, Jr., Lakewood.

PENNSYLVANIA: K. W. Foucar, Herman H. Kline, F. F. Schumann, Ellis R. Waring, Philadelphia; George J. Scheers, State College; Doyle S. Eberhart, Uniontown; Edmund Poggi, Wilkes Barre.

SOUTH CAROLINA: Charles L. Guy, Greenville.

TENNESSEE: W. W. Donaldson, Knoxville; Everett D. Woods, Memphis.

TEXAS: Arnett Elliott, Dallas; A. E. Boyer, Harrisburg.

UTAH: Slack W. Winburn, Salt Lake City.

VIRGINIA: W. J. Anderson, Jr., Alexandria; L. D. Bean, John Behrens, B. Franklin Hart, 3rd, Marshall Wells University.

WASHINGTON: Carl McLean, Edwin Turner, Seattle.

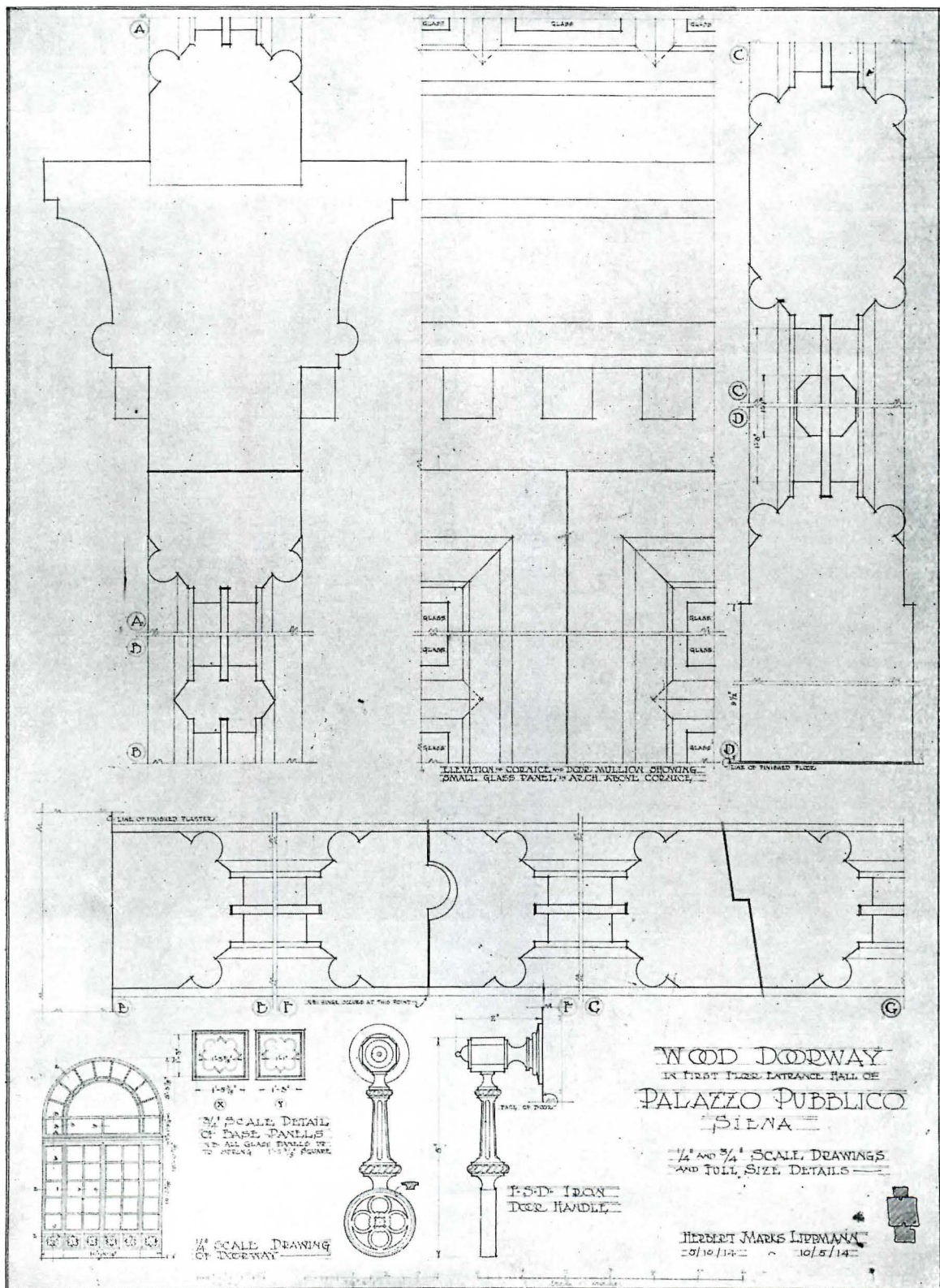
WEST VIRGINIA: J. R. Birchfield, George D. Brown, Huntington; John J. Murray, Wheeling.

WISCONSIN: Ellis J. Potter, Madison; William C. Ostermeyer, Milwaukee.

ATTENTION ARCHITECTURAL CLUBS!

WE WANT the names of officers that have been elected for the coming year in each and every architectural club in the country. We want to know your plans for the coming season, about your parties, ateliers, and anything that will be of interest to PENCIL POINTERS. Material for publication should be in our editorial offices at 19 East 24th Street, New York, on the 10th of the month preceding publication. We shall appreciate it if the secretaries of the various clubs will send in their news *now* for the November issue.

PENCIL POINTS



Measured Drawing by Herbert Lippmann. (A photograph of this Doorway appears on page 83)

HERE AND THERE AND THIS AND THAT

CONDUCTED BY RWR

THE discoverer and founder of this department went on his vacation a while ago and said he would come back in time for the printer, but he hasn't shown up yet and so we guess he is fishing, or something, and has forgotten all about it so we will have to do the best we can, which will probably be just as good as he would have done anyway.

CONTRIBUTIONS in response to the announcement published here in September are already coming in and the competition for the monthly prizes bids fair to be keen indeed. There is certainly plenty of talent rampant or latent in all parts of the country and here is a good chance for everybody to show what he can do. For the benefit of those who may have overlooked the announcement in question it is reprinted herewith.

We are going to offer prizes according to the following specifications. There will be four monthly prizes of ten dollars each, to be awarded as follows:

Prize No. 1 for the most interesting sketch received each month. No conditions as to subject or medium used. Sketches may be of any size and done in any manner pleasing to the sketcher.

Prize No. 2 will be awarded to the most interesting verse. It may be a couplet, or a triolet; a limerick, an ode, or a dithyramb; it may be blank verse or free verse, or doggerel or anything whatever that has capitals at the beginning of each line. It may deal with architecture or astronomy or anything else.

Prize No. 3 will be awarded to the best cartoon or caricature. No conditions as to subject or treatment. In awarding this prize greater weight will be given to the originality and cleverness of the idea, rather than to the technique or draftsmanship.

Prize No. 4 will be awarded to the most interesting item received each month not falling within any of the above mentioned classifications. It may be an anecdote or a witticism, or anything else which would find proper place in this column, and we are to be the sole judge of what is proper.

This stupendous contest started with the month running from September the fifteenth to October the fifteenth. All contributions received between these dates will be considered for the prizes, whether they are actually selected for publication in the November issue or held for later use.

The same dates will be observed for subsequent judgments; that is, the second series of prizes will be awarded for contributions received between October fifteenth and November fifteenth, and so on until further notice.

All drawings, whether awarded prizes or not, will be promptly returned to the contestants.

Anyone may enter as many items as he wishes for one or more months, whether he be a subscriber for PENCIL POINTS or not; and contributions from foreign countries are quite as welcome as the domestic product.

Mark all contributions with the name of this department and make sure that in all cases the name of the contributor appears both on the wrapper and inside the package.

And here is the first offering to our monthly competition, sent in from Phoenix, Arizona. We don't know whether we should publish this now or not, but we like it—and the boss isn't here to stop us:

R. W. R., Conductor of "Here and There, and This and That."

Beloved:

Here is a shot at the prize for No. 2; being alleged verse of a sort; also a problem story of crime in high life, and offered as

A SONNET ON ARCHITECTURAL PRACTICE

Alphabetically Arranged.

A, for an Architect, whose name was B,
And C for a client who came in to see
About D, a design for E-recting a F-lat,
G-rand, H-andsome and I-mposing, and all of that;
J, for Jacobean, the style of the gables
K-aleidoscopically colored to harmony-tables;
Bearing L, the looks, always in M, the mind,
For the good of the N-neighborhood, and things of that kind;
O for orientation, and P for some paint,
Q-uaintly R-eacting on S-inner and saint,
According to T, the technical statistics,
U, for uniform with V-ariale characteristics;
Having W, the windows, set at X, the unknown,
By co-efficient Y, for the new building Z-one.

V. O. WALLINGFORD



Vacation Sketch by Harold W. Barker, Grand Rapids, Michigan.

PENCIL POINTS

HERE is a letter from Pencil Pointer Louis S. Dunbar on the subject of a competition for an "Ideal" Cellar, which we are passing along to those of our readers who may find themselves face to face with the cellar problem. Mr. Dunbar seems to have met the monster face to face and evolved a solution quite in accordance with present day necessities:

In the August 1925 issue I noticed an item regarding a competition for an "Ideal" cellar layout.

I have recently completed for a client (and to the complete satisfaction of both the man and his wife) a small house, the contract price of which was \$37,025.05. The cellar of that house received so much thought and study, and is really so perfect in every detail that in the community it is unanimously regarded as the "ideal" cellar.

Without wishing to appear unduly modest, I venture to state that were I to send in that plan, it would be useless for others to submit their designs. The competition would close then and there.

In the first place, the owners insisted the furnace be located on the first floor, and an oil burner. The man could not be annoyed with the necessity of going down cellar day after day, eight months of the year, merely to stoke up a furnace; to say nothing of the nuisance of clearing out the ashes. As he is door-man in a popular supper club in the City, and would therefore be absent all night, his wife would have had to coal up each evening; and she positively refuses to go down cellar alone after dark. They both had seen glowing pictures in many magazines showing a chic article located in rooms of every description, from billiard room to boudoir, and the nickel-plated trimmings and immaculate floors in the illustrations had captivated them. After much study and with great astuteness, I worked in a cozy niche off the living room, balancing on the plan the radio alcove, and in it installed a shiny, most attractive little boiler, with oil-burning attachment. It is a pleasure now to enter that room and observe the thermal center of the household in its personal intimate setting.

They tell me that guests, after inspecting the cellar, come up-stairs and often go to the furnace thinking it is an elaborate radio set and try to get distance on the steam gauge.

In many homes the laundry is located in the cellar. I eliminated this room. My client's wife each week takes the family wash in a taxi, around the corner to a popular "WET WASH" atelier.

The cold room, which formerly was a prime requisite in every house, was very easily dispensed with. Each day the wife gets all the necessary supplies at the delicatessen on the main street, next door to the beauty parlor.

Thus was the cellar rid of all the usual fussy, awkward, and disagreeable features, and the space left entirely clear—an IDEAL cellar where my client can make all his homebrews.

Very truly yours,
(Signed) LOUIS S. DUNBAR

WE HAVE received a letter from Gaylor Robert Miller, of Honolulu, Hawaii, which we believe will be of interest to readers of PENCIL POINTS. On page 9/ of this issue will be found one of the designs for a small house described by Mr. Miller in his letter.

The Editor,
PENCIL POINTS,
Dear Sir:

Accompanied herewith find sketch of a house which I thought you might find of use for publication in your little journal being, as it were, from the other side of the world. Perhaps a word in explanation would not be amiss.

The first thing that prospective clients ask for is a book that might give them some ideas on the type of a house that they desire. Of course, with apprehension that can be well understood, one dolos out the usual stock plan books with the usual apologies anent their unadaptability, their erroneous appended cost and (Vanitas Vanitatum) their utter atrociousness. Also, altho this point is not mentioned, the fact that these plans are furnished, prepared by certified architects, (please do not comment) for the munificent sum of twenty-five dollars. In order to get away from all this I prepare sketches under local conditions and prices similar to that here sent. This work I do in my spare moments and to date I have about fifty of these designs. Now when the feller with the lot and the girl enters the office he gives

these sketches the double "O" and usually finds exactly what he, pardon me, the missis, wants.

Moreover the renugnant part, that of handing out another's work for ideas, is successfully obviated.

Yours very truly,
(Signed) G. R. MILLER



We are advertised by our loving friends. Ernest Olaf, of Kansas City, encloses the above masterpiece with his order for a copy of the missing book.

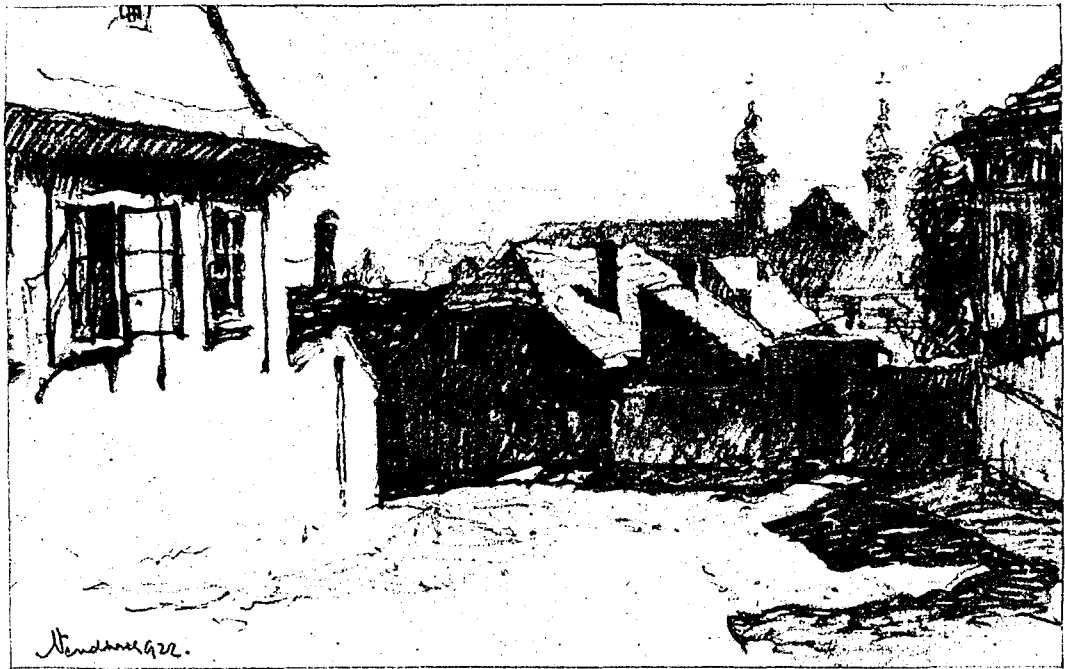
Every ambitious draftsman, as well as every practising architect, should read THE ARCHITECT'S LAW MANUAL. This book, by Clinton S. Blake, Jr., is published by the Pencil Points Press, Inc. Price is \$5.00.—ADV.

The prize for the most interesting contribution in this department for September goes, by unanimous vote, to Mr. Miles Miller, Dayton, Ohio, for his cartoon entitled "Our Office."

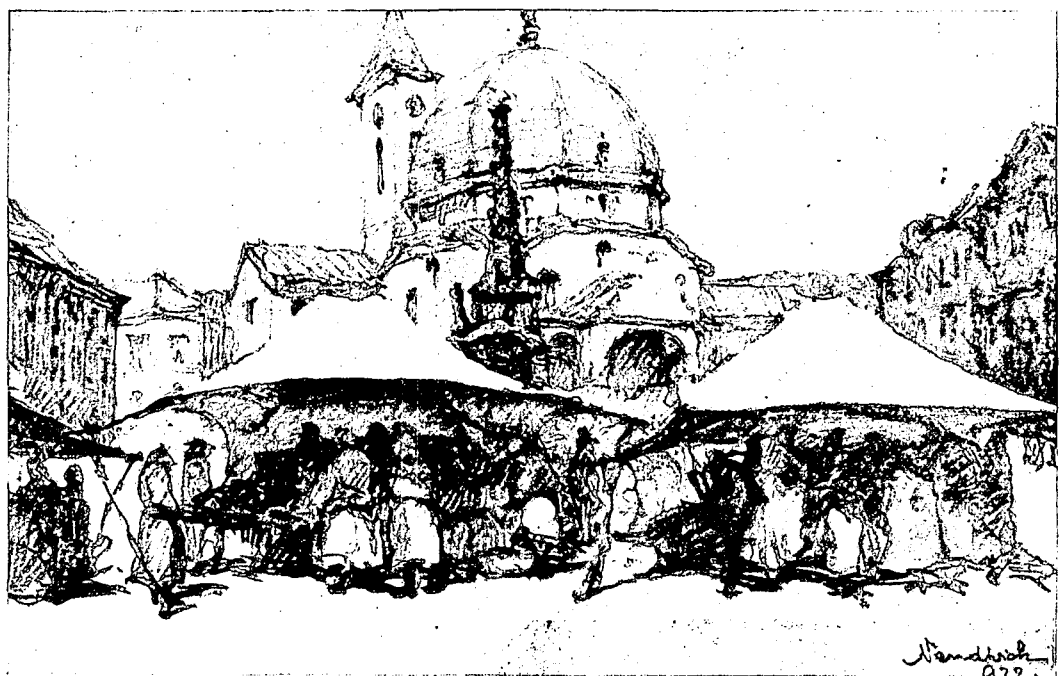
Mr. John J. Wade, 15 Crescent Avenue, Buffalo, N. Y., is anxious to secure copies of PENCIL POINTS for December 1924, January, February and March 1925. Mr. Wade will be glad to hear from those having copies to spare.

We do not know what the old man will say when he gets back about the way we have done his work for him, but he has nobody to blame but himself. The next time he goes on his vacation he ought to do his work before he leaves and not leave us high and dry on the sixteenth of the month, same as he did this time. We had to do our work, vacation or no vacation.

PENCIL POINTS

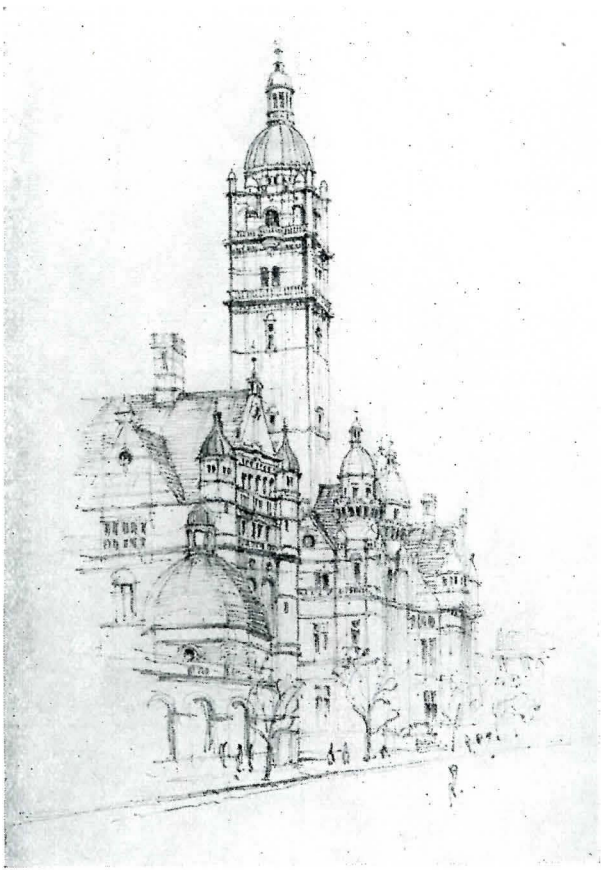


Sketch by André Nendtvich, Old Street in Pecs, Hungary.

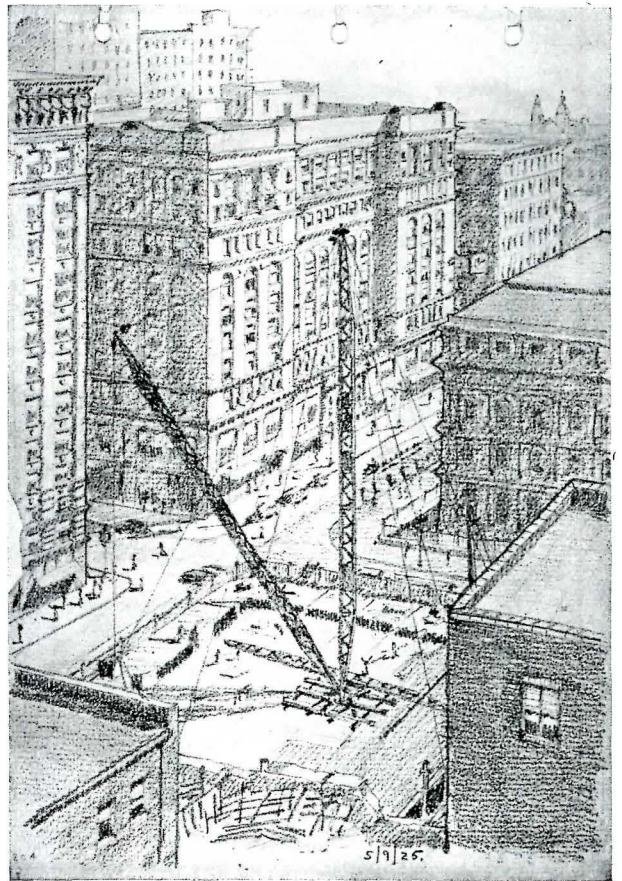


Sketch by André Nendtvich, Market Place in Pecs, Hungary.

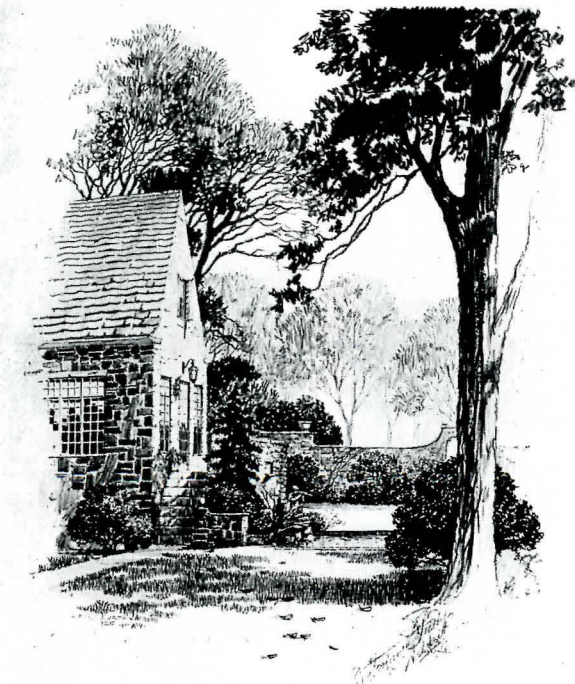
PENCIL POINTS



*Sketch by F. Thorp, New York.
Imperial Institute, London.*



Sketch by Alex. C. Krueger, St. Louis, Mo.



*Drawing by Louis Kurtz. Detail of Residence at
Scarsdale, N. Y.*

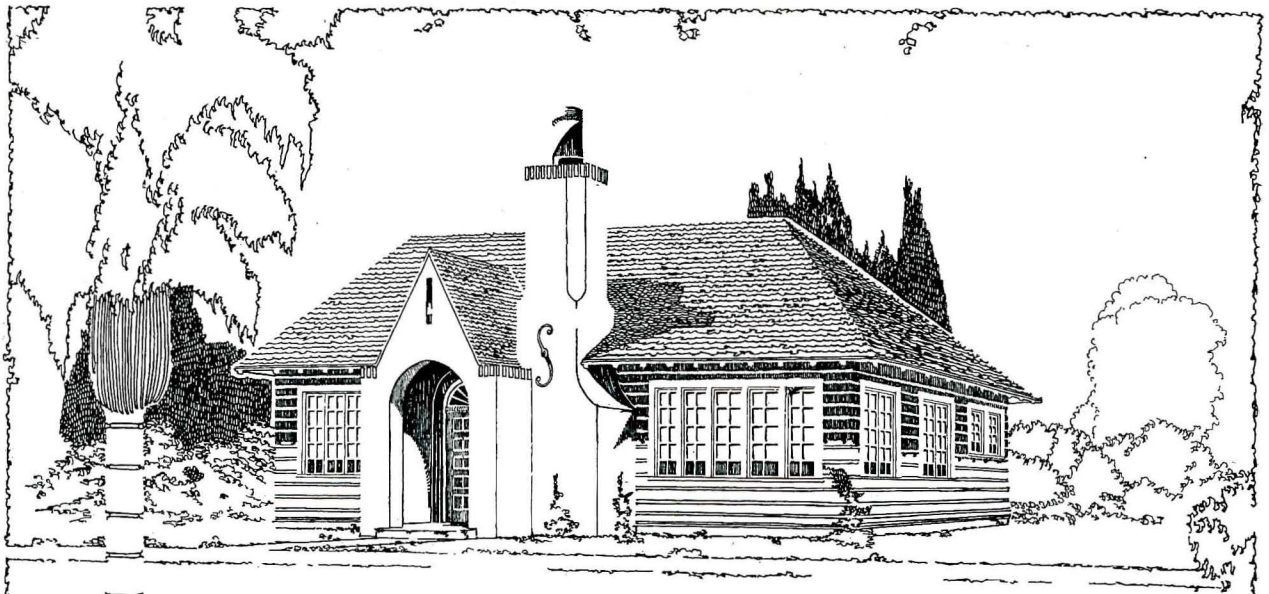


By Carl Jensen, Brooklyn, N. Y.

[illegible]

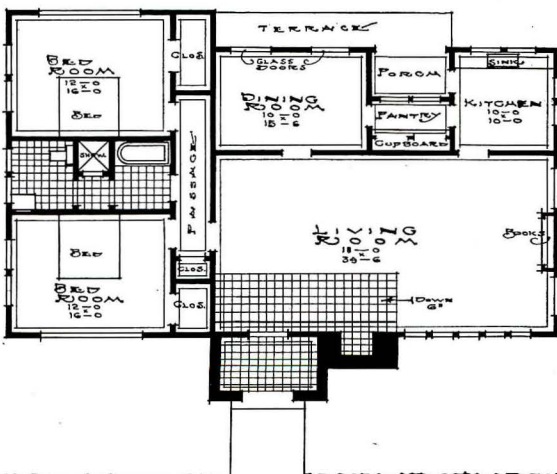
Details of Window Seat, from Part II "Good Practice in Construction" by Philip G. Knobloch, now in Course of prepara-

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DESIGN
FOR A HOUSE
TO COST
7000 DOLLARS

ROBERT
MILLER
ARCHITECT
HONOLULU
HAWAII.....



Design for a House to Cost \$7,000, Guylor Robert Miller, Architect, Honolulu, Hawaii.

THE SPECIFICATION DESK

A Department for Specification Writers

SPECIFICATIONS

By W. W. BEACH

PART XII

DIVISION D, MASONRY

PRECEDING issues have carried these specifications for a Consolidated District School Building through the Divisions of A, General Conditions, B, Excavating, and C, Concrete. We now proceed with the next following Division, that of Masonry, prefacing which we include the customary note, binding the contractor for this division, whether he be general or "sub", by all the terms of the General Conditions, thus:

NOTE. The Contract and General Conditions of these specifications, including the Supplementary General Conditions, govern all parts of the work and are parts of and apply in full force to these specifications for Masonry. The Contractor shall refer there to as forming integral parts of his contract.

ART. 1. WORK INCLUDED.

(A) THE ITEMS under this Division include:

- (1) ALL COMMON BRICKWORK.
- (2) ALL STRUCTURAL TILE MASONRY.
- (3) ALL GYPSUM BLOCK PARTITION WORK.
- (4) ALL EXTERIOR FACE BRICKWORK.
- (5) ALL INTERIOR GLAZED BRICKWORK.
- (6) BOILER STACK, complete.
- (7) SETTING of all cut stone and terra cotta.
- (8) SUCH OTHER WORK as is herein specified.

ART. 2. GENERAL DESCRIPTION.

NOTE. For convenience of Contractors, there is here given a brief mention, not necessarily complete, of the work of this Division, full description of which will be found in the specifications following, beginning with Art. 3.

(A) ALL EXTERIOR WALLS of building above concrete foundations shall be of common brickwork, with face brick on all exterior surfaces, except where cut stone or terra cotta is provided.

(B) EXTERIOR FACE BRICK shall be used on all outside walls of building and boiler stack where so shown and shall be supplied by the Contractor, as selected by the Architect, at a price of \$40.00 per M for standard shapes and \$75.00 per M for angle brick, all f. o. b. cars, East Millville, P. M.

(C) CUT STONE, both limestone and granite, will be prepared and delivered at site under Division E and shall be sorted and set by Contractor under this Division.

(D) TERRA COTTA will be made and delivered f. o. b. cars, East Millville, P. M., under Division F and shall be hauled to site, sorted and set by Contractor under this Division.

(E) BOILER STACK shall be built (on foundation provided under Division C) of common brick, fire brick, face brick and cut stone. Cast iron lintels and cap, steel bands, ladder-rungs and pipe-clamps shall also be provided and set complete under this Division.

(F) INTERIOR WALLS shall be constructed of various materials as follows:

(1) COMMON BRICK shall be used for all partition walls in basement, except that, where glazed brick facing is specified in connection with same, it shall be made an integral part of the wall.

(2) HOLLOW TILE BLOCKS shall be provided for all interior partitions above basement, except where 2" lath-and-plaster partitions are indicated and where gypsum blocks are permitted.

(3) GYPSUM BLOCKS may be used in place of hollow tile for partitions above basement, except for enclosing stair halls and where glazed brick facing is specified.

(G) TILE FURRING shall be built against outside walls back of all glaze-brick wainscot in such location and above same to ceiling in each case.

(H) GLAZED BRICK shall be provided for wainscotting, of height shown, in two gymnasiums, in bath rooms, locker rooms, boys' and girls' toilet rooms, shops and do-

mestic science rooms. The Contractor shall purchase these brick, as selected by the Architect, at a price of \$50.00 per M for stretchers and headers and \$100.00 per M for bull-noses, all f. o. b. cars, East Millville, P. M.

MATERIALS

ART. 3. BRICK, TILE AND GYPSUM BLOCKS.

(A) ALL COMMON BRICK shall be first quality, sound, hard, well-burned, well-shaped, of even color, free from lime, checks and culls and 95% whole. They shall ring clear when struck together. A dry brick, soaked in water 4 hours, shall not show over 15% increase in weight.

(B) FACE BRICK shall be as selected by the Architect, ranging uniformly between the approved samples.

Each face brick shall be in perfect condition when laid in the wall. Octagonal brick shall be so burned, not cut.

(C) GLAZED BRICK shall be in accordance with approved samples, evenly glazed on all exposed faces and free from chips and kiln-marks. Bull-noses shall be provided for all vertical angles, jambs and window stools.

(D) FIRE-BRICK shall be of best approved standard quality, subject to approval of the Architect.

(E) WALL TILE shall be hollow, hard-burned, semi-porous, fire-clay terra cotta tile of best quality. No badly split or warped tile will be accepted. Each piece shall be molded square, true and uniform and shall have a good clear ring when struck with a hammer. No tile may have thru cracks or nicks and none may be used having fiber-cracks greater than 2" at edges or webs or greater depth than $\frac{3}{4}$ ". All blocks shall be free from ingredients liable to stain plaster. Surfaces to receive plastering shall be deeply scored.

(F) GYPSUM BLOCKS shall be made of highest quality calcined gypsum, reinforced with fiber for additional strength and toughness. No sawdust or cinders may be used in the composition. Gypsum shall be shipped in box-cars and stored under roof, free from damp. None that has been soaked by exposure may be used. All shall be sound and dry, with square edges.

(G) SAMPLES of all face, common, glazed and fire-brick, hollow tile and gypsum blocks shall be submitted for approval, showing entire range of variation.

ART. 4. MORTAR MATERIALS, ETC.

(A) ALL CEMENT shall be fresh Portland of approved brand and capable of meeting the test requirements of the American Society for Testing Materials. It shall be delivered in original cloth bags bearing the name and brand of the Maker and none may be used until proven, by tests or otherwise, satisfactory to the Architect. Cement coming in contact with Bedford Stone shall be an approved brand of non-staining. Cement in damp, damaged or caked bags will be wholly rejected. All cement shall be properly stacked in water- and weatherproof sheds, with floors 12" above ground.

(B) LIME shall be mill-hydrate or fresh wood-burned in large lumps. No air-slaked lime may be used. Lime shall meet all requirements of the American Society for Testing Materials. Hydrated lime shall be delivered in original packages, bearing the brand and name of Maker, and shall be stored as specified for cement in preceding paragraph.

(C) MORTAR COLOR shall be of a standard brand and color approved by the Architect, brought on premises in original packages and in sufficient quantity to produce the shade desired.

(D) FIRE CLAY shall be of the best approved standard quality, subject to the approval of the Architect.

(E) SAND shall be composed of clean, hard, durable, uncoated grains and shall be free from injurious amounts of dust, lumps, soft or flaky particles, shale, alkali, organic matter, loam or other deleterious substances. It shall range in size from fine to coarse and the percentage by weight of sand retained on a No. 100 sieve shall not be less than 100, not less than 50% on a No. 50 sieve, not less than 20% on a No. 30 sieve and none on a No. 20 sieve. Volume removable by decantation shall not be more than 1%.

(F) PAINT for Bedford stone shall be approved black waterproof.

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ART. 5. BUILT-IN MEMBERS.

(A) WALL PLUGS AND TIES shall be of standard, heavily-galv. types, approved by the Architect. Plugs shall be No. 20 gage, corrugated both sides and at least $2\frac{1}{2}$ " wide. Ties shall be same gage, not less than $\frac{3}{4}$ " x 6", corrugated full length.

(B) LADDER RUNGS, BANDS AND CLAMPS for chimney walls shall be of structural grade steel, as detailed.

(C) CLEANOUT DOOR, FRAMES, LINTELS AND CAP of boiler-stack be of best grade gray cast iron, in accordance with details and exactly fitting masonry. Standard cast iron door and frame shall be provided for kitchen flue.

(D) ANCHORS for cut stone shall be steel, galv. or tar-coated. Clamps for cornice and coping stones and dowels for balusters shall be bronze.

(E) SLEEVES of No. 24 gage galv. iron shall be provided of proper size, wherever directed, to permit passage of pipes thru walls.

(F) FLUE LINING for smoke and vent flues from kitchen shall be best quality burnt-clay tile of proper size.

WORKMANSHIP

ART. 6. BRICKWORK.

(A) IN GENERAL. All portions of walls, piers and partitions which are not indicated to be concrete, tile, gypsum block, stone or terra cotta, shall be of brickwork, furnished by the Contractor under this Division. All shall be of common brick, except where face brick are called for. Where necessary, walls shall be properly shored and braced until danger from wind or leaning is past.

(B) LAYING COMMON BRICK. All brick shall be thoroughly drenched with clean water just before being laid, except in freezing weather. Bricks shall be well and solidly bedded in mortar, shoved and pressed into place, with no voids either in walls or at window frames. All brickwork shall be laid to a line, inside and outside of all walls.

(C) LAYING FACE BRICK. Face brick shall be used wherever shown on elevations, returning in all jambs. Whole brick culls of same shall be used for inside of all parapet walls above flashing. All face brick shall be laid to line and template and all coursing worked accurately to same, all in best manner by competent press-brick layers. Colors shall be evenly distributed, avoiding patterns other than produced by bond called for.

(D) LAYING GLAZED BRICK. Glazed brick shall be laid on a base of other material or shall start with a soldier-course as shown. Face of brickwork shall be flush with base and with plaster above. Bull-noses shall be used for all external angles and jambs. Except for necessary headers at corners and header courses where made part of bearing wall, all brick shall be laid stretchers, with vertical joints breaking in exact centers of adjoining courses.

(E) EXPOSED JOINTS in common brickwork shall be $\frac{3}{8}$ " to $\frac{1}{2}$ ", level or plumb, as case may be. Joints in interior and exterior face brickwork shall be such as to correspond to dimensions given. Before commencing laying of face brickwork, the work shall be laid out on a template so that bond can be maintained and joints be of practically uniform thickness thruout. Joints shall be struck, raked, flush-cut or concave, as directed.

(F) BOND. Every sixth course of common brick shall be a full header course, bonding with adjoining header courses to complete bond thru wall. Face bricks shall be laid "English cross-bond" with headers bonding with every sixth course of common brick. Glazed brick, where forming part of bearing wall, shall be bonded to same as specified for common brick. Mason Contractor shall furnish galv. iron wall ties to Concrete Workers and direct their placement in concrete beams and lintels against which face brick is to be laid, 2 ties to each sq. ft. of wall. Face bond shall be laid out and adjusted to be continuous thru plain wall surfaces. If brick vary materially in length, an occasional brick shall be neatly clipped to make vertical joints plumb. Where character of bond requires, courses shall start at corners with $\frac{3}{4}$ size brick, but the use of brick less than $\frac{1}{2}$ size shall be avoided wherever possible.

(G) SAMPLE WALL. Before laying any face brick, exterior or interior, the Contractor shall lay up a sample wall of each about 3'0" square, as directed, for the purpose of determining proper size of joints and disposition

of shades and pattern. Changes shall be made until sample wall is approved. All work shall correspond with approved samples.

(H) PROTECTION. The Contractor shall take every necessary precaution to protect face brickwork against staining. Tops of all walls shall be kept covered with boards or waterproof paper when no work is in progress thereon and, at close of work each day, scaffold-plank shall be turned up to prevent dirt splashing against walls.

ART. 7. MORTARS.

(A) CEMENT MORTAR shall be composed of one part Portland cement to 3 parts sand and shall be used for all exterior and interior brickwork below grade in contact with earth and for 2'0" above level of contact with earth, for all granite work, for all piers marked "C" on plans and for all brickwork above roof, such as chimneys, parapet walls, etc. Similar cement mortar, made with non-staining cement shall be used for setting all Bedford stone. Mortar for hollow tile shall be same as cement mortar for common brick, but with 10% of lime added for better working.

(B) LIME AND CEMENT MORTAR. Except where particularly noted, all brick and tile work shall be laid in lime and cement mortar composed of one part lime and 3 parts sand, with 10% Portland cement added just before using.

(C) CAUTION. No cement mortar may be placed in the work after 30 minutes from the time water has been added to same. No ordinary Portland cement, concrete or mortar may be allowed in contact with any surface of finished stonework subject to discoloring. In freezing weather, brick, sand and mortar water shall be heated by approved method.

(D) COLORED MORTAR for all exterior and interior face brick shall be as specified in Par. B, colored with an approved mortar color in accordance with directions of the Maker or the Architect to produce the shade directed. Care shall be taken to have each batch mixed in exact proportion so there will be no variation in shade.

(E) MORTAR FOR FIRE-BRICK shall be fire-clay mixed with water to proper consistency.

(F) GYPSUM MORTAR, used for laying all gypsum blocks, shall consist of one part gypsum cement plaster to 3 parts sand.

ART. 8. CHIMNEYS.

(A) BOILER STACK shall be built with hollow walls as shown, with lining of firebrick laid in fire-clay extending from 2'0" below smoke inlet to height shown. Remainder of flue construction shall be common brick, except where face brick and stone are specified for exposed portion, all laid as specified for those particular materials. All joints, inside and out, shall be cut off smooth as work progresses. Occasional bricks shall be left out in two bottom courses of lining, thru which holes the air-space can be raked out; holes to be bricked in when the Superintendent directs.

(B) IRON WORK. Cast iron cleanout door and frame shall be built into boiler flue at bottom, and hole of proper size left for breeching. Ladder-rungs of $\frac{3}{4}$ " round steel, about 14" o. c., shall extend from 16'0" above grade to top of stack. These and pipe-clamps shall be rigidly built into brickwork. Clamps shall be 10'0" o. c., for support of steam exhaust pipe. Cast iron lintels and cap shall be properly bedded in place as shown.

(C) BREECHING will be set in place under another Division, on concrete slab and this Contractor shall enclose with 8" brick walls as shown, with pressed brick facing.

(D) FLUE-LINING for certain vents and kitchen flue shall be carefully set as walls progress and exactly plumbed. These tile shall be wet when set and shall be laid in same mortar as common brick. Kitchen flue shall have small hinged cast iron cleanout door at bottom, as directed.

ART. 9. SETTING WALL TILE.

(A) CONDITION OF BLOCKS at time of setting shall be as stated in Art. 3. All tile blocks shall be wet when laid, except in freezing weather. Gypsum blocks shall be dry when laid.

(B) LAYING. All blocks shall be set level or plumb, as case may be, breaking joints at least 3" in alternate courses. All blocks shall be laid to a line, each course uniformly level, and in mortar as specified. All blocks shall be close-fitted and neatly trimmed, if necessary,

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against frames and walls and rigidly anchored to same, using long nails for gypsum blocks and approved galv. anchors for tile. Free-standing corners of partitions shall have anchors built into each course, with ends turned up or down into adjoining blocks.

(C) BONDING. All tile walls and backing shall be bonded and tied in best approved manner and laid in mortar as specified. Intersections of partitions shall be laid in-bond and out-bond, alternating.

(D) PARTITIONS of tile or gypsum block shall start on structural floor slabs and be well wedged against under side of slab above. Where suspended ceilings occur, partitions shall extend thru same and finish level at least 6" above. Gypsum block partitions shall start with a course of clay tile on all floor slabs and shall also have clay tile back of plumbing fixtures and brick or tile wainscot. Only clay tile shall be used for basement partitions. All openings shall have lintels or jack-arches over. All structural steel members, except where shown to be covered with concrete, shall be fireproofed by this Contractor with tile masonry as detailed or directed, in conformity with Ordinance and rigidly anchored in approved manner.

(E) BUCKS. All openings in gypsum or tile block partitions, unless otherwise specified, shall have bucks, provided and placed under another Division. Mason shall carefully maintain same in correct position until properly built in and shall not remove stay-bracing until wall over opening is set.

(F) LINTELS. Each opening in partitions and furrings more than 3'3" wide shall have lintel of hollow tile, reinforced with $\frac{1}{4}$ " round rod in top and bottom, and openings filled with 1:3 Portland cement mortar. All such lintels shall be at least 1'0" longer than width of opening.

(G) RECESSES. Where walls are furred, all pipes, conduits and special chases and boxes for plumbing pipe shall be enclosed or formed by 3" tile, well bonded or anchored to adjacent walls or partitions. Where so indicated or required, pilasters shall be formed to enclose piping. Recesses shall be built where required for accommodation of cases and cabinets, with lintels as specified in preceding paragraph.

(H) ANCHORS, TIES AND PLUGS. All anchors, ties, angles, tees and other structural shapes required for support of clay and gypsum tile shall be provided and set by this Contractor, who shall also provide and build in the necessary wall-plugs for attaching wood grounds or finish. Wood plugs will not be permitted.

(I) ALL CUTTING AND PATCHING of this work needed for accommodation of the work of other trades shall be done by this Contractor.

(J) AT COMPLETION of the partition work and immediately after other trades are out of the way, the Contractor shall remove all built-in tile which have been broken (whatever the cause) and shall replace same with whole new tile, so as to leave job in first class condition for plastering and to meet the approval of the Superintendent. All refuse from this work shall then be removed from the premises as specified.

ART. 10. MEMBERS BUILT IN MASONRY.

(A) WALL PLUGS. The Contractor shall provide and build in all requisite metal wall plugs for securing grounds, furring, standing finish etc., all to be located by this Contractor from information obtained from Carpenter. Wherever plugs are needed and not built in as walls progress, this Contractor shall cut holes in masonry for same, correctly placed, and bed the plugs in cement mortar.

(B) OTHER BUILT-IN MEMBERS. This Contractor shall build in all wall sleeves, anchors, plates, lintels and other light steel members, provided by other trades and shall also supply lime mortar to Carpenter for bedding water-bars in reglets in window sills. All such built-in members shall be properly set by this Contractor as walls progress and under direction of Party providing same.

(D) WOOD CENTERS AND TEMPLATES for arches, bays, etc., shall be provided and set by this Contractor, rigidly made of 2" planking and thoroughly braced and tied in place. Centers shall be removed only when so ordered by the Superintendent.

(E) FRAMES. This Contractor shall co-operate with Carpenter in setting door and window frames which shall be true, plumb and correctly located and stay-braced by Carpenter. Stay-braces shall not be removed until frames are entirely built in and masonry set. After walls are

completed around frames, all joints between same and masonry shall be neatly filled all around with cement mortar.

(F) CUTTING AND PATCHING of masonry shall be done by this Contractor at his own expense wherever necessary for other trades. Such work shall be done only by experienced mechanics in workmanlike manner and none may be done which will tend to injure the strength or appearance of any finished work. No avoidable cutting of finished masonry for the purpose of building in members will be allowed. Drilling of face or glazed brick for attachment of other materials and equipment shall be done by this Contractor as required.

ART. 11. CUT STONE AND TERRA COTTA.

(A) HAULING TERRA COTTA from cars to job shall be done by men experienced in handling such materials, who shall use methods that will prevent the least injury to same. Liberal use shall be made of the straw or other packing from the car and same shall be again used between all pieces piled at the job. This Contractor shall provide plank which shall be used in all cases to keep terra cotta off the ground. He shall also receipt for each shipment but shall accept only material in perfect condition. He shall immediately report to the Architect any that is in any way defective.

(B) DELIVERY OF CUT STONE, including granite, at site by Producers will be in convenient location as directed by this Contractor, but such unloading is not to include sorting or distributing around the building. This Contractor shall supply necessary substantial planking on which stone is to be laid, shall inspect same during unloading and issue receipt for each load. He shall not accept any other than perfect stone as he shall be solely responsible for all chipping and other damage after receipting.

(C) SORTING AND STORING of terra cotta and stone shall be done by this Contractor in manner to best expedite the work. Members shall be distributed around building ready for setting but not in such manner as to block passages or storage space assigned to others. All members shall be kept on sufficient planking and supported well up from ground so as not to be subject to earth-stains.

ART. 12. SETTING STONE.

(A) IN GENERAL. All cut stone, including granite, shall be set by this Contractor in accordance with approved details and setting diagrams which will be supplied by Producer to show arrangement of joints, bonding and anchors. Each member shall be set in its proper place, as no unnecessary substituting will be permitted.

(B) CUTTING AND FITTING, if any is required to correct dimensions of stone not in accordance with details, shall be promptly done by experienced cutters supplied by Producer of stone.

(C) PAINTING. All limestone surfaces in contact with mortar shall be painted shortly before setting with a thorough coat of approved waterproof paint completely covering all portions. After setting, the back of all stone work shall be gone over and all places not well covered, including mortar-joints, shall be retouched for complete coverage, so that no brick mortar can reach the stone.

(D) SETTING. Each stone shall be set in a full bed of soft mortar (as elsewhere specified) and tapped down with a wooden mallet to a full and solid bearing. Small stones may be set by hand, but each one weighing over 50 lbs. shall be placed by derrick.

(E) JOINTS shall be of uniform thickness, not exceeding $\frac{1}{4}$ ", and as shown by drawings. Where not so shown, the Contractor shall not proceed without proper information. No joints other than those on approved setting diagrams will be allowed, except by Architect's special permission. All face joints shall be left open at least $\frac{1}{2}$ " for pointing. Sills shall be bedded at ends only. Back of all stone work shall be plastered with $\frac{1}{4}$ " of non-staining mortar before any brick-backing is started.

(F) DOWELS, ANCHORS ETC. This Contractor shall provide all metal anchors, clamps, dowels, etc. for securing stone in wall. Each stone over 24" long shall have 2 anchors and smaller members one each, counter-sunk in top bed. Anchors shall be $\frac{3}{8}$ " x 1", extending to within 4" of inside face of wall. They shall have one end turned down $\frac{3}{4}$ " into stone, 2" from face, and the other turned up $\frac{3}{4}$ ". Each baluster and mullion shall have top and bottom dowel. Adjacent stones of cornices and

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copings shall have clamp at each joint as detailed, in sink-ages cut deep enough to permit 2" of fill over each anchor.

ART. 13. SETTING TERRA COTTA.

(A) IN GENERAL. All setting of terra cotta shall be done by experienced Setters, each piece in true location on a full bed of mortar and all joints well filled. Joints shall be of size and location to exactly correspond with Producer's setting diagrams.

(B) BACKING shall be done by brick Masons and shall include filling of all voids in terra cotta to plane of outer surface of wall. Backing shall be carefully inspected by terra cotta Setters who shall promptly report to the Superintendent for correction any work that has been forced out of position.

(C) ANCHORS AND SUPPORTS shall be built in wherever required. Where necessary, they shall be supplied to Mason to be built into his work ahead of terra cotta setting. Suspended members shall be placed and anchored with special care and opportunity given the Superintendent to inspect same before anchorage is covered.

ART. 14. PROTECTION, REJECTION, CLEANING AND POINTING.

(A) CLEANING. All exposed interior and exterior face brickwork, cut stone and terra cotta shall be cleaned with a stiff brush as work progresses and shall be left clean at completion. Water for cleaning limestone may contain soap but no acid. If necessary, a small amount of muriatic acid may be mixed with the water used for cleaning brick and terra cotta, care being taken to prevent same coming in contact with stone.

(B) PROTECTION. All projecting stone and terra cotta liable to damage after setting shall be properly protected by suitable planking well supported. Washes of water-table and belt courses shall have protection strip of heavy roofing felt built into joint above and left until removed for pointing. Jamb and sills of openings used for passage shall be securely boxed.

(C) REPLACEMENT. Any stone or terra cotta member showing damage or disfigurement during progress of work shall be replaced in its entirety at the expense of this Contractor. No patching or hiding of defects will be permitted, hence all such must be promptly reported in order that replacement may be made by Producer without causing delay in the work. The Architect will decide at whose expense such replacement shall be made.

(D) POINTING. All joints in cut stone and terra cotta shall be carefully raked out and pointed as directed by the Architect, using non-staining cement mortar for cut stone and colored mortar for terra cotta. Joints in terra cotta, subject to extreme weather conditions, shall be filled with elastic cement and not repointed.

THE DRY CELLAR

(Continued)

By OTTO GAERTNER

THE cellar floor construction also needs proper attention. The excavation should be made amply deep to receive the proper thicknesses of fill, tilford, finish, etc. Often bolders or stone occur in the excavation and the tops extend into the fill and sometimes into the finish. This permits water, if any is present, to follow the joint between the bolder and the finish so close to the floor surface that it has no difficulty in reaching the surface. Often such a surface will peel off over the bolder because it has not a proper bond. Also in winter if the house is unoccupied or if the cellar happens to be a cold one, any water in such a joint will freeze, causing the floor to bulge. When there is a proper fill under the finish no moisture can lie there to freeze and cause damage. The finish should be of cement mortar consisting of one part of Portland cement and two parts of sand well troweled to an even surface at least one inch thick.

Below the cement finish there should be at least four inches of cinder or stone concrete, and below the stone concrete there may be placed an additional layer of cinders, broken stone or tilford. Such a tilford is often made by throwing excavated stones and broken bolders back into the excavation where it has been dug deeper for this purpose. Such a layer at least six or eight inches thick should always be laid under the rough concrete for outside pave-

ments, area floors, steps, etc., so that the moisture underneath can drain off. That which may remain can, if it freezes, extend into the voids of this layer without exerting enough upward pressure to heave the pavement. Such a layer does not lessen the necessity of draining surplus water entirely away from the excavation.

While for ordinary conditions the above floor will do, it may be necessary to strengthen it if water pressure exists. If the floor is waterproof by a waterproofed coat of cement mortar finish the strength of its adherence to the rough concrete must not be exceeded by the waterpressure. If the rough concrete as well as the finish are waterproofed, the concrete and finish must have sufficient strength and weight to counteract the water pressure. It may be necessary to increase the thickness of the rough concrete or it may be necessary to reinforce the concrete with wire mesh or reinforcing bars. Such reinforced concrete must be figured as an inverted reinforced concrete slab and the mesh put in the upper part of the slab since the pressure is exerted from below. Reinforced concrete slabs have the advantage of eliminating shrinkage cracks but if mass concrete is to be used instead, roughly a six inch thickness is required for every foot of head of water to counteract the pressure.

If membrane waterproofing is used, there must be a layer of concrete at least three inches thick on which to apply it. After the waterproofing is done the remainder of the concrete and the finish, at least five inches in all, must be placed over it. Since the water pressure is exerted against the waterproofing membrane it must be held in place by sufficient weight of plain concrete or by reinforced concrete, for the same reason the membrane waterproofing when applied to walls is placed on the outside or within four inches of the outside of the wall so that the wall thickness on the inside keeps it in place.

The membrane method of waterproofing consists of applying successive alternate layers of heavy felt, paper, or textile material and a waterproofing compound, coal tar pitch, or preferably asphalt to the outside of the walls and extending it through the walls and into the entire cellar floor. Heavy felts and textile materials are preferable. If only damp-proofing and ordinary waterproofing is required two layers of felt are used but for some waterproofing as many as four are required. Coal tar pitch and any product that becomes hard and brittle is not recommended because expansion and contraction due to changes of temperature, and settlement will crack the hard and brittle substances and permit the water to force its way through. The best compounds and asphalts to use are the ones which remain tacky and are flexible to move with the adjacent materials without causing a discontinuation of the surface.

It is important that the walls and floors should be fairly smooth and clean. All large projections should be removed and all holes filled in so that the fabric will not be ruptured. All surfaces should be dry so that no steam will be formed when the hot waterproofing materials are applied and so that the materials will adhere properly.

The asphalt should be such as will form a permanent mechanical bond not only to the fabric and the masonry to which it is applied, but also to any masonry that may be poured, troweled, or built against it without the use of a primer. A primer of thinned asphalt should be specified for "dusting" or frozen concrete walls only. It is of great importance to specify the quantity of material to be applied. For a job consisting of two ply of asphalt saturated fabric and three moppings of heated waterproofing asphalt, not less than twenty-five square yards of fabric and twelve and one half gallons of asphalt should be used for each one hundred square feet of horizontal surface, and 14 gallons of asphalt for vertical surfaces. The asphalt should be heated to a temperature of not over three hundred and fifty degrees Fahrenheit and none should be applied in wet weather or in freezing weather unless special provision is made to keep the masonry and waterproofing materials warm and dry. The fabric should have at least two inch laps and twelve inch end laps. All asphalt moppings must be continuous so that no fabric touches the masonry and no two layers of fabric touch each other, or any protection applied after the waterproofing is in place.

(To be Continued)

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Murphy's Blue Print Manual.—Illustrated manual detailing in workable blue-prints practical applications of ways to reduce floor space in planning by the use of door beds and other Murphy equipment. 42 pp. $8\frac{1}{2} \times 11$. Murphy Door Bed Company, 22 W. Monroe St., Chicago.

36th Edition of K & E. Catalog.—Complete list and description of drawing instruments, tracing papers, etc. with order numbers. Price-list attached. 482 pp. 6 x 9. Bound. Keuffel & Esser Co., Hoboken, N. J.

Published by the same firm. Leaflets describing individual products, such as Transits & Levels, Slide Rules, Lettering Pens, etc.

The Six Quick Steps.—Illustrated booklet dealing with Bull Dog Floor Clips. Indexed. $8\frac{1}{2} \times 11$. 24 pp. The Bull Dog Floor Clip Co., 108 North First Ave., Winter-sest, Ia.

Drain Specifications, Drawings.—Drain specifications for factory, area floor, narrow valley roof gutter, garage floor, hospital floor and urinal stall. Five latest sheets of fifteen detail drawings now available showing drain installation in construction. The Josam Manufacturing Co., 4908 Euclid Ave., Cleveland, Ohio.

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Insulation.—Booklet dealing with subject. Description of Nonpareil High Pressure Covering and tables of thicknesses, specifications, etc. 62 pp. 5 x 7. Armstrong Cork & Insulation Company, 24th St. and Allegheny River, Pittsburgh, Pa.

Catalog No. 90.—A.I.A. File No. 33G. Describes and illustrates ES Curtain Gate Fenders for collapsible elevator car gates, a new invention to prevent injury to operators and passengers. Elevator Supplies Company, Inc., 1515 Willow Avenue, Hoboken, N. J.

Published by the same firm. E S Bulletin Number Twelve. Dealing principally with the ES Selective Signal System and Automatic Transfer.

Enameled Plumbing Ware.—Catalog F. Very complete illustrated list of Kohler products. Indexed. 215 pp. $7\frac{1}{2} \times 10\frac{1}{2}$. Kohler Co., Kohler, Wisconsin.

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G&G Atlas Systems.—Catalog No. 1755. A.I.A. File No. 35h21. Illustrates and describes Atlas Pneumatic Tube systems and supplies; with details as to saving in floor space, personnel, power, maintenance and time. 8 pp. G&G Atlas Systems, Inc., 535 West Broadway, New York City.

Benjamin Electrical Products.—Catalog 24. Valuable information on lighting fixtures, wiring devices, signals, etc. Indexed. Price lists, etc. 181 pp. 8 x $10\frac{1}{2}$. Benjamin Electric Mfg. Co., 120 So. Sangamon St., Chicago, Ill.

Samson Spot Sash Cord.—Attractive 4-page leaflet briefly setting forth merits of Spot Sash Cord and giving Size Numbers with dimensions. Sample of Spot Sash Cord included. Samson Cordage Works, 88 Broad Street, Boston, Mass.

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Whiting's Brushes.—Catalogs 85 and 86 describing complete line of brushes for varnishing, paper hanging, etc. $4\frac{1}{2} \times 8$. 216 pp. Whiting-Adams Co., Boston, Mass.

Stedman Reinforced Rubber Flooring.—A.I.A. File Number 23c. Illustrated booklet with specifications and technical data. Color plates illustrating 12 of the better colors used and recommended. Stedman Products Co., South Braintree, Mass.

Major Flood Light Unit.—Bulletin No. 5. Describing the construction and adaptability of the Major Unit for efficient floodlighting in theatres, show-windows, mills, etc. List prices and dimensions. Major Equipment Company, Inc., 360 N. Michigan Blvd., Chicago.

Published by the same firm, various bulletins on Siege Pockets, Lower Light, Footlights, etc.

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Baker System Refrigeration.—Illustrated catalog with sectional drawings describing use for hotels, hospitals, apartments, etc. Data blank enclosed for securing preliminary cost estimates. Baker Ice Machine Co., Inc., Omaha, Nebraska. 20 pp. 9 x 12.

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Artist and Drawing Materials Catalog.—Complete illustrated list of drafting room supplies. Price list attached. 352 pp. 6 x 9. F. Weber Co., Dept. PP., 1220 Euttonwood St., Philadelphia, Pa.

Dependable Drawing Materials.—14th Edition. Complete list of drafting room supplies. 356 pp. 6 x 9. The Frederick Post Co., 3617 No. Hamlin Ave., Chicago.

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The ELDORADO PAGE

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Ernest W. Watson



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(Other items on page 126)