PENCIL POINTS

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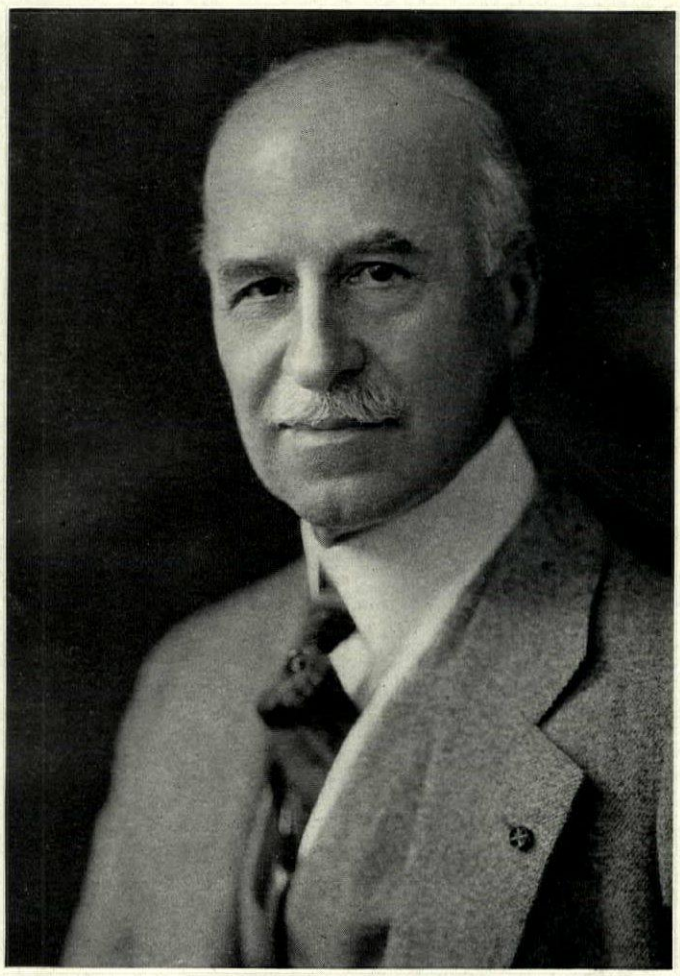
DRAFTSMANSHIP AND ARCHITECTURE

AS EXEMPLIFIED BY THE WORK OF WALTER B. CHAMBERS

By Francis S. Swales

EDITOR'S NOTE:—*This is the third of a new series of articles by Francis S. Swales. The first two dealt with the work of J. Monroe Hewlett and Raymond M. Hood. The next one, which will appear in an early issue, will be devoted to the work of Paul P. Cret.*

WHILE A SMALL BOY, young Chambers began making architectural sketches, the first of which was of a Methodist Church in Brooklyn. The church was an ugly thing, but the drawing was faithful to its ugliness and what it was intended to portray was recognized by members of the artist's family and their friends. The encouragement received from their comments upon his drawing and an interest he found in the old Colonial churches which are lined up along the Green in front of the University at New Haven led him later on, when he had become a freshman at Yale, to make more sketches of those and other pleasing buildings.

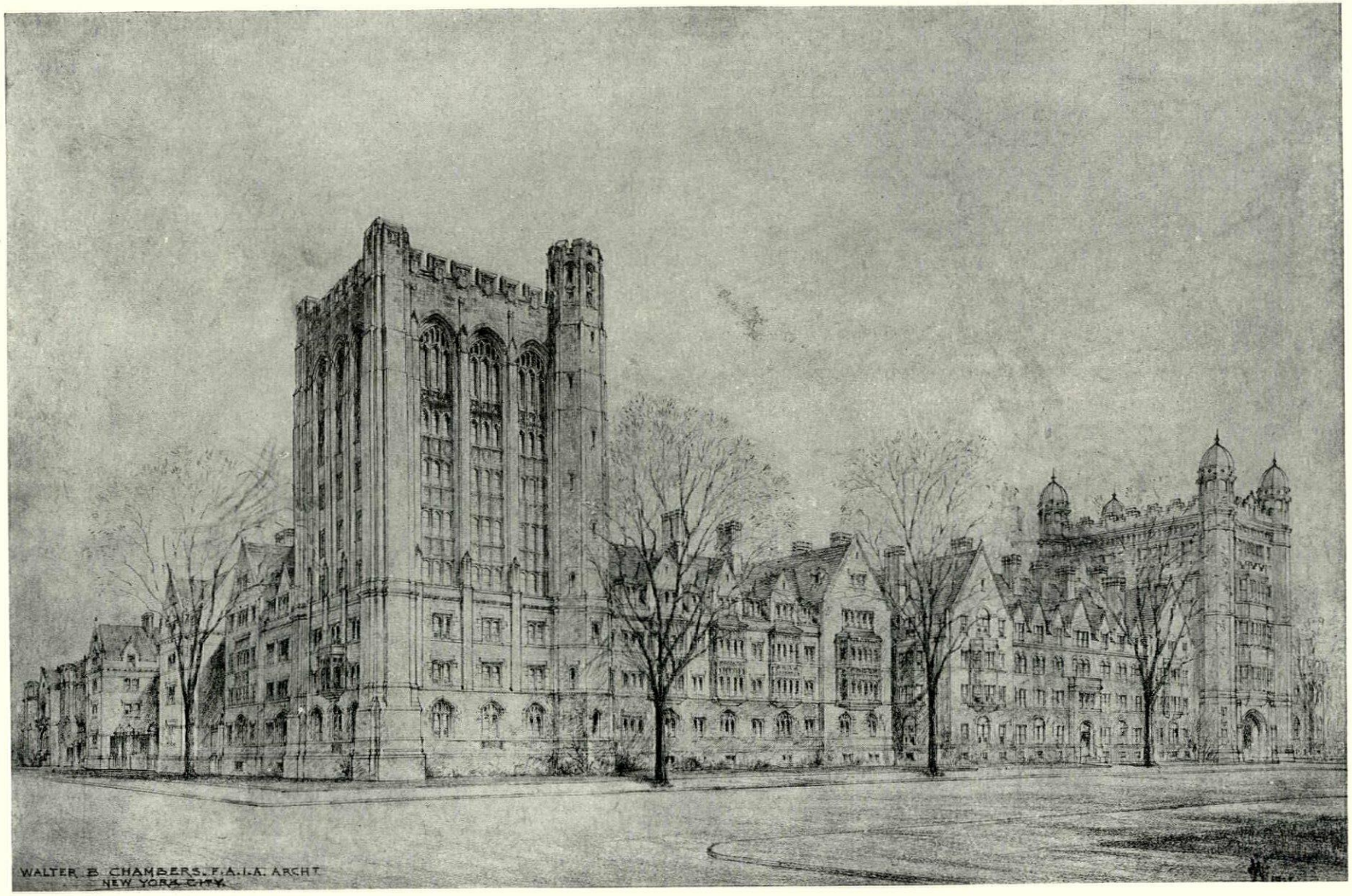


WALTER B. CHAMBERS

His elder brother, Robert, who had begun the study of painting at Paris before he took up his literary career, advised Walter to study architecture, and, finding him favorably inclined to the idea, urged their parents to send him to Paris.

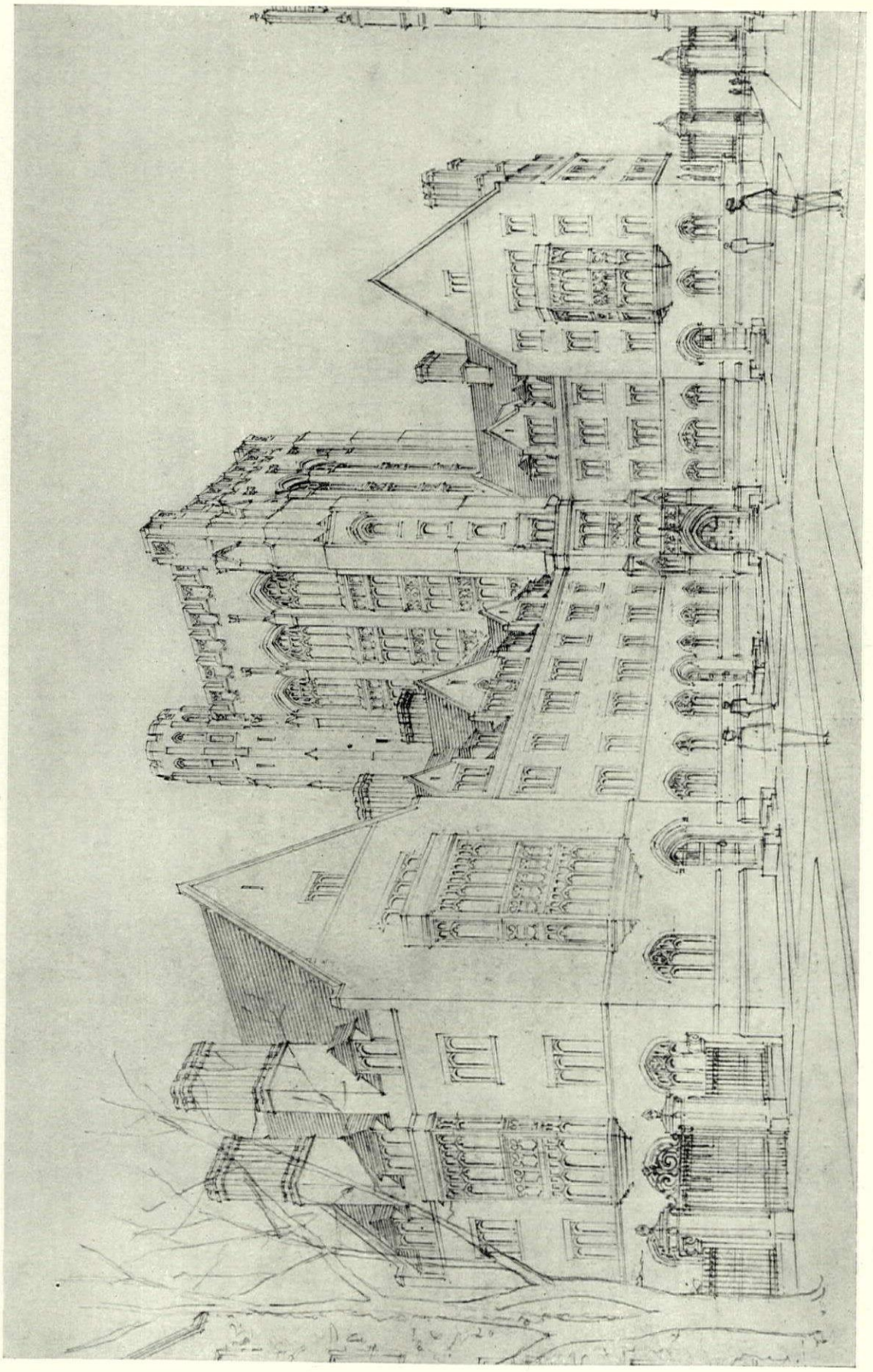
Chambers' father and Richard M. Hunt were friends and fellow members of the Century Club and there the elder Chambers discussed the proposal with the greatest American architect of our times. Mr. Hunt approved it; but Mrs. Chambers, Walter's mother, was abroad spending a year at Munich and suggested that he should join her and commence his studies there. Mr. Hunt, questioned as to whether Munich would be a good place to start, answered, "Hell, yes! He must start somewhere."

Therefore, upon graduating from Yale in 1887, Walter Chambers went to Munich and became a student under Franz Von Reber, Professor of Art, who lectured upon architecture, sculpture, and painting and guided some forty to fifty students through the galleries of the Glyptothek and Pinacothek, using the collections at those museums to illustrate his points. After fifteen months spent in general studies of the fine arts, Chambers went to Paris and entered the École des Beaux Arts early in the year 1889, where, in the Atelier Blondel, he met Ernest Flagg, Herbert Hale, and Stephen Codman. In the summer of 1889, Henry Bacon came to Paris as Rotch Travelling Scholar, and proposed that Chambers should join him on a



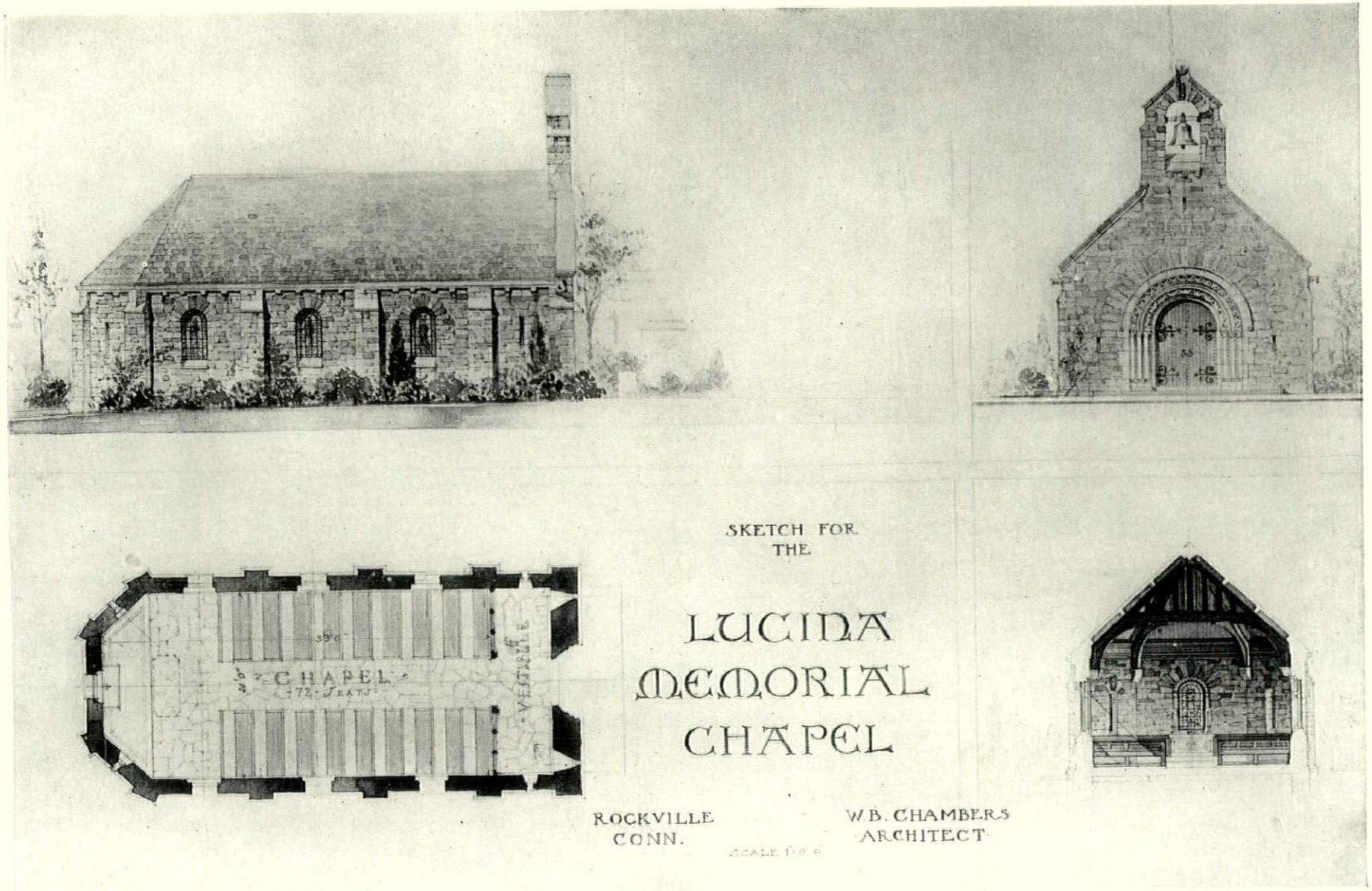
CHARLES W. BINGHAM HALL, YALE UNIVERSITY—VIEW FROM CORNER OF COLLEGE AND CHAPEL STREETS

PENCIL RENDERING BY WALTER B. CHAMBERS, ARCHITECT



CHARLES W. BINGHAM HALL, YALE UNIVERSITY—WALTER B. CHAMBERS, ARCHITECT

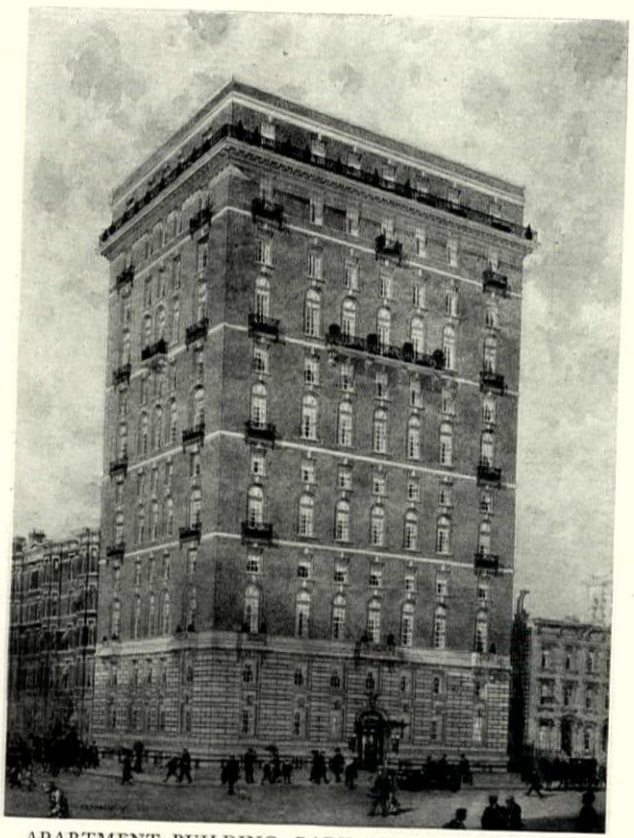
PERSPECTIVE DRAWING OF VIEW FROM CAMPUS SIDE



PRESENTATION SKETCH IN WATER COLOR BY WALTER B. CHAMBERS, ARCHITECT

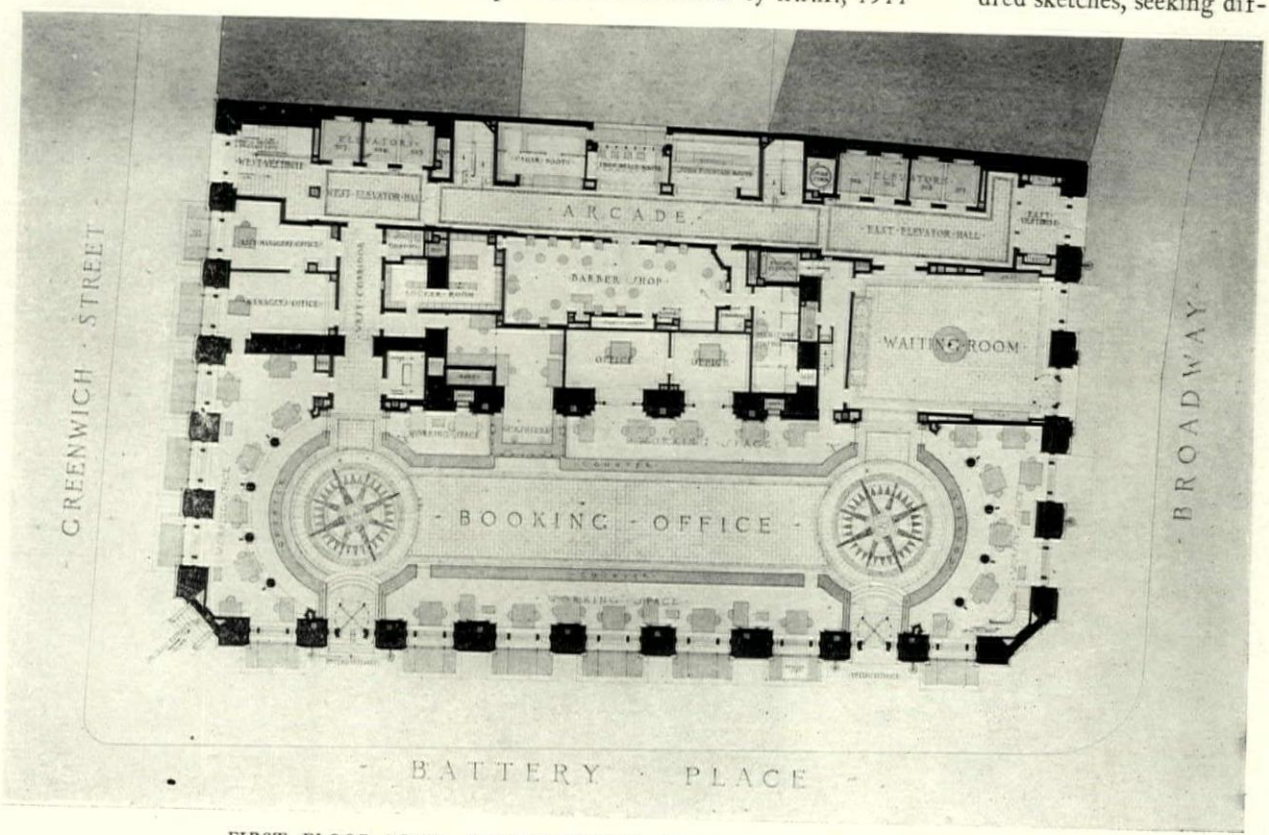
LUCINA MEMORIAL CHAPEL AT ROCKVILLE, CONNECTICUT

sketching trip through the provinces of France. Bacon introduced him to English metallic sketching paper—a paper from which no erasures can be made and which therefore requires the exercise of care in the placing of every point and line. Sitting beside Bacon—who was then an able draftsman and an artist who had a special faculty for locating the best point of view from which to sketch an architectural composition—and making sketches of the same subject at the same time gave young Chambers a special training in this branch of drawing. During the trip he made one hundred pencil sketches, many of which are sufficient to show the rapid progress from timid beginnings to complete confidence in dealing with his subjects. The sustained training produced a marked improvement in technique between the earlier and later sketches, as might be expected from the valuable discussion sure to take place and the criticism of an artist as positive of views as Henry Bacon. His first sketches have technique like Bacon's, but not so firm, while his later ones show a developed character of their own—a style full of charm and feeling. The result of such sketching out of doors is a facility in making sketch studies of design and conceiving them in the three dimensions.

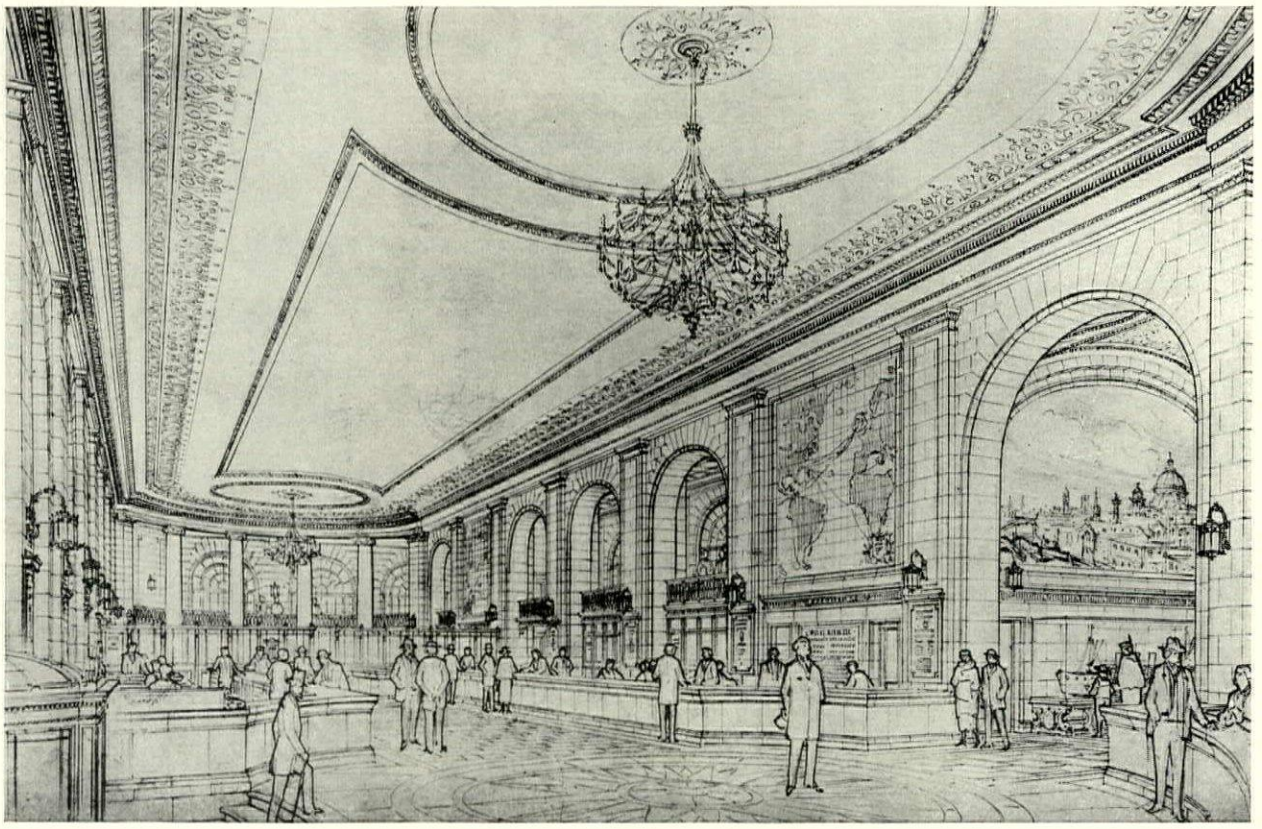


APARTMENT BUILDING, PARK AVENUE, NEW YORK
WALTER B. CHAMBERS, ARCHITECT
Awarded Apartment House Medal of A.I.A., 1911

Towards the end of the year 1891, Chambers returned to New York and called upon Mr. Hunt, taking several of his drawings and his hundred sketches, seeking dif-

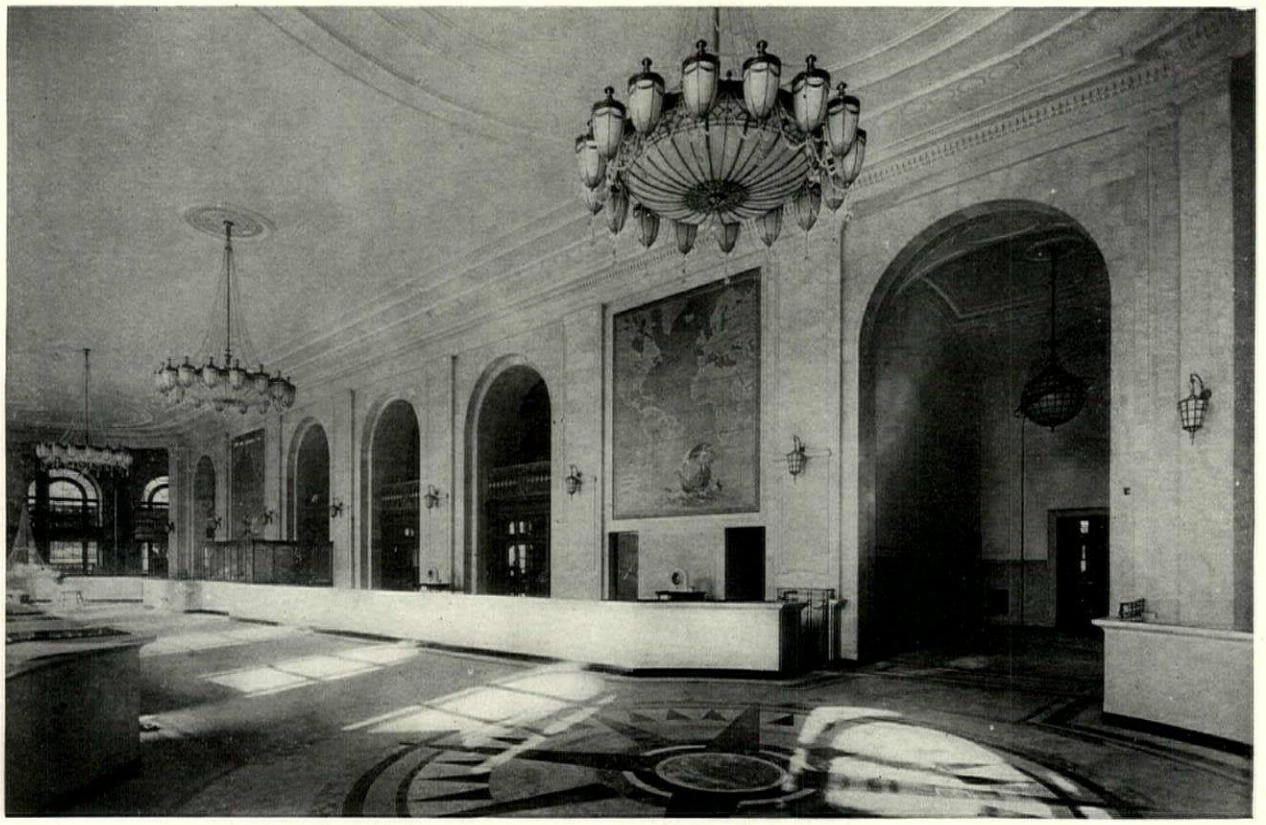


FIRST FLOOR PLAN—INTERNATIONAL MERCANTILE MARINE BUILDING
NUMBER 1 BROADWAY, NEW YORK—WALTER B. CHAMBERS, ARCHITECT



INTERIOR, BOOKING OFFICE, INTERNATIONAL MERCANTILE MARINE BUILDING

NUMBER 1 BROADWAY, NEW YORK—PERSPECTIVE DRAWING BY WALTER B. CHAMBERS, ARCHITECT



BOOKING OFFICE OF NUMBER 1 BROADWAY, NEW YORK, AS BUILT FROM DESIGN SHOWN ABOVE

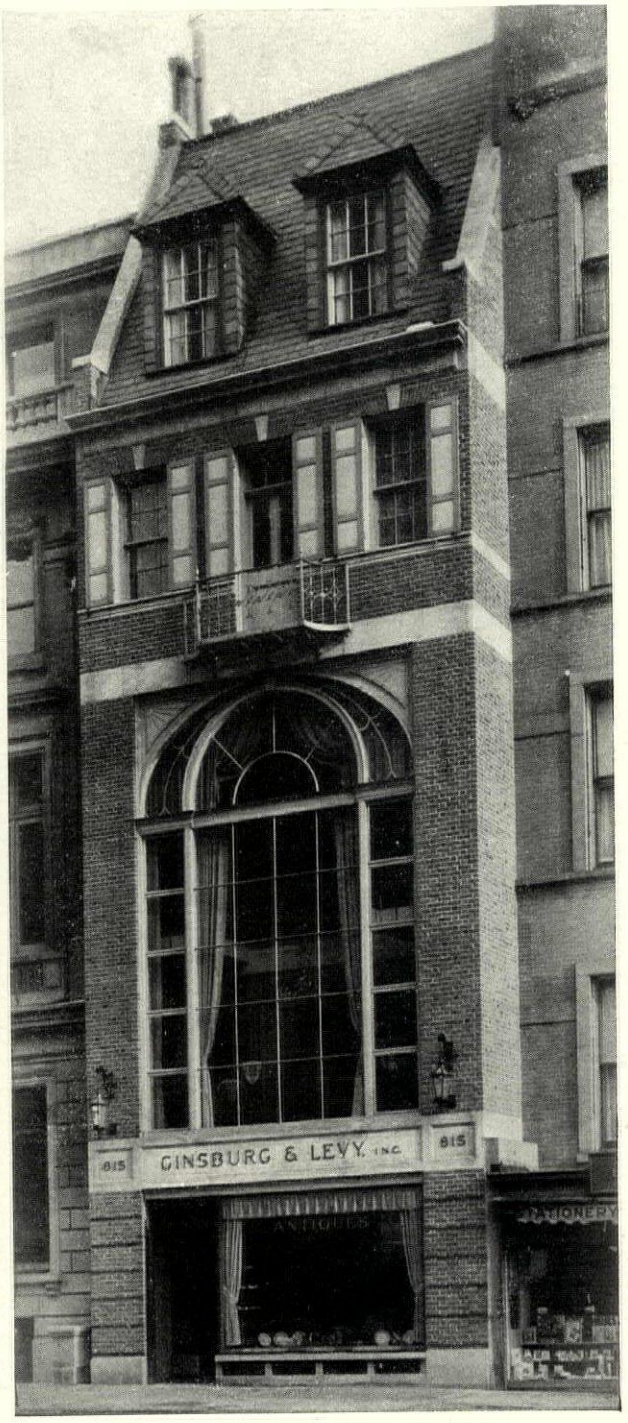
THIS BUILDING WON THE NEW YORK DOWNTOWN LEAGUE AWARD IN 1921

fidently a location rather than a salaried position in the then leading architect's office in this country. He was engaged, however, and found himself in Hunt's drafting room with Warrington Lawrence, Frank E. Wallis, Holland Anthony and E. L. Masqueray. At that time, Hunt was designing "Biltmore," at Asheville, N. C., for George W. Vanderbilt.

Masqueray had been in this country only two or three years, and in the Hunt office only a month or two when Chambers went there, and Chambers' comment on his first observations of Masqueray will recall the gay, amusing personality of the latter to many readers who knew him: "The dear old red-headed Norman sat hunched up over a drawing-board at work on something or other for the Vanderbilts. He looked up at me with a knowing sparkle in his blue eyes and a friendly grin back of his red beard, and said something funny. He was always saying something funny. And, at once, we became the best of friends,—our friendship lasting some 26 years up to his untimely death in 1917."

Among the dozen or two young men of Paris training—such men as Carrère & Hastings, and Boring & Tilton, and Flagg, and McGuire, and Whitney Warren, and Breck Trowbridge,—there was already taking shape the idea of a Society of Beaux-Arts Architects, its purpose to be educational and under that banner to bring about a revolution in the principles and methods of instruction in vogue here by supplanting them with those of the Paris School.

Masqueray and Chambers were among the founders of that Society when it was formed and incorporated;



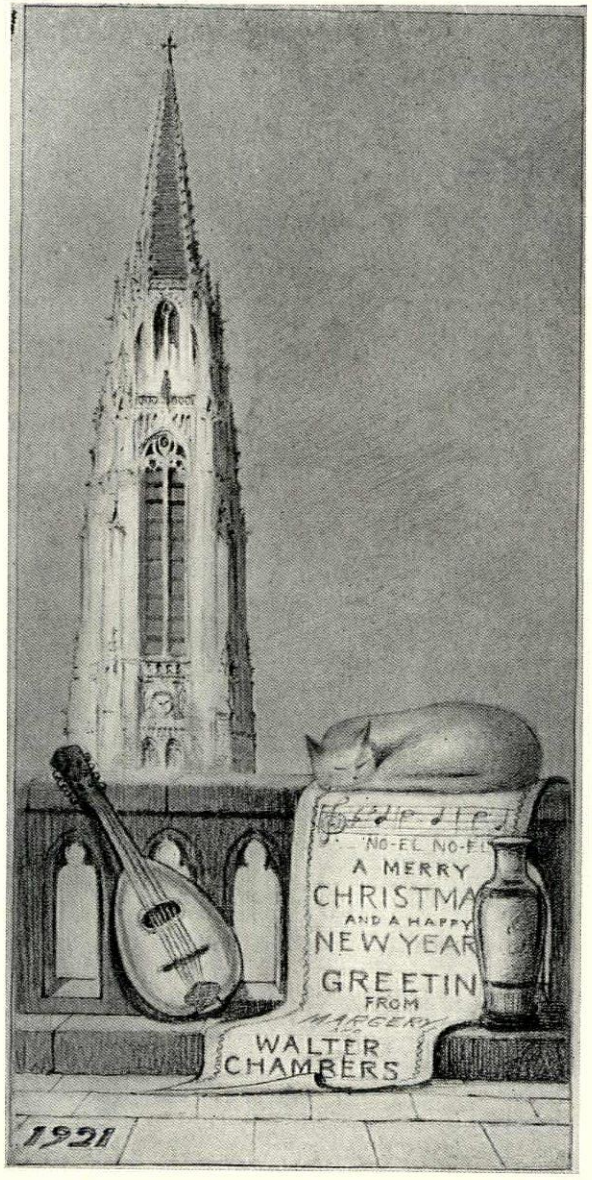
ALTERATION OF A CITY BUILDING

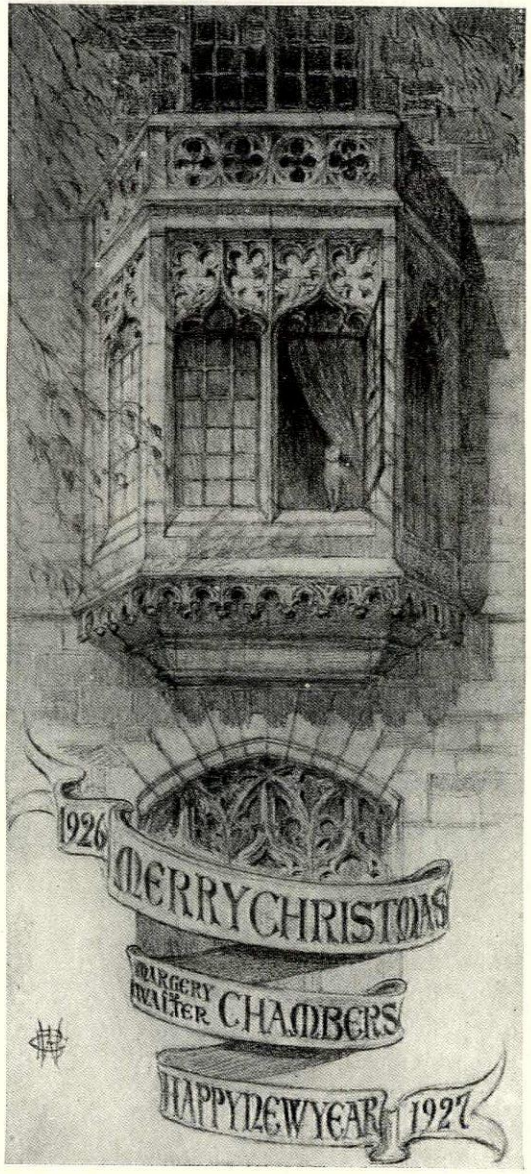
WALTER B. CHAMBERS, ARCHITECT

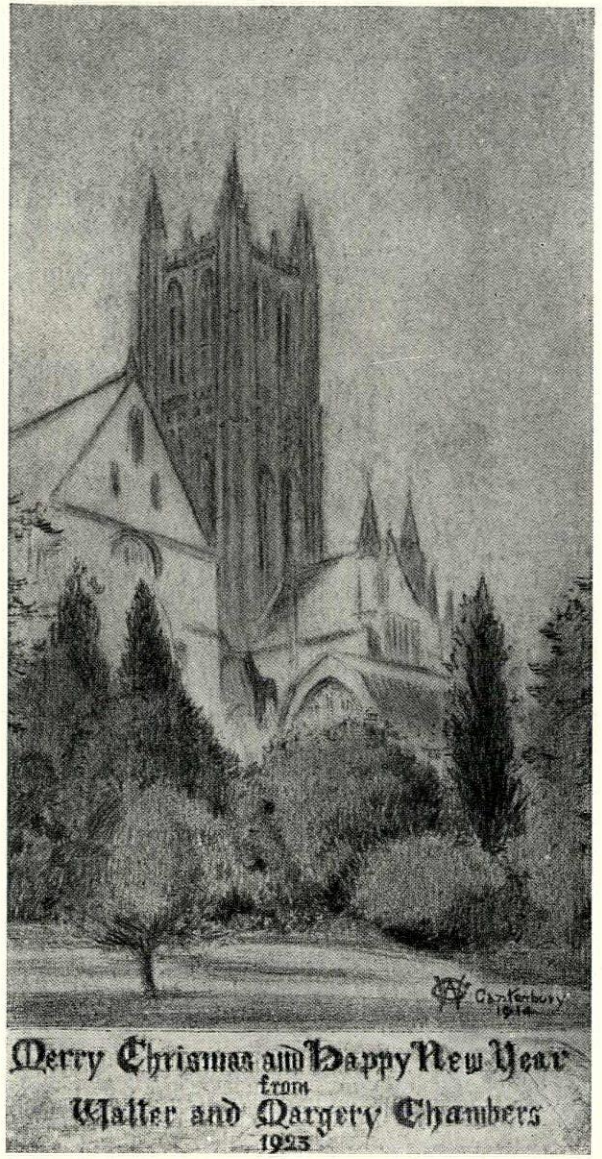
Awarded Gold Medal of Fifth Avenue Association in 1927

and together they formed the Atelier Masqueray-Chambers in 1893 or '94. They were both still in Richard M. Hunt's office which had moved uptown to Madison Square. "Around the corner"—at 123 East 23rd Street, they found a loft which suited them and with a modest equipment of drawing boards and reference books "opened up for business." The earliest of the students were J. M. Uffinger, Nelson Goodyear, and "Texas," whose real name even Mr. Chambers has lost under that comprehensive title which Masqueray gave to their pupil who was older than himself. "From the outset," says Mr. Chambers, "Masqueray was the mainstay of the enterprise, giving up most of his evenings to the students who began to trickle in, with an eager unselfishness that put my own efforts to shame." Nevertheless several of the early students in that famous atelier still remember the genial teamwork of the two patrons whose unbounded good humor did a great part in developing in this country the spirit of the French ateliers. Masqueray was the cause of many a good, humorous short story, but Chambers had a way of telling them for the first time which suggests that the gift of good story-telling may run in a family. The following serves as an illustration of his talent for anecdote:

"In order to raise some money for the educational fund of the Beaux-Arts Society (this was before the days of our balls and pageants) we decided to deliver a series of lectures on the history of Arts, so six of us took the subject of French Decoration from Louis XIV to the present time and carved it up into six parts, for a lecture apiece, and with many lantern slide

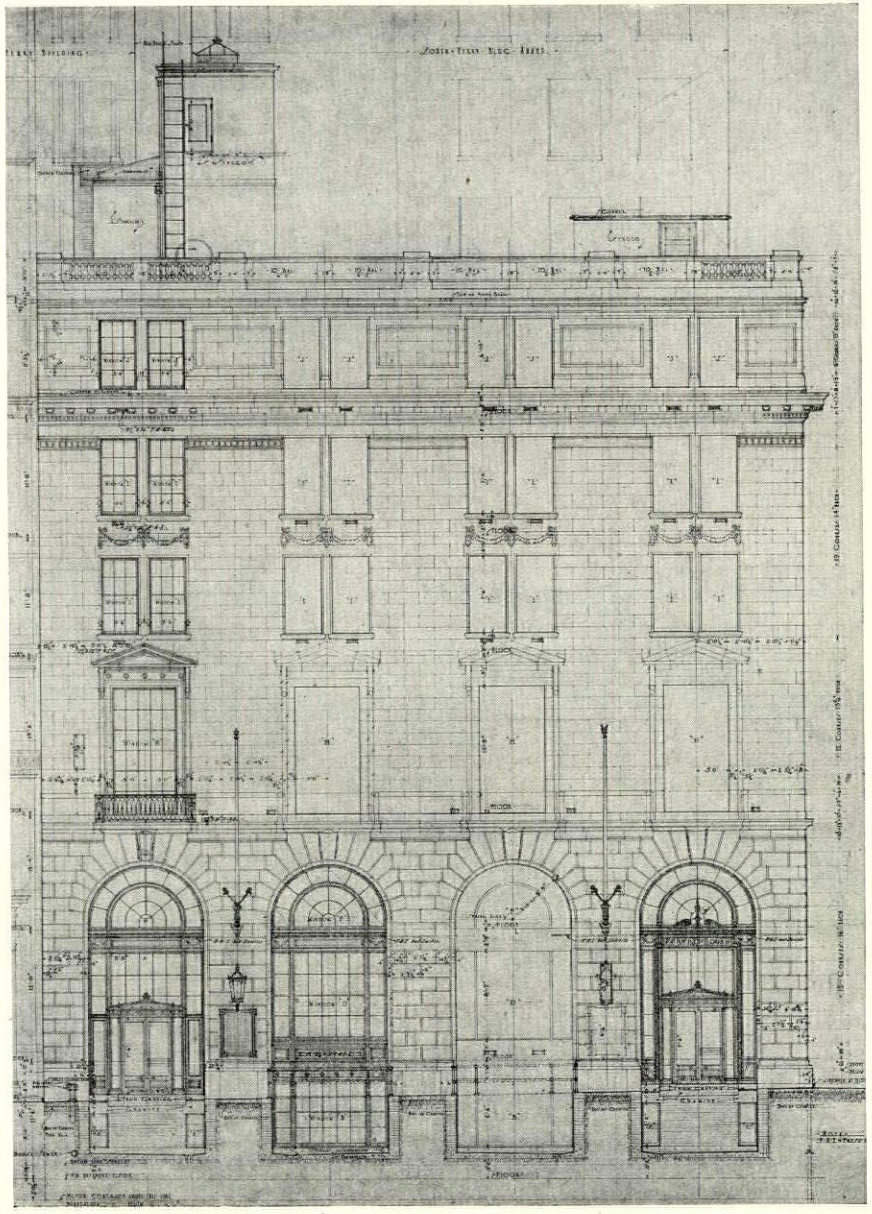






CHRISTMAS CARDS DESIGNED BY WALTER B. CHAMBERS

PENCIL DRAWING BY WALTER B. CHAMBERS—FROM A TRAVEL SKETCHBOOK



FURNESS HOUSE, WHITEHALL AND PEARL STREETS, NEW YORK—WALTER B. CHAMBERS, ARCHITECT

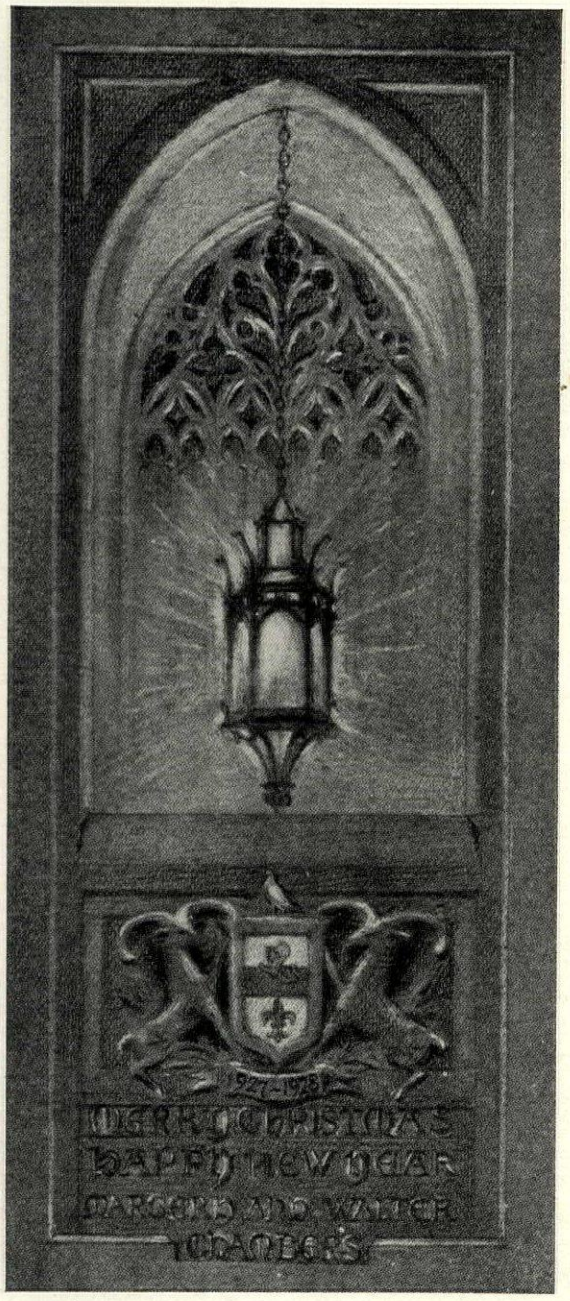
DRAWING SHOWS FAÇADE AS DESIGNED—PHOTOGRAPH AS BUILT WITH TWO ADDITIONAL STORIES

illustrations. There were Breck Trowbridge, Professor Despradelle of the Boston Tech., Lloyd Warren, Thomas Hastings, Masqueray, and myself. We used to meet at Lloyd Warren's house, where the lectures were given, to rehearse and compare notes. We were all a little nervous about how they'd go, for most of us had had little or no experience as lecturers.

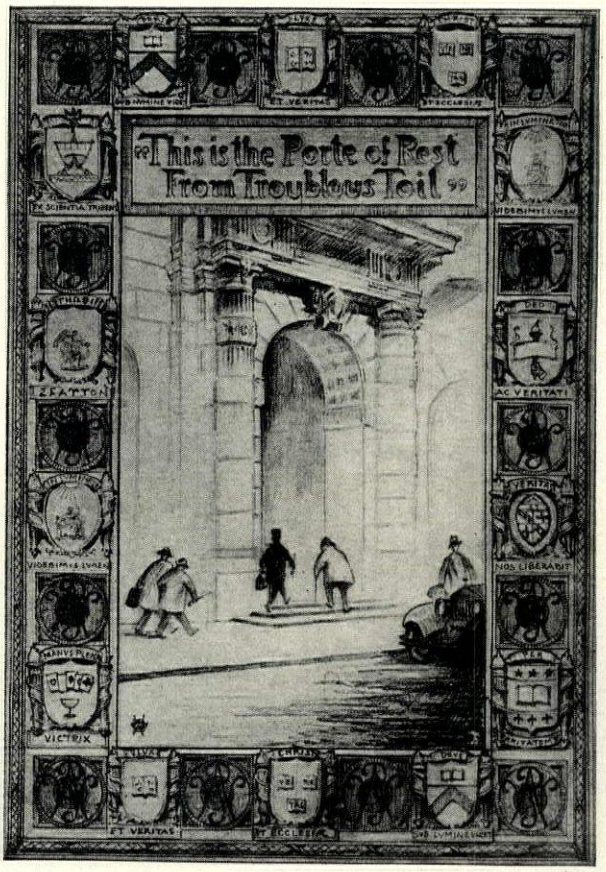
"A day or two before they began, Tom Hastings said to the rest of us in his funny little nervous way, 'I say fellows, are *you* fellows coming to hear these lectures?'

" 'Oh, well,' said Masqueray, 'I've got to come and hear mine—I can't help it!' "

The atelier had been in existence about a year



CHRISTMAS CARD BY WALTER B. CHAMBERS

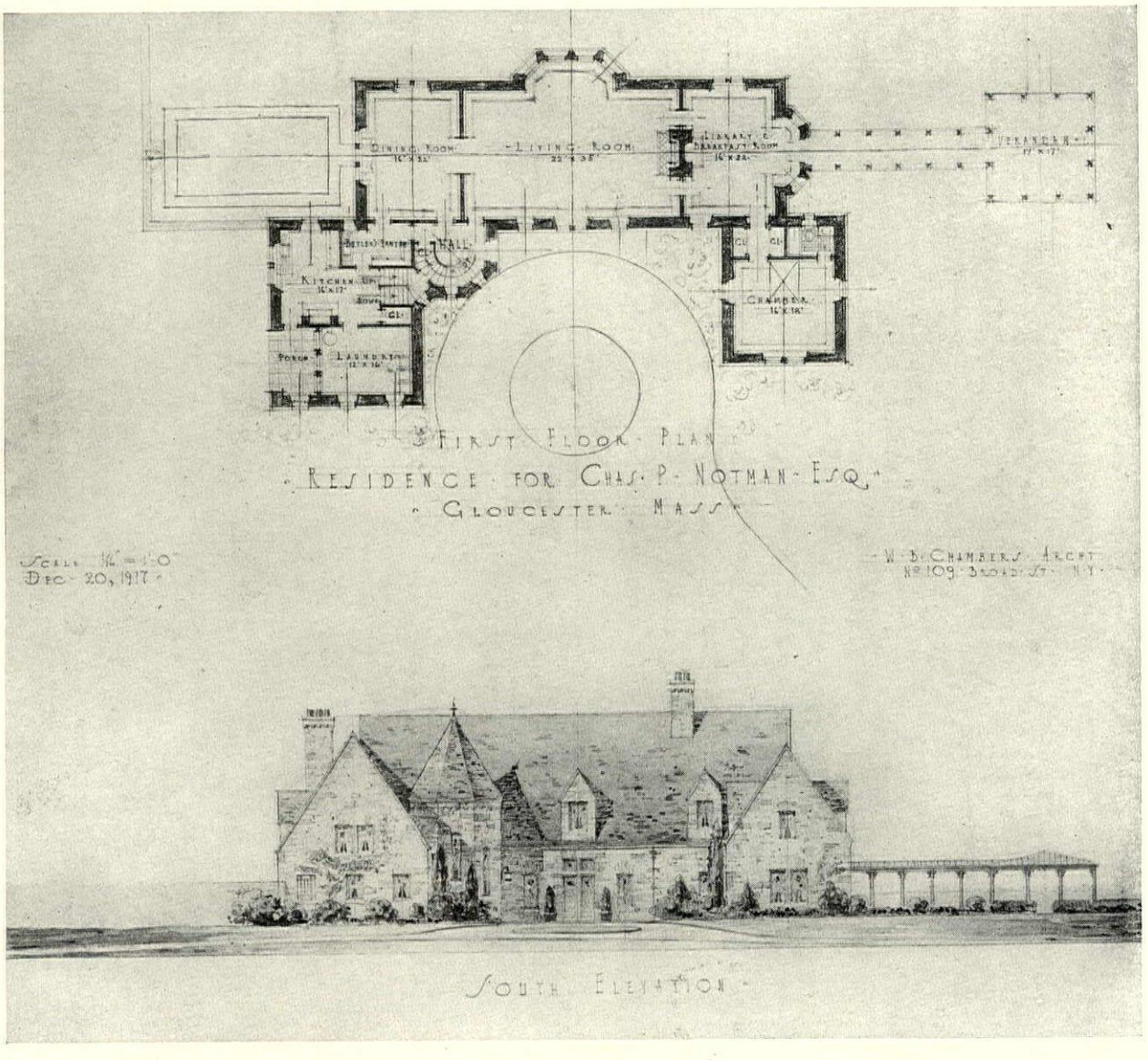


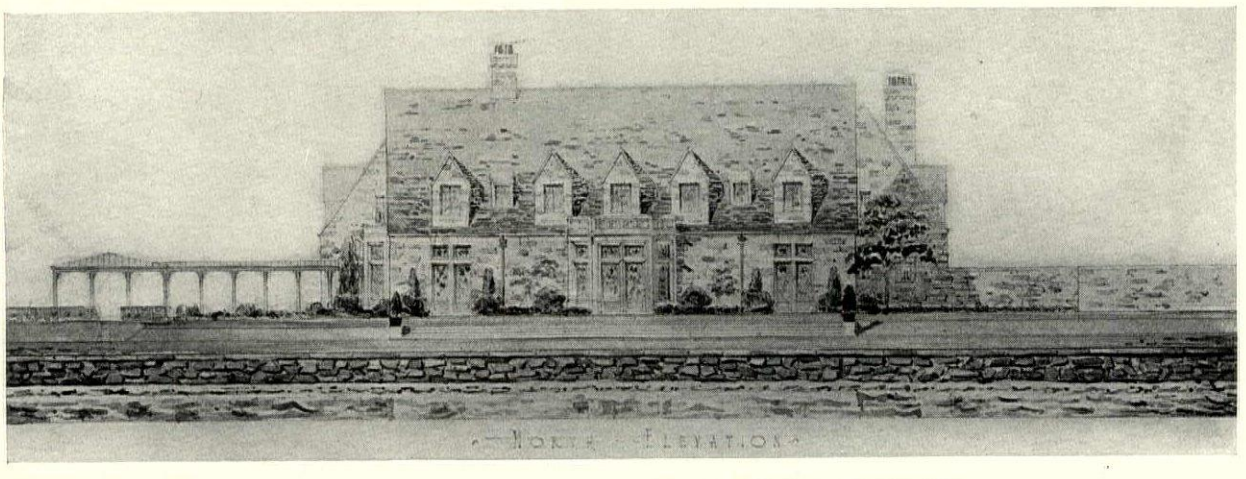
DRAWING BY WALTER B. CHAMBERS

MADE FOR AN ENTERTAINMENT OF THE PEE-WEE CLUB

when Ernest Flagg, who had been commissioned to design the Corcoran Art Gallery at Washington, suggested that Chambers join him and enter into practice. The firm quickly became known among the leaders during a short period of actual partnership; and though after a time each member became absorbed in his individual work and the partnership ceased, they continued to share the expenses of their offices—an amicable arrangement that has gone on during more than thirty years. The separate work of the members of the original firm is still often thought of as by Flagg & Chambers, though the style of each is very different and individual, Mr. Flagg's work being based upon the modern French school, while that of Mr. Chambers has its inspiration in old English and early American models.

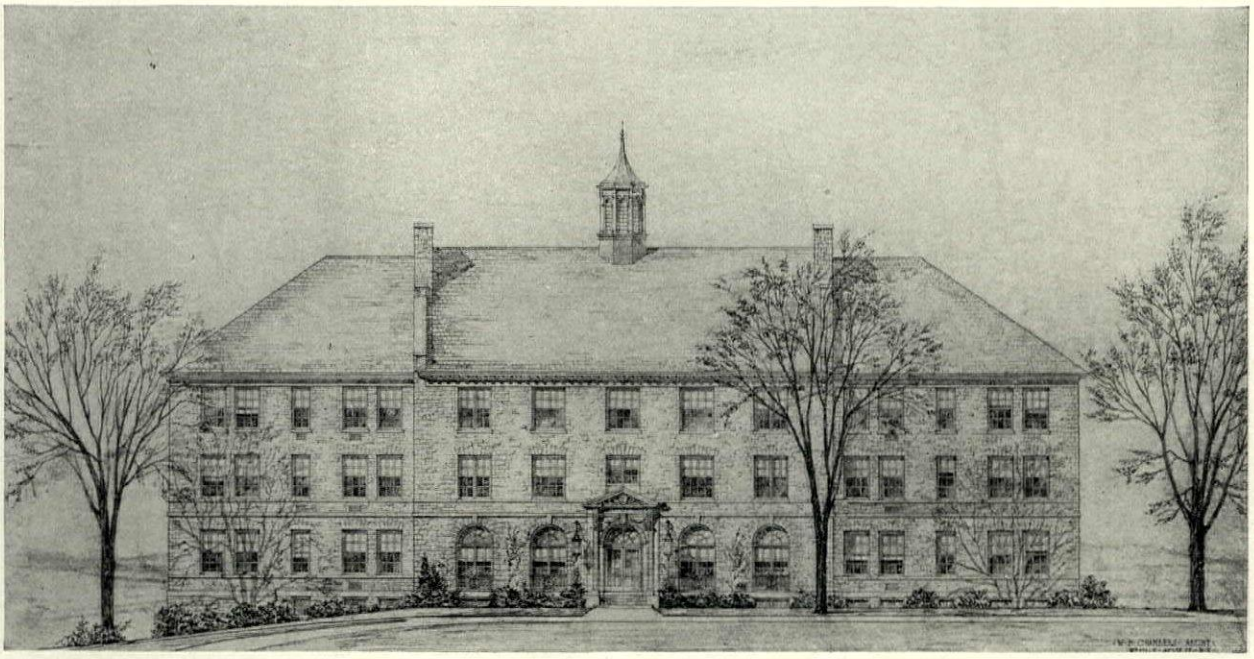
Among the many interesting works contributed to our architecture by Mr. Chambers are two apartment houses in mid-Manhattan and two commercial buildings in the district south of Wall Street, a group of buildings for Colgate University designed in the American style of 1830, and the new Bingham Hall at Yale University. Three of the first-mentioned group and an alteration to a small building done for a firm of dealers in antiques at 815 Madison Avenue have caused the Fifth Avenue Association and others





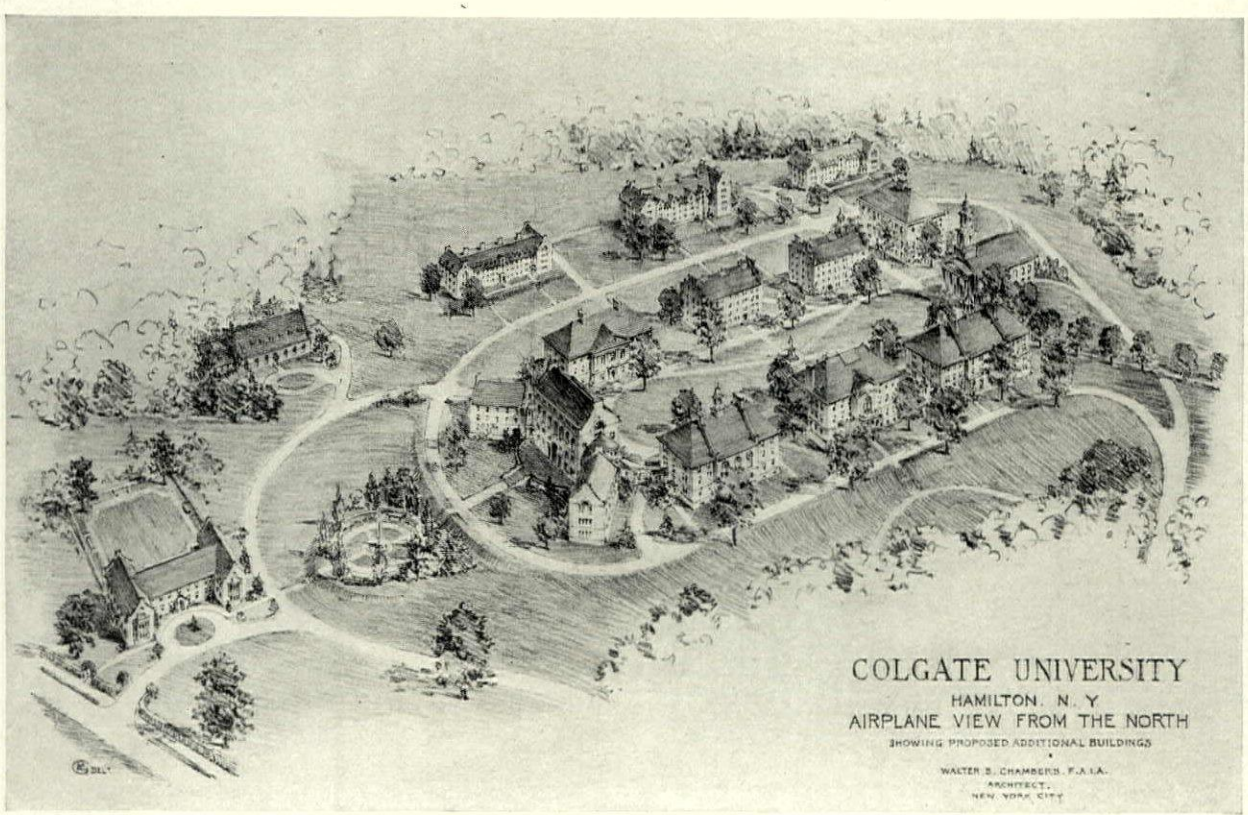
SKETCH RENDERINGS BY WALTER B. CHAMBERS, ARCHITECT

RESIDENCE OF CHARLES P. NOTMAN, ESQ., GLOUCESTER, MASS.



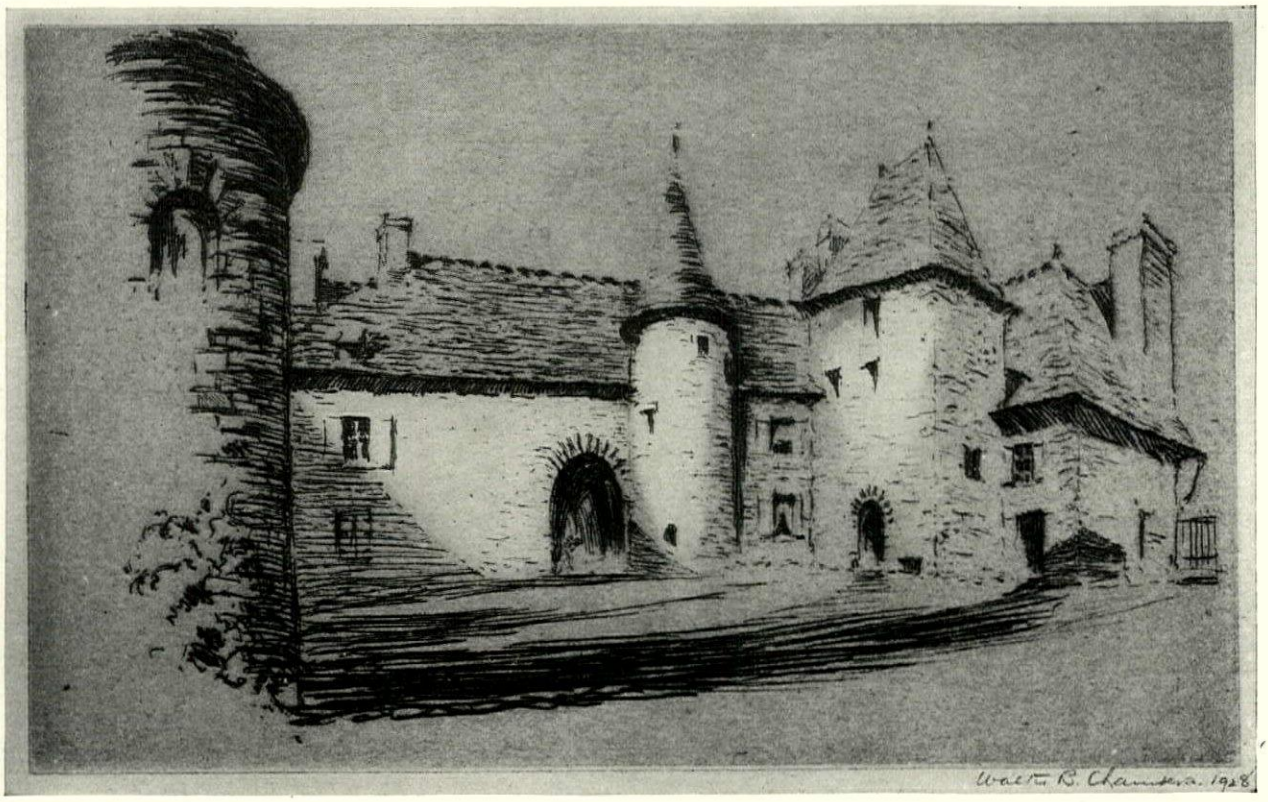
LAWRENCE HALL, COLGATE UNIVERSITY, HAMILTON, NEW YORK

PENCIL RENDERING OF ELEVATION BY WALTER B. CHAMBERS, ARCHITECT



GENERAL VIEW OF COLGATE UNIVERSITY FROM THE AIR

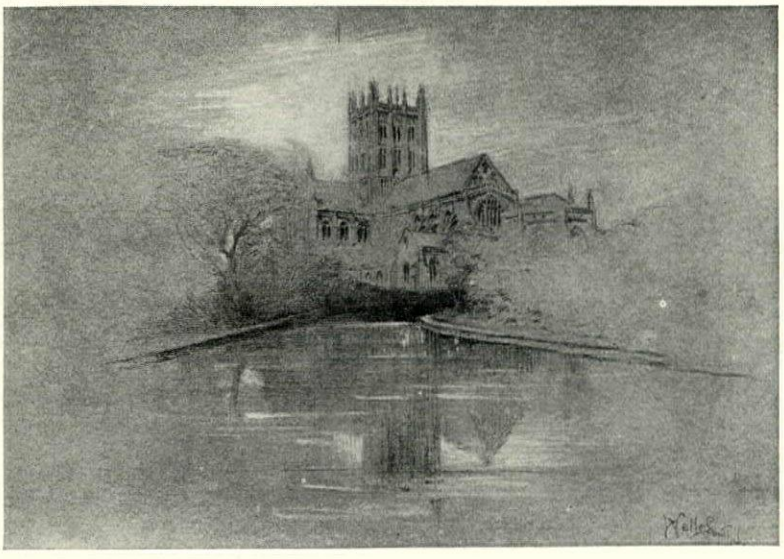
SHOWING PROPOSED NEW BUILDINGS BY WALTER B. CHAMBERS, ARCHITECT—LAWRENCE HALL AT THE RIGHT



NORMAN FARM BUILDINGS—ETCHING BY WALTER B. CHAMBERS

MADE FROM A SKETCH DRAWN IN 1922

of like disposition to inflict Gold Medals upon the architect. Bingham Hall, which is a memorial to General Charles W. Bingham given by his four children, has given Mr. Chambers the opportunity to amuse by the introduction of details of historical decorative pictures in stone, as in the memorial of the old "Yale Fence," showing the costumes of the students of the years when General Bingham was a student at Yale. His designs for the Christmas cards he has sent to his friends during several years past make an interesting series of decorative studies with architectural motives, while a decoration for the "Pee-Wee Club"—a little circle of his merrymaking friends within the University Club—show the familiar quality of good humor with which all of the clan of good artists seem to be infected.



WELLS CATHEDRAL — SKETCH BY WALTER B. CHAMBERS

COST ACCOUNTING FOR ARCHITECTS, PART III

CAPITAL AND CONTINGENT CHARGES

By Lloyd M. Hendrick, Jr.

THE USE THAT IS made of capital depends on the demands of the business and the judgment of him who manages it; in an architect's office it will fall into two divisions, "working capital" and property investments, as were enumerated in Part II. The administration of funds as working capital is not within the scope of this article, nor are the bookkeeping and accounting methods pertaining thereto. We shall, however, undertake to follow property investments as capital charges to their final disposition, not from the administrative standpoint but as a cost proposition representing the outgo of money which must be controlled.

The most significant characteristic of Property, the account, is that its history appears wholly in the journal, cash book, and ledger rather than on subsidiary cost-keeping records as will be described for the other kinds of costs. This is explained by the fact that Property represents the purchase of things of a tangible nature possessing substantially permanent asset character, while other costs must be compiled from the books and from records of intangibles, such as time, or of things rapidly consumed and having no asset character worthy of notice. Let us suppose that John Smith begins the practice of architecture with a capital of $5000 cash. He also contributes to the business, architectural books and certain other equipment valued at $500. His first move is the renting of quarters and arranging for telephone service, etc. He likewise buys furniture, typewriters, drafting tables, etc., at $400 for which he pays later in the month. This is clearly a capital investment for the Property account. He also sets aside $2000 as sufficient for present needs as working capital. With this he opens a checking account, keeping the remainder of his capital separate as a reserve. Our bookkeeping entries, omitting the formalities of opening the books, would now be as follows:*

JOURNAL

Jan 1	Capital	5000 00	
	To John Smith		5000 00
	Property	500 00	
	To John Smith		500 00
2	Property	400 00	
	To Accounts Payable		400 00

CASH BOOK

Jan 1	Capital			2000	00
18	Capital			400	00
	To Accounts Payable				400 00

LEDGER

Capital

Jan 1	John Smith		5000	00	Jan 1	Cash	2000 00
					18	Cash	400 00

John Smith

			Jan 1	Capital	5000 00
				Property	500 00

Property

Jan 1	John Smith		500	00			
2	Accts Payable		400	00			

Accounts Payable

Jan 18	Cash		400	00	Jan 2	Property	400 00

Cash

Jan 1	Capital		2000	00			
18	Capital		400	00	Jan 18	Accts Payable	400 00

If Mr. Smith preferred to consider his whole $5000 as working capital as some might choose to do, the debit in the cash book would of course be $5000 instead of $2000.

From the cost-keeping standpoint the foregoing arrangement offers several definite advantages. In the first place we have created a Property account on the books, and all purchases coming under this heading can be properly posted instead of getting mixed with other costs and permitting false conclusions to be drawn. It likewise becomes easy to see at a glance the amount of the Property investment and to judge whether Capital funds are sufficient for any additional purposes contemplated. Other incidental advantages flow from the arrangement, such as possessing an accurate check against inventories, a true basis from which to compute proper depreciation charges and insurance coverages; and, in case of the

**For the purpose of demonstration it has been deemed best to employ at first simplified forms of rulings and columnar arrangement in the examples here presented. As the exposition of the subject proceeds, new forms will be given approaching more closely standard rulings and arrangements, and the single column method as here shown will give way to the multiple column system with entries such as above appearing in new locations. It will be understood of course that there is no departure at any time from the universal practice of placing debit entries to the left and credit entries to the right.*

death of a partner, a means of avoiding dispute in the equitable settlement of affairs. A glance at the ledger shows that John Smith has an interest of $5500 in the business, that the Property amounts to $900, and that there is $2600 available for additional working capital and for further Property purchases. In this way a clear picture is presented of what has been done with certain portions of the money, and the executive is better able to decide whether his next outlay of funds is economically justifiable.

As time goes on the Property account will show credit entries. These will generally be brought about by allowances for depreciation, although if anything is sold, such as books, there will of course be the necessary credits entered for them. Depreciation is an Indirect charge as given in our list in Part II and will be discussed in detail later, but it is desirable to show at this time how it would appear in the books. We will assume that the policy followed is one of setting aside at regular intervals in a separate fund a sum of money, say $50, to provide for the renewal of equipment. The cash book would show as follows:

CASH BOOK

April 1	Office Expense - depreciation			50 00
July 1	Office Expense - depreciation			50 00
Oct 1	Office Expense - depreciation			50 00

In the foregoing, Office Expense is introduced as the title of the account under which all entries will be made that are Indirect costs. The nature of the expenditure appears in the explanatory detail following the entry. From the point of view of the cash book the particular thing here considered, depreciation, is an expense requiring the same treatment as other Indirect costs such as rent, supplies, etc., and therefore the word "depreciation" appears here merely as an explanation of the entry proper. This is to be carefully distinguished from the account Depreciation Fund shown in the journal below.

The following entries would occur in the journal:

JOURNAL

April 1	Depreciation Fund	50 00	
	To Property		50 00
July 1	Depreciation Fund	50 00	
	To Property		50 00
Oct 1	Depreciation Fund	50 00	
	To Property		50 00

We make balancing entries here to Depreciation Fund and Property because value has been lost by Property and we wish these respective accounts to show on the ledger in the first case the amount of the fund and to what extent, from time to time, money is available for renewal of equipment; and in the second case the true asset value of Property. After posting to the ledger, the accounts, omitting that of Office Expense, tell this story as follows, assuming debit entries to Property and Cash as in our first example:

LEDGER

Cash

Jan 1	Capital	2000 00				
			Apr 1	Office Expense		50 00
			July 1	Office Expense		50 00
			Oct 1	Office Expense		50 00

Depreciation Fund

Apr 1	Property	50 00				
July 1	Property	50 00				
Oct 1	Property	50 00				

Property

Jan 1	John Smith	500 00				
2	Accts Payable	400 00				
			Apr 1	Depreciation Fund		50 00
			July 1	Depreciation Fund		50 00
			Oct 1	Depreciation Fund		50 00

The depreciation allowances given above are probably larger than would actually be justified but are offered as an example to demonstrate the situation after the system has been in use. We see that Office Expense (an Indirect cost) of $150 has been sustained, paid out of Cash. Our Depreciation Fund has reached the same amount, and Property of an original value of $900 has shrunk to $750. In this way the movement of both money and values is kept clearly in sight.

Contingent charges, it will be recalled, are those costs which do not add to equipment or asset in the execution of a commission, directly or indirectly. From the list of these as given in Part II it will be seen that they are either of a miscellaneous character or selling expense. If an office maintains a sales or publicity department or "promotion" man, which we shall assume to be the case, it is desirable in the interest of concise and reliable information to segregate such costs from others. This would give us two accounts, Contingent Expense, representing miscellaneous items, and Selling Expense, both under the broad classification of Contingent costs. In the case of the small office where publicity expenditures are few it might not be worthwhile to make the foregoing separation, and all Contingent costs may be entered in the general column in the journal and cash book under the single account Contingent, with an explanatory line giving the details of the entry. The total expended in the direction would appear on the ledger each time a trial balance was taken. This method would be justifiable only when the items were few, for it is evident that if the total of Selling Expense was wanted it imposes upon the bookkeeper the extra

work of going back over all her entries in the two books, picking out from the Contingent items those for which the selling department was responsible and then making separate additions. In a somewhat busier office some of this work could be avoided by having a special Contingent column in the journal and in the cash book, though the greatest advantage here would lie in the quicker entering and posting.

If the scale of operations of an office is large it becomes desirable to use an arrangement that entails the minimum of labor and gives the maximum of results with clarity and directness. This would be secured by entering miscellaneous Contingent costs in the general column of the journal and cash book under the heading Contingent Expense, accompanied by a word of explanation. These would be posted in the ledger to an account of the same name. Conceivably these charges might be numerous enough to call for a special column in the journal and cash book but this is rather unlikely in the average office. Under the conditions assumed selling costs must now be grouped so that they likewise can always be both properly entered and stand apart by themselves for quick examination as frequently as desired. This would be accomplished by a special column in both the journal and the cash book entitled Selling Expense to which all entries of this class would be made, and then only the total of these columns need be posted monthly to the ledger.

The following examples, assumed to be pages from the journal, cash book, and ledger, illustrate the method described. For the purpose of keeping the illustration simple and clear, balances brought forward and carried forward are not included, nor are entries and accounts other than those of the kind we are now considering. The nature of most of the entries is self-evident. The perspective which is the first entry in the journal is one of a completed group of buildings required for publication purposes. If this were of a projected group needed for study purposes it would be a Direct cost and would not appear as here shown. If it were a show drawing made at the client's request it might by arrangement be billed directly to him. These variations in the manner of handling apparently the same kind of cost item reflect directly the object of the expenditure, and leads us again to emphasize the importance, from an accounting standpoint, of thinking first of the purpose of expenses. Toll calls originating in the selling department would be listed by the switchboard operator

JOURNAL — PAGE 10

			GENERAL	SELLING EXPENSE	GENERAL
Oct 2	✓	Perspective Addition job		150 00	
	22	To Accts Pay.- Arthur Johnson			150 00
4	18	Contingent Expense	25 00		
	22	To Accts Pay, dues, Ch. of Com.			25 00
7	✓	Toll calls, Sept.		11 42	
	22	To Accts Pay. Am. T & T Co.			11 42
15	18	Contingent Expense	28 00		
		Photos, A.B. Smith House			
	22	To Accts Pay. H.A. Brown			28 00
22	18	Contingent Expense	3 00		
		Sub. to Pencil Points			
	22	To Accts Pay. Pencil Points			3 00
26	✓	Advertising - Sept		25 00	
	22	To Accts Pay. School Journal		186 42	25 00
31	34	Selling Expense - total	186 42		

CASH BOOK — PAGE 28

				GENERAL	GENERAL	SELLING EXPENSE
Oct 10	18	Contingent Expense			5 00	
		Tickets to Letter Carriers Ball				
11	✓	Beacon Printing Co.				26 75
		Folders & Printing				
14	✓	W. J. Smith				85 00
		Salary				
15	18	Contingent Expense			25 00	
		A.I.A. dues				
16	18	Contingent Expense				
		Salvation Army			5 00	
20	✓	Traveling Expense				16 82
		W. J. Smith				128 57
26	22	Accts Payable			28 00	
		H. A. Brown				
27	22	Accts Payable			150 00	
		Arthur B. Johnson				
	22	Accts Payable			25 00	
		Chamber of Commerce				
	22	Accts Payable			11 42	
		Am. Tel. & Tel. Co				
30	22	Accts Payable			3 00	
		Pencil Points Press Inc.				
31	34	Selling Expense - total			128 57	

LEDGER

Contingent Expense — (PAGE 18)

Oct 4	Accts Pay.	10	25 00	
10	Cash	28	5 00	
15	Accts Pay.	10	28 00	
	Cash	28	25 00	
16	Cash	28	5 00	
22	Accts Pay.	10	3 00	

Accounts Payable — (PAGE 22)

Oct 26	Cash	28	28 00	Oct 2	Selling Expense	10	150 00
27	Cash	28	150 00	4	Contingent Expense	10	25 00
	Cash	28	25 00	7	Selling Expense	10	11 42
	Cash	28	1 42	15	Contingent Expense	10	28 00
30	Cash	28	3 00	18	Contingent Expense	10	3 00
				26	Selling Expense	10	25 00

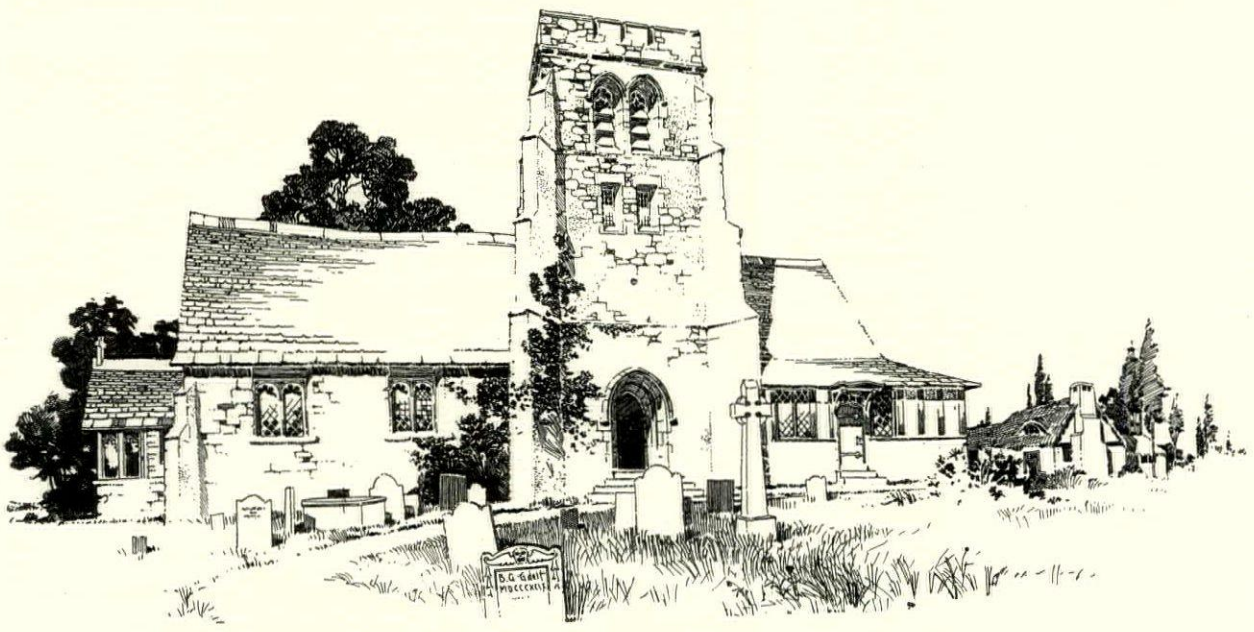
Selling Expense — (PAGE 34)

Oct	Cash	28	128 57	
	By sundries	10	186 42	

or the person calling, checked off from the monthly bill of all such calls, and then entered as shown. The other entries explain themselves.

Considering first the form of the journal and cash book above shown we observe the special columns for Selling Expense. These occur, however, only on the debit side of the journal and the credit side of the cash book. The reason for this differing arrangement arises from the desire for avoiding unnecessary use of space and rulings in the two books mentioned. The term Selling Expense expresses an outgo, and represents normally all the money activity in this department of the office. It would be difficult to imagine any income here unless a rebate was collected for something, or unless the salesman, beside his usual activities, wrote and lectured for compensation. In such rare cases the situation could be handled by appropriate entries in the journal or cash book with the accompanying figures put in the general column. Since, therefore, all entries under Selling Expense are either liabilities assumed or cash disbursements, it follows that no special column with that heading is needed on either the credit side of the journal or the debit side of the cash book and, consequently, none is provided. The special column occurs on the debit side of the journal because Selling Expense, a nominal account, is nominally the receiver of equivalent values, and it occurs on the credit side of the cash book because cash has given up value. The special column device accomplishes one thing vital to our quest in cost-finding, that of providing a place for the class of costs with which we are concerned and then, assuming we have a good bookkeeper, increasing the probability that these things will be found in their place. It goes further and becomes a great convenience and timesaver in the mechanical side of bookkeeping. Instead of the necessity of posting every item, the special column is added, the total carried by a summarizing entry into the general column at the end of the month and then only the single posting of this total need be made.

It is now opportune to cast a glance backward to see what the system herein described has thus far accomplished in respect to office costs. Following the classification of costs according to character (the cornerstone of everything coming after) the first expenditures—property investments and the related charge of depreciation—are given a place in the bookkeeping plan and the means indicated by which they should always go to their place. Then Contingent charges of both the general and specialized classes are similarly provided for. To the extent to which we have proceeded the books now show with conciseness where some of the money goes and how much of it goes there. This clears the way for a consideration of the major expenses of operating an office, the heavy outgo under Indirect and Direct costs, with which the next installment of this series will concern itself.



FROM A PEN-AND-INK DRAWING BY BERTRAM GROSVENOR GOODHUE

THE LAYING-OUT OF SUNDIALS

By Lewis M. Lawrence

A DIAL IS A plane upon which lines are described in such a manner that the shadow of the sun, cast by the upper edge of a gnomon, or plane, erected perpendicular to the dial plane, will show the time of day. The edge of the gnomon which casts the shadow is called the stile and must always be parallel to the earth's axis. The line on the dial plane upon which the gnomon is erected is called the substile. The angle between the stile and substile is called the elevation, or height, of the stile.

Dials whose planes are parallel to the plane of the horizon are called horizontal dials. Those whose planes are perpendicular to the plane of the horizon are called erect, or vertical, dials.

Erect dials, whose planes face directly south, north, east, or west, are called direct south, north, east, or west dials. All other erect dials are called declining because their planes are turned away from the four points named.

Dials whose planes are neither parallel nor perpendicular to the plane of the horizon are called inclining or reclining dials according as their planes make acute or obtuse angles with the horizon toward the south, north, east, or west. If their planes are also turned so they do not face one of these four points they are called declining-inclining or declining-reclining dials.

The intersection of the dial plane with the plane of the meridian of the place, whose plane also passes through the stile, is called the meridian of the dial or the hour line of XII.

Those meridians whose planes pass through the stile and make angles of 15°, 30°, 45°, 60°, 75°, and 90° with the plane of the meridian of the place are called hour circles, and their intersections with the plane of the dial are called hour lines.

In all declining dials the substile makes an angle with the hour line of XII.

In Figure 1 the circle represents the circumference of the earth, EE the equator, CP the polar axis, and L the location of a sundial at Boston. Draw TLP tangent to the circle at L, and ALG parallel to CP. Draw CLV which will be perpendicular to TLP.

Let TLP represent a horizontal dial at L. Angle ECL equals the latitude of Boston or 42° 30′, and equals angle PLG. Line LG, parallel to the polar axis, will be the stile of the dial TLP.

Let CLV represent a vertical dial at L. Then AL will be the stile making the angle ALC, or 47° 30′, with the dial. For angle ALT equals PLG equals 42° 30′, and angle TLC equals 90°; therefore TLC minus ALT equals ALC or 47° 30′, the co-latitude of Boston.

In Figure 2 let EPEP represent the circumference of a transparent globe, PCP the axis of the earth, ECE the equator, and A any point on the surface of the globe, as Boston.

Divide the equator into 24 equal parts by the meridians a, b, c, d, etc., a being the meridian of A. Each part will equal 15° or one hour of the day.

Let BD be a horizontal plane through the center of the globe representing a horizontal dial at A. Then CP will be the stile making an angle of 42° 30′ with the dial plane.

When the sun is in the zenith over any meridian the shadow of the meridian and the shadow of the stile CP will coincide and cast a shadow on the dial plane. Thus the meridian f and stile CP will cast the shadow C-VII on the dial plane. As the sun advances 15° or one hour, to meridian e, the shadow will fall on the dial at C-VIII. When the sun is in the zenith over meridian a the shadow will fall on C-XII.

If, instead of being horizontal, the plane BD is taken at any other angle through the center of the globe, the same demonstration will apply. The axis PP will still represent the stile but the direction of the hour lines on the dial will vary with the position of the dial plane.

In laying out a dial it is difficult to project spherical intersections accurately. Therefore a cylinder will be substituted for the globe.

In Figure 2 let EE be the diameter of a cylinder and PP its axis. Draw SN parallel to PP and tangent to the globe at any meridian as at T. Then STN is in the surface of the cylinder and parallel to the axis, or stile, PP, and therefore is in the same plane as meridian b and stile PP. When the sun is in the zenith over meridian b, the shadows of meridian b, cylinder line STN, and stile CP, will all fall on the same hour line of C-XI. Therefore, if the plane BD is taken through a cylinder instead of a globe exactly the same hour lines will be obtained and the projection will be simplified.

In Figure 3 draw the horizontal line ST. Draw SN, the axis of a cylinder, or stile of the dial, making the angle NST equal to the latitude of the place where the dial is to be erected. In this article the latitude of Boston, or 42° 30′, is used for all diagrams.

At any point C on SN, and with any radius CE, draw the circle EE′ EE′ to represent the circumference of a cylinder whose diameter is EE perpendicular to SN at C.

Divide the circle into 24 equal parts or hours of 15° each, and number the divisions in each semicircle from 1 to 12, the 12 in each case being at the point E. These divisions, representing the hours of the day, will hereafter be referred to as "cylinder points."

Through each of these divisions draw a line parallel to SN. These are front elevations of lines on the surface of the cylinder and are numbered with the same numbers as the cylinder points through which they pass, as 12, 1-11, 2-10, 3-9, etc. These lines will hereafter be referred to as "cylinder lines."

Draw S′ N′ parallel to ST and let S′ N′ be the plan of the axis, or stile, SN. Take the perpendicular distances from line EE to points 1, 2, 3, etc., on circle EE′ EE′ and set them off perpendicular to S′ N′ and through these cylinder points draw the cylinder lines 6, 5-7, 4-8, etc., in plan parallel to S′ N′ and number them the same as the corresponding cylinder lines in elevation.

This gives the elevation and plan of a cylinder whose axis, or stile, makes an angle with the horizon equal to the latitude of the place. A plane intersecting this cylinder in any direction may represent a dial whose hour lines and gnomon can be obtained by projection.

Thus far the method is the same for all dials and the description will not be repeated for the other diagrams.

Horizontal Dial

In Figure 3 draw the horizontal dial plane DB parallel to ST, intersecting the stile at C and the cylinder lines at 12, 1-11, 2-10, etc. From these cylinder points on line DB project vertical lines to intersect the corresponding cylinder lines in plan. An ellipse drawn through these points of intersection is the true shape of the dial plane.

From C, where the stile CN intersects the dial plane, project a vertical line to intersect S′ N′ at C′. Lines drawn from C′ through the cylinder points 12, 1, 2, 3, etc., on the ellipse are the hour lines of the dial. From the meridian line XII the hour lines are numbered XI, X, IX, etc., toward the west, and I, II, III, etc., toward the east.

Let AC, lying in the line SN, be the stile whose plan is A′ C′. Draw AB perpendicular to dial plane DB. Then the plan of line AB is the point A′ B′, and the plan of plane ACB, or gnomon, is the line C′ B′ which is the substile. Therefore ACB is the true angle of the gnomon, or height of the stile, which is to be erected perpendicular to the dial plane with the line CB on the substile C′ B′, and CA is the stile which casts the shadow.

Direct South Dial

In Figure 4 draw the vertical dial plane ECE in elevation and E′ C′ E′ in plan. With center C′ and radius C′ E′ revolve line E′ E′ and its cylinder points to E^2 E^2 in line S′ N′. Project vertical lines from the cylinder points on E^2 E^2 to intersect horizontal lines drawn through the cylinder points on line EE. An ellipse drawn through these intersections is the true shape of the dial plane as revolved into a vertical plane through S′ N′. Lines drawn from C through the cylinder points 12, 1, 2, 3, etc., on the ellipse are the hour lines of the dial.

Let AC, lying in the line SN, be the elevation of the stile whose plan is A′ C′. Draw AB perpendicular to dial plane EE. Then the plan of line AB is A′ B′ and the plan of plane ACB, or gnomon, is the line A′ B′ and BC is the substile. Therefore ACB is the true angle of the gnomon, or height of the stile, which is to be erected perpendicular to the dial plane with the line BC on the substile BC, and AC is the stile which casts the shadow.

This is also the diagram for a Direct North Dial, in which case CN is the stile instead of CA and the hour lines are drawn in the upper part and on the opposite face of the dial plane.

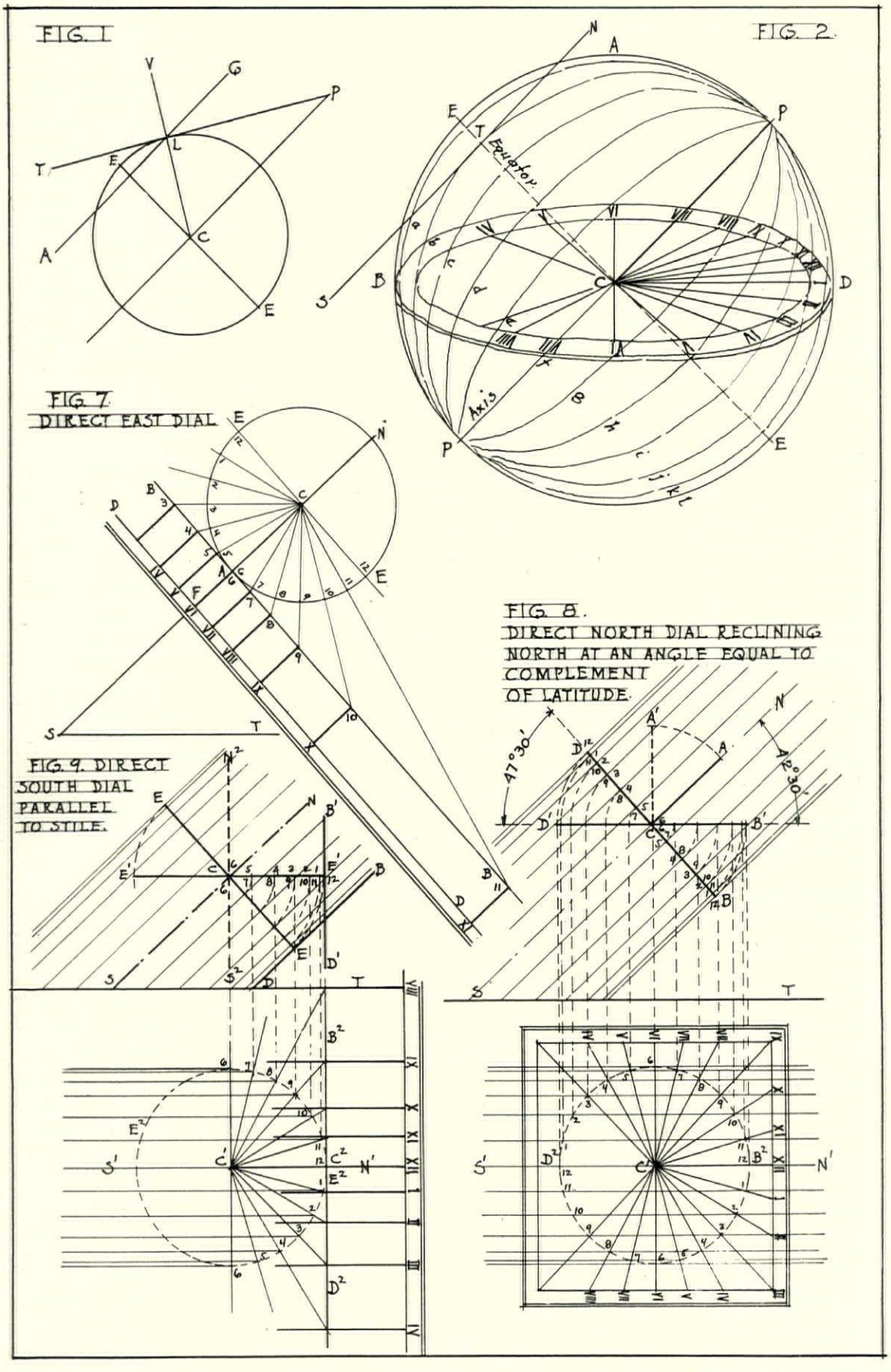
Erect South Dial Declining 30° East

In Figure 5 draw D C^1 D perpendicular to S′ N′. Draw the vertical dial plane E^3 C^1 E^3 declining 30° east from D C^1 D.

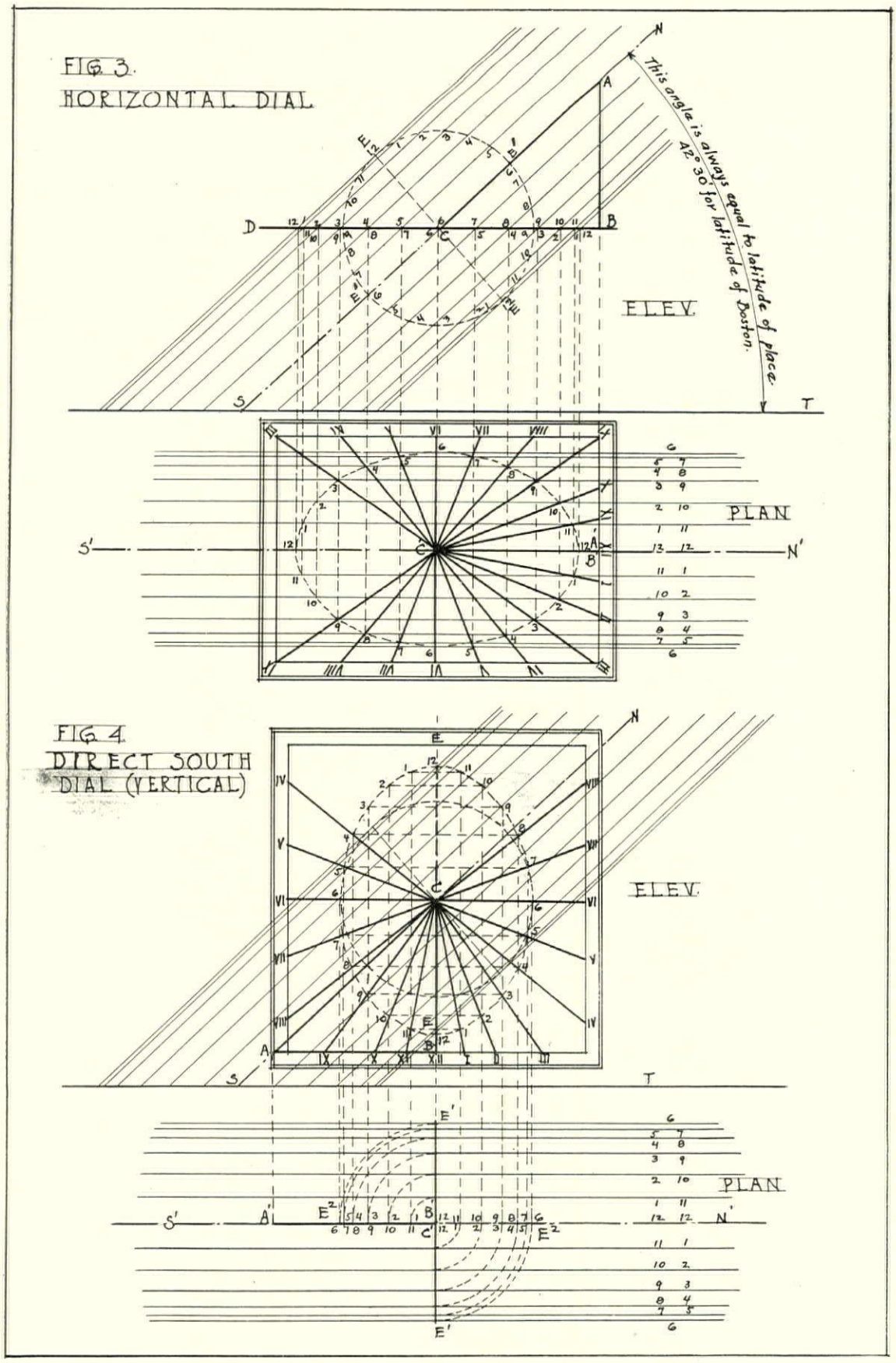
From the points where E^3 C^1 E^3 intersects the cylinder lines project vertical lines to intersect the corresponding cylinder lines in elevation at 1, 2, 3, etc. An ellipse E^1 E^1 drawn through these intersections is the elevation of the dial plane E^3 E^3.

With center C^1 and radius C^1 E^3 revolve line E^3 E^3 and its cylinder points to the position E^4 E^4 in line S′ N′. Project vertical lines from the cylinder points on E^4 E^4 to intersect horizontal lines drawn through the cylinder points on ellipse E^1 E^1. An ellipse E^5 E^5 drawn through these intersections is the true shape of the dial plane as revolved into a vertical plane through S′ N′. Lines drawn from C through 12, 1, 2, 3, etc., on ellipse E^5 E^5 are the hour lines of the dial.

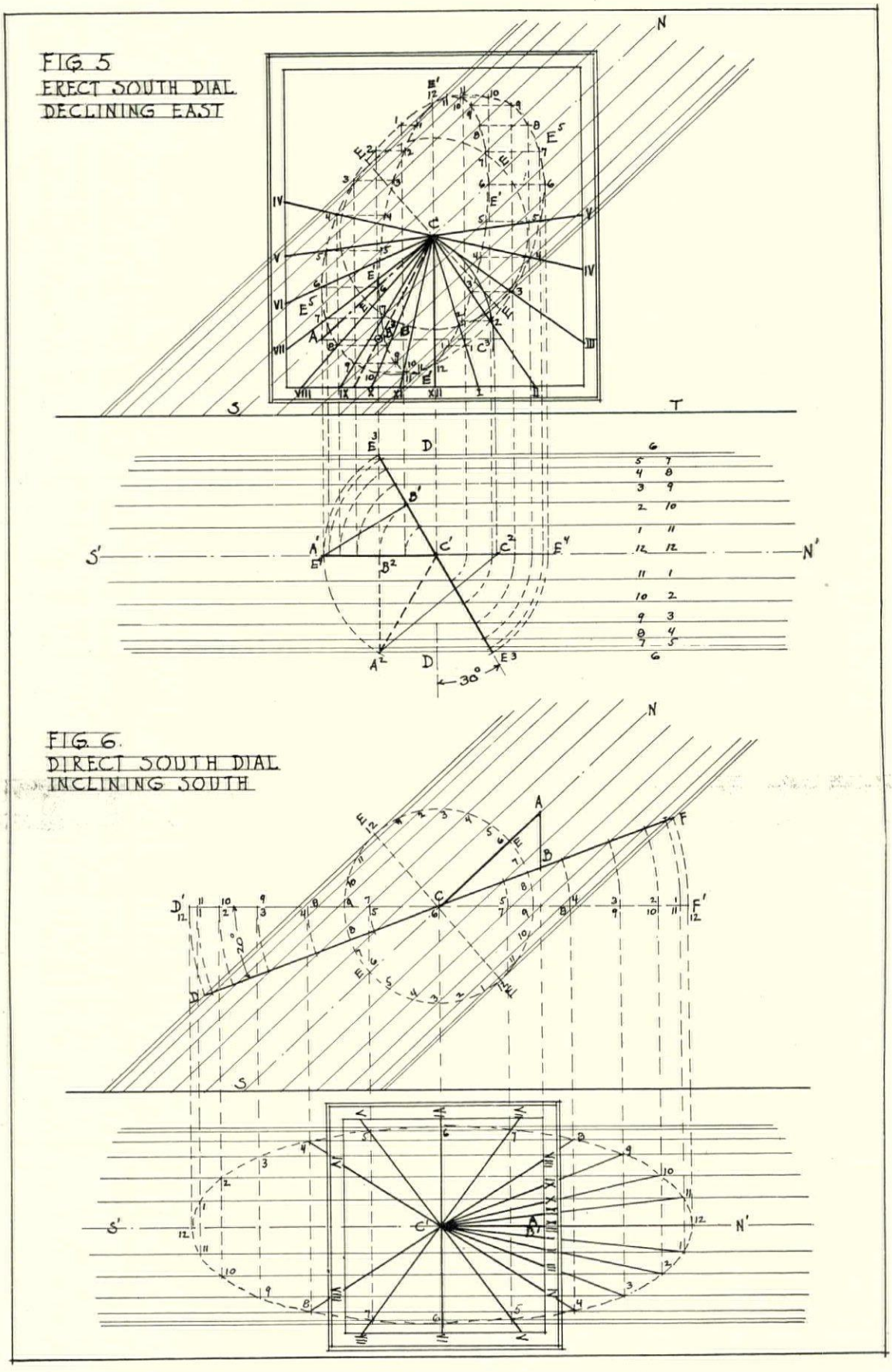
Let AC, lying in the line SN, be the elevation of the stile whose plan is A^1 C^1. Draw A^1 B^1 perpendicular to dial plane E^3 E^3. Then the elevation of line A^1 B^1 will be the horizontal line AB. Therefore A^1 C^1 B^1 is the plan, and ACB the elevation, of the gnomon. When E^3 E^3 revolved to E^4 E^4, the angle A^1 C^1 B^1 revolved to A^2 C^1 B^2, and points A and B in elevation revolved horizontally and coincide in the point B^3 which is the elevation of horizontal line A^2 B^2. The line CB^3 is the substile. With center B^3 and radius B^3 C draw the arc CC^3, and B^3 C^3 will then be the elevation of the angle A^2 C^1 B^2 revolved into the horizontal position A^2 C^2 B^2 about B^3 as an axis and A^2 C^2 B^2 will be the true shape of the gnomon which is to be erected perpendicular to the



FIGURES 1, 2, 7, 8, 9—DIAGRAMS FOR SUNDIALS



FIGURES 3 AND 4—DIAGRAMS FOR SUNDIALS



FIGURES 5 AND 6—DIAGRAMS FOR SUNDIALS

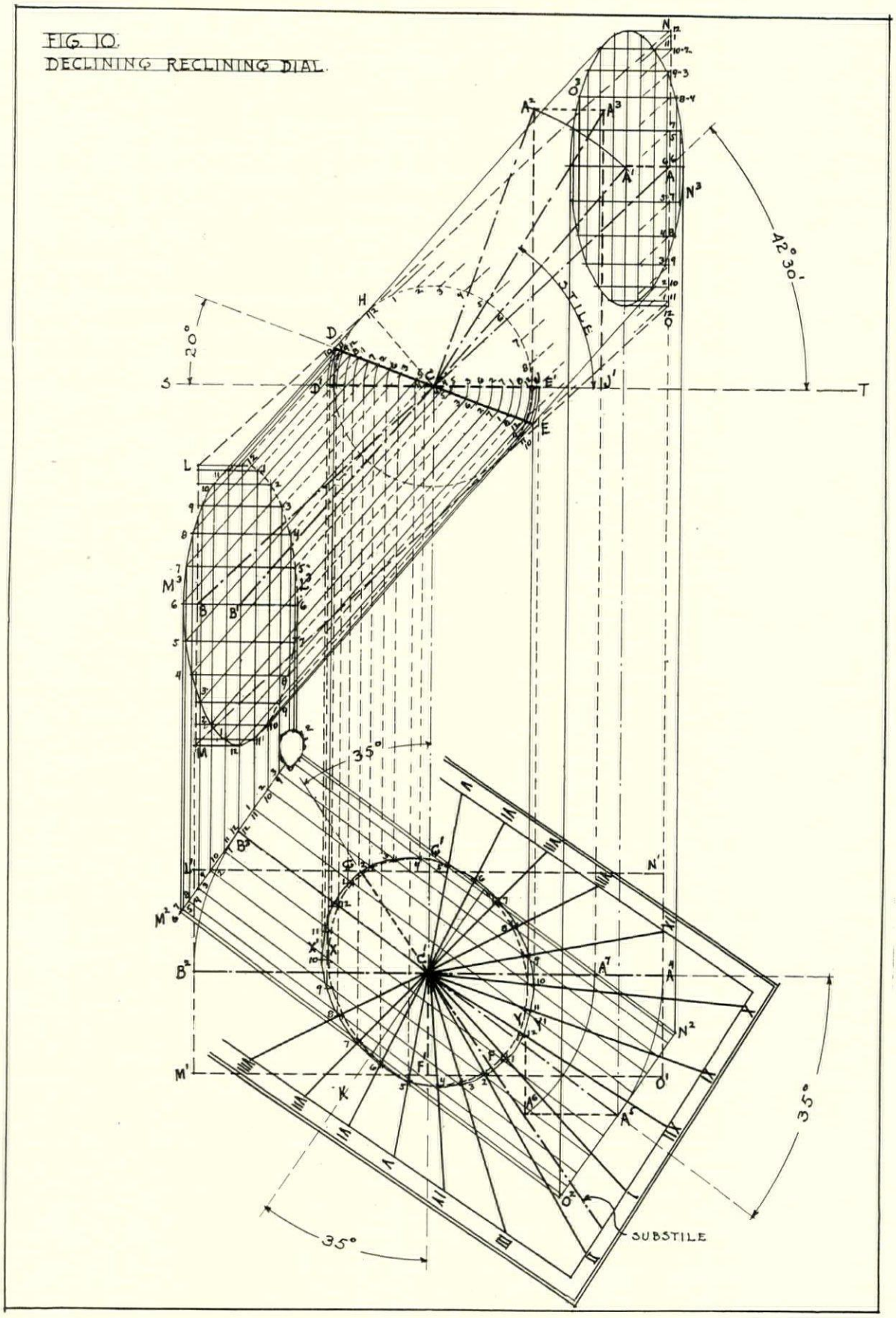


FIGURE 10—DIAGRAM FOR DECLINING-RECLINING DIAL

dial plane with the line B^2 C^2 on the substile B^3 C, and A^2 C^2 is the stile which casts the shadow.

Direct South Dial Inclining 20° South

In Figure 6 draw the horizontal line D′ F′. Draw the dial plane DCF inclining at an angle of 20° from D′ F′. With center C and radius CD revolve DF and its cylinder points to the horizontal position D′ F′. Project vertical lines from the cylinder points on D′ F′ to intersect the corresponding cylinder lines in plan at 1, 2, 3, etc. An ellipse drawn through these points is the true shape of the dial plane. Lines drawn from C′ through 12, 1, 2, 3, etc., on the ellipse are the hour lines of the dial.

Let AC, lying in the line SN, be the elevation of the stile whose plan is A′ B′. Draw the vertical line AB whose plan is the point A′. Then A′ C′ is the plan and ACB the elevation and true shape of the gnomon which is to be erected perpendicular to the dial plane with the line BC on the substile B′ C′, and AC is the stile which casts the shadow.

Direct East Dial

In Figure 7 draw the horizontal line ST and let SN be the axis of a cylinder making an angle of 42° 30′ with ST. At any point A draw BAB perpendicular to SN. Draw DD parallel to BAB. Then BBDD is the elevation of a vertical dial plane facing directly east. Let the cylinder be tangent to the dial plane and let its axis SN be any distance from the dial plane as AC. Then a section through the cylinder on line BB revolved into the plane of the dial is the circle AENE, tangent to BB at A, whose radius CA is the distance of the axis, or stile, from the dial plane. Divide the semicircle EE into 12 equal parts beginning at point A with 6. From C draw lines through 6, 7, 8, etc., intersecting BB at points 6, 7, 8, etc. The lines VI, VII, VIII, etc., perpendicular to BB are the hour lines of the dial.

The gnomon is a rectangle whose height is AC, erected on the substile AF perpendicular to the dial plane, and whose upper edge AF is the stile which casts the shadow.

A Direct West Dial is the same dial reversed.

Direct North Dial Reclining North at an Angle Equal to the Complement of the Latitude or 47° 30′

In Figure 8 draw the horizontal line D′ B′. Draw the dial plane DCB perpendicular to the stile SN and reclining north from the horizontal D′ B′ at an angle of 47° 30′. Angle ACB is 90°, angle ACB′ is 42° 30′, and angle BCB′ equals 47° 30′ equals angle DCD′.

With center C and radius CD revolve the line DB and its cylinder points to the horizontal position D′ B′. Project vertical lines from the cylinder points on D′ B′ to intersect the corresponding cylinder lines in plan at the points 1, 2, 3, etc. A circle drawn through these points is the true shape of the dial plane. Lines drawn from C′ through 12, 1, 2, 3, etc., on the circle are the hour lines of the dial.

Let AC, lying in the line SN, be the elevation of the stile. When dial plane DB revolved to D′ B′, the stile AC revolved to A′ C. The plan of line A′ C is the point C′. Therefore the gnomon is the line A′ C which is to be erected perpendicular to the dial plane on the point C′ which is the substile, and A′ C is the stile which casts the shadow.

Direct South Dial Inclining South at an Angle Equal to the Latitude of the Place, or Parallel to the Stile.

In Figure 9 draw the line EE representing a plane through the cylinder perpendicular to the axis SN. Draw the dial plane DB tangent to the cylinder at E, that is, inclining south 42° 30′. With center C and radius CE revolve EE to the horizontal position E′ E′ and the dial plane DB to the vertical position D′ B′. Project vertical lines from the cylinder points on E′ E′ to intersect the corresponding cylinder lines in plan in points 1, 2, 3, etc. A circle E^2 E^2 drawn through these points is the true shape of the cylinder section EE, and D^2 B^2 is the plan of the dial plane D′ B′. Lines drawn from C′ through 12, 1, 2, 3, etc., on circle E^2 E^2 intersect the dial plane D^2 B^2 in points through which the hour lines XII, XI, X, etc., are drawn parallel to S′ N′.

CE is the height of the gnomon which is to be erected perpendicular to the dial plane with the lower edge of the gnomon on the substile C′ N′ and the upper edge, or stile, at the distance CE above the dial plane.

Declining-Reclining Dial, Declining 35° East and Reclining 20° North

In Figure 10 let ST be a horizontal line, LMNO the elevation, and L^1 M^1 N^1 O^1 the plan, of a cylinder whose axis is AB in elevation and A^4 B^2 in plan. Draw F^1 G^1 perpendicular to A^4 B^2 at C^1. Through C^1 draw FG declining 35° east of F^1 G^1 and let FG be a horizontal line in the dial plane. Then the elevation of FG will lie in the line ST. With center C^1 and radius C^1 A^4 revolve the cylinder 35° east around the point C^1 to the position L^2 M^2 N^2 O^2. The axis will revolve to A^5 B^3 and FG will revolve to F^1 G^1 perpendicular to A^4 B^2. The elevation of the revolved cylinder will be L^3 M^3 N^3 O^3 obtained by projecting vertical lines from the cylinder points on L^2 M^2 and N^2 O^2 to intersect horizontal lines drawn through the cylinder points on lines LM and NO. The ends of the cylinder in elevation will then be the ellipses L^3 M^3 and N^3 O^3, axis AB will re-

volve to A^1 B^1, and the elevation of line FG will revolve to the point C.

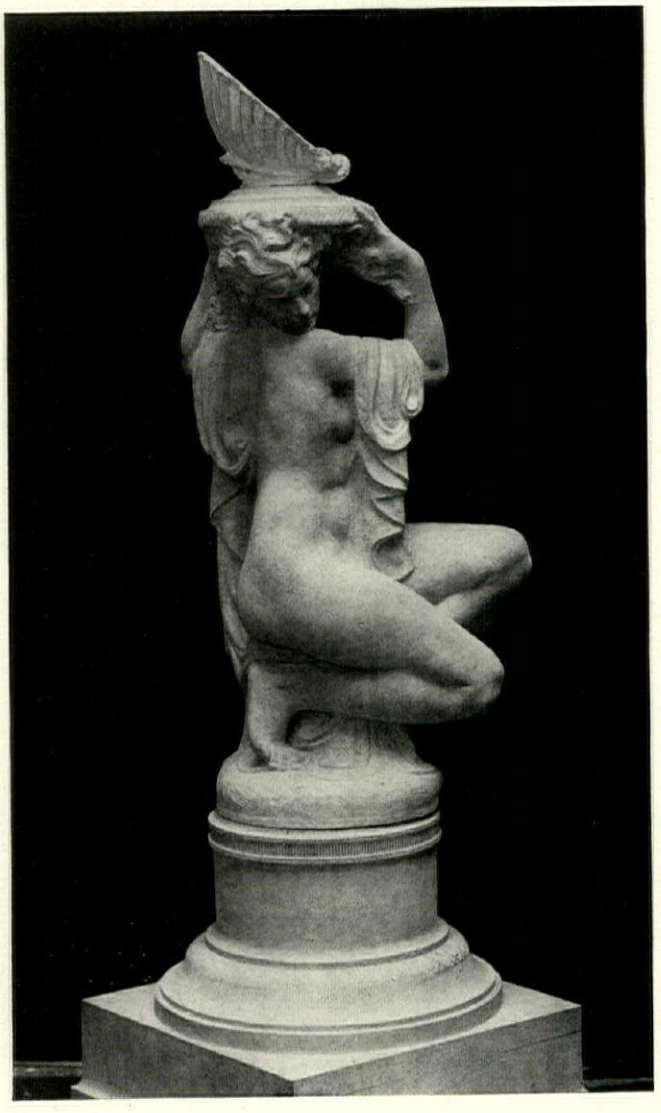
Through C, which is a horizontal line in the dial plane, draw the line DE which is the elevation of a dial plane reclining 20° north from the line ST. Project vertical lines from the cylinder points on DE to intersect the cylinder lines of L^2 M^2 N^2 O^2. An ellipse XY drawn through these intersections is the plan of dial plane DE.

With center C and radius CD revolve DE to the horizontal position D^1 E^1. Axis CA^1 will then revolve to CA^2 in elevation and C^1 A^6 in plan. Projecting vertically from the cylinder points on D^1 E^1 to intersect horizontal lines through the corresponding cylinder points on ellipse XY gives the points 1, 2, 3, etc., of ellipse X^1 Y^1 which is the true shape of the dial plane. Lines drawn from C^1 through the points 12, 1, 2, 3, etc., on ellipse X^1 Y^1 are the hour lines.

A vertical plane through C^1 A^6 will intersect the dial plane in C^1 A^6 which is the substile. With center C^1 and radius C^1 A^6 revolve the gnomon to C^1 A^7 in line B^2 A^4. The stile CA^2 in elevation will then revolve to CA^3, and A^3 C J^1 is the true shape of the gnomon which is to be erected perpendicular to the dial plane with the line CJ^1 on the substile C^1 A^6, and CA^3 is the stile which casts the shadow.

Setting the Dial

In setting a dial great care must be taken to erect the dial face at the exact angle for which it is designed. The stile must always make an angle with a horizontal plane equal to the latitude of the place where the dial is erected and the stile must point to the true north, that is, parallel with the earth's axis, and not to the magnetic north.



SCULPTURED SUNDIAL BY LEO LENTELLI

MAKING FULL-SIZE DETAILS, PART II

By Evans Chrysler

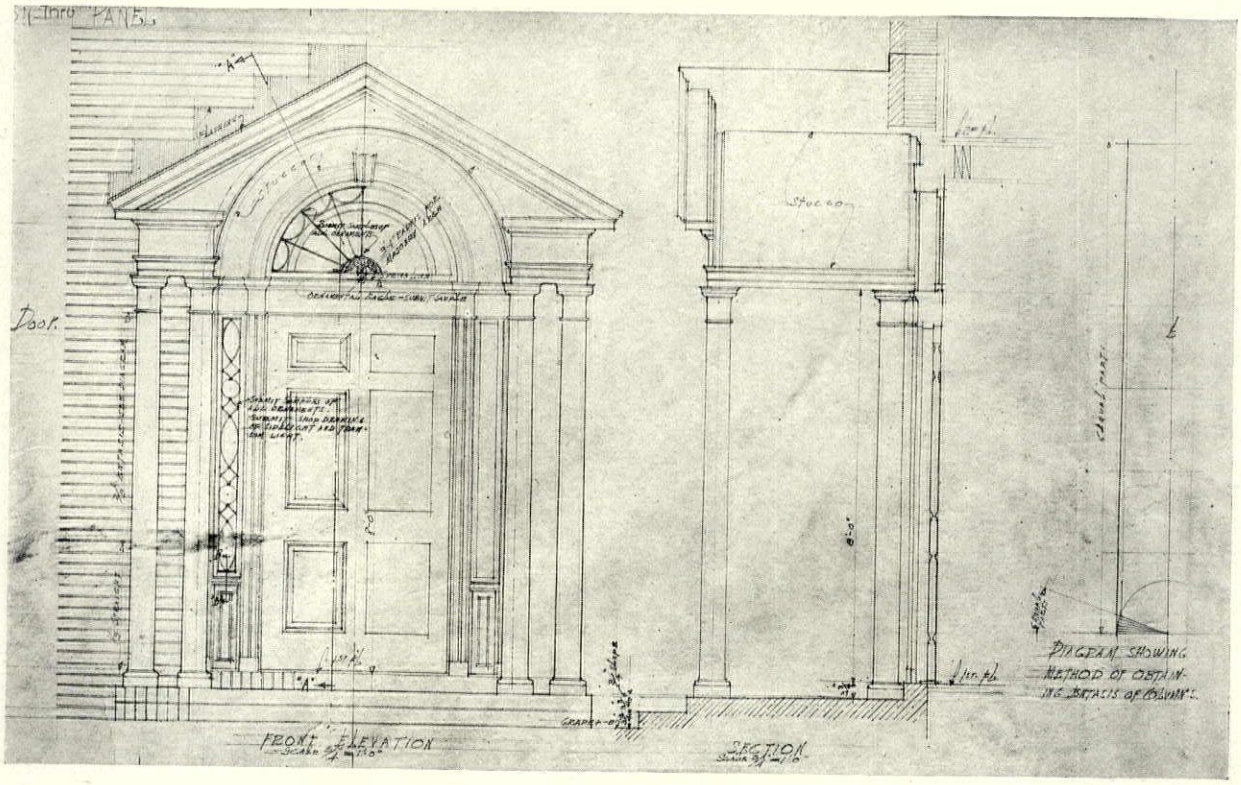
THE FULL-SIZE DETAILS grow by natural stages from the idea for the building first embodied in the architect's little rough sketch study of his *parti* for the design. The character of every detail and its method of construction are comprehended within the first studies and preliminary drawings, in condensed form and in general terms. What the detail is to be is fixed long before the drawing of the full-size is begun. The architect must have in mind the character of the architectural features, the profiles, the kind of ornamentation and the nature of the construction from the outset, for these are all implied by his first rough sketch. It is, then, a matter of developing these characteristics in detail and stating them.

The full-size detail drawings and the models that accompany them or that are developed from them, as the case may be, are merely instruments, like the other drawings and models. The architect's medium is the material of his building,—he uses drawings and models, specifications and oral instructions in working in that medium.

The size, general shape and the relation of the parts can be shown on the scale drawings. The kind and quality of materials, and to some extent the methods of construction, can be indicated in the specifications. But refinements of form of the parts cannot be shown on scale drawings, they must be shown at full size. As a rule it is not possible to secure in any other way the desired contour of a moulding or exactly the ornamentation wanted at any point.

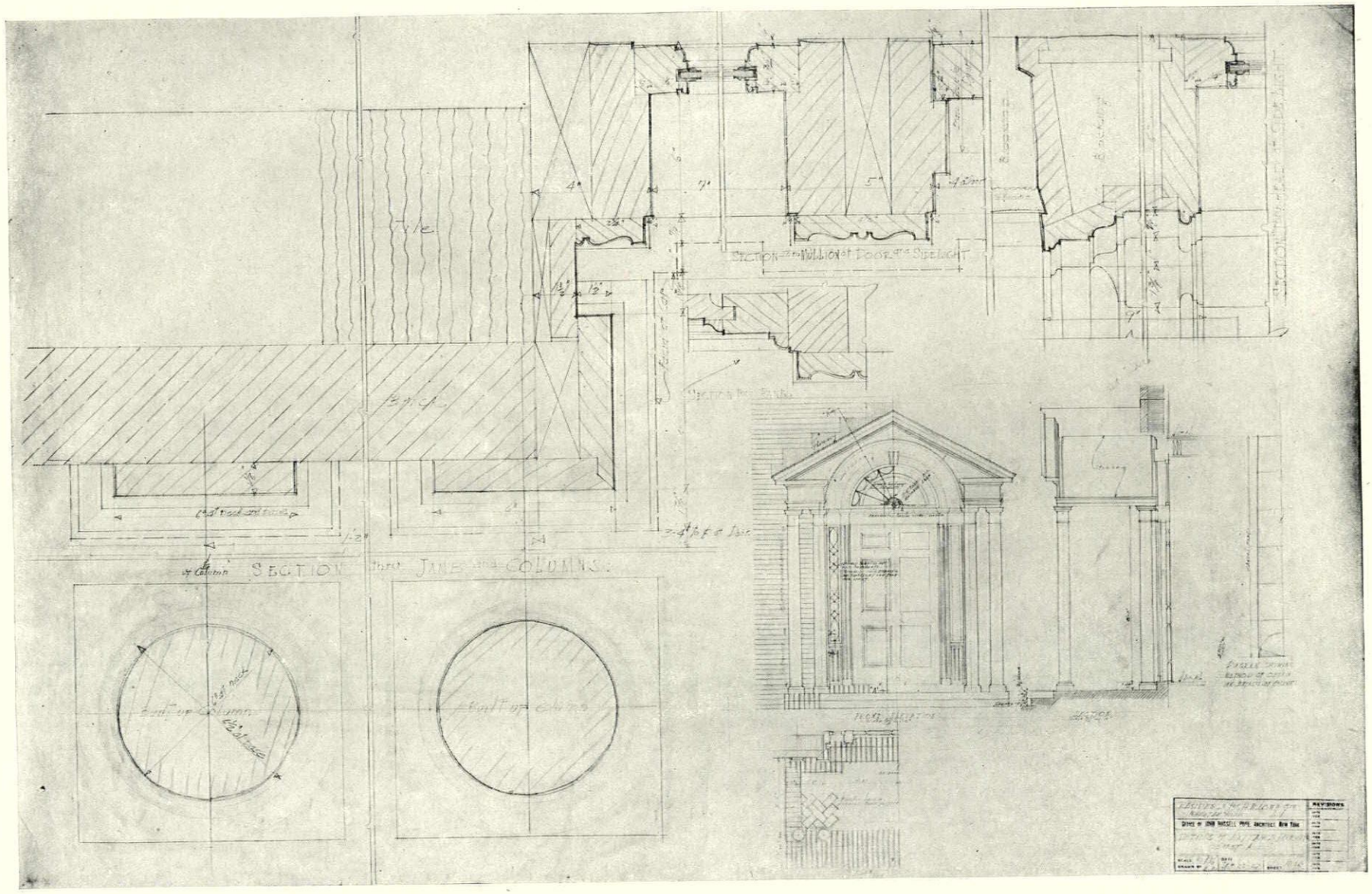
Full-size drawings of such features as pediments, cornices, and so on may be made to convey all of the needed information satisfactorily. But full-size drawings have limitations,—for instance, they fail to convey a wholly satisfactory idea of such a detail as the capital of a pilaster.

Where there is ornament, a model at full size is nearly always better than a full-size drawing for the use of the workmen. The model not only shows the detail in three dimensions exactly as it is to be in execution, but its making permits the architect to refine the design. The model can be used in studying the detail under the same conditions under which the executed detail will be seen,—it can be placed at the same height in relation to the eye level, lighted in the same way and viewed from the same distance. In this way the effects of light and shade can be seen and, whether or not the ornament has the right degree of boldness to carry or the right degree of refinement to



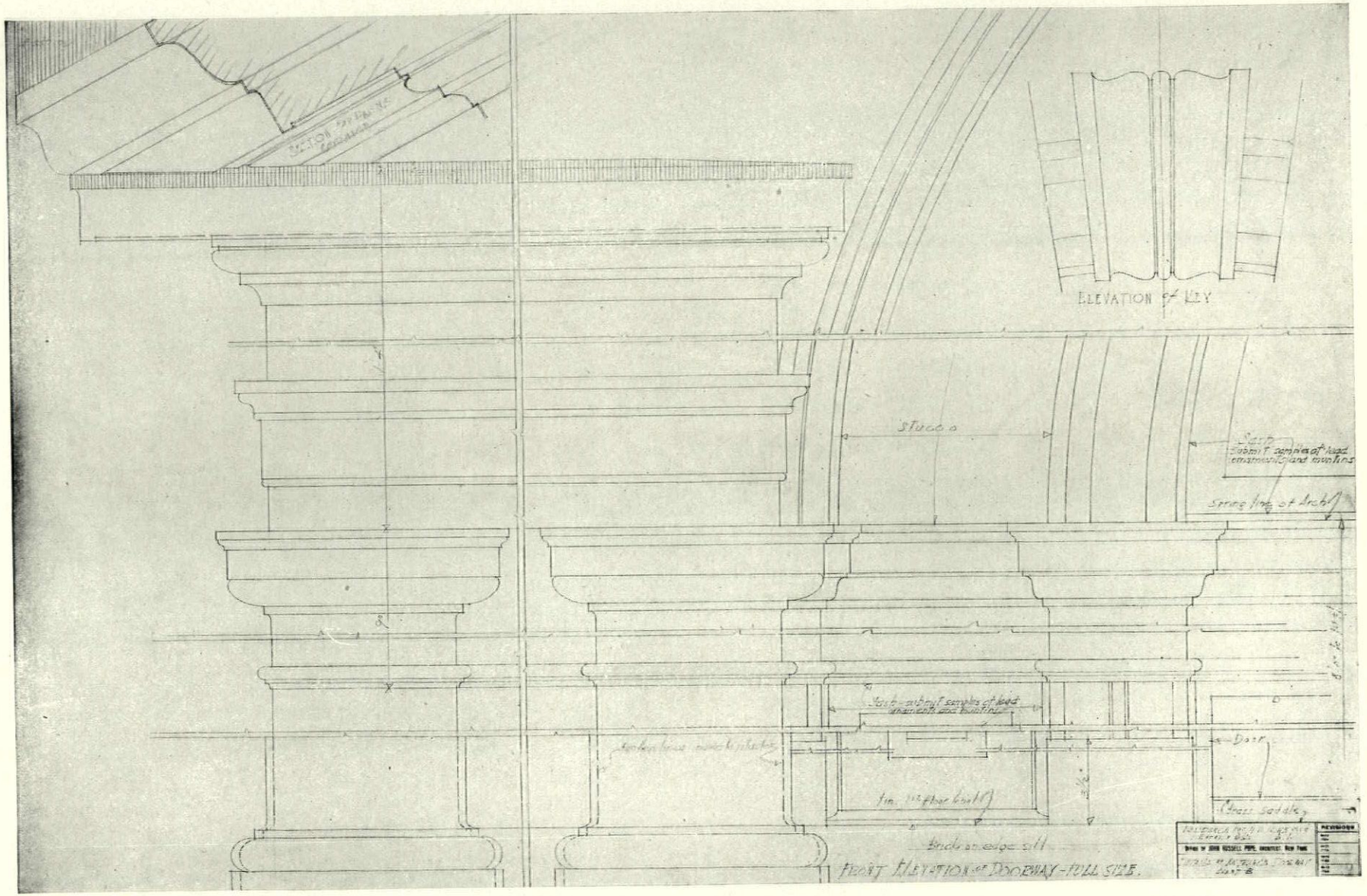
ENTRANCE DOORWAY FOR RESIDENCE OF H. W. LOWE, ESQ.—JOHN RUSSELL POPE, ARCHITECT

REDUCED FROM 3/4" SCALE DRAWING TO READ AT 1/4" SCALE



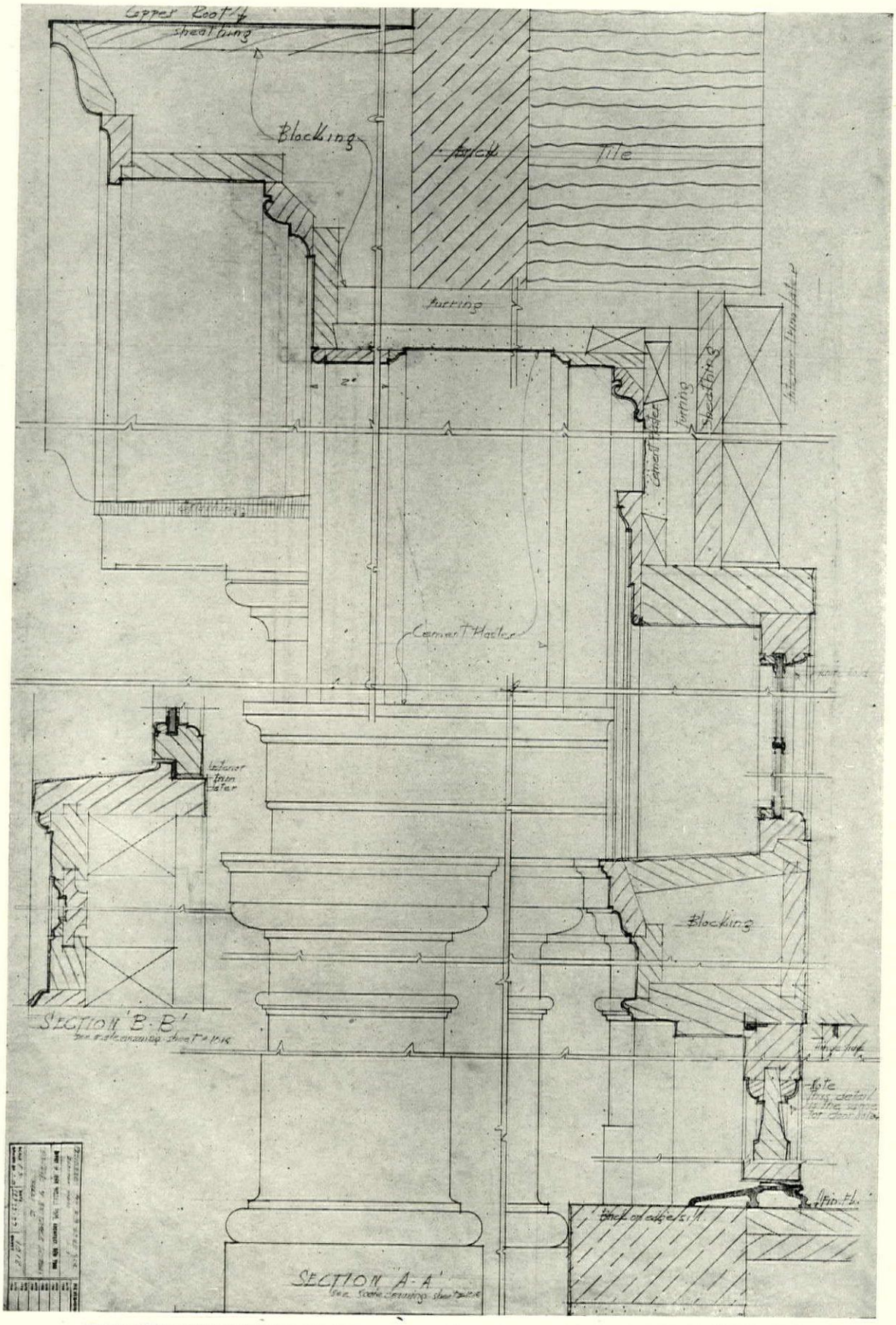
FROM FULL-SIZE DETAILS OF ENTRANCE DOORWAY—RESIDENCE OF H. W. LOWE, ESQ.—JOHN RUSSELL POPE, ARCHITECT

SEE OTHER DETAILS ON PAGES 571 AND 572



FROM FULL-SIZE DETAILS OF ENTRANCE DOORWAY—RESIDENCE OF H. W. LOWE, ESQ.—JOHN RUSSELL POPE, ARCHITECT

SEE OTHER DETAILS ON PAGES 570 AND 572



FROM FULL-SIZE DETAILS OF ENTRANCE DOORWAY—RESIDENCE OF H. W. LOWE, ESQ.

JOHN RUSSELL POPE, ARCHITECT—SEE OTHER DETAILS ON PAGES 570 AND 571

please under these condtions, the effects of foreshortening can be seen and many other matters can be studied. The model can be colored in imitation of the material in which the detail is to be worked as a further means of approximating the actual conditions. Detail shown by a white plaster cast of a clay model is different in effect from the same detail in any material that has not the glaring whiteness of such a cast. The plaster model may even be painted in polychrome, on occasion, and this is often done. Frequently two plaster casts are made of the same model, one being altered to indicate changes in the design, while the other is kept in its original state as a record. It may be said in passing that in the case of a very large detail such as the capital of a huge order it is better to make the model at one-half size or one-quarter size rather than at full size, since the cast can be made more accurately at the smaller size and the stone carver can take his points perfectly well from the smaller model, enlarging the measurements as required. When the architect studies the ornamental detail by means of models he is able to make all changes easily and rest assured that the results in the executed work will be satisfactory.

The fact that models of ornamental detail are largely used does not mean usually that full-size drawings of these same details are not made. On the contrary the drawings are commonly made as a basis for the making of models,—as a means of conveying much of the needed information to the modeler. Since such drawings are for the modeler, not for the workman who is to execute the ornament, they are usually more or less sketchy.

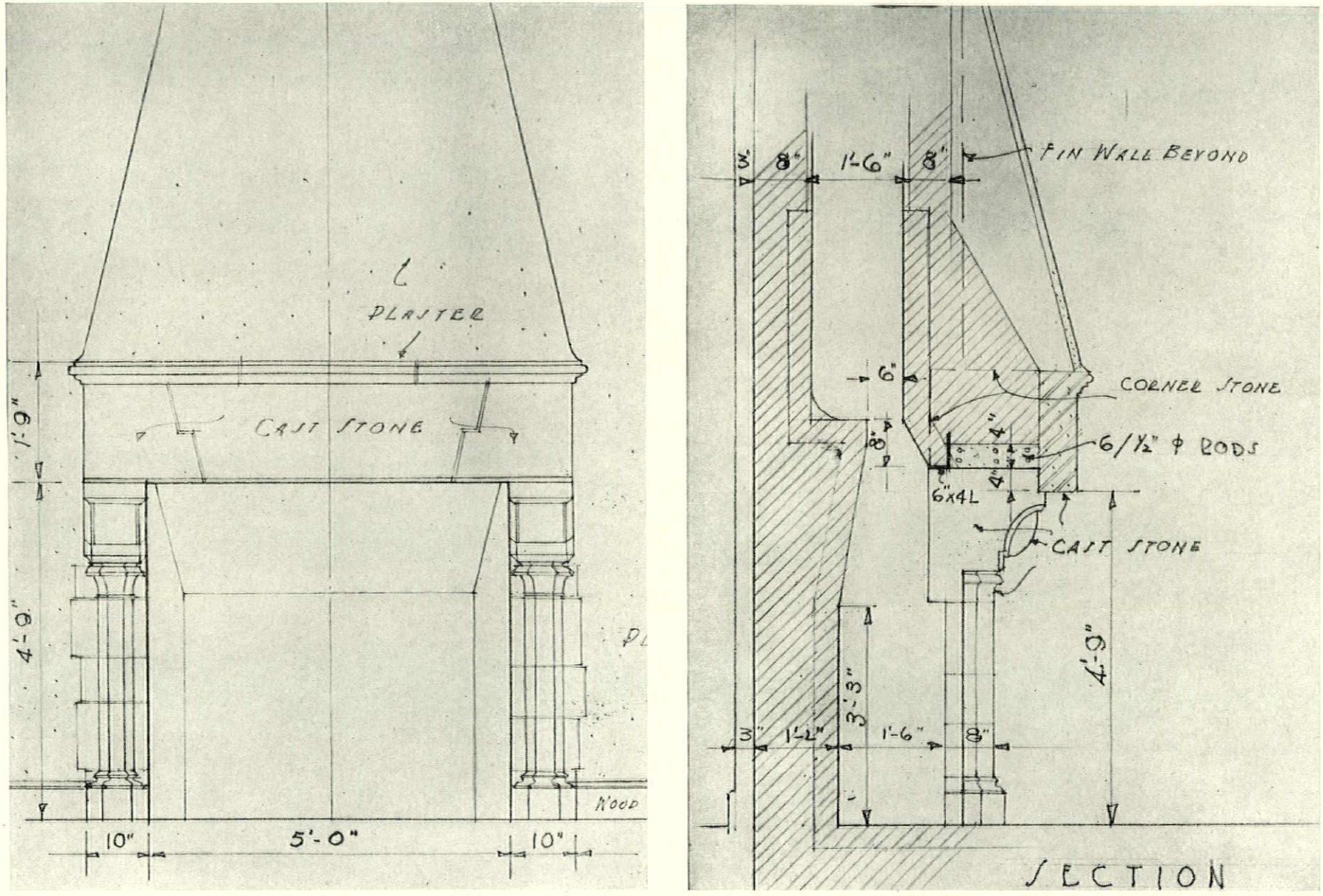
Full-size drawings have other limitations besides their inability to convey fully the character of ornamental detail. They cannot show the infinite variety of line and texture required to relieve the detail of the mechanical hardness that is objectionable in many cases. In a large residence in the Early English manner, for instance, the mouldings and all other details must have a considerable degree of irregularity for no two sections on adjoining stones are exactly alike. The detail around no two windows is the same, the verge boards on the gables are different in their carved ornamentation. Much of this can be taken care of by the making of numerous full-size detail drawings, but there is much that has to be left to be conveyed by oral instructions to the people who are to execute the work.

The practice followed by the office of John Russell Pope in such cases is to make detail drawings of everything that may be said to have form excepting the ornamental details for which models are used, then to have typical portions executed in the actual material under the supervision of a member of their organization. When these portions, which are often of considerable size, are pronounced satisfactory, the builders are instructed to proceed with the work, interpreting the full-size details in the manner of the portions approved. In this way is secured the color variation, the irregularity of line, and the varied qualities of texture that are essential in capturing the charm and friendliness that are characteristic of an old world building. These refinements have an intrinsic value that make them desirable, entirely aside from any sentiment that may attach to the simulation of old architecture. They give a building a peculiarly agreeable quality, but they are so subtle that they cannot be shown on drawings, even full-size drawings stop short of this degree of minuteness. A number of full-size drawings from the office of John Russell Pope are reproduced as illustrations in connection with this article. On page 574 are shown scale drawings for a stone fireplace. These drawings represent the practice of this office in studying parts of the building at one-half inch scale for the detail of design and construction. From the one-half inch scale drawing the full-size drawings are developed.

How the same method is applied to the exterior detail is shown by the scale drawing of an entrance door of Early American character reproduced on page 569 and in the full-size details of this feature which are reproduced on following pages. It will be noted that the construction is shown fully on these drawings. This information must be given somewhere, and the full-size is the best place for it in such cases as this one. The scale drawings cannot well indicate the construction fully enough, and to attempt to describe it in sufficient detail in the specifications would be futile. It would also be forcing the specifications to perform some of the functions that are not properly theirs, but that belong to the drawings. Methods of working are proper subjects for treatment in specifications. There is a point, however, at which a method of working becomes so much a matter of the form and the arrangement of parts, that the details can be conveyed much better by drawings than by the specifications.

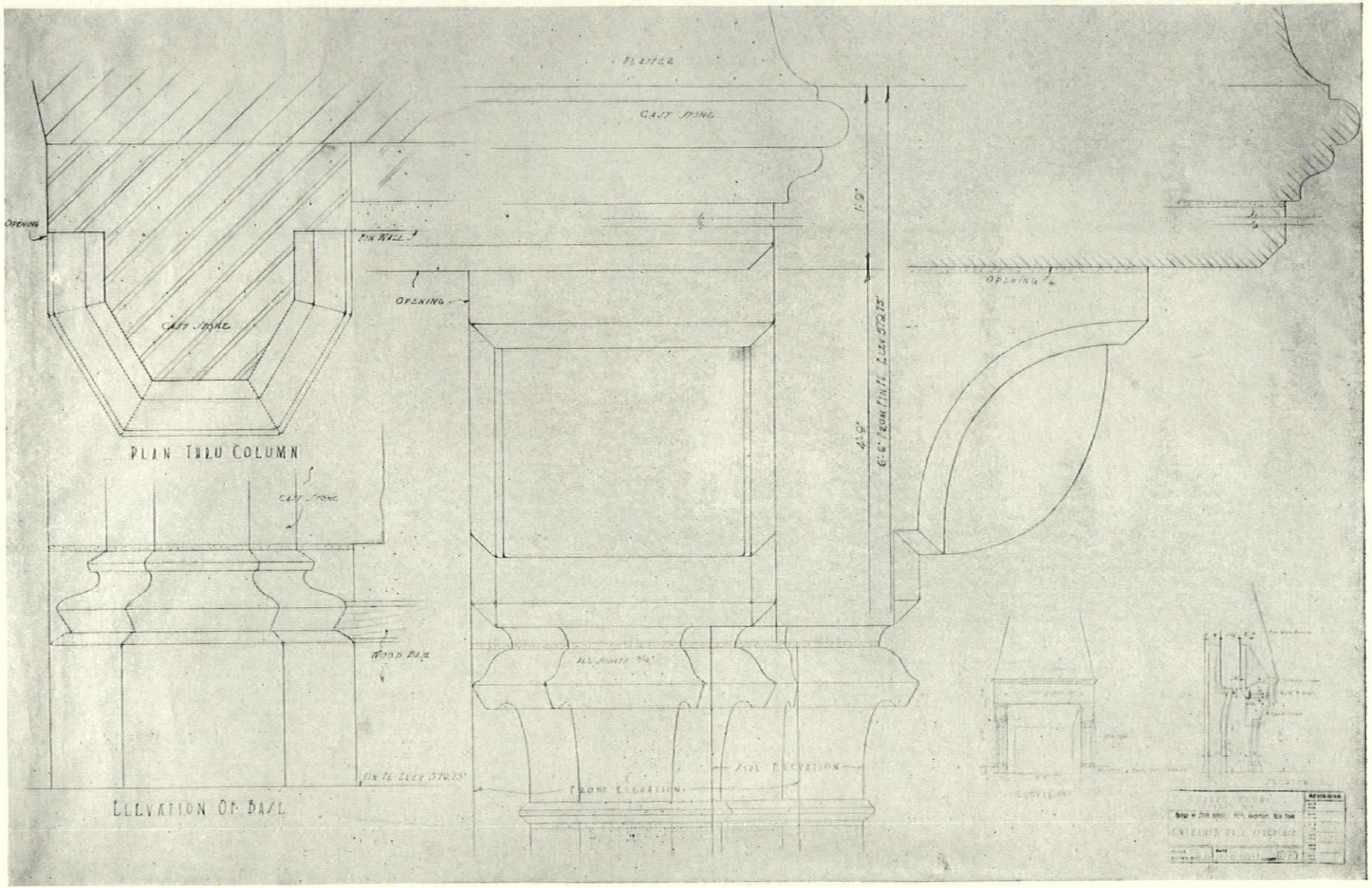
The kind of construction called for by the particular example under consideration, the Early American entrance shown on page 569, does not require shop drawings. There are other kinds of construction for which shop drawings are required, but that is a matter which needs to be taken up separately for discussion in connection with drawings which illustrate the points.

In the office of John Russell Pope, the drafting room work is under the constant supervision of two responsible members of the organization. The duties of one of these men include the direction and checking of the drafting room work during its progress for all matters of design character, while the other man looks after the practical side, sees that whatever is drawn can be built properly, and that the necessary drawings are made to show the construction, and show is correctly. On page 576 is reproduced a full-size



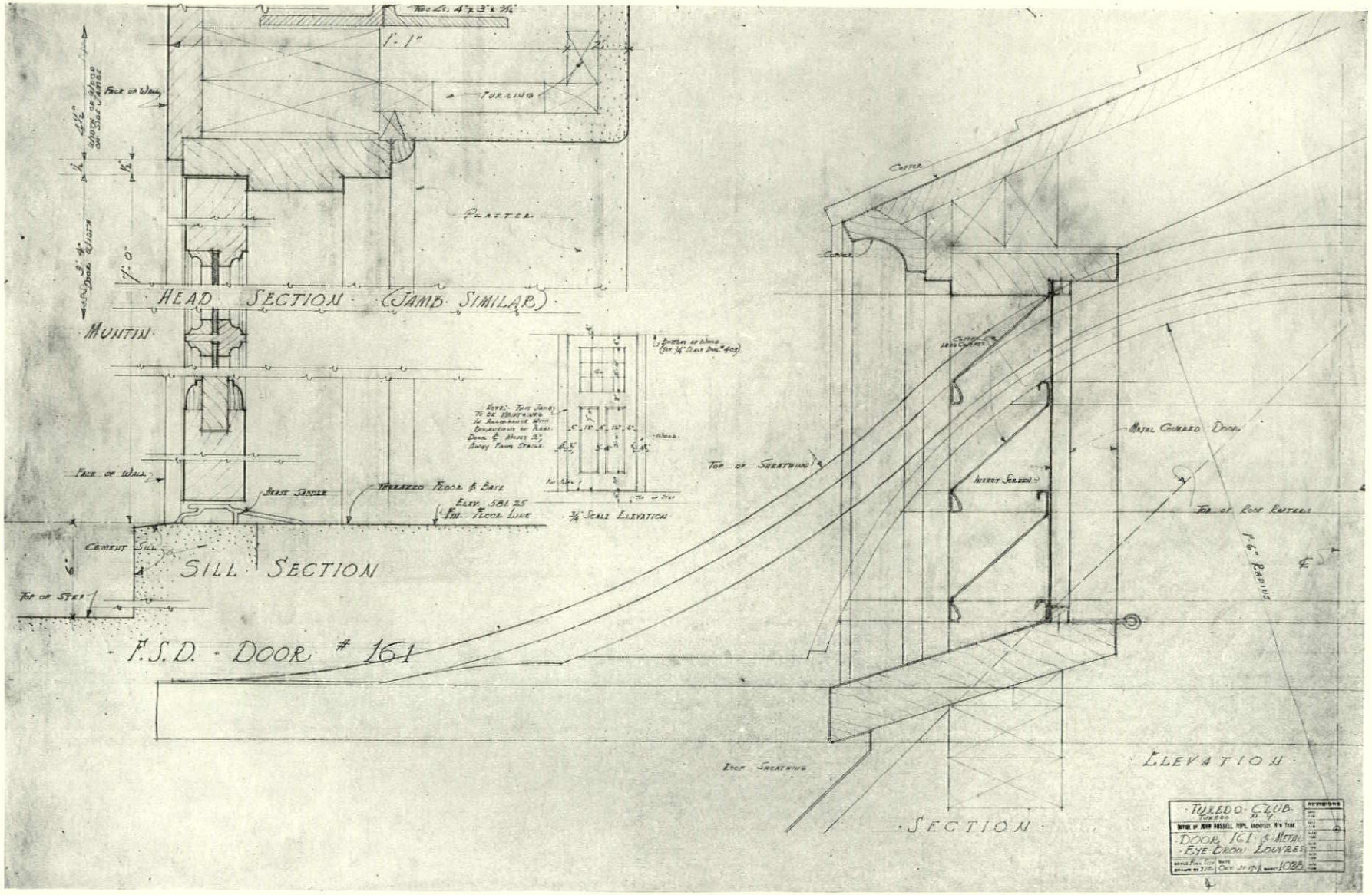
HALF-INCH SCALE DRAWING OF FIREPLACE IN ENTRANCE HALL OF TUXEDO CLUB—JOHN RUSSELL POPE, ARCHITECT

REPRODUCED AT EXACT ORIGINAL SIZE FROM SHEET OF FULL-SIZE DETAILS SHOWN ON PAGE 575



FROM SHEET OF FULL-SIZE DETAILS OF FIREPLACE IN ENTRANCE HALL—TUXEDO CLUB, TUXEDO, NEW YORK

JOHN RUSSELL POPE, ARCHITECT



FROM SHEET OF FULL-SIZE DETAILS OF DOOR AND EYEBROW LOUVRES—TUXEDO CLUB, TUXEDO, NEW YORK

JOHN RUSSELL POPE, ARCHITECT

detail drawing of a type different from those already shown here, an eyebrow window with louvres. Such details as these must be studied with care and properly full-sized if the effect of the whole building is to be satisfactory. The liberal use of full-size detail drawings is highly desirable, for it is the best means of giving refinement to the various architectural features of the building, including the minor parts.

If anything is left to chance or to the judgment of someone outside of the architect's organization, there are sure to be incongruities and inconsistencies, bits of bad detail that will seriously detract from the quality of the architecture. But what is shown must be right, and this applies to the construction as well as to the design character. Of course there are many cases in which the construction need not be drawn at full size, the half-inch scale or three-quarter inch scale drawings may show it fully enough. It may be that the usual practice of the trade is all that is required but in all fine work the construction must be definitely known to the man who makes the full-size detail drawings whether it is drawn in or not, otherwise a makeshift method of construction may have to be adopted or the character of the design may have to be changed,—things that are, of course, highly undesirable.

A thorough knowledge of construction on the part of the draftsman is less often found than the ability to draw well and to grasp the idea and the spirit of the design. This is largely due to the natural predisposition of the man in most cases, to the love for design and for drawing that led him to become a draftsman, and to a corresponding lack of interest in what may be regarded as the mechanics of building. This weakness in the subject of construction is due partly to the fact that few draftsmen have an opportunity to see building operations in progress. They do not see the things they draw actually built in stone and wood and terra cotta. Then, too, construction is a big subject and one that is not easily mastered, for the construction must be varied in order to adapt it to different conditions so that it may produce the form required by the design and at the same time be sound and workmanlike.

Very often the construction can be omitted from the full-size details where the essential thing is to show the architectural character of the parts, and may be left to the practice of the builder, subject to the approval of the architect's office, or shown on the shop drawings supplied by the contractors. Often nothing but the profiles of the parts need be shown on a full-size drawing. The drawing in of the construction may be entirely superfluous and a waste of time. This is especially true if the construction shown is not practicable, as is the case all too often. Nothing is more futile than the drawing of construction details that have to be disregarded.

The making of full-size details calls forth the draftsman's ability as a designer, his knowledge of architecture, sureness of hand, refinement of taste, sensitiveness to the character of materials, and his knowledge of construction. It also requires the exercise of good judgment to a greater degree than most other parts of drafting room work.

PEN-AND-INK DRAWING BY JOHN KNOBEL

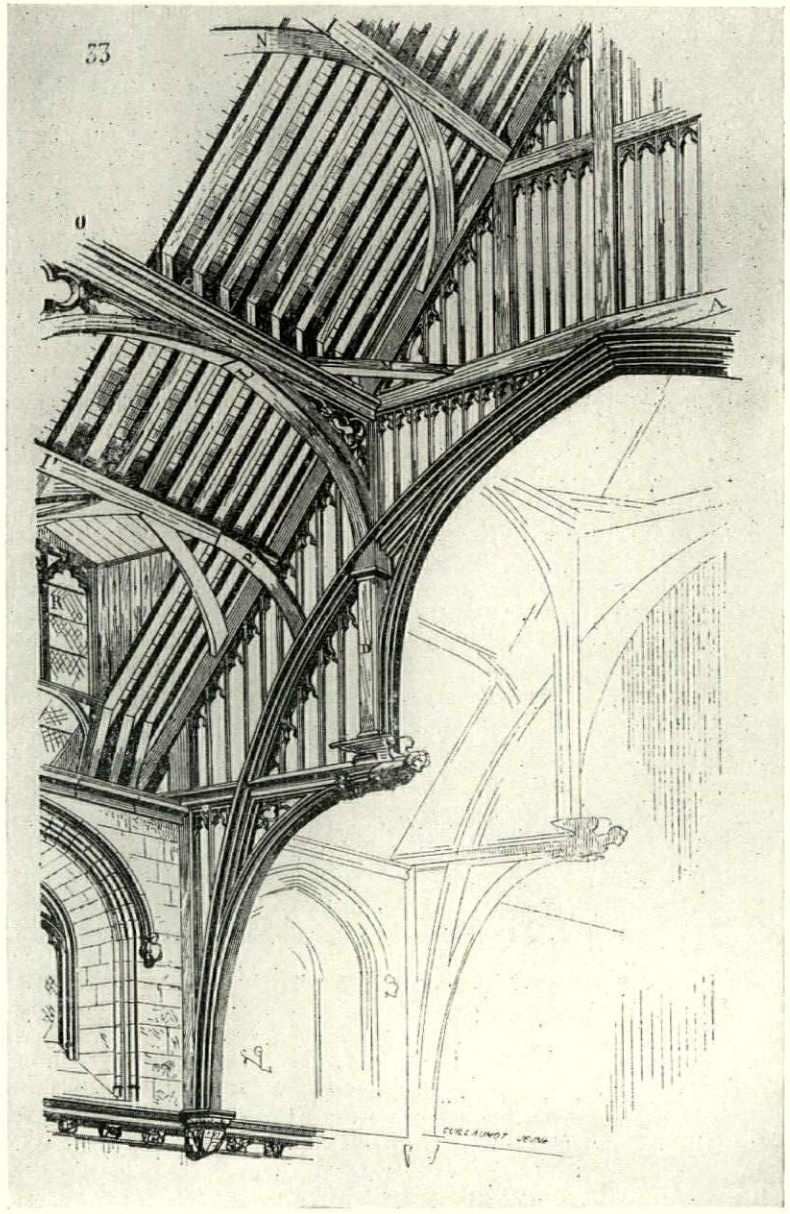


FIGURE 1

An example of advanced open-timber roof construction as developed by the French. A hammer-beam truss. Drawn by Viollet-le-Duc.

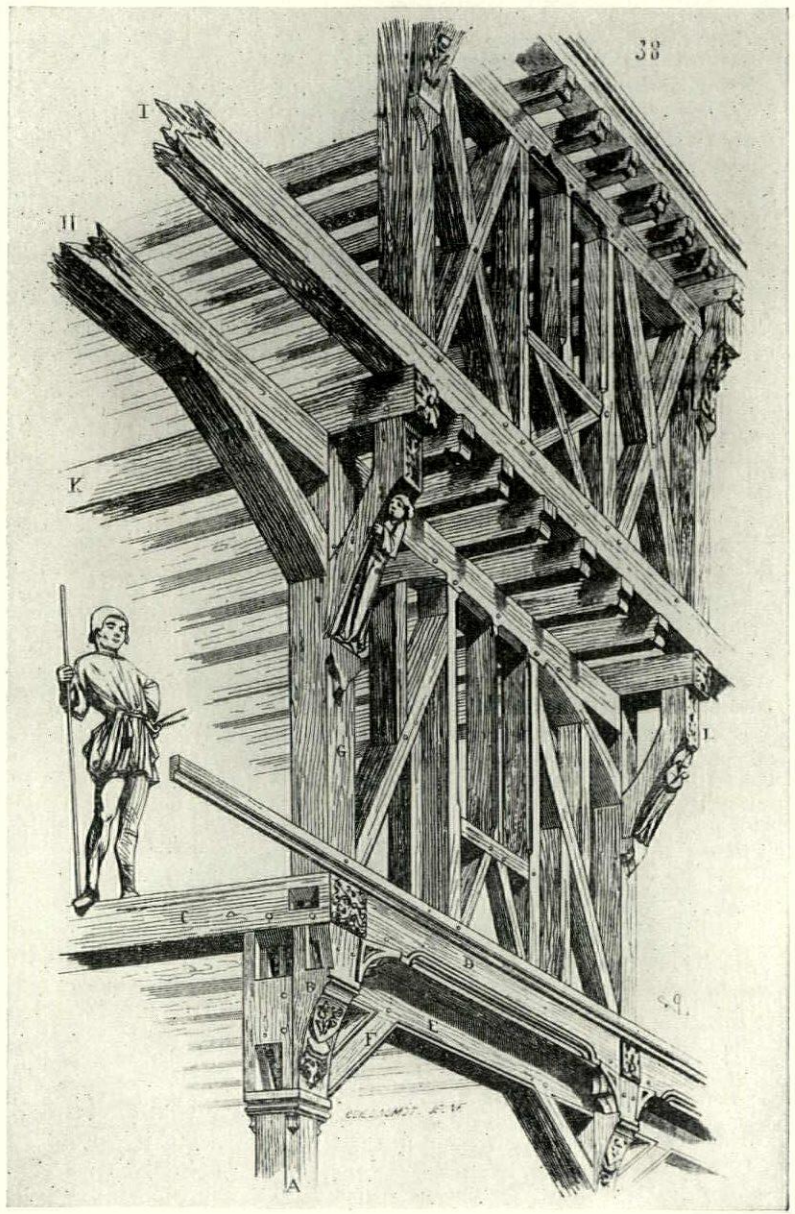


FIGURE 2

Typical French half-timber construction, as shown by Viollet-le-Duc in his third volume of the "Rational Dictionary of French Architecture."

THE RICKER MANUSCRIPT TRANSLATIONS, VII

VIOLLET-LE-DUC'S "RATIONAL DICTIONARY OF FRENCH ARCHITECTURE FROM THE ELEVENTH TO THE SIXTEENTH CENTURY," VOLUME III

By Thomas E. O'Donnell

VOLUME THREE of Viollet-le-Duc's *Rational Dictionary of French Architecture,* which is among the Ricker translations, is more uniform in the treatment of subjects than either of the first two volumes. Only forty-three items are discussed, but they are of such a nature that a substantial treatise has been written on each. Although all of the subjects covered are interesting and valuable, only a few can be considered here. Four subjects have been chosen which are typical of the method of treatment throughout the volume.

The first subject discussed is *Carpentry,*—French carpentry. The art of wood framing was introduced into France by the Romans. In early times great forests covered the whole of the French country, and timber was the chief building material for both private and public buildings, and the art of building in wood must have attained perfection. Wooden structures were used almost exclusively down to about the XI century. Unfortunately no structures of this early period are preserved to us. The earliest known to Viollet-le-Duc dates from the XII century.

In the earliest work, Roman traditions were followed, and only large, heavy timbers were used. But after the XII century, the great forests had been thinned out to such a degree that only smaller timbers were available, and it was then that the lighter and purely French type of framing was introduced. The complete subsequent development is traced by Viollet-le-Duc. It seems evident that during this period of French history, timber construction held a place of highest importance. No matter what phase of construction work, timber framing or carpentry was employed at least in some part. Aside from the con-

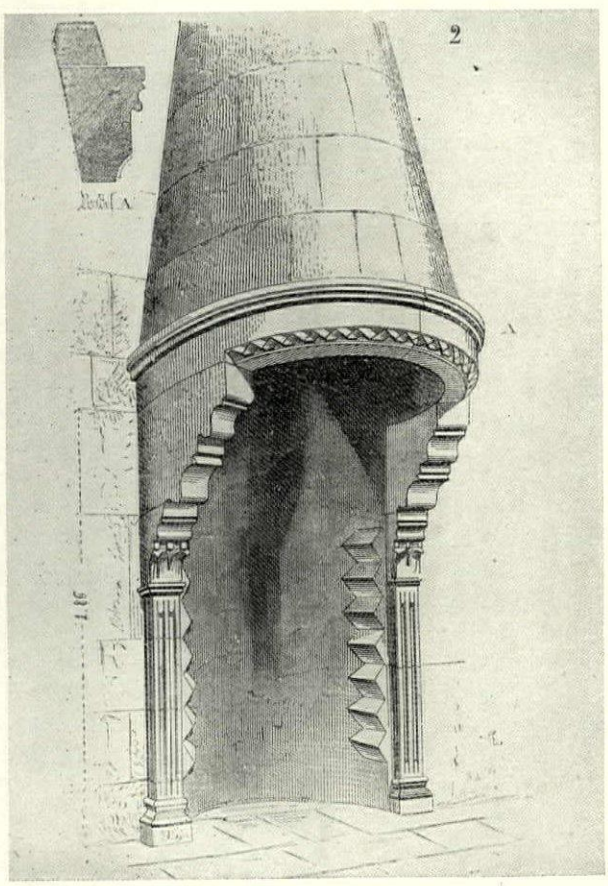


FIGURE 3

A very early type of French fireplace, semi-circular in plan. Drawn by Viollet-le-Duc.

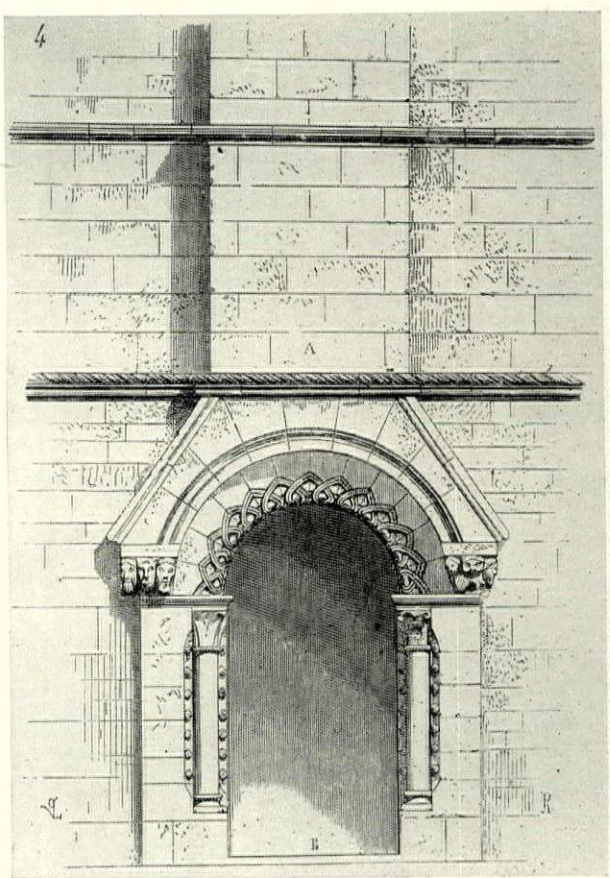


FIGURE 4

Fireplace of rectangular plan. The next step after the semi-circular plan in early French work.

struction of houses, commercial and public structures, —carpentry played an important part in the building of the great French churches and cathedrals. During the Romanesque and Gothic periods carpentry was used for the protective roof construction over vaults, although the highest and finest development came during the period of the early Romanesque and Norman churches when there were no vaults and the trusses and other members of the roof framing were designed for internal decorative effects. All of the well defined types of French open timber roofs, from the simplest tie-beam to the most decorative hammer-beam, are explained and illustrated. Several of the characteristic drawings of Viollet-le-Duc are reproduced here. The designer will find in this volume of the *Rational Dictionary*, full and authentic information relative to the French types of timber roof construction.

The next article of special interest in this volume is that on the *Château*. No one in France was a greater authority on this subject than Viollet-le-Duc, and in this treatise he has fully covered the history and development of the château, from the early castles down through the fully developed and famous châteaus so well known to us. He shows how the customs and ideals of home life of the upper classes came to be fully expressed in this, the world's most noted domestic architecture. He shows also those characteristics contributed by the different strains of civilization which operated in France during the Mediæval and Renaissance periods and how in time they were blended together to give us that unique French structure, the château. The materials used, methods of construction, decoration, defense, etc., are all carefully considered.

The changes that took place during the early Renaissance are also well shown. Beginning with the introduction of a few classic details upon the exteriors and interiors, he shows how through the addition of windows, mouldings, sculpture and various forms of classic architectural decoration, the gloomy, Mediæval fortified castle emerged into the delightfully picturesque and livable château.

An article of special interest, in this volume, is that on the *Fireplace*. It is a fascinating story of the whole development resulting from man's use of fire in his dwelling place, which transforms it from a dreary, cold, lifeless shelter, to a cheerful and comfortable fireside. Beginning with the open hearth built upon the floor or pavement in the center of the room, and the primitive fireplace built in a recess in the side wall, Viollett-le-Duc carries the development through all the intervening steps on down to the fully developed and decorative types of the Renaissance. Supplementary to his treatise on the fireplace proper, he also discusses the various associated features; the chimney breasts, mantels, decorative motifs, chimneys and chimney caps.

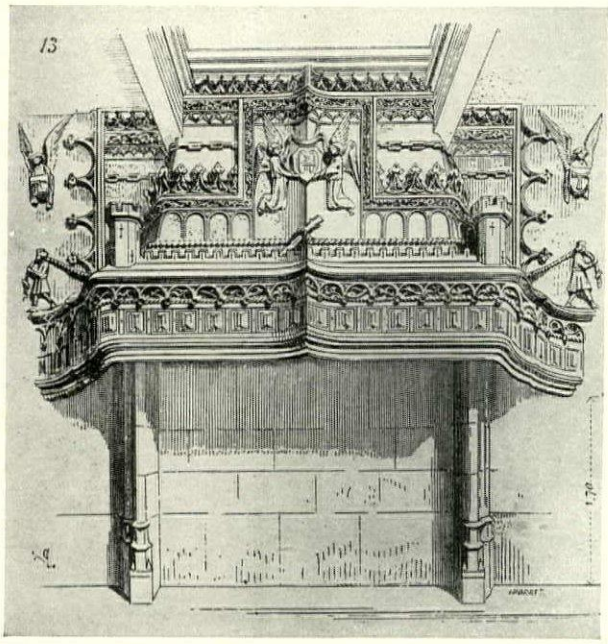


FIGURE 5

An advanced type of French fireplace—a decorative late Gothic type. From Viollet-le-Duc.

The earliest fireplaces seem to have been circular in plan,—being half in the wall recess, and half in an extended hearth, with a semi-circular hood over the hearth portion. The next step in development was the rectangular plan, which became the common type and progressed through numerous stages of development.

The material of construction, various designs, method of decoration of the chimney breast, the forms and decorative features of the chimneys and the part they play in the exterior architectural effects of structures, are all fully covered in the treatise. The better castles and châteaus of the XIV and XV centuries had many small fireplaces in the private apartments and a few large and more ornamental ones in the great halls. During the Renaissance the fireplace with its mantel was the object upon which was lavished much of the decorator's art and many beautiful examples were produced.

In the supplementary article on *Chimneys and Chimney Caps*, Viollet-le-Duc treats, in a very interesting way, those features which constitute the external architectural expression of the fireplace within. Here, again, he traces the development from the early "smoke louvres" on down to those very elaborate and picturesque chimneys of the Châteaus of the Renaissance period. Regarding the importance of the chimney as a part of the design of the whole structure he says in substance, that one of the most remarkable qualities of the architecture of the middle ages is that the builders knew how to use all the most common accessories of construction so as to make them a motive

of logical and pleasing decoration. As the need of additional features gave new forms to be disposed of, the builders did not conceal or minimize them but on the contrary sought to give them an art form, not only in the great palaces of the nobles, but also in the humble dwelling. This accounts for the many picturesque chimney tops that once crowned the old structures of the period. Several illustrations, taken from the original work of Viollet-le-Duc, accompany this article.

There are many valuable articles in the remainder of the volume. Those most fully treated are concerned with some phase of ecclesiastical architecture, such as: Chevet, Choir, Bells, Cloister, Choir and Altar Screens, Grilles, Ambulatory, and Towers. All of these are well worth consideration but only one can be discussed here; because of its special architectural significance, the *Tower*, in its various forms, has been selected.

During the first centuries of Christianity, bells were not used on churches, consequently towers were not needed. And even after the VIIIth century, when bells were introduced, it was several centuries before bells of any size were cast, and before bell-towers became prominent features in connection with churches. The earliest forms of bell-towers seem to have been lightly constructed campaniles, built beside the church edifice. These, after several centuries more, gave way to brick or stone campaniles, of the types still extant. This form seems to have been prevalent in Italy.

In France, according to Viollet-le-Duc, the bell-tower developed along different lines. There the early churches were usually fortified—or connected with a

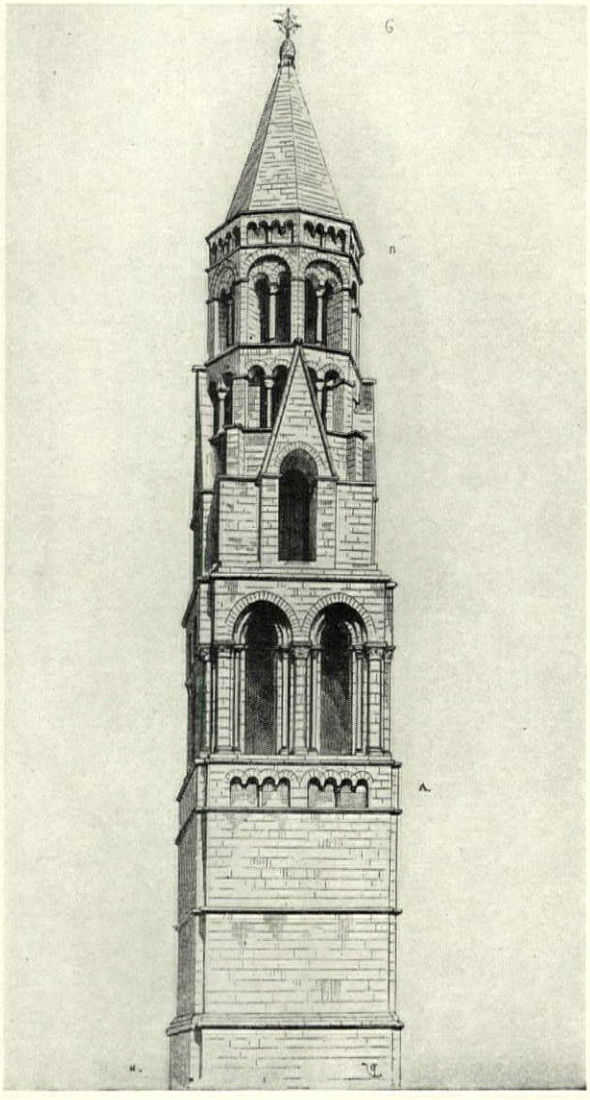


FIGURE 6

An early example of detached French bell-tower. Built as a part of a fortified place and not directly attached to a church. From Viollet-le-Duc.

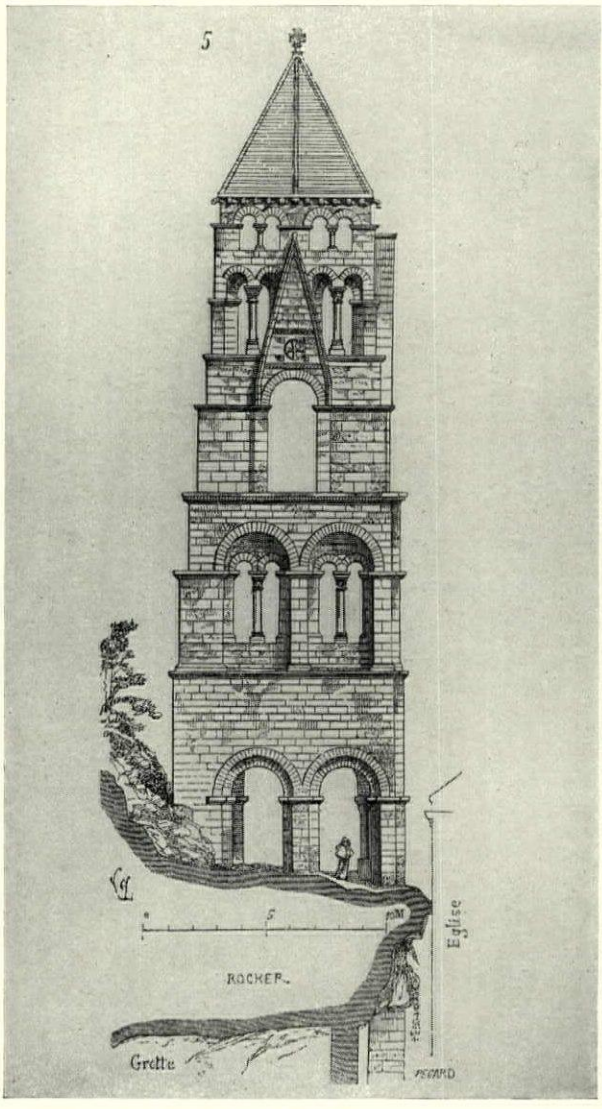


FIGURE 7

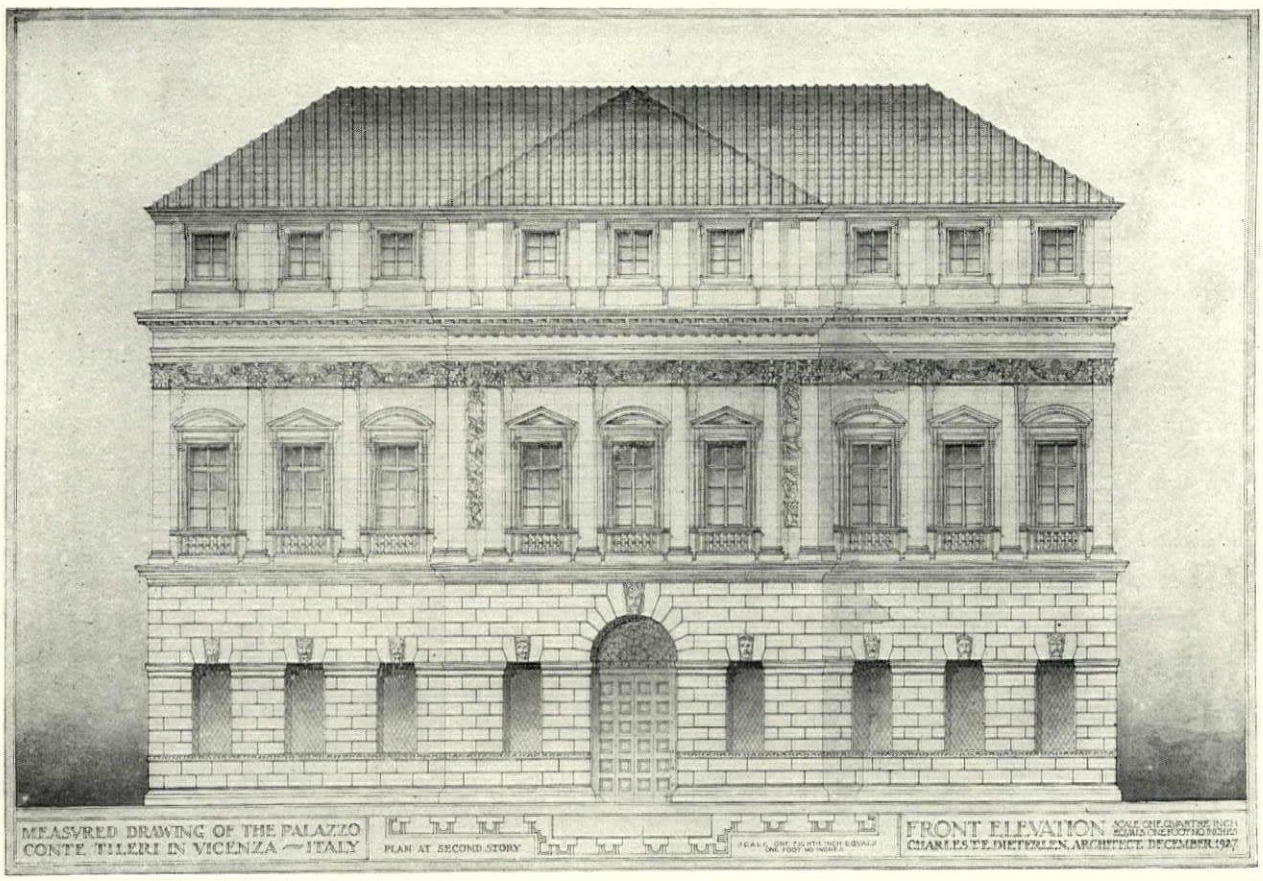
The same type of bell-tower as in figure 6, which in later times became an integral part of the church edifice. After Viollet-le-Duc.

fortified portion, where towers for observation and defense were necessary. The bell was used not only for the call to worship, but also as a warning signal in time of need, for calling the faithful together for protection against the barbaric enemy. These plain, massive towers were the prototypes of the later towers and spires of the Romanesque and Gothic period in France. Unlike Italy, the French made their bell-towers an integral part of and an important architectural feature of the religious edifices itself.

Viollet-le-Duc describes in detail most of the noted towers and spires of France. Every characteristic feature involved in the design and construction of them is explained. In the later churches and cathedrals the towers were often the crowning glory of the structures and upon them were lavished much in the way of beautiful sculptural forms. The principles involved in the relation of the towers and spires to the composition of the whole structure is given careful consideration, and the variations in arrangement, as to position and number of towers, are fully discussed.

On this subject of church towers and spires Viollet-le-Duc has brought together a great store of information and illustrative matter that will be of the utmost value to the student of church architecture, the knowledge of which will enable him to design such structures with a fuller and deeper understanding of the chief architectural features of religious edifices.

NOTE:—*Preceding installments of this series have appeared in November, 1926, March, May, August and October, 1927, and February, 1928.*



FROM A MEASURED AND RENDERED DRAWING BY CHARLES T. E. DIETERLEN

THE PALAZZO CONTE TILIERI, VICENZA, ITALY

PENCIL POINTS SERIES
of
COLOR PLATES

This colorful rendering of a small bank building represents a type which is very popular for showing buildings of this character. A rather careful pencil perspective drawing on a sheet of cold pressed Whatman's board formed the basis for the application of color. The sky was first blown on by means of an air brush. During this process, the building and trees were protected by a mask cut out of waxed paper and held in place with lead weights. Where there were to be clouds, sand was spread on the drawing in the appropriate places. After the sky had been blown in, the sand was brushed off, leaving the clouds with a soft edge. The building and foreground were then rendered with transparent color. As a final touch, the figures and the flagpole with the American flag were put in with opaque color applied with a brush. In this case the original drawing measured 20″ by 23″.

FIRST NATIONAL BANK, TUCKAHOE, NEW YORK—HOLMES AND WINSLOW, ARCHITECTS

WATER COLOR RENDERING BY PHILIP E. BEARSE

CHAPEL AT PRINCETON UNIVERSITY—CRAM AND FERGUSON, ARCHITECTS

RENDERING IN WATER COLOR BY ALEXANDER E. HOYLE

PENCIL POINTS SERIES
of
COLOR PLATES

This dignified rendering by Alexander E. Hoyle of the firm of Cram and Ferguson, Boston, was made over a carefully worked out pencil drawing on Whatman's paper. It was done entirely in transparent water color and the result was quite faithful to the effect of the finished architecture. The original drawing measured 26½" by 36½" so that this reproduction represents a considerable reduction. For this reason it fails to give a wholly adequate idea of the richness of the rendering.

Courtesy of Goodspeed's

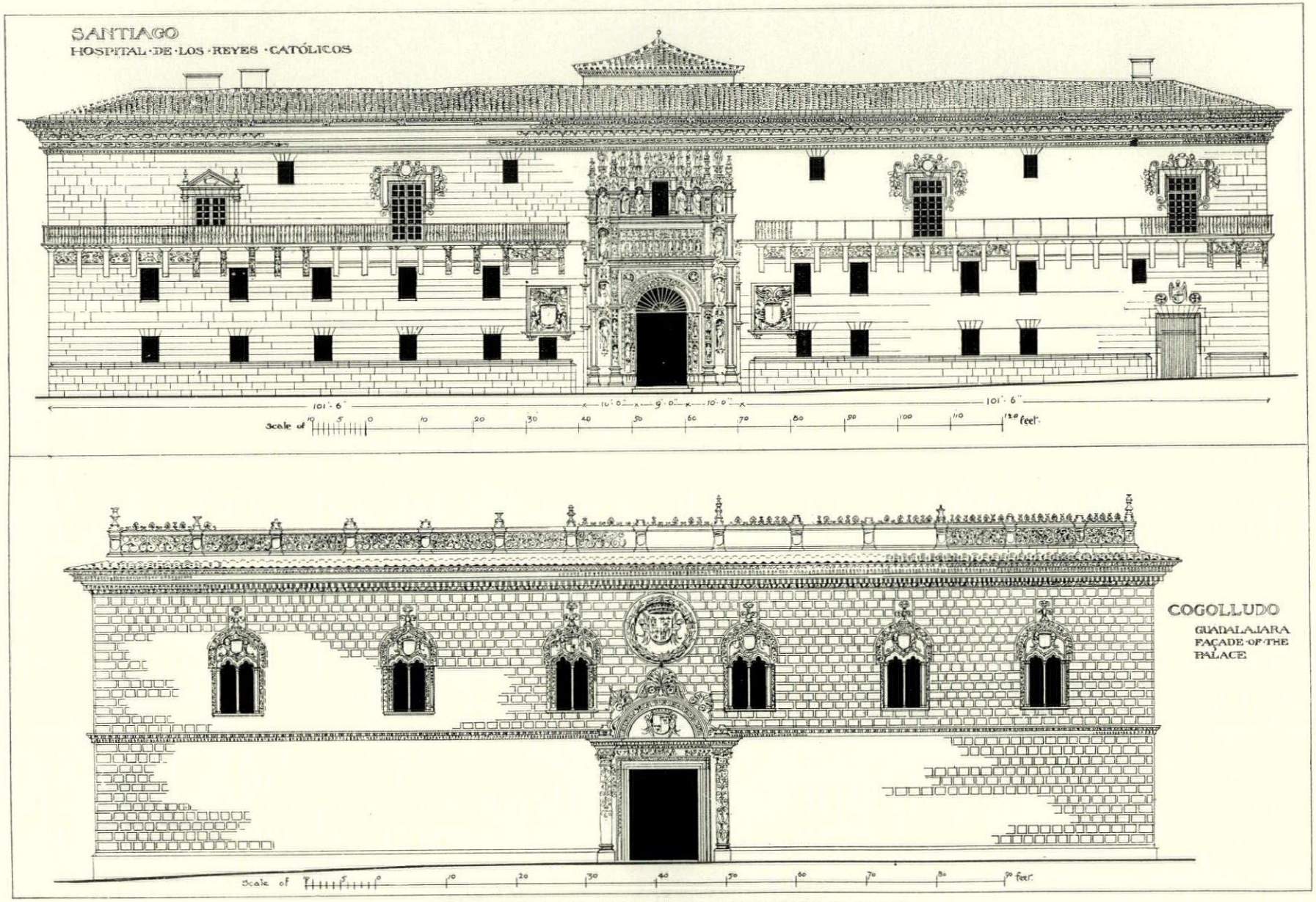
FROM A LITHOGRAPH BY SAMUEL CHAMBERLAIN

BROOM SHOP—LUCCA, ITALY

PLATE XXXIII

VOLUME IX NUMBER 9

A lithograph by Samuel Chamberlain which contains an element of breezy humor as well as being a record of an interesting bit of informal architecture furnishes the material for this plate. The reproduction is practically the same size as the original print so that it conveys an accurate idea of the technique of draftsmanship employed.



RENAISSANCE ARCHITECTURE AND ORNAMENT IN SPAIN

A PLATE FROM THE WORK BY ANDREW N. PRENTICE

PLATE XXXIV

"According to the Latin inscription over the Renaissance portal at the centre of this façade, the hospital was built 1505-11. The bust of the King is placed in the spandril of the arch, and the two large square panels on either side of the entrance bear the arms of Castille. The statues in the niches represent Adam and Eve, the twelve Apostles, and various saints, surmounted by richly carved canopies with terminations in the form of six angels holding musical instruments. The façade is built of grey granite, crowned with a beautiful chain cornice, enriched with grotesque gargoyles. A striking feature is the projecting balcony running the entire length of the building, and supported by carved stone corbels connected with enriched panels, but these are hardly so refined in execution as the central doorway. Three of the windows on the principal floor, surmounted by small figures and fruit ornaments, appear to be of later date than the rest of the building. The original windows were probably similar in design to that on the left-hand of the façade. The roof of the lantern to the central chapel is seen over the doorway, as shown in the drawing."

A. N. PRENTICE.

WATER COLOR PAINTING BY HUGHSON HAWLEY

CITY HALL SQUARE, NEW YORK

PLATE XXXV

This painting by Hughson Hawley (37" x 29" in the original), aside from its worth as a rendering, is interesting as a picture of the development of city architecture in New York. In the foreground at the right is the old New York City Hall, built in 1803 by Manguin and John McComb. Just beyond this rises the old Post Office, designed by A. B. Mullett about 1870. At the left is the New York Tribune building, by Richard M. Hunt, which dates from about 1880. This building was increased in height at a later date, as was the old New York Times building across the street from it, done by George B. Post about 1890. The Park Row, or Ives Syndicate Building, a little to the left of the center of the picture was built at about the same period. The Woolworth Building by Cass Gilbert dates from 1910. Just beyond the Post Office is William Welles Bosworth's American Telephone and Telegraph Company Building built between 1914 and 1921. Next to the Woolworth tower, the Transportation Building, erected in 1927 by York and Sawyer, brings us up to date.

"LEDA"—SCULPTURED GROUP BY LEO LENTELLI

FOR THE PARK CENTRAL HOTEL, NEW YORK—EDMUND L. ELLIS, ARCHITECT

PLATE XXXVI

VOLUME IX NUMBER 9

The effective sculptured "Leda" shown on this plate has been placed in the center of the entrance court on the Seventh Avenue side of the Park Central Hotel, New York. It was modeled at larger than life size, the figure of the nymph being between 7 and 8 feet tall.

WHITTLINGS

VIRGIL BARKER,

Associate Editor of "The Arts," in a review of T. F. Hamlin's "The American Spirit in Architecture," examines into the underlying essentials of great architecture:

"One is expected to be indignant, or at least superciliously amused at our Eastlake homes, our Downing cottages, our Mansard roofs. But turn to the cold correctitudes of architectural archeology initiated by the Chicago World's Fair and determine whether the preceding vulgarities have not something to say for themselves. The lesson of our era of correctiveness would seem to be: 'Good taste is not enough.'

"There must be power . . . . Here again it is safe enough to show enthusiasm over our skyscrapers, grain elevators, and warehouses; but already it is becoming plain that we have a further lesson to learn—the lesson that 'Power is not enough.' Power must be controlled in order to become fully creative."

MAURICE CHAUCHON,

French architect and winner of the 1928 Travelling Fellowship of the A.I.A., after completing a tour of our middle western cities, gives some of his impressions to the Press:

"I am particularly impressed with the convenience and attractive appearance of the modern American home which has accepted the household devices of the mechanical age in which we live. In France the average home is not so well equipped with gas mains, flowing water and electric current, nor is construction as modern. Some of the homes are very old, and there is often a feeling that it would be something like sacrilege to improve or redesign them. Schools, too, often being old buildings, lack the modern construction, with the lighting and ventilation features that are characteristic of American school buildings. Because of space limitations they are not equipped with the playgrounds and athletic fields which are so characteristic a feature of American schools."

ANONYMOUS ARCHITECT,

Of Philadelphia, quoted in the Evening Bulletin of that city, brings up a problem that is sometimes overlooked in designing a home:

"Then here is another thing to be considered in building a home. Where are Dad and Mother to spend the evening when the children entertain their friends?

"Parents want their daughters to bring their friends home, but if this is not anticipated, you will find father and mother spending many of the evenings in their bedroom.

"This makes it almost a necessity that a den or some such room be provided in anticipation of just this contingency. I know of one house where the cloak closet in the living room was large enough while the children were little. It became outgrown, and is now a recessed bookcase, while the breakfast room has been turned into a cloak room. Sooner or later that cloak room will become a den for the parents."

EDITORIAL WRITER,

Of the Fort Meyers, Florida, News, is moved by a new bit of local architecture to speculate on America's architectural greatness:

"Contemplating the new filling station at Main Street and Broadway—an edifice not only striking but extraordinarily handsome—we are moved to reflect upon America's contributions to architecture.

"America's most important architectural achievements, it occurs to us, are filling stations and skyscrapers. Of these, of course, the skyscraper is the most spectacular and the most important, but the filling station is not without its own significance. The skyscraper is to the United States of the 20th century what the cathedral was to the Renaissance. It is the embodiment of the hopes, aspirations and dreams of the people. It is the symbol of commerce on the grand scale, the cathedral of business. . . . .

"And now the filling station, born of our 20th century needs and adapted to practical use. We evolved it from nothing, and now we are dressing it all up to satisfy our sometimes obscure, often bizarre, but never absent sense of beauty. That is how architecture advances."

"T-SQUARE,"

Who writes entertainingly of architecture in "The New Yorker," believes the modern style is here to stay:

"The modern note in architecture, as well as in art, advertising, sculpture, and music, is being sounded with considerable persistence and the conservative mossbacks, who can see no good in it and in whom it arouses distress, are in for an uncomfortable time. More and more we see the abandonment of classic moldings and cornices for the new vocabulary, the sheer wall and the combination of steps, pylons, and plain surfaces that are characteristic of our later development."

ELBERT PEETS,

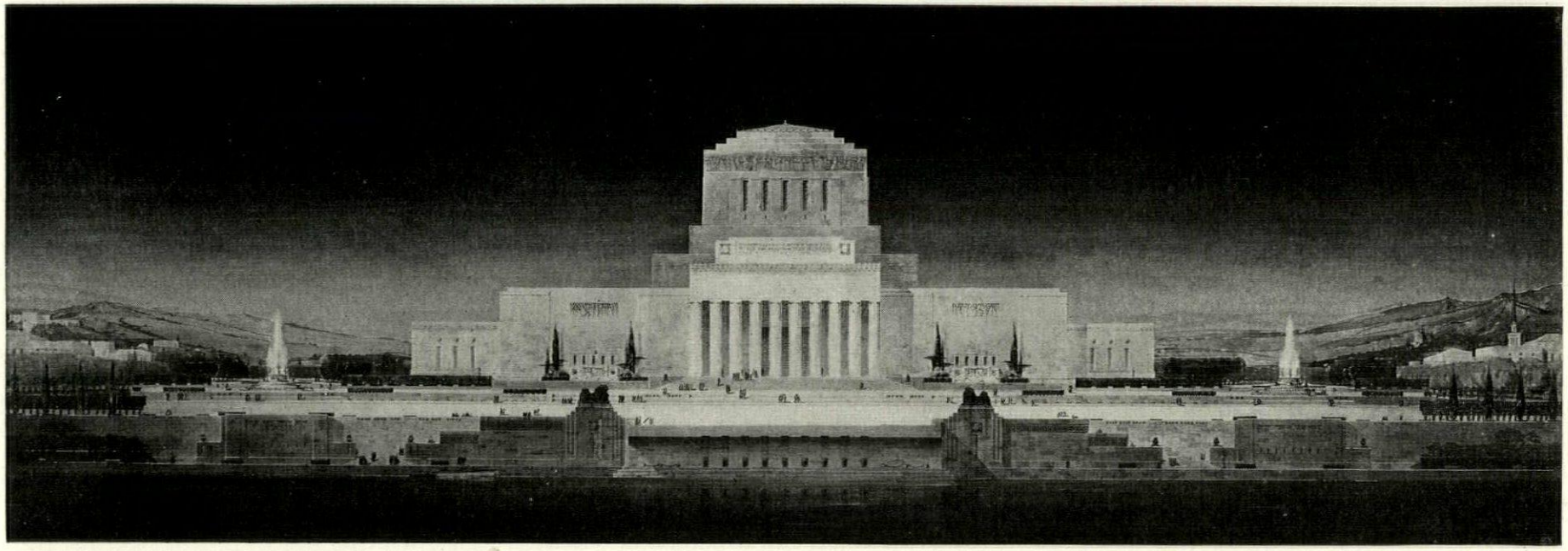
Cleveland Landscape Architect, writing in "Your Garden," voices a thought or two concerning an often slighted accessory to the house and garden:

"Truly, few garden features are on their own account more beautiful than a high hedge. The play of breeze and sun and shadow over its surface, the darkness in shadow and the brightness in sun, the sense of penetrability and yet of firmness and precise location—these are phrases in its esthetic message. Hedges are human, the product of human thought and work, they stand like sturdy human beings, talk a human language and conform to human ideals of order and economy."

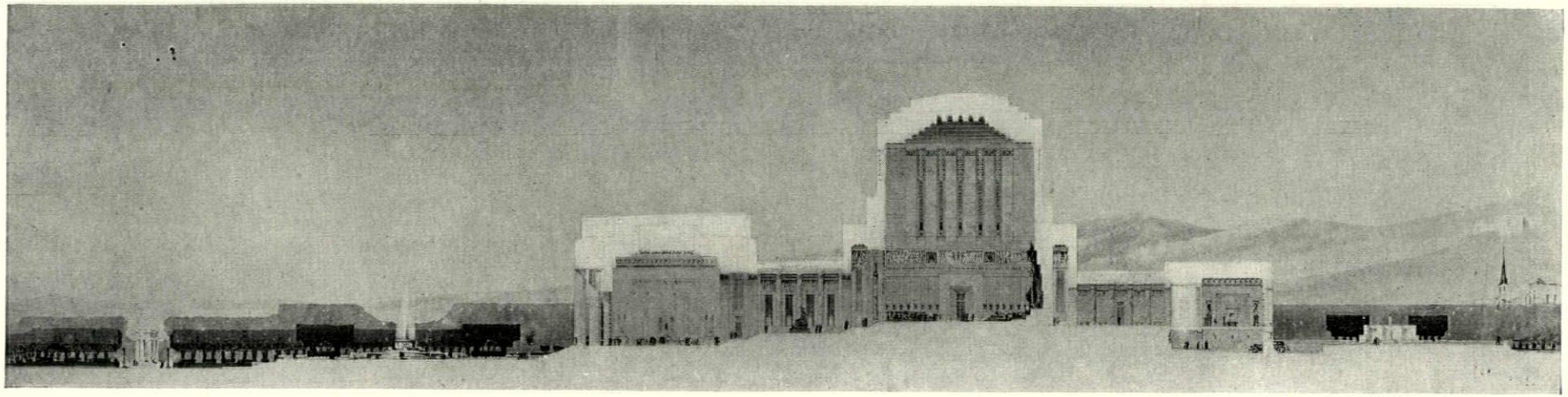
WILLIAM WARD WATKIN,

Architect and Professor of Architecture at Rice Institute, writing in "Civics for Houston" on modern American architecture, pleads for creative imagination rather than mere archeological correctitude in design:

"An architecture fully embellished with the scholarship of accurately rebuilt historic forms, even when beautiful, must be cold, except to the scholar, as compared with equal beauty conceived and expressed with freedom and fertile imagination."



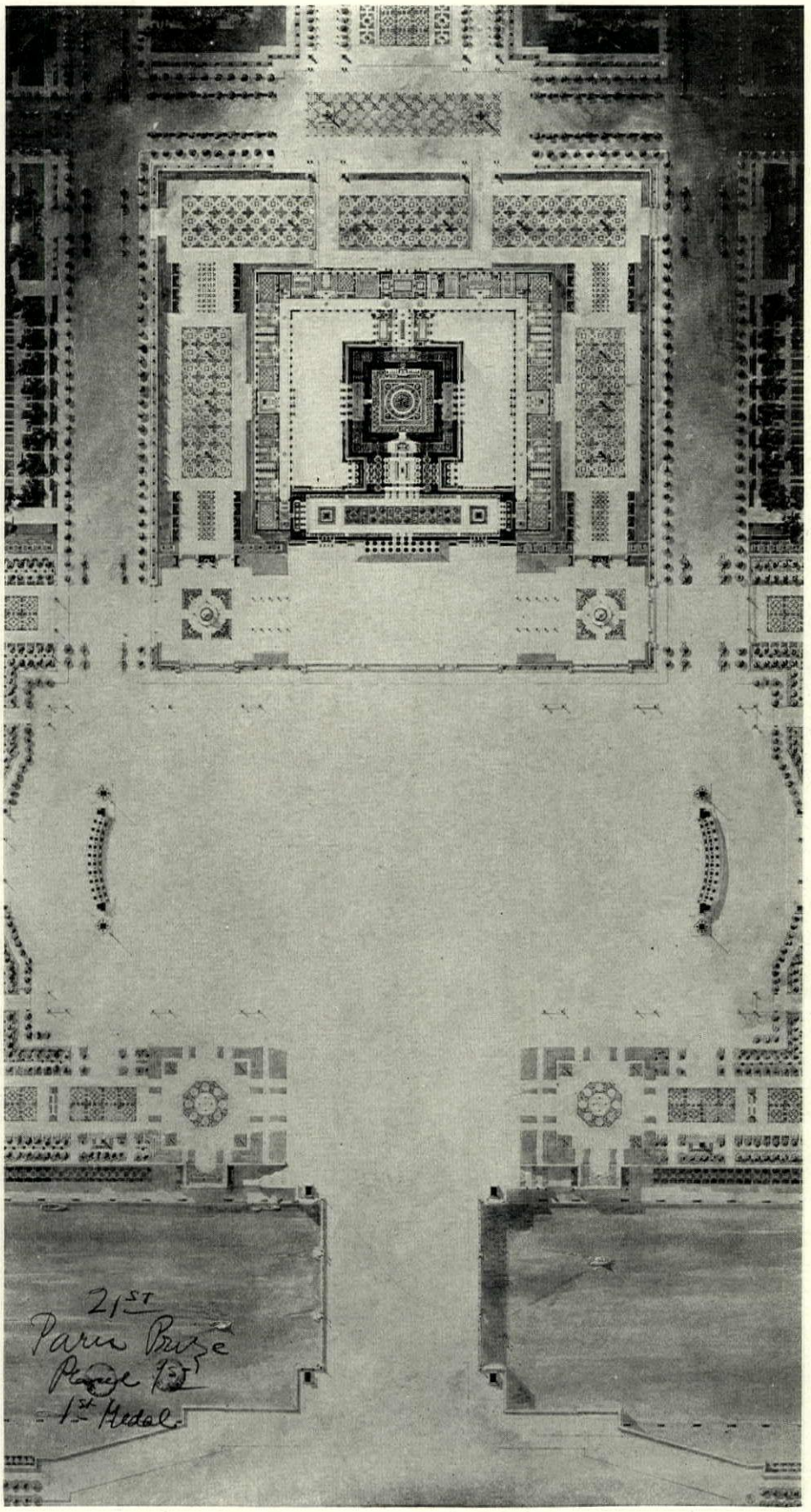
Elevation



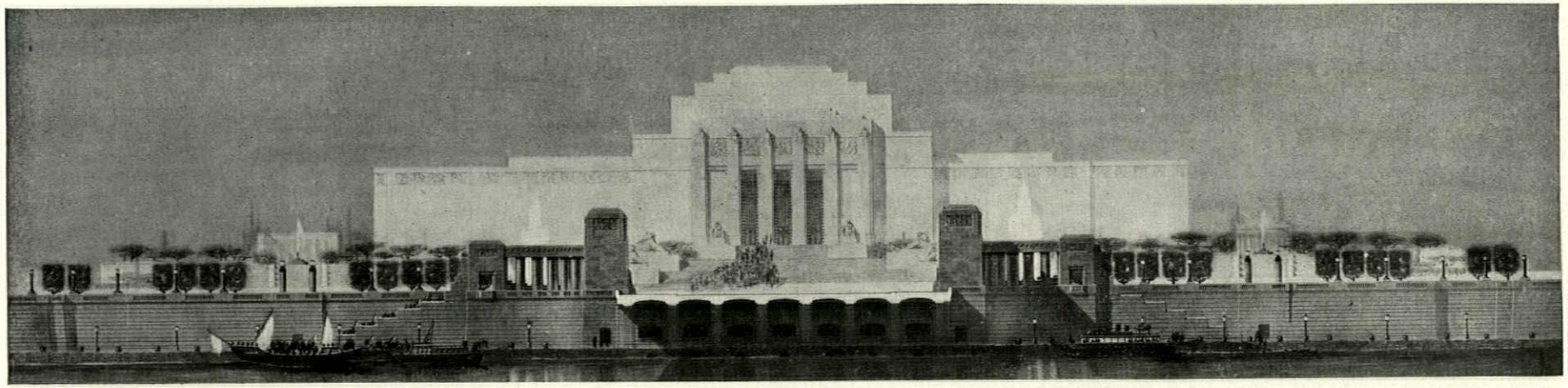
Section

WINNING DESIGN FOR "A SUPREME COURTS BUILDING IN THE CAPITAL OF A GREAT REPUBLIC," BY THOMAS H. LOCRAFT, CATHOLIC UNIVERSITY OF AMERICA

COMPETITION FOR THE PARIS PRIZE OF THE SOCIETY OF BEAUX-ARTS ARCHITECTS, 1928



"A SUPREME COURTS BUILDING IN THE CAPITAL OF A GREAT REPUBLIC,"
PLAN OF WINNING DESIGN BY THOMAS H. LOCRAFT
COMPETITION FOR THE PARIS PRIZE OF THE SOCIETY OF BEAUX-ARTS, 1928



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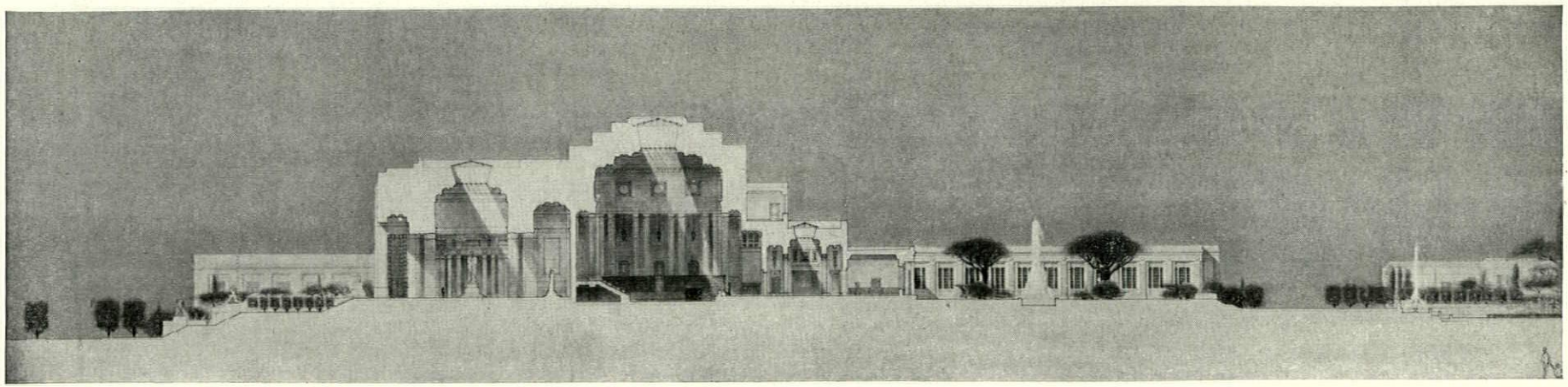
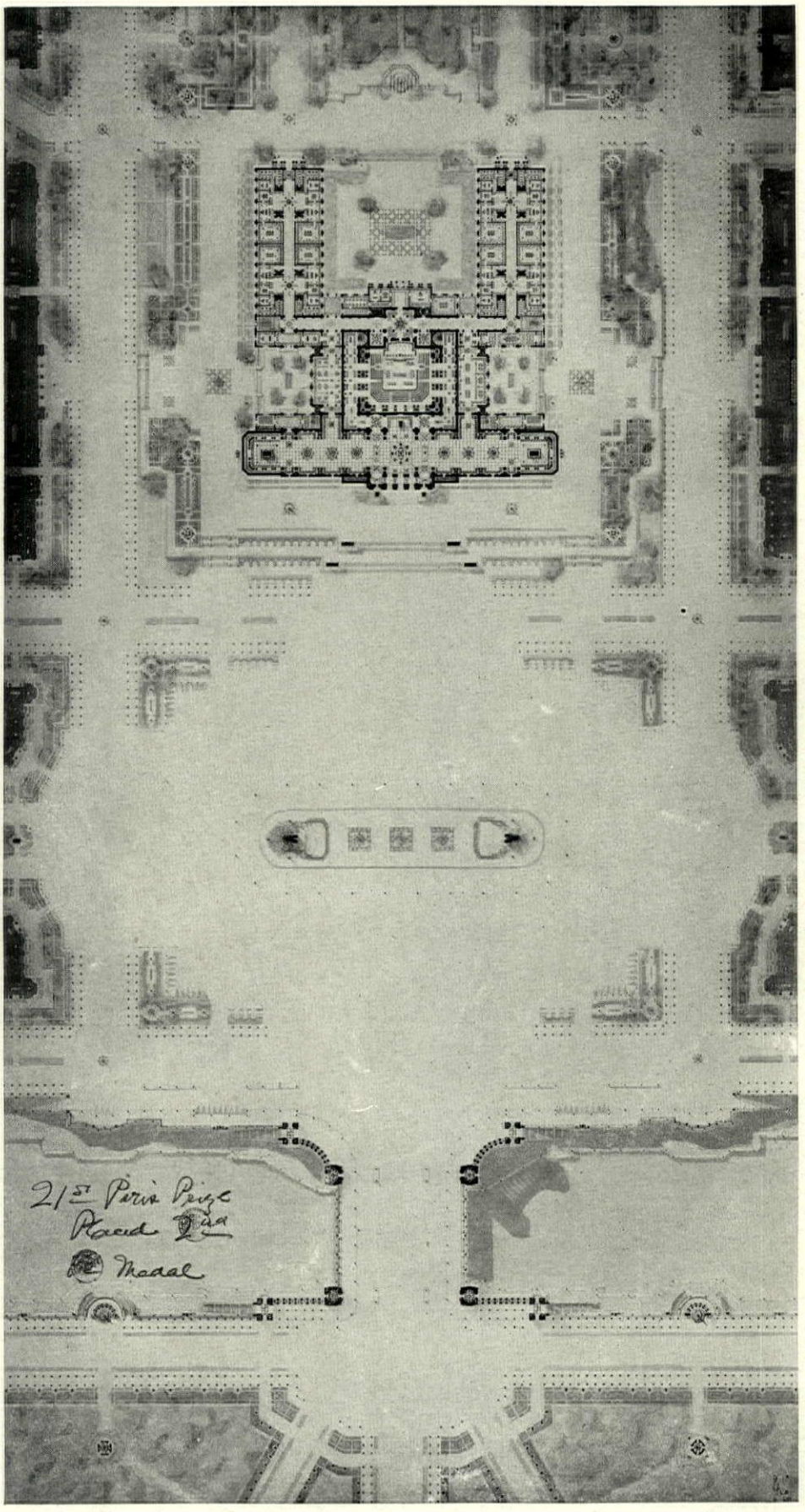


Section

PLACED SECOND—DESIGN FOR "A SUPREME COURTS BUILDING IN THE CAPITAL OF A GREAT REPUBLIC," BY ALBERT J. KELSEY, YALE UNIVERSITY

COMPETITION FOR THE PARIS PRIZE OF THE SOCIETY OF BEAUX-ARTS ARCHITECTS, 1928



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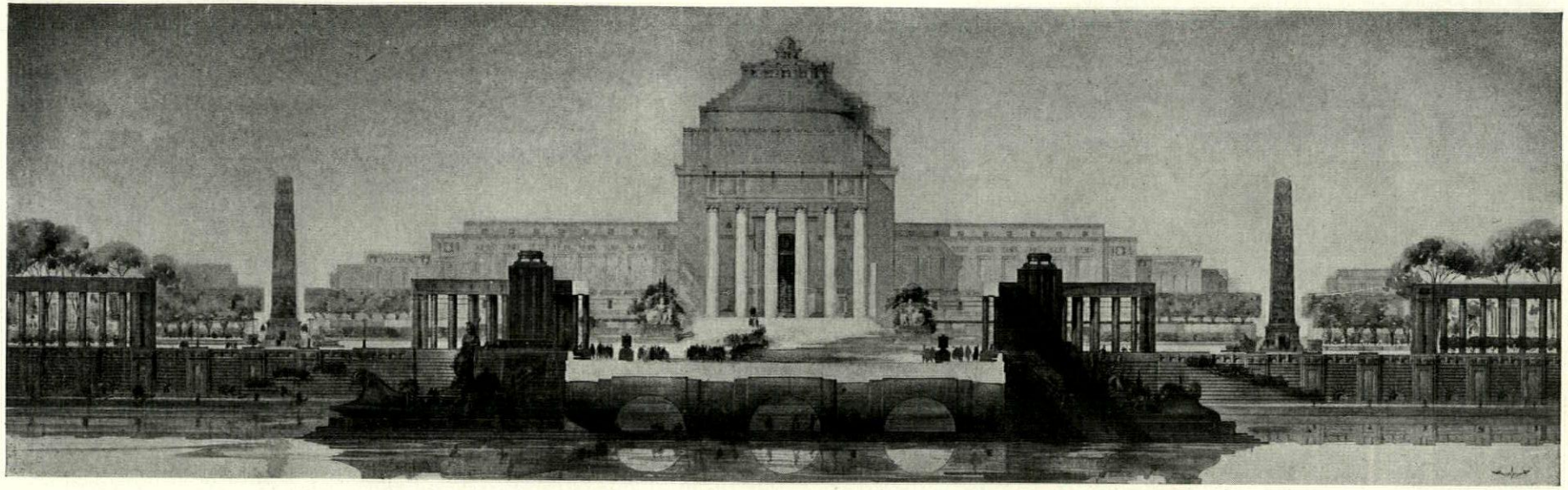

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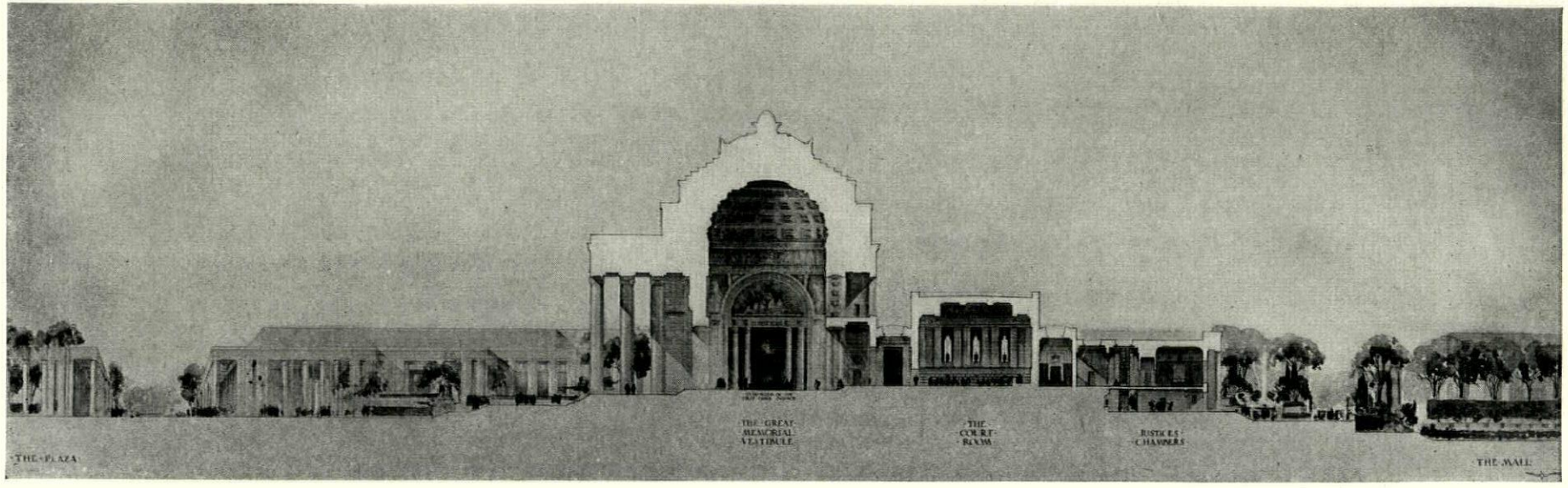
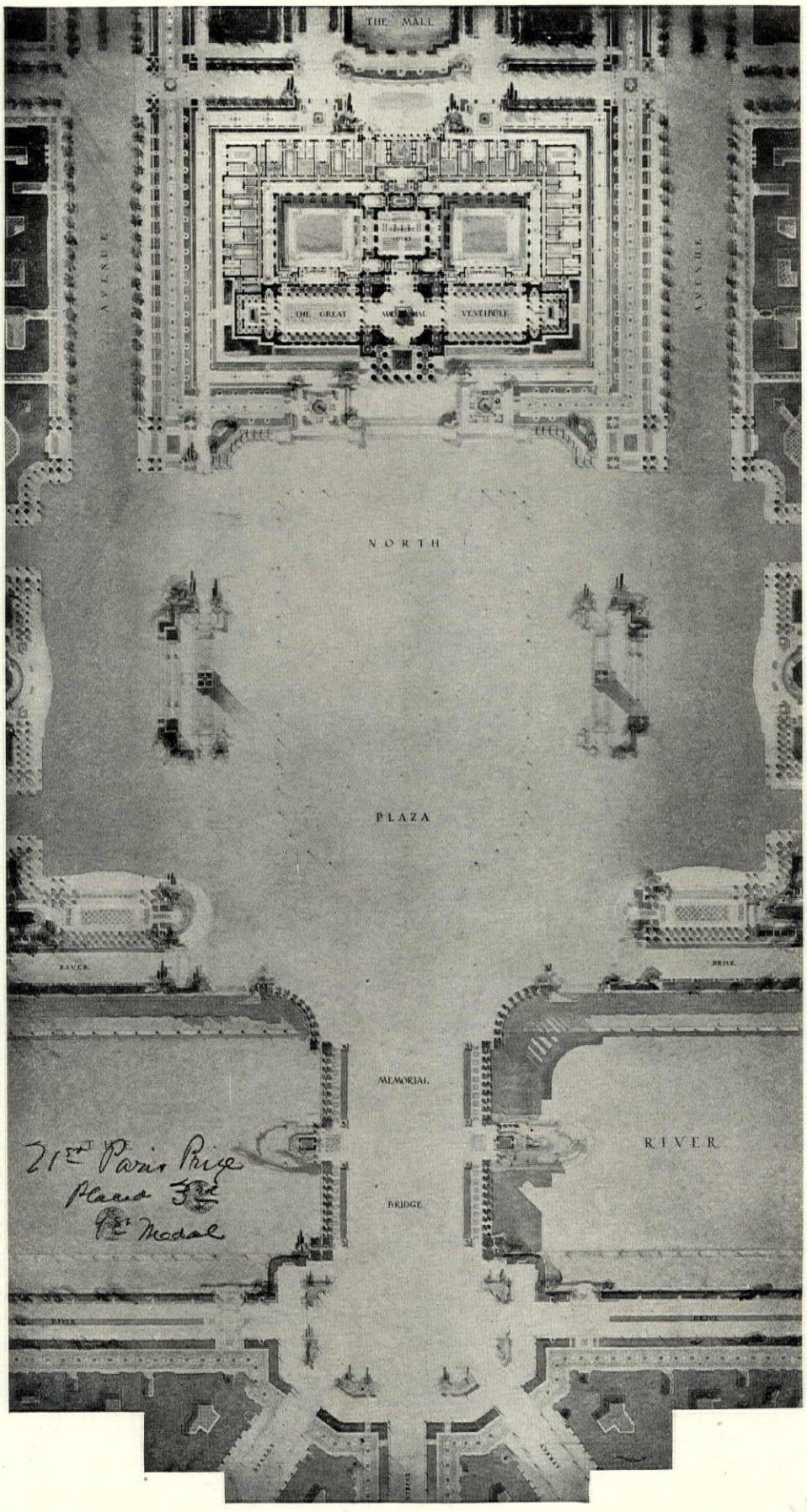


Section

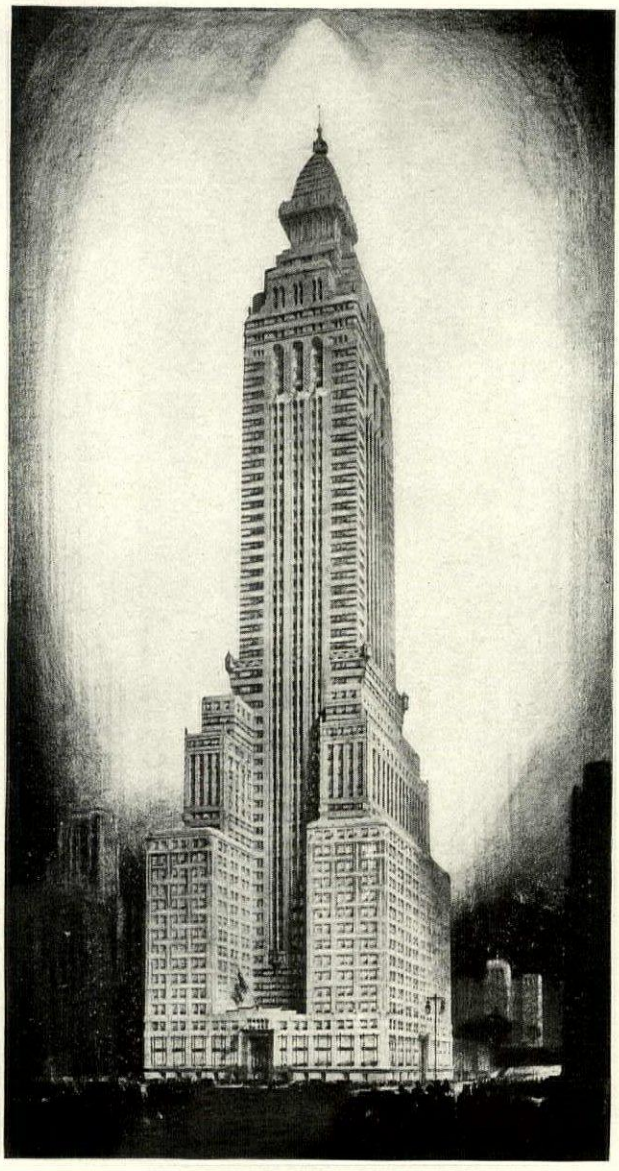
PLACED THIRD—DESIGN FOR "A SUPREME COURTS BUILDING IN THE CAPITAL OF A GREAT REPUBLIC," BY ANDREW E. EUSTON, YALE UNIVERSITY

COMPETITION FOR THE PARIS PRIZE OF THE SOCIETY OF BEAUX-ARTS ARCHITECTS, 1928



"A SUPREME COURTS BUILDING IN THE CAPITAL OF A GREAT REPUBLIC,"
PLACED THIRD—PLAN OF DESIGN BY ANDREW E. EUSTON

COMPETITION FOR THE PARIS PRIZE OF THE SOCIETY OF BEAUX-ARTS ARCHITECTS, 1928



PROPOSED REYNOLDS' BUILDING—RENDERED BY HUGH FERRISS

WILLIAM VAN ALEN, ARCHITECT

This building will be erected at Forty-second Street and Lexington Avenue, New York, and will be sixty-seven stories high—808' 4"

THE SKETCH CLUB ATELIER OF NEW YORK

THE SKETCH CLUB ATELIER of New York will open its third season in its new quarters in a large studio at 170 Fifth Avenue. The demands for the class for the past two years have made it imperative to leave the Art Center, its former home, to take additional space. The class will open on October 2nd at 6:30 P. M. and will continue consecutively for the following twenty-three Tuesdays, with the exception of December 25th and January 1st. Instruction during the coming year will be divided between Arthur L. Guptill and A. Thornton Bishop.

The fee for the class will be the same as last year. The conditions of payment are also unchanged. If an additional evening weekly is necessary to accommodate the large number of applicants, as has been the case in the past two years, the Atelier will also be held on Thursday evenings, paralleling the Tuesday class. Inquiries may be addressed to A. T. Bishop, 105 West 40th St., New York.

THE NEW YORK ARCHITECTURAL CLUB, INC.

Tennis Tournament

THE TENNIS TOURNAMENT for the William Adams Delano Trophy of The New York Architectural Club is now well under way.

An invitation is extended by William Adams Delano to all men in the architectural or allied arts profession to be present for the finals which will be played on his estate at Syosset, L. I., on Saturday, September 8th. Those desiring to attend will please communicate by postcard with H. M. Barone, c/o The New York Architectural Club, 118 East 42nd Street, New York, N. Y. A bus for transportation will be hired should a sufficient number of men desire to attend.

Baseball League, 1928

The standing of the teams, on August 1st, was as follows:

Starrett & Van Vleck	2	Lamb	0	1.000
	18	Guilbert & Betelle	0	
Board of Education	10	Lamb	7	1.000
	11	Schwartz & Gross	4	
Warren & Wetmore		Won 2 — Lost 1		.667
	13	York & Sawyer	1	
	7	Guilbert & Betelle	4	
Thos. Lamb		Won 3 — Lost 2		.600
	16	Cass Gilbert	15	
	25	Schwartz & Gross	12	
	6	Warren & Wetmore	4	
Cass Gilbert		Won 1 — Lost 1		.500
	3	Guilbert & Betelle	0	
Guilbert & Betelle		Won 2 — Lost 3		.400
	21	York & Sawyer	7	
	5	Schwartz & Gross	3	
York & Sawyer		Won 1 — Lost 2		.333
	13	Schwartz & Gross	1	
Schwartz & Gross		Lost 4		.000

LOS ANGELES ARCHITECTURAL CLUB

THE LOS ANGELES ARCHITECTURAL CLUB is becoming each month a more stable and progressive organization. The regular stated meetings are increasingly attractive. The July meeting aroused unusual interest among the members and brought out many notable guests. The reason for this was the excellence of the two speakers whose subjects congenially dealt with the structural use of bricks.

The first speaker was Major Lent of Cleveland, Ohio, who is Chief Engineer for the Common Brick Manufacturing Association of America. He treated his subject from a technical standpoint, beginning with a history of brick and tracing its uses from the past to its varied uses at the present time.

Major Lent was followed by J. E. Johnson, architect and traveler who spent six years in the West Indies. He continued the discussion on brick with references to its uses in the Islands in the buildings constructed by Columbus and his followers.

The employment service of the Club is proving itself most popular among draftsmen, not merely as a means of finding local employment but as a vehicle through which vacation travel is facilitated. Calls have come in from Yellowstone Park, Wyo.; Twin Falls, Idaho; Tuscon and Phoenix, Arizona; and even from Texas. The men who have filled these out-of-town positions are enthusiastic over the opportunity.

GRACE CATHEDRAL, SAN FRANCISCO

LEWIS P. HOBART, ARCHITECT—RALPH ADAMS CRAM, CONSULTANT

By William C. Hays

San Francisco is to build a Cathedral and its accessory structures. There are skeptics who may decry the Cathedral idea in our day: to the contrary, however, there are those who believe that, even apart from any religious significance, such a structure is of civic value, while, obviously, there are many more who may sincerely build to set forth Man's higher aspirations and ideals. Is it conceivable that a creation of present day minds may have those qualities which came down "through the centuries when Christian civilization was formative and faith was finding expression in great art"? So wondering, shall we, in imagination, and with the drawings as guide, visit this Grace Cathedral of the near future? At least there is the assurance that direction of work is in the sympathetic and competent hands of Lewis P. Hobart, with Ralph Adams Cram as Consulting Architect.

Few locations may be compared with this one. The Cathedral group will crown Nob Hill and occupy an entire city block. As it fronts upon Huntington Park, the desirable open space adjoining is assured for the future. The site was occupied for many years by the homes of California's great pioneers and Empire Builders, some of whose descendents will worship here. Below, and to the east, lies the historic ground which was the city of the Argonauts and Vigilantes. From the encircling sweep of San Francisco Bay glimpses of the Cathedral will rise dominantly in the sky line.

Because of the slopes in the ground, the direction of prevailing winds and the fact that the natural approach from the city is at the east end, it has been found desirable to reverse the conventional orientation. The choir is, therefore, toward the west, the main front toward the east.

The approach is by a broad flight of steps leading to the East Terrace. Before us is the porch, beneath which we are to enter the great portal and pass into the narthex. This porch itself justifies a pause! It not only serves the physical need of shelter; it is also dignified by having a spiritual function. By some alchemy, dross is here to become precious metal: one is to leave the city and the things of the working world, for through the portal lie the things of the spirit. The porch is to be majestic in design, mellow in color and rich of detail: the effect is intended to combine sumptuousness with austerity, dignity with human appeal.

We have passed the portal and stand beneath the vaulting of the nave. Right and left, seen through a sequence of octagonal piers are the high-lifted aisles. As one senses the rhythm of marching, marching tread—suggested by these piers—and one's interest is led away into far distances of perspective, there comes the consciousness that this architecture is, somehow, both like and unlike the historic Gothic churches that we know and admire. There are many old examples of broad naves and lofty aisles, with great clerestory windows above. At least one, to us, unaccustomed feature, however, is that the nave resembles the Spanish Gothic type, without the triforium usually found in both French and English churches. The aisles are ample and each bay is to be lighted by a pair of slender "lancet" windows.

Figures and dimensions generally mean little, but it may be worth mention that compared with St. Thomas' in New York, Grace Cathedral's nave is practically identical in height, from floor to .vaulting bosses and in width, between aisle piers, but the distance from portal to altar will be almost one hundred feet greater in our San Francisco example.

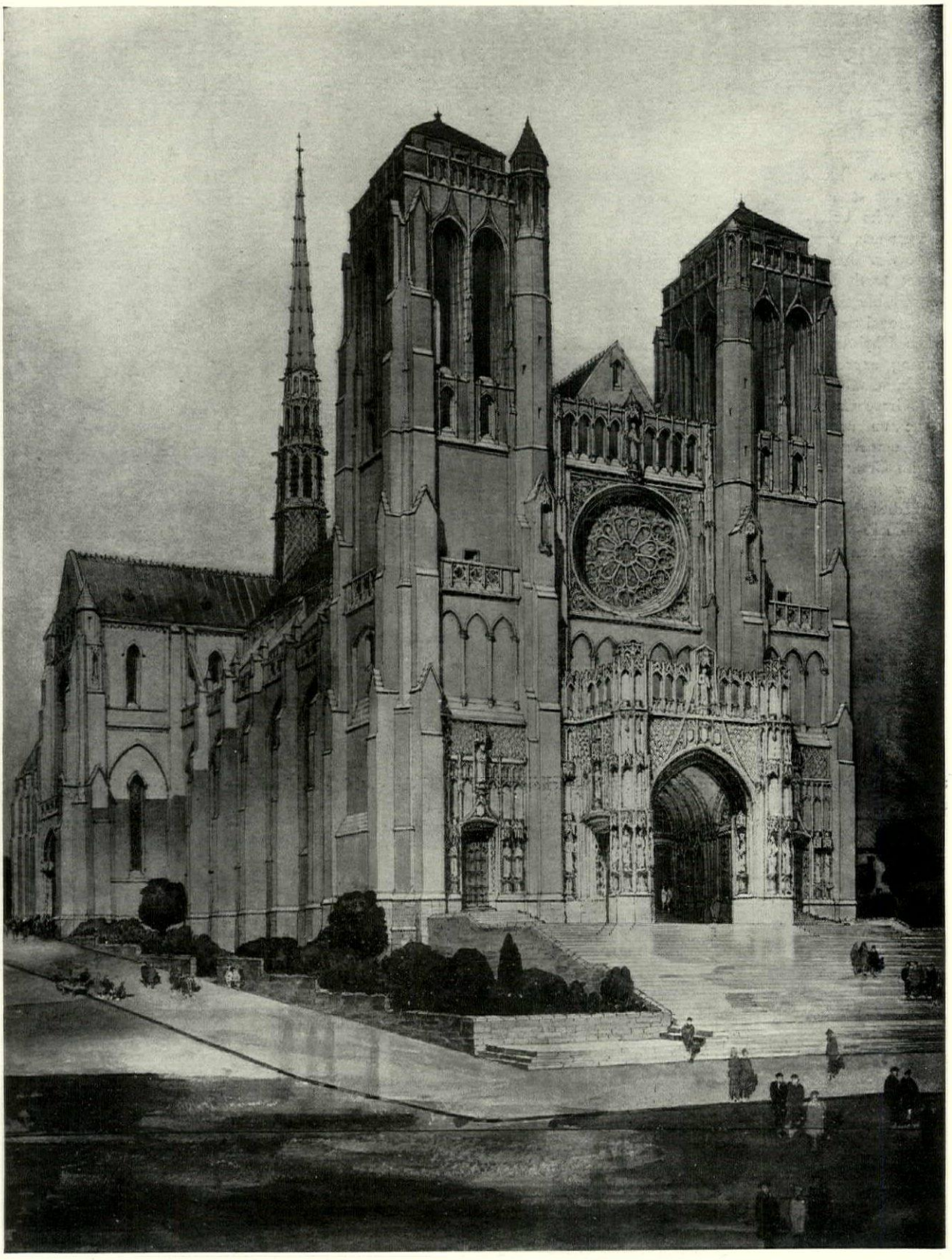
Progressing the length of the nave, we are now at the crossing, with its adjoining north and south transepts, and we pause at the chancel, before the choir and sanctuary. There is a different atmosphere here. We have been in the gathering area for the people: we are now approaching the more sacred places where the worshipper is to find spiritual communion in surroundings which are quiet and, as nearly as may be, from the world remote. Its architecture, that adjoining the sanctuary, must be different in its every aspect. Its scale is smaller, its basic forms are multiplied. Detail is richer and more delicately wrought: one is conscious that here "the machine" has been disbarred; that only handiwork has been admissible; that materials are more precious! Niched, high-backed and hooded stalls range the sides of the Choir, and, culminating the ensemble—in the shadow, behind the moving figures of clergy and choir—rises the altar. Above all the chevet windows, through the painted glass of which, at evensong, filters the late westering sun.

We leave the Cathedral by the doors leading directly to California Street. This south transept, through which we are passing, is worth notice: one of the finest of the many bits of architectural composition in the church! From the gracefully designed doorway, our attention is led upward past the five lancet windows to where, focussed under the vaulting, is the "rose." Pausing to look westward before leaving the transept we find the baptistery, and beyond, in the angle between the baptistery and choir, the sumptuous yet serene Memorial Chapel, separated by a wrought metal screen.

Adjoining the church proper, full provision is being made for sacristies, choir and altar guild rooms, as well as for residences of the Bishop and the Dean.

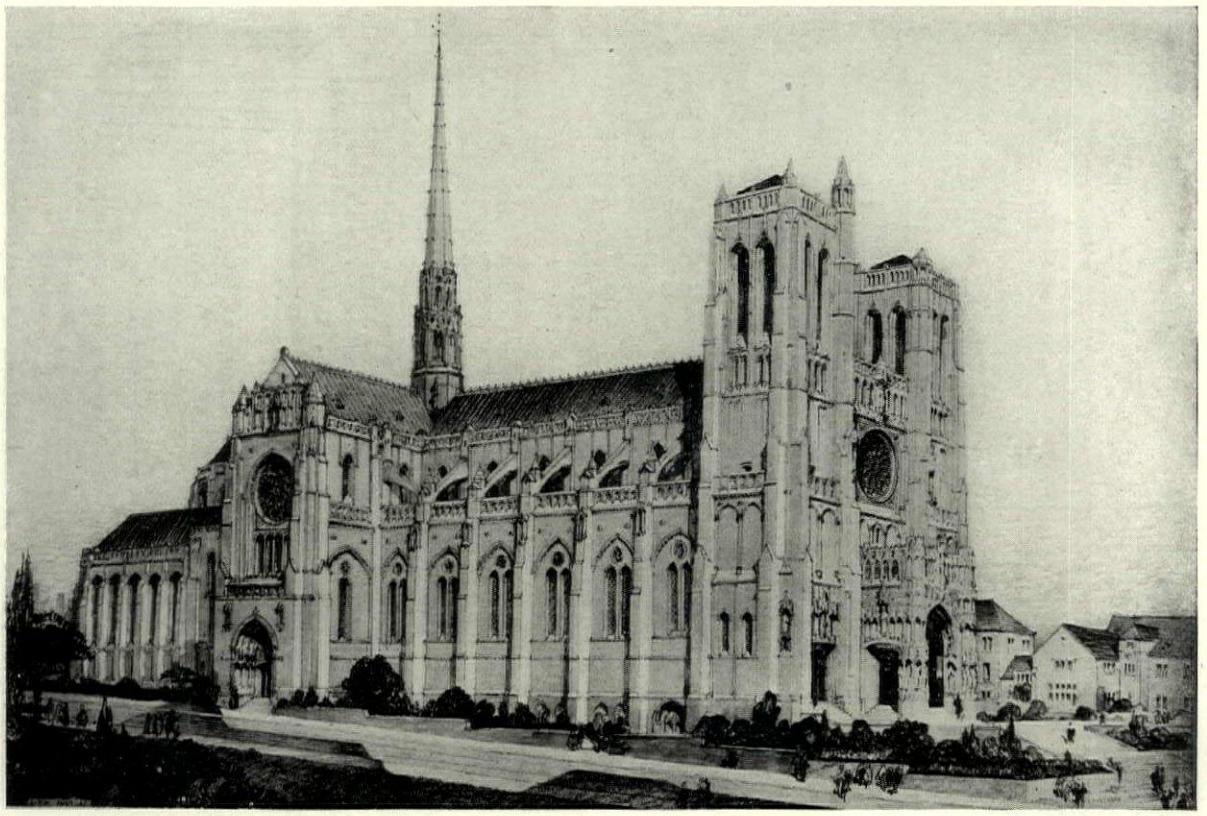
Mr. Cram, as Consulting Architect for the work, has written in his report to the Diocese that the style maintains "the *sense* of religious and architectural tradition." A further word may be justified on "the Architecture"—which is a more significant term than "a style"! For "styles" are of times that are past, and we are to build, serve and worship in a day that is our own! The wrong men are engaged upon this undertaking if the architects are expected to have their hands wholly tied by tradition. Mr. Hobart and his associates are creative artists, not archæologists, and they cannot admit that devout service in our day is fully expressed by forms and functions which are only reminiscent of a respected, however venerated, past. These men know the world in which they live and, vitally, sub-consciously, they must offer an interpretation of their own age. Shall not our appropriate constructive methods influence the architectural vernacular and shall not the present day demands be echoed in the forms of the very fabric itself? We should not be surprised, therefore, to find that this Cathedral which they have fore-visioned is scholarly, adroit and without feigned naïvete—yet informed with the very essence of worship itself.

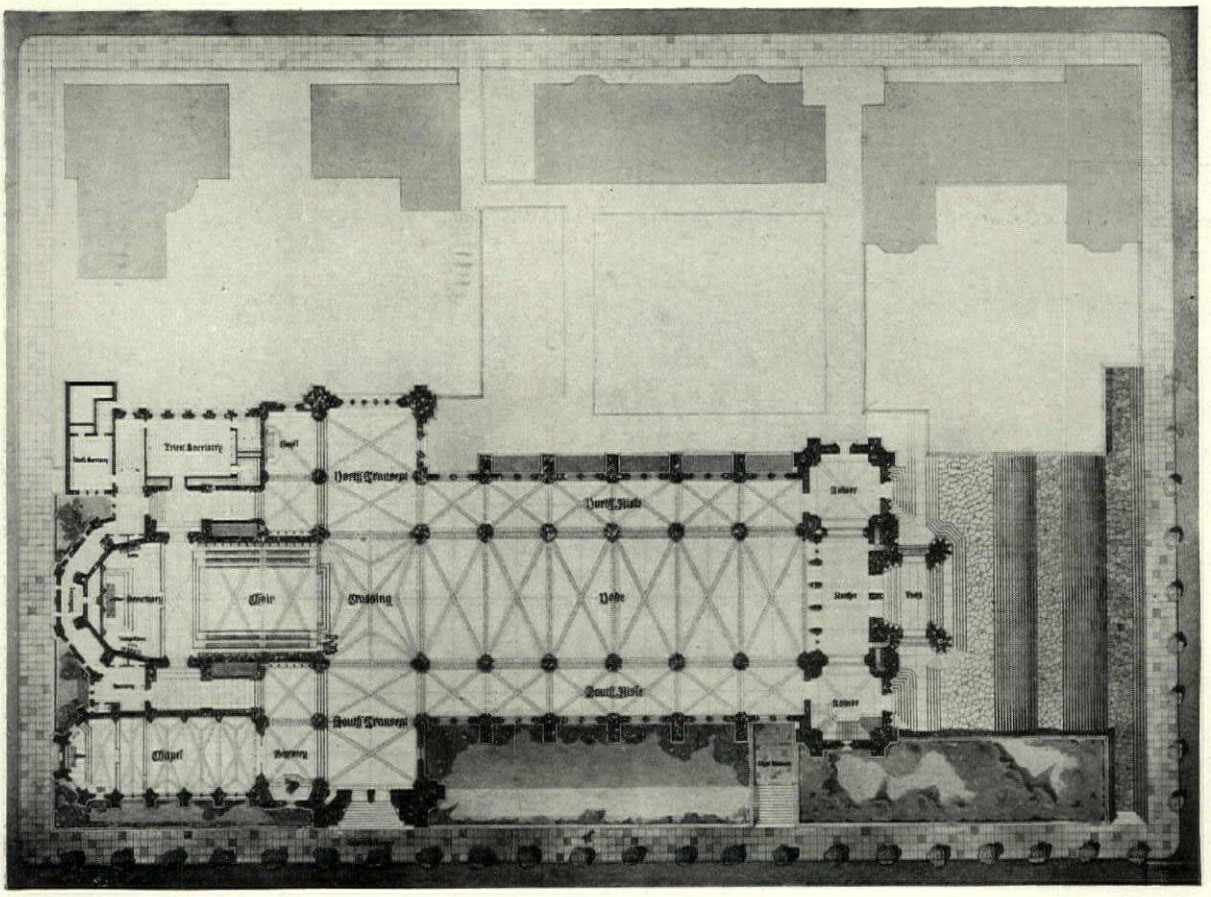
(Continued on page 608)



WATER COLOR RENDERING OF GRACE CATHEDRAL, SAN FRANCISCO

LEWIS P. HOBART, ARCHITECT—RALPH ADAMS CRAM, CONSULTING ARCHITECT





PERSPECTIVE AND PLAN, GRACE CATHEDRAL, SAN FRANCISCO

LEWIS P. HOBART, ARCHITECT—RALPH ADAMS CRAM, CONSULTING ARCHITECT

INTERIOR OF GRACE CATHEDRAL, SAN FRANCISCO

LEWIS P. HOBART, ARCHITECT—RALPH ADAMS CRAM, CONSULTING ARCHITECT

LETTERS OF AN ARCHITECT TO HIS NEPHEW

EDITOR'S NOTE:—*This is the thirteenth of a series of letters by William Rice Pearsall, Architect, of New York, addressed to young draftsmen and students about to take up the study of architecture. Mr. Pearsall, who may be addressed at 527 Fifth Avenue, New York, has expressed his willingness to answer any questions which may be addressed to him by our readers.*

August 10th, 1928.

DEAR GEORGE:

There are so many different angles and various points of view with regard to architecture in general, that the young man finds difficulty in making up his mind as to just which branch of the work he wishes to follow. Many times he is influenced by the work done in the office in which he first finds employment. This particular difficulty has been brought to my attention recently in discussing just this problem with some young men who have had a few years' experience and I find that they have been influenced very strongly by their first work. One found that his work had influenced him even to the extent of being unable to do very much in the drafting work, but the same young man was very successful in carrying out work in the field, interpreting the drawings, specifications and contracts.

This young man's one regret according to his own statement is that he is unable to do the drafting in the manner in which he would like to or should, and he seems at a loss just how to improve his drafting. He finds his time limited after returning to the office.

In my opinion he has his field cut out for him and needs only the proper deriection of his efforts so that he may realize that it is necessary in supervision work to take the initiative in order that the work of the different trades will be properly coordinated to bring about a completion of the different work in proper sequence. The lack of fine draftsmanship in one with this ability for executive direction is not in any sense a detriment to his progress, because he is able to make the necessary diagrams and can visualize and obtain just what information is necessary to bring into the office for the draftsman who has the drafting technique to carry out in the development of the drawings.

It is very important that every young man realize that the field is broad, is subdivided definitely and there is opportunity for each one who has controlled energy, initiative, and a willingness to do a little more than required to become highly efficient in any one of the subdivisions. Concentrated effort along the particular line found to be most interesting will lead to success, especially if an effort is made to get into the office where the class of work is done that one is fitted for and enjoys.

The illustration I have used emphasizes one phase of the work in an architect's office and that is *supervision*. This work can be made to so fit in with the drafting that it creates greater momentum in developing drawings, both scale and full size, and conserves the time required in supervision at the building. Just let me show this another way—(refer to my former letter on incompleteness of information)—by a study of the drawings. Some draftsman charged with the responsibility for certain building drawings lacks confidence in himself and allows the omission of dimensions, notes, or reference information to other drawings, and omits the connecting link on the details without thinking of the almost needless complications into which his neglect is placing the work. The unraveling is thrown upon the superintendent. I say thrown because he usually begins his work after the drawings are well under way and in some cases after they are all completed. This is of course dependent on the distance of the job from the office.

If you have been the lucky draftsman to be sent to the job to assist the superintendent you will learn more in a few months what *not* to do, what *not* to omit and what *to do*—when making drawings either personally or directing the work of others—than in years of drafting. The only other way is by constant study, watching the progress of the work, asking the why of all questions that come back to the office after drawings are issued and determining whether the drawings could have been made sufficiently complete to avoid the numerous questions that require more drafting, letters, trips to the job, changes meaning many times cost to someone, including the architect.

To sum up, you will find that correct drawings, complete drawings, and data, together with cooperation with the superintendent, will make the progress through a construction job one of pleasure rather than what some are—a nightmare.

Sincerely,

YOUR UNCLE

THUMB TACK CLUB OF DETROIT

THE FORMER Atelier Derrick has now become the Thumb Tack Club of Detroit. The Atelier outgrew its old quarters and was invited to take over the Thumb Tack Club, an incorporated organization. The aim of the Club is to maintain the Atelier and provide sketch classes. While there will be some social activities they will be in small proportion to the efforts in the way of architectural development.

The Club will stage an architectural exhibition at the Detroit Institute of Arts during the first week of December. The Committees have already been selected, and every possible effort will be made to give Detroit the finest exhibition it has ever had. The work of architects all over the country will be exhibited as well as outstanding examples of craftsmanship.

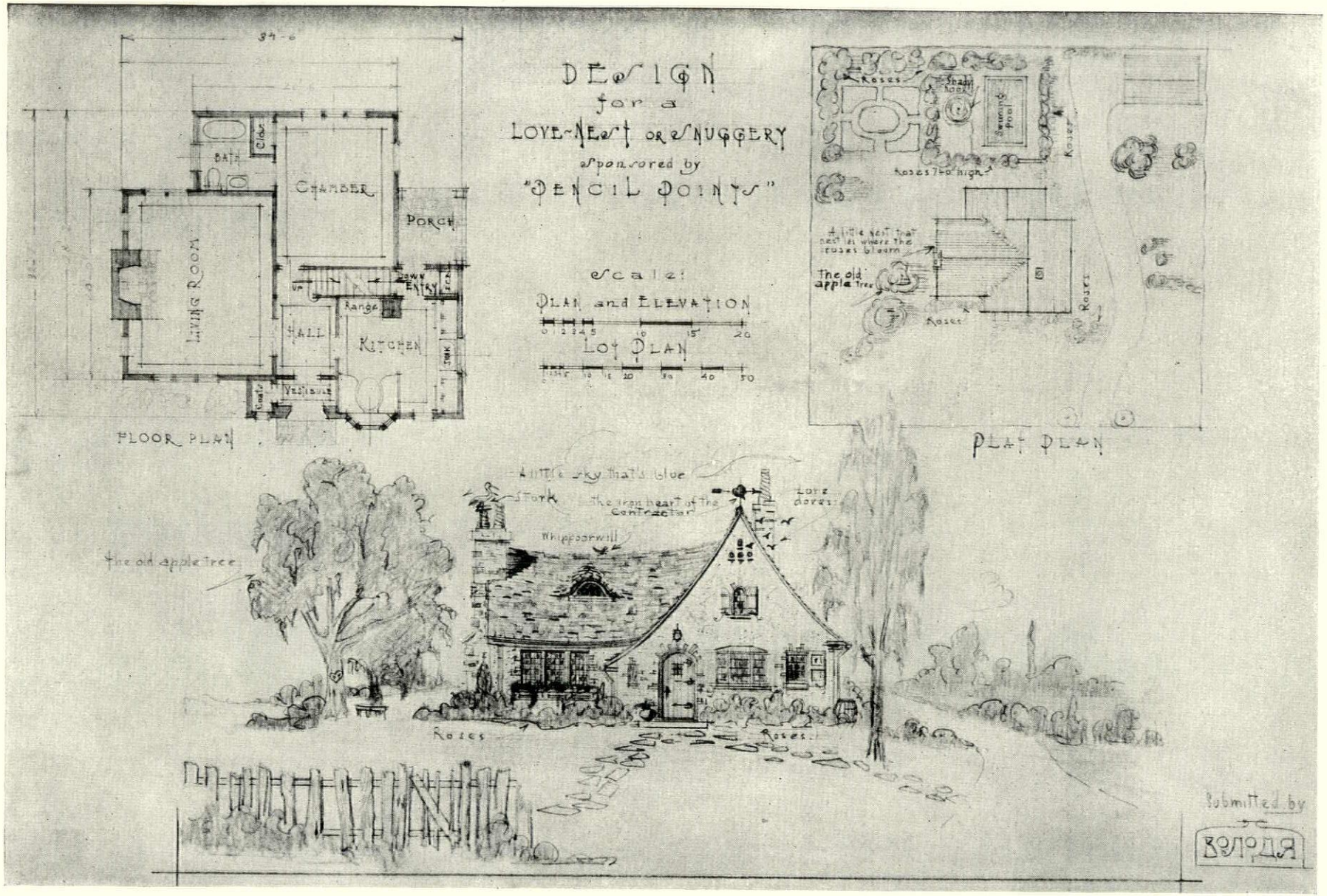
THE TECHNOLOGY CLUB OF SYRACUSE

THE TECHNOLOGY CLUB of Syracuse has taken on as affiliates the Syracuse Architects' Club, forty-two out of the forty-six members having joined. Also the local section of the American Chemical Society has become an affiliate, giving the Technology Club at large a membership of over a thousand. The twenty-fifth anniversary of the Club will be celebrated in October with proper ceremonies.

COMPETITION FOR A BOOK JACKET DESIGN

THE OXFORD UNIVERSITY PRESS has announced a competition for a book jacket design to be used for volumes of the world's classics which they propose to issue.

A prize of $250.00 will be awarded the winning design. The competition closes November 1, 1928. Copies of the programme may be had upon application to the Oxford University Press, 114 Fifth Avenue, New York.



First Prize Design by William Wilde, of Providence, Rhode Island

Competition for a Suburban Love Nest or "Snuggery" *(See Jury Report on page 607)*

This department conducts four competitions each month. A prize of $10.00 is awarded in each class as follows: Class 1, sketches or drawings in any medium; Class 2, poetry; Class 3, cartoons; Class 4, miscellaneous items not coming under the above headings. Everyone is eligible to enter material in any of these four divisions. Competitions close the fifteenth of each month so that contributions for a forthcoming issue must be received by the fifteenth of the month preceding the publication date in order to be eligible for that month's competition. Material received after the closing date is entered in the following month's competition.

THE PRIZES in our regular monthly competitions have been awarded as follows: Class 1—H. D. Theo, New York; Class 2—Evantha Caldwell, San Antonio, Texas; Class 3—Fred H. Kock, Cincinnati, Ohio; Class 4—William E. Nast, Brookline, Mass. Mr. Nast sent in the following description of the way in which he made his design, which will prove interesting to our readers: The placque was designed for the entrance of a power plant. The design was made with glue and sand, the latter being sprinkled on and gradually built up.

GOURMAND

By Meredith McCullough

I do not care who is the mayor, nor yet the city fathers.
If they with craft engage in graft, there's hardly one that bothers.
The newsprint leader, the average reader devours with spinal thrills.
What price the clamor, about the hammer, with which some half-wit kills?
If old John D. dubs at the tee, in Florida's sunny clime,
I do not rave, nor do I crave, his present of a dime.
The footpad's stalk, makes people walk, the middle of the highway.
But I don't scare, when journals bare, a robbery in some byway.
If I get beat, by some poor cheat, who quotes a lower fee,
Or some contractor, who's a bad actor, tries funny tricks on me,
It might be worse. No use to curse, or grumble at one's fate.
Life's often hard, but our reward, is coming soon or late.
But listen, hark! there's one remark, that brings me to my feet.
My client just pushed back his chair, and said
"Let's go and eat."

MONT-SAINT-MICHEL

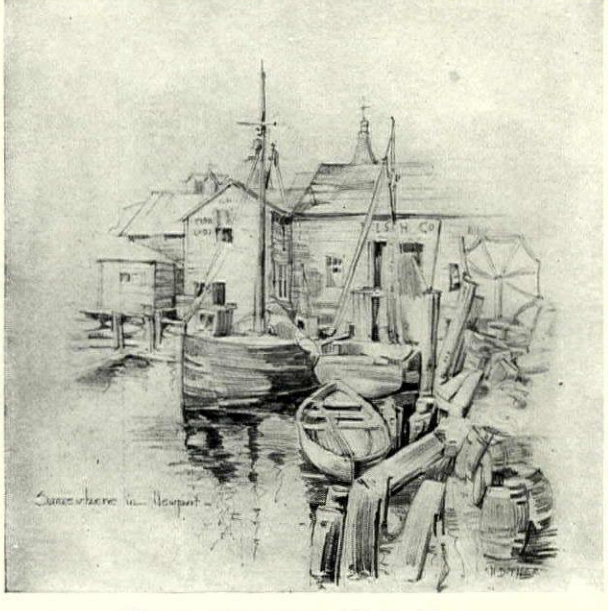
By Evantha Caldwell

(PRIZE—*Class Two—August Competition*)

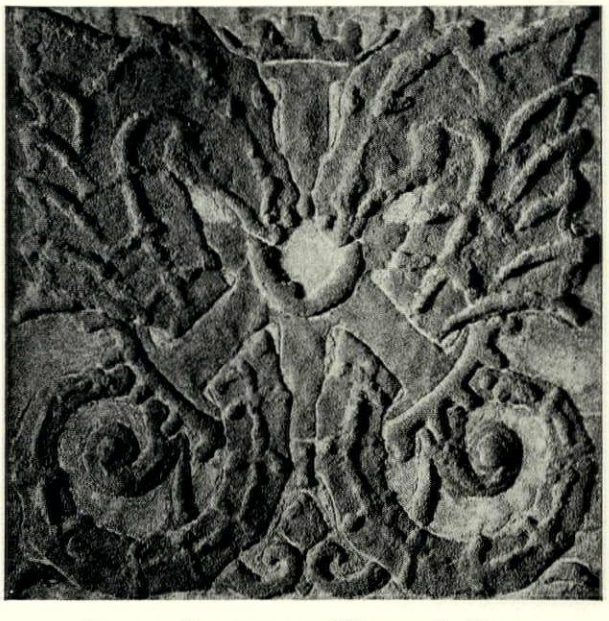
Just off the sunny coast of France
The isle, Mont-Saint-Michel,
Lures travelers to its abbey-fort
Where, charming legends tell,
In cloisters beautiful, romance
Enshrines the glory of old France.

The years have walked with princely tread
Its ancient granite stair
And left their royal graciousness
And silver footprints where
Dim, shadowed flights from basements gray
Sweep towerward to open day.

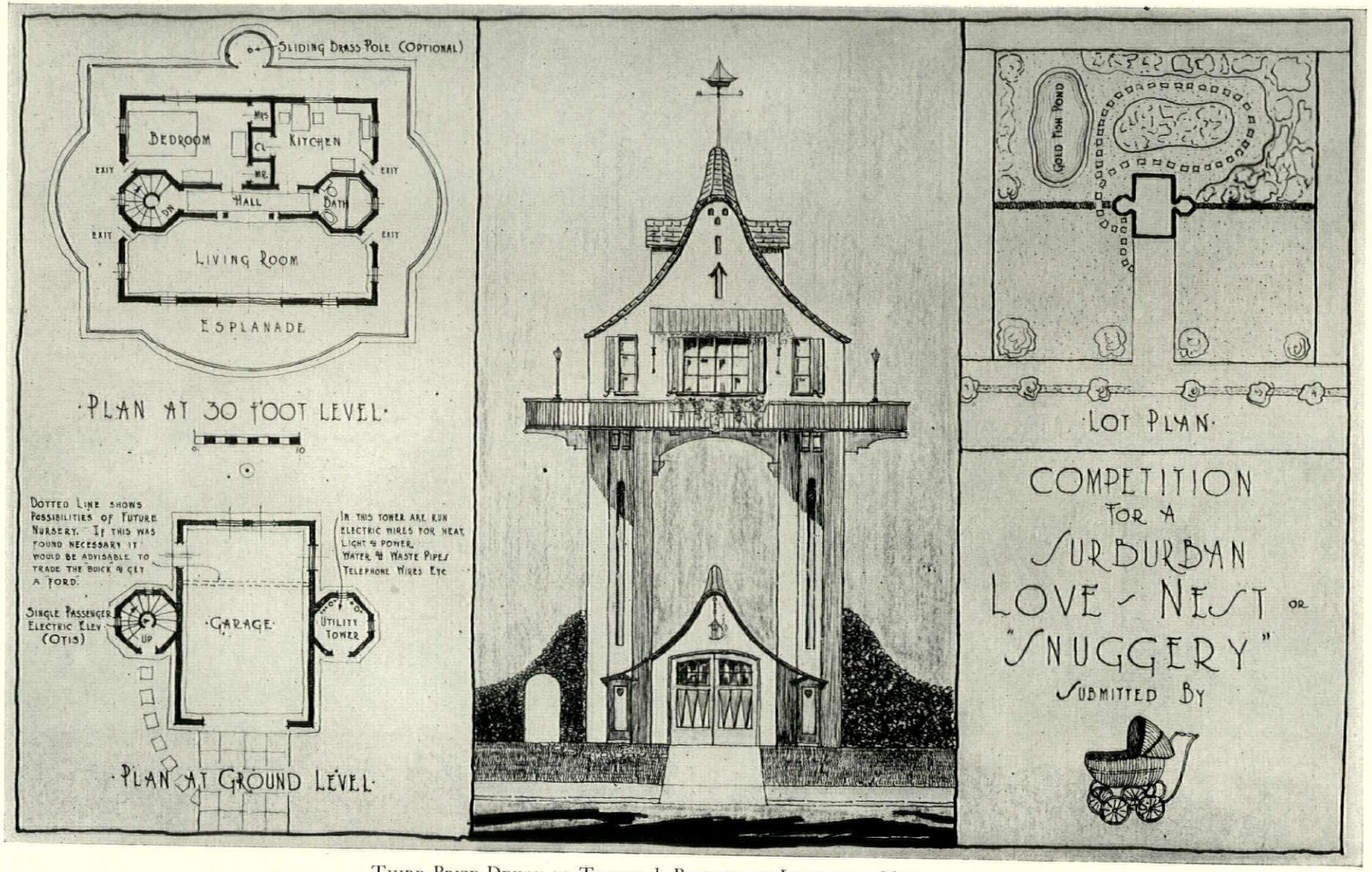
And years have touched each leaf-rosette,
Each lapping, lancet arch;
And lo, now all is poetry
Where was but rhythmic march
Of stone on stone in sculptured art:
The years have given it a heart.



PENCIL SKETCH BY H. D. THEO
(PRIZE—*Class One—August Competition*)

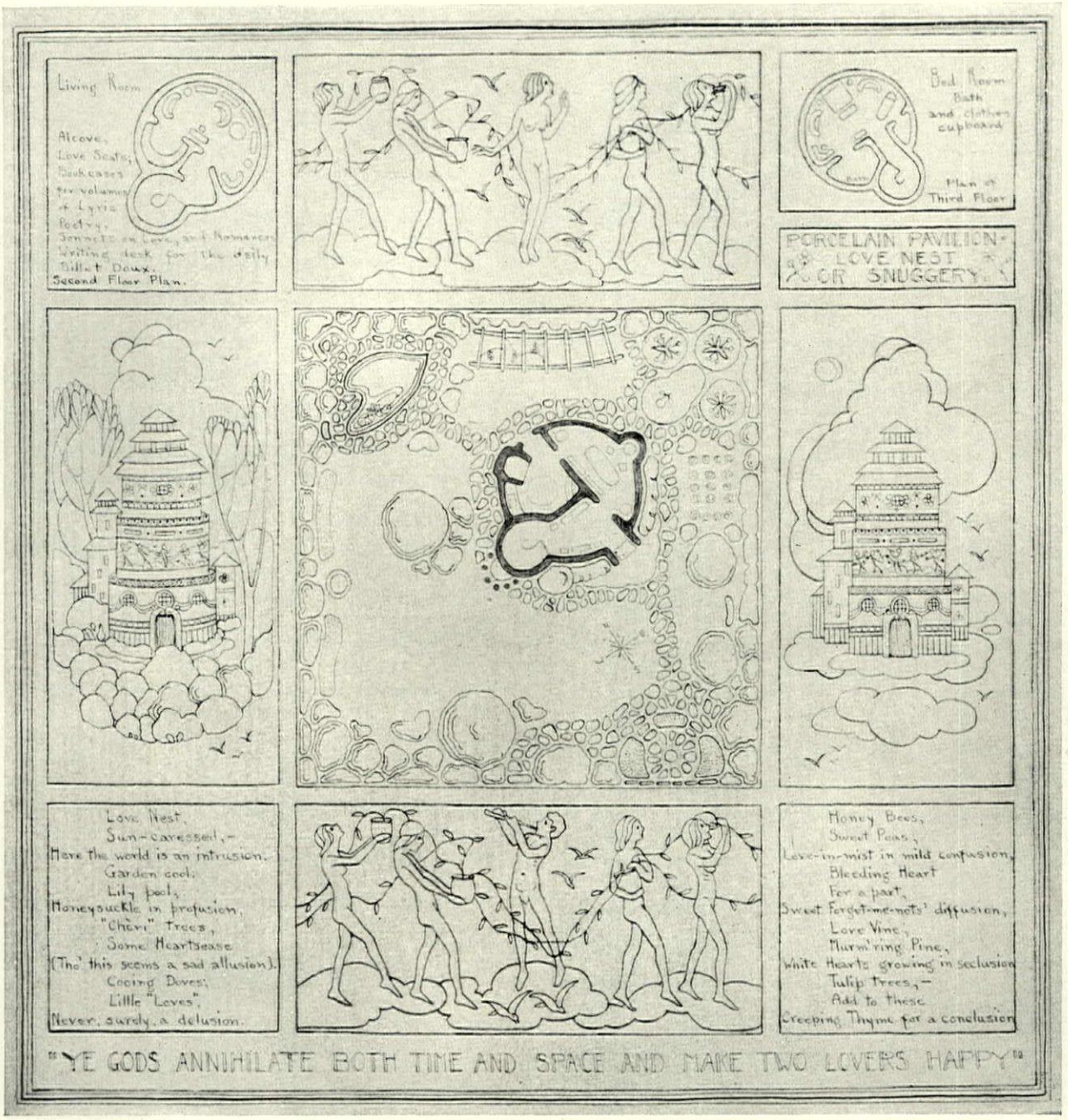


PLACQUE DESIGNED BY WILLIAM E. NAST
(PRIZE—*Class Four—August Competition*)



THIRD PRIZE DESIGN BY THOMAS J. PEARSON, OF LAWRENCE, MASSACHUSETTS

Competition for a Suburban Love Nest or "Snuggery"



SECOND PRIZE DESIGN BY JEANNETTE C. SHIRK, OF GLENSHAW, PENNSYLVANIA

COMPETITION FOR A SUBURBAN LOVE NEST OR "SNUGGERY"

Report of the Jury of Award

THE COMPETITION offered by this department in the July issue for the design of a Suburban Love Nest or "Snuggery" has far exceeded our fondest hopes both in the number of drawings submitted and in the excellence of the solutions offered.

There seems to be no reason whatever why in future our Love Nests should be ugly. They should all be beautiful and a careful study of the prize winning designs published herewith should be full of helpful suggestions to those interested in the problem of a suitable Love Nest.

The drawings submitted ran all the way from grave to gay—some of them too gay and some of them far too grave.

The prizes have been awarded as follows:

1st prize—William Wilde, Providence, R. I.
2nd prize—Jeannette C. Shirk, Glenshaw, Pa.
3rd prize—Thomas J. Pearson, Lawrence, Mass.

And thus we see that the competitors from New England, descended undoubtedly from long lines of Puritan ancestors, have come out ahead of the rest of the country in creating designs for this decidedly modern type of building.

Mr. Wilde's solution is charming. It makes you feel romantic and sentimental just to look at it—or at least that's the way the Jury felt. The cunning little house with its entourage seems just about right. The plot plan is good, the plan of the little house is cozy and inviting. Who wouldn't he happy in a place like this? William Wilde has designed a very nice little Love Nest.

And the second prize design submitted by Miss Shirk, while perhaps more fanciful than practical, is decidedly original and entrancing. The building itself is a little jewel and the decorations carry out what the jurors feel should be decidedly the dominant theme in the design for a Love Nest. While perhaps this building may not actually be reproduced in the material indicated the design seems equally well adapted to less expensive materials.

The design submitted by Thomas J. Pearson, awarded third prize, is undoubtedly original in conception and was at all times a strong contender for high honors. Its great! There is no doubt about that. The plan perhaps could be improved but the idea of getting quickly from the living quarters to the garage by means of a brass pole, which so far as we know has heretofore been confined to fire houses, appeals strongly to the Jury. Mr. Pearson is to be congratulated in having evolved such an original and at the same time practical solution of the vexatious difficulties inherent in the problem.

It was stated that suitable prizes would be awarded. So Messrs. Wilde and Pearson will soon receive handsome smoking jackets and Miss Shirk an equally handsome negligée. What could be more suitable as an article for personal use to one who has proved to be so adept in the design of a Love Nest than a smoking jacket or a negligée?

The editors of this department who have, as announced, judged this competition, wish to extend their congratulations and thanks to all who have submitted drawings. Many of those not reproduced were both amusing and interesting and showed a firm grasp of the fundamentals of Love Nest Architecture.

In the October issue of PENCIL POINTS there will appear a programme for another astonishing competition. Its all right to hold competitions for school houses and city halls and business buildings and things like that, but the editors of this department feel that many of the most important architectural problems of the present day have either been overlooked or given but meager attention.

"HOW WE LOST YOUNG WILFRED," BY FRED H. KOCK
(PRIZE—*Class Three—August Competition*)

GRACE CATHEDRAL, SAN FRANCISCO

(Continued from page 599)

How closely has "precedent" been followed? What, if any, have been the sources of inspiration for notable features of Grace Cathedral?

Comparison of photographs of the South Porch of St. Cecelia at Albi with the East Porch of Grace Cathedral will show certain similarities, but still more marked differences. Confessedly, Albi inspired Mr. Hobart, but the plan of the San Francisco porch is much shallower than the venerable French example, and both its proportions and its motifs are radically different. Both porches, alike, have strong structural corners, playing against which are intricacies of interlaced detail, flowing in phantasy. But Mr. Hobart has created, not a new Albi, but a new porch.

The (apparently) twin towers of the East Front, tied into unity by the decorative arcade which extends horizontally between the towers and across the nave gable are in both Grace Cathedral and Nôtre Dame at Paris! But Grace Cathedral bears little resemblance to Nôtre Dame. Mr. Hobart knows and respects his Paris: he makes no attempt to reproduce its monuments.

Crown of Grace Cathedral—the flèche, which lifts the eye upward from the Crossing: Has it prototype? Many; but not at Saint Chapelle, not at Nôtre Dame, not at Amiens is there just such a flèche. In common with all of these others there is only the *significance*. For the French word *flèche* means *arrow* and its movement points us toward "those things which are above." So, if we continue analyzing the architect's studies, we find here and there the reminiscence only the more to realize that the architects have brought forth a most convincing creation of their own.

If, of the qualities inherent in the French, English, and Spanish examples which have been studied, there remains in Grace Cathedral any one outstanding influence, it may perhaps be that of the Spanish Gothic, "which at once by its massiveness and extravagance and by its realistic naturalness,—potently embodies the spirit of mediæval life." Having "a quality,—which we call the romantic spirit—a mixture, that is, of the soaringly ideal with the crudely real, a mixture which to us today has the cunning fascination of art, but was really the natural outcome of the experiences and feelings of the men who created it": that architecture—in a word—which "demands in the highest degree courage, strength, intelligence, and grace."

ARCHITECTURAL SKETCH CLUB OF CHICAGO

THE ARCHITECTURAL SKETCH CLUB of Chicago is issuing a small magazine among its members and others interested and is anxious to open up an exchange of magazines of this nature with other Clubs. The Club will be glad to receive copies at the Club rooms, 1801 Prairie Avenue, Chicago, addressed to The Editor, *Treads and Risers*.

A CORRECTION

IN AN ADVERTISEMENT of the May Oil Burner Corporation which appeared in the August issue of PENCIL POINTS there appeared a photograph of Mr. Paul M. Hesser, Jr. Mr. Hesser was referred to as Chief of the Bureau of Design, Bureau of City Architect, Philadelphia, Pa. This statement was in error, inasmuch as Mr. Hesser was formerly the Chief of the Bureau of Design, but has been practicing architecture from his own office in Philadelphia for the past three years.

THE SPECIFICATION DESK

A Department for the Specification Writer

A COMPETITIVE MASTER PAINTING SPECIFICATION

EDITOR'S NOTE: *We present herewith the second and concluding part of a reprint of an open "Competitive Master Painting Specifications for Perfect Paintings," which has been compiled by Frank B. Stevens, Inc., and G. A. Beem, President of Paint Engineers, Inc. The specifications have been prepared in an effort to eliminate the chaotic conditions existing today by virtue of ignorance or misrepresentation and are a real step forward in the establishment of a standard painting specification. We shall be glad to hear from readers of this department commenting upon the specifications.*

PRIMING

(NOTE: *Should a separate specification for the finishing of cabinet work be incorporated in the cabinet work specifications, a note to this effect should be incorporated at this point in the Painting Specifications, stating that this work will be finished completely in the shop by the cabinet work Contractor and therefore no work will be required of the Painting Contractor in connection with the cabinet finish.*)

(NOTE: *Where the interior finish is Millwork, the priming of same should be done at the mill wherever possible. Back painting however, should be done by the Painter on the job.*)

68. The Contractor shall prime all window frames and sash on all surfaces, both surfaces exposed and those that will be concealed after the installation of the frames, except for the inside of the weight boxes and except for the pulley stiles and parting strips. This priming paint shall be mixed in the proportion of one gallon of linseed oil and one quart of turpentine to 20 pounds of white lead.

69. Pulley stiles and parting strips shall be stained with oil stain and waxed.

(NOTE: *Where desired, the linseed oil priming for the pulley stiles can be stained to match the color of the interior wood finish of the room.*)

70. All interior woodwork for stain and varnish or wax finish shall be primed on the back and on all surfaces which will be concealed after erection shall be primed with a heavy coat of same paint as specified for priming exterior wood.

71. All interior and exterior woodwork for painted finish shall be primed on all surfaces at the mill with a heavy coat of white lead and oil paint.

EXTERIOR WORK

EXTERIOR WOODWORK

72. All exterior woodwork throughout the entire building shall receive two coats of the exterior paint specified in addition to the priming coat, in colors selected by the Architect.

73. All exterior woodwork *(State location)* shall be given one coat of approved creosote stain. This stain shall be applied on all surfaces of particular items before same is installed and after erection each stained member shall be touched up on all damaged spots and shall then be given one additional coat of the stain.

74. All temporary woodwork such as fences, overhead protection, Architect's office and similar items shall be given two coats of paint specified of colors selected.

STRUCTURAL STEEL

75. All steel after erection, except in places where poured concrete comes in direct contact, shall be given one coat of *(State brand)* manufactured by *(State name of manufacturer)* and shall be either sprayed or brushed without the addition of any thinners.

OUTSIDE METAL WORK

76. All miscellaneous or ornamental iron, as well as the exterior face of all hollow metal doors and frames (except bronze, zinc, or copper) shall be given three coats of paint in colors selected by the Architect in addition to the coat applied as priming coat by others.

77. In connection with galvanized iron, the first or priming coat shall be as follows: All galvanized iron surfaces which are to be painted shall be treated with a solution consisting of 5 gallons of 36% ascetic acid, 3 pounds of blue vitriol and 3 pounds of powdered alum, dissolved in 50 gallons of water. This solution shall be prepared in a wooden container and shall be applied to the galvanized iron surfaces with a kalsomine brush. After this treatment has been allowed to dry thoroughly, the surfaces may be painted.

(NOTE: *Use the following for obtaining weathering effect on copper.*)

78. After the copper work has been installed, and all work completed, all exposed surfaces shall be thoroughly cleaned by scrubbing with a strong solution of caustic soda in hot water, after which they shall be washed off with clean water. After the copper has been scrubbed clean, a solution of one pound of powdered sal ammoniac dissolved in five gallons of water shall be applied with a brush and allowed to stay on for about twenty-four hours. After twenty-four hours, the roof shall be thoroughly sprinkled with clean water.

EXTERIOR BRICK, CEMENT AND PLASTER

79. All exterior brick work, cement work and plaster such as *(State locations)* shall be given a priming coat of sulphate of zinc, using 3 pounds to each gallon of water, and shall then be given *(State number of coats)* of *(State name of manufacturer and brand)* paint which shall be

applied in strict accordance with the manufacturer's direction.

(NOTE: *In the painting of such exterior surfaces as brick, concrete, plaster, etc., caution should be used in order to obtain best results. Work only should be done in dry weather. Considerable care should be exercised in the selection of the manufacturer whose paint is to be used.*)

SHINGLE STAIN

80. All shingles shall be dipped to within four inches of their ends (throughout their entire length) in *(State name of manufacturer and brand of material)* shingle stain in strict accordance with the manufacturer's specifications and shall be stored and piled in such a manner that they will properly drain dry. All shingles shall be bone dry before being stained and care shall be taken to keep the material well stirred so that all shingles will be of uniform color.

81. Poor results caused by damp shingles before staining shall be made good by this Contractor. If required by the Architect, he shall remove such damaged shingles and replace same with new which in turn shall be stained as specified.

82. After the shingles have been applied, the Painter shall touch up all raw edges caused by fitting and shall then give the exposed surfaces one brush coat to even up.

INTERIOR PAINT AND ENAMEL WORK

METAL WORK

83. All miscellaneous iron, ornamental iron, exposed structural steel, steel fire doors, tinned doors and all sheet metal work (except copper, brass, bronze and zinc) shall be thoroughly cleaned and all marred spots shall be touched up and shall be given two coats of paint as specified.

84. In connection with galvanized iron, the first or priming coat shall be as follows: All galvanized iron surfaces which are to be painted shall be treated with a solution consisting of 5 gallons of 36% ascetic acid, 3 pounds of blue vitriol and 3 pounds of powdered alum, dissolved in 50 gallons of water. This solution shall be prepared in a wooden container and shall be applied to the galvanized iron surfaces with a kalsomine brush. After this treatment has been allowed to dry thoroughly, the surfaces may be painted.

INDUSTRIAL ENAMEL FINISH

85. All interior exposed iron, structural steel, steel sash, sheet metal work and all walls, columns, partitions, beams and ceilings (including also the underside of cement roof tile) shall be painted with one coat of *(State name of manufacturer)* undercoating followed by one heavy coat of undercoating and enamel paint (of the same manufacturer as the undercoat) half and half and then followed by one heavy coat of enamel.

86. On all walls, partitions, columns, etc., a dado shall be painted *(State height)* high of a darker color than the wall and shall be finished on top with a narrow black line, 1¾" wide.

87. At his option, the Contractor may use a spray and touch up the edges, etc., with a brush. No spraying, however, shall be done on any work unless so specified.

ENAMEL FINISH

88. FIVE COAT WORK: All wood work in *(State locations)* shall be enameled in five coat work as follows:

First Coat—White lead and two-thirds linseed oil and one-third turpentine.

Second Coat and Third Coat—Standard undercoating as made by the manufacturer of the enamel used.

Fourth Coat—Standard undercoating and full gloss enamel equal parts. When dry rub with curled hair and clean with cold water and chamois.

Fifth Coat—Enamel flowed on and when dry rubbed with pumice and water to a fine dead gloss, using a felt cloth.

89. FOUR COAT WORK: All woodwork in *(State locations)* shall be enameled four coat work as follows:

First Coat—White lead and two-thirds linseed oil and one-third turpentine.

Second Coat—Standard undercoating manufactured by the maker of the enamel used.

Third Coat—Enamel full gloss.

Fourth Coat—Enamel egg shell gloss.

(NOTE: *Should full gloss finish be desired, use the following in lieu of the above.*)

First Coat—White lead and two-thirds linseed oil and one-third turpentine.

Second Coat—Standard undercoating manufactured by the maker of enamel used.

Third Coat—Enamel undercoating and enamel, equal parts.

Fourth Coat—Enamel full gloss.

GRAINING WORK

90. All *(State locations and surfaces which are to be grained)* shall be grained to match adjoining woodwork. The first coat shall be of paint. The second coat shall be a flat paint suitable for a ground color. A coat of graining color as manufactured by *(State name of manufacturer)* shall then be applied and shall be grained and shaded to imitate as closely as possible the adjoining work. After the above has thoroughly dried, two coats of varnish shall be applied which shall be finished same as specified for adjoining finish.

INTERIOR VARNISHED AND FINISHED WORK

(NOTE: *Open grain woods are oak, ash, chestnut, mahogany, walnut, prima Vera butternut, rosewood, teak and elm.*

The closed grained woods are pine, birch, gumwood, cherry, white wood, cypress, maple, fir, sycamore, beech and redwood.

Close grained woods shall be finished same as specified below (which specifications are for open grained woods) except that the filler should be omitted.)

RUBBED FINISH

91. All *(State kind of wood or else state location and type of wood to be finished)* trim shall be sponged with clean water and after drying, shall be rubbed with No. 00 sandpaper, shall be stained to color of approved sample, filled with filler colored to match, given a thin coat of shellac which shall be lightly sanded and shall then be varnished two coats with the last coat rubbed to a fine dead gloss with pumice and water, using a felt cloth. All trim shall be thoroughly cleaned after rubbing.

(NOTE: *Where economy is necessary an additional coat of shellac is advisable before applying the varnish, as this builds up a film below and produces less expensive results.*)

92. Window stools shall be treated the same as above, except that an approved spar varnish shall be used in lieu of the interior varnish specified for above trim.

FULL GLOSS FINISH

93. Full gloss finish should be specified the same as above for rubbed finish, except that the fourth coat should be specified to remain "full gloss."

DULL FINISH (not rubbed)

94. All *(State kind of wood or state kind of trim or location of same)* trim shall be sponged with clean water and after drying shall be rubbed with No. 00 sandpaper. Trim shall then be stained to color of approved sample, filled with filler colored to match, given a thin coat of shellac and varnished one coat full gloss and one coat dull gloss.

Waxed Work

95. All *(State kind of wood or state kind of trim or location of same)* shall be sponged with clean water and after drying, rubbed with No. 00 sandpaper, shall be stained to match approved sample, filled and given two coats of shellac, lightly sanded between coats. After last coat of shellac has been applied, the same shall be waxed two coats well rubbed out to a fine dead gloss.

96. The last coat of shellac and waxing of same shall not be applied until just before the building is turned over to the Owners.

Oiled Finish

97. All *(State kind of woods)* counter shelves and shelving shall be given two coats of hot linseed oil with the surplus wiped off.

Acid Proof Finish

(Note: *Use the following for specially prepared acid proof finishes.*)

98. All counter tops in laboratories shall be treated as follows:

First Coat—Shall be a solution of 125 grams of potassium chloride to 125 grams of copper sulphate to one gallon of water which shall be heated and applied hot.

Second Coat—Shall be applied after the first coat is dry and shall consist of the same solution as the first coat but shall be applied cold. This shall be followed by two coats of a solution composed of 120 CC Analine oil, 180 CC of hydrochloric acid to 1000 CC of water. After same are dry they shall be given one coat of raw linseed oil which shall be polished and allowed to stand for at least eight hours. The surface shall then be washed with hot soap suds and water and shall be again rubbed with linseed oil as above. If any black comes off the surface shall be washed and oiled again in the same manner, which operation shall be continued until no black comes off in the rubbing.

FLOORS

Varnished Finish

99. All *(State kind of wood)* floors shall be stained to match approved sample, thoroughly filled and given three coats of floor varnish, allowing 48 hours between coats and lightly sanding between coats. The last coat shall be rubbed with pumice stone and oil to a fine dead gloss finish.

(Use the following for cheaper work)

100. All *(State kind of wood)* floors shall be stained to color of an approved sample, shall be thoroughly filled, and given two coats of approved floor varnish left in full gloss.

Oil Finish

101. All *(State kind of wood)* floors shall be given two good coats of *(State kind of oil, trade name and name of manufacturer)*. Surplus shall be wiped off.

Wax Finish

102. All *(State kind of wood)* flooring shall be stained to match approved sample, shall be thoroughly filled, given one coat of approved floor varnish, slightly thinned with turpentine to give a dull finish and the surface shall then be waxed two coats well rubbed out to a fine dead gloss.

Cement Floors

103. The finish cement floors in *(State location)* shall be given two or three full coats of cement floor paint as manufactured by *(State manufacturer)* applied strictly in accordance with the manufacturer's directions.

INTERIOR PLASTER PAINTING

Alkali Prevention

(Note: *Where alkali is present in the plastering and paint is applied thereon without proper sealing and priming coats, burns will result which will show through the paint. It is exceedingly difficult to ascertain whether alkali is present in a plastered wall or not by observation and, if there is reason to believe that alkali is present, the plaster may be tested with "Phenopthalein" which may be applied by thoroughly wetting the stopper and touching the wall at suspected points. If alkali is present, a red spot will appear.*

If the above testing is not done, it is best to assume that alkali is present and apply a preventative.

Where extreme alkali conditions exist, the following methods of treating this condition are suggested.)

104. All plaster surfaces shall be treated with a solution consisting of five gallons of 36% ascetic acid, three pounds of blue vitriol and three pounds of powdered alum, dissolved in 50 gallons of water. This solution shall be prepared in a wooden container and shall be applied to the plaster surfaces with a kalsomine brush. After this has been allowed to thoroughly dry, the walls may be painted.

105. If the plastered surfaces show a great deal of alkali present the above solution shall be used dissolved in 25 gallons of water instead of fifty and the plaster should be given all of the solution that it will absorb. After this is thoroughly dry, the plaster surfaces should be given a coat of ready mixed aluminum paint, after which the wall finish can then be applied.

(Note: *The usual conditions met in ordinary building construction do not demand the above treatment and the walls may be primed with any one of a number of primers on the market which have given excellent results, in general; the Architect is referred to the literature of the various manufacturers whose products have given satisfaction in this regard.*)

Plaster Finishes

106. All plaster surfaces *(State location)* shall be given one thorough priming coat of *(State name of manufacturer and brand of goods)* and shall then be given two coats of *(State kind of paint and manufacturer of same, as well as brand)* of colors selected.

107. The last coat shall be stippled and shall be glazed as hereinafter specified.

(Use the following for lead and oil finish.)

108. All plaster surfaces *(State location)* shall be given a priming coat of *(State name of manufacturer and brand)* and shall be painted two coats of white lead and oil paint of colors selected.

Washable Wall Finish

109. All plaster surfaces *(State location)* shall be given a priming coat of *(State name of manufacturer and brand)* and shall be then given two coats of *(State name of manufacturer and brand)* flat wall paint of colors selected.

Enamel Finish

110. All plaster surfaces in *(State location)* shall be primed one good coat of *(State manufacturer and brand)* and shall be finished same as specified for five coat enamel work on wood.

(If economy demands, the above number of coats may be reduced similar to that specified for wood work.)

GLAZING

111. All plaster surfaces in *(State locations)* shall be painted as specified above and shall then be given one coat of glazed color as manufactured by *(State manufacturer)* of the effect desired. The glaze shall be brushed or stippled or shall be sponged with cloth or sponge as directed.

STARCHING

112. All painted wall surfaces in *(State location)* shall be given one coat of the following:

Dissolve two pounds of starch in ten gallons of sour buttermilk and thoroughly mix to uniform consistency. This shall be applied with a kalsomine brush and stippled.

All surfaces shall have a uniform coating and the color of the undercoating shall not be changed except for a slight flattening of same. No brush or stippling marks shall show.

113. For the sake of economy starching may be as follows: The starch dissolved in scalding water and then thinned to the desired consistency and brushed on. This coat should be transparent and should not show brush marks.

CANVASSING

114. All *(State locations of walls, ceilings, etc.)* shall be given a coat of approved glue and syrup size and shall then be covered with *(State grade and manufacturer)* heavy white muslin thoroughly pasted on free from wrinkles or blisters. Care shall be taken to remove all pimples or other projections on the plaster surfaces before installing the muslin. Muslin shall be in such widths that vertical joints will occur at angles, corners, trim or back of panel mouldings or base. All exposed joints must be cut joints and filled with lead putty.

115. Horizontal joints will not be permitted and the muslin shall be fitted neatly around light outlets, switches, trim and other similar items.

116. Covering shall be placed, if possible, before the trim, including split paneling, is erected and shall extend back of the trim not less than one-half inch.

117. Any canvas showing blisters or evidence of coming loose shall be removed and new material applied in lieu thereof.

COLD WATER PAINT

118. The following surfaces shall be (sprayed or brushed) with one coat of cold water paint as manufactured by *(State name of manufacturer)*.

CEMENT PAINT

119. The Contractor shall spray the following surfaces *(State list of spaces)* with one good coat of *(State name of manufacturer)* cement paint.

KALSOMINE

120. All *(State locations of same)* shall be given a coat of approved size using *(State kind and manufacturer of size wanted)* and shall be then given one good coat of kalsomine in colors selected by the Architect.

121. All finished work shall be free from brush marks, thin spots, etc., and all surfaces shall be completely covered and of a uniform color.

LACQUER

122. Lacquer may be used for the finishing of wood, metal or plaster. There are two types of lacquer, the spraying type and the brushing type. They are both made either clear or colored.

123. No lacquer should be used for exterior work. Lacquer should not be used where moisture or grease is present or where it is possible for moisture to reach it through the material upon which it is applied.

124. It is suggested that spraying the lacquer into the base will undoubtedly give more satisfactory results, in that finer workmanship can be thus obtained.

125. Brushing lacquer has the same durable characteristics as the spraying type but requires considerable care in the application and should only be used by a mechanic thoroughly skilled in its use.

126. No lacquer should be used on steel sash or other steel which has already had any priming coats.

CABINET FINISH

127. All *(State kind and location of wood)* shall be sponged with clean water and sanded with No. 00 sandpaper. Surfaces shall be then stained with an approved acid stain, filled with *(State name of manufacturer)* oil base pastefiller, shall be sanded with No. 00 sandpaper. Surfaces shall then be thoroughly cleaned and shall be given three coats of *(State name of manufacturer)* clear lacquer, lightly sanding with No. 00 steel wool between each coat and after the final coat.

(If a dull finish is desired without the expense of rubbing, the last coat may be a clear flat lacquer.)

(Birch may be finished the same as above but in this event the filler should be omitted and the lacquer should be sprayed on as brushing does not give as good results as in the open grained woods.)

FLOORS

128. Oak floors shall be treated same as above, except that the stain may be omitted if a natural finish is desired.

129. Birch shall be treated same as above omitting the stain if natural finish is desired.

130. Lacquer enamel finish should be brushed or sprayed on birch.

NUMBERING AND LETTERING

(Letters may be made with XX gold leaf with black border, with plain black letters outlined in gold, or with plain black letters or other styles as desired. The size and style of letters should be clearly stated.)

(Store front doors, fire escape landings, exits, toilet room stairways, stair-enclosures, floor numbers at elevators, floor numbers at stairs, openings to offices, linen room and other special rooms will be required in various cases to have letters by the Painting Contractor and all such rooms should be listed.)

GUARANTEE

131. Contractors shall guarantee painting and finishing free from defects of manufacture, materials, workmanship, etc. Any defects developing during construction and before building has been taken over by Owner, shall be made good by this Contractor without expense to the Owner.

RUBBISH

132. Contractor shall at completion of the work contemplated under this contract, remove all rubbish and accumulated materials of whatever nature not caused by other trades from the premises and leave the work in a clean, orderly and acceptable condition.

PLASTER PATCHING, ETC.

133. All plaster patching and glass breakage caused by this Contractor in the installation of his work shall be made good and paid for by this Contractor. Balance of plaster patching and glass breakage will be paid for by others.

SERVICE DEPARTMENTS

THE MART. In this department we will print, free of charge, notices from readers (dealers excepted) having for sale, or desiring to purchase books, drawing instruments and other property pertaining directly to the profession or business in which most of us are engaged. Such notices will be inserted in one issue only, but there is no limit to the number of different notices pertaining to different things which any subscriber may insert.

PERSONAL NOTICES. Announcements concerning the opening of new offices for the practice of architecture, changes in architectural firms, changes of address and items of personal interest will be printed under this heading free of charge.

QUERIES AND ANSWERS. In this department we shall undertake to answer to the best of our ability all questions from our subscribers concerning the problems of the drafting room, broadly considered. Questions of design, construction, or anything else which may arise in the daily work of an architect or a draftsman, are solicited. Where such questions are of broad interest, the answers will be published in the paper. Others will be answered promptly by letter.

FREE EMPLOYMENT SERVICE. In this department we shall continue to print, free of charge, notices from architects or others requiring designers, draftsmen, specification writers, or superintendents, as well as from those seeking similar positions. Such notices will also be posted on the job bulletin board at our main office, which is accessible to all. Owing to the very large number of advertisements submitted for publication under this heading we are asking those desiring to use this service to make their advertisements as short as possible.

Notices submitted for publication in these Service Departments must reach us before the fifteenth of each month if they are to be inserted in the next issue. Address all communications to 419 Fourth Avenue, New York, N. Y.

THE MART

Lauren V. Pohlman, 80 Broad St., Elizabeth, N. J., has for sale copies of PENCIL POINTS from June 1923 to August 1925 inclusive, all in good condition.

Charles A. Kloman, 712 Benedum Trees Building, Pittsburgh, Pa., wants PENCIL POINTS for January 1923, September 1925, and December 1925.

Lewis P. Hobart, Crocker Building, San Francisco, Calif., wants a copy of PENCIL POINTS for August 1926.

Colin C. McKenzie, Washington Hotel, Grant Avenue, San Francisco, Calif., wants copies of PENCIL POINTS for January and February 1928.

James E. Kubes, P. O. Box 211, Cumberland, Md., has for sale 46 numbers of *White Pine Monographs*, to be sold as a whole to the one giving best offer.

Bruce E. Howden, 119 Colfax Road, Upper Darby, P. O., Pennsylvania, would like to secure a copy of *Architectural Review* for August 1913 and *The Brickbuilder* for January 1914.

Albert C. Wirth, 23 Technical Bldg., Asheville, N. C., has the following magazines for sale: *Inland Architect*, April 1906 to Dec. 1906, $5.00; Jan. 1907 to Dec. 1907, $7.00; Jan. 1908 to Dec. 1908, $7.00; or the lot for $17.00; *Architectural Record*, for the years 1907, 1908, 1909, 1910, 1911, 5 vols. $25.00; *Western Architect*, June 1907 to Dec. 1908, complete for the years 1909, 1910, 1911, 4 vols. $20.00; *American Architect*, July 1907 to Dec. 1907, Jan. 1908 to Dec. 1908, Jan. 1909 to April 1909, 4 vols. $15.00; *New York State Architect*, linen bound, leather re-inforcing, 1909, 1910, 1911, complete, $35.00. All other bindings are linen.

PERSONALS

COOK AND BLOUNT, ARCHITECTS, have opened an office at 415 Lexington Avenue, New York.

ANDREW PALMIERI, ARCHITECT, has opened an office for the practice of architecture at 216 South Essex Ave., Orange, N. J., and would like to receive manufacturers' samples and catalogues.

OSCAR L. WUTZDORFF AND JOHN G. HELMERS have opened a new office as associated architects in the National Bank of No. Hudson Bldg., 147 Summit Ave., Union City, N. J.

A. B. WARONOFF, architectural draftsman and student, 16530 Princeton Ave., Detroit, Mich., is starting an A.I.A. file and would like to receive manufacturers' samples and catalogues, including steel and concrete ornamental work and details.

LOUIS BAYLINSON, architectural student and draftsman, 1623 N. Franklin St., Philadelphia, Pa., would like to receive manufacturers' samples and catalogues.

WALTER A. RABOLD, Inc., of Canton, Ohio, have opened an office in the Bloomberg Bldg., Massillon, Ohio. They would like to receive manufacturers' samples and catalogues.

DODD & RICHARDS, ARCHITECTS, are located at 606 Architects Building, 816 W. 5th St., Los Angeles, Calif.

GOLDWIN GOLDSMITH, ARCHITECT, has left Lawrence, Kansas, and will be located at B. Hall, University of Texas, Austin, Texas.

SAMUEL B. GOLDMAN, ARCHITECT, has opened an office for the practice of architecture at 3820 Washington Ave., St. Louis., Mo., and would like to receive manufacturers' samples and catalogues.

BENNES & HERZOG, ARCHITECTS, have moved to 915 Public Service Building, Portland, Ore.

THE COUNTY ENGINEER'S DEPARTMENT, Court House, Camden, N. J., is revising the present system of filing and would be pleased to receive manufacturers' samples and catalogues.

D. H. GREER, ARCHITECT, formerly associated with H. G. Little, Wauchula, Fla., has moved to 1919 Ave. E, Ensley, Ala., and would like to receive manufacturers' samples and catalogues.

HANS P. NELSON, architectural student, 2036 N. Albany Ave., Chicago, Ill., would like to receive manufacturers' samples and catalogues for his A.I.A. file.

L. D. MOSER, architectural student, 1324 West 5th Street, Los Angeles, California, would like to receive manufacturers' samples and catalogues.

(Continued on Page 76, Advertising Section)

PUBLICATIONS

OF INTEREST TO THE SPECIFICATION WRITER

Publications mentioned here will be sent free unless otherwise noted, upon request, to readers of PENCIL POINTS *by the firm issuing them. When writing for these items please mention* PENCIL POINTS.

Escalators.—New catalog with color plates covering the modern escalator for use in connection with all types of buildings where economical vertical transportation is required. Models, layouts, and complete data. 36 pp. Standard filing size. Otis Elevator Co., 260 11th Avenue, New York, N. Y.

The Ventilation of Modern Churches.—A.I.A. File No. 35-A-42. A collection of 52 full page plates showing fine wood carvings as used in some of the more prominent churches throughout the country. Substantial looseleaf binder. Standard filing size. American Seating Company, 14 East Jackson Boulevard, Chicago, Ill.

Invisible Radiators.—New publication with color plates on the subject of modern radiation for various types of buildings. Construction details, tables. Standard filing size. Herman Nelson Corporation, Moline, Ill.

Folding Partition Door Hardware.—Catalog No. 86. Monograph on the subject of folding doors with drawings, details, specification data and all required information. Standard filing size. Coburn Trolley Track Mfg. Co., Holyoke, Mass.

Window Shades.—A.I.A. File No. 28-E. New document covering subject of window shades and shade rollers with samples of cloths, specifications, etc., etc. Standard filing size. The Columbia Mills, Inc., 225 Fifth Ave., New York, N. Y.

Von Duprin Self-Releasing Fire Exit Latches.—A.I.A. File No. 27-C-5. New and comprehensive catalog covering to the most minute detail everything in connection with safety exit devices. Vonnegut Hardware Co., 116 E. Washington St., Indianapolis, Ind.

A Competitive Master Specification for a Perfect Painting Job.—This specification covers a complete painting contract. 16 pp. 8½ x 11. Paint Engineers, Inc., 1009 So. Kolmar Ave., Chicago, Ill.

Instructions for Installing Ventilating Fans.—A useful document for the draftsman and specification writer covering installation of modern ventilating equipment in all types of buildings. Layouts for many different types of service. 36 pp. 8½ x 11. Ilg Electric Ventilating Co., 2850 No. Crawford Ave., Chicago, Ill.

Heinz Roofing Tiles.—Folder with detail drawings and color plates devoted to the subject of roofing tiles. Standard filing size. Heinz Roofing Tile Co., Denver, Colo.

Lime Plaster.—A.I.A. File No. 21-A-1. Brochure showing details of famous Italian buildings, together with information on Lime Plaster, textures, specifications, etc. Standard filing size. National Lime and Stone Co., Findlay, Ohio.

Johns-Manville Sound-Absorbing Treatment in Banks and Offices.—New brochure on the subject with numerous illustrations, specifications, drawings and complete data. Full size details. Standard filing size. Johns-Manville Corporation, 292 Madison Ave., New York, N. Y.

Are Oil Heaters Perfected?—Discussion of the subject with facts and full particulars. 30 pp. Standard filing size. Oil Heating Institute, 420 Madison Ave., New York, N. Y.

Essco Pine for Interior Finish.—A.I.A. File No. 19-A-22. Brochure showing the possibilities of the common grades of pine for the interior treatment of many types of buildings. Many reproductions of interiors in sepia. Standard filing size. Exchange Sawmills Sales Co., Kansas City, Mo.

Casement Window Hardware.—A.I.A. File No. 27-C-2. Catalog No. 12. New and attractive document devoted to the subject indicated. Full page detail plates, specifications, etc. Standard filing size. Casement Hardware Co., 406 No. Wood St., Chicago, Ill.

Truscon Steeldeck Roofs.—Bulletin No. 206. New document devoted to subject indicated. Many illustrations, tables, charts, etc. Standard filing size. Truscon Steel Co., Youngstown, Ohio.

Ambler Asbestos Shingles.—A.I.A. File No. 12-F-1. Booklet illustrating many houses and showing the different varieties of shingles in full colors. Standard filing size. Asbestos Shingle, Slate & Sheathing Co., Ambler, Pa.

Gypsteel Pre-cast Fireproof Floors.—A.I.A. File No. 10-B-21. Bulletin No. 28-B. Careful treatise on the subject of fireproof floor construction with blue prints, details, and much other data. 36 pp. Standard filing size. Structural Gypsum Corporation, Linden, New York.

Colonial and Early English Hardware.—A.I.A. File No. 27-B. Beautiful brochure devoted to a line of extremely interesting and artistic hardware. Many illustrations. 50 pp. Standard filing size. P. & F. Corbin, New Britain, Conn.

Massachusetts Modified Unit Heaters.—A.I.A. File No. 30-D-11. Folder for architects with drawings and much data on the subject. 24 pp. Standard filing size. Massachusetts Blower Division of The Bishop & Babcock Sales Co., 4901 Hamilton Ave., N. E., Cleveland, Ohio.

Aerolux Window Shades.—A.I.A. File No. 28-E. Catalog No. 91. Looseleaf folder showing this type of window protection which also affords adequate ventilation. Much data on the subject of air circulation. Specifications. 30 pp. Standard filing size. The Aeroshade Company, Waukesha, Wisconsin.

Kalmantruss Joists.—A.I.A. File No. 13. New booklet showing uses of this light structural steel member. Tables of loads, dimensions, etc. Standard filing size. Kalman Steel Company, Wrigley Bldg., Chicago, Ill.

Commercial Lighting for Office, School, Hotel, Hospital and Institution.—A.I.A. File No. 31-F. New catalog devoted to the subject indicated. Many illustrations, much data. New designs. Standard filing size. Graybar Electric Co., Graybar Bldg., New York, N. Y.

Acousti-Celotex—Less Noise, Better Hearing.—A.I.A. File No. 39-B. Document on the subject of sound absorption. Color plates, detail construction of the different types of buildings where acoustical treatment is intended. 50 pp. Standard filing size. The Celotex Co., 645 No. Michigan Ave., Chicago, Ill.

Drawing Ink.—Reprint of a full page advertisement inviting users of drawing inks to make eight tests with Pelican waterproof ink. The advertisement carries a coupon entitling the holder to secure a bottle of Pelican ink in black or colors at any retail artists' material store. Pelican Works, Gunther Wagner, 34 East 23rd Street, New York, N. Y.

Memorials Today for Tomorrow.—Handsome book on the subject of memorials with numerous illustrations in color and valuable accompanying text. 80 pp. Cloth binding. Georgia Marble Company, Tate, Georgia.

Norton Floors.—Standard filing folder with much well arranged data on the subject of non-slip floors. Plates showing patterns and color combinations. Specification data. Norton Co., Worcester, Mass.

Atlantic Terra Cotta.—Monthly publication for architects and draftsmen. The issue for June 1928 is devoted to the work of Messrs. Dennison & Hirons, architects. Color plates, drawings, details. Atlantic Terra Cotta Co., 19 West 44th St., New York, N. Y.

Two New "Standard" Products.—Data folder giving information on the electric dishwasher and sink and the electric clothes dryer recently added to the "Standard" line. Complete data for the specification writer. Standard filing size. Standard Sanitary Mfg. Co., Pittsburgh, Pa.

National Lumber Handbook (2nd Edition).—Much information on lumber of interest to all who have occasion to use this material. National Lumber Mfrs. Assn., Transportation Bldg., Washington, D. C.

Pipe Economy (7th Edition).—Handbook on the subject of Clow Foundry Products. Covers an enormous line of cast iron items required in connection with modern building. 200 pp. James B. Clow & Sons, Chicago, Ill.

The Custom Built Door.—Data sheet showing door design by an architect and now for general distribution. Specifications, complete information, standard filing size. Roddis Lumber & Veneer Co., Marshfield, Wis.

Beardslee Talks.—Monthly publication dealing with lighting fixtures. The issue for July is the modern art number and contains much in the way of designs in metal work of interest at the present time. Beardslee Chandelier Mfg. Co., 216 So. Jefferson St., Chicago, Ill.

Bathroom Cabinets.—Data sheets dealing with the Ideal and Globe bathroom cabinets with designs, roughing-in measurements and complete data. Ideal Cabinet Corp., 8835 Central Ave., Detroit, Mich.

Handy Reference Tables.—Booklet prepared for the information of architects, draftsmen, and engineers, which answers many questions regarding concrete and other building materials. Convenient pocket size. Indexed. 36 pp. Atlas Portland Cement Co., 25 Broadway, New York, N. Y.