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The AMERICAN ARCHITECT AND BUILDING NEWS

Regular Edition

Vol. XCI.

APRIL 20, 1907.

No. 1634.

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SOCIETIES

WASHINGTON ARCHITECTURAL CLUB

"English Domestic Architecture" was discussed in its many phases on April 6 by George O. Totten, Jr., who spoke before the Washington Architectural Club, at their rooms, 729 Fifteenth Street Northwest. The lecture was illustrated by slides procured by the lecturer while abroad.

A business meeting was held, and R. M. Powers and John M. Dunn were named as full members and Henry Spencer Powell as an associate member.

For the convention of the Architectural League of America, which is to be in session April 22-24, the club appointed these committees:

Executive Committee, W. D. Windom, Percy Ash, H. S. McAllister, W. W. Youngs, L. A. Simon, C. L. Harding, and F. B. Wheaton.

Reception Committee, Chairman, Waddy B. Wood; J. Paul Marshall, R. A. Sissington, J. D. Fuller, M. D. Morrill, Elliott Woods, A. W. Burt, and N. C. Wyeth.

Entertainment Committee, Chairman, Percy Ash; W. W. Stevens, Oscar Winderoth, Charles Ramey, Frederick Owen, A. L. Harris, and Oscar Vogt.

CHICAGO ARCHITECTURAL CLUB

The annual exhibition of the Chicago Architects' Club opened at the Art Institute April 1.

DETROIT ARCHITECTURAL CLUB

In the annual meeting of the Detroit Architectural Club, held Monday, April 1, in the club quarters in the Lewis Block, it

KEYSTONE

was decided to make an effort to land the 1908 national gathering for Detroit.

The following officers were elected: *President*, Frank C. Baldwin; *Vice-President*, Adolf Eisen; *Secretary*, E. N. Pratt; *Treasurer*, Hans Gehrke; *Financial Secretary*, J. H. Gustav Steffans; *Directors*, Alpheus W. Chittenden, Sol. B. Rosengarten and Henry J. Brennan. Mr. Eisen and Emil Lorch were chosen delegates to the convention to be held in Washington, D. C., April 22, 23 and 24.

PERSONAL MENTION

WASHINGTON, D. C.—Papers for the incorporation of Frank P. Milburn & Co. have been filed. The firm is to carry on the business of architecture, the capital stock being stated at \$5,000. As incorporators appear Frank P. Milburn, L. L. Milburn and Michael Heister.

READING, PA.—Mr. Edward Z. Scholl, architect, 540 Court Street, has formed a partnership with Mr. Harry Maurer, late of New York. The firm will be known as Scholl & Maurer and for the present will occupy the above offices.

BERLIN, O.—On April 1 Messrs. L. B. Williams and Frank L. Wilson opened an architect and builders' office in rooms over Mr. Wolfe's shoe store on South Main Street.

RENO, NEV.—Messrs. Ira W. Tesch and

Fred J. DeLonchant have tendered their resignations to U. S. Surveyor General Matthew Kyle, to take effect April 15, at which time they will open offices in the Sunderland Building, 213 N. Virginia Street, where they will do architectural work and general drafting.

NEW YORK, N. Y.—Clarence B. Cleveland, an architect and builder, whose home is in New York City, but who has been in Boston since January, was found dead in his room there, on April 7, having committed suicide, according to the medical examiner. Mr. Cleveland was forty-five years old.

NOTES AND CLIPPINGS.

A LARGE RIDING-HALL.—The largest riding-hall in the army will be at Fort Leavenworth, Kan., the contract for the construction of which has been awarded by the Quartermaster General to Fred Tarry, for \$73,350. It will be 300 feet long and 100 feet wide.—*Exchange*.

A HUGE VENTILATING PLANT.—The largest mechanical ventilating plant ever placed under a single roof is that recently constructed for the Carnegie Library extension at Pittsburg. It has an aggregate capacity of moving more than six hundred thousand cubic feet of air a minute. The plant consists of a number of small units, which is regarded as more effective than large units and easier of installation. There are 15 fresh-air stations having 19 fans, and 21 exhaust stations having 30 fans. The heating apparatus is entirely separate from the

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ventilating system, and the air is delivered by the latter at the normal temperature of the rooms supplied.—*Philadelphia Record*.

THE MONSON COLUMBARIUM.—One of the features of Lord Monson's ancestral home in Lincolnshire, at Burton, is the sort of columbarium of carved ornamental stone, bearing the Monson heraldic devices and arms, which is destined to receive the urns, or silver jars, containing the ashes of the Monsons now living and as yet unborn. It was built by the late Lord Monson immediately adjoining the private chapel, and with the object of avoiding an enlargement of the ancestral vaults and family mausoleum which would otherwise have been necessary, owing to the number of dead which they contain. The Monson columbarium is something in the shape of a sanctified pigeon house, there being tiers of pigeonholes, one above the other. Each pigeonhole, on receiving its urn of ashes, is hermetically sealed with a pane of thick glass, while a brass plate immediately below gives the name, the titles and the other customary data concerning the person whose ashes occupy the receptacle. Cremation is becoming more and more the fashion among the titled and untitled aristocracy of Great Britain, and this is naturally leading to the abandonment, in a great measure, of ancestral vaults and of the old family mausoleums, and the substitution in their stead of columbariums, such as that of Lord Monson. These columbariums, in spite of their ornate character, do not, however, in-



spire the feelings of solemnity aroused by the stately tombs that adorn so many of the ancient cathedrals, abbeys and churches of the United Kingdom.—*Marquis de Fontenay in N. Y. Tribune*.

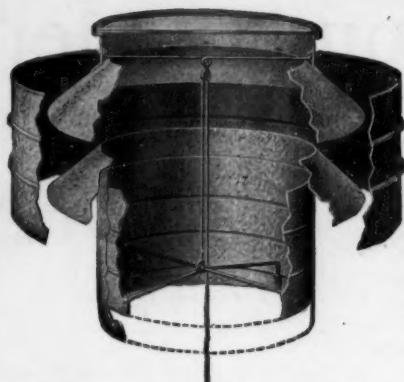
A STRANGE GRANARY.—The "golah" at Bankipur, India, was built for a granary in 1783, but has never been used for that purpose. It is 426 feet round at the base, with walls 12 feet 2 inches in thickness, the interior diameter being 109 feet. It is about 90 feet high and might contain 137,000 tons. Inside is a most wonderful echo, best heard from the center of the building. As a whispering gallery there is, perhaps, no such building in the world, not even the famous Mormon Temple.—*Kansas City Journal*.

THOSE UNQUIET STAIRS.—In a recent suit in a Cincinnati court a lawyer was cross-examining a German, the point under inquiry being the relative position of the doors, windows and so forth in a house in which a certain transaction was alleged to have occurred. "And now, my good man," the lawyer said, "will you be good enough to tell the court how the stairs run in your house?" The German looked dazed for a moment. "How do they run?" he repeated.

"Yes; how do the stairs run?"

"Vell," continued the witness, "ven I am oopstairs dey run down and ven I am downstairs dey run oop."—*Harpers Weekly*.

ALEXANDER'S TOWN.—An appeal to Hellenism and Hellenic spirit throughout the world is implied in a scheme, the tentative beginnings of which are being discussed here (writes an Alexandria correspondent), to revive the memory of Alexandria's magnificent past. The project is for the erection of a monument to Alexander the Great, the founder and eponymous hero of the city. It is probable that an organizing committee will be formed, and when that point is reached nothing can deter the scheme from success, for the Hellenic colony here is both wealthy and patriotic. It is not, perhaps, without significance that the first subscriber to the movement should be a German, settled in Alexandria, whose donation is £500. The predominant suggestion for the monument is that it should take the form of a gigantic statue of the hero in marble and iron, to stand on the newly constructed esplanade arching the eastern bay. It is suggested that the marble should come from the classical quarries of Pentelcus. A resident of Alexandria, in a letter to the *Egyptian Gazette*, recalls the Greek legend surrounding the founding of the city. The soil all being black and yielding no chalk, flour was sprinkled to mark the site of the future city, which took the shape of a Macedonian mantle. Suddenly a flight of birds swept down and consumed



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the flour. Alexander, perturbed by this omen, was only comforted at length by this interpretation of his augurs: That the city was destined to feed many nations. The prophecy has been fulfilled in the moral as well as material sense, for Alexandria, once the capital of Western learning, is still one of the granaries of Europe. —*Manchester Guardian*.

CAPE COD CANAL HISTORY.—The Cape Cod Canal scheme is really a very old one. It was in 1676 that Samuel Sewall, of Boston, who, like Samuel Pepys, kept a diary, wrote one evening in his book that Mr. Smith of Sandwich had called his attention to the route of a canal across the cape. Perhaps, had not some unrecorded deterrent event occurred, the canal might have been built years and years ago, says the *Boston Herald*. In 1697 the General Court of Massachusetts appointed a committee which was to "look into the canal route." The next recorded step toward dissipating the shades of night was when the General Court in 1776, passed an order appointing James Bowdoin and William Sever a committee to examine the canal route. Thomas Machin, an engineer in the service of the United States, was employed to assist them and to make a plan of the route and an estimate of the cost of building the canal. It really seemed as if some progress was to be made this time, but the stirring events of the period brought about another interruption. This interruption, however, came from such a source that there must be a

disposition to pardon it even on the part of Cape Codders. The responsible person was no less than the Father of His Country. General Washington needed Engineer Machin for departmental work, and he wrote to Mr. Bowdoin, the chairman of the committee, on June 10, 1776, regretting that the action was necessary, and at the same time referring to the departure of the troops from Boston. The next committee to consider the question was appointed in 1791. The General Court offered to authorize anybody to construct the canal with the privilege of collecting toll from all shipping passing through it. Various legislatures heard proposals until 1824, when the supervision of canals and waterways was taken over by the National Government. Year after year the new committees were appointed and new surveys were made, but nothing was ever done in a definite way. As late as 1893 false starts were made. But delays occurred one after another. Only a month or two ago the last preparatory step was taken when the long-threatened fight between two companies, each of which wanted to build the canal, came to an end and the company which is at last to construct the Cape Cod ditch, the Boston, Cape Cod and New York Canal Company, asked for tenders. The work, it is estimated, will require in the building about two and a half years, and the cost will run close to \$12,000,000. The completion of the canal will make an almost unbroken waterway inland from Boston to Florida, and canal-boats with cargoes of grain and coal can find a safe passage

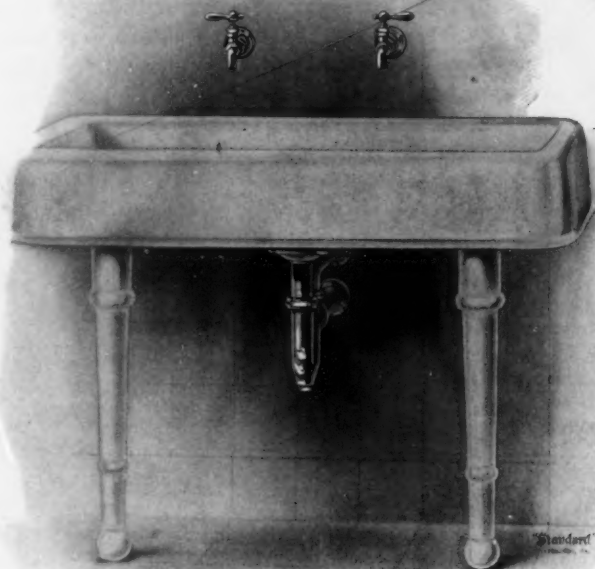
from the Great Lakes and inland points to Boston without breaking cargoes.

GERMAN TIMBER GROWING.—Consul J. I. Brittain, of Kehl, sends the following information regarding the amount of timber produced in the German province of Alsace-Lorraine:

"The wood-cutting in the demesial forests of Alsace-Lorraine, Germany, will produce this year in all 18,022,219 cubic feet of timber of all sorts—6,757,369 cubic feet of timber suitable for construction purposes, and 11,264,850 cubic feet of fuel wood. Of the different species of trees the oaks will furnish 1,033,381 cubic feet of construction timber and 1,610,952 cubic feet of fuel wood, the beach trees will furnish 978,856 cubic feet of building timber and 6,628,883 cubic feet of fuel wood, the pine trees will furnish 4,648,468 cubic feet of building timber and 2,298,178 cubic feet of fuel wood; the other species will furnish 96,907 cubic feet of building timber and 734,890 cubic feet of fuel wood.

"The Province of Lorraine alone will furnish 8,986,226 cubic feet of timber, of which 3,410,254 cubic feet consists of building timber and 5,504,340 cubic feet consists of fuel wood. In addition to this, Lorraine furnishes 1,289,350 cubic feet of brush-wood used for kindling and small willow used in making baskets. It also furnishes 8,970 cubic feet of stumps and roots, which are carefully gathered together and used for fuel.

"Lower Alsace follows Lorraine with 7,438,644 cubic feet of timber, with 1,467,863



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cubic metres of building timber and 4,622,908 cubic feet of fuel timber. Upper Alsace furnishes only 1,618,329 cubic feet of timber, of which 556,351 cubic feet are used for building purposes and 1,065,978 cubic feet for fuel. The timber is cut each year on the demesial grounds and sold to the public. The mountains are never entirely denuded of timber over any large territory or area, and small strips are indicated for cutting by the authorities, and thick forests are frequently thinned out. All the underbrush and small branches are sold in bundles for fuel. Aside from the large amount of timber furnished by the forests of Baden and Alsace-Lorraine, new timber is constantly being planted to supply the wants of future generations. The forests are provided with splendid drives and walks, making them at all times accessible to tourists. On Sundays the trains in Alsace-Lorraine and Baden are crowded with people from the cities and towns who spend the day in the forests."

STRENGTH OF SOLDERED JOINTS.—The strength of soldered joints has been found in thesis tests recently made at the Iowa State College to be a very uncertain quantity, varying widely with the composition of the solder, with the method of making the joint, and with the kind of metals joined. It was found, says the *Engineering Record*, that the process known as "sweating" results in a joint of the least strength of any of the methods of soldering; all joints made with pressure were invariably found to be more or less granular or spongy, while those made without pressure are

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usually smooth and firm. In comparing different compositions of solder, it was found that a solder of 60 per cent. of tin to 40 per cent. of lead was the most suitable for general work in which considerable mechanical strength is required, although the actual strength of the joint was found to depend upon the kinds of metals joined. In a series of joints made on brass and on copper with solders containing from 35 to 70 per cent. of tin, practically all of them broke at loads under 13,000 pounds per square inch. The maximum strengths on copper were obtained with 60 per cent. solders, the strength declining rapidly with higher percentages; this peculiarity on copper was believed to be due to the difficulty of maintaining the proper temperature in soldering, as with a slight excess of heat the extreme fluidity of the high percentage compositions of solder cause it to run out of the joint. With brass, on the other hand, the strength increases as the proportion of tin in the solder is increased. In further tests to determine the life of soldered joints under light loads, it was found that joints on brass have a longer life under a given load than those on copper. An interesting feature of the observations made in the tests is that the time taken to break a soldered joint is an important factor in the results secured. All joints will, after a short time, fail under a stress much less than that required to produce failure at

once; it was found in many instances that a decrease of 5 seconds in the total time of testing would increase the strength of the joint from 4,000 pounds to 5,000 pounds per square inch, the total time of testing being usually 20 to 25 seconds. The maximum strength obtained was 25,900 pounds per square inch, in the case of a joint on copper with a 60 per cent. solder the total time of testing having been shortened to 20 seconds.

COMPETITIONS

NEW COUNTY HALL.

Supplemental notes for addition to the conditions issued to competitors for designs for the New County Hall, London.

(a) Any further information required by competitors must be applied for to the Assessors and addressed to the County Hall, Spring Gardens, London, S. W., in the form of separate questions on or before Wednesday the 1st day of May, 1907, after which date no further questions can be considered.

(b) These questions which it is necessary to answer will be replied to, and the information supplied to all competitors; such replies will then form part of the conditions.

(c) For the immediate information of competitors, the scale for the Drawings for the Preliminary Competition has been definitely decided by the Council to be 16 feet to an inch; and in view of the possibility of most of the competitors having con-



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siderably advanced their design, no alteration in the scale can now be made.

28th March, 1907.

For further particulars see issue of March 9, 1907.

BUILDING NEWS.

(The editors greatly desire to receive information from the smaller and outlying towns as well as from the larger cities.)

AKRON, O.—J. Milton Dyer, of Cleveland, O., is preparing plans for a church building for St. Paul's Episcopal Church. Plans will be received by the vestry within a week and bids will be called for.

ALBANY, GA.—The United States Government has purchased a lot in this city for erection of a United States postoffice and courthouse, to cost \$112,500, exclusive of price of land. James Knox Taylor is supervising architect.

ALLEGHENY, PA.—Mayor Chas. F. Kirschler in his annual message recommends the erection of a new municipal building.

ARVERNE, N. Y.—Lewis H. May Co. has sold for the Arverne-by-the-Sea Co. a plot of fifteen lots on the east side of Amerman avenue, fronting on the ocean at Arverne, L. I. The purchaser, Max Gold, will erect a seven-story brick hotel at a cost of \$150,000.

ATHENS, GA.—Reports state that a \$100,000 hotel is to be erected on the plot purchased last week for that purpose.

ATLANTA, GA.—The County Commissioners, it is stated, have decided to erect a

courthouse to cost \$300,000 on the site of the present structure.

A permit has been granted to J. H. Smith, according to reports, to erect a three-story apartment house at 130 W. Peachtree street of brick and stone and cost about \$50,000.

The officers and employees of the Southern Railroad are said to be contemplating the erection of a hospital here at a cost of \$200,000 for railroad men and their families, as a memorial to the late Samuel Spencer.

It is said that improvements will be made to the Atlanta Federal prison to cost about \$400,000.

AUGUSTA, GA.—It is reported that the Young Men's Library Association will probably expend \$50,000 for the erection of a library building.

Union Savings Bank, it is said, will erect a modern steel building, probably ten stories high, 23x225 feet. William Schweigert, president.

BELLEFONTAINE, O.—L. B. Stough, Clerk of the Board of Education, writes that Searles, Hirsch & Gavin, of Cleveland, have been selected to prepare plans for a high school, to cost about \$50,000.

BELOIT, WIS.—The Masonic lodges are discussing the building of a \$40,000 temple, E. B. Kilburn, secretary.

BIRMINGHAM, ALA.—A. S. Hertz, of Montgomery, it is reported, is contemplating the erection of a \$75,000 hotel here.

Thornton Marye, of Atlanta, Ga., is stated to have prepared plans for an edifice which is to be erected by the members of the Five Points Methodist Church at a cost of about \$60,000.

BISHOPVILLE, S. C.—Reports state that Lee County Commissioners have selected C. C. Wilson, Columbia, S. C., to prepare plans and specifications for proposed new courthouse.

BOWLING GREEN, KY.—According to reports this city will build a \$100,000 custom house. Address the Mayor, Bowling Green, Ky.

BUCKEYE LAKE, O.—C. F. Joyce, of Columbus, O., it is said, is organizing a company to erect a hotel building containing 100 rooms here.

BUFFALO, N. Y.—It is reported that Dr. Charles Colton, Bishop of Buffalo, has arranged for construction of a five-story brick stone-trimmed addition to the Holy Angels' Academy, 158x48 feet, to be built on Porter avenue, between Fargo and Prospect avenues, at a cost of \$100,000.

BUTTE, MONT.—The Y. M. C. A., it is said, has secured a site at Alaska and Granite streets on which to erect a building to cost \$240,000. Link & Haire, architects, have plans for a five-story building.

CAMBRIDGE, MASS.—Mrs. David P. Kimball, of Boston, it is stated, has given \$70,000 to Radcliffe College to erect a four-story dormitory to be known as Grace Hopkinson Eliot Hall in honor of the wife of President Eliot of Harvard.

CAMDEN, N. J.—The Camden Aerie of Eagles, A. J. Oberst, chairman, 809 South Fifth street, are receiving competitive plans for a three-story clubhouse. Estimated cost about \$50,000.

CARTHAGE, ILL.—William Pore, of Pittsburgh, Pa., is reported to have given \$25,000 to Carthage College toward the \$200,000

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which is to be raised in order to secure the erection of a Carnegie Science Hall by Andrew Carnegie. There is \$75,000 yet to be raised.

CHARLESTON, W. VA.—Reports state that the State Street Methodist Church will erect a stone edifice costing \$50,000. Rev. H. D. Clark, pastor.

CHARLOTTE, N. C.—W. P. and W. C. Dowd, it is said, will erect a building to cost \$50,000.

CHICAGO, ILL.—It is stated that the members of the Evangelical Lutheran Emmanuel Church, of South Chicago, purpose erecting an edifice at 931 Houston avenue, costing about \$35,000.

The International Harvester Co. is stated to have had plans prepared for a seven-story, 590x412 feet warehouse, to be erected at Blue Island avenue and Leavitt street, at a cost of \$600,000.

Shepley, Rutan & Coolidge, 84 Van Buren street, are preparing plans for a hospital building, to be erected at Congress and Woods streets, for the Presbyterian Hospital, 300 South Wood street. The building will be six stories high, 75x100 feet, built of brick and stone, fireproof construction, with plate glass, oak and birch finish, iron work, combination light fixtures, nickel plumbing, etc. Estimated cost, \$400,000.

George S. Kingsley, 36 La Salle street, is taking figures on an apartment building which will contain 86 flats, to be erected at Irving Park boulevard and Sheridan road, for Walter S. Bogle, 303 Dearborn street. It will be three stories high, 316x140x44 feet, built of pressed brick, with stone trimmings, composition roof, plate glass, hardwood finish, maple and oak floors, combina-

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tion light fixtures, mantels, nickel plumbing and galvanized cornices. Cost, \$150,000.

CINCINNATI, O.—The Cincinnati Union Terminal Co. (Otto Armleder, president) is reported to be contemplating the erection of a union depot at Eighth street and Central avenue.

Samuel Hannaford & Sons, architects, Hulbert Block, have been retained to prepare plans for a group of buildings, to be erected at Montgomery road and Carthage avenue, for Henry Moeller, Roman Catholic Archbishop, Cincinnati, 636 West Eighth street. The group will consist of the following buildings: Archbishop's palace, to cost \$80,000; senior seminary building, to cost \$250,000; priests' house, parochial school and cathedral building, to cost \$1,000,000.

CLEVELAND, O.—Abram Garfield, Garfield Building, is stated to be the architect for the buildings to be erected by the members of the County Club.

The Odd Fellows' Temple Company has been incorporated with a capital of \$50,000

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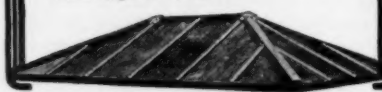
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to erect a seven-story building. G. W. F. Alexander, Charles J. Merton and James A. Cannon are interested.

CRESSON, PA.—Schollar & Hersh, Altoona Trust Building, Altoona, Pa., have completed plans for Orphan Asylum, to be erected by Altoona Diocese, care of Rev. Eugene A. Garvey, 1221 Thirteenth Street, Altoona. Structure will be erected on Keystone Avenue, Cresson. Brick, stone and steel construction, three stories, 100x100. Cost, \$75,000. It is reported that work will be done by P. W. Finn, Altoona, on percentage basis.

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R U B B E R T I L I N G

CRANDON, WIS.—It is reported that the erection of a \$60,000 school is contemplated.

DALLAS, TEXAS.—Plans prepared by Sanguinett, Staats & Hill have been completed for proposed edifice to be erected by the First Methodist Church; 100x100 feet; seating capacity, 2,000; cost, \$100,000.

DES MOINES, IA.—It is stated that steps are being taken to erect a four-story wing to the Mercy Hospital by the Sisters of Mercy, at a cost of about \$50,000.

Hallett & Rawson, architects, have plans for a brick building to be erected at W. Ninth and Locust streets, for the Ewing Improvement Co. It will be three-story, 135x190. Cost, \$100,000.

Bids will be received until May 7 by the Independent School District, of Capital Park, Des Moines (George W. Franklin, secretary), for erecting an addition to the Logan School. W. R. Parsons & Sons Co., architects, 317 E. Fifth street.

The Board of Supervisors is stated to be seeking a site on which to erect a juvenile detention home. A building costing about \$50,000 is reported contemplated.

J. K. & W. H. Gilcrest, of the Gilcrest Lumber Company, will erect an eight-story brick building at Sixth and High streets at a cost of \$60,000.

DETROIT, MICH.—St. John's parish proposes to erect a new edifice here. Plans not yet completed. D. Riebel & Sons, architects, Columbus, O.

DULUTH, MINN.—It is announced that the United States Steel Corporation will establish an iron and steel plant in Duluth to cost \$5,000,000 to \$6,000,000.

KEYSTONE FLAT FINISH

DURHAM, N. C.—The members of the Main street Methodist Church, it is reported, will erect a \$130,000 edifice. Address B. W. Duke, trustee.

ELKINS, W. VA.—It is stated that the erection of school buildings costing about \$100,000 is contemplated.

ELLISVILLE, MISS.—Bids will be received by the Board of Supervisors of Jones county, Miss., until May 6 for the erection of two courthouses, one at Ellisville and the other at Laurel, according to plans by P. J. Krouse, Meridian, Miss.

EL PASO, TEXAS.—Dr. E. R. Carpenter and others have organized a company and have purchased the corner of Magoffin and San Antonio streets and will erect a modern six-story business and apartment house block. Estimated cost, \$125,000.

FAIRVIEW, PA.—The erection of a State Hospital for the Criminal Insane at Fairview is reported under consideration. Probable cost, \$150,000. C. J. M. Shirk, of Philadelphia, is stated to be the architect for the Commission.

FORT D. A. RUSSELL, WYO.—It is reported that plans have been completed for a military hospital to be erected at a cost of \$125,000 at this post. Capt. V. K. Hart, Cheyenne, is Construction Quartermaster.

FORT LOGAN, COLO.—Bids are asked by Captain Wilson Chase, Constructing Quartermaster, until 10 A.M., April 27, for con-

structing additions to hospital, including all buildings, heating, plumbing, wiring and lighting fixtures.

FT. WORTH, TEX.—A. T. Byers is said to be contemplating the erection of a ten-story office-building at Seventh and Main Streets.

Smith & Schenk, it is stated, have prepared plans for a fireproof hotel; eleven stories and basement; foundation 100x120 feet.

FRESNO, CAL.—The Methodists are said to be contemplating the founding of a college in this city and erecting an administration building costing \$50,000, and two dormitories each costing \$25,000. Rev. J. A. Bachellor, of Oakland, may be able to give further information.

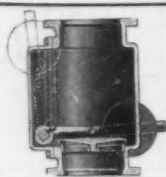
GAINESVILLE, FLA.—The Masons are said to be contemplating the erection of a two-story temple at W. Main and E. Court street.

GRAFTON, N. D.—Dr. L. B. Baldwin, of the State Institution, it is stated, is having plans drawn for improvements and additions to the Institution building. There will be an addition and a new power house.

GREENSBURG, IND.—The trustees of the Grand Lodge, I. O. O. F., of Indiana, are considering plans for the erection of a large hospital building at the Odd Fellows' Home in this city.

HARRISBURG, N. Y.—Reports state that a company has been formed and is planning to build an up-to-date modern hotel here, to cost about \$500,000.

HARTFORD, CONN.—Plans are being prepared by Messrs. Cram, Goodhue & Ferguson, 170 Fifth avenue, New York, for a



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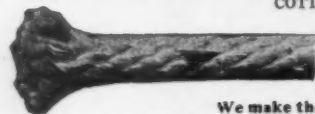
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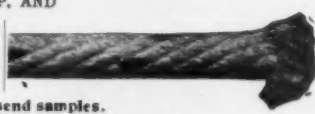
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church for St. John's Episcopal Congregation at Hartford. Rev. J. W. Bradin, 84 Vernon street, Hartford, pastor. The structure will be of seam face trap rock, with concrete trimmings.

HARTSVILLE, TENN.—A. C. Welch, J. W. Rankin and associates are reported to be planning to erect a hotel.

HOWARD, KAN.—We are advised that Architect G. E. McDonald, 716 Paseo, Kansas City, Mo., has completed the plans of the new Elk County Court-house to be erected at Howard, Kan. Tile roof, reinforced concrete, brick walls, hardwood finish, tile floors, steel beams and fireproof construction throughout; approximate cost, \$45,000. Contract to be let May 17; plans may be had of the architect.

INDIANA HARBOR, IND.—B. & M. Cohen, of Whiting, it is reported, have accepted plans prepared by Franz Roy, of Chicago, Ill., for a four-story office and hall building to be erected here at an estimated cost of \$65,000.

INDIANAPOLIS, IND.—It is reported that the Grand Opera House Co. intends erecting a \$150,000 opera house on N. Pennsylvania avenue.

The Masons are reported to be contemplating the erection of a \$100,000 building at Illinois and North streets.

Plans have been prepared by the same architect for the Richcreek Bank and office building to be erected on the site of the Phoenix Block at the corner of Market and Delaware streets. The building will be 78½x67½ feet, ten stories high, and will cost about \$200,000.

JACKSON, MISS.—Local capitalists are con-

KEYSTONE

FLAT FINISH

sidering the rebuilding of the Norvelle Hotel, destroyed by fire two years ago. Address Jones & Carnes.

KANKAKEE, ILL.—The erection of a Y. M. C. A. building is reported contemplated. About \$55,000 is available at present.

KENORA, SASK.—The Kenora Tourist Hotel Co., Limited, it is said, will erect a hotel to cost \$150,000.

LAFAYETTE, IND.—Bids are asked by James Knox Taylor, supervising architect, Washington, D. C., until 3 p. m., May 7, for the construction, including plumbing, heating apparatus and electric work, of an extension to the United States postoffice at Lafayette.

LANESBORO, MASS.—At the town meeting the Selectmen and Treasurer were authorized to secure plans and estimates for a new town hall and library building combined.

LEXINGTON, KY.—The Bible College of Kentucky University is planning the erection of a dormitory to cost between \$50,000 and \$60,000. No plans have yet been made, nor has an architect been selected. Rev. J. W. McGarvey, president, should be addressed.

LINCOLN, NEB.—The erection of a Y. W. C. A. building to cost about \$40,000 is reported under consideration.

LITTLE ROCK, ARK.—The Sisters of Mercy will erect a convent, 100x200 feet. Plans have been prepared by Architect Charles L. Thompson, Arkansas Building.

LONG BEACH, CAL.—G. T. Norton, Byrne

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Building, Los Angeles, is stated to be the architect for the four-story apartment house which is to be erected on American avenue by M. Howitz, of Los Angeles, at a cost of about \$50,000.

LONG ISLAND CITY, L. I., N. Y.—Theo. Engelhardt, of New York City, is reported to have prepared plans for an edifice which is to be erected in Lutheran Cemetery, Middle Village, for the Lutherans, at a cost, including furnishings, of about \$65,000.

LORAIN, O.—The members of the Black River Lodge of Odd Fellows will erect a \$75,000 building.

LOS ANGELES, CAL.—The Los Angeles Athletic Club, 534 South Spring street, has purchased the Hotel Baltimore, on Seventh and Olive streets and will erect a new club building on the site of the hotel. Improvements involving the expenditure of \$1,000,000 will be made.

LOUISVILLE, KY.—Dr. T. C. Evans, it is stated, has purchased a site 80x200 feet and is having plans prepared for an apartment house costing between \$75,000 and \$100,000.

MANSFIELD, MASS.—The erection of a \$60,000 hotel is contemplated by Walter M. Lowney, 447 Commercial street, Boston.

MEMPHIS, TENN.—Henry Weissenbach, it is stated, has organized a company with a capital of \$100,000 to erect a department store.

MERIDIAN, MISS.—Alabama & Vicksburg Railway will receive bids for construction of terminals. It will erect two warehouses and an office building at a cost of \$100,000. D. D. Curran, vice-president and general manager, 839 Gravier street, New Orleans, La.

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The American Architect and Building News.

Vol. XCI.

SATURDAY, APRIL 20, 1907.

A Journal of
Constructive and Decorative Art
Published Every Saturday by
THE AMERICAN ARCHITECT
(Incorporated)
No. 12 West 40th St., New York
REGULAR EDITION - - - - \$6.00 a year
Single Copies from 15 to 50 cents.
INTERNATIONAL EDITION - - - \$16.00 a year
Single copies from 40 to 75 cents.
Entered at the Post-office, New York, as Second Class Matter.
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SOCIETIES, PERSONAL MENTION, ETC.	

IT is the experience of those who have served as expert-advisers that the average building-committee is made up of sensible, well-intentioned men, distinctly amenable to guidance. The inference is, then, that building-committees which have not had the forethought to seek the counsel of an expert-adviser also consist of well-intentioned men, who mean, and are trying, to deal fairly. A large part of the "competition evil" would vanish if there could be devised some way of rounding-up and posting new building-committees before they had committed themselves, through uninstructed action, to unfair or, at least, impossible programme conditions. A case in point is afforded by the competition for the new quarters of the Lotos Club, New York. Here seventeen architects were invited to compete in a limited, but unpaid, competition, and on reading the programme thirteen of them united in declaring the conditions "unusual" and asked for a joint conference with the building-committee, in order that the terms might be reconsidered and restated. This the committee declined to do, arguing that, since three competitors had accepted the terms and were already at work, they were in honor bound to stand by the programme as issued. The committee's action was honorable, well-intentioned and not unreasonable; but it was none the less mistaken and unnecessary. The committee evidently felt that in assuring the job to the winner at the full five per cent. rate, or a reasonable prize to the best design in case no one won, and in making it plain that the competitive designs were to be fairly considered and adjudged without favor, they had done all that the accepted rules of practice demanded. To be sure, no promise was made that an expert-

adviser would be called in, but, then, everyone could see for himself that one of the committeemen was a man whose judgment deserved consideration and respect.

BUT, lacking competent guidance, the committee did not comprehend that their problem had "unusual" conditions, and so demanded unusual treatment, or, rather, such treatment as is usually accorded to unusual conditions. Passing over the fact that, for a limited and unpaid competition, the number of invited competitors was unusually and needlessly large, we find that the problem to be solved consists in the transformation into a convenient and fireproof club-house of an apartment-house built some years ago; and, further, that it involves the transfer and reinstallation in the new building of certain portions of the present club-house situate in another part of the city. In other words, the problem is distinctly one of "alterations," and so does not fall under the five per cent. rule. At the conference suggested it would have been made clear at once that the competitors, having each to examine and measure, not one existing building, but two, would be put to greater expense than usual, and that this should be allowed for both in the compensation of the winner and in the amount and number of the prizes offered as consolation to the unsuccessful. It would have taken but a short argument to satisfy a committee such as the one in control that their problem was not yet in condition to submit to architects and that, in fairness, they should relieve the competitors of an unnecessary duplicating of expenses by themselves providing a certified description of the present buildings, properly dimensioned.

UNFORTUNATELY, as we believe they will agree, the committee was not caught in time, and that is usually the case with such bodies. It is a condition that perennially confronts the profession, the same that so troubled the notable Mrs. Glass, and it is high time that architects tried to do something effective to catch their hares. How to instruct the public and prevent these easily remediable blunderings is the real problem to be solved, and we think it can be partly solved if the several architectural organizations will open their eyes to the fact that advertising is one of the most potent weapons in the arsenal of commercial life, and hardly less so in all other fields where real progress is making. Without exception, we believe, the important daily papers maintain a real-estate and building-news department, which receives a considerable expansion in one issue for each week. It seems to us that an announcement always appearing at the head of such departments, to the effect that the local organization of architects stands ready to aid building-committees in preparing competition-programmes so that they will attract in place of repelling the desired competitors, should enable the catching in time of a good many lagomorphic committees.

TWO matters of extreme interest have been if not developed yet at least hinted at, in the matter of the Pennsylvania Capitol scandal since we last wrote. It will be recalled that the ladies of Harrisburg, some years

since, had to unite in public protest to prevent the destruction of the grove of fine trees in the Capitol grounds which Mr. Huston was desirous of removing *in toto* in order that he might have space enough for his "approaches." It is now said to be disclosed by the granite dealers who had figured on this proposed embellishment that, if these approaches and their allied walls, balustrades, etc., had been carried out as designed by Mr. Huston, the total cost of the Capitol, in place of being thirteen millions as now, would have been over thirty millions! The ladies have a right to be acclaimed real economists. The second matter is the interesting possibility that, at length, the history of the connection of Mr. Henry Ives Cobb with the building in all its particulars may be known. Mr. Cobb, it will be remembered, was the architect into whose hands, as the result of the early unpleasant competitions, was placed the task of producing for the appropriated \$500,000 a "complete" and "fireproof" building in time for the ensuing legislative session. He actually produced a partially fireproof and very incomplete brick structure which his final drawings showed was intended to be but the central portion of a much larger and more elaborate building, after being clad inside and out with marble. Just why Mr. Cobb was not allowed to carry out his ideas, while Mr. Huston was, it would be very interesting to know, and Mr. Cobb is desirous that it shall be known, for he is pressing to obtain leave to sue the State of Pennsylvania for an architect's commission on the building as it stands, alleging that Mr. Huston made use of the designs he left on file behind him. Further, it is alleged that a draughtsman has been found willing to testify that he was employed by Mr. Huston to copy the Cobb drawings, being kept *perdu* while doing so.

IT seems to us that Pennsylvania is hardly happy in inventing a new name for a very useful adjunct of municipal government which has long been known in other communities by another and better name. "Municipal Art Jury" seems less dignified than "Municipal Art Commission," and by the public it is likely to be thought of only as a body, in some way and at some time, concerned with the receiving and hanging of pictures. However, the power rather than the name of the body is the thing of real concern. This new jury, if the bill is passed, comes into being in cities of the first class—and as there is at the moment only one such city in the State, it concerns for the present Philadelphia alone—on the appointment by the Mayor of nine members, including himself. Among them are to be a painter, a sculptor, an architect, a member of the park commission and four others, selected from the governing and teaching forces of the schools of art or architecture in the city. These men are to serve without pay—and we hope that this sensible provision may never be varied from in any American community—and are to have cognizance of and control over the same matters and undertakings that fall under the consideration of similar bodies in other cities. We think that the public is coming to understand that a Municipal Art Commission is of quite as much importance to a city's real welfare as its school-committee.

THE smug and self-satisfied provincialism of New York has been shown in nothing more than in the way it has shut its eyes to the fact that as an advantageous centre for their exploitation, Philadelphia, Pittsburgh, Chicago and even Boston are of more value to American artists than is its metropolitan self. The artists themselves have not been blind to this, nor have they been voiceless sufferers, but as the problem is one which they cannot handle alone, one that they should not be expected to cope with unaided, they have been able to accomplish little. Feeling that at length enough missionary work may have been done, the Council of the National Academy of Design has just issued an appeal to the public for material aid toward the erection of an exhibition building which will allow the exhibitions of the National Academy to rank with those held in Philadelphia and Pittsburgh. As the interest of the public in the permanent collections at the Metropolitan Museum of Art manifestly grows with the expansion of those collections, the public doubtless will assent to the proposition that it has a very real concern in the character of the temporary exhibitions that the National Academy undertakes to provide, and so may be counted on as willing to aid any well-considered scheme that may be formulated.

THE death of Osborne Howes, of Brookline, Mass., last week, in his sixty-first year, puts an end to the career of a very active-minded and useful citizen, one to whose well-directed efforts the country at large and those interested in buildings in particular are under much the same sort of obligation as they owed to the late Edward Atkinson. After an early life of a rather adventurous type, Mr. Howes engaged in newspaper work in New York, and at the time of the great Boston fire he was, through his intimate knowledge of that city where he was born, able to expand for the *New York Times* into a most readable, full and generally accurate account of the progress of the fire the brief and disjointed messages that trickled over the wires, thus enabling the *Times* to eclipse its metropolitan rivals. He was always particularly proud of this piece of work, and it seems not unlikely that the performance was the cause of his being asked to return to Boston the following year to become secretary to the Boston Board of Fire Underwriters, an office he held up to the time of his death, and through which, as Boston architects know, he was able to exert a very real influence on the building methods of the community. As editorial writer on the *Boston Globe*, and later on the *Boston Herald*, Mr. Howes was able to continue in the newspaper field up to the time of his death, and much of the sane and sound counselling contained in the latter journal has been due to his prompt and careful consideration. Politically a Mugwump and Free-trader, he was a member of many influential commercial bodies, and was frequently appointed by the State to a place on important commissions. His early life at sea made him always peculiarly interested in shipping matters, and caused him in 1891 to persuade the Legislature to establish the Nautical Training School, which is now maintained on the U. S. S. "Enterprise."

A FINAL REPORT ON THE SAN FRANCISCO DISASTER.¹—II.

CONCLUSIONS AS TO EARTHQUAKE DAMAGE.

THE writers offer the following as conclusions based upon a study of the effects of the earthquake. These conclusions are offered for the reason that it is recognized to be impossible to set forth in a partial description a full idea of the damage.

The effect of the earth motion is to set a building in motion. The structure is thus subjected to all the stresses occurring in a truss sustaining a live load. The amounts of the stresses are unknown, and cannot be predicted, as the intensity of the shock is unknown. Obviously, the shock may range from a tremor to that of a violence that would wreck any building. Again, should the earth-slip take place beneath a building, it would be wrecked. Sufficient evidence is at hand to warrant the statement that a building designed with a proper system of bracing to withstand wind at a pressure of 30 pounds per square foot will resist safely the stresses caused by a shock of an intensity equal to that of the recent earthquake in California.

The prime requisite of the structure is elasticity. This must be understood as the ability of a structure to return to its original form after distortion. This elasticity allows the building to absorb the motion of the earth, where a more rigid structure would be ruptured.

To this requirement, the building with a timber or steel frame answers very well. The reinforced-concrete structure does so also, with the exceptions noted below. The building with stone, brick or block construction, having horizontal mortar-joints, does not answer the requirement at all. It may be stated, as one of the most obvious lessons of the earthquake, that brick walls, or walls of brick faced with stone, when without an interior frame of steel, are hopelessly inadequate. As a method of building in earthquake countries, such types are completely discredited.

To resist the shearing effect of the horizontal earth motion, vertical members are necessary. The shear is transformed into diagonal forces, which appear as stresses in diagonal and horizontal members. There was probably no better illustrated lesson of the existence of diagonal stresses than that offered by the innumerable instances of the cracking of brick and stone work along diagonal lines. In relation to this, it may be stated that a brick spandrel wall adds little, if any, to the bracing of a steel frame. Many of such walls were cracked badly, and moved on the supporting girder. No reliance should be placed upon them, as they are open to all the objections stated in connection with brick walls in general. The well-designed steel frame offers the best solution of the question of an earthquake-proof building, as all the stresses can be cared for. The well-designed timber-framed house is also adequate. A reinforced-concrete building offers a solution, but is open to the following objections:

Architectural reasons demand that diagonal bracing shall not be used except on rare occasions. This is overcome by the use of gusset-plate knee-braces and portal-braces in the steel frame. Such design induces severe bending moments in the columns and girders; and in the girders, the moment may be of the opposite character to that of the floor loads, thus producing tension in the upper flange of the girder. As at present designed, no reinforcement is used at that point, and hence such a girder would be defective. Again, it will be found upon analysis that relatively great stresses occur at points where the girders join the columns, especially in the lower floors of tall buildings. Here, again, the reinforced-concrete construction, as now designed, is weak. These remarks are offered more in connection with high buildings. They can be overcome by the designer in reinforced-concrete. All the evidence in the recent shock favors reinforced-concrete, but the writers are of the opinion that the steel frame offers the best solution of the problem.

Foundations did not suffer at all, no instances of any damage having come to hand. Some discussion has taken place as to the advisability of making a monolithic mass under buildings. Several of these have been constructed, such as the Claus Spreckels, Mutual Savings Bank, and Bullock and Jones Buildings. They are all of relatively small base. It is commercially impossible to construct a monolithic base under a building, say, twelve stories high, and having a base of 150 feet. Buildings of that size and larger, with isolated pier foundations, suffered no more than

others. The evidence is that foundations well built, along accepted lines, are adequate. It might be claimed that, if such had been used in large structures, the damage would have been less. The evidence does not point that way, for even if the monolithic base were sufficiently strong to resist the vertical earth motion, the horizontal motion would still vibrate the structure.

Evidence for floors is not conclusive, as all terra-cotta-arch floors were afterward burned. Terra-cotta arches covered with concrete stood without much damage in the brick portion of the Stanford University Museum. The terra-cotta there could not be seen. Analogy with masonry walls would seem to say that many of the joints would be broken. Ordinary concrete floors stood the shock with but little damage.

In the case of partitions, those of terra-cotta tiling were everywhere cracked and opened. It amounted to practical destruction in most cases. In this case, earthquake damage can be distinguished from fire damage. Partitions of metal studs and lath suffered less, but plaster was badly cracked. Nothing seems to be suggested for a partition in which the plaster would not be destroyed.

For rear walls, reinforced concrete offers the best solution, the reinforcing members being tied to the steel frame. A facing of brick or stone could be backed with reinforced concrete. In the case of stone, the parts should be doweled together, and, if possible, all tied to the steel frame. Terra-cotta as a facing for walls is admirable, in this respect, as it offers superior facilities for tying it to the steel frame. For fire and parapet walls, the steel frame should be carried up, and anchors should be provided.

Brick chimneys, large and small, are open to all the objections of brick walls, only in a more marked degree, owing to their isolated design. Reinforced concrete seems to offer the best method for such construction.

Arches with voussairs are not able to resist earthquakes. The motion opens the joints, and the keystones fall, thus thrusting aside the abutments. Evidences of this exist everywhere.

Finally, it may be questioned whether difference in workmanship was not responsible for many of the results. While it is true that good workmanship gave better results than ordinary, it is still the opinion of the writers that it was mainly a question of design. Agnews' Asylum was of brick, laid in a fair grade of lime mortar. Ten miles away, on similar ground, St. Patrick's Academy, of similar design, was of brick, laid in lime and Portland cement, and there was better work than at Agnews'. The damage at the latter place was less than at the former, but, as far as use was concerned, both places were demolished. The tower at St. Patrick's Academy was of brick, laid entirely in Portland cement mortar, and the work was so well done that the brickwork invariably broke through the bricks and not at the joints; yet the tower was completely destroyed; in fact, it was the worst wrecked of all the buildings there.

The writers simply reiterate the statement that, speaking generally, buildings of brick walls and wooden interiors cannot be built which will not be wrecked in a severe shock, it being a fault of design and not of materials or workmanship.

III.—THE FIRE DAMAGE.

Within half an hour after the earthquake shock, the Fire Department of San Francisco had notice of fifty-two different fires. It is probable that others had started. The fire lasted three days, being finally stopped by dynamite, wide streets, and individual efforts. The wharves of the city were saved by State and United States Navy tugs. Only a portion of the residence district was saved. Some isolated fires were extinguished by the Fire Department, using water in the dead ends of mains. The destruction of the supply mains, described in another report, was complete, and hence the entire fire burned without interference. The area destroyed was a trifle in excess of four square miles. It was entirely covered with buildings, excepting where there were lumber-yards. A few isolated blocks escaped, but they are of no interest in connection with this report.

In commenting upon the destruction by this fire, it must be borne in mind that no water was used on any of the materials. Hence, in some cases, the damage is less than it might have been had water reached the materials while they were hot.

Of the buildings within the burned area, estimated at nearly 20,000, only those given in Tables 1 and 2—some 50 or 60—remain standing. All others are completely destroyed, only some brick walls standing here and there. Unless one has been an eyewitness, it is difficult to realize how all materials that men make

¹A report on the San Francisco disaster by the American Society of Civil Engineers, published in the "Proceedings" of that Society, and here continued from page 144, No. 1633.

into the shape of buildings can be so utterly destroyed in a general conflagration. With two exceptions—the Kohl and Atlas Buildings—all the buildings in Tables 1 and 2 were completely burned in the interior, only the frame remaining.

All the business center of the City of Santa Rosa was destroyed, but as only buildings of Type 2 were burned, nothing additional can be learned there, and no further mention will be made of this place.

It would be well to state here that when the phrase "complete destruction" is used, it means that the part is destroyed so that it is unfit for further use. Under this, a disintegrated terra-cotta floor, or a leaning brick wall, or a bent steel beam is "destroyed," even if the part may be again reshaped and used.

No attempt will be made here to describe in detail the amount of destruction of any one building. Cases will be cited illustrating various points. It is believed that a description of the fire effects on different materials and upon their combination will be of more real interest. Reference will only be made to buildings of Types 3 and 4. Types 1 and 2 were completely destroyed, and Type 5 had no example of moment. In Type 2, the city ordinance allowed buildings 100 feet high, if lathed with metal; and of 82 feet, if with wooden lath. No evidence is offered regarding this, as they were all destroyed.

Bearing in mind the definition of "complete destruction," it can be said that all materials were destroyed when directly exposed to the fire for any length of time. Brick, terra-cotta, granite, marble, sandstone, steel, cast-iron, concrete, plaster, cement, timber—all failed. Especial emphasis is placed on this point. Anyone with an interest in any one material can find evidence to support a claim for it; yet, impartial observation leads to the conclusion that, when a material was subjected to what would be considered a test fire, it was destroyed.

Front Walls.—All ordinary methods of construction were exposed to the fire. Granite suffered more than any other stone, spalling badly wherever exposed. Marble fared nearly as badly, and sandstone slightly less. With all, there was complete destruction. No limestone fronts had been used. Of the terra-cotta fronts, most were destroyed, for instance, the Bullock and Jones Buildings. Glazed terra-cotta blocks, used in court walls, were generally cracked. Terra-cotta brick spalled everywhere. The walls of the Mills and Merchants' Exchange Buildings are to be removed. Moulded terra-cotta brick and pressed brick withstood the fire best of all, but were spalled where much exposed. Terra-cotta brick with rounded corners fared best, sharp edges cracking off.

Either stone, brick or terra-cotta was used around windows, and here the damage was the worst. In relation to this, it may be said that terra-cotta is deceptive, in that it retains its form after being destroyed. Many fronts, apparently in good order, must be removed. In the Mills Building, there was hardly a window opening in which the terra-cotta sills, jambs and heads were not badly cracked. From the street, they had the appearance of being in good order. Walls of ordinary red brick and mortar were destroyed in many cases, especially in buildings of Type 2, where the fall of the interior frame pulled down the wall. There are many instances of the integrity of such walls, especially at corners; while many of them were injured in the earthquake, it is not believed that this was a factor of much importance in the fire. The damage to standing walls in all buildings was the spalling of the red brick, sometimes to a depth of one inch.

Foundations.—No foundations were found injured by the fire.

Floors.—Only two kinds of floors were exposed: terra-cotta and concrete. Of the two, terra-cotta suffered the more, being in all cases, where directly exposed, completely destroyed. Terra-cotta floors, built with flat arches and with plaster applied directly, were all destroyed. The general effect was a spalling of the lower section of the tile structure and a disintegration of the mortar joints. The tile also became brittle, breaking with a slight blow. All terra-cotta was of the dense type, no porous tile being used. In the James Flood Building, tile arches were used, being of the regular arch construction. They were covered with four inches of concrete, and protected by a wire-lath ceiling. They escaped injury except where the ceiling lath fell, and there the lower layer spalled off.

Concrete floors generally had hung ceilings, and, where thus protected, were uninjured. Where exposed, the concrete is in most cases destroyed, for instance, in the Sloan, Rialto, and Aronson Buildings, and the Crocker Warehouse. The concrete is dry,

and while in many cases hard, yet all the water has been burned out and it may be said to be destroyed, even if able to support weights. Floor coverings of wood invariably burned, adding to the destruction. Sleepers were generally burned. Surfaces of cement mortar fared much better, the linoleum covering remaining practically intact.

Partitions.—Partitions were of terra-cotta tile, and of wire-lath and plaster, either solid or hollow. All kinds were destroyed. In the tile partitions the mortar joints were disintegrated, the plaster was destroyed, and the tiles were made brittle. One could pull down with the hand any partition in the Mills Building, all of which were of tile. Metal lath and plaster partitions were completely wrecked, but the lath might be considered as salvage. The use of wooden grounds around doors and transoms helped the destruction, but it is difficult to see what would have prevented the damage.

Steel Frame.—The steel frames were the least injured of any part of the various structures. Where properly protected, there was no injury. Where the protection was faulty, or where there was none, the destruction was complete.

Cast-iron columns were used in a few buildings of Type 3. As a rule, not as much care was taken to protect them as in the case of steel columns. Numbers of cases have been observed of the melting of cast-iron columns, especially lugs, in buildings of Type 2. In Type 3, the most conspicuous example is that of the Sloan Building, used as a carpet and furniture store. A number of columns in the basement, covered with one layer of lath and plaster, melted so that the metal ran together into a lump, lowering the floors from one to four feet, and completely wrecking the building. The basement was full of linoleum. In the Wells Fargo Building, with cast-iron columns protected by double lath and plaster, and used as offices, no damage resulted.

Steel columns fared about the same. In the Fairmount Hotel, probably 25 per cent. of the columns was destroyed. These columns had practically no protection, being built in between lath and plaster partitions. These partitions had interior blind spaces of from six to eighteen inches in width, and, in many of the wall columns, the space extended from the first floor to the roof. To stiffen the partitions, studding of timber, 2 by 4 in., 4 by 4 in., and 4 by 6 in., was used everywhere. The burning of the timber directly against the unprotected column, in addition to the general fire, destroyed it.

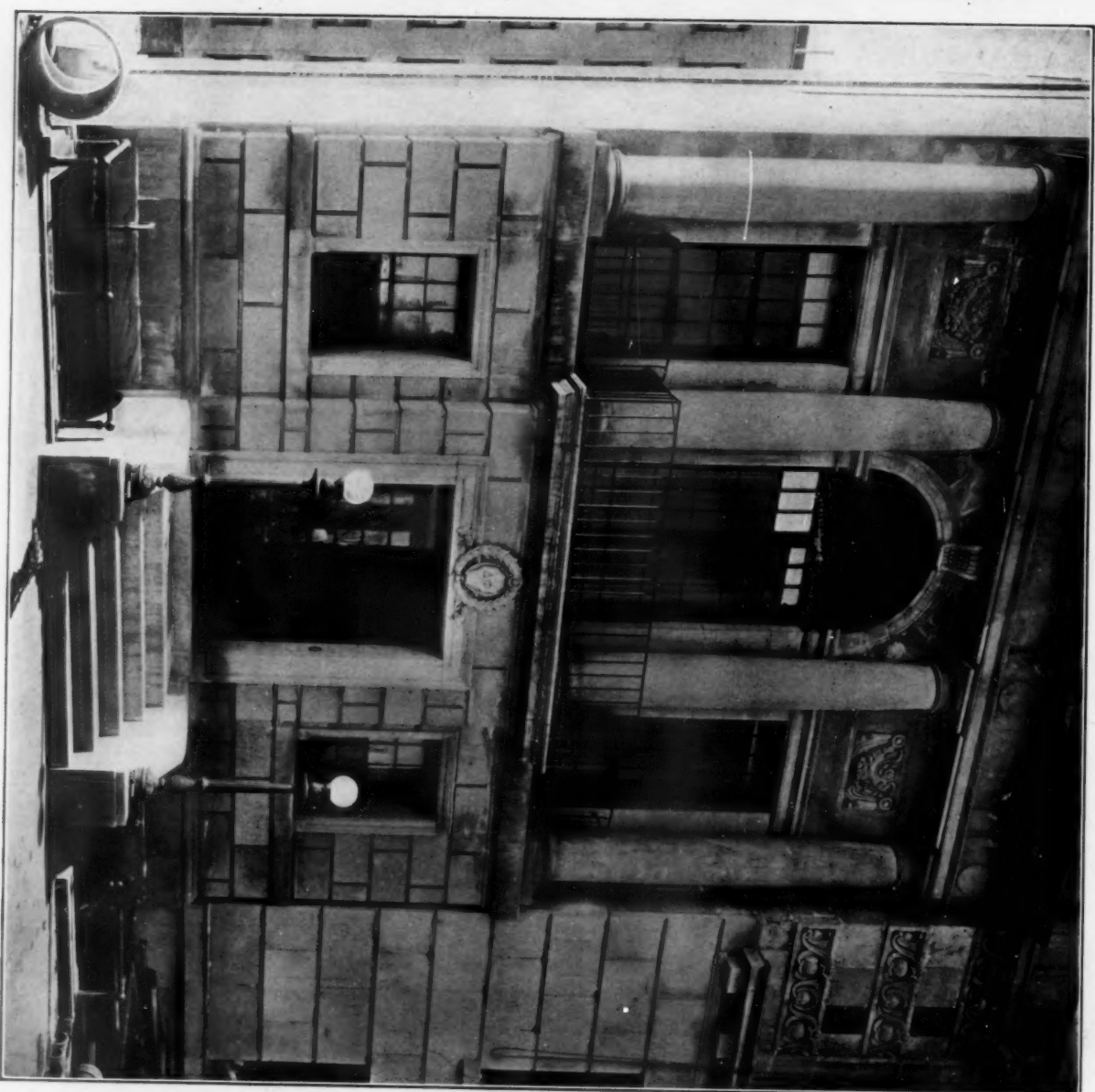
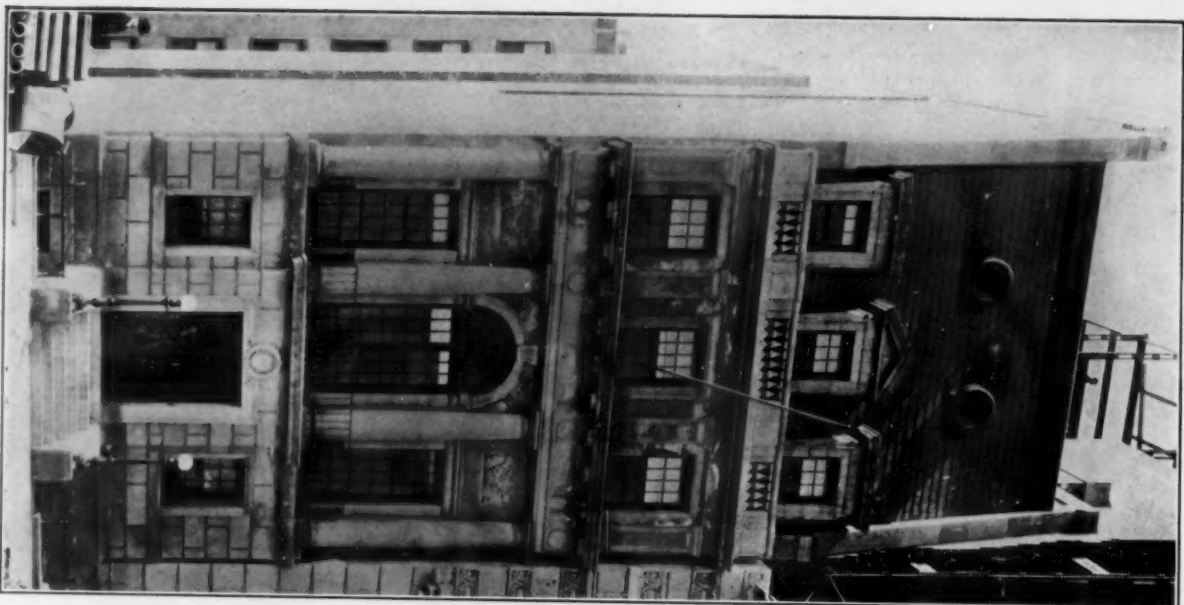
In the Hotel Alexander an apology of wire lath and plaster was used as a fire-proofing. It was cut into everywhere for door frames; and thirty-nine column sections were destroyed. In the Aronson Building, the terra-cotta fire-proofing fell away, and ten column sections were buckled. One case of this kind occurred in the Mills Building, and several columns were bent, for the same reason. One column section was similarly wrecked in the Crocker Building, and two sections were bent in the St. Francis Hotel, where the tile fire-proofing had been cut away to allow the placing of rolling doors. It may be stated that every instance of failure can be thus explained.

Steel beams and girders were bent where unprotected, but remained uninjured otherwise. Much of the injury was suffered in first floors; basement and sidewalk beams, as a rule, having the lower flanges unprotected. Comment on protection is offered below.

Most roofs were simply of beam construction, similar to the floors, but the damage was generally less, owing to the protection afforded by hung ceilings. The trusses in the Mutual Life Building were covered with tile, which failed to protect, allowing the trusses to fall and damaging the supporting columns. A number of roofs were destroyed from lack of adequate protection, generally, where made of terra-cotta, the Crocker and Spring Valley Water Company Buildings being examples.

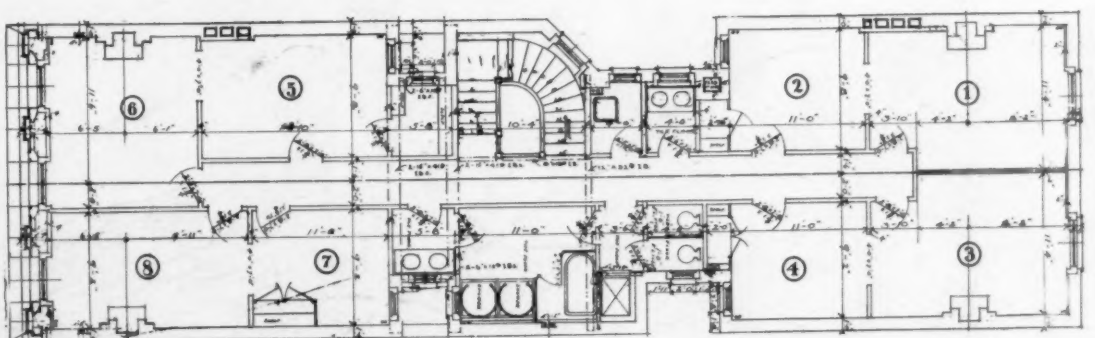
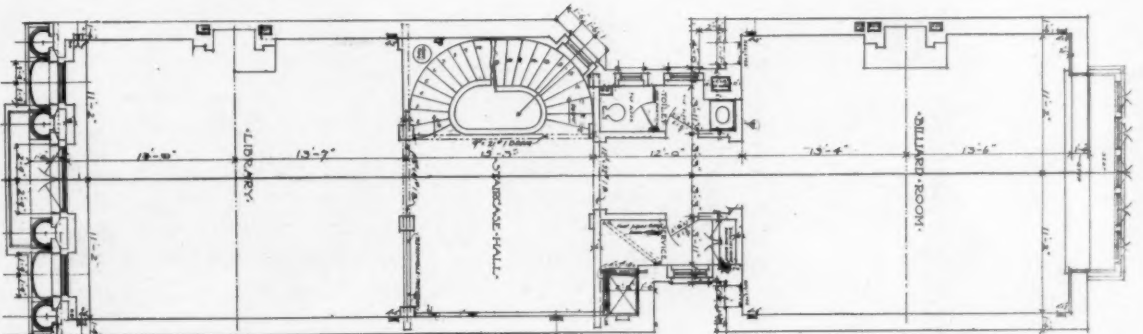
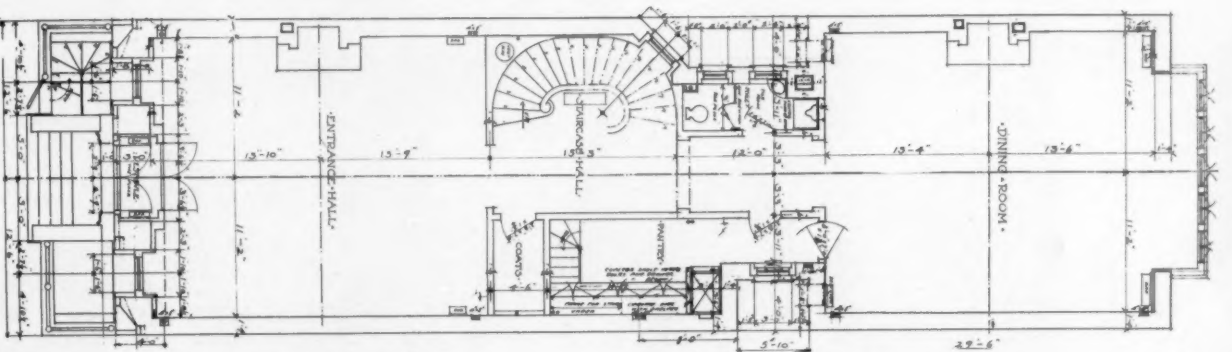
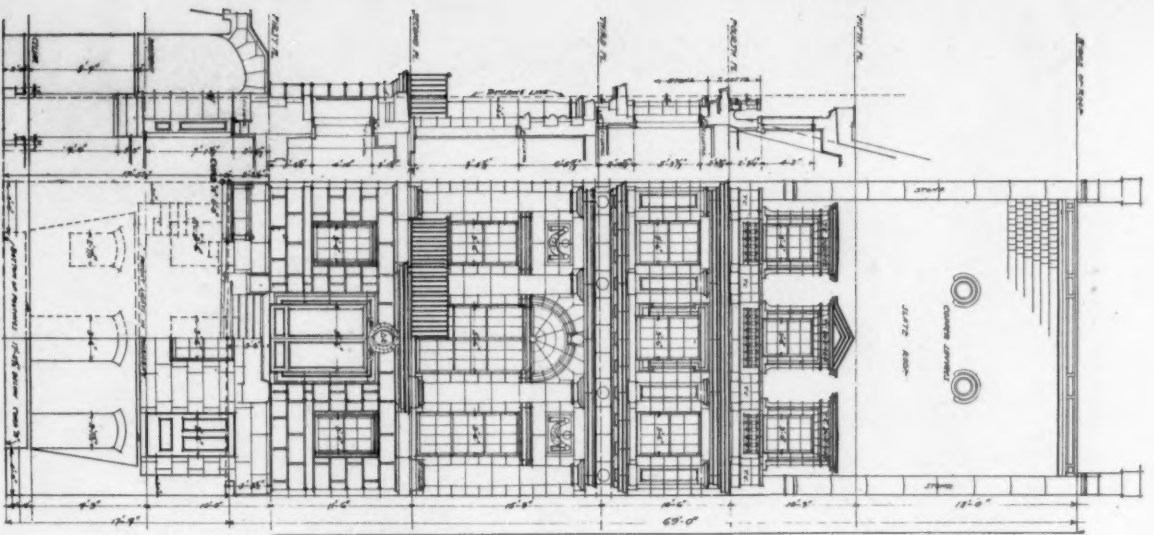
Ceilings.—Where ceilings were made by plastering directly upon terra-cotta flat-floor arches they were completely destroyed. Where metal-lath hung ceilings were used, the plaster was destroyed, but the lath generally remained in place, and was not damaged. Where copper wire was used to fasten the wire lath it failed, dropping the ceiling. Such wire should never be used.

Miscellaneous.—Vaults in offices, where made with doors set in terra-cotta, or wire-lath and plaster box, failed everywhere, the contents being burned. Vaults made with an iron box covered by fire-proofing fared much better. Safe-deposit vaults in the basements of banks were uninjured, which suggest similar devices for the tenants of large buildings.



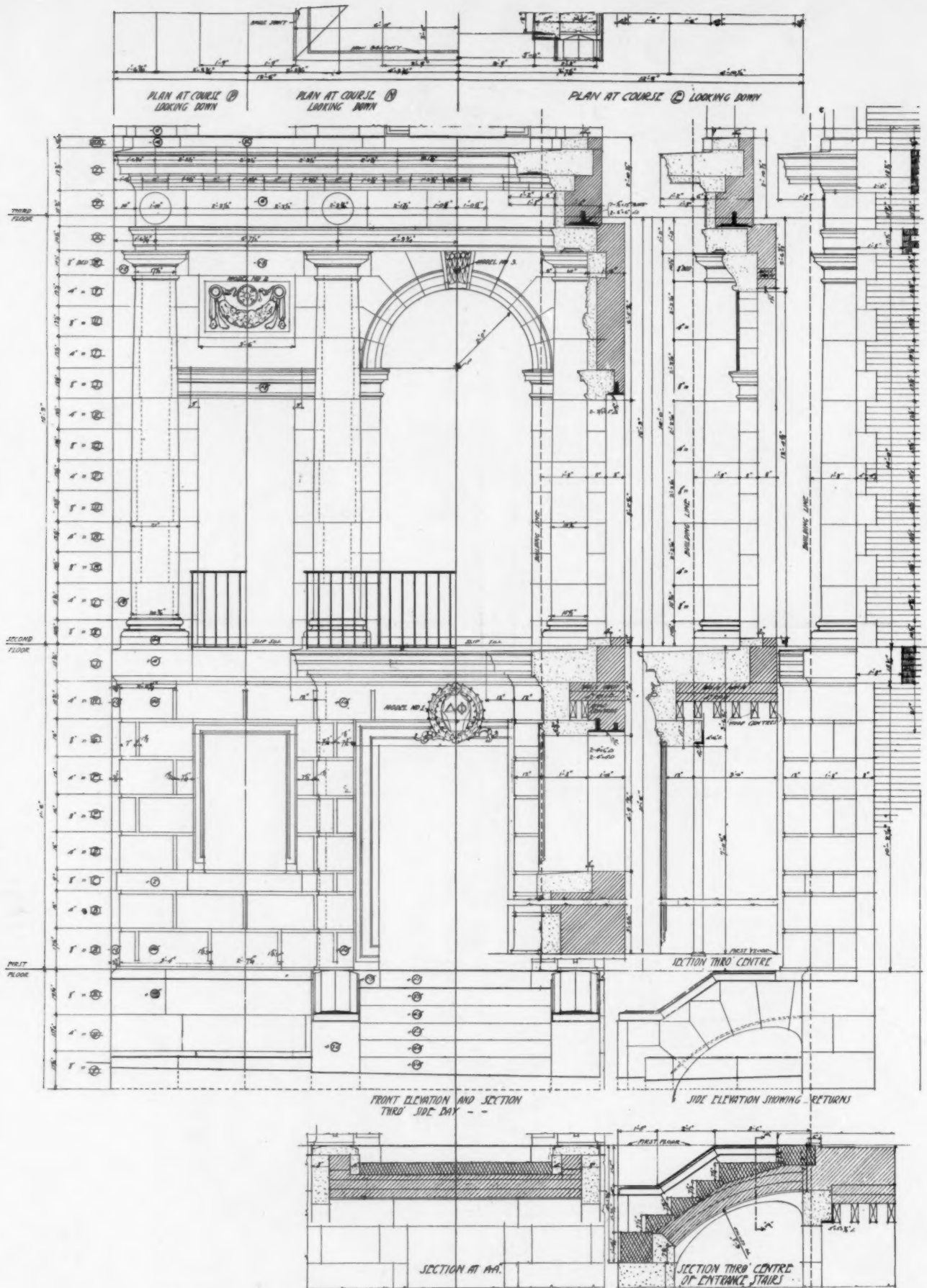
DELTA-PHI CLUB-HOUSE, WEST 116TH STREET, NEW YORK, N. Y.

Thomas Nash, Architect.



PLANS AND ELEVATION: DELTA-PHI CLUB-HOUSE, WEST 116TH STREET, NEW YORK, N. Y.

Thomas Nash, Architect.



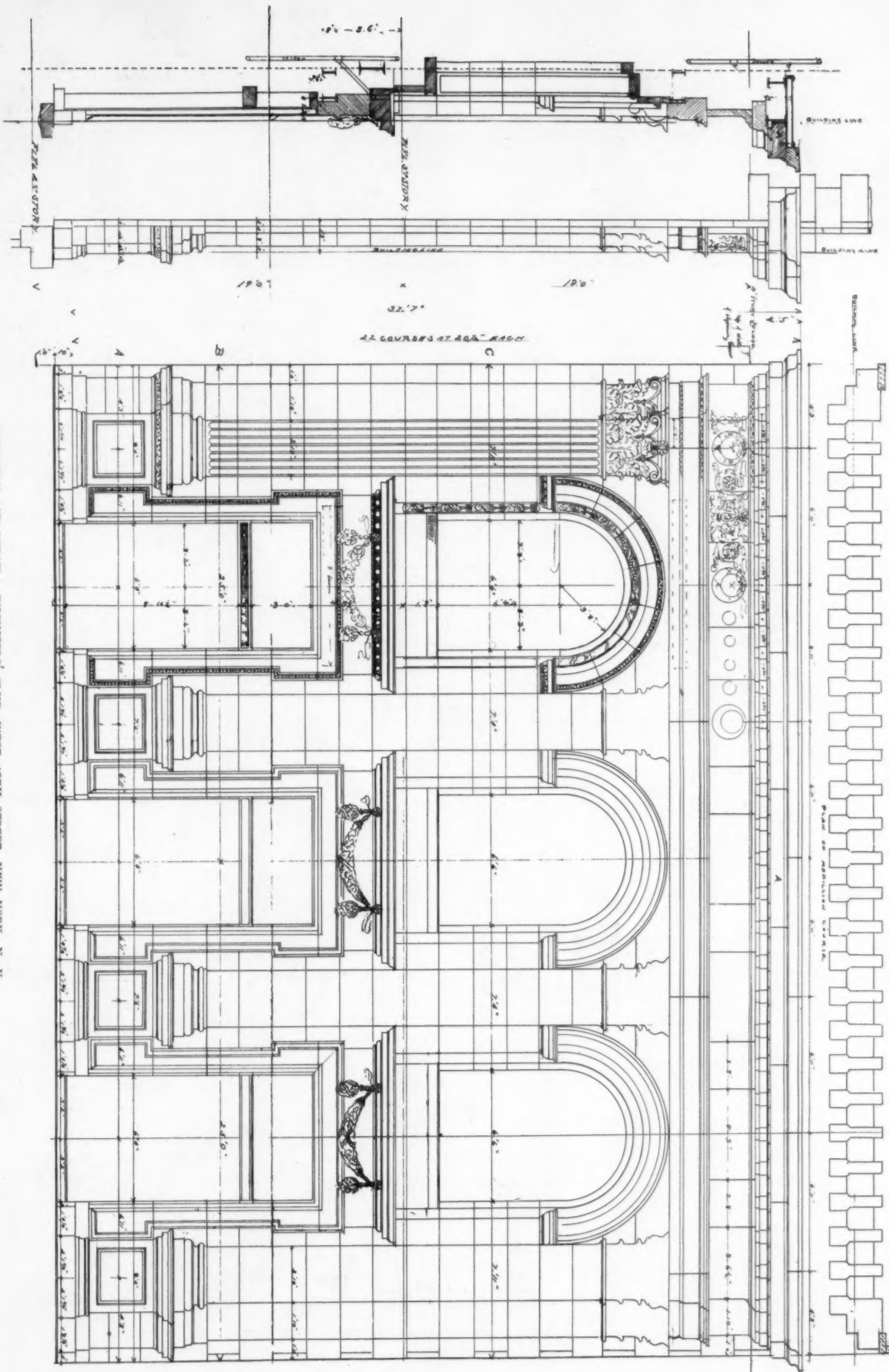
DETAIL OF LOWER STORIES: DELTA-PHI CLUB-HOUSE, WEST 116TH STREET, NEW YORK, N. Y.

Thomas Nash, Architect.

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Regular Edition.

Volume XCI., Number 1634.
April 20, 1907.

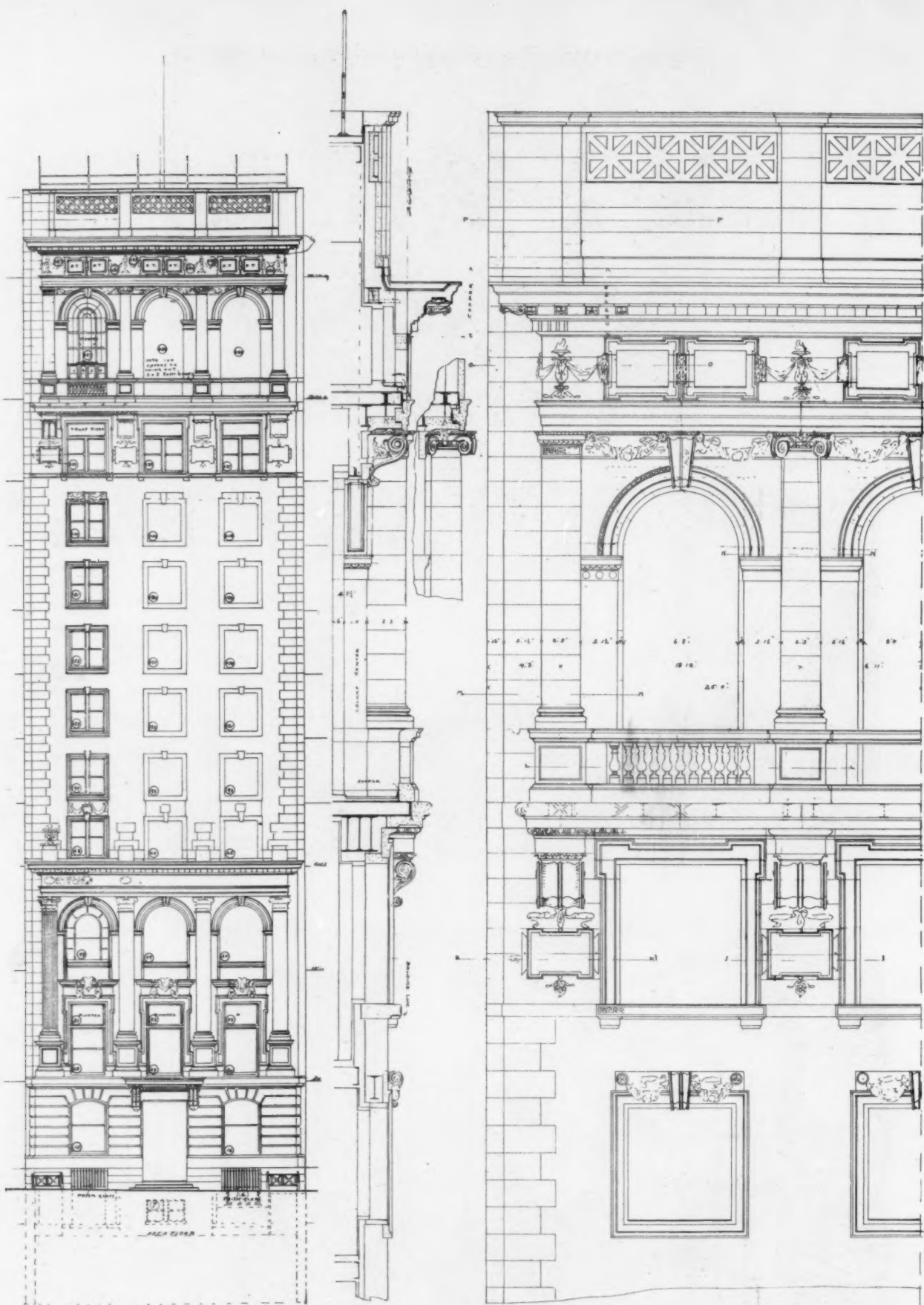
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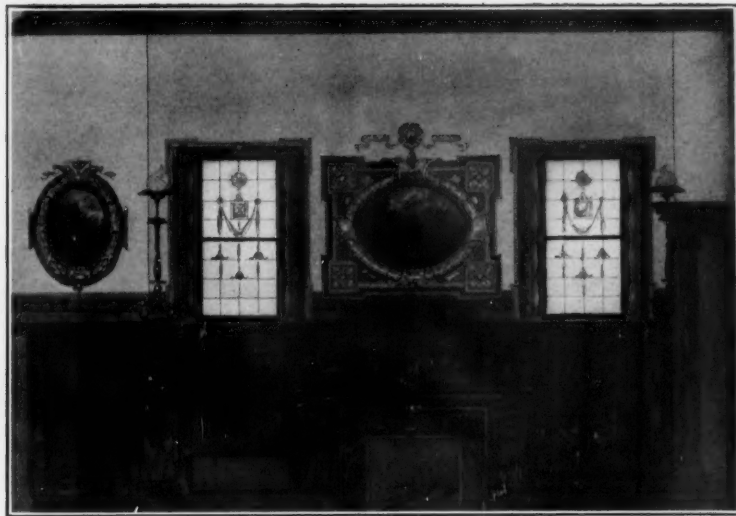
ELEVATION AND DETAIL: ENGINEERS' CLUB, WEST 40TH STREET, NEW YORK, N. Y.

Whitfield & King, Architects.

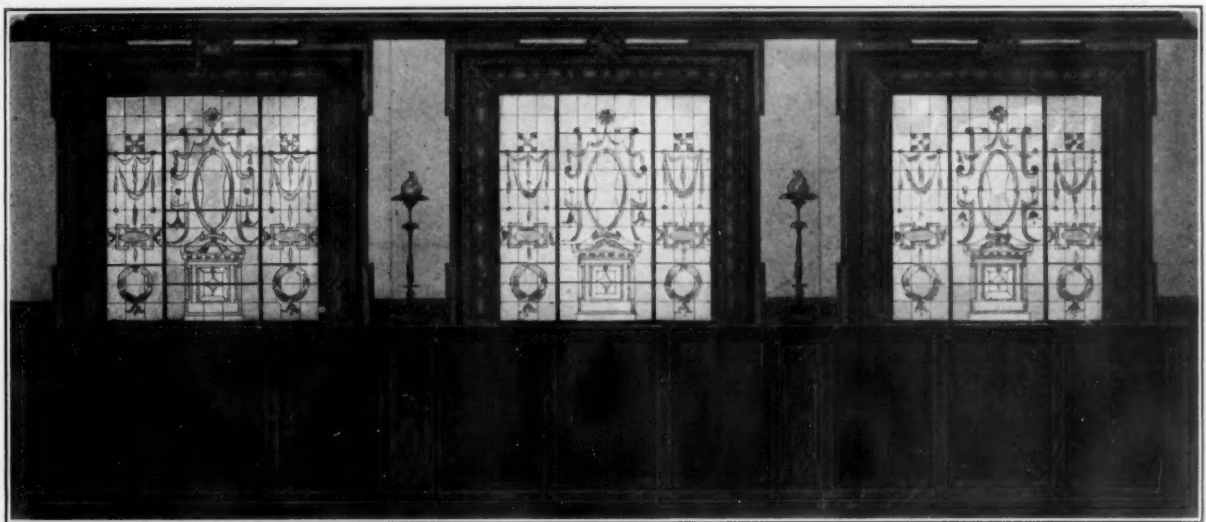
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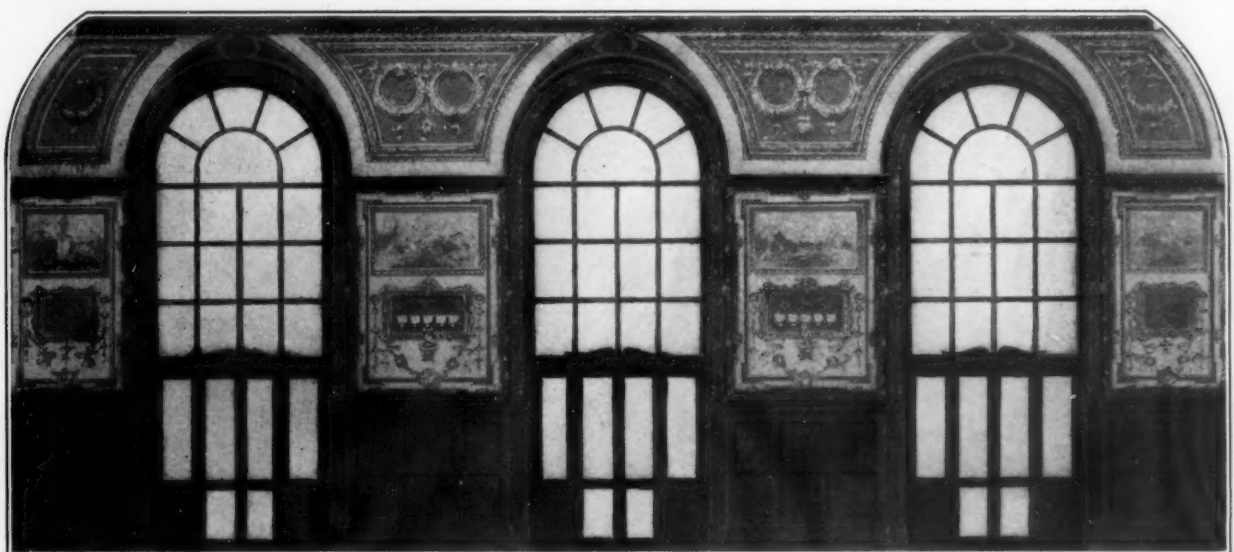
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EAST WALL OF LIBRARY.



SOUTH WALL OF LIBRARY.



BANQUET ROOM.

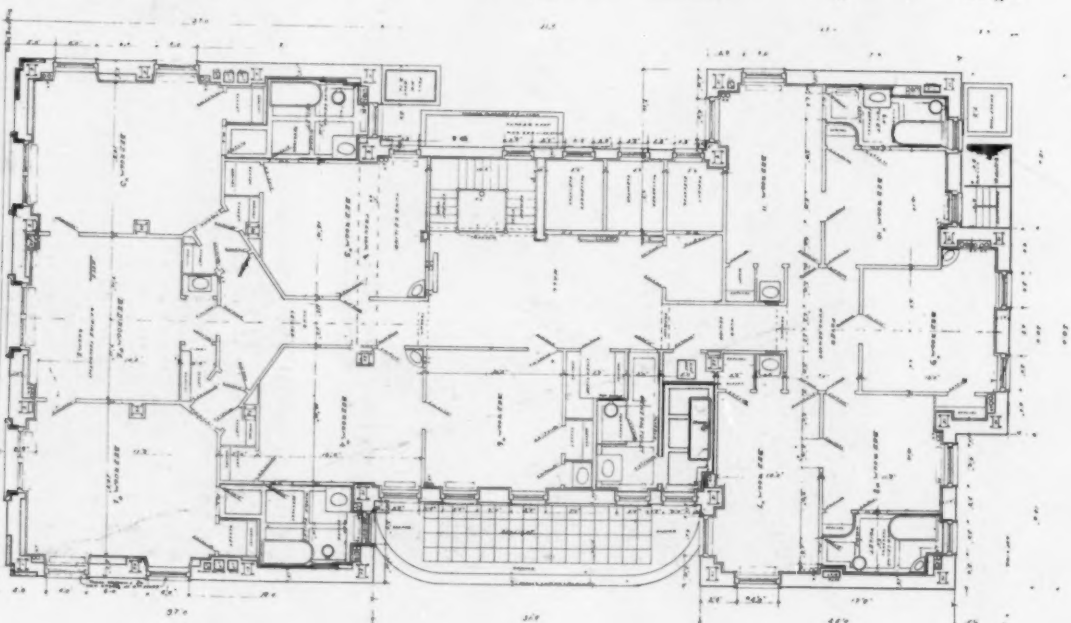
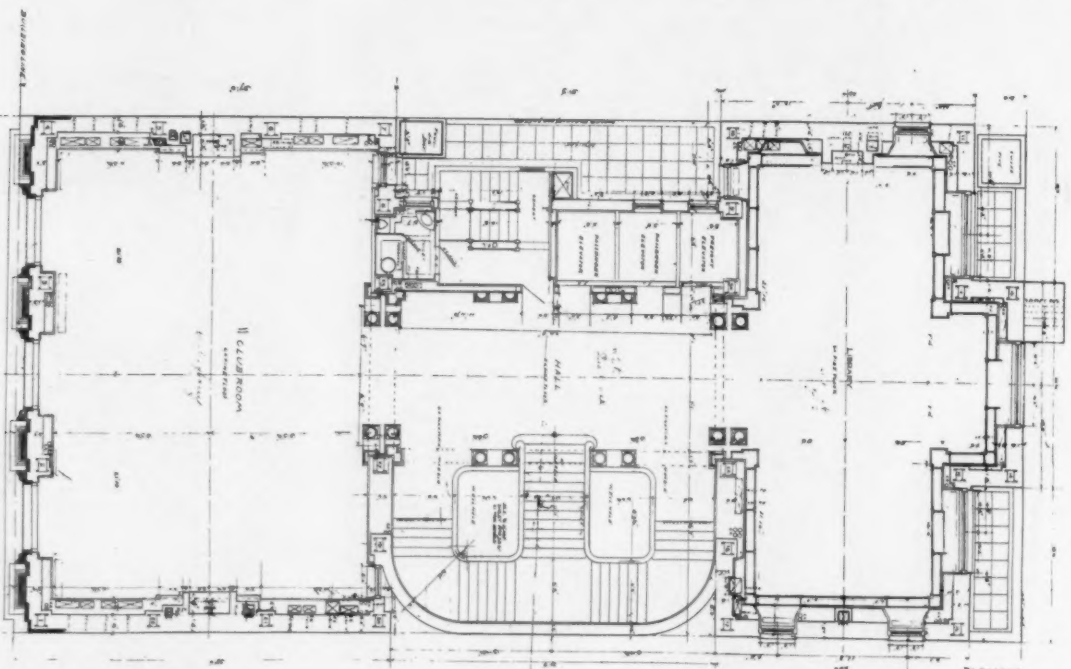
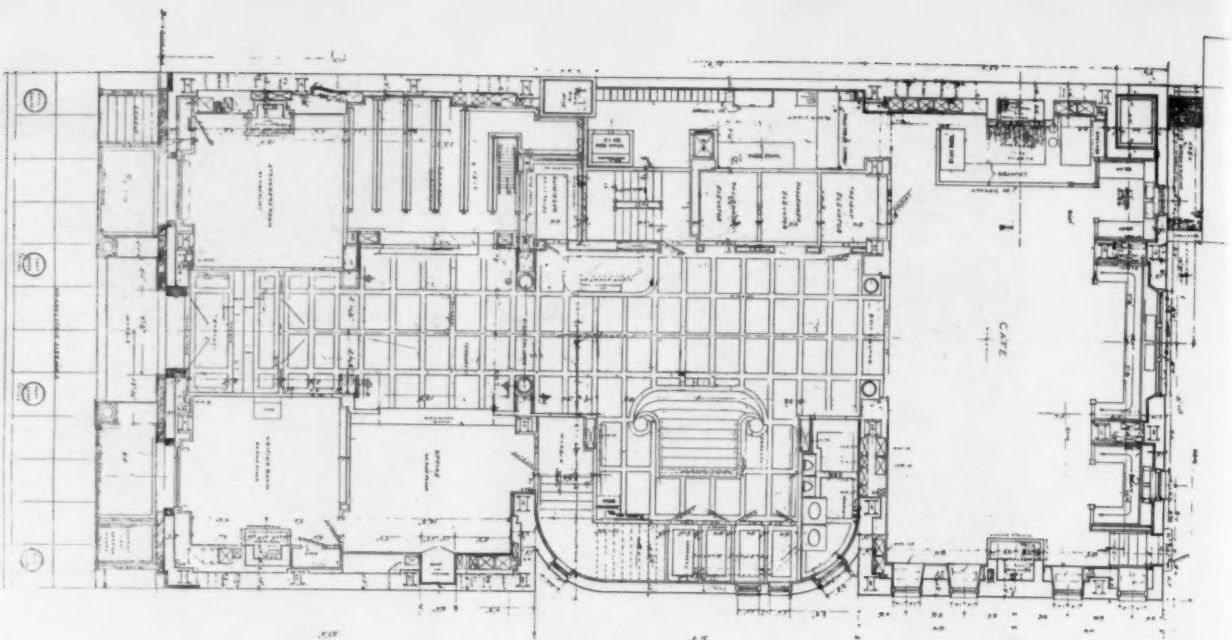
INTERIOR DECORATIVE TREATMENT: ENGINEERS' CLUB, WEST 40TH STREET, NEW YORK, N. Y.

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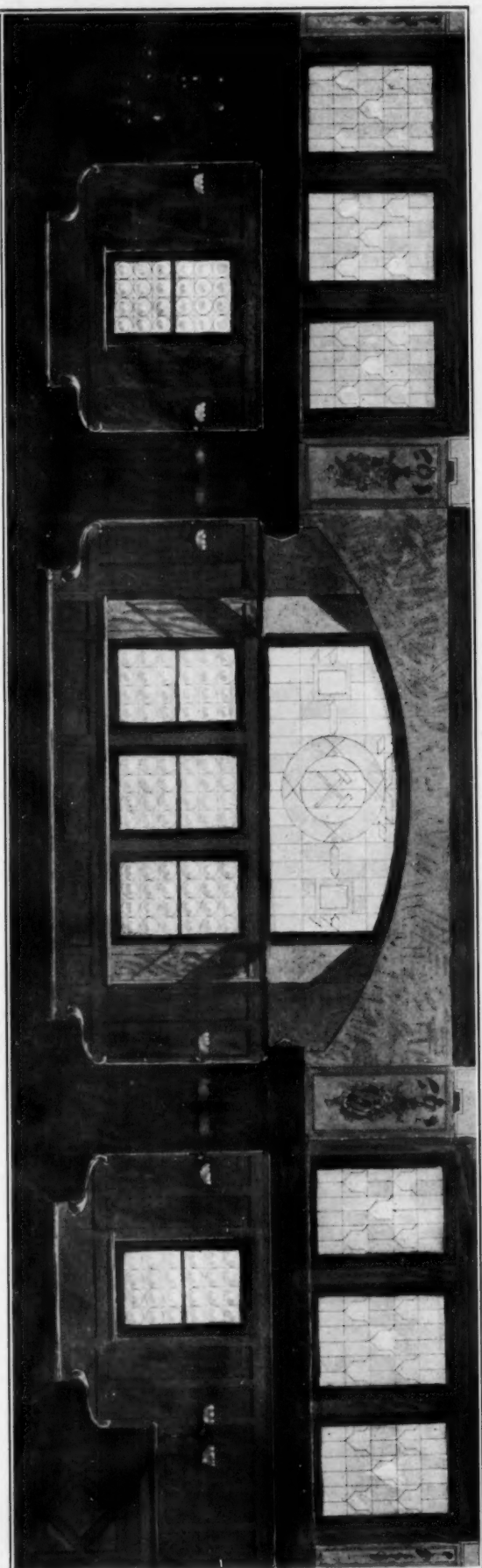
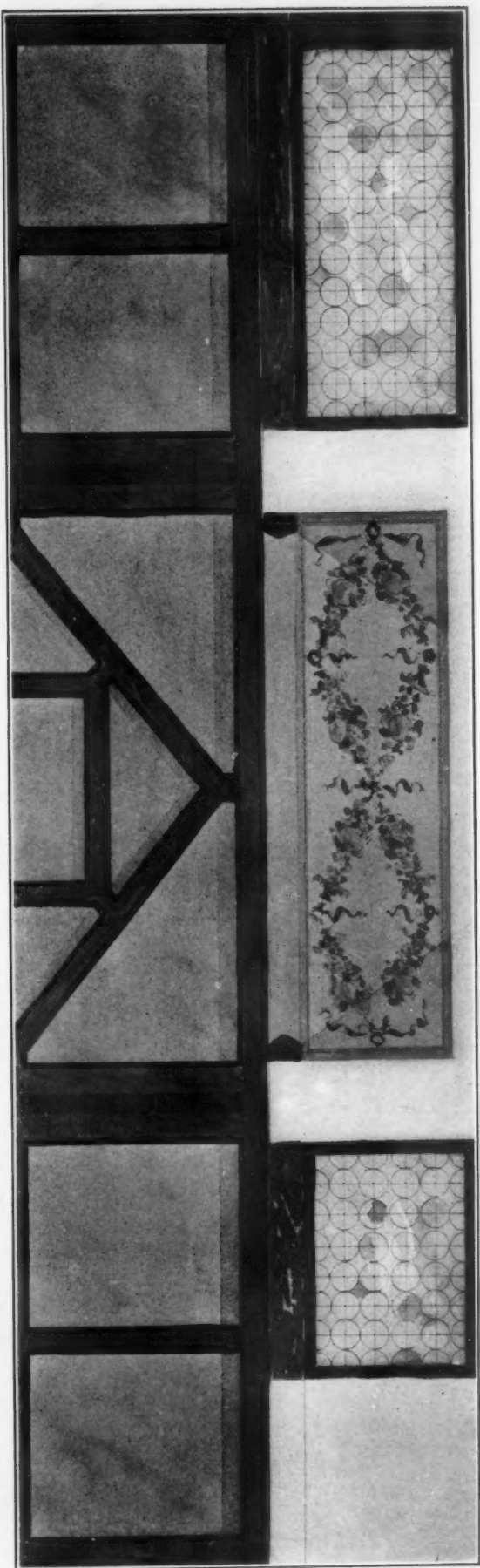


PLANS: ENGINEERS' CLUB, WEST 40TH STREET, NEW YORK, N. Y.

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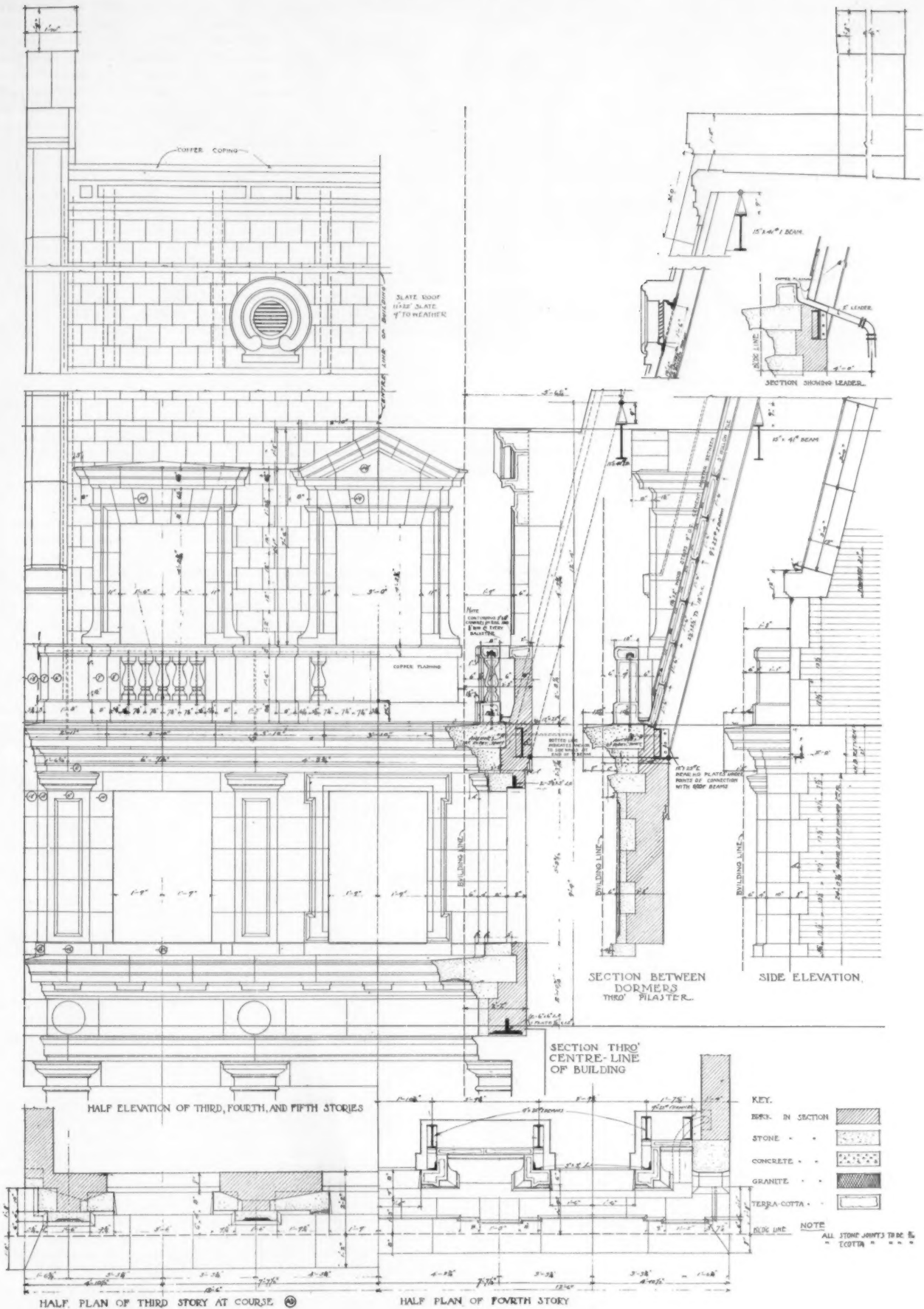
DECORATIVE TREATMENT OF THE CAFÉ: ENGINEERS' CLUB, WEST 40TH STREET, NEW YORK, N. Y.

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Volume XCI, Number 1634.
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UPPER STORIES: DELTA-PHI CLUB-HOUSE, W. 116TH STREET, NEW YORK, N. Y.

All plaster was destroyed. Marble tiling for floors was a complete failure. Marble treads for stairs failed, as also all wainscoting of that material, the marble being calcined.

Wire-glass covering of skylights resisted the fire well, except where the glass melted. Temperatures that melted glass were reached everywhere.

Metal-covered window-frames, doors and door-frames were used in the Kohl Building, the upper six-stories of which were not burned. No opinion is offered, except that this building was not much exposed, the glass of the exterior windows not being even cracked. The metal trim undoubtedly acted to deter the spread of fire within the building.

Steel shutters were used in the Telephone Building, but it was completely burned. It is claimed that the fire entered through some unprotected windows.

Elevator-grills were generally destroyed, together with the cages and machinery above the basement.

Some questions may arise as to the temperatures during the fire. Glass was melted everywhere. The softening of cast-iron columns in the Sloan Building has been referred to. There were numbers of cases of the actual melting of cast-iron columns, and in many buildings steel was melted. Cases of the latter were observed in a dry-goods store, where numbers of I-beams were fused; and also in a machine-shop, where steel rods were fused.

Conclusions.—Any deductions from the fire must be those based upon a general conflagration, and not those of an isolated fire. In view of the complete destruction of all materials it becomes a question as to what should be done to make a building fire-proof.

San Francisco was built probably in about the same way as other cities. It is an error to say that it was a wooden-frame city, as the business district was generally composed of buildings with brick walls. In among these had been constructed the so-called fire-proof structures, exposed on all sides to danger by the burning of the inflammable structures around them.

The only statement that can be offered is that the best insurance for buildings would be the isolation of a district containing nothing but fire-proof structures. A general conflagration would then be impossible. Manifestly, this is impossible in San Francisco, where business must be resumed with the least cost. In many cities, it would be good insurance for men owning large buildings to combine to buy out old and inflammable structures, either demolishing or rebuilding them. Otherwise, there remains the danger of general conflagrations, such as those at Baltimore and San Francisco, in which fireproof buildings will be injured from 30 to 60 per cent.

Turning to the individual building, the question of the exterior walls must be settled. There does not seem to be much choice of material. Architectural considerations demand the use of brick, terra-cotta, or stone. With a steel frame supporting the walls at each story, any local fire will destroy the nearby facing, but it may be removed without damage to adjoining parts. This cannot be done when walls are self-supporting and the facing acts as a part of the wall. This risk of damage must always be carried, gradually becoming less as inflammable buildings are eliminated.

There is no doubt that the steel frame is adequate for all its purposes, but it must be protected. This brings up the general subject of fire-proofing, in which is involved the construction of floors and partitions, and ceiling and column protection. Where any reasonable protection was given the steel frames of buildings in San Francisco, the steel was uninjured, and hence the writers feel warranted in stating that it is possible to protect such a frame so that it will pass uninjured through a fire that consumes all parts that can burn.

It was stated previously that all materials were destroyed by fire; it follows, from this, that the destruction of fire-proofing must be expected, and that it will have to be restored after a fire. It becomes a question, then, of selecting the material that will stand up best, for the fire-proofing must retain its form, even if destroyed.

In the writers' judgment, the column should be of a closed form, such as channels and plates. This is preferable to latticed columns. For columns, the fire-proofing that will stand up best is red brick set in Portland-cement mortar. Equal to this is a casing of solid concrete at least 4 inches thick, with a mesh of reinforcing metal. Examples were found in the St. Francis Hotel and Shreve Building, where the concrete was uninjured.

In the Fuller Building, which was used as a paint and oil warehouse, the floors were of wood, and the columns were covered with from 4 to 5 inches of concrete. This protection held in place when the columns fell. It was completely destroyed, but the column shafts were protected. Next in order, and of equal merit as far as examples show, is the double wire-lath and plaster protection, which, in the Wells Fargo Building, afforded complete protection. In many buildings, columns were protected by one layer of lath and plaster, directly applied, and then the entire column, with pipes, etc., was enclosed by the regular partition. This afforded complete protection, and the Merchants' Exchange and Kohl Buildings are examples. The examples of the Fairmount and Alexander Hotels are not included, as obvious defects in design and execution warrant the statement that the columns in these buildings were practically unprotected. The same remark also applies to the melted cast-iron columns of the Sloan Building.

The remaining examples of column failures must be laid to the failure of terra-cotta tile. The work in the Mills, Crocker, and Aronson Buildings was well done, but in all, and in the latter case especially, it failed utterly to afford complete protection. As the failure of one column section means the practical destruction of all floors supported by that column, the results are serious. In justice to the terra-cotta tile, it must be said that in the St. Francis Hotel, the Union Trust, and some other buildings, it stood up well enough to protect the columns. The writers believe, however, that it is the least valuable of all materials commonly used for fire-proofing.

For floor construction, some form of reinforced-concrete is far preferable to tile. In all cases the record of concrete is better than that of tile. Connected with this is the protection of the lower flanges of beams and girders. The fire shows that a cover of lath and plaster directly upon the flange, protected again by the suspended ceiling, is the best. The layer of plaster alone on the flange will not protect. Neither will the thin piece of terra-cotta strapped on. It may be stated here that one of the most obvious lessons taught by this fire is the protection to concrete floors and floor beams by the suspended ceiling of lath and plaster. In all cases where used, it afforded complete protection. Where not used, concrete was destroyed and beams were distorted.

The subject of partitions is bound up with that of column protection. Terra-cotta tiles are inferior to lath-and-plaster, although both were destroyed. A partition may be destroyed, but, if it stands, it impedes the spread of fire, and, in this light, the lath-and-plaster type is superior to tile. It should be possible to construct better partitions, but as yet no better ones have been offered.

A logical deduction from the statement that all materials were destroyed is the conclusion that all structural parts of a building, of whatever material constructed, must be protected by another material which will be a more or less complete loss in a fire. This applies to a steel frame, to floors of any type, and to roofs. It is impossible to protect some parts, such as fronts, partitions, and other parts directly exposed. The floors and frame constitute the structural parts, failure of which means destruction of the building. All such should be fire-proofed. This remark applies with equal force to buildings with reinforced-concrete columns, girders, beams and floors. As integral structural parts, they should be fire-proofed as well as similar members of a steel-frame structure, *for concrete is destroyed by fire nearly as quickly as steel.*

No further comment is offered, except the following: Buildings with wooden floors will be completely destroyed in a fire. Such parts as metal trim, wire-glass, and steel shutters, were not used to sufficient extent to warrant any definite conclusions, except to say that what showing there was was favorable. Whether the expense is warranted was not determined. Bad work and indifferent construction will cause any material to fail. Good work will enable a poor material to stand up. Fire-proofing should be continuous, and at no place should it be cut into for the passage of pipes, etc. The subject of pipes should be treated as it deserves, and proper ducts and shafts should be provided, instead of allowing them to be placed anywhere, where they will give the least trouble.

It is hoped that comment will be received on this report, but it is trusted that it will be in the nature of criticism, and not in the way of advocacy of some one form of construction.

THE CASA GRANDE RUINS.

IN the heart of the Southwest, says the Washington correspondent of the Boston *Transcript*, in a region formerly forsaken by whites and little frequented by Indians, lie the traces of an ancient city buried by desert sands. Many tumbled walls smoothed flat with the burning plain are marked, grave-like, by the still remnants of a building. In the Gila Valley, Ariz., this lone ruin, christened the "Casa Grande" by the Spaniards of the Territory, has since October been the object of investigations, under a special appropriation of Congress, by an archaeological expedition of the Smithsonian Institution.

The Casa Grande is twelve miles from the Santa Fé system of railroads and eighteen miles from the Southern Pacific—an easy trip across the desert from Florence, Ariz. It has furnished material for much surmise and recently for actual scientific investigation—surmise dating back as far as the gold-seeking invasion of Coronado in 1540.

The ruin has been brought three times to the attention of our national legislative body. It lies upon public lands and is therefore under national control. Early, however, it paid the price of many valuable relics by suffering from the too devoted attention of souvenir hunters. About fifteen years ago Congress recognized its importance by appropriating \$2,000 for its repair and preservation—following upon private explorations which at the time aroused much general interest. Victor Mindeleff, archaeologist, was sent to supervise the construction of a guard against the wear of the elements, and a custodian was appointed to protect it against too curious sightseers. Last year Casa Grande again brought an appropriation—this time \$3,000, and for the fiscal year ending June 30, 1908, a like sum has been granted.

As provided by the terms of the more recent appropriations the work was placed under the supervision of the secretary of the Smithsonian Institution, and Dr. J. Walter Fewkes, of the Bureau of American Ethnology, was chosen as the most available member of the Smithsonian staff to undertake the excavations. He set out on October 17, arriving on the scene October 24, and since then has accomplished appreciable results.

A good description of the spot is given by one of the predecessors of Dr. Fewkes. He says:

"The Casa Grande ruin (the single standing building) is located near the southwestern corner of the group, and the ground surface for miles around it in every direction is so flat that from the summit of the walls an immense stretch of country is brought under view. On the east is the broad valley of the Gila River, rising in a great plain to a distant range of mountains. About a mile and a half to the north a fringe of cottonwood trees marks the course of the river, beyond which the plain continues, broken somewhat by hills and buttes, until the view is closed by the Superstition Mountains. On the northwest the valley of the Gila River runs into the horizon, with a few buttes here and there. On the west lies a range of mountains, closing the valley in that direction, while toward the southwest and south it extends until in some places it meets the horizon, while in other places it is closed by ranges of mountains blue and misty in the distance."

The accounts of visitors to this particular ancient town on the banks of the Gila River trickle along the course of time ever since white men landed in the "New World."

When the adventurous members of Coronado's expedition in 1540 braved the scorching sands of the north Mexican desert, they halted in amazement at the ruins of a long-deserted, sand-topped city hiding the secrets of a people older than the Indians. Castaneda, the scribe of the invasion, wrote with appreciation of the relic of a supposed fortress which had been destroyed long before by barbarous tribes, perhaps ancestors of the Apaches. In 1694 a Jesuit father, wandering in penance, chanted a mass within its walls, recalling the spirits of departed chiefs of whom we are left no written record. While the white colonists of New England were struggling, in 1775, to throw off a yoke binding them to Europe, an ecclesiastic, Padre Font, was living in a room of the Casa Grande, writing the deeds of a nation whose prestige had already waned at the approach of a mightier tribe.

In 1836 Lieutenant Emery and Lieutenant Johnston saw and wrote of the ruins, and Major John Russel Bartlett later described them with admiration. Mr. A. F. A. Baudelier, traveling for the Archaeological Institute of America, was the next to mention them in notes on a trip as far south as Central America. These accounts were followed by a partial report, in 1888, by Mr. Frank Hamilton Cushing of the "Hemenway Southwestern Archaeological Expedition" from which the party returned laden

with specimens of carved stone implements, highly decorated pottery and burial urns, but above all with a vivid description of the customs of the extinct people of the region. In settling up affairs of this expedition Dr. Fewkes came into actual touch with the archaeology of Arizona.

The Hemenway explorations were general. The work of Dr. Fewkes is limited to the buried city about Casa Grande, which he firmly believes, as he writes to the Smithsonian, will be one of the great spectacles of the region—"an American Pompeii for sightseers, as well as an object-lesson for students of American archaeology and history."

"The Casa Grande group of mounds," he says, "is composed of three walled clusters of buildings or compounds, now for the most part buried in the earth." In his reports he has labeled these compounds A, B, and C. "Compound A" he is excavating. "Compound B" is close at hand. He describes it, writing from his tent upon the grounds: "It is a noble ruin and as I see it now looming among the mesquite trees I fancy the stately buildings that some one, some day, will uncover there."

Dr. Fewkes has already unearthed much of the first group of structures in which stand the walls of the "great house." As the sand is dug out, the mystery of its meaning gradually clears. It can hardly be a massive temple of sun-worshippers, as a former traveler surmised, but it is more probably a place of refuge, a stronghold in which there may have resided a powerful chieftain of bygone days who exacted homage from his vassals. The group proper is slightly over 400 feet long by 200 feet wide, surrounded by a solid wall of pressed earth a yard or more thick, and now from eight to fifteen feet high. On two corners have already been unearthed an eight-room bastion and a two-room lookout. The great house itself rests about the center of the enclosure, flanked by plazas and groups of smaller houses arranged on an ordered plan. On one side is a large opening, probably the entrance, and about the whole, outside the wall, run traces of a ditch which connects at one corner with an adjacent depression in the ground.

Beyond the walls are mounds of all sizes and shapes—mounds which prodding has proved to be of as many origins. There are mounds of earth left from clearing out springs. There are mounds formed of ashes and debris. The larger ones are burial mounds—treasure-houses for the archaeologist—rich in mortuary offerings and human remains. There is a fourth class of many remains of "ultra-urban single houses" which may hold the solution to the makeup of the whole city.

What sort of people were these first Americans who have left only silent evidence of their pre-Columbian life? It is established that they were ancestors of the Indians—that they bore little resemblance either to Asiatics or to Africans. Wherever they came from originally, they must have been Americans for many generations. Closely allied to the Pima tribe of the present day, conservative estimates would place their number well up into thousands in each city.

It has been a pet theory of ethnologists to account for these vast Western ruins by a series of many occupations of the same site, marking each return by the construction of a "temple" or a "gathering place" or a "compound," as Dr. Fewkes has termed these large blocks of buildings. One relic at least speaks of a vast population in words that are clear—the network of irrigation ditches constructed from the Gila and Salt rivers. Dug, as they must have been, with crude stone implements, the dirt was then laboriously carried away in baskets strung across the backs of the women. Imagination will conjure up the number of workers necessary to complete in this manner a ditch found by Mr. Cushing traceable, at least calculation, for thirty-eight miles.

All the Arizona investigations of the Smithsonian Institution are being conducted with scientific caution. Much of the labor is performed by Indians, who are perhaps the descendants of the very men whose homes they are unearthing. Such relics as have been discovered will be carefully shipped to the National Museum to be compared by experts with other specimens of Indian work. Dr. Fewkes has reserved his own conclusions until the completion of the excavations, when whatever definite theories he may have established will be embodied in a complete report on the Casa Grande and its vicinity. One of his most recent letters to Secretary Walcott says:

"I believe the excavation and protection of the ruins on the Casa Grande Reservation may be made the most important archaeological work the Smithsonian has ever undertaken, and if completed as begun will be valuable contribution to the advance-

ment of knowledge among men.' Allow me to emphasize one feature of the archaeological work of the Smithsonian at Casa Grande this winter. So far as I know, up to the present year no museum, institution or private worker has ever done anything to protect and preserve walls of buildings in Southwestern ruins, brought to light by excavations, but have left them to be destroyed by the elements.

"By protecting the walls, as well as specimens found in archaeological excavations, the Institution has inaugurated a new epoch in Southwestern field-work."

COMMUNICATION

THE LOUISIANA PURCHASE EXPOSITION COMPANY AND THE GUESSING CONTESTS.

TO THE EDITORS OF THE AMERICAN ARCHITECT:

DEAR SIR:— In the *American Architect* of March 16 appeared an editorial regarding the casting in bronze of the statue of Saint Louis, in which was the following:

"Mr. Niehaus would, perhaps, have a better chance of recovering something if the officials of the Exposition had not just been compelled to pay, after long dispute, the prize of \$25,000 they offered to give the person who guessed with nearest accuracy the number of paid admissions to the grounds."

The quotation has reference to litigation over the prize in a guessing contest about admissions to the World's Fair of 1904. With this contest the officers and directors of the Louisiana Purchase Exposition Company had no connection directly or indirectly. The contest was one of several conducted by newspapers and magazines. In this particular case the facts were that several persons claimed to have won the prize and entered suit. The parties conducting the contest paid the money into court, where the claimants contended for it. The writer can state of official knowledge that the Exposition Board of Directors had no connection with this or any other guessing contest. Early in the preparations for the Exposition several propositions were made to the executive committee to conduct contests and applications were made for concessions, the Exposition to have a percentage of the profits. Every one of these propositions was rejected by the unanimous decision of the executive committee of the Board of Directors. The Board of Directors decided as a matter of policy that the Exposition management should not give official sanction to any enterprise of this kind. That policy was maintained to the end of the Exposition. So far as the writer has knowledge, no officer or director individually of the Exposition Company was interested in or had any connection with the guessing contest referred to in the editorial.

The Exposition management has up to date met every financial obligation and is rapidly winding up the affairs of the corporation. It is the purpose of the management that every just claim shall be met.

Will the editor kindly give space to the above.

Respectfully,

WALTER B. STEVENS,

Secretary Louisiana Purchase Exposition Company.

[We regret that in this respect we should have done injustice to the Exposition Company through giving unjustifiable credence to a report published in the daily press.—Eds. "American Architect."]

ILLUSTRATIONS

THE ENGINEERS' CLUB, WEST 40TH STREET, NEW YORK, N. Y. MESSRS. WHITFIELD & KING, ARCHITECTS, NEW YORK, N. Y.: FIVE PLATES.

This building, though connected with, is not to be confounded with the Engineering Societies' Building illustrated in our last issue. It provides for the social needs and accommodation of the same memberships whose intellectual requirements are fostered in the latter building, as already described. The club-house, to which was devoted \$450,000 out of the gift of Mr. Andrew Carnegie to the allied engineering associations, is practically finished and ready for its house-warming.

THE DELTA-PHI CLUB-HOUSE, WEST 116TH STREET, NEW YORK, N. Y. MR. THOMAS NASH, ARCHITECT, NEW YORK, N. Y.: THREE PLATES.

Additional Illustrations in the International Edition.

ETON COLLEGE VIEWS, WINDSOR, ENGLAND: FOUR PLATES.

NOTES AND CLIPPINGS

MODERN ELECTRIC LAMPS.—The striking feature, says the *Boston Transcript*, of a paper recently read before the Academy of Arts and Sciences by Dr. Louis Bell, was the fact that the new calcium arc is shown to be in a class by itself when economy in the consumption of the current is considered. At the time of the presentation of the paper there were not more than half a dozen of them in the city, but the business man is quick to see things that lie to his advantage. They are now used quite a little where strong illumination is desired, at such places as hotel canopies or the entrances to places of public resort. They are the great, blazing arcs which flood the street with yellow light and are admirable for out-of-door spaces or large halls. They are a great deal the cheapest electric light known, so far as consumption of current is concerned, but the carbons are a foreign product, hedged in by a protective tariff, the lamp is also of foreign make, and there are probably royalties, so that the true commercial efficiency does not as yet stand forth in its due proportion. The cheapness of this calcium arc may readily be seen from a glance at one of Dr. Bell's tables, in which the different lamps are compared in the single element of consumption of current, the item for which the monthly electric-light bill is presented:

Lamp.	Watts consumed per candlepower.
Calcium arc	0.2
Mercury arc	.33
Magnetite arc	.4
Geissler tube	.4
Carbon arc	.8
Osmium filament	1.25
Tungsten filament	1.3
Tantalum filament	2.
Carbon filament	3.5

One does not need to have much technical knowledge of electrical measurements to realize that the calcium arc consumes only one-quarter as much current as the ordinary arc light. Other things being equal, a merchant can light his warehouse or a railway company its station at one-quarter of the cost for the electricity. This great yellow light, then, for most purposes of general illumination is enormously efficient. Its disadvantages are, first, that the carbons are soft and will require trimming each day instead of once a week, as with the present lamps. The second disadvantage, one which will affect its introduction into some kinds of stores, is that it is yellow, and when colors are involved it is misleading.

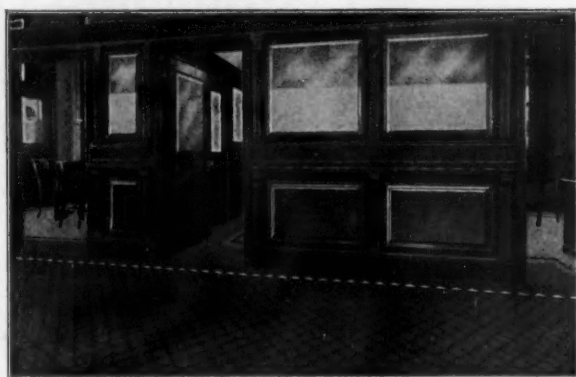
Scientifically considered, the next most efficient light is the mercury arc. This is almost unknown in Boston, and is a radical departure from the familiar forms of arc or bulb. It is neither the bright spot nor the brilliant filament, but a tube filled with purple, glowing pulsating light. It has the effect of the geissler tube, but in a single color. Practically speaking, it is an impossible light. The bluish tint diffuses itself well, but it kills the colors with which it comes into contact. The person who sits under it becomes livid and ghastly. It has been tried in a school-room or two in the larger cities, but the pupils, as described by a visitor, "are dead, but called again into motion." It has some consequence from the photographer's standpoint, but in the words of a prominent New York artist, "it is necessary to begin a new education as to color values."

THE PHILÆ TEMPLES.—In the annual report issued a few days ago by the Egyptian Public Works Ministry, we notice a statement to the effect that the masonry of the buildings on the Island of Philæ appears to show no indication of injury in consequence of its periodical submersion by the waters of the Assouan Reservoir. M. Maspero, the able director of the *Service des Antiquités*, says, in his departmental report, that after his return from Nubia in 1905 he made an examination of the buildings and observed with pleasure that they had in no way suffered since the preceding winter, and adds that they may now be considered as removed from all immediate peril. It is by no means certain, however, whether this favorable state of things can be expected to continue indefinitely, for, as M. Maspero justly remarks, "we have not at present any means of judging whether their periodical submersion will not become fatal in the long run." In the meantime it is satisfactory to find that the only attention necessary last year was to wash away the incrustation of saline matter left by the receding waters, and to make good a few joints in the masonry from which the cement had fallen out.—*The Builder*.

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WANTED—Structural steelwork draughtsmen and architectural draughtsmen, \$5.04 to \$2.80 per diem. A competitive examination will be held simultaneously at the Navy Yards, Boston, Mass.; Brooklyn, N. Y.; League Island, Pa., and Washington, D. C., May 20 to 21, 1907, for the purpose of establishing an eligible register of structural steelwork draughtsmen and architectural draughtsmen. For further information address the Commandant of the Yard at which the applicant desires to be examined. (1633-1634)

WANTED, an experienced draughtsman, capable of making working drawings from rough sketches. State experience and salary required. Thos. C. Kennedy, Law Building, Baltimore, Md. (1634-1635)

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ARCHITECT, German, three months in this country, 18 years' European experience in theoretical and practical works, best draughtsman; thoroughly experienced in all building and architectural works; wants position in architect office or terra-cotta factory. Address August Hohl, care Neumann, 1523 Second avenue, New York City. (1633-1634)

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ARCHITECTURAL draughtsman (English), desires position; nominal salary to commence. Address 16-B, care American Architect, New York City. (1634)

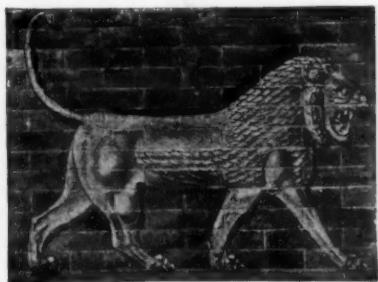
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PROPOSALS.

Oakland, Maryland, Court House Construction
NOTICE TO CONTRACTORS

Proposals for the above building, heretofore advertised to be received up to noon on April 18, will be received up to May 1, at 10 o'clock A.M. In all other respects the advertisement heretofore given holds good.—Robert R. Henderson, Chairman; W. McCulloch Brown, Secretary.



THE LION OF BABYLON

THE Lion of Babylon is made of green and yellow glazed tiles baked several thousand years ago. The figure which adorned the city gate of ancient Babylon is now in the British Museum. The tiles composing it look as if they had been taken from the kiln but yesterday, retaining even their original brilliancy of color. For suggestion on the artistic, sanitary and durable qualities of tile as the most economical and appropriate covering for floors and walls, write:

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KEYSTONE
FLAT FINISH

NOTICE TO CONTRACTORS.

Sealed proposals will be received at the office of W. McCulloch Brown, Secretary of the Court House Commission of Garrett County, at the court house in Oakland, Mary-

PROPOSALS.

land, until 12 o'clock noon on the 4th day of May, 1907, for the erection of a court house for the County of Garrett, according to plans and specifications as prepared by J. Riley Gordon, Architect, of 244 Fifth Avenue, New York City. A certified check in the sum of \$2,000 made payable to the order of the Court House Commission of Garrett County, must accompany each proposal as a guarantee that the contractor awarded the contract will furnish good and sufficient bond within ten days in the sum of \$30,000 that he will complete said contract in accordance with the said plans and specifications. Plans and specifications will be on file on and after April 1, 1907, at the office of the Secretary of the Commission at Oakland, and at the offices of the Architect, J. Riley Gordon, 244 Fifth Avenue, New York, and 921 F Street, N. W., Washington, D. C. The Commission reserving the right to reject any and all proposals.—Robert R. Henderson, Chairman; W. McCulloch Brown, Secretary, Court House Commission. (1631-1634)

March 20, 1907.

Treasury Department, Office of the Supervising Architect, Washington, D. C., April 6, 1907.—Sealed proposals will be received at this office until 3 o'clock p. m. on the 14th day of May, 1907, and then opened, for the construction (including heating apparatus, electric wiring and conduits) of the extension to the U. S. Post Office at Rockford, Illinois, in accordance with the drawings and specifications, copies of which may be had at this office or at the office of the Custodian at Rockford, Ill., at the discretion of the Supervising Architect.—James Knox Taylor, Supervising Architect. (1634-1635)

BUILDING NEWS (Continued).

MILWAUKEE, Wis.—Kirchhoff & Rose, 201 Grand avenue, it is stated, have completed plans and specifications for the new Majestic Theater which the Schlitz Brewing Company will erect at Grand avenue and Third street. It will be fourteen stories and will cost upwards of \$1,500,000. A special ventilation system to cost \$75,000 will be employed. Cream colored tile will be used for the exterior. There will be 436 offices and 169 vaults. Marble will be extensively used. A central power plant will be installed.

The Y. M. C. A., it is reported, has

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started a building fund and proposes to erect a \$250,000 building.

Ferry & Clas, architects, it is said, have plans for a \$60,000 residence for Emil Ott, of the William Steinmeyer Co., to be of brick and steel, with brick, stone or terra cotta walls.

The citizens are reported to have voted in favor of the following bond issues: \$250,000 for the auditorium, \$250,000 for a new police station, and \$100,000 for an engine house and apparatus for the Fire Department.

MINOT, N. D.—F. W. Mann & Co. will erect a department store at Minot, three stories, 50x140 feet, of brick, to cost about \$75,000. The walls will be faced with pressed brick and stone will be used for trimming. J. Bell DeRemer, of Grand Forks, is preparing plans.

MONTCLAIR, N. J.—The committee on buildings and grounds of the Board of Education, it is stated, has been authorized to have plans and specifications prepared for an addition to be erected to the Chestnut street school.

MONTGOMERY, ALA.—The board of trustees of the Alabama Girls' Industrial School is reported to have appointed a committee of which Governor Comer is chairman to secure plans for additional buildings to be erected with the \$50,000 appropriated by the Legislature.

Reports state that the Exchange Hotel Co. contemplates building an annex to the New Exchange Hotel; five stories, seventy-five rooms; fireproof; cost about \$60,000; Jas. E. Hickey, manager.

MONTPELIER, VT.—Reports state that it

KEYSTONE FLAT FINISH

has been decided to erect a City Hall on Haymarket Square, on Main street, now owned by the city, and some adjacent property will be purchased to afford the necessary room. The construction of the building will be in charge of a committee of six citizens selected by the City Council, with James S. Haley, Mayor, as chairman ex-officio. The cost will be about \$150,000.

MONTREAL, QUEBEC.—The McDonald Engineering Building at McGill University is reported to have been destroyed by fire. Prof. Bovey of the Faculty of Applied Science is stated to have announced that steps will be taken immediately to rebuild. The old foundation will be used and the new building made fireproof as far as possible.

It is stated that the erection of a \$50,000 addition to the Hotel Dieu Hospital is contemplated.

MOOSEJAW, SASK.—Plans are now being prepared in Montreal for a hotel to be erected here at a cost of \$175,000 for the Canadian Pacific Railway Company. Hayter Reid is Superintendent of Hotels, Montreal, Quebec.

MT. GILEAD, O.—Reports state that the First Baptist Church will erect a church building, 55x95; pressed brick, tile roof, stone trimmings, auditorium, church furniture, hot air heating. Stribling & Lum, architects, Columbus, O.

NEGAUNEE, MICH.—J. C. Chubb, architect, of Chicago, is preparing plans for the erec-

tion of a high school building, to cost \$80,000.

NEWARK, N. J.—Carnegie Steel Co., 71 Broadway, New York, will begin immediately the erection of a power house, general warehouse and bar warehouse at Newark. The cost is figured at about \$250,000, and the buildings will cover 16,000 square feet.

NEW BEDFORD, MASS.—The City Council contemplates expending \$450,000 to remodel two of the old municipal buildings, and plans for the same have about been completed.

NEW CASTLE, IND.—The members of the Christian Church are reported to have under consideration the erection of a \$35,000 edifice.

NEW ORLEANS, LA.—Press reports state that the Government will expend \$400,000 in erecting about twelve fireproof buildings at Southwest Pass, near Berwood, in connection with work of dredging and maintaining a channel. Structures will include steel warehouse 30x80 feet, wharves, machine shops, coaling plant, blacksmith shop and dwellings. Colonel E. H. Ruffner, Corps of Engineers, is in charge.

The Baronne Street Improvement Co., it is reported, will erect a building, probably ten stories high, for Emilien Perrin and associates on the site, 120x80 feet, recently leased from Joseph Lenex.

NEW YORK, N. Y.—Plans have been filed for a church to be erected for the Roman Catholic Church of St. Paul, Dr. John McQuirk, rector, at 117th street, east of Park avenue. It is to be 87 feet front and 158½ feet deep, with an extension, and will be

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of Gothic design, with five front entrances. The façade will be of decorated limestone, with two ornamental towers and adorned with statuary in niches over the entrance doors and a great central window of decorated glass. The building is to cost \$160,000. Neville & Bagge, 35 West Twenty-first street, architects.

A bequest of \$300,000 by the will of the late F. P. Fernald, subject to the life interest of Mrs. Fernald, is reported by the trustees of Columbia University. The purpose of the money, it is stated, is to erect a dormitory in memory of Royal Bleckler Fernald.

George Keister, 11 West Twenty-ninth street, has been commissioned to design plans for a six-story apartment house on Riverside drive, east side, 332.2 feet south of 127th street, to cost about \$180,000. Bergen Realty Co., 339 East Fifty-eighth street, is the owner.

Press reports state that no plans have been prepared or architect selected for a \$2,000,000 residence to be erected at the northeast corner of Fifth avenue and Fifty-second street for Mr. E. H. Harriman.

Plans have been filed with Buildings Superintendent for a twelve-story fireproof commercial building to be erected for Henry Corn, 320 Fifth avenue, at 22 to 28 West Twenty-first street, the façade to be of brick trimmed with granite and limestone and terra cotta. It is to cost \$300,000, according to the estimate of Maynicke & Franke, architects, 298 Fifth avenue.

On the southwest corner of Broadway and 135th street, Frank A. Clark, 251 West 129th street, will erect a six-story apart-

ment house, 100x136.11 feet, to cost \$225,000. Henry Andersen, 1181 Broadway, is preparing the plans.

NORTHFIELD, MASS.—Mrs. Russell Sage is stated to have given to the Northfield Seminary \$150,000 to erect a \$100,000 chapel and \$50,000 music hall.

NORTH BRADDOCK, PA.—We are advised that U. J. L. Peoples, Times Building, Pittsburg, was awarded contract to design brick and stone school building to be erected by the Board of Education, W. S. Colmery, secretary. Structure will be brick and stone, 2 stories; cost, \$75,000.

OAKLAND, CAL.—W. V. Witcher and W. I. Reed are reported to be arranging for the erection of a ten-story building at Broadway and Ninth street.

OMAHA, NEB.—The members of the Christian Science Church are reported to be contemplating the erection of a \$50,000 edifice.

Press reports state that Philadelphia capitalists are negotiating with George & Co. for the southeast corner of Sixteenth and Harney streets and it is planned to erect there a ten-story fireproof hotel at a cost of over \$300,000.

OTTAWA, ONT.—The Collegiate Institute Board is stated to have decided to erect an addition to the school at a cost of \$100,000.

PARSONS, KAN.—The building committee (S. C. Elliott, of Topeka, secretary) is reported to be planning improvements to be made to the State Hospital here, at a cost of about \$85,000.

PHILADELPHIA, PA.—P. A. B. Widener is stated to have made an offer to the city to erect a \$10,000,000 municipal art gallery on

the Parkway on condition that the city furnish the site.

C. W. MacFarlane, Fifty-second and Walnut streets, contemplates, it is reported, the erection of a four-story apartment house, 140x140 feet, at Fifty-second and Market streets. Brick, stone and terra cotta will be used for construction, with slag roof, open plumbing, mantels, tile work, plate glass, gas and electric fixtures, etc. Cost, \$150,000.

The Knights of Columbus will erect a building at Broad and Poplar streets to cost about \$300,000.

PITTSBURG, PA.—Messrs. Palmer & Hornbostel, 63 William street, New York, have plans well under way for a soldiers' memorial home for the Board of Commissioners of Allegheny county, to be erected here.

John Goettmann, Diamond street, Pittsburg, Pa., it is stated, proposes to build an apartment hotel at Center and Negley avenues. Cost, \$200,000. No architect selected.

Architect T. C. McKee, Arrott Building, it is reported, has plans for a large auditorium for E. M. Gabel, Ellsworth avenue and Clyde street. Cost, \$75,000.

PITTSBURG, PA.—Architect Charles Bickel, 524 Penn Avenue, Pittsburg, will take bids on remodeling the Exposition Music Hall. New floors will be provided and a large stage erected. New finish and decorations will be furnished, and new heating system installed.

Architects Nirdlinger & Simpson, Diamond Bank Building, are drawing plans for brick and stone residence for James H.



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Aiken, 350 Fifth Avenue. Cost, \$25,000.
Structure will be 2½ stories, 50x36. v.

Contract for erection of St. Paul's Parochial School, Craig Street, was awarded to the Duquesne Construction Co., Bessemer Building. It will be a three-story brick structure; cost, \$60,000. Architect is John T. Comes, Washington National Bank Building. v.

MacClure & Spahr, architects, Keystone Bank Building, have prepared plans for an eight-story store and office building to be erected on the old Tree of Life property at Fourth Avenue and Ross Street by Albert Curry, of the firm of Avey & Irish, Union National Bank Building. Structure will be a fireproof building, with 77 offices and small storerooms on first floor. Cost, \$125,000. v.

Architect John T. Comes, Washington National Bank Building, is preparing plans for new church for the Polish Roman Catholic congregation to be erected on Cooper property at 1618-1620 Penn Avenue. Cost, \$75,000. v.

We are advised that Thomas J. Keenan,

KEYSTONE FLAT FINISH

Farmer's Bank Building, Pittsburg, has awarded contract to Architect Thomas Hannah, Diamond Bank Building, to design seventeen-story store and office building to be erected at Penn Avenue and Seventh Street, Pittsburg. v.

Architect Frank Andrews, Cincinnati, O., has been commissioned to draw plans for large addition to the Fort Pitt Hotel. The new structure will be twelve stories high, and will contain 500 rooms, including ball rooms, dining rooms, bowling alleys, and a magnificent banquet hall. Addition will be erected just east of present structure on Penn Avenue. v.

Thomas Reilly, Ellsworth Avenue, Pittsburg, was awarded contract for wings A. B. C. and D., together with the power house for St. Francis Hospital. Building will be fireproof throughout and constructed of brick, concrete and Indiana limestone. Floors and roof will be fire-

proof and concrete. Building was designed by Sidney F. Heckert, Lewis Block, Pittsburg. Cost, \$650,000. v.

PORTSMOUTH, VA.—Improvements are to be made to the Naval Hospital here, involving an expenditure of \$200,000. Plans, which are being prepared by Wood, Donn & Deming, architects, 808 Seventh street, Washington, D. C., provide for extending the wings on the main front of the building, increasing the width 200 feet. A dome will be placed on the roof, in which the general operating room will be located. An additional building will be constructed, to be used for contagious diseases.

PORT TOWNSEND, WASH.—Sealed proposals will be received by the Supervising Architect, Washington, D. C., until 3 o'clock P.M. on the 2d day of May, 1907, and then opened, for the construction of an isolation hospital at the United States Quarantine Station, Port Townsend, Wash., in accordance with drawing and specification, copies of which may be had at the discretion of the Supervising Architect, by applying at his office or to the Medical Of-



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ficer in command at Port Townsend, Wash.
PROVIDENCE, R. I.—Plans are on foot looking toward the erection of a \$175,000 city hospital for contagious diseases.

REDLANDS, CAL.—Col. W. C. Greene is stated to be having plans prepared for a residence which he intends erecting in Redlands at a cost of about \$75,000.

REISTERSTOWN, MD.—Archer & Allen, Central Savings Bank Building, Baltimore, Md., have prepared plans for additions to be made to Hannah More Academy, including clock tower and service and dormitory building; tower will have frontage of 25 feet and will be 75 feet high; building will be 31x64 feet; three stories high; façade of colonial brick laid in Flemish bond; marble trimmings; colonial style of architecture.

RICHMOND, VA.—The railroads entering this city are said to be contemplating the erection of a union depot on Main street, to cost about \$1,000,000. D. W. Lum, Chief Engineer of Maintenance of Way and Structures of the Southern Railroad, at Washington, D. C., may be able to give further information.

ROCKFORD, ILL.—Bids will be received until May 14 by James Knox Taylor, Supervising Architect, Washington, D. C., for the construction, including heating apparatus, electric wiring and conduits of the extension of the United States postoffice at Rockford.

ROSSFORK, IDAHO.—Bids are asked by the Commissioner of Indian Affairs, Washington, D. C., until 2 P. M., May 7, for material and labor for constructing stone dormitory

KEYSTONE FLAT FINISH

and a stone hospital at Fort Hall School, Idaho. Further information may be obtained from A. F. Caldwell, Rossfork, Idaho.

ST. JOSEPH, MO.—Reports state that plans have been prepared by Architects Eames & Young, Chestnut and Seventh streets, St. Louis, and E. J. Eckel, Commercial Bank Building, St. Joseph, for a six or eight-story hotel building, 140x160 feet, for the Buchanan Hotel Company. Cost, \$300,000.

The Hebrews here, it is said, are planning to erect a new synagogue. It will cost about \$50,000. Samuel Block, M. C. Strauss and others are on the building committee.

The Fruit Growers' Publishing Company will erect an office building here, according to reports, to cost in the neighborhood of \$50,000. It will be three stories high.

Haward Realty Company is having plans prepared by Meier, Hartman & Meier, architects, for a four-story fireproof building; steel and concrete construction; electric elevator; steam heating; electric lighting.

ST. LOUIS, MO.—The erection of a \$225,000 vaudeville house is reported contemplated. Martin Lehman, manager of the Orpheum, may be able to give further information.

The Luran Realty Company will erect an eight-story office building to cost about \$225,000.

The Masonic Sanitarium and Training

School Co., 3509 Franklin avenue (James M. Ball, secretary), it is stated, intends erecting at Kings Highway and Clayton avenue a \$100,000 building. Plans have been approved and provide for a foundation and main pillars of reinforced or armored concrete, and the structure throughout to be fireproof.

James H. McTagus is reported to be arranging to erect a hotel at Pine and Ninth streets, to cost \$300,000.

ST. PAUL, MINN.—It is understood that the Schuberts have secured options on several sites, with a view to erecting an opera house, to seat about 1,500. A building to cost \$90,000 is proposed.

SAN FRANCISCO, CAL.—The First Baptist Church of San Francisco, Cal., is preparing to build a new edifice at a cost of \$50,000 to \$75,000. George E. Burlingame, Sausalito, Cal., is pastor.

T. Paterson Ross, Mutual Life Building, and A. W. Burgren, are reported to have prepared plans for a reinforced concrete edifice to be erected by the congregation of the United Presbyterian Church at Golden Gate avenue and Steiner street, at a cost of about \$75,000. Dr. H. H. Bell, pastor.

The Alaska Commercial Company, Kohl Building, is making arrangements to erect a twelve-story Class A structure to cost \$500,000. It will be located at the corner of California and Sansome streets.

M. P. Sheidman has applied for a permit to erect a five-story brick hotel building at a cost of \$130,000. It will be located on the corner of Howard and Sixth streets.

The Schroth Company will erect a ten-

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story Class A building on the corner of Stockton street and Union Square avenue, to cost \$200,000.

It is stated that a seven-story steel frame building, to cost \$200,000, and to be located at the corner of California and Montgomery streets, will be erected by E. A. Bridgford and B. G. White, trustees for Jack Clunie.

The Metropolis Trust & Savings Bank building which is to be erected on the corner of Market and New Montgomery streets, will be Class A in every detail, fourteen stories in height, with three electric elevators. Estimated cost, \$600,000. L. B. Dutton, Chronicle Building, is architect.

Plans have been completed for and construction will begin at once on the new building of the First National Bank, on the site of the old Masonic Temple, corner of Post and Montgomery streets. D. H. Burnham & Co., Merchants' Exchange Building, have designed a Class A building, which is to cost approximately \$800,000. It will cover 75x100 feet.

SAN FRANCISCO, CAL.—Building operations have been hampered in a degree by the rains, but with the removal of the height limit on Class A buildings there has come greatly increased activity. The return of normal weather conditions during the last four days of the month brought a rush of applications for building permits. Hotel accommodations have increased, as have those of rooming and boarding houses. Many flats and residences have been completed, and there is a tendency toward reduction of rents. The following summary shows San Francisco's condition: Value of March building permits, \$8,203,880. Adding 15 per cent. for undervaluation would bring this amount to \$9,434,452. Value of permits issued since the fire, \$55,058,756. Adding 15 per cent. for undervaluation would bring this amount to \$63,317,568.

Additional indication that the business centers of San Francisco will be located in the same districts as they were before the fire is offered by the decision of the Mutual Life Insurance Company to repair and occupy their building at the corner of Sansome and California Streets. The lower stories will be occupied by the Canadian Bank of Commerce and the upper stories will be occupied by the Mutual Life Insurance Company. The architect for the alterations and repairs is Mr. Nathaniel Blaisdell. The contract for this work was recently awarded to the Frank Gilbreth Company on the cost-plus-a-fixed-sum basis.

SAN LUIS OBISPO, CAL.—Reports state that the Governor has signed the following bills: \$133,000 for the California Polytechnic School at San Luis Obispo, and \$70,000 for training school building for the State Normal at San Diego.

SEATTLE, WASH.—The Y. M. C. A., it is said, is having plans prepared for a building to cost \$300,000.

The Kenney Presbyterian Home will erect a building to cost \$100,000. George F. Frye has taken out a permit for the foundation of a ten-story steel frame hotel building.

SHARON, PA.—The School Board, it is reported, will erect a \$50,000 high school in West Sharon.

SHREVEPORT, LA.—It is stated that Sanguinet, Staats & Hill, architects, Wilson Building, Dallas, Texas, have plans and will take figures in about a month for an addition to the New Phoenix Hotel, at Shreveport, for Peter Youree. The building will be constructed of architectural and structural iron and steel, plate glass, marble, mosaic and tile work, hard plaster, with composition roof, gas and electric fixtures, plumbing supplies, etc. \$250,000.

SILLSBEE, TEXAS.—The Harvey Hotel, recently destroyed by fire, will be shortly rebuilt and enlarged, it is said.

SIoux CITY, IA.—The members of the Grace Episcopal Church, it is stated, are preparing to erect a \$40,000 edifice.

SOMERVILLE, MASS.—The West Somerville Baptist congregation, it is reported, has decided to erect a \$50,000 edifice. Jesse E. Perry, chairman building committee.

SPOKANE, WASH.—C. D. Wilbert, it is reported, has announced that he intends erecting a seven-story building at Main avenue and Washington street, to cost \$150,000.

D. C. Corbin is having plans prepared for a six or seven-story building to be located at the corner of Main avenue and Washington street. This site has a frontage of 100 feet on Main avenue and a depth of 142 feet. Such a building as Mr. Corbin contemplates erecting would probably cost between \$150,000 and \$200,000.

Holy Trinity Episcopal Church, of which Rev. A. E. Worthing is pastor, will erect a building at Dean Avenue and Elm Street to cost \$60,000. It will be of stone construction.

The Spokane Club has secured a site on Riverside Avenue, near Monroe Street, for \$55,000, and it is announced a club building to cost \$150,000 will be erected this year.

Chicago investors operating with J. L. Callahan & Co. will erect a ten-story steel structure, 100x150 feet, on Riverside Avenue, at a cost of \$250,000. It will contain a grill and dining room and the rooms will be arranged in suites for families.

The Spokane Dry Goods Company, of which R. B. Paterson is president, will erect a five-story building on Main Avenue early next year. The cost is placed at \$125,000. The company will also build a wholesale house at Lincoln Street and Railroad Avenue to cost \$100,000 this summer. The building will be six stories, 142x150 feet.



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N. Y.
- LIGHTNING RODS.**
T. W. Jones, New York.....
- MAL CHUTES.**
Cutler Mfg. Co., Rochester, N. Y....
U. S. Mail Chute Equipment Co.,
St. Louis, Mo.
- MARBLE-WORKERS.**
Batterson & Eisele, New York....
The Robert C. Fisher Co., New York.
- METAL CEILING.**
The Berger Mfg. Co., Canton, Ohio..
W. H. Mullins Co., Salem, Ohio....
See also Fireproofing.....
- METAL LATHING.**
American Rolling Mill Co., Middle-
town, Ohio.....
G. Hayes, New York.....
Truss Metal Lath Co., New York....
- MINERAL WOOL.**
U. S. Mineral Wool Co., New York..
- MORTAR COLORS.**
Saml. H. French & Co., Philadelphia,
Pa.....
- PAINT.**
Joseph Dixon Crucible Co., Jersey
City, N. J.....
Keystone Varnish Co., Brooklyn, N. Y.
National Lead Co., New York.....
- PHOTOGRAPHS.**
J. W. Taylor, Chicago, Ill.....
- PLASTER ORNAMENTS.**
Samuel H. French & Co., Phila-
delphia, Pa.....
- PLUMBING GOODS.**
Standard Sanitary Mfg. Co., Pitts-
burg, Pa.....
Wolf, L., Mfg. Co., Chicago.....
- PNEUMATIC TANKS.**
Kewanee Water Supply Co., Kewa-
nee, Ill.....
- PRISM LIGHTING.**
American Luxfer Prism Co., Chicago.
Holophane Glass Co., New York....
- PUMPS.**
Rider-Ericsson Engine Co., New York.
- REFLECTORS.**
I. P. Frink, New York.....
Holophane Glass Co., New York....
- REINFORCED CONCRETE.**
Clinton Wire Cloth Co., Clinton, Mass.
Expanded Metal and Corrugated Bar
Co., St. Louis.....
Gabriel Concrete Steel Co., Detroit,
Mich.....
Gilbreth, Frank B., New York.....
Trussed Concrete Steel Co., Detroit.
Turner Construction Co., New York.
Underwriters' Engineering and Con-
struction Co., New York.....
W. N. Wight & Co., New York.....
- ROOFING MATERIALS.**
American Sheet & Tin Plate Co.,
Pittsburg.....
Barber Asphalt Paving Co., Phila-
delphia.....
Bird, F. W., & Son, East Walpole,
Mass.....
Keasbey & Mattison Co., Ambler,
Pa.....
See also Asphalt Roofing.....
- SASH-CORD.**
Samson Cordage Works, Boston....
- SCHOOLS OF ARCHITECTURE.**
Lawrence Scientific School, Harvard
University, Cambridge, Mass.....
- Massachusetts Institute of Tech-
nology, Boston.....
Ohio State University, Columbus,
Ohio.....
Society of Beaux-Arts Architects,
The, New York.....
University of Michigan, Ann Arbor..
University of Pennsylvania, Phila-
delphia, Pa.....
Washington University School of
Engineering and Architecture, St.
Louis, Mo.....
- SHEET-METAL WORK.**
Berger Mfg. Co., Canton, O.....
W. H. Mullins Co., Salem, O.....
J. S. Thorn Co., Philadelphia, Pa....
- SKYLIGHTS, ETC.**
Burt Mfg. Co., Akron, Ohio.....
George Hayes, New York.....
W. H. Mullins Co., Salem, O.....
Vaile & Young, Baltimore, Md.....
- STAIR TREAD.**
American Mason Safety Tread Co.,
Boston.....
- TAPES AND RULES.**
Lufkin Rule Co., Saginaw, Mich...
- TERRA-COTTA.**
The Northwestern Terra-Cotta Co.,
Chicago, Ill.....
- TILES.**
Information Bureau of Tile Industry
Washington, D. C.....
Jackson, Wm. H., Co., New York....
- TILES (Interlocking Rubber).**
N. Y. Belting and Packing Co., Ltd.,
New York.....
Pennsylvania Rubber Co., Jeannette,
Pa.....
- TIN AND TERNE PLATES.**
American Sheet & Tin Plate Co.,
Pittsburg.....
- VACUUM CLEANING.**
General Compressed Air & Vacuum
Machinery Co., St. Louis, Mo.....
- VALVES AND PACKING.**
Jenkins Bros., New York.....
- VENTILATING APPARATUS.**
New York Blower Co., Chicago.....
Thomas & Smith, Chicago.....
- VENTILATORS.**
Burt Mfg. Co., Akron, Ohio.....
Globe Ventilator Co., Troy, N. Y....
- WATER HEATERS.**
Monarch Heater Co., Pittsburg, Pa.
- WATERPROOFING.**
Bird, F. W., & Son, East Walpole,
Mass.....
- WATER SUPPLY SYSTEMS.**
Kewanee Water Supply Co., Kewa-
nee, Ill.....
- WEATHER VANES.**
T. W. Jones, New York.....
- WINDOW LINE.**
Samson Cordage Works, Boston....
- WIRE GLASS WINDOWS.**
George Hayes, New York, N. Y....
James A. Miller & Bro., Chicago, Ill.