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NO. 1495



ARCHITECTURE

ENGINEERING

DECORATION

238 TREMONT ST.

CONSTRUCTION

BOSTON MASS.

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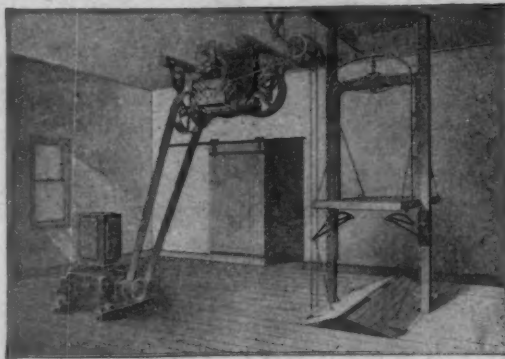
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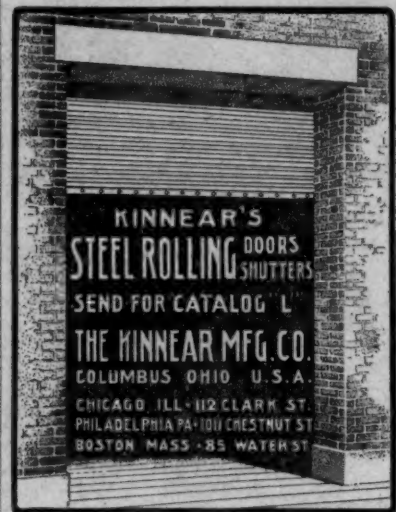
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THE AMERICAN ARCHITECT AND BUILDING NEWS

A WEEKLY JOURNAL OF CONSTRUCTIVE AND DECORATIVE ART

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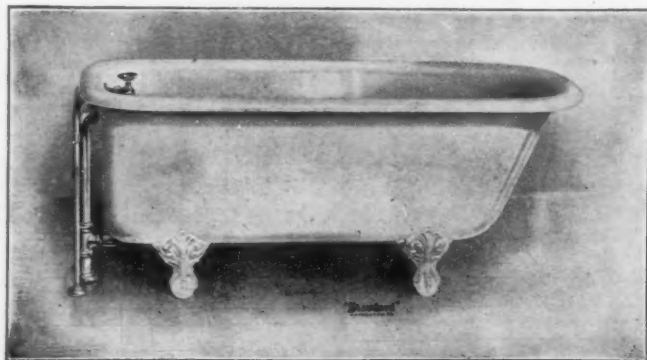
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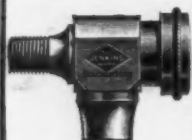
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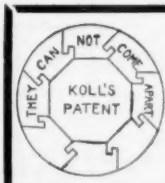
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BUILDING INTELLIGENCE.

(Reported for the American Architect and Building News.)

(Although a large portion of the building intelligence is provided by their regular correspondents, the editors greatly desire to receive voluntary information, especially from the smaller and outlying towns.)

ADVANCE RUMORS.

BALTIMORE, Md.—Sperry, York & Sawyer are preparing plans for a building for the Merchants' Club, to be erected on the old site on German St.

Parker & Thomas have prepared revised plans for the Maryland Casualty Company's building, to be built on lot at the corner of North Baltimore and Fayette Sts. Construction of brick and terra-cotta, three stories, 37x208 feet. General contractors are Henderson & Co., Limited.

Architect T. Henry Randall, of 51 Madison Ave., New York, is preparing the plans for the new building of the First National Bank of Baltimore, to be erected on the old site, at 17 South St., opposite German St., with fronts on two streets.

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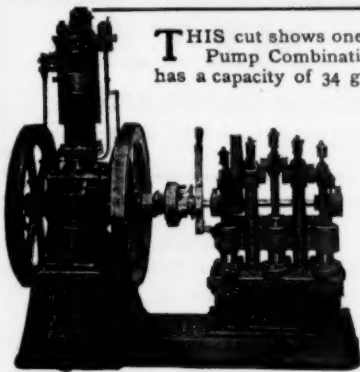
(Advance Rumors Continued.)

Sperry, York & Sawyer, Builders' Exchange, Baltimore, have been commissioned to prepare plans for the new building of the Consolidated Gas Company, at the northwest corner of Lexington and Liberty Sts. The structure will be five stories, fireproof, steel, stone and brick. Estimated cost, \$100,000.

BAY CITY, MICH.—Report states that Jos. Mills, of Pontiac, is preparing plans for a court-house to be erected here, at an estimated cost of \$100,000.

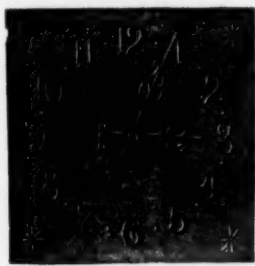
BOONE, N. C.—L. W. Cooper, of Charlotte, is stated to have received the contract for erecting a court house in Watauga County, at a cost of \$20,000.

BOSTON, MASS.—The Employers' Liability Assurance Corporation building, to be erected on Broad St., extending from Water St. to Central St., from plans by Shepley, Rutan & Coolidge, architects, is to be a thoroughly modern and up-to-date fireproof office building, eleven stories high. The plans call for a handsome brick and brown stone building, with a frontage of 80 feet on Broad St. and 50 feet on Water St. and on Central St. L. D. Willcutt & Son are the general contractors. The building will be ready for occupancy Oct. 1, 1905. The building is owned by Harvard College and is leased to the Employers' Liability Company for a term of 50 years.



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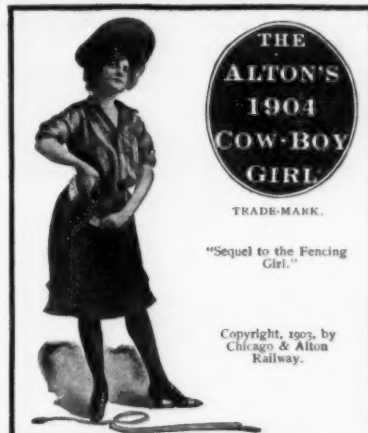
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BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

The Schoolhouse Commission has designated the following architects to prepare plans for schoolhouses: James E. McLaughlin, for the proposed new grammar schoolhouse, to be located on Harvard St., Dorchester; Charles K. Cummings, primary schoolhouse at the corner of L and Fourth Sts., Lincoln district, South Boston, and William H. McGinty, for the enlargement of the new Howard Ave. schoolhouse, Phillips Brooks district.

Eben D. Jordan has purchased two lots at the corner of Beacon and Clarendon Sts., at the Back Bay. The present houses thereon will be removed and a costly residence will be built on the site. The stables are to be remodelled to conform to the new house.

BRADDOCK, PA.—It is reported that the Henry Shenk Company, of Pittsburgh, has received the contract for erecting a building for the National Bank of Braddock, for about \$200,000.

BROOKLYN, N. Y.—F. S. Lowe, 186 Remsen St., has completed plans for a brick, stone-trimmed, gravel roof stable for Temperance & Sutherland, 208 Willoughby St., \$10,000.

CAMDEN, N. J.—George Bachman has been awarded the contract for building the twelve-room schoolhouse at the corner of Newton Ave. and Chestnut St., at \$38,119.

CANANDAIGUA, N. Y.—The Board of Education is stated to have accepted the plans of Wilson Potter, New York City, for the two-story brick academy building to be erected here, at an estimated cost of \$80,000.

CHICAGO, ILL.—Wolfe Adolphus has purchased a fine residence site, 100x150 feet, at the corner of Sheridan Road and Bryn Mawr, for \$27,000, and will erect a fine residence, costing about \$50,000.

Rabbi Schreiber and Adolph Kraus are members of a building committee appointed by Emmanuel congregation to make arrangement for a new synagogue to be built at the intersection at Cleveland and Belden Aves. The preliminary plans provide for a two-story building, 60x90 feet, with a seating capacity of 1,000, which is to cost \$25,000.

Revised plans for the new Maria Incoronata Roman Catholic church (Italian), the Rev. R. A. Lorenzoni pastor, to be built at 12-16 Alexander Place, have been completed by William F. Gubbins. The struc-

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

ture is designed in the Romanesque style of architecture, with 85-foot tower, carried out in brick and stone. It will have 60x100 feet ground dimensions, and will cost \$50,000.

Mrs. Joseph Kiple, widow of the late chief of police, will build a residence on Lexington Ave., near Fifty-third St., after plans by Henry L. Newhouse. It will be two stories high, 35x70 feet, of brick and stone, with tile roof, and will cost \$20,000.

It is reported that plans are being prepared for the Michael Reese Hospital, to be erected at Groveland Ave. and 29th St., at a probable cost of \$500,000.

The Fort Dearborn building at the southwest corner of Clark and Monroe Sts. is to be enlarged by a thirty-foot front sixteen-story addition on the south and four stories added to the present twelve-story building, the cost of which will exceed \$300,000. Plans for the new building and additional stories are being prepared by Architects Jenney & Mundie, and it will conform in design and material to the present structure. It is intended to award the contracts for construction within six weeks with a view to completion by May 1.

CINCINNATI, O.—The Southern Railway Company (A. Stewart, M. E., Washington, D. C.) is reported to be considering the erection of a terminal at Commerce and Vine Sts. The structure to be a two-story stone, brick, iron and steel building, and cost about \$200,000.

CLEVELAND, O.—The contract has been awarded by F. L. Packard, architect, of Columbus, for the erection of the Infirmary building, at the Cleveland State Hospital, to R. H. Evans & Co., of Zanesville, O., the contract price \$53,990. The structure will be two stories in height, of brick and stone, and will contain a number of retiring rooms, together with a large dining room.

The City Hall Commission has closed a contract with Architect J. Milton Dyer, Cuyahoga building, for plans for City Hall to cost \$1,500,000.

DAVENPORT, IA.—The School Board has awarded to H. B. Walters, Danville, Ill., the contract for the construction of the new high school building at \$191,270.

DAYTON, O.—The congregation of the First U. B. Church has purchased a site at Fourth and Perry Sts., for the erection of an edifice, to cost \$50,000.

DETROIT, MICH.—A. W. Chittenden has

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

prepared plans for a two-story office building for the Detroit Stove Works.

Baxter & O'Dell have prepared plans for a terrace of three houses to be built on Alexandrine Ave. E., near Woodward Ave., for the C. D. Widman estate.

E. W. Gregory has prepared plans for a six-family apartment to be built on Prentiss St., near Cass Ave.

Stratton & Baldwin are the architects for the addition to the Detroit Museum of Art.

It is reported that the congregation of the North Baptist Church, Woodward Ave. and North Grand Boulevard, will erect an edifice to cost \$50,000.

ELIZABETH, N. J.—The plans of Louis J. Quien, Jr., for a two-story brick school have been accepted by the Board of Education. The site is at the corner of Prince St. and Union Ave., and estimated cost is \$38,000.

ELKHART, IND.—W. J. McAlpine, of Dixon, has secured the contract for constructing the United States post office at this place, for \$58,400.

EL PASO, TEX.—The Order of Elks are reported to have approved the plans prepared by Edward Knezel for the erection of a lodge building to cost \$65,000.

EVANSTON, ILL.—It is reported that the congregation of St. Mary's Church will erect a three-story brick parish house at a cost of \$40,000. Father Smythe, pastor.

EVANSTON, WYO.—E. Miller, of Minneapolis, Minn., has secured the contract for constructing the United States court-house and post office at this place, at \$149,300.

GIBSONVILLE, N. C.—The plans of Hook & Sawyer, of Charlotte, have been approved by the County Superintendent for a six-room school, to be erected here, at a cost of \$40,000.

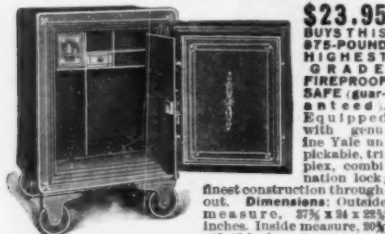
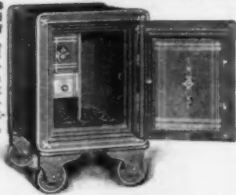
GLENDALE, CAL.—Plans of C. F. Skilling, of Los Angeles, for the new \$10,000 grammar school at Glendale have been accepted, and the trustees will advance the project as rapidly as possible.

GREENVILLE, S. C.—Jameson & Morris have received the contract for erecting a passenger station here for the Southern Railway Company; estimated cost, \$80,000.

GREENWOOD, MISS.—Press report states that the Board of Supervisors are advertising for plans and specifications for a

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BUILDING INTELLIGENCE.*(Advance Rumors Continued.)*

modern, up-to-date \$75,000 or \$100,000 new court-house building, to be erected and accepted at the October meeting of the Board. A committee was empowered to purchase two lots just east of the present court-house, which, added to the grounds now owned, will give ample room for the new structure. It is the purpose of the Board to also build a new jail.

HAMMOND, IND.—Nimmons & Fellows, 204 Dearborn St., Chicago, Ill., have plans for a large manufacturing plant, for Reid, Murdock & Co., who will remove from Chicago to Hammond. There will be two buildings one and two stories high, covering 60x240 feet and 250x300 feet. They will be of semi-fireproof construction and cost about \$200,000.

KANSAS CITY, Mo.—Hucke & Sexton, N. Y. Life building, are reported to be preparing plans for a residence to be erected on Armour Boulevard, by J. Logan Jones, at a cost of \$35,000.

LANCASTER, O.—Richards, McCarty & Bulford, Columbus, have completed the plans for a handsome new \$45,000 high school building, to be erected in this place.

LOUISVILLE, Ky.—The Fidelity Trust Company has purchased ground on Jefferson St. and will erect two store and office buildings.

MALDEN, MASS.—The Common Council has appropriated \$500 to secure plans, etc., for the proposed addition to the high school.

MENDON, ILL.—Reports state that Geo.

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Behrensmeyer, of Quincy, has completed plans for an edifice to be erected by the Congregational Society.

MINNEAPOLIS, MINN.—A new cathedral is contemplated. It is proposed that the total cost shall be in the vicinity of \$300,000, and that a time limit of not less than five years be placed on the building. Archbishop Ireland will appoint the executive committee during the course of the next two weeks, after which time plans and specifications will be prepared.

MOREHEAD, N. C.—The County Superintendent has approved the plans of Hook & Sawyer, of Charlotte, for a six-room school, to be erected here, at a cost of \$40,000.

NEW ORLEANS, LA.—Report states the contract for erecting a Y. M. C. A. building at Palafox and Belmont Sts. has been awarded to Robert B. Heine, for \$24,852.

PERTH AMBOY, N. J.—The Buckley Construction Company, of Schenectady, N. Y., has secured the contract for constructing the United States post office and Custom House at Perth Amboy, including heating apparatus, electric wiring and conduits, at \$52,400.

PHILADELPHIA, PA.—The contract for erecting the Wm. L. Elkins Home for Orphan Girls, at Broad St. and Hunting Park Ave., has been awarded to Doyle & Doak, at about \$240,000. The orphanage will be a three-story brick building of Colonial architecture. There will be a central building, 68x125 feet, with a wing 36x107 feet on each side. Horace Trumbauer, architect, Land Title building.

It is stated that the contract for erecting a four-story maternity pavilion for the Presbyterian Hospital has been awarded to Stacy Reeves & Sons, for about \$35,000.

A permit has been granted Chas. Gilpin, contractor, 211 Pennsylvania building, for

BUILDING INTELLIGENCE.*(Advance Rumors Continued.)*

erecting a brick and terra-cotta theatre at Broad and Cherry Sts., at a cost of \$210,000.

PITTSBURG, PA.—A. & S. Wilson, 541 Third Ave., received the contract for erecting additions to the Allegheny County jail, for \$568,050.

PROVIDENCE, R. I.—Martin & Hall have completed plans for a \$90,000 schoolhouse, to be built at the corner of Ontario and Niagara Sts.

PUEBLO, COLO.—Robert S. Roeschlaub, of Denver, has completed plans for the new \$300,000 high school building.

RALEIGH, N. C.—The contract to erect an agricultural building at the North Carolina College of Agriculture and Mechanic Arts has been awarded to W. C. Bain, of Greensboro, at about \$41,000. Hook & Sawyer, architects, Charlotte.

SOUTH HADLEY, MASS.—Caspar Ranger, of Holyoke, is stated to have received the contract for erecting the Mount Holyoke College Library here, for about \$100,000. Geo. F. Newton, Boston, architect.

STEWARTSVILLE, N. J.—It is probable that a school will be erected here in the near future, and will cost about \$15,000.

ST. JOSEPH, Mo.—J. A. McGonigle, of Leavenworth, has been awarded the contract for constructing the United States post office extension at this place, at \$178,920.

ST. PAUL, MINN.—A permit has been issued for an addition to Bethesda Hospital, on Ninth St., to cost \$25,000. Olaf Swanson, contractor.

TOLEDO, O.—T. Bentley & Sons have received the contract for erecting a building for the Toledo Elks Building Company, at \$37,529.

VERSAILLES, Mo.—Reports state that C. T. Taylor has purchased a site for the erection of a \$50,000 hotel.

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

WAMPUM, PA.—It is reported that the Catholic congregation will erect an edifice here, to cost \$82,000.

WATERBURY, CONN.—Architect Joseph A. Jackson, 1,123 Broadway, New York, has completed plans for a new rectory to be built on South Main St., this city, by Our Lady of Lourdes Church, of which the Rev. M. A. Karan is pastor. It will be about 34x52 feet, constructed of gray pressed brick and terra-cotta, with a slate roof.

WICHITA, KAN.—The First Presbyterian Society has decided to erect a church here to cost \$35,000.

WINCHENTON, MASS.—J. J. Prindiville, South Framingham, has the contract for the erection of a two-story schoolhouse. Construction of brick, 68x42, four rooms, and cost \$15,000. W. T. Townner, 6 Beacon St., Boston, architect.

WINCHESTER, MASS.—Report states that the congregation of the Church of Epiphany has voted to erect a brick edifice 120x30 feet, at Church and Central Sts., at a cost of about \$40,000.

WOBURN, MASS.—Robert Allen Cook, of Milford, has been selected as architect for the new \$100,000 high school building to be erected in this city.

PROPOSALS.

BARRACKS.

(At Ft. Douglas, Utah.)

Bids are wanted September 7 for constructing a barrack building and a guard-house, including plumbing, gas piping, heating and electric wiring at this post. CAPT. SAM'L V. HAM, Constructing Q. M., 512 Dooly Bldg., Salt Lake City. 1496

LIBRARY STACKS.

(At New York, N. Y.)

Bids will be received September 22 by the Board of Park Commissioners for furnishing material and erecting library stack work in the N. Y. Public Library. JOHN J. PALLAS, President. 1496

HEATING, ETC.

(At National Military Home, Ind.)

Bids will be received September 1 by John Q. Adams, Treasurer, Marion Branch, N. H. D. V. S., for extension of hot-water heating plant and constructing tile drain. 1495

Treasury Department, Office of the Supervising Architect, Washington, D. C., August 13, 1904. Sealed proposals will be received at this office until 3 o'clock P. M., on the 16th day of September, 1904, and then opened, for the construction, including plumbing, heating apparatus, electric wiring and conduits, of the U. S. Post-office at Marblehead, Massachusetts, in accordance with drawings and specifications, copies of which may be had at this office or at the office of the Postmaster at Marblehead, Massachusetts, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1496

Treasury Department, Office of the Supervising Architect, Washington, D. C., August 12, 1904. Sealed proposals will be received at this office until 3 o'clock P. M., on the 12th day of September, 1904, and then opened, for the construction of the U. S. Post-office, Zanesville, Ohio, in accordance with drawings and specifications, copies of which may be had at this office, or the office of the Postmaster at Zanesville, Ohio, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1496

Treasury Department, Office of the Supervising Architect, Washington, D. C., August 8, 1904. Sealed proposals will be received at this office until 3 o'clock P. M., on the 12th day of September, 1904, and then opened, for the construction (except heating apparatus, electric wiring and conduits), of the U. S. Post office at Kankakee, Illinois, in accordance with drawings and specifications, copies of which may be had at this office or at the office of the Postmaster at Kankakee, Illinois, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1495

Treasury Department, Office of the Supervising Architect, Washington, D. C., August 2, 1904. Sealed proposals will be received at this office until 3 o'clock P. M., on the 25th day of August, 1904, and then opened, for the construction of the extensions to the U. S. Court-house and Post-office Building at Detroit, Mich., in accordance with drawings and specifications, copies of which may be had at this office, or at the office of the Custodian at Detroit, Mich., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1495

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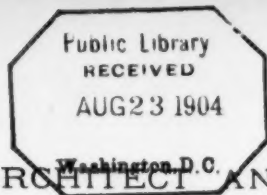
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THE AMERICAN ARCHITECT AND BUILDING NEWS

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SATURDAY, AUGUST 20, 1904

No. 1495

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THERE is many a man who would feel he deserved his Maker's "well done," could he but claim to have done a small portion of the praiseworthy things that Samuel Putnam Avery, who died last week at the age of eighty-two, took so much pleasure in doing for his fellow-men, for their enlightening and their uplifting. His humanitarianism was indicated by his taking part in the Civil War as a member of the Twenty-third Regiment, N. Y. Volunteers, and his later efforts to help forward the education not only of the Negro but of the Indian as well, and by his interest in charitable undertakings of sundry kinds throughout his lifetime. His most beneficent endeavors, however, since into them was thrown the strength of a real personal interest, turned in the direction of stimulating and directing the growing interest of his fellow-citizens in New York in matters of art. In this field his development was interesting and natural. Beginning life as an engraver on wood and copper, while yet a mere youth, it was but natural that he should develop as a publisher of prints. Selected as one of the United States Commissioners to the Paris Exhibition of 1867, he was able to make the beginnings of a large acquaintanceship with foreign artists, and on his return to New York he opened a picture-dealing gallery, which grew to be one of the most famous in the country and proved the means of accumulating a large property for himself, so that at the age of sixty-three he was able to retire from business, but not to a life of idleness, for he was active in the forwarding of his selected interests up to the day of his death. These interests lay mainly along the pathway of the arts, and it was through his position as a director in the Metropolitan Museum of Arts that he was able to render such good service to his fellow-citizens, not only through ungrudging expenditure of his own time and special gifts to the collections, but still more through his being able to influence others to give or bequeath collections of value which are making the New York museum one of the great institutions of the kind. Being also a trustee of the Lenox Library and the New York Public Library, these institutions, also, benefited by his foster-

ing care, particularly the former, whose collection of prints he greatly enhanced. His most significant undertaking, one in which his wife joined him, was the founding and endowing of the valuable Avery Architectural Library at Columbia University, in memory of his second son, an architect educated at the Ecole des Beaux-Arts. This collection, unquestionably the largest and most complete in this country, and probably one of the largest in the world, is a great boon to the profession in New York, since it is managed under singularly liberal regulations, and the profession at large has made what acknowledgment it could by making Mr. and Mrs. Avery Honorary Members of the American Institute of Architects. These enlightened parents also made the memory of a daughter, a teacher, more lasting, by establishing a memorial library in connection with the Teachers' College, now an annex of Columbia University. In these ways and through his aiding and guiding amateurs in the formation of private collections of paintings and through his activities on the art committees of such clubs as the Grolier, the Players', the Union League and the National Arts, Mr. Avery exerted a very wide influence in the education of the last two generations of New Yorkers in matters of art.

THE latest move in the latest labor-union trouble that has arisen in New York is a most unexpected one and one which would seem to offer much encouragement, but for the unfortunate facility with which Labor abrogates all its agreements and treaties and refuses to be restrained by the bonds that fetter Capital and that greater *tertium quid* that is neither Capital nor Labor. When Labor appeals to the Law, it looks as if it might be willing to give up its residence in the realm of unreason and return to the way of life that is governed by law, logic and reason; but, as we say, it is quite impossible to know what Labor will actually consent to as a permanent condition. The Building Trades Alliance has just entered suit under the anti-trust law against the Building Trades Employers' Association as a body organized to effect a restraint of trade, and this appeal to the law is, as we say, interesting, and it possibly may be encouraging. It seems to us, however, a case of the pot and the kettle, for we cannot conceive of any argument that can be brought against the employers that cannot be brought with equal justice against the unions, and as the law compels a pleader to come into court with clean hands, and as the hands of the union men are unclean with underhand methods and with human blood, it would seem as if their plea might run a very good chance of being thrown out of court.

DOUBTLESS the Building Trades Employers' Association, one of whose strong cards it is just now to declare for the "open shop," will be more than ever inclined to play it, because the long strike of carpenters at Springfield, Mass., which was declared off last week, has resulted in such a pronounced victory for the master-builders of that city and has assured

to them the advantages of the open shop. This strike, which lasted for fourteen weeks and seriously interfered with the building industries not only of Springfield but of all central Massachusetts, was peculiar in that although the strikers frequently invited their employers to meet them in conference the invitation was always ignored, the employers holding that their striking workmen had no further claim upon or interest in their former positions; that is, simply, they consistently refused to recognize the latest trade-union doctrine that a union man has "a right to his job," whether it is his pleasure to do the job or leave it undone while he is supported in idleness by strike benefits exacted from other union men willing for the nonce to accept wages. The Springfield carpenters have lost every point they contended for, have sacrificed the best part of the building season and have after all only established the open shop.

THE logical but not the natural outcome of the labor-union movement is to bring all the unions together into one vast central and nearly omnipotent body. This is the logical outcome but, considering the average intellectual standard of the laboring man, it is fortunate that the universal foibles of mankind stand in the way of its being the natural outcome. It is testimony to the importance of the building industries in this country that the first effort at the creation of a central body of the first importance should be made by the building trades. This body which is to be known as the Structural Building Trades Alliance of America has been germinating for a couple of years and the third meeting of the organizers was held at Indianapolis this month. The nine organizations, which have a total membership of nearly a million, that are already affiliated are the International Bricklayers and Masons; Brotherhood of Carpenters and Joiners; Operative Plasterers; Brotherhood of Painters and Decorators; Journeymen Plumbers; Steam and Gas Fitters; International Stationary Engineers; Bridge and Structural Ironworkers; Brotherhood of Electrical Workers, and International Hod-carriers and Building Laborers. Any congregation of a million men, so long as they consent to work together, can accomplish a great deal that is good or a greater amount of evil. Fortunately the present body, or rather the body's present leaders, seem to be well-intentioned men, as there is certainly to be found much that is deserving of praise in the following declaration of principles as stated in the Association's constitution:

The establishment of local and international boards of arbitration to settle disputes as they arise without having resort to strikes.

When necessary to give international sympathetic support to all trades affiliated, where local boards fail in their efforts to adjust difficulties.

To safeguard, protect and watch over the interests of the organizations affiliated.

To protect the autonomy of the several trades represented.

To keep agreements with employers inviolate.

To avoid and discourage strikes and to prevent international strife and friction in the building trades industry by substituting arbitration in settlement of trade disputes.

To oppose the formation of dual and rival bodies; to demand their complete annihilation and assist only such unions as are affiliated with their respective national or international unions conforming to this declaration of principles.

To encourage and maintain fraternal relations with existing recognized central bodies and to emphasize the necessity of a centralization of organized wage-earners.

THE New York newspapers are doing their best to make it appear that Mr. Hopper, the Superintendent of Buildings, has only a sinister motive in asking for an additional one hundred thousand dollars to expend on his pay-roll. It seems to us, however, that they do not give enough weight to the fact that the inspection of building operations in the past has been woefully ineffective, and that it is a matter of common knowledge that it would be impossible for the present number of inspectors, even if they were the very best obtainable, to give proper inspection to the vast amount of work that is done at such great speed. It is true that before his appointment Mr. Hooper was a Tammany district-leader, but it is also true that he was a successful and competent contractor for masonry work, and it is just as true that the present Tammany administration is making a singularly good record for itself in nearly all departments of municipal work. Fifty-four new men are to be employed, most of them inspectors, and their proper wages must consume the greater part of the new appropriation, and so there cannot remain a larger fraction of it than can be used, as is alleged, in improperly increasing the pay of the present force of inspectors, some of whom certainly are efficient enough to deserve any increase of pay that may come to them.

IT gives one a thrill of real pleasure each time that the supremacy of the law over incidental expediences is asserted. The Westminster Chambers case was a very interesting instance of the final triumph of the law, but that is as nothing to the spectacular decision of the House of Lords, which, being based on fundamental law and disregarding the injury and injustice the decision does to great vested interests, has recently thrown into confusion the entire Presbyterian Church of Scotland, depriving, as it does, the majority of the membership of all their right to and title in the churches, manses and other buildings, as well as to the invested funds they have hitherto held, and bestowing these on the minority, a score of poor parishes in the Highlands. That these Highlanders should profit in the amount of some twenty million dollars' worth of property because they had remained true to the principles of the establishment of their church and the doctrine of predestination is interesting enough, but not so noteworthy as that there should be judges capable of doing a great wrong for the sake of upholding an abstract right.

IT is very galling at times to have to follow one's own advice or to swallow the medicine prepared for another patient, so no good American can wonder that our newspaper writers are writhing in indignation at the audacity of the Canadian Government in ordering the deportation of certain civil engineers holding important positions in the work of constructing the new Canadian transcontinental railroad, the Grand Trunk Pacific. What right has Canada, or any other country, to protect its citizens by enacting an "alien contract labor law"? Is not that one of our own most precious inventions, and can't we do something to prevent an infringement of our rights in it? One is sometimes tempted to believe that Americans nowadays are a bit too strenuous to be wholly satisfactory occupants of this world.

THE ENGINEER, THE ARCHITECT, AND THE GENERAL CONSTRUCTION COMPANY.

WITH the permission of the editors and the assent of the writer, we are glad to be able to lay before our readers a paper by Mr. Reginald Pelham Bolton, C. E., which appeared in the August issue of the *Engineering Magazine*.

The proper relation of the architect to the engineer, always a matter of discussion, has become more and more delicate because of the increasing complication of modern buildings and building methods, which compel more than ever the members of the two professions to be associated closely in the carrying on of the same structural undertaking. Discussion of these complexities is usually confined to members of the same profession, and it is not often that the views of architects are laid before engineers or *vice versa*, and we have thought it might be advantageous and perhaps excite a public discussion, to which we should be glad to open our own columns, if we placed Mr. Bolton's paper where it would be seen by a great number of architects who do not read the *Engineering Magazine*:—

THE architectural profession has not infrequently recognized its responsibility for the results of its professional work, and has advanced in many ways along lines of modern development. But it has curiously failed to recognize its responsibility in another and more important respect, namely, that of the acceptance of fees in payment for certain technical and artistic work which its members are not qualified by training to execute, and in which they are not expert in the same sense as they are in connection with actual building design. The position occupied by the profession in this regard is not logical, and has brought about a very disastrous state of affairs as regards their employment in the largest building enterprises.

As the logical reason for the employment of professional ability in the design of a building, in place of the employment of contractors or builders for the purpose, it is maintained by the profession that their members are a trained body, expert in the design and proper construction of the work they undertake to plan, uninfluenced by the considerations which affect the contractor or builder, and capable of giving economical and independent advice to their clients.

The client, it therefore follows, in employing an architect, engages and pays for a personal ability and technical knowledge of the subjects under consideration and is entitled to a receipt of that personal capacity and technical information in each branch dealt with.

If, therefore, the architect does not possess expert knowledge on any one branch of his undertaking—and no one can expect that any one of that wide profession should be so fully informed—he is under moral obligation to supplement his own deficiency in respect of any particular item involved—such as, say, sculpture, modelling, decorative effects, landscape gardening, sanitation, boiler practice, chimney design, electrical equipment, heating, ventilating, hydrostatic, elevator, foundation, steel construction, or other modern requirements—by the equivalent expert and equally independent knowledge of others; otherwise he is not giving his client value for his engagements.

In other words, architects are paid for professional knowledge and experience upon all parts of the work they undertake, and cannot honestly accept pay for their services as amateur sculptors, artists, engineers, plumbers, and for amateur opinions upon technical subjects. Yet too many of them not only do so, but still adhere to the old practice of obtaining information, guidance, proportions, even their plans and specifications, from contractors and prospective bidders.

As regards engineering work, there are a few architects who by reason of a certain amount of habitude, possibly in some cases of a certain amount of training, possess a familiarity with some sanitary and engineering matters. But would they, if deprived of their architectural practice, undertake with that amount of knowledge to enter upon independent practice as experts in those lines?

In other words, will any architect assert himself to be as fully qualified in these matters as he professes to be, and is, in building design and construction?

Recognizing the necessity of doing something, but desirous of avoiding the cost of employment of ability of a character and cost equal to their own, a number of architects have proceeded to a course which has proved peculiarly adverse to the interests and credit of the profession. They hire inadequate and often inexperienced help in the shape of assistants or draughtsmen, and

put them forward as their substitute for technically trained expert assistance. One of the foremost firms of architects in the United States have in their employment, and put forward as their "consulting engineer," a very worthy, and in his own line deserving, man whom they took out of an engine-room. There are several others who pay their "consulting engineers" in their office from \$20 to \$30 per week, and permit this class of experience to pass upon and decide the important operating expenses of their clients. Such men are not only incompetent in the direction of knowledge, experience, or ability, but an injury is inflicted upon the client which often reflects back upon the architects, by placing such a class of men in control of matters where large sums of money and many competing and unscrupulous interests are engaged.

The very essence of the employment of professional men is that their "standing" shall protect the employer from corruption and undue influence; and in passing over any part of their engagement to a lower class of employed and often under-paid labor, the architects very seriously compromise their employer's interests. Even when an independent engineer is employed he is often made to feel that he is only the agent of the architect or is placed under obligations to make his designs coincide with the architect's views. The results are to be seen in many otherwise well-considered installations.

There are eight hundred and fifty practising architects in New York, and there are seventeen independent consulting engineers employed on such cognatic work, where there should be plenty of inducements and work for ten times the number. The architectural profession have had this matter drawn to their attention by several engineering societies, and have not only failed to correct their false position, but have embodied it in the provisions of their form of professional contract. As their self-sufficiency evidently renders them deaf to the calls of plain dealing, it is necessary to direct the attention of those who employ them to the matter, so that the existing system may perhaps be remedied from without. I shall not lay myself open to any charge of one-sidedness, but freely admit that there are some engineers posing as architects to whom the same consideration can be inversely addressed. But it is to the general credit of my profession that they are an extremely limited number.

It is in connection especially with steam apparatus that this matter assumes peculiar proportions, for in this the owner's pocket is particularly and permanently assailed. If a few personally conducted parties of steam users could be taken through some of the most modern fire-rooms in New York they would certainly be convinced of the desirability of employing engineers on engineering work. A trip up Broadway would reveal boilers in dark and stifling sidewalk vaults which are a menace to public security, since boilers so placed cannot be properly maintained in security; boilers far away from the chimney, necessitating horizontal smoke connections, in one case 225 feet long; boilers, as in one well-known and widely illustrated building, so badly placed and connected that when steam is raised in one the expansion pulls the piping off the other, or, as in one of the largest insurance buildings, placed in the same room as the machinery, with space for only one day's fuel. Such instances could be multiplied.

Owners are of course largely to blame. But they do not realize what the position is. The mechanical plant in a large office-building is worth from \$60,000 to \$150,000. On this an architect commonly receives his commission of 2½ or 5 per cent, or from \$1,500 to as much as \$7,500. His outlay in respect of its design is frequently nothing, the whole being obtained from contractors.

The steel structure may be competed for by more than one firm of contractors, but each maintains its own drawing-office, sometimes employing as many as 100 to 150 draughtsmen, the cost of which labor is added to the price; and thus the planning of this part of the work is frequently paid for by the owner of the building twice over.

The Building-Construction Company.—The unsatisfactory conditions of service, as offered by the majority of the architectural profession, have led to the introduction of a recent development of the pretensions of the builder to the possession of the facilities of the architect, and for this development, directly hostile as it is to their own pretensions, the architectural profession have themselves, in their persistence in the foregoing practices, entirely to blame. I state this fact from personal knowledge of the reasons which induced the introduction in New York of the present system of general construction, the foregoing conduct of the architectural profession having been given to me as the cause by two of the leading concerns against whom the architects of New York are now loudest in their denunciations.

By dint of liberal assertion, of active exertion on the part of young and alert employes, and of constant iteration of architectural shortcomings, the construction companies have plucked the ripest plums from the building orchard. They have calmly adopted the plans of architects, without credit or thanks, have walked off with their clients, belittled their abilities, thrown doubt on their capacity, sneered at their rectitude, and cold-shouldered their approaches to any understanding.

Their particular facility is that they, for a covering figure, can carry out all architectural detail and engineering work without cost and with their own trained staff. This would be an excellent idea, if the staff were of that character; but in point of fact, they have not yet grasped the fact that it would pay them to employ the highest class of professional ability; and therefore the men employed by them in the work of design are often either small contractors, or are assistants of the same order as those to whom I have referred as being employed by some of the architectural profession. If the scope of these powerful concerns should eventually fully cover the field of building operations, the profession of architecture would be very completely visited for its shortcomings, since the avowed idea of the construction company is to allow the architects no more than the opportunity of producing general designs to be by them detailed and developed; but so far, owing to the very similar class of intelligence applied to their work of detail design, the result has often been poor architecture and, more often still, poorer engineering.

In respect to the latter, I regret to say that since the operations of these construction companies began, no advance whatever has been made in the improvement of the interior engineering of the buildings they have handled. In point of fact, their practice at present is the installation of poorer designs of mechanical equipment than were generally discredited before their methods obtained an ascendancy in modern building operations.

It is but a natural result of such a system that this should be the case. A general contract for a great building is made on a condition which is the essential feature and object of the employment of a general contractor. It is that a building of a certain character, often identified only by a mere sketch or outline, or even by a partial reference to some existing building of a more or less similar type, shall be erected within a certain period for a certain sum, without any extra charges. Any attempt to introduce any detail of conveniences, of desirable materials, or of particular requirements, is met and combatted by the objection that the builder must have a free hand in selection or in dealing with competing manufacturers; otherwise the cost will be increased, or the time limit will be exceeded, or labor trouble may ensue. So the owner signs away his money and gets in return a complete structure, it is true, such as his picture showed, which is, however, built of the material, equipped with the class of apparatus, proportioned to the extent of liberality, and constructed by the class of labor, which have best suited the policy or profit of the contractor. If by the inducement of the needs of this building a gain can be made in another; if by the sacrifice of a detail in one an extra can be avoided in another; if by diverting proper labor from one, less competent or cheaper labor can be utilized in another—then these policies are open to adoption, are liable to be adopted, and are and have been in many cases adopted.

As to the designing work produced under this system, it is inferior and is done by inferior help, whose efforts are subordinated to the one predominating consideration of avoiding all avoidable cost, while at the same time evading the much-abused "extra," which in this class of contract, coming directly on the construction company, is of course to be avoided at all cost of sacrifice of efficiency. I will give an instance of an actual occurrence:—

In the construction of one such building it was discovered that by a blunder in reading, or more likely by an error in estimating, no provision had been made for the cost of carrying the decorative "effects" of the two outer sides of the building round its interior sides, which were exposed by the ownership of the abutting property. The difficulty was overcome by directing the engineer to cut down the equipment to a sufficient extent to pay for the deficiency.

The proper equipment was, therefore, cut from two boilers of ample capacity and one spare, to two boilers which, when forced, can just do the work; two generators which unitedly will barely carry 5-10 of the total lighting load, and 6-10 only by overload; the omission of every possible convenience and cross-connection; the reduction of the plumbing and character of the fixtures; and the skinning of the heating arrangements down to the cheapest

system. The owners have the satisfaction of knowing that their building is carried out "without extra," and has cornices of the anticipated appearance. But they do not know that they have not only paid an extra in full for the work, but also are paying an extravagant and permanent interest on the achievement, in their coal, repair, and labor bills.

The Owner of Property.—I could multiply these instances, but I do not know if there is any good in attempting to draw beneficial lessons for the education of an educated class which is, withal, too careless or incapable to take elementary precautions as to its own rights and property. One would suppose that a most limited intelligence would enable a property owner to perceive that he is not likely to get something for nothing out of a smart firm of general contractors.

As regards the features of engineering character in their buildings, it might naturally be assumed that men of business capacity and of ordinary intelligence would, in a matter in which they are directly and permanently liable for the cost of results, very closely examine into the conditions surrounding their future outgoings, with the aid of the best technical knowledge available. But that is rarely the case. Such people, when contemplating the construction of a building, are captivated by the ideas of outside design and interior decoration, and are under those influences to such an extent that the hard and mechanical details of engineering operations are uninteresting to them. They are also very frequently dependent in all such matters on some mechanic in their employment, such as the operating engineer or fireman in their own home or other property. These men, when put forward (as they very frequently are) to discuss or suggest or even to proportion necessary apparatus in a new building, do so with the natural subserviency of their class, and come under the architect's or contractor's dominance, their employment in this manner often resulting in worse blunders than would have been the case without their limited ideas, and their liability to accept all kinds of assertions on the part of manufacturers.

Not until it is much more widely understood that the mechanical apparatus in a building is the part of it that directly affects the pocket of the owner, that in it and by it he is constantly being defrauded and fleeced, will the present state of affairs be amended.

I have recently had the opportunity of laying these views before one of the great mortgage-insurance companies, whose action will in future take into account the imperfections and deficiencies of mechanical apparatus in the building in which they take an interest. It may be that others will awake to this, to them, important element, and that through their action careless ownership will be aroused.

Having sat for ten years past between these elements, and having had the good fortune not to fall into the evil graces of either, I am in hopes that my plain speaking will be taken in good part and that all parties will proceed to set their courses with a little more regard for their true interests in this age of engineering detail. And I am thankful to record my knowledge that there are architects who fully live up to their undertakings in the respects I have named, as there are builders who are conscientious, and as there are owners who are capable of appreciating the value of the old saw—"Every man to his trade."

COÖPERATION OF THE ARCHITECT AND ENGINEER.

IN connection with the foregoing paper, it seems worth while to publish also the following editorial which recently appeared in *Building News*:

INDUSTRIAL and municipal developments that have lately come into notice, and forced their demands on the architect's attention, have rather altered the relations between architecture and engineering. Before these developments occupied attention the two professions worked side by side, each in his own groove, without any interference. Each had his own separate work, and probably the only kind of building or construction for which both put in a claim was the construction of bridges and railway stations. With regard to bridge-building, indeed, the engineer has had his own way since, at least, the construction of railways, which gave an impetus to bridge-construction, though the engineer's exclusive right to this class of structure has always been disputed. In the erection of large terminus stations for our great lines of railway, the engineer has generally been associated with an architect in the external design. At least we know several of our large terminal stations have been designed by architects, from

that of Southampton, one of the first we believe, designed by the late Sir William Tite, to those of the Northwestern at Euston, and the Midland at St. Pancras, the latter being, as all our readers know, by the late Sir Gilbert Scott, who was also the architect of the hotel in front. Since the railway era, various kinds of building for utilitarian purposes have sprung into existence. The development of water supply for our large towns has necessitated the erection of engine houses for pumping, and the various requirements in connection with sewage and utilization schemes have in like manner called for the design of buildings for pumping-stations and boiler-houses. Workshops, factories, power-stations for electrical plant have quite recently added greatly to the possible development of the architect's functions. We owe this transference of buildings constructed for engineering purposes to the progress of specialism. The engineer is now so entirely occupied with the design of the mechanical arrangements and plant, that he has less time to devote himself to architectural design, and to this extent the architect has been more brought into requisition. Thus the relation between the two professions has been altered. A readjustment of the relation has become necessary. On one side the line of demarcation limiting the engineer's from the architect's work has become stronger, while the latter's knowledge of engineering arrangements is practically an extension. He must at least have an intelligent and general knowledge of the requirements of pumping and machinery equipments and electricity before he can grasp the conditions of the problem. The engineer may, and often does, assist him in the general plan; but he ought to be so far a master of the requirements as to have a free hand in the design, to be able to advise on possible modifications of plan and structure, which he could not do if he wholly depended on the engineer's instructions, and this independence has brought about a more perfect coöperation between the professions than had previously been possible. For instance, it was usual when a railway-station or bridge was contemplated for the engineer to consult the architect about the elevation. The plan and structural arrangements were completed before the architect was called in—a proceeding which resulted naturally in a case of two cooks spoiling the broth. Between them both the work became a failure. The engineering requirements trespassed on the plan, in the section, in the elevation, and the architect submitted to the demands, and in a half-hearted way designed something that he could not admire. We have only to look at the buildings of an engineering kind—our railway-stations, factories, pumping-stations, and engine-houses to discover the unworthy compromise between so-called utility and art. Unfortunately those who were called in to make designs for such works, instead of attempting to suggest a better way, gave up in despair, or introduced ornamental features of doubtful meaning to conceal what was thought to be unsightly. We see, for instance, gable ends of engine-houses enriched by questionable details, and power-stations embellished by Gothic screens, in which large traceried windows appear, expedients introduced to mask the naked baldness of the structure within. Factory and engine-house and power-station are frequently adorned by chimney shafts representing Italian campanili. The Tower Bridge is another example of architectural engineering in which fourteenth-century gateways and machicolated towers of fortress-like character of thin stone form the external casings of the steel framework for the chains which raise and let down the bascules of the centre span. These are a few illustrations of the questionable mode of using architectural design to conceal the real structure in the absence of a better understanding between the engineer and designer. They are standing witnesses of the transition from structural engineering to the architectural solution. Our railway bridges and viaducts across our public streets still offend the eye by their extreme harshness and unsightly appearance. Where anything has been done to render them ornamental, as in the railway viaduct at Ludgate Hill, it is by concealing the only structural part, the main girders, which carry the railway track, rather than by boldly designing them on more artistic lines. The same remark applies to many of our modern bridges across the Thames. Blackfriars and Westminster Bridges, and the proposed Lambeth Bridge afford instances of iron and steel structures in which the engineer's design has been accepted, and an ornamental screen-work or spandrel facing designed to give a sort of architectural character to the structure. The first named is at least a more honest attempt than the second, as the segmental arched ribs are externally shown. The claim of steel over masonry or granite for bridges which have a steep rise or gradient is, no doubt, a strong one, which the engineer cannot disregard; but why should not the

architect be consulted to assist the engineer in the design? Probably because the architect is supposed to be less acquainted with steel construction, or that his proposals will be of too radical a kind to be considered practical or moderate in cost. The design of the external spandrels may be left to him, and this is all that the engineer or his employers are prepared to do. The remedy for this state of things is not likely to be found till the committees intrusted with works of this kind invite architects to submit designs. There are surely men to be found in the profession who are quite capable of applying their art to steel-work. The possibilities of steel-concrete construction are great, and what has been done in smaller works can be taken as a guide. A good deal may be argued on each side. Professional men, and especially artists, do not care about sharing the credit of unimportant work. It is, perhaps, not unnatural that the engineer or designer of a bridge does not like the architect to come in and take the most attractive part of the design—the elevation. It is the outward appearance of a thing which appeals to the public taste and favor. The architect gets at least this share of the work, small and unimportant though it may be. On this point we have something to say. He ought not to feel satisfied with following the engineer's lines and curves of his steel-construction—designing piers, spandrels, and balustrading. When the architect has or experiences this compunction, that the credit due to him is for a very subordinate part, and that he can claim no share in the real structural design of the work, whatever it may be, there may be some hope of an amendment, and it will be a healthful sign of an awakening from a false position. No conscientious architect can honestly believe in "decorated construction," or of becoming a decorator of engineering work; he cannot honestly say that he is a part-author of the design, unless he has taken a share in the initial conception of the bridge or other work, and the main constructive parts of which it is composed. The design of a river bridge involves various considerations: pier construction, waterway, gradient, span, the best form of girder or arched rib, the loads under varying conditions. Piers must be proportioned to the foundations, to kind of girder, and the thrust, height above river level, and other things. All these factors have to determine the general design; other decorative effects are subsidiary to it. To take this view of engineering design the architectural profession have something to learn. They must be able to place themselves in the position of the engineer, to anticipate the difficulties of steel or masonry construction, and the various conditions of the building; and this point of view has not been taken. The relation between engineers and architects has been rather one of antagonism. The former has regarded the architect's ideas as chimerical or impracticable, as based on imperfect knowledge and experience of iron and steel; while the architect has looked upon the engineer's work as crude and inartistic, based on mathematical theories and formulas which leave much unsatisfied, and which seldom give any sense of pleasure. These antagonistic opinions have, of course, prevented any *entente cordiale* between the professions, and have rather widened the gulf which separates them. While regarding each other from such opposite standpoints, we cannot wonder that differences have been magnified, and that any agreement between them has been rendered more difficult of accomplishment.

When on one side it is argued that an engineer is the only qualified person to design a bridge or a structure used for engineering purposes; and on the other side it is argued that without an architectural training no engineer can build such a structure that will be satisfactory, it is impossible to come to any mutual terms which underlie or are common to both professions. On the engineer's part, a great deal of his prejudice against art or aesthetical principles is derived from the early instruction of the civil engineer. He learned only partial truths from his master and at school. For example, all held half a century ago to the atomic theory, and anyone who doubted its truth was considered ignorant, as Sir Guilford Molesworth, in his inaugural address at the City Guilds Central Technical College, said last year; but he reminded his hearers that Professor Huxley years afterwards had declared that these molecules or atoms were "creations of the imagination and pure assumptions." Neither have chemical facts proved the truth of that theory. In like manner, a great deal of the engineer's early education and training in construction has been proved to be defective. The principles of bridge construction have undergone considerable modifications. Cast-iron, so often used in the earlier railway bridges, was first believed to be a safe material; but much has since been learned about the tensile and compressive strengths of cast-iron, its chemical composition, etc. Professor Unwin has shown that the

tensile tests give better indications of the quality of the material for structural purposes than the compressive tests, which were at first considered sufficient. Since the establishment of the engineering laboratory in our technical schools, and the experiments made with testing-machines, the qualities of iron and steel and their use in construction have been developed to a degree which has rendered new ideas of design possible. In short, engineering speculation and science cannot lay down or enunciate a code of rules on design, for new materials and methods are always being introduced. With steel construction we seem to have reached a point where aesthetic considerations have no common ground; nothing appears at first sight to be more utterly at variance than steel and artistic treatment. What can the architect do with a steel truss or roof—its members are so light and thin? The most economical distribution of the metal in ties and struts has not been favorable to artistic designers. But who could have foretold that steel could be employed to strengthen and reinforce concrete, and could be shaped to almost every requirement? So from the strictly engineering side of the question not very much can be expected to bring about a reconciliation between the professions. The engineer moves in a hand-to-mouth way;—where a new material is found or method introduced it is immediately turned to account in the most direct way without consulting the architect; he resists all improvements till another new material is forced upon his attention. On the architect's side there is a reluctance to use the engineer's type, but there is prejudice also on his part. He will not take the trouble to consider the question from the engineer's point of view. He will not make himself acquainted with the new material, but allows it to be employed by the engineer till it is too late to suggest any modification. From scientific analysis, tests of material, he keeps aloof; yet from such an independent standpoint he is apt to condemn all that the engineer has done. No doubt he has good ground for his protests, when he sees engineering structures costing fabulous sums, so utterly crude and unsightly, so opposed to all art sense. Yet he has made no attempt. On each side there has been prejudice. The only hope of better relations being established is for each profession to try to begin to understand each other's position. The time has arrived for a *rapprochement*. The installation of electric lighting and tramways, the design of power-stations, and other structures requiring engineering skill, has made it more incumbent on the architect to master these questions. In his instructive paper he read some time ago, on the "Design and Construction of Electric-Generating Stations," at the Institute, Mr. Stanley Peach pointed out that coöperation of the two professions of building and mechanical engineering is necessary. The latter profession is of the most complex nature, and from the very beginning electric-supply engineers have been too busy on the working-out and perfecting of the many devices and details of the various systems of the subject to spend any time or thought in the consideration of the buildings. Mr. Peach says: "From the moment that the plant arrangement which the engineer requires has been given to the architect, the former never expects, nor wishes to have anything more to do with the buildings until the architect is in a position to hand them over ready for the engineer's work to commence and plant to be erected." True, but during this time the engineer and architect must be in touch. The latter has to deal with legal questions affecting the building; their costs, as well as their construction. He must have a knowledge of the industry and what its developments are likely to be, he must have a general knowledge about machinery and electrical plant. The same advice will apply to all other structures in which the two professions are concerned. They must coöperate, while preserving their organized functions independently.

ARTIFICIAL STONE.

AMONG the many uses to which that marvellous product Portland cement has been applied, there is none that has secured more attention and caused more disappointment than its application to the manufacture of artificial stone, and in no other department of its use has conservatism and prejudice so effectively curtailed its employment. Portland cement as a binding material for rough concrete for foundations, dams, and for all purposes in which the ordinary laborer may apply it has secured for itself a position above all rivalry, and in calling to mind the importance of such works in Portland-cement concrete as are to be found on the Nile, at Dover, and the Midlands, British engineers can congratulate themselves in being at the forefront in the adoption of a material which will make their work live, humanly speaking, for all time.

Our architects, however, have not been so ready to admit its usefulness as a substitute for natural stone. The reason is not far to seek. Skilled workmen having a life-long acquaintance with Portland cement and its humors are few and far between. Evidences of gross ignorance in the treatment and application of cement are many, and though the poor results often obtained are patent to the most unobservant eye, it is not always that the cause of the failure is traced to its proper source.

Almost every builder has at one time or another essayed to make his own artificial stone, and the great majority of them have given up the attempt in despair. How often have we seen crude attempts at the making of a cottage threshold or window-sill composed of an unsuitable aggregate, badly applied? It is a common enough sight to see in buildings of doubtful architecture and still more doubtful permanence, a concrete step with large pieces of the surface and corners broken away and portions of red brick and pebbles protruding. Such use of concrete has tended to discredit the works of important artificial-stone manufacturers in this country, who are now executing architects' designs in a material which has in its appearance all the good qualities of the best building stones and in its durability far surpasses anything that nature has placed at the disposal of the builder.

In adapting cement to the intricate and delicate work of forming architectural detail and ornament, there is a great field of the most fascinating work open to the architect who will intelligently apply this material to the reproduction of elaborate architectural forms; but unless they approach the subject from a sympathetic standpoint and realize from the first the nature of the medium which is being used, disappointment is more than likely to ensue. One sometimes sees an attempt to execute an undercut design with sharp detail in Portland cement, whereas an elementary knowledge of the material would show that in order to execute such work a thin "slip" must be run into a gelatine mould with very disappointing results, due to air-holes and cracks from unequal expansion of the "slip" and the coarser aggregate forming the body of the casting. To secure fine detail the aggregate should be "dry pressed" and rammed into a hard mould, but, of course, such a process cannot be applied to an undercut design.

The average plasterer who has spent most of his time working in plaster of Paris will persistently declare his thorough acquaintance with Portland cement and will then proceed to run his cornices in neat cement. One cannot be disappointed if such work should have the unsatisfactory appearance and texture of neat cement, nor will work executed in this manner match other castings made with a proper aggregate and cast in a hard mould.

The manufacture of artificial stone should invariably be entrusted to firms making a specialty of this product. The most careful supervision of every detail by experienced men is necessary, and the workmen properly trained in making ornamental concrete work are rarely to be found except in the employment of such firms.

In color, perhaps, the most satisfactory results are obtained in the natural gray tint of the cement. Artificial stone of this color is indistinguishable from the best Portland stone when the former has been weathered for a few months. The principal tints now used are those to obtain the effect of yellow and red Mansfield stones. These tints are obtained by the addition of small quantities of iron oxides while a brown tint obtained by the addition of roasted iron oxide is also produced to some considerable extent.

The present practice in artificial-stone making is to well mix the coloring matter, cement, and aggregate in a dry state. Water is then added and the material well rammed into hard wood or iron moulds. This ramming is of great importance, as its object is to expel all the air from the moulds, and if it is not properly done the concrete, when set, will have a pitted surface which will entail a considerable amount of trouble afterwards in rectifying. The concrete is left in the moulds for two or three days until it has become sufficiently set to enable it to be safely removed.

It is not often that the stone, after removal from the moulds, has a perfectly true surface; minute air-holes and other imperfections are almost invariably present. The material must be "dressed" to give the surface the desired effect. It is in the dressing that bad results from unsatisfactory workmanship are most frequently obtained. After filling the holes with a thin mixture of cement worked into the concrete by means of a rubbing stone, the whole of the surplus grouting should be carefully removed by means of a steel tool. It sometimes happens that a workman in attempting to put a good surface on to a bad casting will apply a thin layer of neat cement over the whole and allow it to set, such stone may look well when it is in the workshop,

but after erection the effects of heat and weather quickly show themselves in the shape of numerous cracks, after the manner of a mosaic pattern, covering the stone. This effect is due to the difference in the co-efficients of expansion between the general body of the concrete and the thin covering of neat cement. The fault is all too frequent in work done by inexperienced and careless workmen.

Dressing is sometimes completed after the stone has been erected in the building. In the finishing of large buildings in concrete this rough surface has been obtained very satisfactorily with the aid of pneumatic tools.

An unsightly effect often noticed in artificial stone work is the white efflorescence from the Portland cement. Analysis of this white matter proves it to be sodium carbonate, which in the drying of the stone comes out to the surface and is left in a crystalline form by evaporation. The difficulty is not a serious one and disappears when the stone has properly dried out. The deposit may then be brushed or washed off.

Ornamental work in artificial stone is not always cast, as the material, when formed of a suitable aggregate, can be carved in much the same manner as natural stone. The usual process, however, is to prepare a model of the ornamental work in clay, plaster, wood or other convenient medium, and from this model to take a plaster cast in as many sections as may be necessary. When the plaster is thoroughly set it is removed from the model and the inside painted over with shellac or other non-porous compound to prevent any moisture from the artificial stone casting penetrating the plaster. Before the concrete is placed in the mould the latter is painted over with oil or with a mixture of clay and water to prevent the concrete sticking and pulling away in patches when the mould is removed. This precaution is also necessary in the case of wood and iron moulds. It must be repeated each time a casting is taken from a mould in order to ensure clean work and sharp arrises.

An artificial stone which lends itself peculiarly to the ordinary work with the mason's chisel is the silicate-of-limestone which has recently been re-invented and patented by Mr. Ford of Wrexham. This material is not, however, a product of Portland cement, but is composed of a mixture of silicious sand and lime treated with water and subjected to high pressure until it is set. This stone is said to be indistinguishable in texture and appearance from natural stone.—*Stone Trades Journal*.

COMMUNICATIONS

[The editors cannot pay attention to demands of correspondents who forget to give their names and addresses as guaranty of good faith; nor do they hold themselves responsible for opinions expressed by their correspondents.]

THE DEAD CHURCHES OF LONDON.

TO THE EDITORS OF THE AMERICAN ARCHITECT:

Dear Sirs,—A paragraph from the *Boston Herald* in the *American Architect* for July 16th prompts me to write upon the subject of "Dead" churches in London. The correspondent of the *Boston Herald* is no doubt right as regards Sunday attendance at many of the City churches. But a large number of the old buildings are open at midday on weekdays, either for religious services, preaching or organ recitals, and are well attended; and during Lent are crammed with men—City men, during their dinner hour. Others are opened very early on weekdays, to accommodate women and girls who have to leave the suburbs by early trains and arrive too soon for their work. These girls are welcomed and have books provided; or they have a service of song, and I think in some cases are given coffee in the vestries. It seems a pity that grand old churches, mostly by Wren, should be destroyed. The expense of moving them is too great, and if they can be made useful, why pull them down? I have often wondered the American millionaires have never thought of purchasing for re-erection those which must absolutely be pulled down. Respectfully,

S. BEALE.

NOTES AND CLIPPINGS

GALVESTON'S NEW SEA-WALL.—The sea-wall of Galveston was completed recently. It has cost \$1,198,318. It is 17,593 feet long, 16 feet high, 16 feet at base and 5 feet wide on top.—*Exchange*.

LIVERPOOL CATHEDRAL.—When the present King Edward—he was, of course, Prince of Wales then—laid the foundation stone of Truro Cathedral in 1880, Archbishop Benson declared that it was the first instance of the kind that had occurred in England since the Norman conquest. It was at about that time that the movement for a great cathedral in Liverpool began to take form, and now the King has just laid the foundation stone of a building which is likely to become the most noteworthy architectural feature of that city. The architect is George Gilbert Scott, grandson of the famous Sir George Gilbert Scott, and his design was chosen from the plans of more than one hundred competitors. The area of the new cathedral will exceed that of any other in England. The church, with its chapter-house and morning-chapel, will cover about 90,000 square feet. Its full length will be 584 feet. Whereas the nave of Westminster Abbey is 102 feet high, the Liverpool nave up to the barrel vaulting will be 116 feet. The part now to be put in hand—the choir and central space—will accommodate 3,500 people, while the finished building will accommodate 8,000. As to finance, the cost of the first part might seem to be secured, for the committee has £230,000 of the necessary £240,000; but preliminary charges have absorbed £32,000. There is not much anxiety, however, on the score of future contributions. The committee already has received various specific gifts, notably a magnificent chapter-house to be erected by the Freemasons of West Lancashire to the memory of the late Lord Lathom.—*N. Y. Evening Post*.

VERSAILLES LAKES DRYING UP.—One of the most striking consequences of the continued extreme heat is the fate which has befallen Versailles, that splendid and royal city having become almost uninhabitable owing to the partial drying up of the great Suisses Lake. All the fish in these waters, mostly carp, and many of them of enormous size and more than two centuries old, died one night from asphyxiation, and as soon as the inhabitants saw them floating on the surface of the lake they filled up no less than fifty carts and transported 28,000 kilos of dead fish to Paris, where they were sold for a sou a pound. The Prefect of Versailles sent an entire regiment of engineers to stop this traffic, and the men are now drawn up around the park. The fish in the other lakes, however, are dying at a great rate, and the stench permeates all Versailles, driving hundreds of residents away.—*N. Y. Times*, Aug. 5.

THE DECORATION OF THE HOUSES OF PARLIAMENT.—The painful subject of the decoration of the national palace of Legislature was brought up in the House of Lords on Monday by Lord Stanmore,

ILLUSTRATIONS

[Contributors of drawings are requested to send also plans and a full and adequate description of the buildings, including a statement of cost.]

HOUSE OF J. C. HOOE, ESQ., WASHINGTON, D. C. B. MESSRS. TOTTEN & ROGERS, ARCHITECTS, WASHINGTON, D. C.

ELEVATION OF THE SAME.

INTERIORS IN THE SAME.

THE ROYAL MARITIME EXCHANGE, BERLIN, PRUSSIA. HERR P. KIESCHKE, ARCHITECT.

This and the following plates are copied from *Zeitschrift für Bauwesen*.

DETAIL OF THE SAME.

PLANS AND ELEVATION OF THE SAME.

Additional Illustrations in the International Edition.

THE CARRIE TOWER: BROWN UNIVERSITY, PROVIDENCE, R. I. MR. GUY LOWELL, ARCHITECT, BOSTON, MASS.

This memorial tower was presented to the University by Count Bajnotti in memory of his wife.

DETAIL OF THE SAME.

ENTRANCE DOORWAYS: PALACE OF LIBERAL ARTS, LOUISIANA PURCHASE EXPOSITION, ST. LOUIS, MO. MESSRS. BARNETT, HAYNES & BARNETT, ARCHITECTS, ST. LOUIS, MO.

FORMER CHURCH OF S. MIGUEL DE LOS REYES, AND AN UNIDENTIFIED CHURCH, VALENCIA, SPAIN.

who moved that a Select Committee be appointed "to inquire and report with respect to the unfinished condition of the rooms in the Palace of Westminster appropriated to the service of this House, and their approaches." Unfortunately, to the majority of English members of Parliament, the idea that rooms in a public building are "unfinished" because they have not received the artistic decorations once vainly intended, would not recommend itself as "practical." The temper of the House of Lords is more sympathetic in regard to art, but unhappily they have no control of the purse-strings. Lord Stanmore drew a satirical picture of what the foreign visitor would see on entering the House through Westminster Hall: the empty niches, reserved forty years ago for the statues of Marlborough and Wellington, still vacant; the panels surrounded with stone mouldings intended as a framework for mosaic, but only inclosing spaces of blank paper; and so on. Lord Windsor, of course, could only express sympathy coupled with the conviction that it would be hopeless to approach the Treasury on the subject at present; it is always impossible "at present" to spend any money on art; but, the future opportunity never arrives. In some other countries it would be considered a national discredit that the most important building in the country, after being up for more than half a century, was still wanting its highest class of artistic embellishment. In this country it is regarded as a trivial matter, and Lord Stanmore's motion was "negatived without a division."—*The Builder*.

"WHAT THE PEOPLE SLEEP ON."—At a recent Sanitary Congress in Glasgow, Peter Fyfe read a paper entitled "What the People Sleep On." With the view of tracing the disease with which the sanitary officer has to deal, he had, he said, instituted an investigation into the bed-making trade. Calling to his aid some makers of common wool flock, vendors of this material, and members of the sanitary staff, he proceeded to examine the nature of wool flock, and found that it was manufactured from a mass of rags, the rejected of every class of the population, from the wealthy of the West End to the tramps and vagrants of the East End. To explain what he observed on some of the torn garments would be impossible. Nothing in the nature of cleansing or disinfecting was attempted. All went into the machine if sufficiently dry. At the other end it came out flock. From one of the factories visited he secured a pound of flock as it came from the machine. At the sanitary office he weighed off half a pound, and the corporation chemist gave him two jars of distilled water, in which he twice rinsed this quantity, and subsequently he had the water analyzed, and it compared very badly with the analysis of a similar quantity of average Glasgow sewage. In support of this statement he quoted a report by Dr. Buchanan, the city bacteriologist, who said it would be safer to sleep on a bed filled with sewage than on this material, upon which 78 per cent of their humbler fellow-citizens were nightly reposing.

VENTILATING AND WARMING A BERLIN CHURCH.—An interesting system of combined warming and ventilation was introduced by Prof. H. Fischer, a well-known heating engineer, in a Berlin memorial church that in general plan resembles St. Paul's Cathedral in London, though of smaller dimensions, the height of the nave and transepts being 82 feet and of the dome 237 feet. The corresponding measurements in St. Paul's are 100 feet and 360 feet, respectively. To the height of 80 feet from the floor the walls are traversed by hot-air chambers, so that from the ground to the galleries, 22 feet above, there is no perceptible difference of temperature, the air being kept constantly at 60 degrees. The radiating surface is placed high up, in the neighborhood of cooling surfaces, maintaining a higher temperature in the upper portion of the building and intercepting and reheating the cooled air in its descent toward the lower part occupied by the congregation. There are thus four strata of air of different temperatures. On the ground floor and in the galleries there are very few coils, but along the first entablature, at a height of 95 feet, the coils are sufficiently numerous to counteract the loss of heat through the walls, which there are no longer traversed by hot-air channels, and to maintain from this level to that of the second entablature—at a height of 145 feet, or 50 feet above the first—a temperature a few degrees higher than that in the parts below. Other coils are fixed above the second entablature and in the lantern of the dome. To avoid the dangerously chilling draughts that would follow the opening of the doors in the intense cold of a Prussian winter, the entrances are provided with double swing doors and coils are placed in the intervening passage. Professor Fischer maintains that the system of heating the upper more than the lower regions of the air is the only proper course in such lofty buildings as churches. He holds that whereas, with the ordinary method, the air heated on or below the ground level is cooled on reaching the roof, and, fouled by the products of respiration, descends on the heads of the congregation, unless withdrawn by some such exhausting arrangement as is carried out in the English houses of Parliament, in his system the fresh air is warmed to an agreeable temperature in its passage through the channels in the walls, and its ascent is favored by the coils between the first and second entablatures. The coils in the dome, although

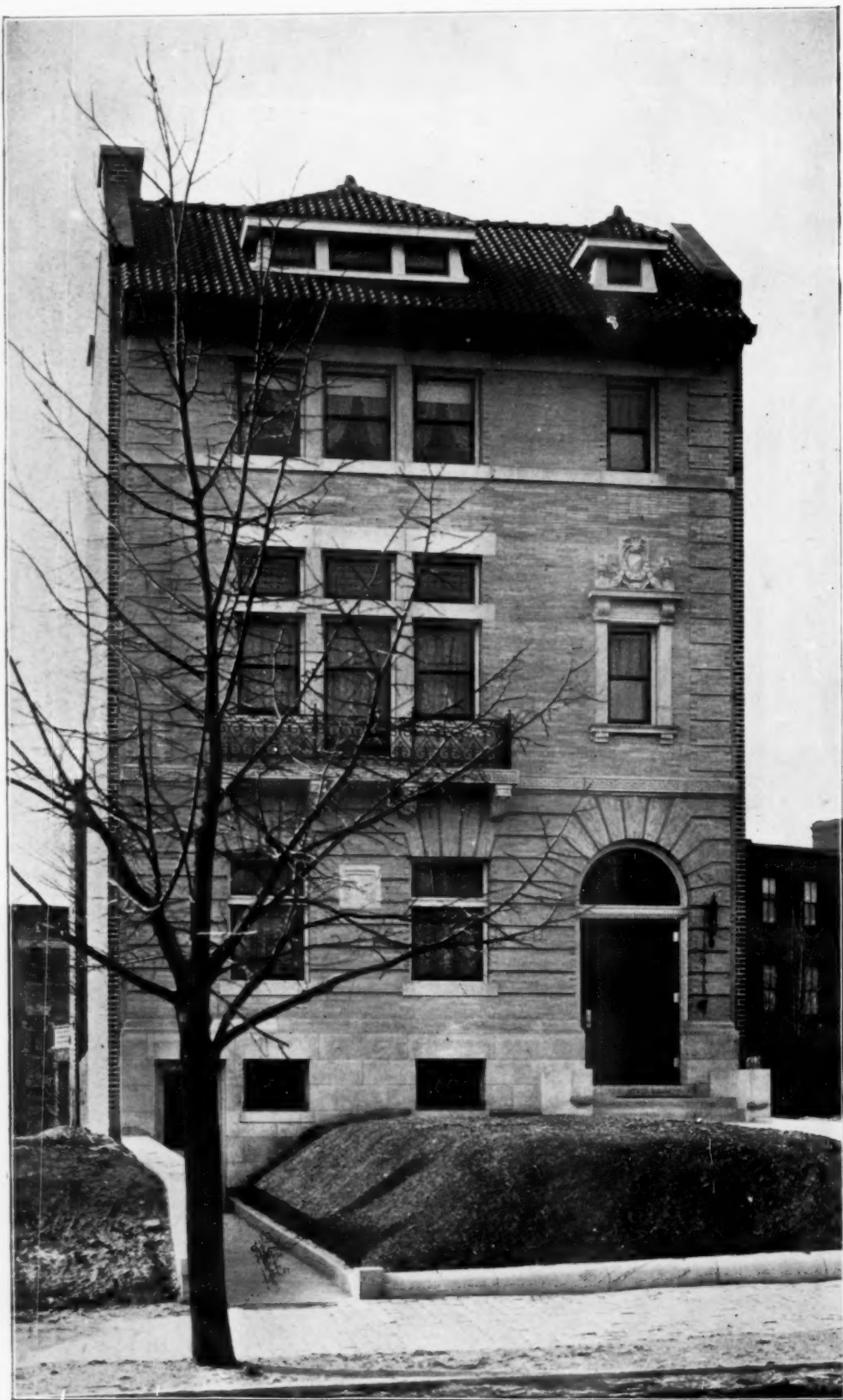
they do not contribute to the warming of the parts occupied by the worshipers, serve effectually to prevent the descent of the foul air by securing its continued ascent toward and escape through the apertures in the lantern that crowns the edifice.—*C. W. in the Metal Worker*.

SCYTHES AS CHURCH ORNAMENTS.—At first sight the scythe is a strange ornament for a church, but there is nothing incongruous in these curious agricultural implements as seen in the parish church of St. Mary's, at Horncastle, in Lincolnshire. Thirteen of these blades are nailed above the door in the north chapel. At one time the blades numbered forty or fifty, but owing to rust and decay many of them have been lost. Each of the scythes is about a yard in length. The general belief is that these blades were placed in the church in commemoration of the zeal of peasants who wielded them in defense of their faith in the rebellion known as "The Pilgrimage of Grace," which had its rise at Louth in 1536. When the people saw the ruins of their churches and abbeys they rose in revolt, and, arming themselves with the instruments of husbandry, such as the scythes, they went forth to encounter the enemy. They were beaten and dispersed, but in the eyes of their countrymen they were heroes, and the rude implements with which they fought were deemed worthy of an abiding place in the old church, where the peasants had worshipped.—*Christian Age*.

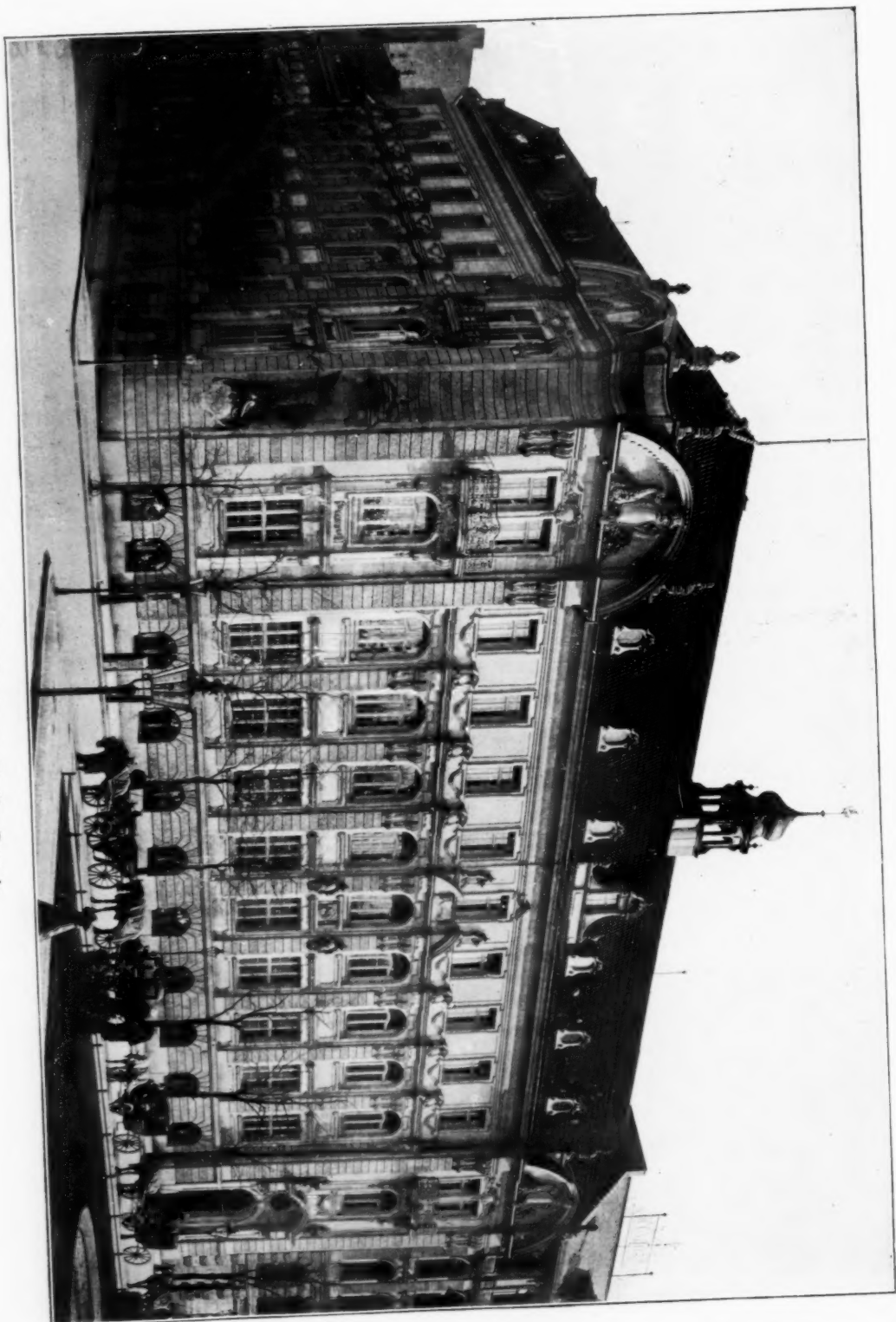
MILAN CASTLE.—Every American tourist who has ever visited Milan will be glad to learn that active steps are now being taken for the repair and preservation of the famous old castle of Milan, overlooking the Piazza d'Armi, and which a short time ago was, on account of its tottering condition, on the point of being consigned to demolition. It was built by the Sforza Dukes of Milan, who reigned there in the fifteenth century, on the ruins of the still older castle of the Viscontis, which had been almost entirely razed by the populace in 1448. It was regarded in the Middle Ages as the proudest and strongest fortress in Italy, and served as a model, in part, at any rate, for the Kremlin at Moscow. Its history is full of interest. It has had many different masters of divers nationalities since the days of the Sforzas, and has sustained many sieges, the last of these being at the close of the eighteenth century. Possibly because its fortunes have always been identified with tyranny, and because it has ever been, in the eyes of the people, the outward and visible sign of foreign domination, it has been so neglected by the Italians of the present day, and it is doubtful whether any of the Milanese now living, save the soldiers quartered within the precincts of the castle, have ever crossed its threshold. However, now the municipality of Milan and the government have awakened to the importance of preserving this interesting monument, and work has been begun in clearing out the wide and deep moat, removing huts and shanties which have been built against its walls, restoring the drawbridges and the battlements, and, in one word, taking the necessary steps for its preservation.—*Marquise de Fontenoy in N. Y. Tribune*.

AN IRISH CITY VENICE.—Cork is the Venice of Ireland. It is built on a group of islands, and nine bridges connect these islets with the mainland. The River Lee is navigable, and Cork harbor could contain the whole of the British navy. An ancient custom, that sounds quite Venetian, still prevails in this Irish city: every three years the Lord Mayor proceeds in his state barge to the mouth of Cork harbor, and throws into the sea a dart that has a gilded head and a shaft of mahogany. This ceremony implies the dominion of his town over the adjacent sea, with all its inlets and islands.—*Boston Herald*.

REARRANGING THE CHAMP DE MARS, PARIS.—The following is the scheme definitely adopted by the Municipal Council for rearrangement of the Champ de Mars. At each side, along the Avenue Suffren and the Avenue La Bourdonnais, a space 40 metres wide will be reserved for a first line of buildings, with shops on each face. Then will come an inner boulevard 25 metres wide. A second line of buildings 20 metres wide will follow, but restricted to a height of 15 metres, and without shops on the side next the Park of the Champ de Mars. The esplanade of the Champ de Mars will be cut from east to west by two broad roads on the axes of the Rue de Grenelle and the Rue St. Dominique respectively, and all the portion between the first of these roads and the river will be laid out in "jardins Anglais," while the opposite space, down to the Ecole Militaire, will be laid out in "jardins à la Française," with large spaces reserved as playgrounds. A free space 60 metres wide will be reserved in front of the Ecole Militaire, so that Gabriel's fine façade will, as before, close the perspective at the end of the Champ de Mars. This scheme of course necessarily implies the demolition of the Galerie des Machines, which, however, may very probably be rebuilt on some other site, where it will be useful without interfering with architectural effect.—*The Builder*.



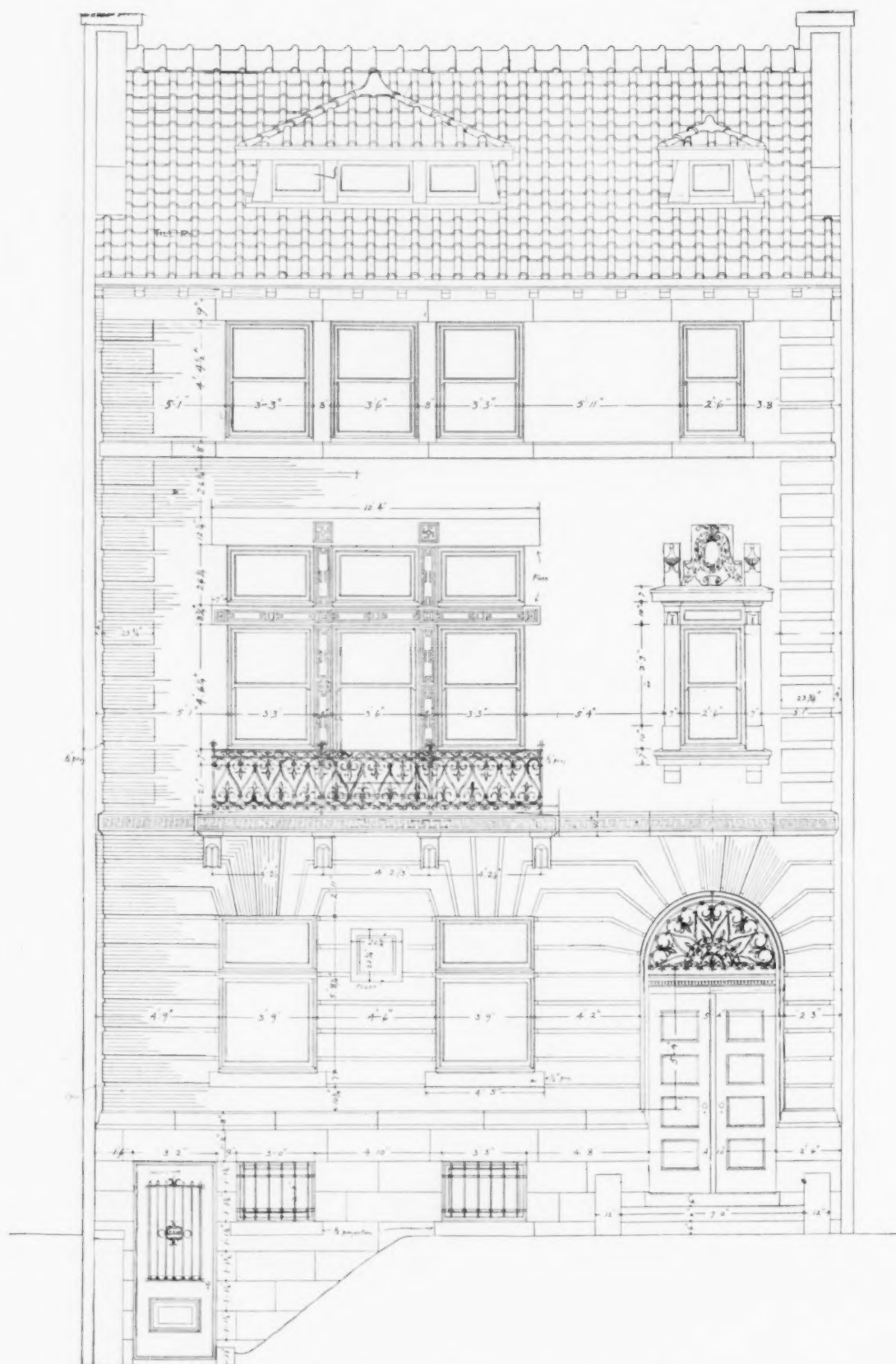
*House of J. C. Hooe, Esq., Washington, D. C.
Totten & Rogers, Architects.*



*The Royal Maritime Exchange, Berlin, Prussia.
P. Kieschke, Architect.*

From Zeitschrift für Bauwesen.

*The American Architect,
August 30, 1904
No. 195*



Front Elevation: House of J. C. Hooe, Washington, D. C.
 Totten & Rogers, Architects.

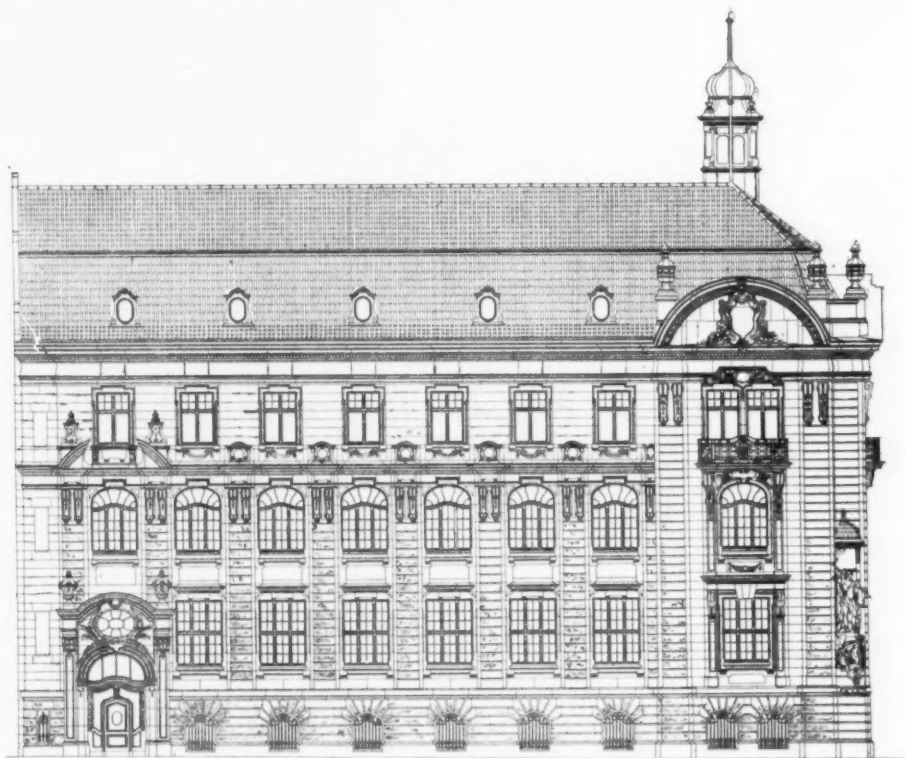


Abb. 1. Front an der Jägerstraße.

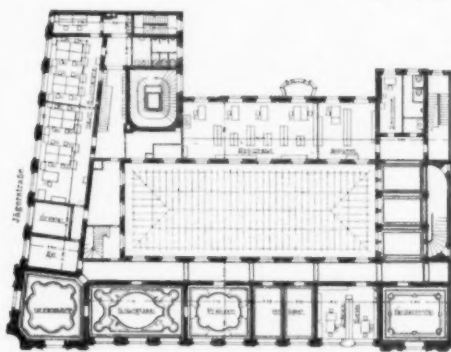


Abb. 2. Erstes Stockwerk.



Abb. 3. Zweites Stockwerk.

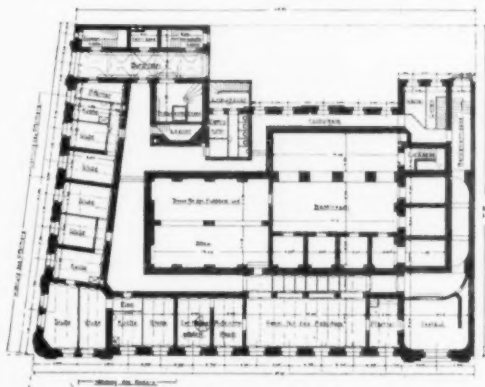


Abb. 4. Sockelgeschoß.

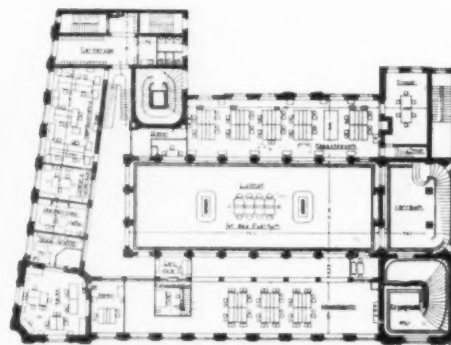
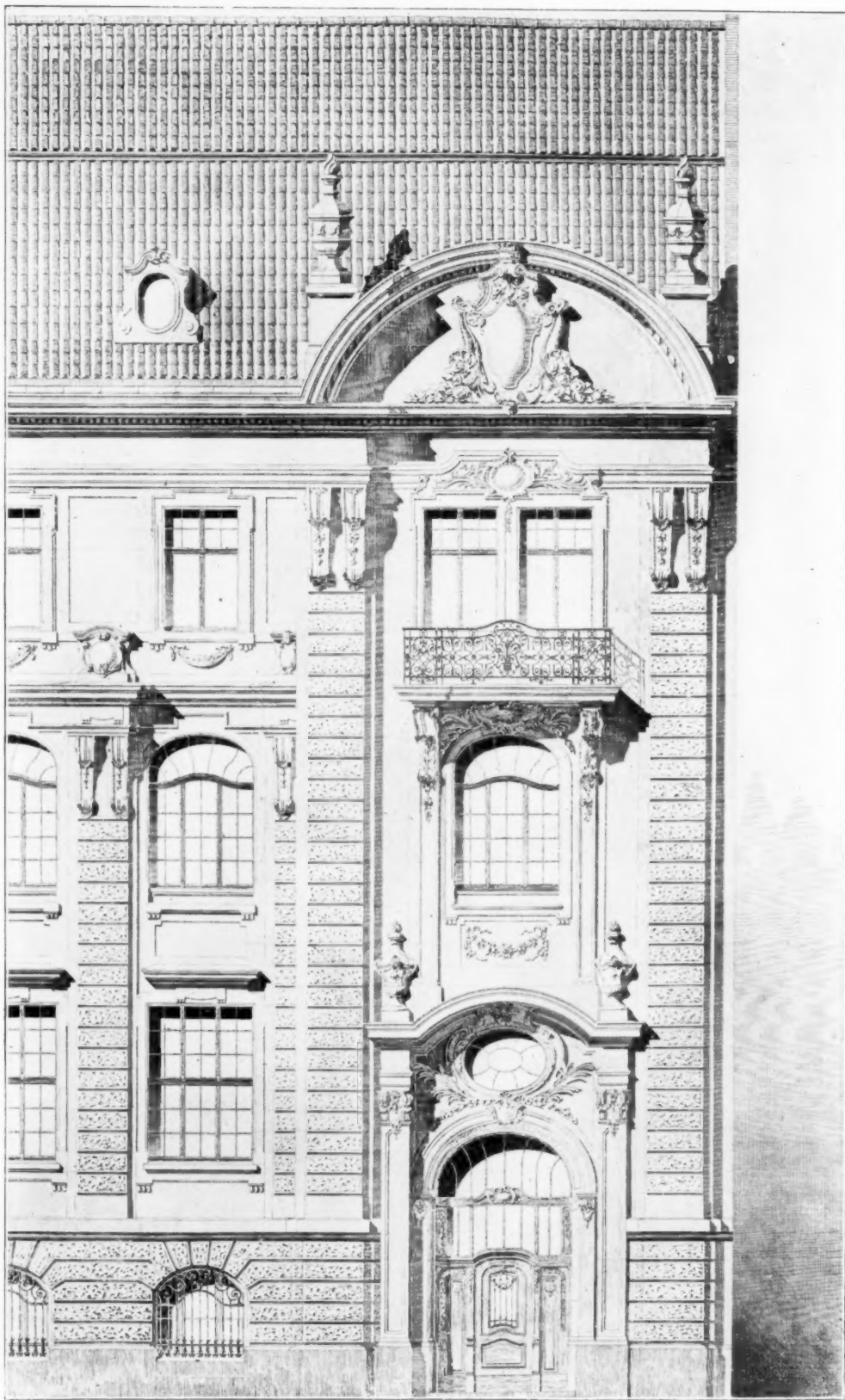


Abb. 5. Erdgeschoß.

Plans and Elevation: Royal Maritime Exchange, Berlin.

P. Kieschke, Architect.



Detail: Royal Maritime Exchange, Berlin, Prussia.

P. Kleschke, Architect.



Interiors: House of J. C. Hooe, Esq., Washington, D. C.
Totten & Rogers, Architects.