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INTERIOR VIEW, FRANKLIN FIELD STADIUM, UNIVERSITY OF PENNSYLVANIA

STADIA—PART I

BY ROI L. MORIN

IN 1913 there were but five completed stadia in this country. In 1920, there were eleven, while in the Fall of 1923 there will be twenty, with two partly built, and several more in the process of construction, or on the drafting boards. In this summary the scores of grandstands, baseball parks, open-air theatres, etc., are not included, but only such huge structures as the Los Angeles Coliseum, the Yale Bowl, the Ohio State University Stadium, etc. In view of this widespread interest and activity in such a singular field, which in each instance requires an outlay of a large sum of money (from \$250,000 to \$4,000,000), considerable research, and often an original solution for the particular problem, **THE AMERICAN ARCHITECT AND THE ARCHITECTURAL REVIEW** presents in this issue, the first of a series of articles describing several of the latest edifices of this type, together with details of construction of these as well as older structures.

In these articles an attempt will be made to differentiate between the types of stadia, both as respects layout and use, and with this in view the

following important stadia will be described:

1. U-shaped Stadium for general college athletics, Franklin Field Stadium, University of Pennsylvania.

2. Largest baseball park, Yankee Stadium, (New York American League Baseball Club).

3. A reinforced concrete college stadium, built with economy as an important consideration, University of Kansas Stadium.

4. An English Football Stadium (the largest structure in existence), Wembley Park Stadium, London, England.

5. A Tennis Stadium (the only one in this country), West Side Tennis Club, Forest Hills, L. I.

6. A large municipal stadium, and several others.

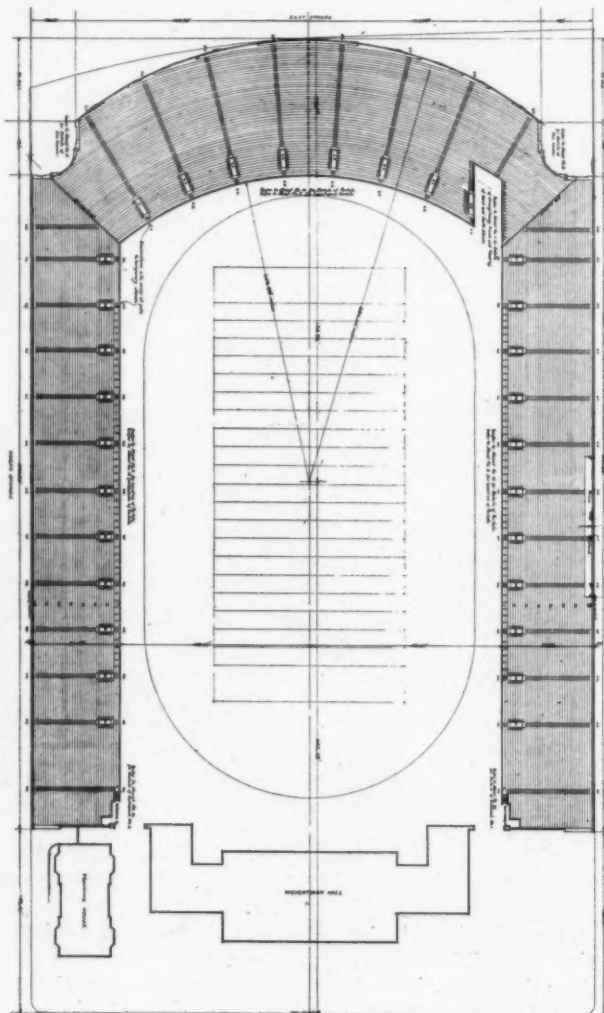
In a subsequent article there will appear a tabulation of these stadia, with names, locations, use, shape, materials of construction, capacity, architects, date of completion, together with remarks as to peculiarities, costs, etc.—THE EDITORS.

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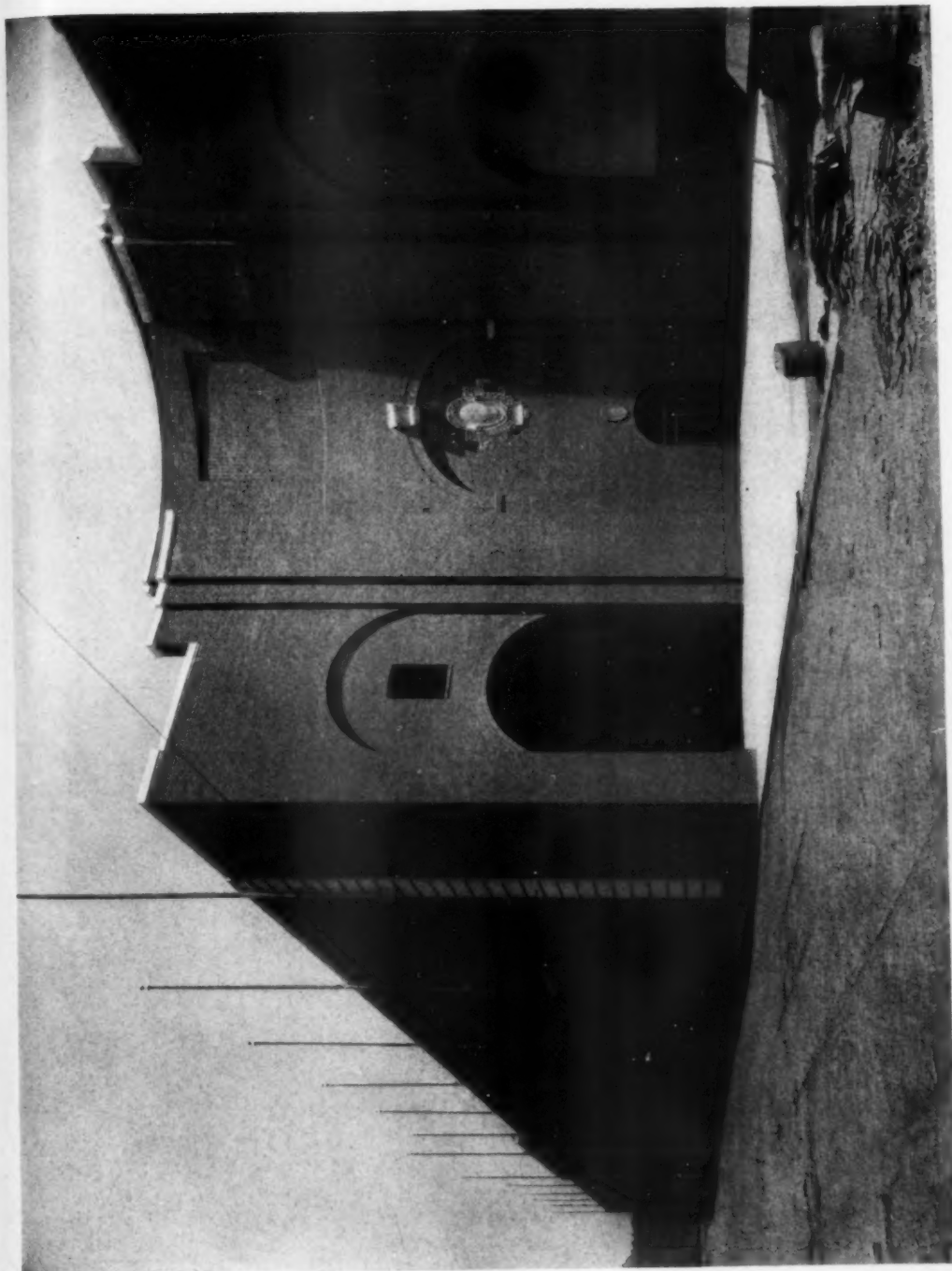
DAY & KLAUDER, Architects

These races have always been run on Franklin Field, the scene of many records, one of the very best of cinder tracks. It was decided, therefore, that the new Penn stadium should accommodate not only football but track and that it should quite appropriately enclose Franklin Field.

Hemmed in by these many limitations the problems have been solved in a truly admirable manner. Happily, the municipal authorities were willing to allow the structure to be built over the adjoining sidewalks on the two long sides, and over the entire street on the closed end, provided it was ar-



GENERAL LAYOUT OF FRANKLIN FIELD STADIUM,
UNIVERSITY OF PENNSYLVANIA

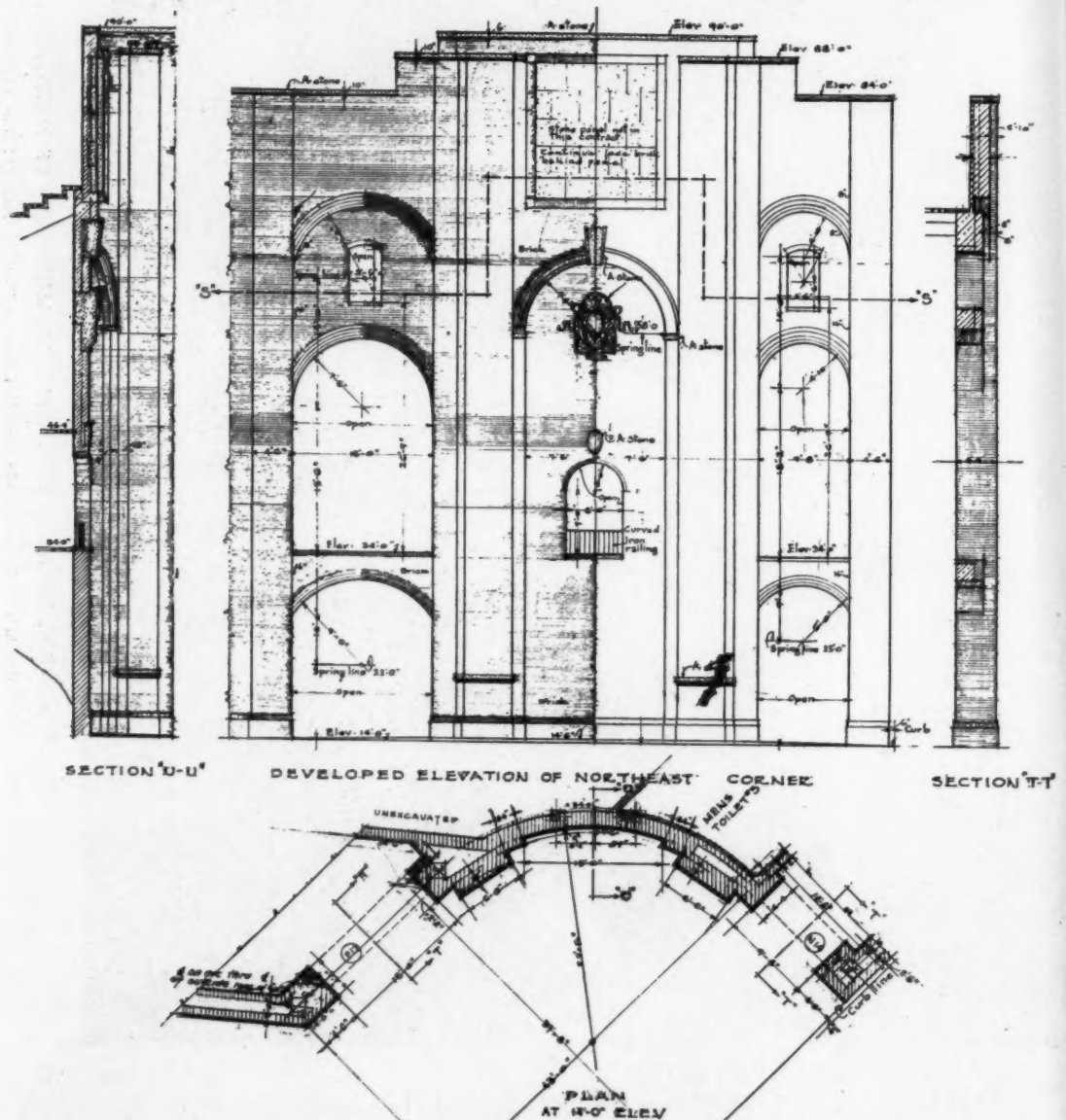


EXTERIOR VIEW, FRANKLIN FIELD STADIUM, UNIVERSITY OF PENNSYLVANIA
DAY & KLAUDER, ARCHITECTS—GAVIN HADDEN AND H. T. CAMPION, ASSOCIATED ENGINEERS

caded over so that the sidewalks would remain open. Even then it was impossible to lay out more than 35,700 fixed seats in one tier. However, as the large seating capacity is only needed for the football games, it was decided to accommodate the other 15,000 by temporary seating over the track and along the gymnasium end. *Note that the two parallel sides of the track are further apart than is customary, making easier and longer curves at the ends; an interesting point considering that Franklin Field is a fast track.*

The architectural design of the Franklin Field stadium is probably its most unique feature. Weightman Hall Gymnasium is a collegiate Gothic

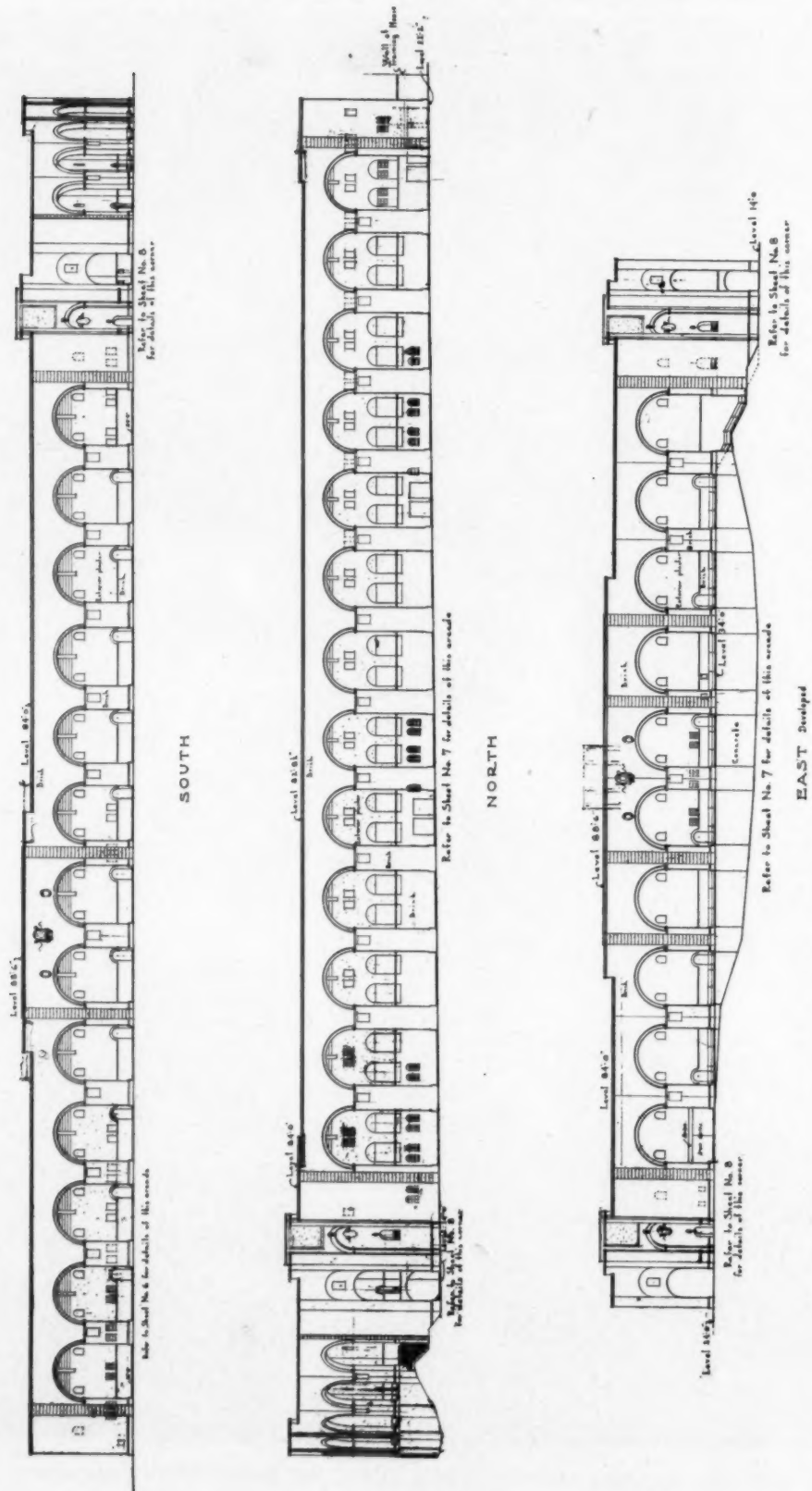
building of brick with cut stone trim whereas the Archaeological Museum, the nearest other building, is Byzantine, brick veneered. As the Gothic style does not lend itself very well to stadium design (the designers may have considered the Princeton structure), and as the Museum was in closer conjunction with the exterior of the stadium, it was decided to veneer the exterior wall with brick making a harmony of color and material in the three structures, and treat it with large Roman arches. In this latter connection it was desired to get away from the stilted long and narrow arch effect which is so common to stadium design, caused by the vertical supports being from 15' to 20' apart. In



DETAIL OF MAIN ENTRANCE, FRANKLIN FIELD STADIUM, UNIVERSITY OF PENNSYLVANIA



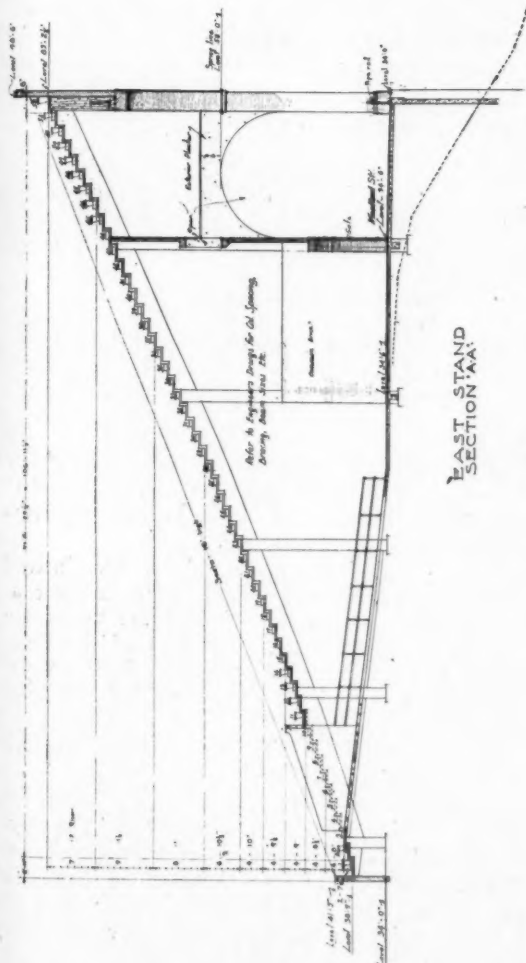
VIEW THROUGH ARCADE, FRANKLIN FIELD STADIUM, UNIVERSITY OF PENNSYLVANIA
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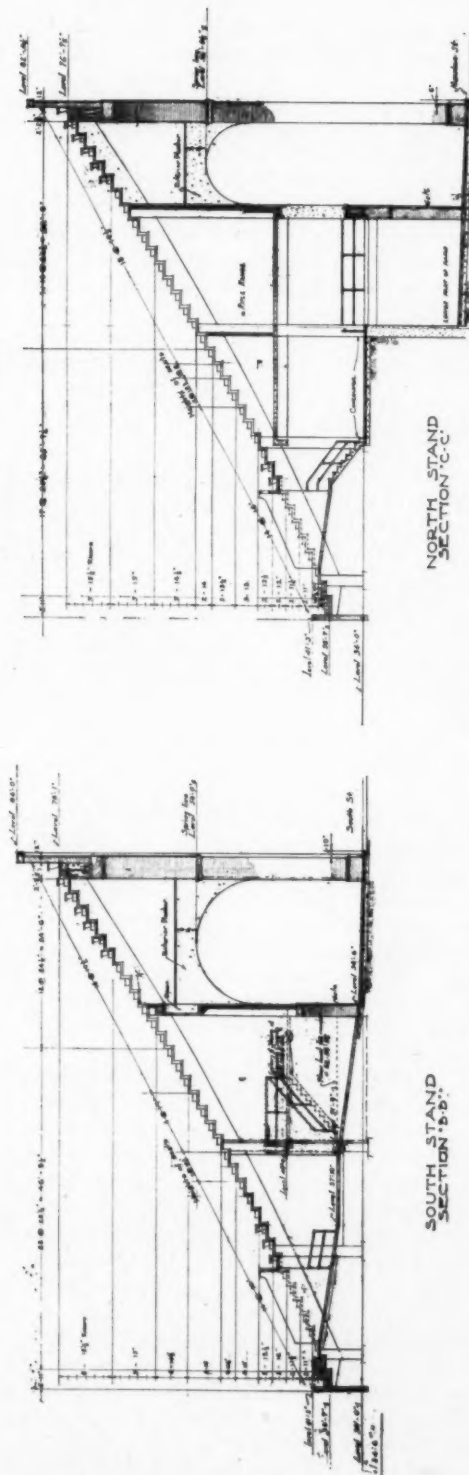
ELEVATIONS, FRANKLIN FIELD STADIUM, UNIVERSITY OF PENNSYLVANIA
DAY & KLAUDER, ARCHITECTS—GAVIN HADDEN AND H. T. CAMPION, ASSOCIATED ENGINEERS

DAY & KLAUDER
ARCHITECTS

GAVIN HADDEN
AND
H. T. CAMPION
ASSOCIATED ENGINEERS



EAST STAND
SECTION AA'



SOUTH STAND
SECTION BB'

NORTH STAND
SECTION CC'

TYPICAL SECTIONS, FRANKLIN FIELD STADIUM, UNIVERSITY OF PENNSYLVANIA

order that the Penn structure should have an individuality all its own, the alternate columns were eliminated, making the arches 27' wide and 37' high on the one side, and 27' wide and 50' high on the other. As a consequence this structure has no counterpart in exterior treatment. At each pier a panel is left for future memorial tablets, and corbels and sockets for flagpoles.

The structure proper is built of reinforced concrete on concrete piles, the tops of the piles being dowelled and tied together by reinforced concrete beams in each direction. The ground was a 20 year fill, borings were made and as rock was struck only at a minimum depth of forty feet, piles were determined upon as the best foundation. The columns, beams, slabs, etc., are all of reinforced concrete. Adjacent sections of the structure are separated by expansion joints (now common to

The field is also considered adequate for college baseball, though it is not immediately obvious why this qualification is introduced. College baseball teams like Holy Cross and Yale, are but little inferior to the major leagues, and can surely drive the ball as far. When baseball games are played in this enclosure the right and left fields must be very short. (See later reference to the playing field of the Yankee Stadium).

The temporary seats over the track are of light steel frames and wood seats, while those up against the Gym (running clear up to the eaves), are of bolted timber frames. These are all readily demountable, and are stored under the stands. The seats in the permanent structure are cypress strip planks, bolted to cast iron brackets 4'-0" on centers, which are in turn fastened to U-bolts bedded in the concrete risers. A section of this seat together

STATEMENT OF COST, FRANKLIN FIELD STADIUM

Capacity of permanent stands	35,700 seats
" " temporary seating	15,300 "
Total	51,000 "
	Totals
	Field Costs Contracts & Extras
Permanent stands	\$655,583.43
Temporary stands	59,638.37
Totals	\$715,331.80
	Architect & Supervision Overhead, Engineering,
	\$76,189.88
	6,930.99
	\$83,120.87
	\$731,773.31
	66,569.36
	\$798,342.67

this type of building, and to be treated in a subsequent article), and the joints run through the exterior wall.

As the sections indicate, the lowest seats in the permanent structure are at some height above the track. It was necessary to erect a wall here to back the several rows of temporary seats. This does not afford a very good view of the track from the average seat. In fact the runners near the wall cannot be seen at all. This condition could not be helped and mars only the two sprint events, the 100- and 220-yard. The section is "dished" and every seat affords an excellent view of the football field. The two opposite sides have the same pitch but as the curved East stand has a greater number of rows, and the same total height, the pitch is less. This necessitated a rather delicate adjustment of steppings at the mitre lines at either corner, which has been done successfully.

The 220-yard straightaway is not ideal, the start being out of sight of more than half the seats, alongside the gymnasium, the runners going through a gateway, along the front of the stand, and finishing at the point where the tunnel goes under the curved end of the structure. However, there is no necessity of running through a tunnel as at Syracuse and other places; the track is fast and official, which is all that matters.

with numerous others will be shown in a later article. The rows are approximately 25" back to back, which seems very little, and risers vary from 18" at bottom to 19½" at top.

The coaches' and substitutes' benches, instead of being located out on the field, in line of sight, as is customary, are in a section of the temporary seats, on the transverse centerline of the field. The press box is on the same line, at the top of the right stands. Both are adequately isolated from the crowd.

The circulation facilities are excellent because of the compactness of design, though there is an unfortunate use of steps in the exits from the North stand. Considerable study of the psychology of crowd behaviour in such public assemblages would tend to show that steps at exits are not always safe. Similar steps in the stands at Boyle's Thirty Acres during a championship fight would likely prove disastrous. The ramps and concourses beneath the structure are wide and direct, perhaps the most simple of any structure save the Yale Bowl.

One of the features which are highly praiseworthy is the large and numerous toilet facilities. Study of stadia would tend to show that this important detail is not given proper attention. At the Yale Bowl numerous wooden sheds were

erected in the open field outside of the structure, when they might so easily have been built into the fill, off the numerous tunnels. These facilities at Penn are absolutely first rate.

The remainder of the interior of the structure is given over to athletic purposes. There are three large team rooms (Varsity, Visitors' and Freshmen) with lockers, showers, rubbing tables, etc., a doctor's office, two first-class squash racquet courts with spectators' galleries, five additional squash and handball courts, a rifle range, dirt floor space for indoor track and field athletics, a crew room with space for 150 machines, etc.

It is always interesting and practical to know what these structures cost. In addition to the costs of various stadia that will be given in a subsequent article, an itemized list of the costs of the Franklin Field Stadium is as per statement given on the opposite page.

Expressed in unit costs the permanent structure cost \$20.498 per seat, and the temporary stands \$4.351 per seat. An average brings the total structure to \$15.654 per seat. Some structures boast of a lower unit cost, but then a Rolls-Royce costs more than a flivver.

COMMENTING ON BUSH HOUSE

IN a "broadcast talk on architecture," Major Harry Barnes, Vice President of the R.I.B.A., in reviewing the present architectural aspect of London, comments on Bush House, designed by Helmle & Corbett, as follows:

"Passing from Kingsway to the island site in the Strand, the building that undoubtedly dominates, and will continue to dominate it, is Bush House. Up to the time of its erection, Australia House, a remarkably fine piece of design, was certainly the best building on the site. The chief matter for regret is that there was not in the early days of this great development scheme someone strong enough to secure the use of this site by the London County Council for their new building. This is where they should have been. Here was the chance for a great public building which has not occurred since Wren rebuilt St. Paul's, and which was miserably lost when the Law Courts were erected. The mind almost failed to conceive what might have been achieved here if the whole site had been devoted to the great purpose of housing the supreme authority in London. That chance has been missed, but we are fortunate that its place has been taken by a building which shows the quality of mind and feeling displayed in Bush House. Here we have, perhaps, the most important site that has been developed in modern London, passing into the hands and under the control of an American business man, employing an American architect, and no greater tribute can be paid to both than to say that they have placed upon this site a building which in some respects more than any building I know has been erected with a genuine regard for the amenity of the surroundings in which it has been placed. What is to be seen at present is but the central part, and when the whole is completed there can be no doubt, as has already been said by those competent to say

it, that the building will command more attention than any other modern building in London.

"In these troublesome times, when so much depends upon the friendship and the co-operation of the English-speaking people of the world, it is a great thing that, in the heart of our great city, buildings should have been erected by men from across the sea, who speak the same language as ourselves, dedicated to the friendship of the English-speaking people throughout the world. It was a fine conception, it has been finely carried out; the simplicity and dignity of the building are extraordinarily great. The great portico in Kingsway will never cease to be an object of admiration, and all lovers of architecture will hope that the day is not far distant when linked up to the great central block will be the two wings, and that the whole structure will be completed, including the fine tower which is contemplated. Perfection being too much to expect in an imperfect world, we may congratulate the architects of London at the completion of this century-old scheme on having risen to a very considerable height, and hope that this great development will be but the forerunner of others which may come to fruition more quickly."

AN ANCIENT ROOF AT SHERE, ENGLAND

DURING renovations, several months ago, at the White Horse Inn, Shere, near Guildford, an old roof of wattle and daub was discovered. The ceiling at the top of the stairs had been partly removed when the workmen found the roof sloping up from about the level of the ceiling about 12 ft. below the main roof. It is remarkably preserved, and antiquaries are of the opinion that the roof must have been built in the fourteenth century or earlier.

OLD IRONWORK in NORMANDY

Sketches and Irrelevant Remarks by Samuel Chamberlain



NORMANDY has more than its share of enthusiastic admirers who insist that it is the most beautiful part of France. Undeniably it has a charm distinctly its own, with its rolling, colorful countryside, enlivened by the winding Seine and

one feels some things *must* have been neglected.

Ironwork is one of the many architectural features that remain authentic and untouched, due to the remarkable preservation of the ancient town, although much of the iron is dusty and obscure, some of it obliterated and softened by repeated paintings, some falling to dejected bits, eaten away by rust. The streets are everywhere enlivened with odd bits of it, shop signs, balconies, grilles, knockers, lamps.

countless scattered bits of old architecture. Perhaps the most gratifying fact about the region is that it is dominated by a city as ancient and delightful as Rouen, and not by one of the rather dead modern manufacturing towns upon which one often stumbles.

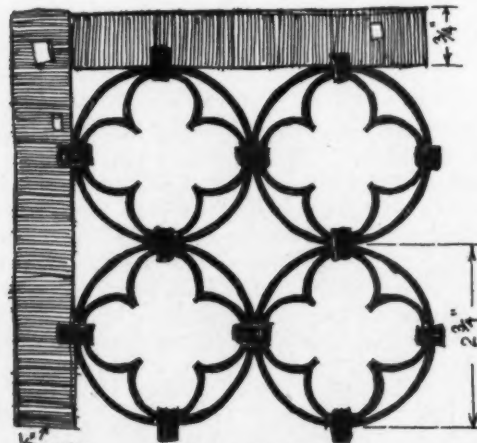
Rouen has had such countless volumes written about it, and has had its every crook and corner set down by all conceivable types of artists, that it seems a dangerous place to look for something of new interest. It is entirely too well known to allow any sketchpad observer the satisfying thought that he is uncovering something new, but at the same time, the architectural variety of the place is so vast and complex that

Due to the generosity of M. LeSeq des Tournelles, who recently gave his vast and invaluable collection to the city, Rouen now possesses a display of old ironwork which, for architectural interest at least, has few equals anywhere. M. Des Tournelles, it appears, is one of those rare people with an incurable and insatiable mania for collecting. But instead of chasing butterflies, postage stamps or cigar coupons, he wandered over Normandy, ferreting out unnoticed window grilles, latches, door ornaments, iron chests,

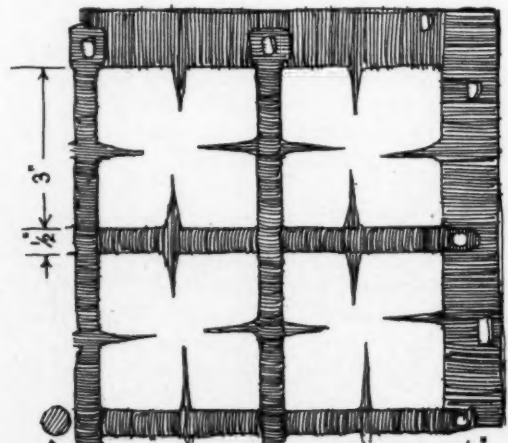
keys by the thousands, scissors, knives, andirons, lamps and an inexhaustible list of quaint and beautifully executed objects which leave no doubt



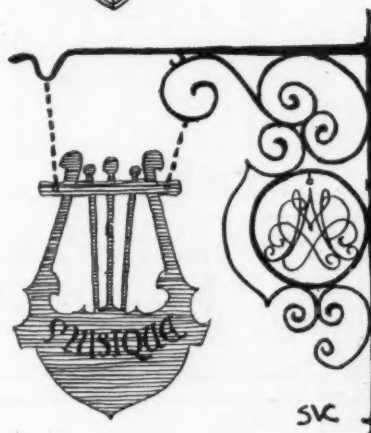
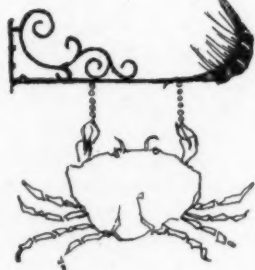
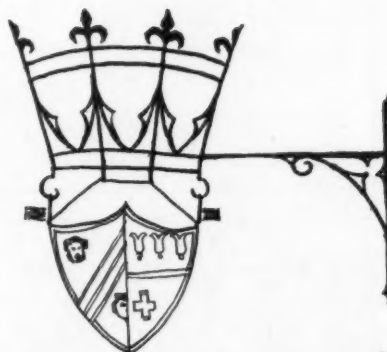
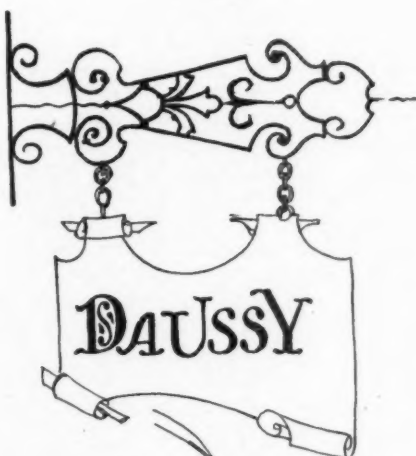
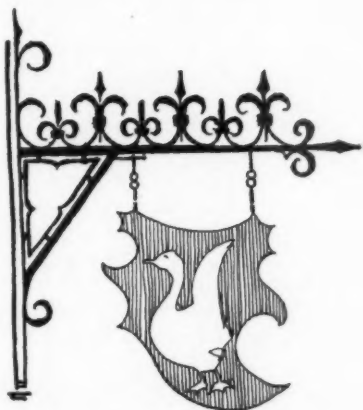
SMALL XVII CENTURY WINDOW GRILL-ROUEN



XIV CENTURY RINGS 1/8" THICK AND 1/4" DEEP



XIV CENTURY GRILL FROM ABBAYE ST. DENIS



SHOP SIGNS - ROUEN

FROM SKETCHES BY SAMUEL CHAMBERLAIN

about the high plane at one time attained by the iron workers of Normandy. The old abandoned Gothic church of St. Laurent has been made over to house the collection, and one can wander for hours through its cool gray interior without seeing half of the results of the zeal of this one man. Some of his most valuable finds, the tottering old custodian told me, were picked up in old farmhouses

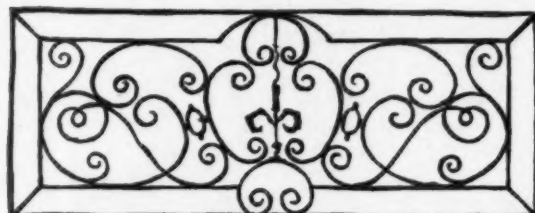
for a few sous, yet there was one magnificent grille for which he parted with fifteen thousand francs, leading to the conclusion that here indeed was an enthusiast.

It is by no means simple to devise a unit of grille work which will repeat itself over a large window opening and yet retain distinction. Proof of this lies in the fact that many of the grilles of this type scattered over France are not too successful. The diagrams shown here were taken from the des Tournelles collection and are more indicative of the effectiveness of some of the ancient handiwork.

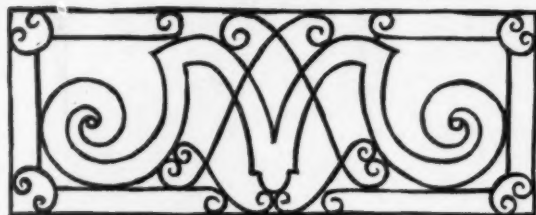
By keeping the neck craned at the appropriate tourist angle and watching closely, one can still find some of the picturesque old shop signs that lend such a touch of medieval color to the streets. Usually they are on antique shops, but a fish market and a dingy phonograph store furnish two of the most amusing ones here sketched.

Rouen has many of the finest old railings and balconies in France, although it is a question whether anywhere is there to be found a greater profusion of them than in Paris. The window rails have their measure of utility too. Walk along the streets of Rouen in the evening and you will see apparently half of the town leaning out of the upstairs windows, their elbows resting on them, silently watching the leisurely procession headed toward the waterfront cafes.

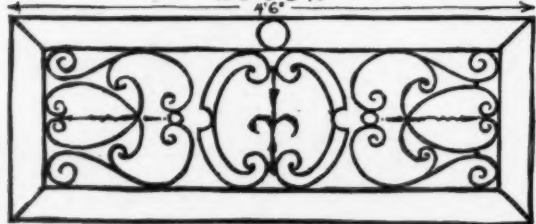
The sidewalk cafe has always been looked upon as one of the most gratifying of French institutions, and no one who has long lingered, tranquil and unmolested under its friendly awning, can deny it this distinction. As a mild sport, there are few things that can be compared to sitting on a cafe terrace and watching the dust settle in the water bottle while an endless stream of varied humanity straggles by. In the evening when the youthful, long-haired musicians played popular airs on the terrace of the huge cafes that line the quais of Rouen, and the stragglers stopped to listen, then was the best time to observe the ups and downs of French life. Seated at the tables were all the people of the town with sufficient financial position to allow them a glass of lager. Their families, including fat-legged children with abbreviated rompers and the pet dog, invariably assisted at the occasion. The bloods of the town, wearing tight waisted suits and black broad-brimmed hats, passing motorists with ridiculous leather helmets, stately old business men with assorted moustaches of a dozen degrees of distinction, demi-mondes with orange face powder and huge sweeping black hats, tourists with tweed clothes and a somewhat forced nonchalance, all were here in the parquet. And then farther out in the street, pale under the glare of the gaudy cafe lights, was the passing panorama of strange faces, brought into a curious harmony of expression by the music. Pathetic, sad-eyed



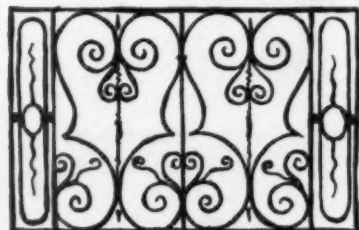
ROUEN



ROUEN



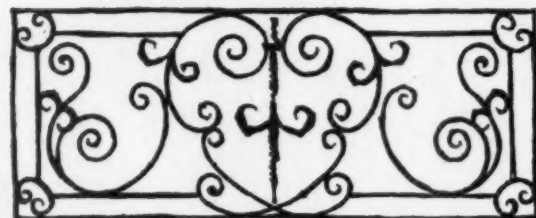
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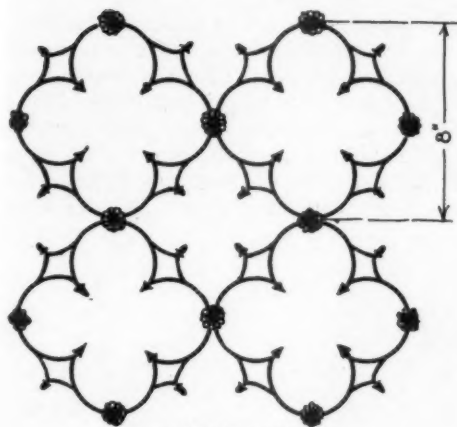


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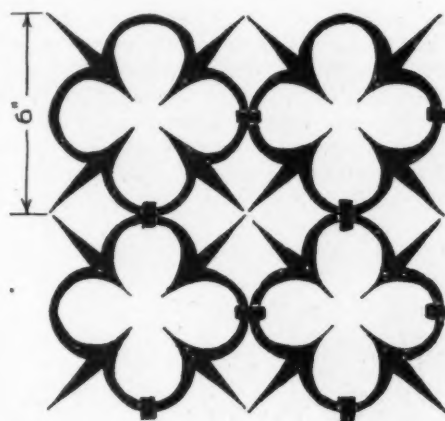


LAON

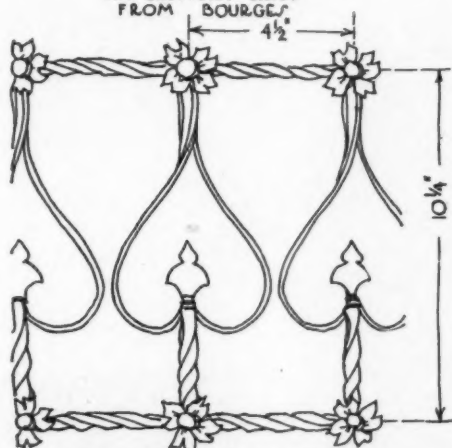
COUR DE DRAGON - PARIS
WINDOW RAILS



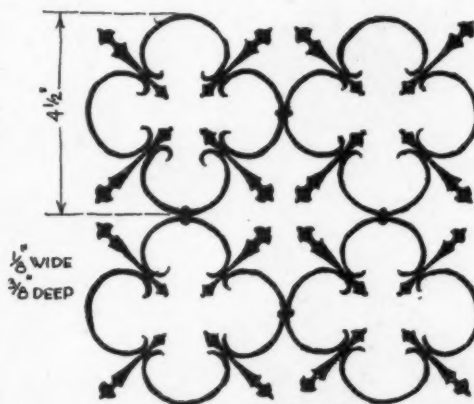
XIV CENTURY GRILL
FROM BOURGES



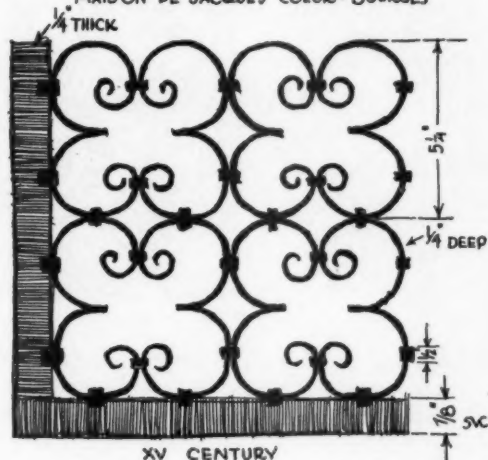
ITALIAN - XIV CENTURY



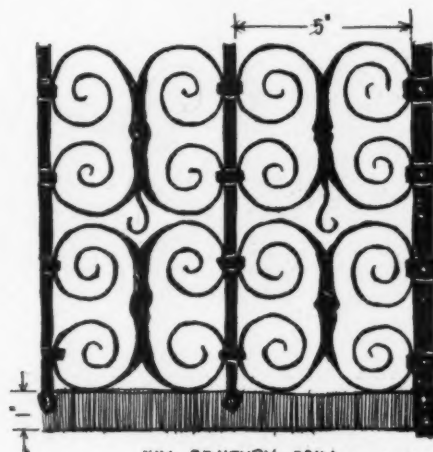
XV CENTURY GRILL FROM
MAISON DE JACQUES COEUR - BOURGES



XIV CENTURY



XV CENTURY



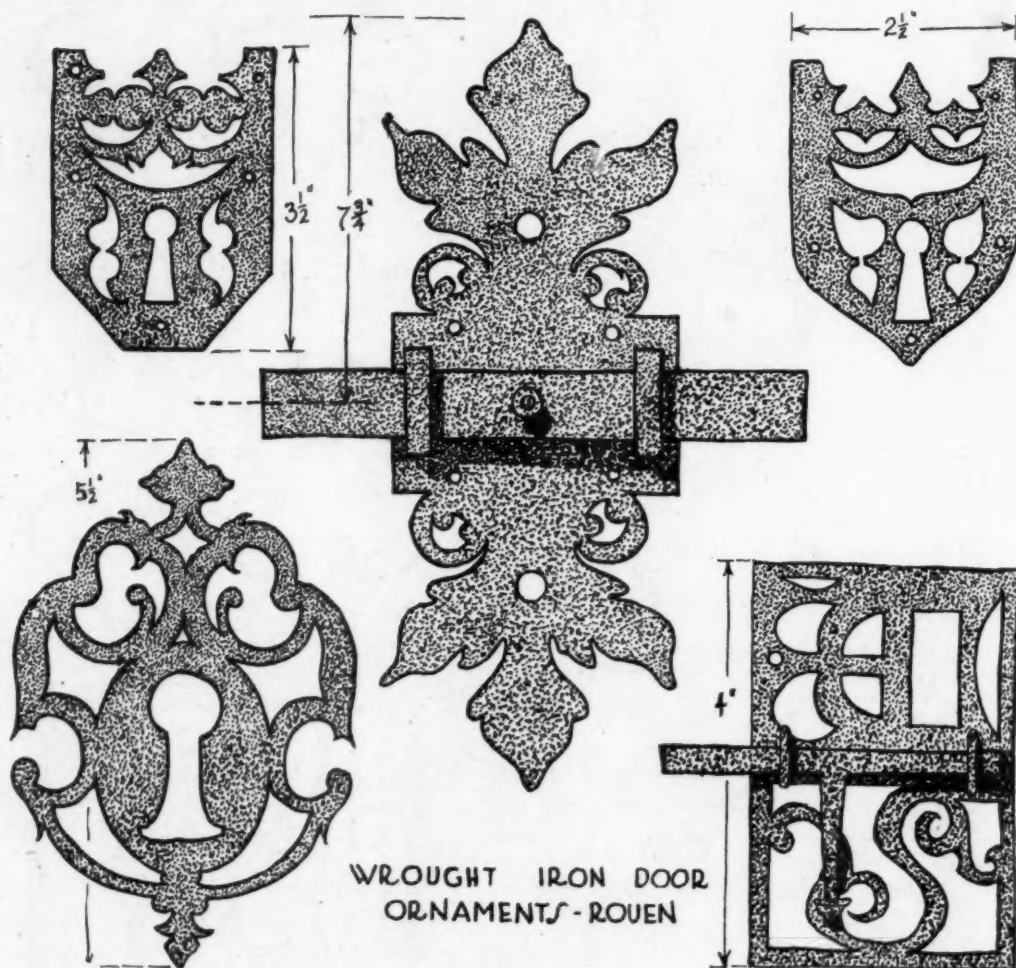
XIV CENTURY GRILL
FROM ROUEN

EXAMPLES OF EARLY FRENCH GRILLE WORK

couples, ragged and grimy from the slums of the city, leaned on one another and listened silently, rather stupidly. A tired, flaxen-haired mother with four children, the most recent of them a sleeping burden in her arms, looked under the lights with blinking, troubled eyes while her children stared with open mouths. And every night, far over the heads of the crowd, would appear a lean,

this digression may be pardoned on the ground that architects in Europe are not exactly unacquainted with the aforementioned institution.

Repeated coats of paint often obscure many of the fine old knockers, hinges, and key plates that can be found on every old street in Rouen, yet some of them have been well appreciated and cared for. The few shown here are merely random examples



comical face, for all the world like the image of Mutt of "funny paper" fame.

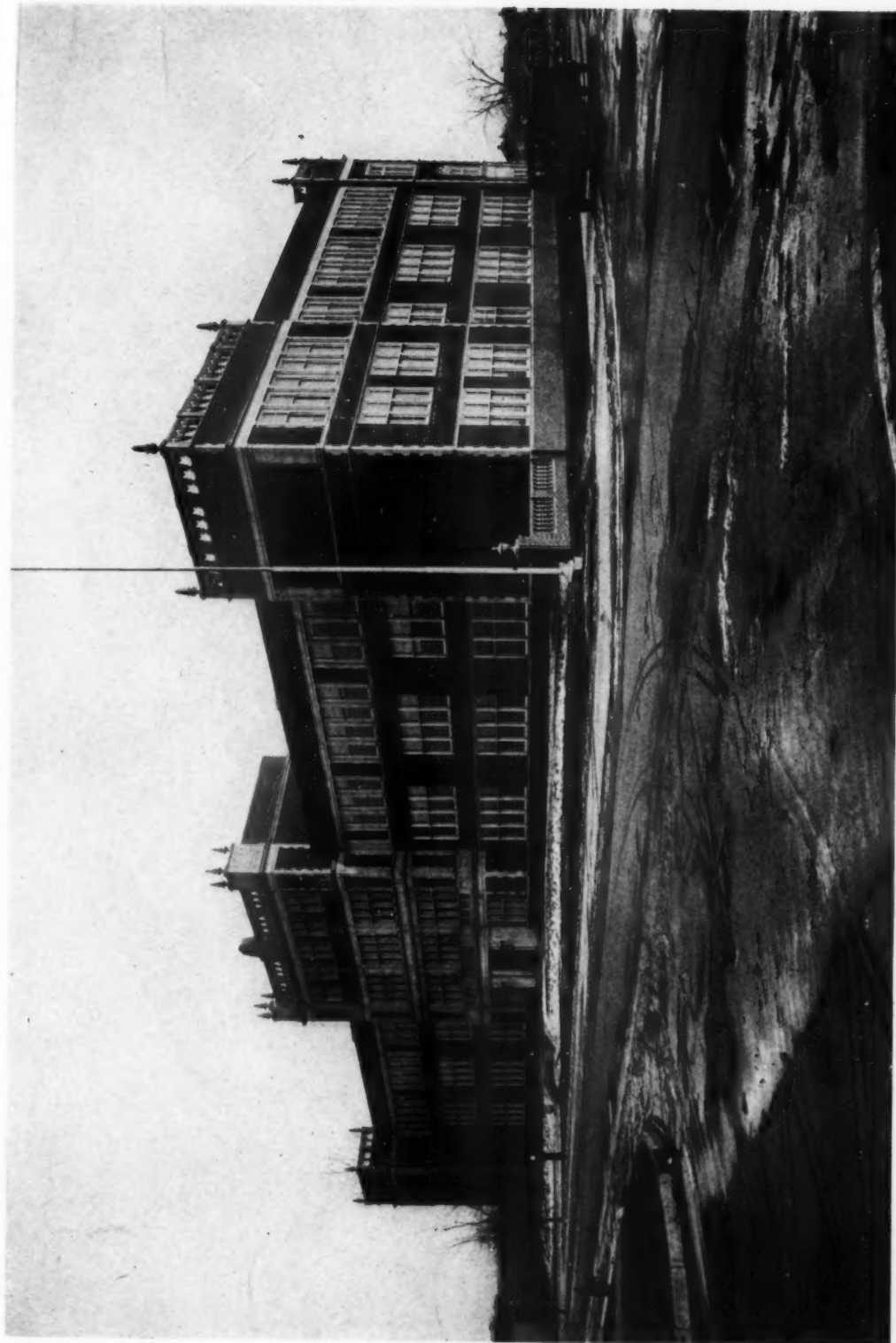
A bent, bobbing tramp with a blue white fuzz on his drawn face would walk past, peering keenly at the sidewalk. Suddenly he would stop, ask the pardon of the couple seated at the table, and fish expertly with his cane for a cigarette stub in the sawdust. With a quick motion he would drop it in his pocket, make a gesture to tip his hat, and shuffle on. It isn't architectural, but there are other fascinations in Rouen besides its "monuments historiques," it would appear. Perhaps

of the endless bits of ironwork that can be observed at the price of a morning's walk, and sketched at the price of being stared at by the bewildered passing population. The great army of the curious, which peers over the shoulder of the sidewalk sketcher, can understand the choice of a cathedral as a subject, but from the remarks one overhears, they quite evidently have no use for the misguided person who squats on first one doorstep and then another, drawing idiotic bits of iron. It is the startled hope of the writer that their opinion is not shared by the readers of these pages.

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THE AMERICAN ARCHITECT—THE ARCHITECTURAL REVIEW

VOL. CXXIV, No. 2431



JUNIOR-SENIOR HIGH SCHOOL, WATERLOO, IOWA
W.M. B. ITTNER, ARCHITECT

The NEW JUNIOR-SENIOR HIGH SCHOOL at WATERLOO, IOWA

BY WM. B. ITTNER, Architect and School Specialist, St. Louis, Mo.

THE new Junior-Senior High School at Waterloo, Iowa, is without a peer in the state. School authorities, engineers and architects regard the school as a masterpiece in modern school planning, in substantial construction, and in American architecture.

The school has accommodations for 1,200 students, is three stories in height, and located on a commanding site in the heart of West Waterloo. The building is of fire-resistive construction and is adequately and properly lighted, both naturally and artificially. Provisions for natural ventilation have been supplied abundantly and no feature of the plant has been given more careful consideration than the heating and ventilating system. Eight complete changes of air throughout the building are possible every hour.

PRESENT-DAY EDUCATIONAL OBJECTIVES CONSTITUTE THE BASIS FOR THE DEVELOPMENT OF THE EDUCATIONAL CONTENT

Health, the fundamental operations, citizenship, ethical character, and manual skill comprised the educational objectives which determined the character of the educational content of the school.

As to health, the school is first of all a model for sanitation, cleanliness and cheerfulness. In addition, there are ample provisions for health, physical education and recreational activities. Seventeen well lighted and ventilated class rooms, a generous sized library flanked by two spacious study halls serve the students in their academic studies. Seven home economic units, six workshops, a commercial suite and a group of laboratories furnish opportunities for the development of special interests, manual skill and thrift. An attractive, centrally located auditorium, with a normal seating capacity of 1,200, together with a music and expression room with a capacity for 150 students at a time, serve both the students

and the community for community interests, cultural pursuits and the development of ideal standards in conduct for which there is so great a need today.

OUTSTANDING FEATURES OF THE SCHOOL

The physical education program and recreational activities are developed in two gymnasiums, one for girls and one for boys. A swimming pool is also included. The boys' gymnasium is arranged on a level with the auditorium stage. Gymnasium exhibitions may, therefore, be viewed from the auditorium. Furthermore, the seating capacity of the large auditorium may be expanded for special occasions by temporary seatings on the stage. A soundproof movable partition divides the stage from the gymnasium whenever the direct connection between the two units is not desired. The accessory health quarters include showers, clinics and examination rooms.

The music and public speaking room has an outside entrance and is located for the convenience of both school and community use. It is arranged with a small stage.

The home economics laboratories located on the third floor include a four room housekeeping suite where first-hand information on how to conduct a home is given. The entire group is arranged in correlation with the art group.

The work shops are on the ground floor toward the rear and arranged for indefinite expansion with a minimum of cost. Instruction and practice in woodworking, metal work, auto mechanics, printing and bookbinding are offered as shop courses.

The building is executed in brick with Indiana limestone trim and its charm lies in its simplicity and directness of style. While the architecture does not follow any definite period, the design partakes of the qualities of early English Renaissance.



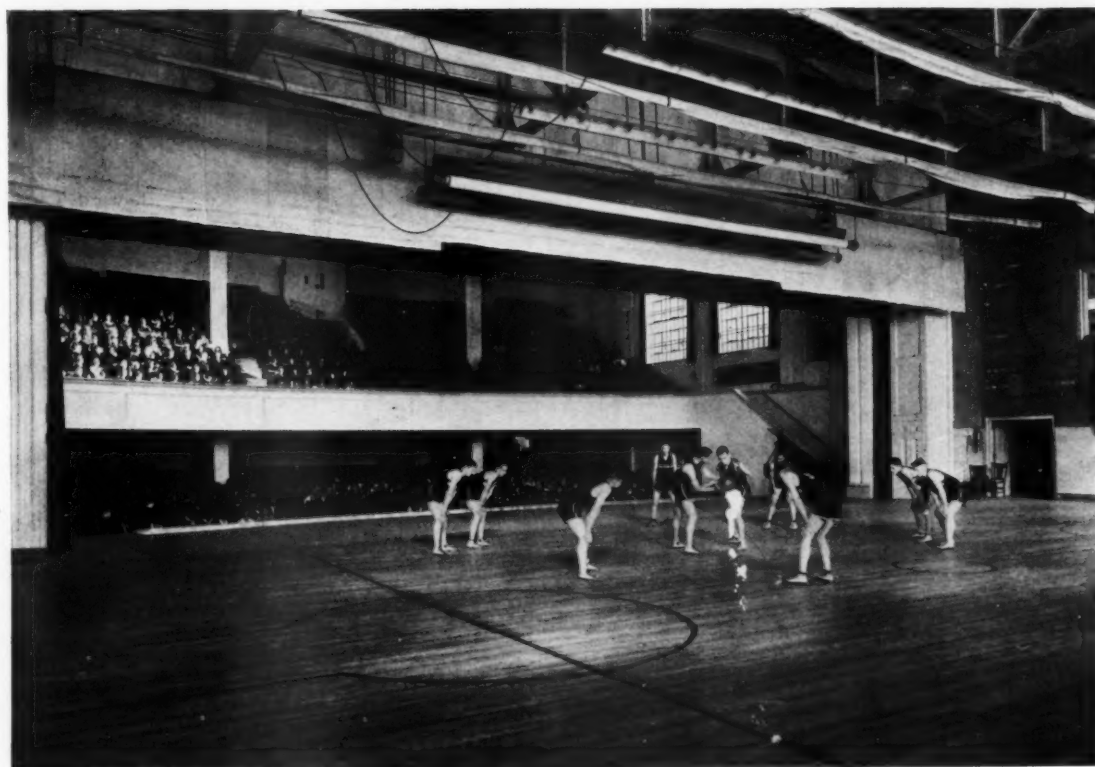
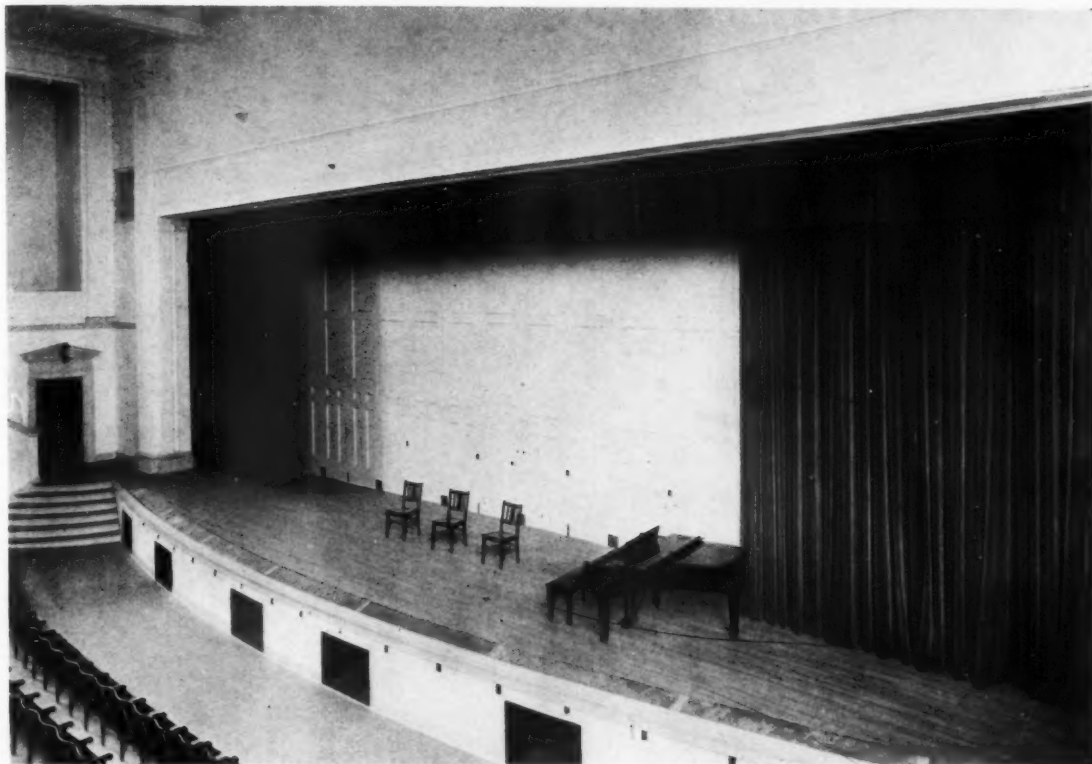
THE COMMERCIAL ROOMS ARE LOCATED EN-SUITE AND INCLUDE A BANK FOR PRACTICE WORK



THE SCHOOL LIBRARY IS LOCATED ADJACENT TO THE STUDY ROOMS. IT IS ALSO READILY ACCESSIBLE TO THE CLASS ROOMS

JUNIOR-SENIOR HIGH SCHOOL, WATERLOO, IOWA

WM. B. ITTNER, ARCHITECT



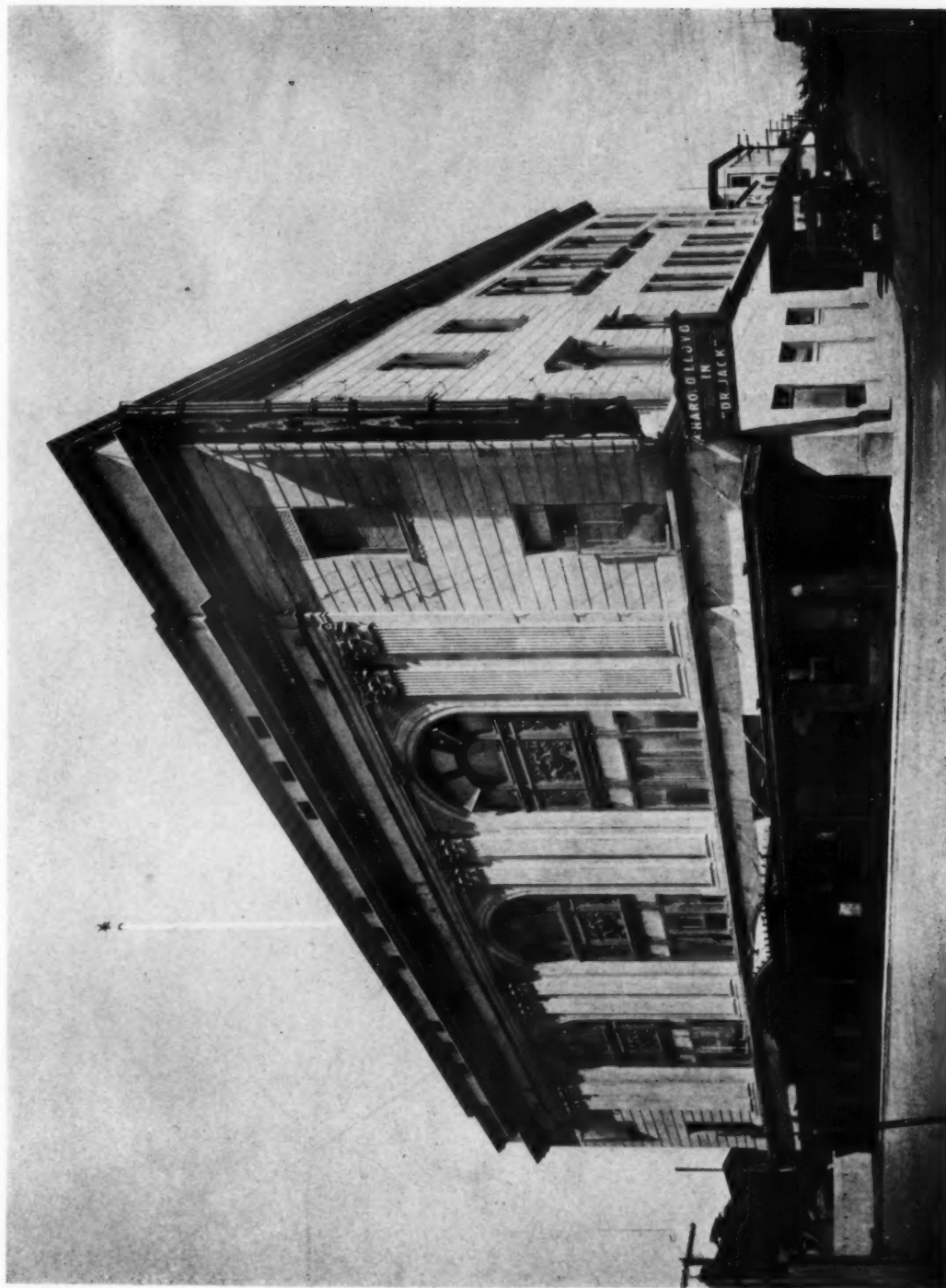
JUNIOR-SENIOR HIGH SCHOOL, WATERLOO, IOWA

WM. B. ITTNER, ARCHITECT

THE movable partition may be lowered at any time desired, thus dividing the stage from the gymnasium.

THE gymnasiums are arranged on a level with the auditorium stage. By this arrangement the audience room serves as space for spectators during physical exhibitions. The arrangement also adds space for temporary auditorium seatings for special occasions. A soundproof movable partition divides the stage from the gymnasiums and may be lowered whenever direct connection between the two units is not desired.

The illustration on the other side shows the partition raised and a basketball game in progress.



HAWAII THEATRE, HONOLULU, HAWAII
EMORY & WEBB, ARCHITECTS

The HAWAII THEATRE, HONOLULU, HAWAII

EMORY & WEBB, Architects

MANY people from the mainland United States, visiting Honolulu for the first time, are surprised when they find instead of grass huts, waving palms and hula girls, a really modern city with many modern buildings and improvements which compare very favorably with many mainland cities.

They are even more surprised when they learn that most of the buildings were designed by local architects and the work executed by local contractors with materials furnished by local dealers.

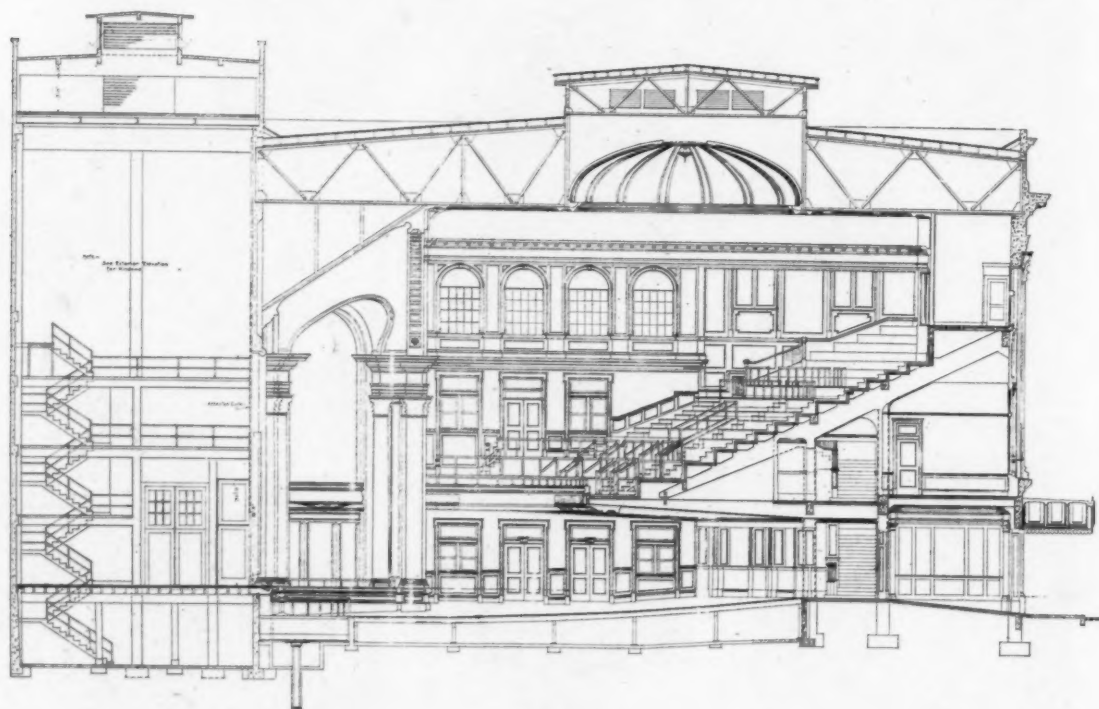
The most recently finished of these buildings is the Hawaii Theatre.

and the roof over the stage are all of reinforced concrete.

The exterior walls and interior partition walls are of hollow terra cotta tile, plastered on the exterior with cement plaster and on the interior with lime plaster.

The roof of felt, pitch and gravel is supported by steel trusses spanning the auditorium from the proscenium wall to the front wall.

On the main or ground floor are three stores which are placed on either side of the entrance lobby. The lobby floor is of Columbia marble tiles and the walls are finished in three shades of



The building was designed by Emory & Webb, architects of Honolulu and the structural engineering and construction were executed by the Pacific Engineering Co. of Honolulu.

The owners insisted that the theatre be modern in every particular, that it was to be used primarily for the production of legitimate plays and secondarily for moving picture production.

The exterior finish of the building is of cement plaster in natural color with the exception of the window trim, the three large bays in the front facade, the awnings and marquise on the front, which are of bronze.

The foundations, columns, girders, beams, floors

Tennessee marble, while the cornice and ceiling above are of hard wall plaster.

The lobby leads directly through eight panic bolted bronze doors into the foyer, which has a cement floor covered with heavy Wilton carpet over the entire area.

The walls of the lobby and the columns are wainscoted to a height of four feet, and the walls and ceiling above are of plaster.

Leading directly from the foyer are the aisles to the main floor of the auditorium, cloak rooms, toilet rooms and the stairs on either side lead to the mezzanine floor above.

The mezzanine floor is directly under the slope



HAWAII THEATRE, HONOLULU, HAWAII

EMORY & WEBB, ARCHITECTS

of the balcony and is large enough to provide space for the offices of the management as well as a promenade or foyer for the theatre.

The mezzanine promenade floor is of concrete with heavy carpet covering the entire area, the walls are wainscoted and panelled above with heavy leather paper, while the mouldings and ceiling above are of plaster.

Opening from the mezzanine promenade are toilet rooms, smoking room, ladies' dressing rooms and tunnels and stairs which lead to the balcony above.

Around the front of the balcony are two rows of loge boxes which are provided with loose wicker upholstered chairs, while the balance of the balcony as well as the chairs on the main floor are the regulation opera chair upholstered with cane.

The projection booth is equipped with three of the latest model automatic projectors, a stereo machine and a spot light.

The floors of all boxes, aisles and public space are carpeted with a taupe shade of heavy Wilton carpet, and all of the hangings are of silk velour of a lighter shade than the taupe.

The walls of the auditorium gradually lighten in tone from a taupe at the main floor, to a gray as far up as the cornice under the main cove.

Panels between windows and on the ceiling beams and in the dome are imitation mosaic placed in panels of contrasting colors to relieve the monotone effect.

The proscenium arch pilasters, cornices and arch members, as well as the decoration over the proscenium boxes and the organ screens, are all of

plaster, gilded with three shades of gold with a touch of verde in the shadows.

The sounding board of the arch is practically covered with an oil painting by Lionel Walden, of Honolulu, depicting the "Glorification of the Drama," with a background and borders of the same imitation mosaic.

The organ console is mounted on a hydraulic elevator in the orchestra pit which permits raising same to a level of the stage, for feature performances. The organs are placed on either side of the proscenium arch, directly above the proscenium boxes.

The stage floor is of maple over the entire working area and is divided into movable sections for special productions.

The floors surrounding the stage and all stairs are of concrete while the dressing rooms which open off the stage and on the various halls above are all of concrete or hollow tile construction.

The entire lighting system of the theatre is controlled at the stage switchboard, which is the latest model "Major" control system.

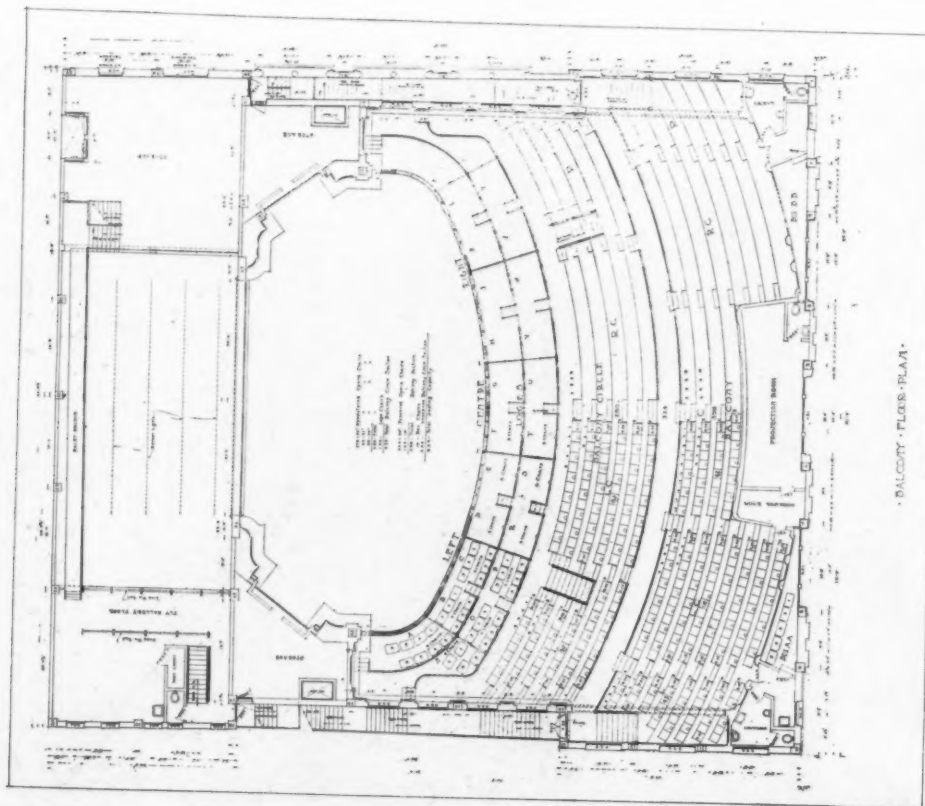
The lighting throughout the auditorium is entirely from concealed sources and is in four colors—red, blue amber and white—and all are controlled by dimmers by the stage switchboard.

The use of a "live" pin rail on the stage is something unusual in stage equipment. It permits the handling of drops directly from the stage floor, instead of running all the way up to the fly gallery. This is of special value to the theatre where a large crew of men are not employed and is a "wrinkle" frowned on by the unions.

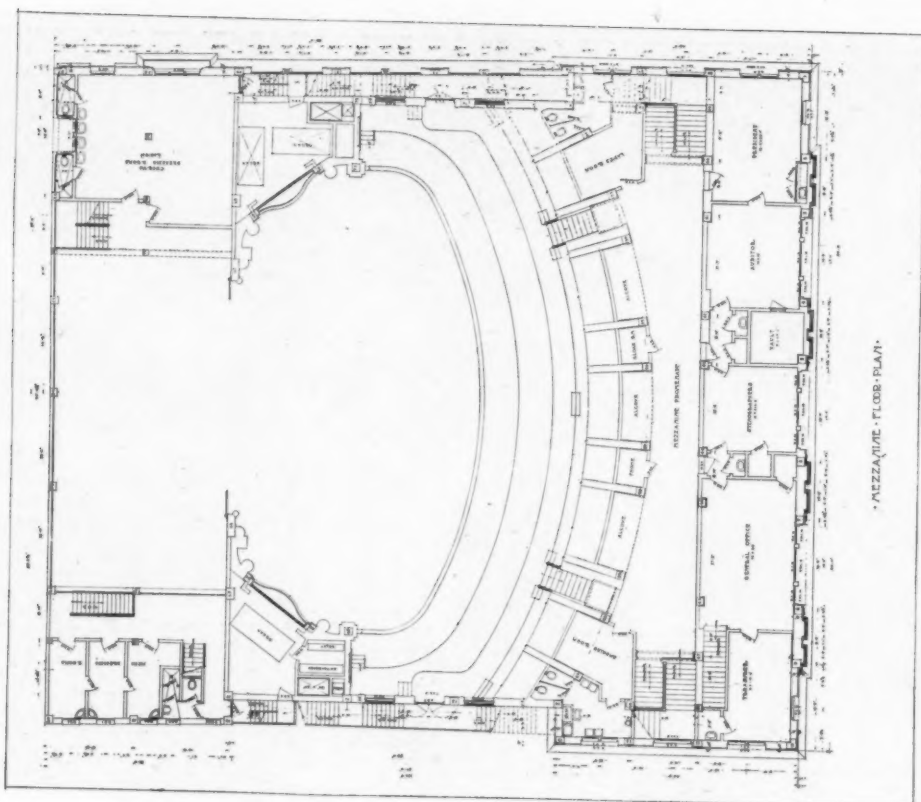


HAWAII THEATRE, HONOLULU, HAWAII

EMORY & WEBB, ARCHITECTS



• BALCONY - FLOOR PLAN •

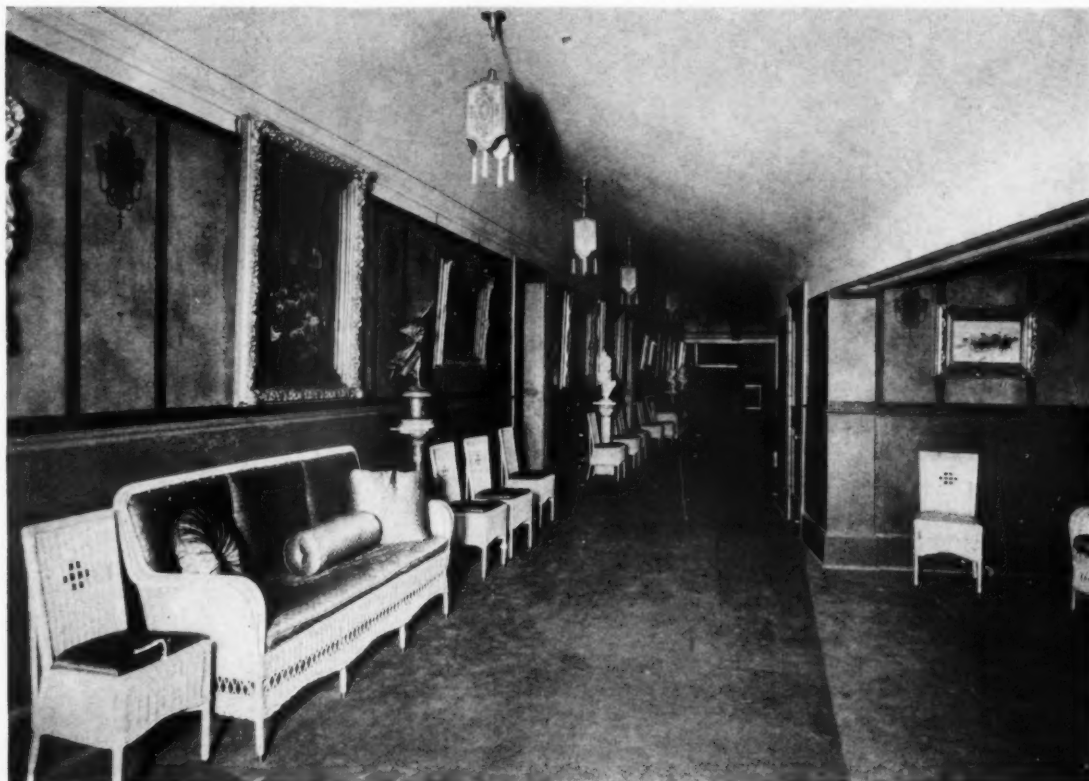


• MEZZANINE - FLOOR PLAN •

HAWAII THEATRE, HONOLULU, HAWAII
EMORY & WEBB, ARCHITECTS



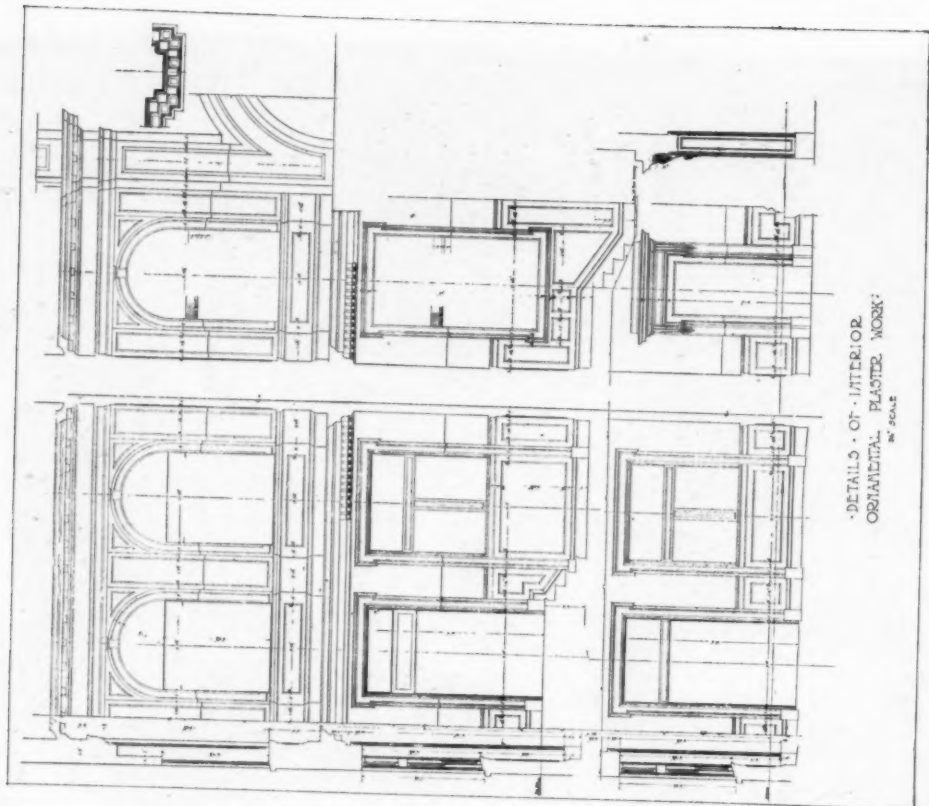
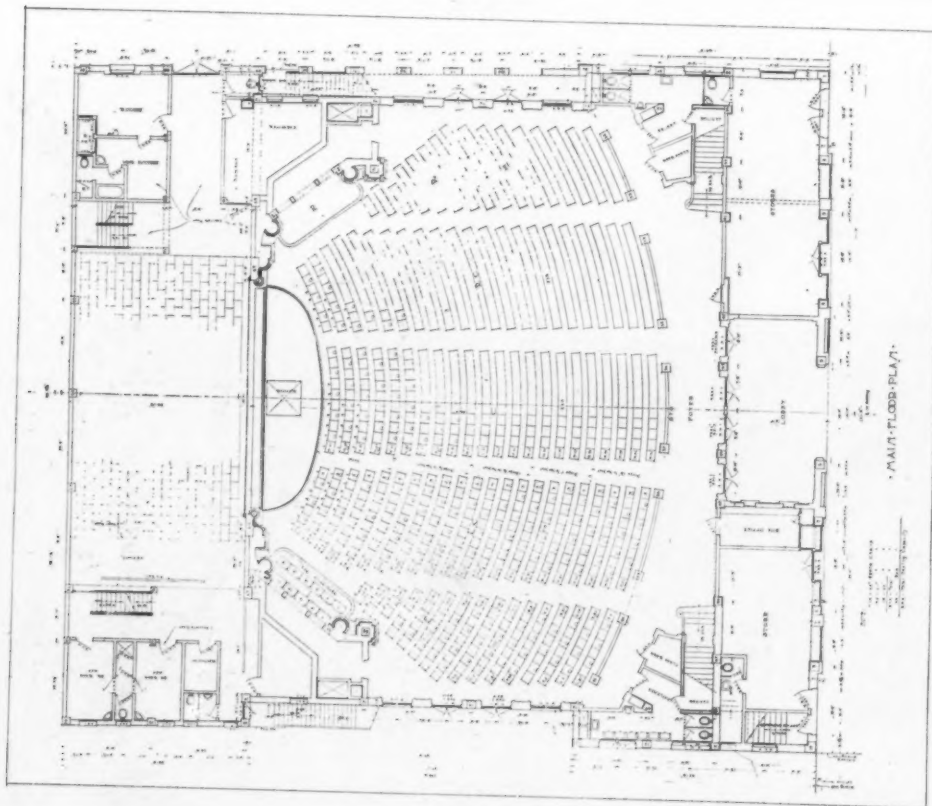
BALCONY



MEZZANINE FOYER

HAWAII THEATRE, HONOLULU, HAWAII

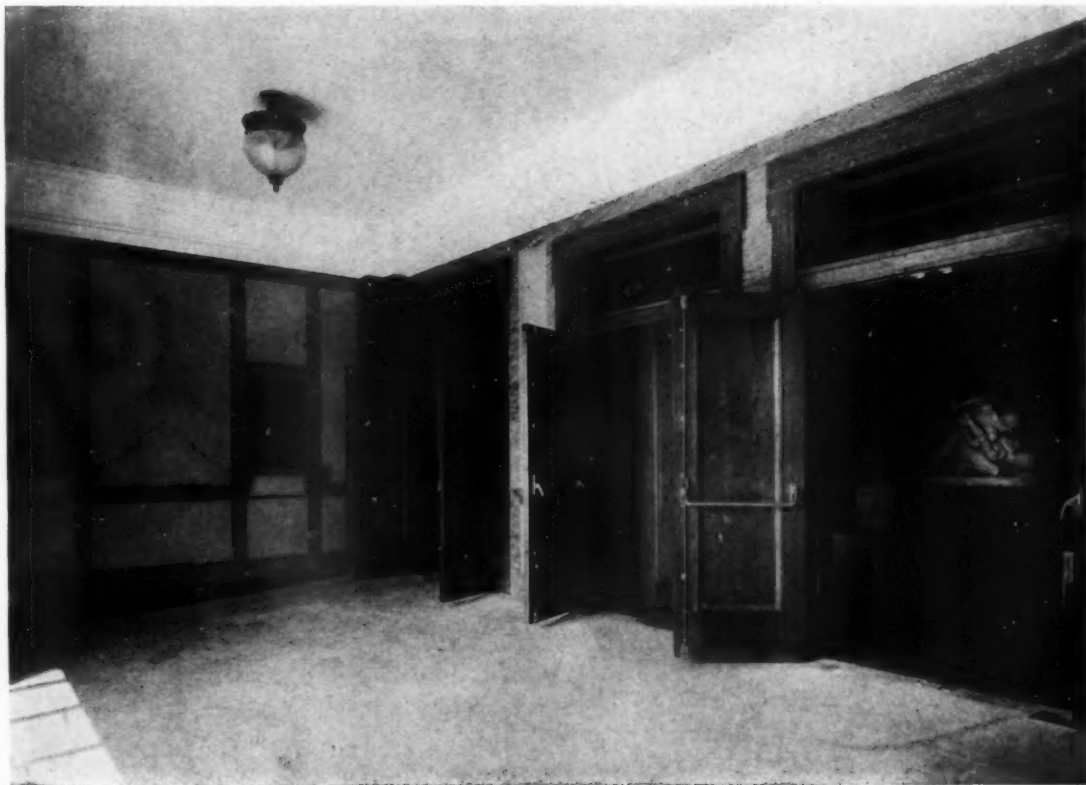
EMORY & WEBB, ARCHITECTS



HAWAII THEATRE, HONOLULU, HAWAII
EMORY & WEBB, ARCHITECTS



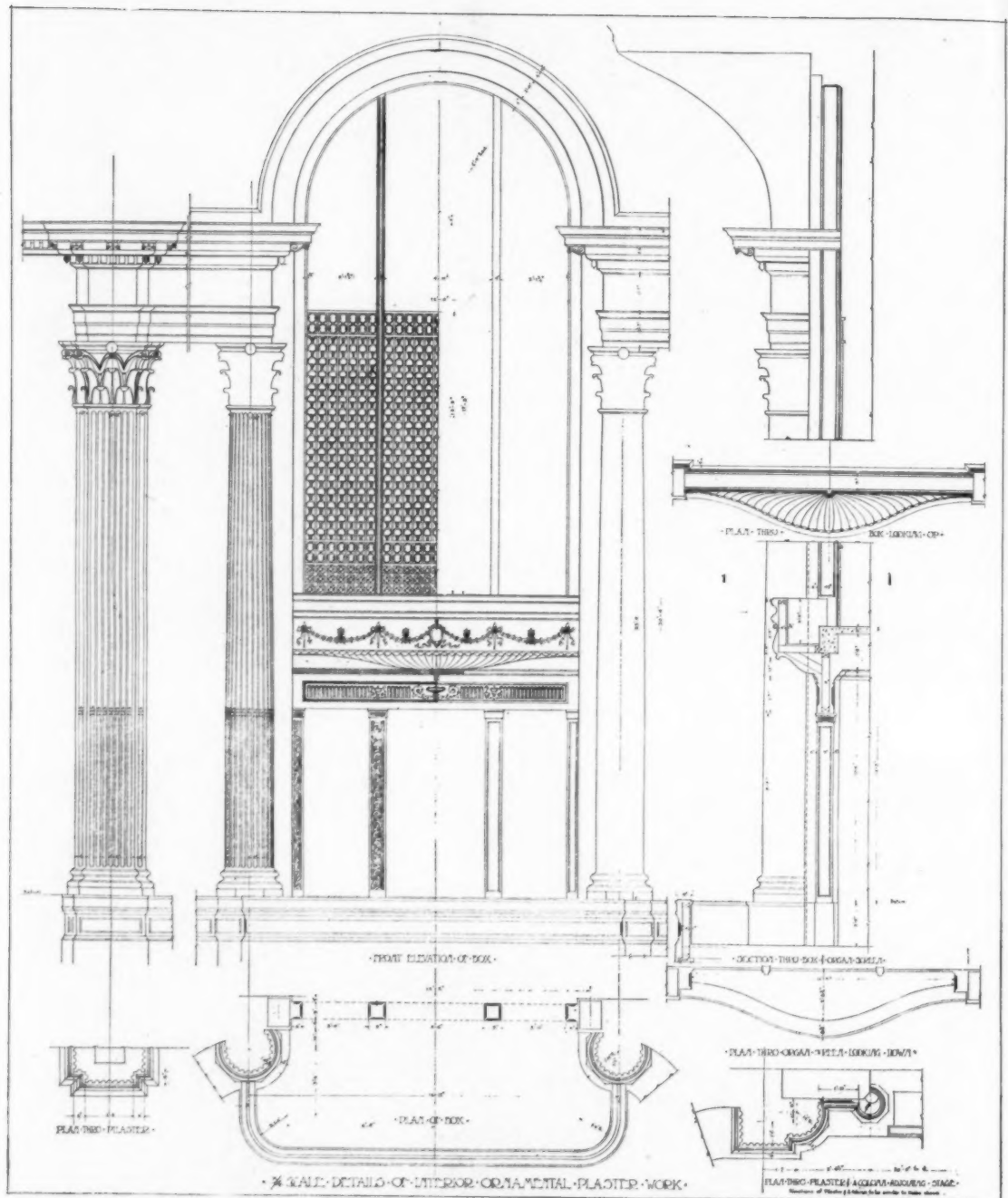
STAR'S DRESSING ROOM



ENTRANCE LOBBY

HAWAII THEATRE, HONOLULU, HAWAII

SMORY & WEBB, ARCHITECTS



HAWAII THEATRE, HONOLULU, HAWAII

EMORY & WEBB, ARCHITECTS

DEPARTMENT of ARCHITECTURAL ENGINEERING

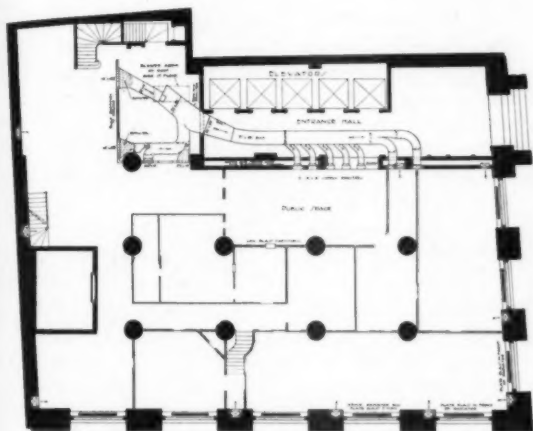
COOLING SYSTEMS for BUILDINGS

BY A. M. FELDMAN, M. E.*

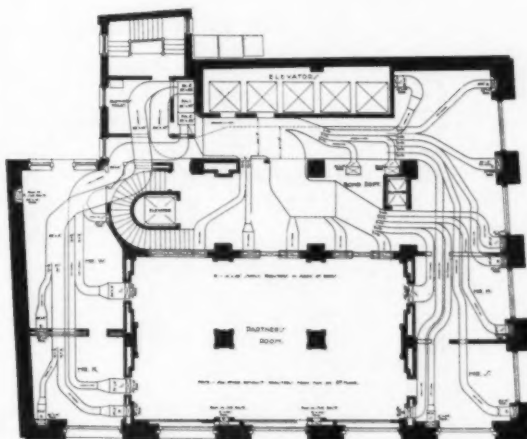
THE producing of cold air is done for three reasons; to preserve things that would otherwise be destroyed by heat, to make possible certain manufacturing processes and for the health and comfort of human beings. The latter use will be considered at this time. The making of cooled air for this purpose is now considered to be a luxury and it is so under ordinary conditions. The theatre and other places of amusement and public dining rooms are becoming more and more commonly equipped for these conditions, with resulting increased patronage and revenue. Its application to hospitals is as yet

In 1906 a heating, ventilating and cooling plant was installed for the banking offices of Kuhn, Loeb & Company, C. P. H. Gilbert, architect, occupying the first floor of their twenty-story building at William and Pine Streets in New York City. The plant was successful. In 1922 the banking quarters were extended to include the second and third floors and the original plant was scrapped.

As there was no room available for a plant of the required size in the basement, advantage was taken of the fact that a new firetower stairway was then erected, in the rear, to extend to the fifth floor. Three stories were built over these stairs



FIRST FLOOR PLAN, KUHN, LOEB & CO. BANK,
NEW YORK CITY



SECOND FLOOR PLAN, KUHN, LOEB & CO. BANK,
NEW YORK CITY

limited and its therapeutic value for certain diseases is yet in question. As a means conducive to comfort, that alone justifies its use. When this is the condition where persons are employed it results in an efficiency which justifies the cost.

The usual procedure in producing cooled air is to install a complete plant for that purpose alone. If, however, a heating and ventilating plant can be converted to a seasonable use as a cooling plant, this dual employment must result in a considerable economy. This latter scheme has been developed by the writer in a satisfactory way.

to house the ventilating plant. In this space one of the exhaust fans was installed on the eighth floor. On the seventh floor were located the vento stacks for tempering, heating and cooling the fresh air, the air washer and the blower which was made of special design to suit the available space. On the sixth floor were placed the heater for the humidity control, the air washer pump, condensation trap and the control dampers in the fresh air ducts leading to the banking quarters.

The vento stacks are arranged in five rows two tiers high, 40" and 50" sections, a total of 2061 sq. ft. radiating surface. These vento stacks have the usual supply and return steam headers. On the

*Consulting Engineer, 115 West 45th Street, New York City.

Location of Thermometer	TEMPERATURES—JUNE 5, 1923													
	6 A.M.	7 A.M.	8 A.M.	9 A.M.	10 A.M.	11 A.M.	12 M.	1 P.M.	2 P.M.	3 P.M.	4 P.M.	5 P.M.	6 P.M.	7 P.M.
In brine tank	10	14	14	13	16	15	17	19	20	24	25	28	30	20
Outside at inlet	68	68	68	69	70	70	73	76	78	80	82	83	83	81
At fan discharge	68	60	60	57	59	58	60	62	62	64	65	66	66	78
First floor	76	74	73	72	72	68	69	70	71	72	72	72	73	75
Second floor	72	70	69	68	68	64	65	66	66	67	68	68	69	70
Third floor	72	72	72	72	69	68	69	69	70	70	70	70	71	72

TABULATION OF TEMPERATURES INDICATED BY THE TEMPERATURE RECORDING INSTRUMENT, KUHN, LOEB & CO. BANK, NEW YORK CITY

steam supply headers are located the thermostatic control valves placed on a by-pass so that they are not used when the brine circulates through the system. The brine supply enters the vento stacks at the bottom through the steam return headers and leaves them at the top through the steam supply headers, reversing the travel flow of the steam and condensation. This control is effected by means of by-passes and valves. The main steam condensation return becomes the brine supply and a separate brine return is used.

A 75 ton refrigerating machine is in the basement, consisting of an 8" x 12" horizontal duplex

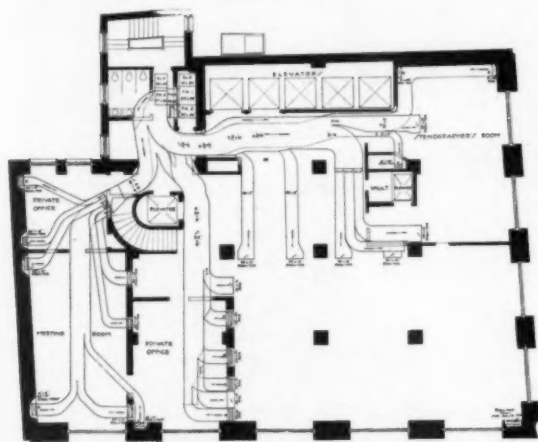
reserve or supplementary unit. A new 20 ton tank and pipe-type cooler have been installed over the 75 ton cooler.

For the observation of temperatures a Wilson-Maulen Co. "Tapalog" Resistance Pyrometer Recorder is installed in the engine room and electrically connected with resistance bulbs. These, six in number, are located on each of the three banking floors, and the air duct leaving the fan, in the brine tank and out-of-doors. These six temperatures are indicated in different colored inks on a continuous recording chart.

The nearness of the United States Assay Office to this building has a pronounced effect on the quality of the air in that neighborhood. The acid fumes are present in sufficient quantity so to impregnate the water of the air washer that the circulating pump was soon rendered useless. It was necessary to replace it with one having special bronze corrosion-resisting parts.

The writer has found from experience and is convinced that when air is cooled for the comfort of the occupants of the cooled room, it should not be more than 8° to 10° below the outside temperature in the hottest weather, nor below 73°F. It appears that the human body has the ability to adjust itself to atmospheric conditions and obtains comfort with only slight differences of temperature, especially if some of the excessive absolute humidity has been removed from the air. Absolute humidity is the weight of a cubic foot of aqueous vapor at different temperatures and percentages of saturation.

A test of the first installation, made on June 25, 1909, found the following conditions: outside temperature 91°F. with relative humidity of 53 per cent; temperature of air introduced into banking rooms 71°F.; average temperature in banking rooms 81°F. with relative humidity 63 per cent. The absolute humidity of the outdoor air, at 91°F. and 53 per cent relative humidity was 8.074 grains per cubic foot and that of the air in the banking rooms at 81°F. and 63 per cent relative humidity was 7.103 grains per cubic foot. The 390,000 cu. ft. of air drawn in by the fan at 91°F. became about 382,000 cu. ft. at 81°F., hence 390,000 x



THIRD FLOOR PLAN, KUHN, LOEB & CO. BANK, NEW YORK CITY

type motor-driven ammonia compressor, a horizontal type brine cooler and four 15 pipe high stands of 2" and 3" double pipe ammonia condenser 20'-0" long. A brine storage tank 8'-0" x 9'-6" x 13'-0" deep is also provided. The brine circulating pump, in duplicate, pumps the brine from the storage tank through the cooler to the vento stacks on the seventh floor, returning by gravity. The connecting brine pipes are 5" in diameter. The old 20 ton steam-driven refrigerating machine with its independent condenser and cooler are inter-connected with the system and is kept as a



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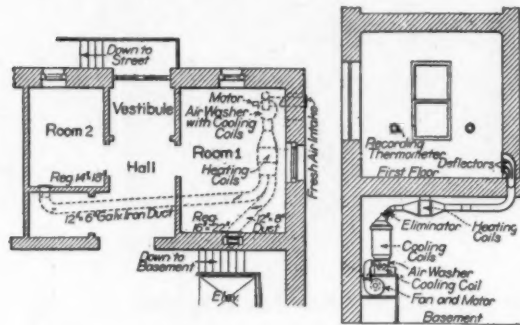
8.074 — $382,000 \times 7.103 = 435,514$ grains or 62.2 lbs. of water removed from the air by the cooling coils per hour. This corrected by amount of vapor given off by the occupants of the offices in the products of respiration gives a net weight of 59.5 lbs. of water condensed and removed from the air by the process of refrigeration.

Numerous other tests were made at about that time with practically the same results. The performance of the new plant during last Summer and this season proved to be very satisfactory. The difference of temperatures is kept up as in the past.

The cubical contents of the three stories is about 200,000 cu. ft. and the fresh air supply fan has a maximum capacity of about 1,900,000 cu. ft. per hour. The exhaust air from the banking rooms of first floor, not vitiated on account of the very large volume supplied per person, is cool and removed

through an upper chamber filled with additional brine coils, thence through short ducts into the rooms where the cooled air enters near the floor level. Open window transoms allow the warm strata of vitiated air to escape from the top of the rooms. Some air also escapes through the entrance doors when used. The possibility of warm air entering from the corridor is eliminated.

In the type of air washer used the air is forced through a body of water. A float-controlled valve



SMALL COOLING PLANT, MT. SINAI HOSPITAL, NEW YORK CITY

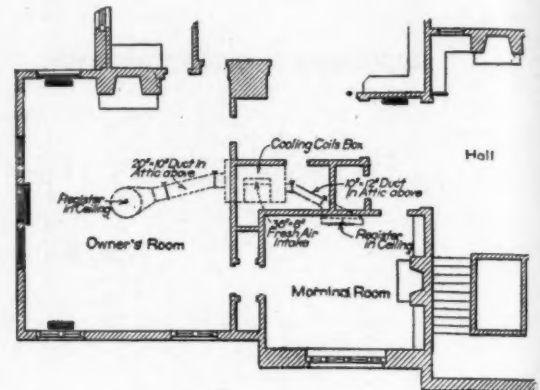
near the floor. It is discharged into the engine room with a resulting reduction of about 10°F. in temperature.

To overcome drafts from the windows in the Winter time, plate glass in frames full width of window and less than half its height were installed at the inner edge of the jambs and over the direct radiators on the first floor, and full inside sash but with the top panes removed, on second floor.

By this method of circulating cold brine through vento stacks primarily installed for heating, air is cooled to a desired temperature and circulated through the regular hot air ventilating ducts. The main ducts have been insulated with cork boards.

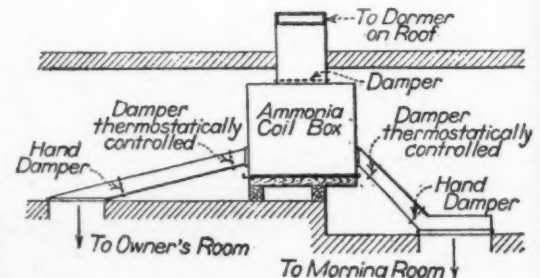
In the Mt. Sinai Hospital, New York City, the author designed a small cooling plant and supervised its installation. This plant is used to cool two rooms, $8' \times 10' \times 14'$ and $11' \times 15' \times 14'$ in size, to be used in the treatment of children suffering from gastro-enteritis. The rooms are located on the first floor and the cooling apparatus is located in the basement below them.

Outdoor air is forced by a motor-driven fan through a water chamber which is cooled by brine coils. From this chamber the air is forced



FLOOR PLAN SHOWING INSTALLATION OF COOLING DUCTS ABOVE CEILING. HOUSE OF HON. PAUL M. WARBURG

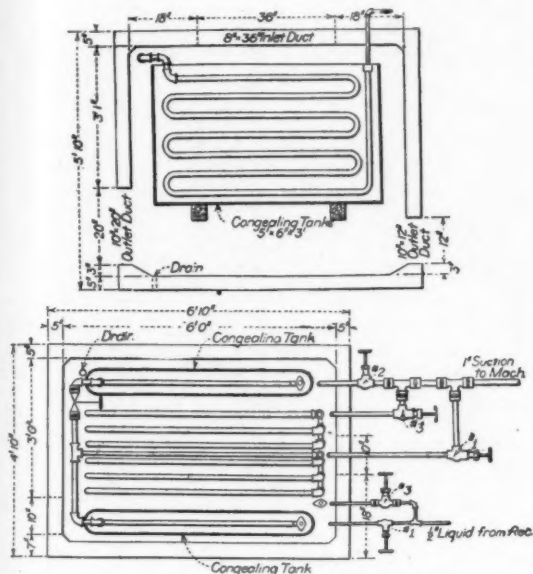
maintains a uniform water level as the volume of water is reduced by evaporation. A brine coil of 5 sq. ft. surface is immersed in the water of the washer and 66 sq. ft. of additional surface, divided into three sections, is installed in the upper shell. Thus the air is washed and partly cooled by passing through cold water and then



ELEVATION OF COOLING BOX AND CONNECTIONS IN ATTIC. HOUSE OF HON. PAUL M. WARBURG

further cooled by passing over the cooling coils above. An eliminator for removing the free particles of moisture and heating coils for reheating the air if desired are installed. Brine is taken from a return main used in connection with the refrigerating system of the building, pumped through the coils by means of a small centrifugal pump and back to the same return.

The relative humidity was observed at different intervals during the day. In the artificially cooled rooms, the relative humidity varied between 41 and 76 per cent, making an average of 59 per cent for readings taken on twenty-five different days. In the main ward the relative humidity varied



DETAIL OF AIR COOLING REFRIGERATOR AND CONNECTIONS. HOUSE OF HON. PAUL M. WARBURG

during the same period from 35 to 80 per cent with an average of 59 per cent. The temperature in the cooled rooms varied through that period from 63° to 74°F. This latter temperature was reached only on one day when the street temperature rose to 93°F. The average temperature of the rooms for 252 readings was 69°F. during a period of 42 days. The outdoor temperatures during the same 42 days taken at 8 a. m., 12 m., 4 p. m., 12 m. and 4 a. m. were 77°, 90°, 80° and 70°F. respectively.

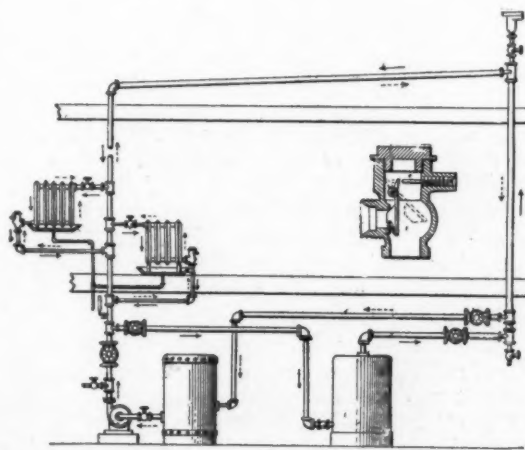
It is interesting to note that while low temperatures were obtained in the cold rooms, the relative humidity was approximately the same percentage as that in the main ward with higher temperature, thus indicating that the absolute humidity was reduced by the process of cooling. As beneficial results are reported, it may be inferred that air conditioning by lowering the temperature and reducing the absolute number of grains of moisture produces the effect, notwithstanding the relative humidity may still show a high percentage.

For the country residence of Hon. Paul M. Warburg at Hartsdale, New York, the author was called upon to provide a design for cooling the owner's bedroom and morning room in conjunction with the installation of a small refrigerating plant

to be used for pantry and kitchen refrigerators. The rooms are 28' x 23' x 11' and 14' x 9' x 10' respectively. This problem was solved by installing a cork insulated box with 300' of 1" galvanized iron pipe in the attic immediately above the rooms. The top of the box was connected with a short duct to the roof dormer for a fresh air inlet. From the ends near the bottom of the box two galvanized iron ducts were connected to the ceiling registers of the two rooms. Fresh air enters the top of the box, is cooled and drops by gravity through the registers to the floor of the rooms. The cooled air then escapes through the partially opened windows, thus creating the necessary change of air for ventilation. Advantage was taken of the thermostats installed in connection with the heating apparatus and inter-connected with diaphragm levers to control the dampers in the ducts, thus providing means for automatically shutting off the cold air in case it became necessary.

Tests showed a temperature in the room of about 6°F. lower than out-of-doors.

The cooling box is provided with two narrow but deep congealing tanks filled with brine in which coils are submerged. The chilled brine in these tanks furnishes enough cold storage to cool the air part of the night when the refrigerating machine is not in operation. The piping is arranged in three coils which are cooled by direct expansion of ammonia. The control valves are so arranged as to give flexibility to the system in operation, as the ammonia may be expanded into any one or combination of coils independently.

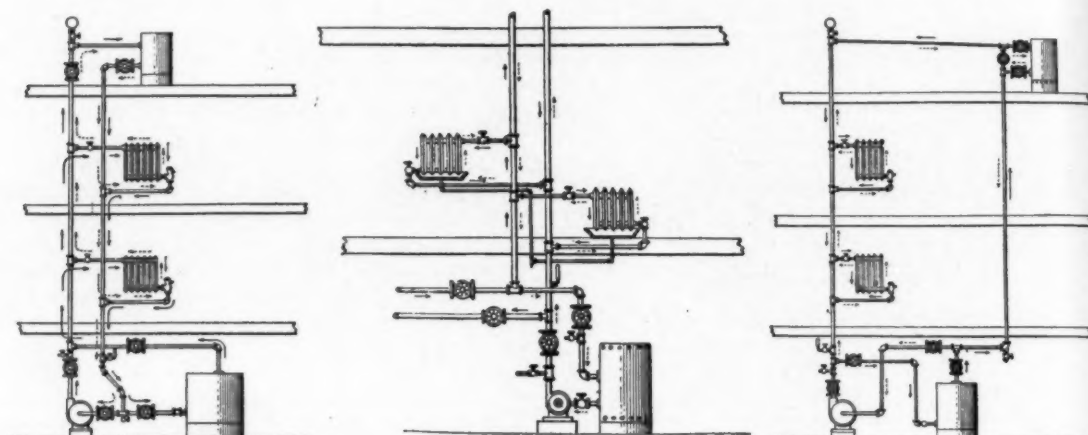


METHOD OF UTILIZING HEATING SYSTEM FOR COOLING, WITH DETAIL OF SPECIAL CHECK VALVE FOR USE WHEN SYSTEM IS OPERATED FOR HEATING

To prevent possible leaks, all of the ammonia pipes throughout the installation are welded together by means of the Goldschmidt thermit pro-

cess. All of the ammonia pipes, ducts and cooling box are insulated with cork covering. The ammonia compressor is a 5 ton, two cylinder vertical machine driven by an electric motor through a short belt with a belt tightener idler. To save waste, the condensing water is pumped back to the

supply, it can be circulated by a motor-driven centrifugal pump throughout the apparatus. The ordinary heating return system would become the supply system, reversing completely the travel of steam or hot water. The cold water will enter the lower part of the radiator through the return



(1) ARRANGEMENT OF COMBINED SYSTEM WITH COOLING EQUIPMENT IN ATTIC. (2) ADAPTATION OF COOLING TO A SECTION OF A HEATING SYSTEM. (3) ANOTHER APPLICATION OF COOLING EQUIPMENT TO A HEATING PLANT

supply tank by means of a small motor-driven centrifugal pump. The water has never had any odor or taste of ammonia.

Rooms can be cooled by means of a steam or hot water heating plant if certain precautions are taken in the original installation. By reducing the temperature of water to between 50° to 60° F. by refrigeration or using a cold well water

end and would leave the radiator through the top supply inlet. This steam or hot water inlet should be connected to the riser at a point level with the top or above the top of radiators. By circulating cold water in this way the temperature of the rooms can be reduced from 8° to 10° F. Patents have been granted the author on certain features of such installations.

PREPARED ROOFING SIMPLIFIED

AT a meeting held recently at the Department of Commerce with representatives of the Division of Simplified Practice and the Chamber of Commerce of the United States, manufacturers, distributors and consumers of prepared roofing agreed to the following simplifications as being of benefit not only to the industry but also to the public at large:

1. To eliminate all grades or kinds of slate-surfaced and also stone-surfaced prepared roofing that do not measure up to the requirements of the "Class C Label" of the Underwriters' Laboratories.
2. To reduce the varieties of smooth surface roofing to seven lines or grades—weights and qualities being considered.

This Simplified Practice Recommendation is to become effective January 1, 1924, and is to hold for one year.

According to Wm. A. Durgin, Chief of the Commerce Department's Division of Simplified Practice, this is another step in the general program fostered by Secretary Hoover for the elimination of waste in industry. "The proposed eliminations," he said "were strongly supported by The American Institute of Architects, The National Retail Hardware Association representing 21,000 retail hardware dealers throughout the United States, the National Retail Lumber Dealers Association, the Southeastern Builders' Supply Association, and the Prepared Roofing Association."

The STANDARD and SPECIAL PRACTICE PLASTERING

BY CHARLES R. ALLISON*

ANY method of building construction that reduces the cost of labor, expedites the progress of work and at the same time maintains or improves the quality of the finished product, is well worth consideration. Any attempt to modify or change the standard practices in the use and application of so old and well established a material as plaster may appear, at first impression, a useless effort. But many another equally old and well established practice has been altered by the advent of new materials and methods to the positive betterment of the finished operation and the advantage of all concerned in its production and use. The applications of the special practice herein described have been such as to demonstrate its practicability, including the mechanical, structural, decorative and economic elements.

Plaster as now applied consists of three coats—the scratch, brown, and white coats. The scratch coat supplies the clinch on the lath foundation or on the rough foundation of the previously built up wall. The brown coat builds up the plaster to practically the required thickness. The white coat smooths and levels the roughness of the brown coat and is susceptible of trowelling to a smoothness, evenness and density which makes it an ideal base over which to apply paint, kalsomine or pasted mural decorations. Its hardness also supplies a degree of support and protection to the undercoats and its density holds up the priming or sizing coats necessary to painting or decorating operations. It is, however, the most expensive of the three coats to apply. Being covered by later painting or decorative operations, its whiteness and burnish, acquired by the use of expensive materials and labor, are unnecessary and an extravagance, *provided the same smoothness, density and protective quality can be secured without adding to the expense of the finished wall.*

There can be no question but that the insulating and soundproofing qualities required of a plastered wall are inherent in the scratch and brown coats. In order to determine the possibility of changing the white coat without detriment to the finished wall, a number of tests were conducted by the writer. These tests were based on two theories: that the brown coat could be smoothed, rodged and trowelled to a smooth even finish and the pores filled with a skim coat; that a machine painted fabric, either in plain tints or in designs, could be applied over the smoothed and skimmed brown coat, completing the plastering and decorating in one operation. Also that the fabric would furnish

the necessary strengthening and protective qualities by reason of its great tensile strength. The tests described were conducted under the direction of the writer. The work was done by a skilled plastering contractor and the costs kept.

Three houses, exactly alike, were selected and all of them were scratch coated alike with a mixture of two parts Cow Bay sand to one part of the best quality of gypsum plaster. Houses Number 1 and Number 2 were brown coated according to standard practice with a mixture of $2\frac{1}{2}$ parts of sand to one part of the best quality of gypsum plaster, laid on directly over the scratch coat which was allowed to set somewhat before the application of the brown coat. After the scratch and brown coats were dried, a hard white finish coat of hydrated lime and plaster was applied as in standard practice.

House Number 3 was brown coated after the scratch coat was dried. The brown coat mixture was $2\frac{1}{2}$ parts sand to one of the best quality gypsum plaster. The brown coat was carried ahead sufficiently to allow an initial set in the first part of the application when the trowelling smooth began. It was found in experience that the brown coat trowelled with ease and quickness to a smooth even surface (having been carefully darbed and pointed up before setting) and that this trowelling and levelling process could be completed much more quickly than on a standard practice white coat, also that, the scratch coat being dry and absorbing the excess moisture of the brown coat, the setting process was fairly rapid, admitting of quick smoothing and setting under the trowel. Further to reduce the porosity of this coat a skim coat of hydrated lime and plaster was mixed as thin as would stay on the hawk and applied as quickly as possible over the smooth brown coat while still wet.

COMPARATIVE PLASTER COSTS PER SQUARE YARD

		Houses No. 1 and No. 2		House No. 3
		Standard Practice		Special Practice
Materials				
Sand, cu. yd.	@ \$ 2.50	\$0.0267		0.0230
Gypsum Plaster, ton ..	@ 22.00	0.1430		0.1147
Finish Lime, ton	@ 24.00	0.0515		0.0256
Plaster, lb.	@ .017	0.0276	0.2488	0.0163 0.1796
Labor				
Helper per hr.	@ \$1.00	0.1004		0.0994
Plasterer, per hr.	@ 1.875	0.1762	0.2766	0.1850 0.2844
Total cost per sq. yd.			0.5254	0.4640
Difference in favor of special practice			0.0614	

Houses No. 1 and No. 2 were decorated over standard practice plaster as follows:—Living Room, Dining Room, Bed Rooms and Halls papered; Kitchen and Bath Rooms, one priming coat, three coats Flat White, one coat enamel on

*Research Engineer, The Standard Textile Products Co., New York City.

side walls and ceilings. All other ceilings were kalsomined.

In decorating House No. 3 all side wall surfaces were sized and covered with a fabric, finished in oil colors made expressly for use on walls. The painting processes on this material aggregate four coats of linseed oil vehicle and standard pigments applied in the factory. The fabric is made in 48 inch widths, in either plain tints or designs. The walls were sized and a starch or flour paste prepared as for paper hangings. The edges of the goods were trimmed with a straight edge, the back pasted and hung on the walls, the trimmed edges being butted to an invisible joint. The use of this material completed the plastering by giving it a clean washable surface of high protective strength by reason of the tensile strength of the fabric. The decorating process was completed at the same operation. All ceilings were kalsomined.

COMPARATIVE TOTAL COSTS PER SQUARE YARD

	Houses	
	No. 1 and No. 2	House No. 3
Plastering		
Standard Practice	0.5254	0.4610
Special "		
Decorating		
Kalsomining, Priming, Painting and		
Enamelling, supplying and hanging		
paper*	0.4705	
Kalsomining, supplying and hanging		
decorated fabrics**		0.5167
	0.9959	0.9807

*As per contract amounting to \$235.25 for each house.

**As per contract amounting to \$258.35.

The value of a fabric covering for plastering has long been recognized. Many high class public buildings and residences have had the walls finished by an application of canvas pasted over the plaster and painted three coats of lead and oil. The cost has been prohibitive although the economic advantage is without question, considering the upkeep expense. Of late, the tendency in the decoration of hotels and high class apartments has been toward paint applied directly to the plaster; but the liability of such walls to show cracks and other defects in a short time has aroused grave doubts as to the ultimate economy and efficiency of this method. The vibration to which large wall spaces are subjected by reason of wind or other causes demands a stronger and more elastic finish than is inherent in plaster and this elasticity is found in a fabric covering applied to the plaster.

The use of a dry scratch coat, a smoothed and skimmed brown coat and a linseed oil and pigment painted fabric compared with standard practice plastering and finishing results in equal thickness of plaster, equal insulating and soundproof qualities, equal or less cost including decorative finish, greater structural strength and better sanitary surface; completes the plastering and decorating pro-

cess in one operation, lessens time in completion of finished walls, labor in cleaning and facilitates re-decoration.

This process which retains all of the desirable qualities of plaster and adds a very appreciable degree of crack resistance, without increasing the finished cost, should appeal to the property owner, the architect and the engineer.

SPECIFICATIONS

Scratch Coat: Thoroughly incorporate one part of best quality gypsum plaster with two parts clean sharp medium-coarse, dry sand. Add water and thoroughly temper to good stiff mortar to work freely from plastering trowel. Proportions may be varied slightly to suit conditions of sand and background.

Application: Scratch coat to be applied with sufficient pressure to obtain a good clinch. Scratch the face crisscross to obtain a good bond for the brown coat and allow the scratch coat to dry.

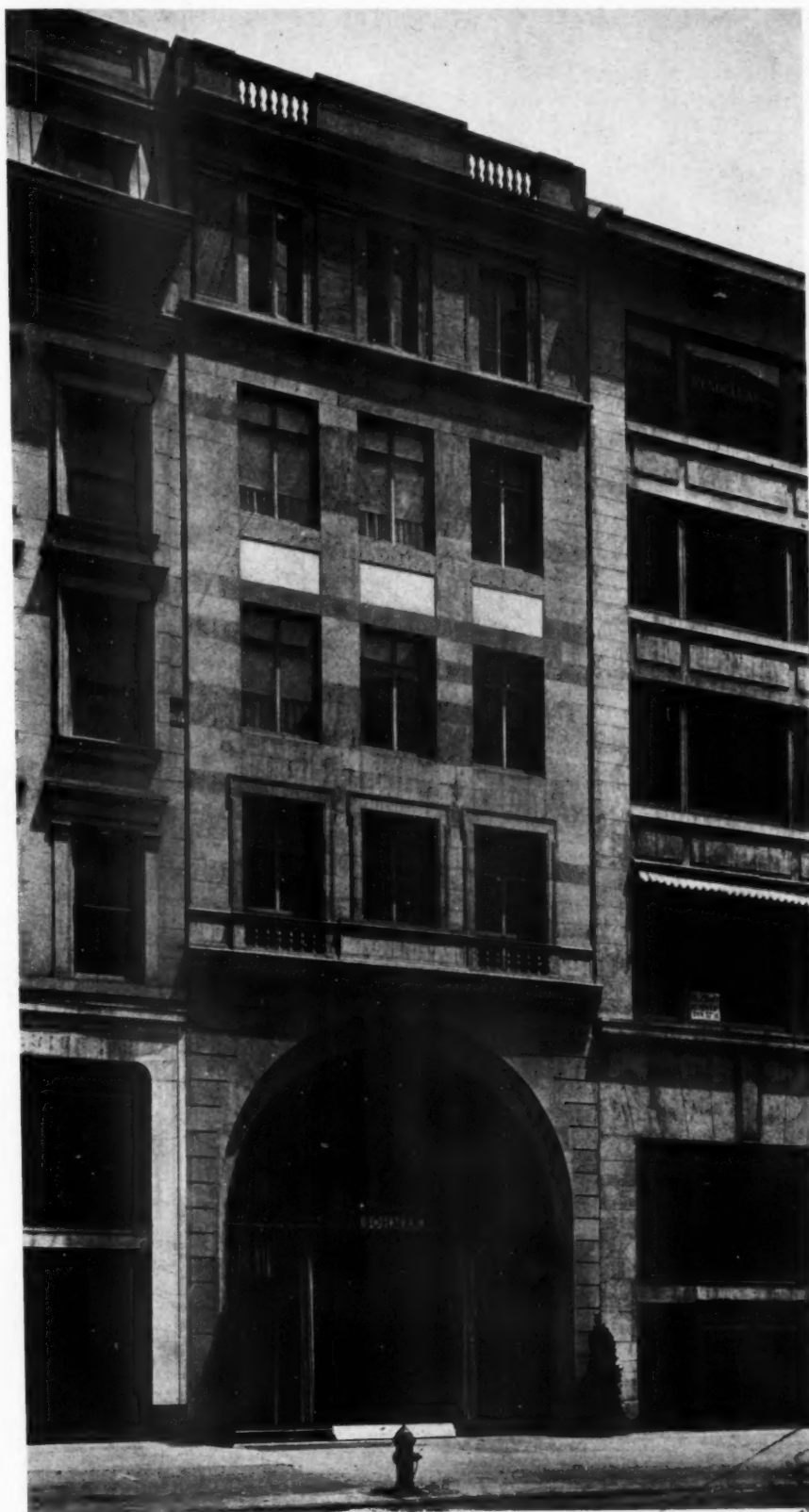
Brown Coat: Thoroughly incorporate one part of best quality gypsum plaster with $2\frac{1}{2}$ parts clean sharp dry medium-coarse sand. Add water and thoroughly temper to good stiff mortar to work freely from plastering trowel.

Application: Use enough material to fill out to grounds. Darby and float the entire surface to obtain a true and even plane. Trowel after a slight interval for setting, to a smooth even surface.

Skim Coat: Mix a very thin coat of well seasoned lime putty and plaster of Paris in about equal proportions and as thin as will stay on the hawk and apply quickly upon the wet trowelled brown coat. Complete the trowelling of the wet brown and skim coats to a smooth even surface which should not vary more than $1/16$ " to $1/8$ " as determined by rodding or quick plumbing.

Finishing and Decorating: After the carpenters have installed the standing trim, size the plaster as above applied with one coat of best white glue size made as follows: Soak one pound of ground glue in cold water over night; add 12 quarts of hot water and one tablespoonful of alum. Apply hot with a paste brush.

Trim the fabric edges perfectly straight and true with a sharp knife using a long metal faced straight edge. Paste the back of the goods with any standard prepared paste used by paperhangers, working the paste thoroughly into the fiber of the fabric. Butt the edges to a straight, true, tight joint and wipe over each seam after finishing with a soft cloth wrung out in cold, clean water, rendering each seam invisible except to the very closest inspection.



BUILDING FOR SOHMER PIANO CO., WEST 57th STREET, NEW YORK

RANDOLPH H. ALMIROTY, ARCHITECT

LIBRARY
THE DETROIT EDISON CO.
OCT 30 1923



ENTRANCE DETAIL

BUILDING FOR SOHMER PIANO CO., WEST 57th STREET, NEW YORK

RANDOLPH H. ALMIROTY, ARCHITECT



VIEW IN SHOWROOM

BUILDING FOR SOHMER PIANO CO., WEST 57th STREET, NEW YORK

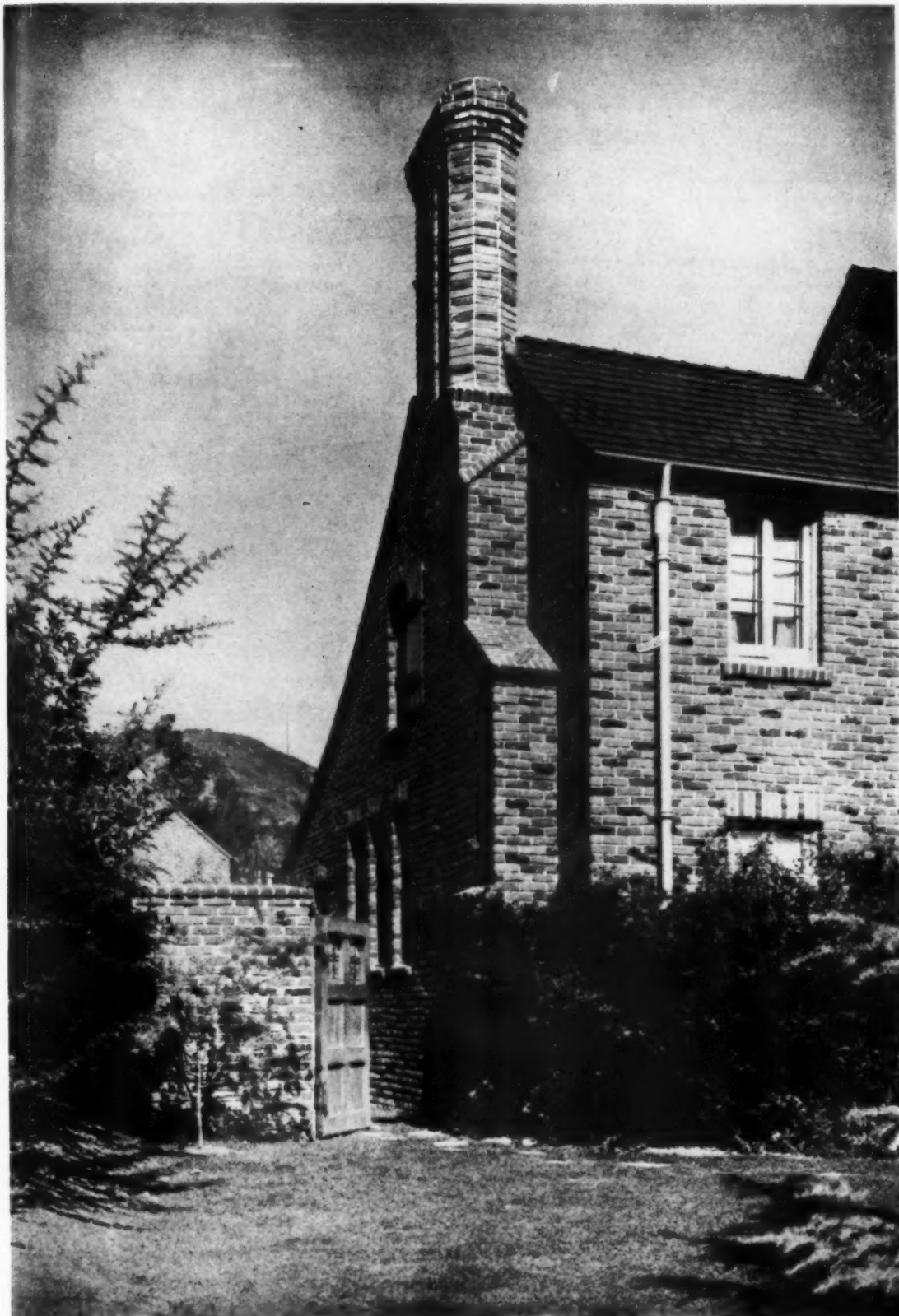
RANDOLPH H. ALMIROTY, ARCHITECT



HOUSE OF THOMAS McNAMARA, LOS ANGELES, CAL.
MEYER & HOLLER, ARCHITECTS, ENGINEERS AND BUILDERS



HOUSE OF THOMAS McNAMARA, LOS ANGELES, CAL.
MEYER & HOLLER, ARCHITECTS, ENGINEERS AND BUILDERS



HOUSE OF THOMAS McNAMARA, LOS ANGELES, CAL.
MEYER & HOLLER, ARCHITECTS, ENGINEERS AND BUILDERS



STANDARD FILM LABORATORIES, HOLLYWOOD, CAL.
MEYER & HOLLER, ARCHITECTS, ENGINEERS AND BUILDERS



ENTRANCE DETAIL

STANDARD FILM LABORATORIES, HOLLYWOOD, CAL.

MEYER & HOLLER, ARCHITECTS, ENGINEERS AND BUILDERS

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DEPARTMENT of ECONOMICS

Economic Factors Which Underlie Construction Activity—Prepared for THE AMERICAN ARCHITECT by the American Chamber of Economics, Incorporated*

DURING August contracts awarded, in the 27 states covered by the F. W. Dodge Corporation declined more than 7 per cent. In the same period of time, estimated building permits (in 150 cities) reported by Bradstreet's, increased 10 per cent in a movement which was confined chiefly to the cities. Inasmuch as permits are more sensitive and timely in their fluctuations than awarded contracts, a rise in permits forecasted the beginning of a slightly heavier volume of jobs in late September and October, an activity which may project itself into November.

Architects report that business is good considering the season of the year, but a reluctance on the part of clients to begin new building is frequently encountered. The tendency now is to wait for the Springtime, and Spring business does not usually appear upon the boards before mid- or late Winter. Construction costs have yielded only fractionally, and the probabilities are that these costs will retain their present high levels for some time yet. The huge volume of building yet to be done fosters these high expenses, but at the same time affords some assurance of the industry's general stability.

Slightly heavier October business, already foretold by a bulge in building permits, is further favored by seasonal influences and the appearance on the market of a few jobs deferred from last Spring because of high costs and an overloaded industry. This wave of new business is expected to be light, so light perhaps that it will reflect itself only in a lessening of the rate of decline in the curve of contracts begun. While it is thought that this movement will likely spread itself over

a very short period of time, the wealth of new construction yet to be done nevertheless encourages the feeling that the building trades will experience another busy Winter.

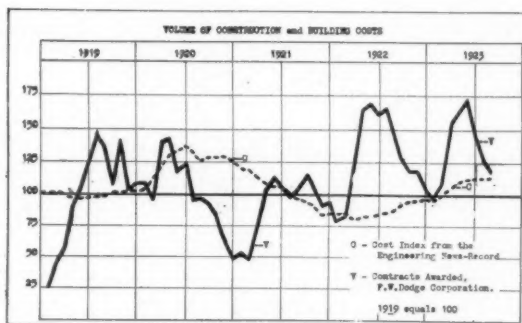
In spite of the fact that the industry has had two record years of activity, there has been no indication yet that the supply of new building space has approximated the demand for such accommodation. The building deficit which still exists does not lend itself readily to measurement, but in conservative circles the shortage is believed

to be substantial. Its dimensions were bulging with the heritage of inactivity that was amassed from 1914 to 1921. The past two extraordinarily busy years have, of course, diminished this deficit, but the rapid rate of turnover which enabled the building industry to accomplish this reduction, brought prosperity to a great many allied lines, increasing again their demands for space accommodations and making a lowering of the building

shortage that much more difficult to accomplish.

Furthermore, these underlying economic factors, which the building industry in the earlier days of the present business cycle fostered and supported, and which are dominating the trend of general business at the present time, favor a well sustained, good demand for new building. Speculative sentiment, generally speaking, is weak and skittish, and trading upon the stock exchange is more or less of a professional affair. Consequently, stock prices have been irregular, artful and evasive, and fraught with too much uncertainty to make speculation magnetic. Industrial sentiment, on the other hand, is wholesome and constructive. Basically, industry is sound, nevertheless the number and volume of Autumn transactions have not met earlier expectations.

The Federal Reserve Board's index of production in basic industries declined 2 per cent (to 119) during August, a recession which has carried the curve about 6 per cent below the year's record



The decline of the volume curve (V) is in response to seasonal influences and to a distinct recession in the demand for new building. The curve's retreat during the coming months will very probably be a less acute one, for the industry's outlook indicates a relatively busy Fall and Winter. The cost curve (C) is still in high territory and its recent declines have been only fractional ones. High costs will, in all probability, be a feature of the building industry for some months to come.

*The American Chamber of Economics conducts a consultation and educational service for executives, in economic principles. Its Supervising Director is George E. Roberts, Vice President of the National City Bank of New York. Co-operating with the Chamber are James B. Forgan, Chairman of the Board of First National Bank, Chicago; Frank A. Vanderlip, Financier and Economist, New York; Samuel Insull, President, Commonwealth Edison Company, Chicago; Joseph H. Defrees, Ex-President, United States Chamber of Commerce; Henry S. Pritchett, President, Carnegie Foundation; Edward J. Nally, Managing Director, International Relations, Radio Corporation of America.

high (127) and about 38 per cent above last year's low (86). So with production still high the movement of merchandise into trade channels, as indicated by freight car loadings, might be expected to be heavy, and it has maintained its earlier and extraordinary intensity. This struggle to achieve a rapid turnover is explained by the narrow margins of profit created by wholesale prices, which precipitate a buyers' strike above a certain point of advancement, and high costs, that seemingly defy readjustment. Prospects for dividends under these conditions make no appeal to the speculator, so stock prices rise laboriously and fall heavily in trading sessions renowned for their dullness and inanimation.

Labor is fully employed, and the trend of wages, purchasing power of the farmer's products, corporate earning ability and dividend payments all point emphatically at a buying and consuming power which is slowly increasing. But buying still reflects the uncertainty that is general, and so takes the simple form of filling only immediate requirements. Interest rates have grown firmer in response to seasonal influences but are still favorable to a constructive movement in industry. An industrial debacle, then, is not in prospect, neither does a boom appear to be on the threshold. Industry is fundamentally sound and healthy, and the prospect for the remainder of the year is good. The influences, therefore, which the general business situation is exercising on the building trades are favorable and constructive.

After the urgency of a building deficit has been relieved, the need for new building subordinates itself to the ability to afford the expenditure which that construction entails. This ability, which lies at the root of the building of all large structures, is in essence the power of individuals and associations of individuals to pay in contributions, in donations, in taxes, in assessments or in dues, money that may be used to finance new construction. And the individual's or association's response to appeals for aid is in direct proportion to the individual's or association's income, potential or real. The trend of this earning ability, then, measures the future response of the public to requests for donations of various characters. Generally speaking, the trend of wages, the purchasing power of the farmer's products, corporate earning ability, and actual dividend payments, all point emphatically to slowly growing incomes and the increasing ability to meet present or future construction needs.

But the demand for new building is not governed solely by necessity and the ability to afford the expenditure. There must be some prospect for a present or future profit. In this particular, the immediate building situation makes a rather cool and gloomy appeal. High rents and the ready marketability of both new and old construction have already had their gala days. The specu-

lative minded made such an immediate and genuine response to these two stimuli that they pushed costs clear out of bounds in attaining a full measure of the situation's benefits. High rents and a ready market for construction are still alluring, but their radiance is substantially obstructed by peak costs and conditions within the industry which make it a rare and uncommon thing to complete a structure within the allotted time. So, not only is it difficult to make delivery, when time is essential, but peak costs have pinched the margin of profit so narrow that the ultimate price does not warrant the assumption of the risk at this late date in the industry's prosperity. The day of the speculative builder, then, seems to be declining, and operations in 1924 will be largely deprived of his support, or there will have to be an alteration in the attitude of labor or a reduction in building costs.

Building costs, according to the *Engineering News-Record*, are still in high territory. The September index (221.50) showed only a fractional decline from the year's peak (July; 222.10). The October figure has not appeared at this writing, but the changes in the cost of materials and labor have not been of sufficient magnitude to affect the index substantially, and there will probably be little if any change. Materials prices have been the weakest of the three department costs, that is, materials, labor and mortgage money. Prices of builders' supplies, according to the Bureau of Labor index, dropped 7 per cent during August and are now at a level (186) about 9 per cent below the year's high (May; 202), but are still about 20 per cent above the 1922 low (March; 155). The September index is likely to reveal further declines, but early October trends have indicated that this recession is meeting with some resistance. Prices are expected to taper off again during the Winter months. Dealers' stocks, on account of declining prices, have been low, and purchases have been confined chiefly to day-to-day buying. Shortages have been avoided by a drop in the volume of building and by a decided improvement in shipments. Demand continues to move with the volume of contracts awarded. The trade expects a relatively busy October, with the usual seasonal tapering off in the volume of sales during the Winter months.

The lumber market has displayed increasing resistance during September to the pressure under which it has slowly retreated since March. The seasonal increase in new jobs, begun during the latter part of September and the first weeks of October, has enlivened wholesale markets where prices have been relatively firm. Production is below the August average but still above normal. Shipments are still declining on the average, but during September unfilled orders, as reported by the National Lumber Manufacturers' Association,

were noticeably strong. The market's undertone is not too well supported, but quotations are likely to continue firm until cold weather comes.

Demand for structural steel has fallen off to some extent, and prices for the fourth quarter are slightly lower than formerly. September was not a busy month, but new business in October has been heavier in volume. Rising costs within the industry preclude the probability of further material declines in quotations, and the market's undertone is believed to be relatively firm. Production and shipments of brick have been increasing, but inventories and orders have been declining. Later reports, however, suggest that brick, as well as steel and lumber, is feeling the invigorating movement occasioned by the better volume of contracts started during late September and October. Demand is said to be improving. Production and shipments during August secured a sufficient lead upon new business, however, to force a downward readjustment in prices. Although the market is firm now, its trend is likely to reflect any decline in the volume of new building. Short stocks and the seasonally strong demand for new construction furnish some assurance against any material weakness in the market. Record production and shipments of cement were reported during August, and this heavy output, together with the recession in the volume of building, have resulted in the first readjustment downward that has occurred in cement prices in more than six months. Prompt shipments and a lighter demand have increased the improbability of a shortage, and light inventories, both in the case of manufacturers and dealers, have tended to steady the market.

These recessions in materials prices have been almost offset by higher wages, making the net change in the cost of building nominal. While recent wage trends reveal no spectacular movement, the changes which have been reported have been increases for the most part. The advances have all been moderate and have come about as a result of local shortages of skilled labor or of prior

wage agreements. A shortage of common labor does not exist, neither is a surplus reported. The demand for plasterers, bricklayers, tile setters, and highly skilled mechanics, however, continues acute, and of sufficient prominence to give a strong undertone to wage trends, for their scarcity has delayed jobs materially. Where the speculative builder is rushing to complete construction before the termination of the Fall renting season, bonus wages are still paid, and the legitimate builder is confronted with this distinct menace. The narrowing margin of profit between the cost and selling price of new construction is dimming the speculative possibilities within the industry and it is generally thought and hoped that the Winter will mark the passing of the speculator and his mischief-making bonus payments.

Conditions in the mortgage money market remain substantially unchanged. The absence of readjustment in either the cost of new construction or the market price of real estate, forces the banker to adhere to the policy of scrutinizing very critically all new loans, and of increasing the banker's equity by forcing the borrowers to provide a greater portion of the purchase price. This is accomplished by either refusing to lend the usual percentage of the present market value, or construing a fair value in terms of pre-war prices and then loaning to the usual percentage of the cost of the property. A complete readjustment in realty prices, in building cost, and in the volume of building, will be necessary before easier conditions prevail in the mortgage money market. An industry, the present price of whose product is inflated, does not attract the investor's capital, for it does not have his whole confidence. It is to be hoped that with the urgent building done, the industry will begin, orderly, gradually and systematically, to correct these high costs, these inflated valuations, and establish its business on a safer and more economical basis. Economic trends, happily, favor such a reconstructive movement.

EDITORIAL COMMENT

IN A RECENT ISSUE of the New York *Evening Post*, a sophomore in college addresses an inquiry to the "Reader's Guide." Among other things, he seeks a book on architecture that will enable him to recognize the various styles. He adds, "I have no desire for technical knowledge. I do not want to be absolutely ignorant when these things are being discussed." The "Reader's Guide" recommends that this student read Caffin's "How to Study Architecture" (Dodd, Mead), T. F. Hamlin's "The Enjoyment of Architecture" (Scribner) and Kimball and Edgells "History of Architecture" (Harper). The latter is a textbook for colleges or higher schools and by its arrangement and method well adapted to the uses of the outside reader.

We make no comment on the selection of these books and have no doubt but that their reading would give the student a fair understanding of the different styles of architecture. There has been published recently a book prepared under the direction of the Committee on Education of The American Institute of Architects, entitled "The Significance of the Fine Arts" (Marshall Jones). The first part of the book pertains directly to the different styles of architecture and is written by several members of that organization who are more or less well known. The second part of the book pertains to the allied arts: sculpture, painting, landscape design, city planning, industrial arts and music, and is written by leaders in their particular fields.

Desirable as it may be to have students in our colleges and universities become conversant with architecture, the dissemination of such knowledge in that way necessarily must be limited. It is far more important to architects, the public and architecture that the broadest possible distribution of architectural knowledge be effected. Architecture should be a matter of common interest to every person because it is one of the essentials to human existence. Defining architecture as the art of building, it provides shelter which, with food, constitutes the two essentials. There is no one thing with which we have a more intimate contact. The influence of the building on its occupant or on its observer is known, but this influence is not generally realized. The very familiarity of the building, the dwelling or place of business, lessens our critical examination and appraisal. Every other thing with which we have more or less constant contact is given some measure of appraisal—many of them having no essential qualities whatever.

That the general public can be made to appreciate architecture is possible and there is one sure

way to accomplish it. Readers of the daily press look to their favorite critics of music, the drama, the motion pictures, fashions, books, and sports for guidance and information on those subjects. As a result of these criticisms printed in the daily press, a majority of the people have some knowledge of and possess decided opinions on these matters whether they be correct or not. Whether the opinions be based on a correct interpretation is not essential in the first instance. The all-important thing is to stimulate interest and critical observation. Improvement is a matter of cultivation in this as in other things. The outstanding fact is that people do give attention to the criticisms of things in which they are interested. To interest the public in architecture, the same policy must be adopted that has been pursued in these other things.

The Committee on Education of The American Institute of Architects could have accomplished far more by furnishing to the daily press criticisms of new buildings as they are completed. By this is meant real criticisms, not merely saying that a prominent architect's design is "bully" and passing out bouquets of platitudes. It should be a logical explanation of the plan and its availability for the occupant's use. An analysis of the elevation as such and of the ensemble of the building in perspective, the indication of use by means of the exterior design, its general fitness, the appropriateness of the placing, size and style of the ornaments and its relation to the surroundings.

It may serve the man on the street to the best advantage if the criticism be not written by architects but rather by those who possess an inherent appreciation of fine things, the ability to discover truth and the courage to tell it. Unfortunately, some architects are wedded to a particular style and by reason of such alliance they become incapable of correct appraisal of things foreign to their adopted style and the kind of buildings in which they specialize. Those architects who understand all styles and know their values and fitness for certain things, are competent critics. Our best dramatic and literary critics, however, are not actors or writers.

There is no reason why the latest building should not be as universally discussed and freely criticised as the latest play, book or "movie." It is only by giving such consideration to architecture that the public can be educated. The main thing is to make people think and talk about architecture with the same freedom and facility with which they think and talk about a new fashion or anything else which holds their attention.

TRAVELING SCHOLARSHIP of the ALABAMA MARBLE COMPANY

WALTER D. BLAIR, Architectural Advisor

PROGRAM

FOREWORD

FOR the purpose of increasing the knowledge and use of marble as an integral part of interior architecture the Alabama Marble Company gave the Educational Committee of The American Institute of Architects the sum of eighteen hundred dollars for a traveling scholarship, covering a period of ten months, to study and record the use and treatment of interior marble in the buildings of Europe.

The winner of the competition, before sailing for Europe, shall visit the quarries and mills of the Alabama Marble Company and there spend such time as will be necessary to become familiar with the character and structure of marble and the technical processes of manufacture. The cost of this visit will be paid by the Alabama Marble Company, in addition to the eighteen hundred dollars for the scholarship. The winner of the competition shall obligate himself to follow an itinerary laid out by the Educational Committee of the A. I. A., and to make certain assigned studies and measured drawings, and to make regular reports to the Committee of work done. Such drawings and reports shall be loaned the Alabama Marble Company for reproduction and publication at its option, and thereafter the drawings, with the exception of one rendered drawing which shall remain the property of the Alabama Marble Company, will be returned to the holder of the scholarship. The assigned work will not occupy more than one-half of the holder's time and the balance of the time will be for the general study of architecture and art under the holder's own guidance and inclination.

The winner of the following competition shall be the holder of the Traveling Scholarship.

A SMALL BANK

General:

On a lot 54'-0" x 125'-0", surrounded on two short and one long side by streets, it is proposed to erect a one story bank. As all three streets are equally important the entrance may be on either the short or long side. The bank is the leading financial institution of the community and wishes its building to proclaim that fact through elegance of design and use of beautiful building materials. The interior especially should have the charm, distinction, and elegance that come from the appropriate use of various marbles. The interior walls, bank screens and floor are to be of marble, selected designed, and combined to produce an effect of great beauty and refinement.

Requirements:

On the first floor there shall be provided a central space for the public, twelve to sixteen wickets; ladies' room and toilet; officers' space and toilet; Directors' room; and work space; vault 8 x 12; access to Safety Deposit in Basement.

In the basement will be employees' locker and lunch rooms, book vaults, safety deposit vaults, and machinery.

Drawings Required:

Plan of first floor scale $\frac{1}{8}" = 1'-0"$
One elevation scale $\frac{1}{8}" = 1'-0"$
Longitudinal Section ... scale $\frac{1}{4}" =$
Interior details scale $\frac{1}{2}" = 1'-0"$

The plan, elevation and section shall be on one sheet 27" x 40"; the interior details on another sheet 27" x 40". The interior details may be in color and shall have a key to the kinds of marble used.

The Basement need not be shown on section.

Regulations:

1. All drawings shall be in ink; elevation rendered with shadows cast at 45 degrees.

2. Each competitor shall certify in writing that the drawings submitted by him have been made entirely by him and such certification shall be enclosed with the competitor's name and address in a sealed envelope.

3. All drawings shall be submitted anonymously, without any mark of identification, and with the name of the competitor in an opaque sealed envelope.

4. The drawings shall be shipped or delivered, prepaid, in a stiff tube, to Walter D. Blair, No. 154 East 61st Street, New York City, not later than August 15, 1923. Any drawing that has a later shipping date than August 15th will not be entered in the competition.

5. A violation of the program will make the competitor "*hors concours*."

The Jury of Award consisting of R. Clipston Sturgis of Boston, Abram Garfield of Cleveland, Donn Barber and John V. Van Pelt of New York, made the following awards:

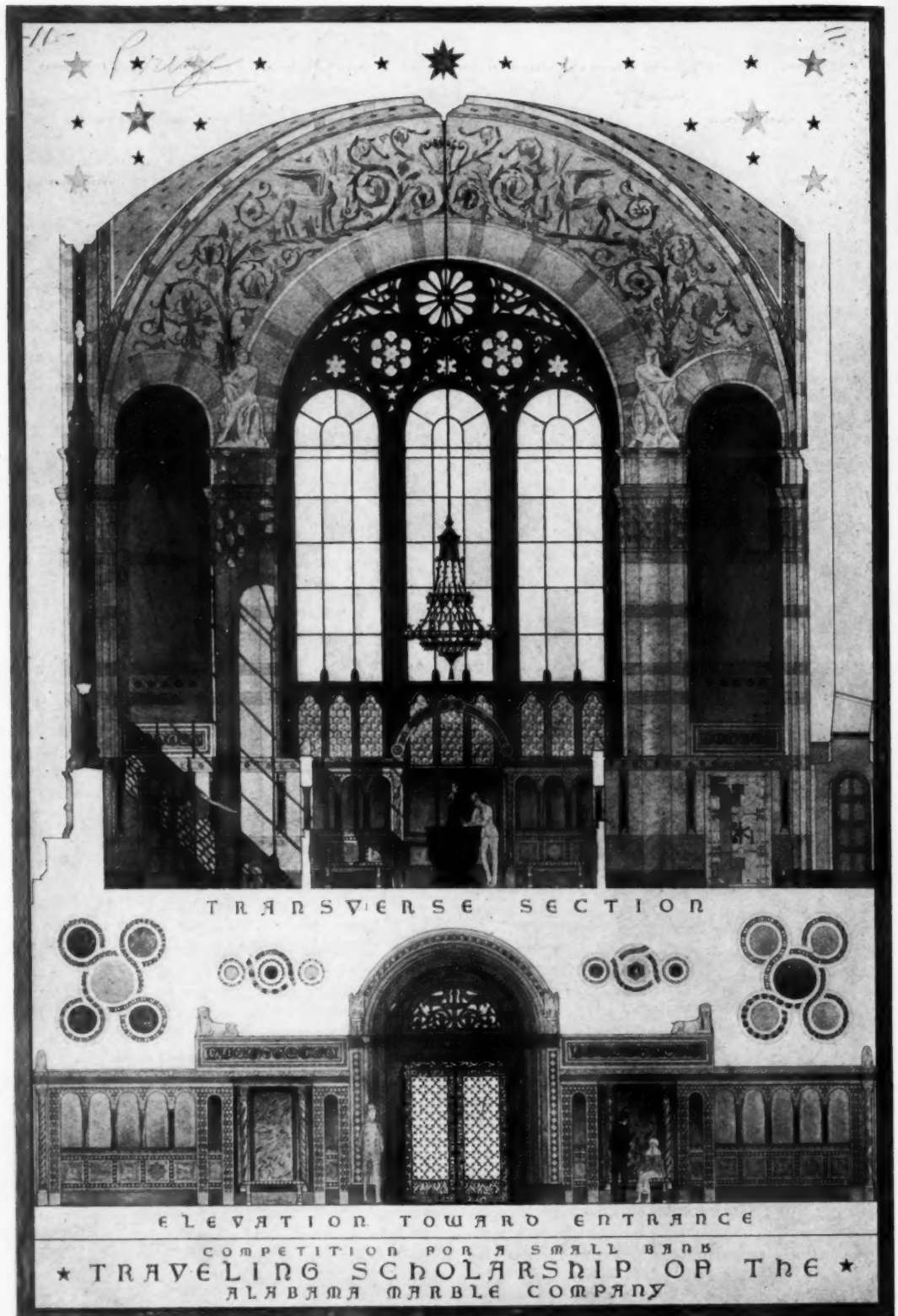
Awarded First Place and Scholarship—"Giotto Lanzi Memorial Bank," Author—Frank Martinnelli of New York.

Awarded Second Place—Philip Sanfilippo of Brooklyn, New York.

Awarded Third Place—George N. Panley of Pittsburgh, Pa.

Awarded Fourth Place—F. Ray Leimknehl of St. Louis, Mo.

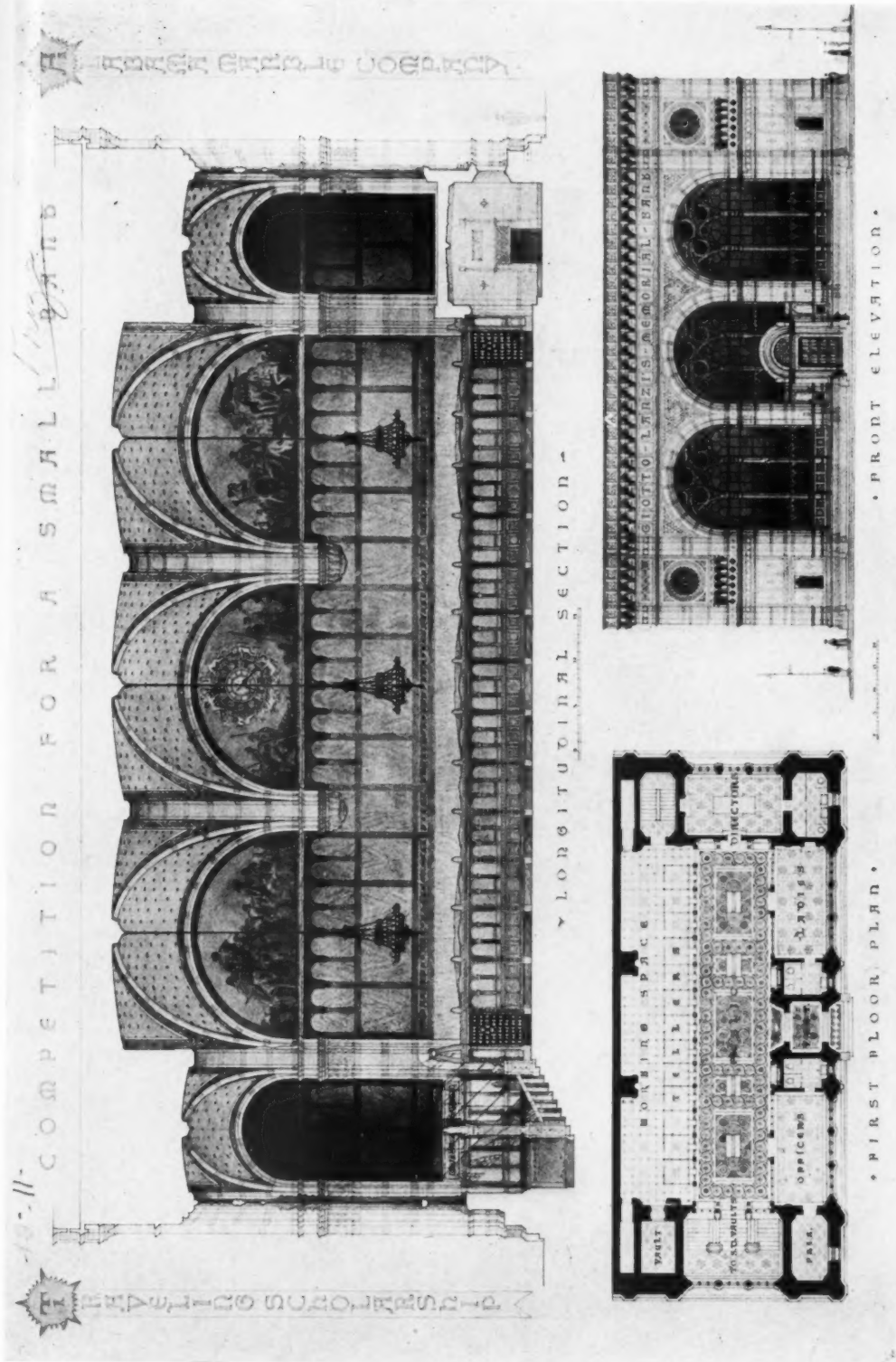
Awarded Fifth Place—Victor Pribil of Woodhaven, Long Island.



AWARDED FIRST PLACE AND SCHOLARSHIP

FRANK MARTINELLI, NEW YORK

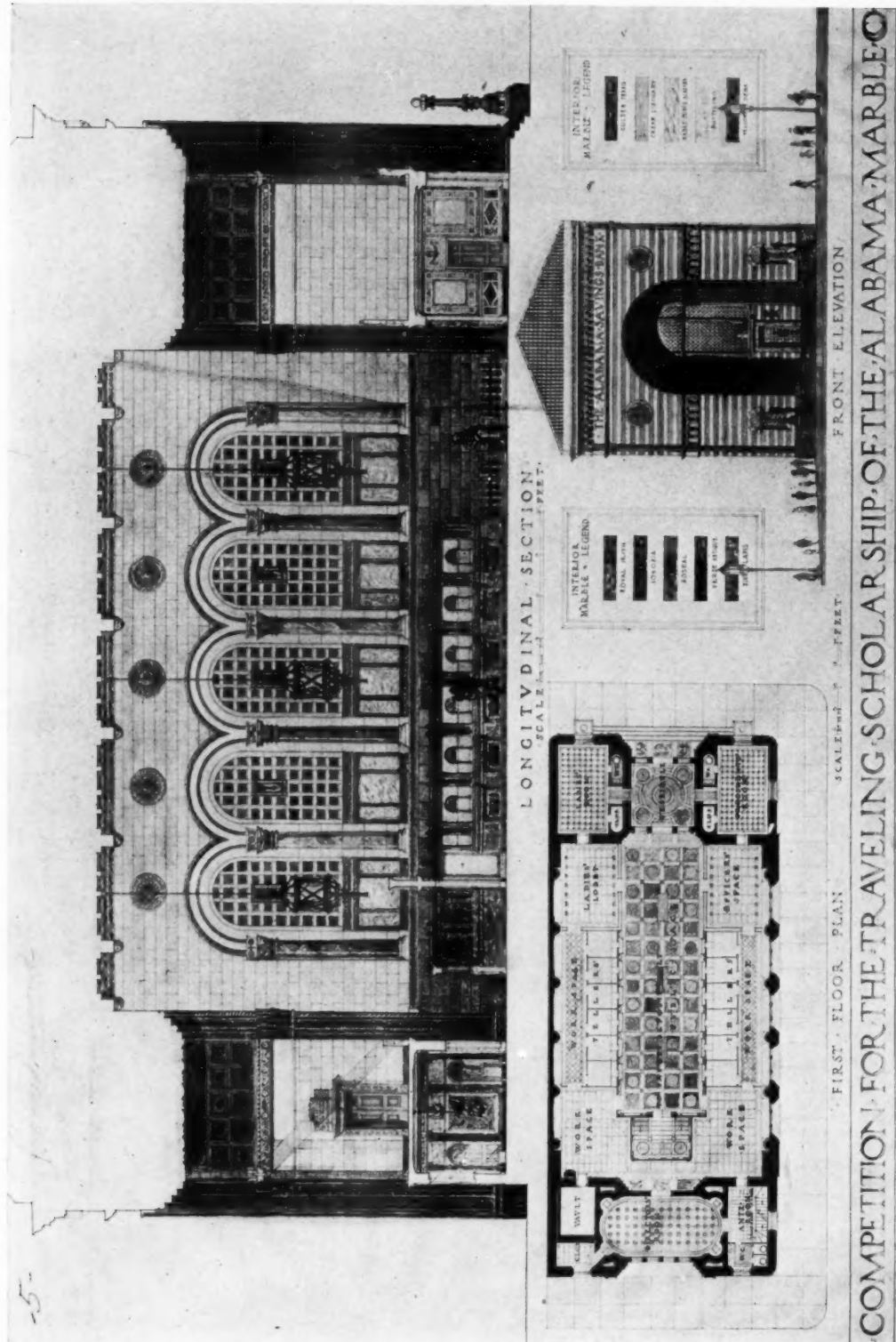
TRAVELING SCHOLARSHIP COMPETITION OF THE ALABAMA MARBLE COMPANY



AWARDED FIRST PLACE AND SCHOLARSHIP

FRANK MARTINELLI, NEW YORK

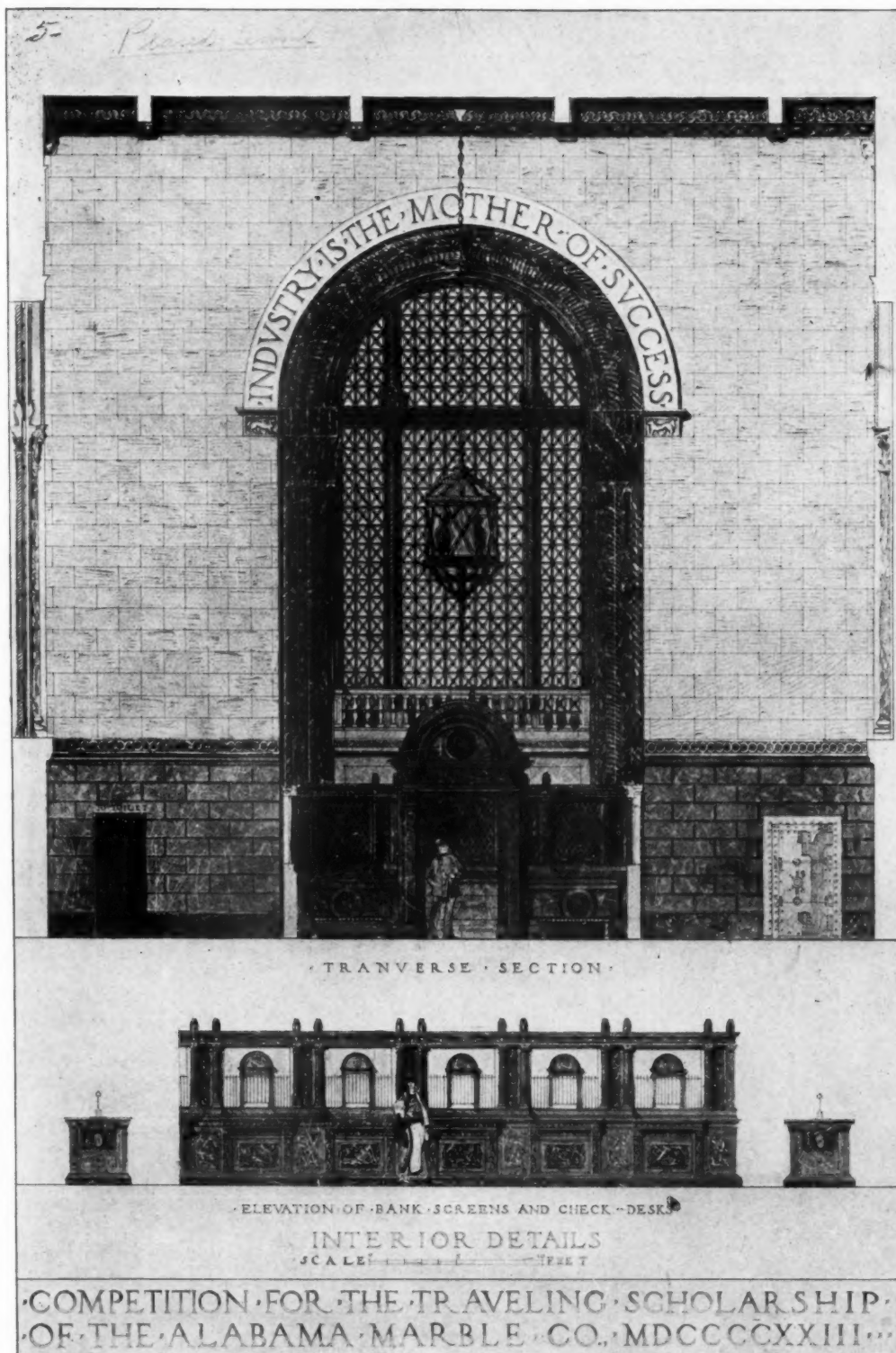
TRAVELING SCHOLARSHIP COMPETITION OF THE ALABAMA MARBLE COMPANY



AWARDED SECOND PLACE

PHILIP SANFILIPPO, BROOKLYN, N. Y.

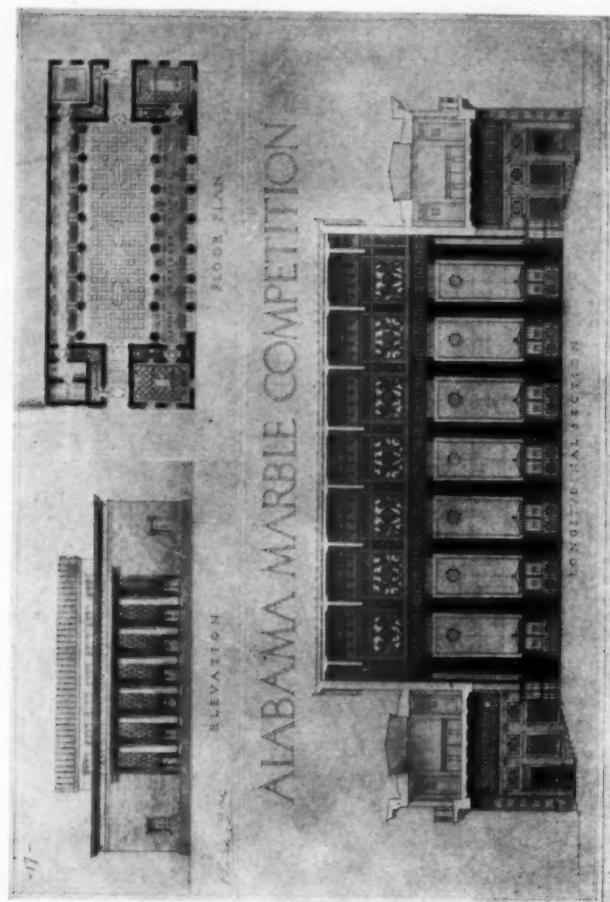
TRAVELING SCHOLARSHIP COMPETITION OF THE ALABAMA MARBLE COMPANY



AWARDED SECOND PLACE

PHILIP SANFILIPPO, BROOKLYN, N. Y.

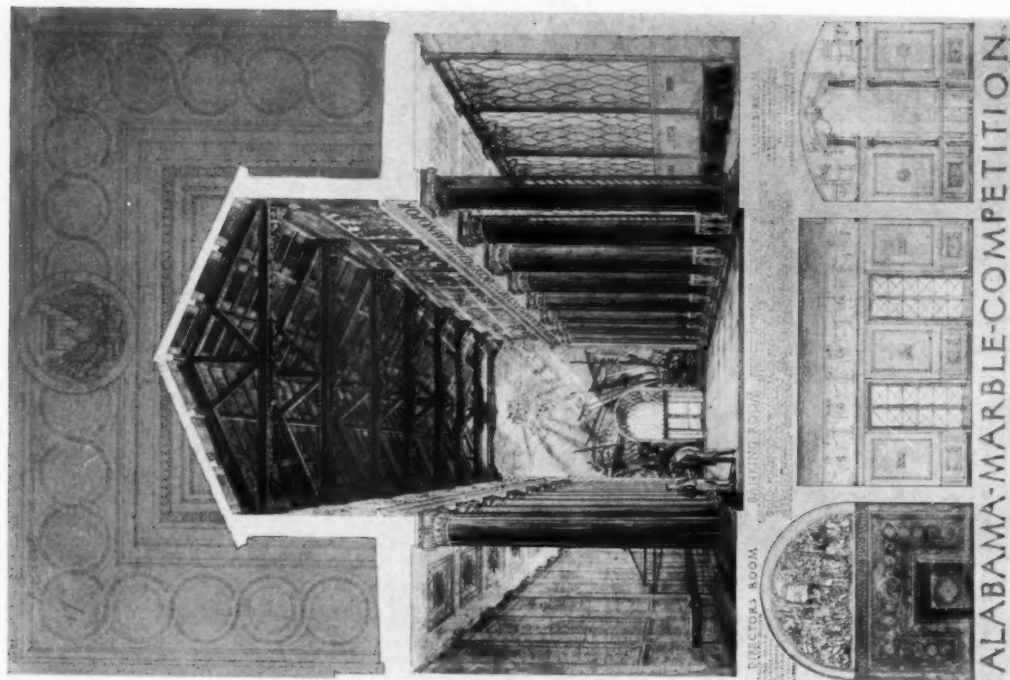
TRAVELING SCHOLARSHIP COMPETITION OF THE ALABAMA MARBLE COMPANY

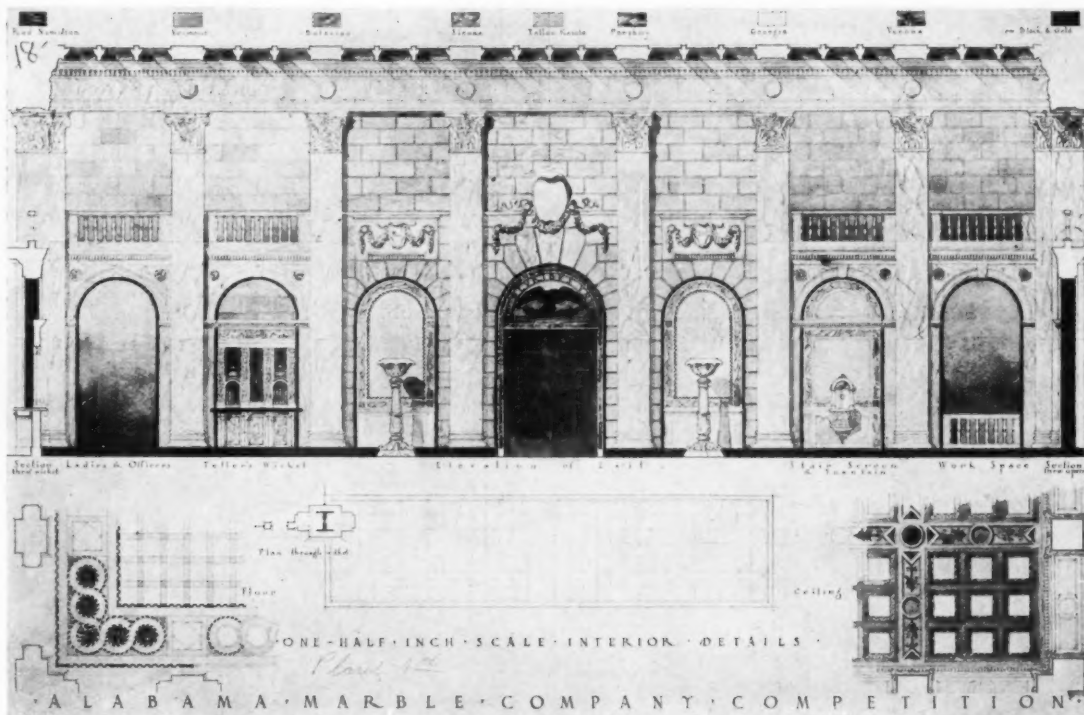
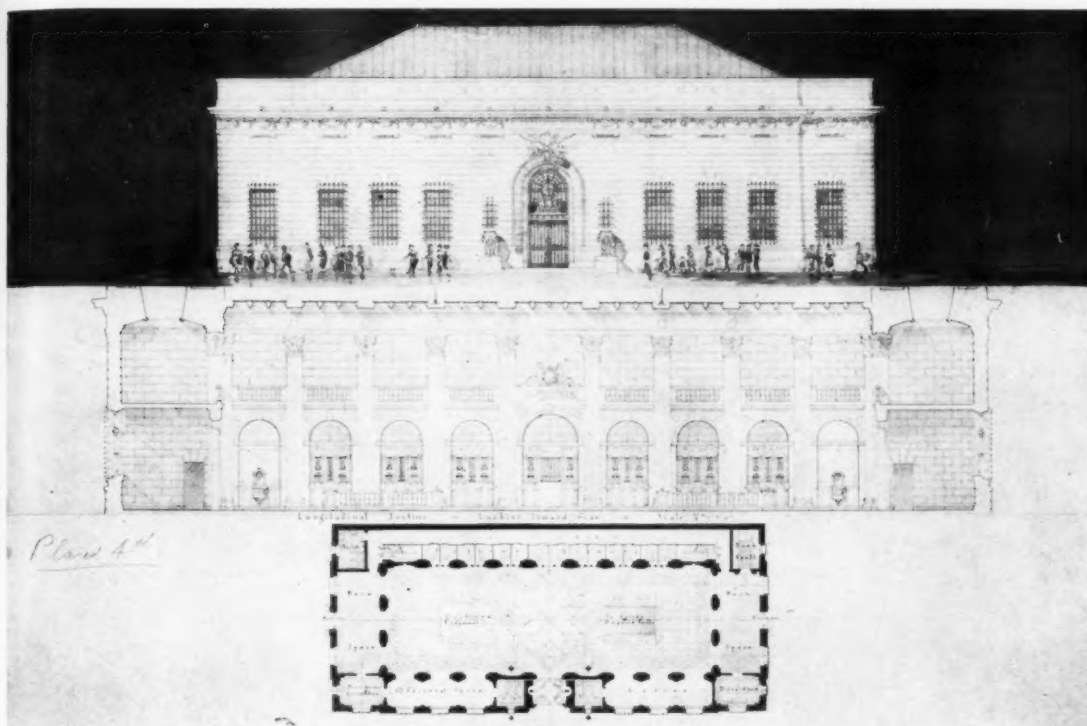


AWARDED THIRD PLACE

GEORGE N. PAULEY, PITTSBURGH, PA.

TRAVELING SCHOLARSHIP COMPETITION OF THE ALABAMA MARBLE COMPANY

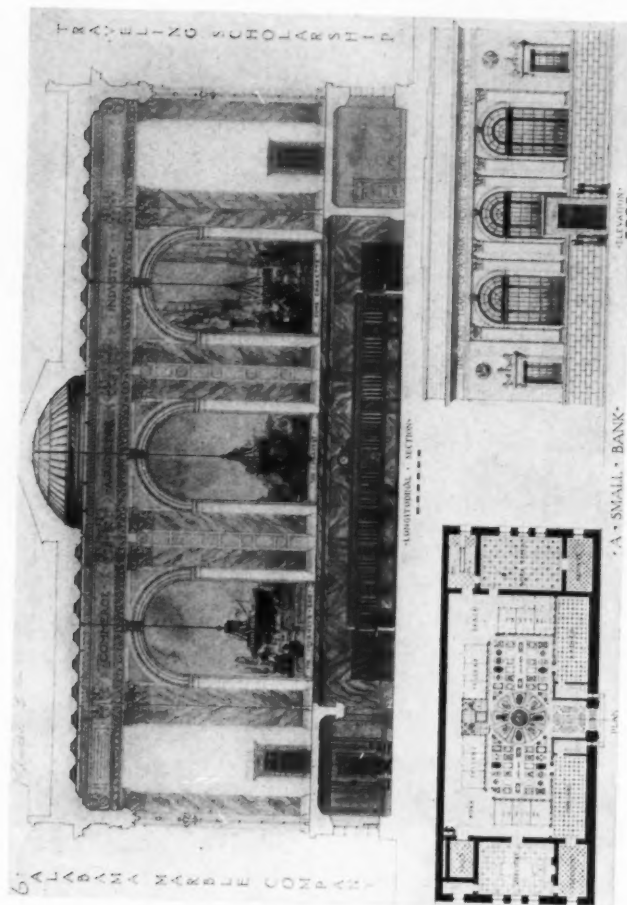
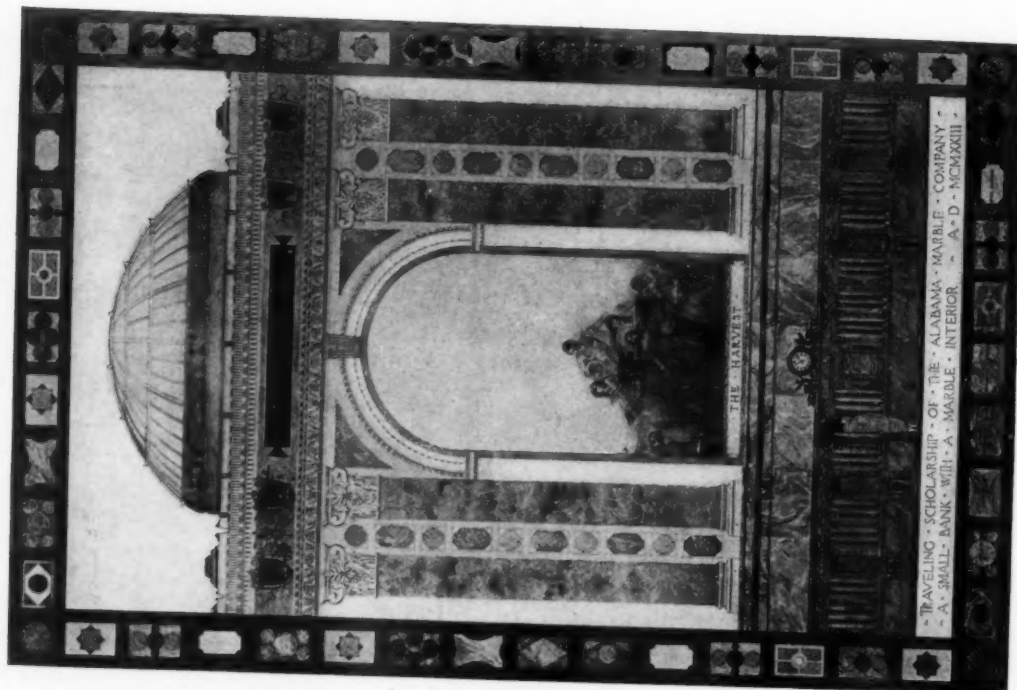




AWARDED FOURTH PLACE

F. RAY LEIMKNEHLER, ST. LOUIS, MO.

TRAVELING SCHOLARSHIP COMPETITION OF THE ALABAMA MARBLE COMPANY



AWARDED FIFTH PLACE

VICTOR PRIBIL, WOODHAVEN, L. I., N. Y.

TRAVELING SCHOLARSHIP COMPETITION OF THE ALABAMA MARBLE COMPANY

BEAUX-ARTS INSTITUTE of DESIGN

OFFICIAL NOTIFICATION OF AWARDS

JUDGMENT OF OCTOBER 2, 1923

CLASS "B"—VI ANALYTIQUE

"A BALCONY AND WINDOW MOTIF"

On the principal facade of a town hall facing on a public square, a large window opens on a balcony. The window, which shall not exceed 10'-0" in width, is on the principal story (story height about 20'-0" to 25'-0") over a basement (basement height about 15'-0") in which a smaller window or door may be shown. Emphasis should be given the window by orders or other enrichment, or by a relation of a column or pilaster design of the building itself. The balcony should be generous, and adequately supported by brackets and may be of stone or metal.

Examples of various types are: Palazzo Cancellaria; Rome; Palazzo Borgia, Rome; Palazzo Farnese, Rome; Villa di Papa Giulio, Rome; Palazzo Pallavicini, Genoa, and in Spain the Town Hall at Palma.

JURY OF AWARDS:—R. M. Hood, W. Warren, B. W. Morris, W. D. Blair, Wm. T. Benslyn of London, E. S. Hewitt, J. C. Levi, A. E. Flanagan and G. S. Koyl.

NUMBER OF DRAWINGS SUBMITTED:—36

AWARDS:—

FIRST MENTION PLACED:—H. L. Hylton, Atelier Denver, Denver; L. M. Faber, John Huntington Poly. Inst., Cleveland; J. C. Ehrlich, Atelier Sibley, Palisade, N. J.

FIRST MENTION:—F. Bellini, Columbia University, N. Y. C.; D. K. Morrison and E. J. Bauman, Carnegie Inst. of Tech., Pittsburgh; R. Smith, John Huntington Poly. Inst., Cleveland; W. Nevara, Atelier Parsons-Chicago Architectural Club, Chicago; A. H. Howze, Univ. of Texas, Austin.

SECOND MENTION:—J. Krendel, H. Metzger, J. A. Baranowski and W. B. Tubby, Jr., Columbia Univ., N. Y. C.; R. G. Kennedy, Carnegie Inst. of Tech., Pittsburgh; F. G. Rice, Atelier Cairns, Memphis; F. J. Ryan, Atelier Corbett-Koyl, N. Y. C.; A. R. Forester and A. K. Laing, Atelier Denver, Denver; W. H. Neubeck, W. G. Kafes and J. Welsh, French Curve Atelier, Trenton; M. E. Myers, T. S. McClelland, A. G. Powell and P. H. Williams, George Washington Univ., Washington, D. C.; L. A. Turcotte, Atelier Hiron, N. Y. C.; L. V. Schelski, Atelier Licht, N. Y. C.; R. A. Spencer, Los Angeles Architectural Club, Los Angeles; Henrietta E. Schmandt, Atelier Spangenberg, Buffalo; H. T. Anderson, H. W. Taylor, K. E. Ponsford and H. R. Treulsen, Jr., San Francisco Architectural Club, San Francisco.

CLASS "B"—VI PROJET

"AN OPEN AIR SWIMMING POOL"

In a small summer resort, it is proposed to build an open air swimming pool and an adjoining club house, as a social center for a summer colony of approximately two hundred subscribers.

The available plot is a rectangle measuring 200'-0" x 350'-0", the short side facing a country road. It slopes gradually away from the road, commanding at the lower end a view of great beauty. The Club House, placed at the high end of the property, shall include on the ground floor, a vestibule, retiring rooms for men and women, a large ball room opening out on a terrace overlooking the swimming pool and services conveniently placed for serving tea and light suppers either on the terrace or in the Ball Room. Stairs shall lead to separate dressing and accessory rooms in the basement for men and women. These rooms will give access to the pool. Steps shall also connect the upper terrace with the lower grounds surrounding the pool.

The pool shall be approximately 7,500 square feet in area, and shall be provided with diving boards, etc., at the deep water end. It shall be flanked with pergolas and other garden features, and furnished with sand pits for children, umbrella tables, chairs, etc., all contrived to

add to the general beauty of the whole and practical comfort of the subscribers.

JURY OF AWARDS:—R. M. Hood, H. O. Milliken, B. W. Morris, H. R. Sedgwick, J. H. Freedlander, J. W. O'Connor, J. C. Levi, D. Barber, W. D. Blair, Wm. T. Benslyn of London, E. S. Hewitt, F. R. King, C. G. Peters, H. W. Corbett and F. C. Hiron.

NUMBER OF DRAWINGS SUBMITTED:—51.

AWARDS:—

FIRST MENTION PLACED:—W. Ferrari, Yale University, New Haven.

FIRST MENTION:—M. G. Maybeck and M. B. Smith, Columbia Univ., N. Y. C.; J. Gambaro, H. A. Simpson and G. E. Kirkpatrick, Atelier Hiron, N. Y. C.

SECOND MENTION:—K. C. Kruchten, S. L. Powell, J. H. Robb and E. Batista, Columbia Univ., N. Y. C.; E. M. Gearhart, Carnegie Inst. of Tech., Pittsburgh; F. Fredericks, Jr., Cleveland School of Art, Cleveland; C. L. Nutt, M. Peele, P. H. Williams, and T. S. McClelland, George Washington Univ., Wash., D. C.; J. S. Shanley, Atelier Hiron, N. Y. C.; A. E. Shrimpton, A. B. Mitchell, and B. Krinsky, John Huntington Poly. Inst., Cleveland; Rose Connor, 526 LaLoma Road, Pasadena, California; F. Wolcken and W. F. Petty, Atelier Norfolk, Norfolk; L. Pirola and F. Ahlson, Atelier Parsons-Chicago Architectural Club, Chicago; J. F. Mullins, Pennsylvania State College, State College; G. W. Travis, J. H. Geering, J. H. Devitt and F. Kruger, San Francisco Architectural Club, San Francisco; A. H. Howze, Univ. of Texas, Austin; P. E. Murphy, Univ. of Southern California, Los Angeles; C. F. Ferrari, Yale University, New Haven.

H. C.:—C. H. Kulp, French Curve Atelier, Trenton.

CLASS "A"—VI PROJET

"THE CONCOURSE OF A RAILROAD STATION"

In the terminal of a great railroad system, the main concourse and tracks are on the same level. One long side of the concourse gives access directly to the tracks, and the other three sides open to the street, the waiting rooms, restaurant, lunch room, parcel and baggage rooms, etc. The main level of the Concourse is a few feet below the adjoining streets, so the entrances will be at this level. The other requirements grouped about the concourse may be arranged on two levels, or if desired, certain of them may even be placed on a third level, below the level of the Concourse. The ticket offices divide themselves naturally in two groups—one for long distance traffic, and the other for local and suburban traffic. Each of these divisions may be further subdivided if desired, in order to provide for a rapid and convenient distribution of tickets. A Bureau of Information should be centrally located.

In general, the controlling factors in the arrangement and layout of the Concourse are the convenience of the Public, and the arrangement of the different elements so as to avoid undue congestion in any place.

The greatest dimension of the concourse shall not exceed 300'-0". The only limiting qualifications of the height are the architectural necessities of the problem.

JURY OF AWARDS:—R. M. Hood, B. W. Morris, J. W. O'Connor, D. Barber, Wm. T. Benslyn of London, W. D. Blair, F. R. King and H. W. Corbett.

NUMBER OF DRAWINGS SUBMITTED:—15.

AWARDS:—

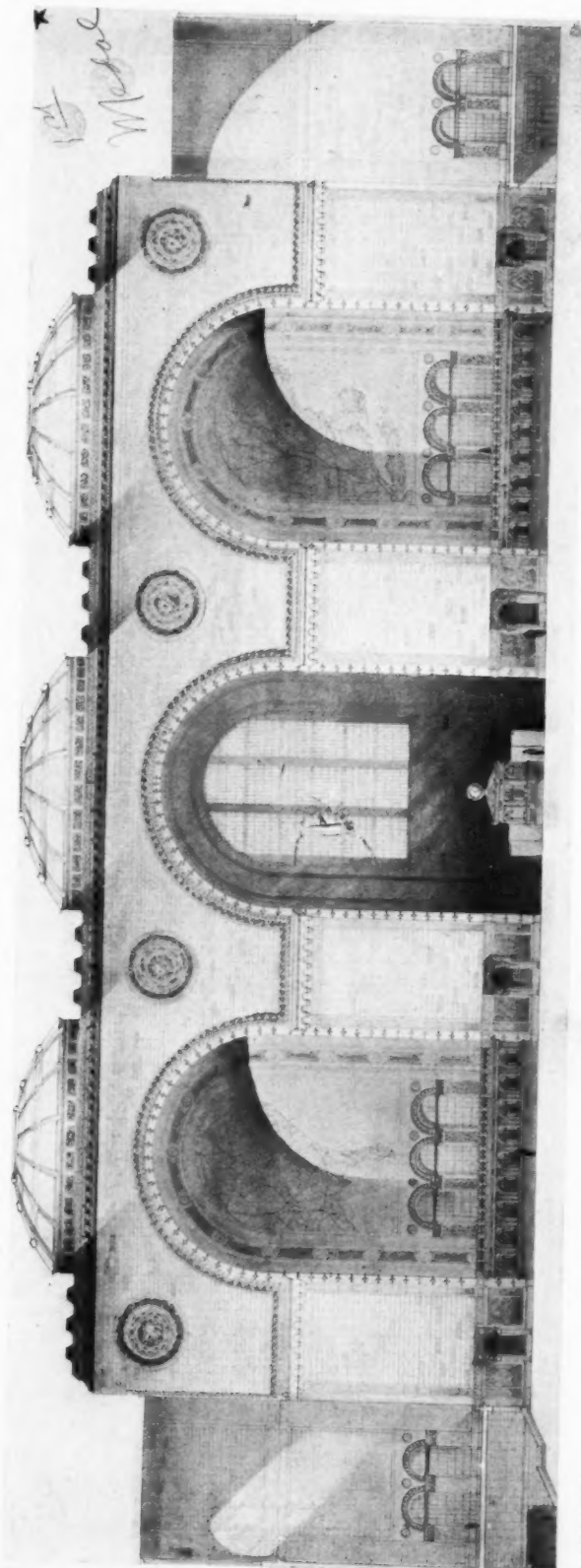
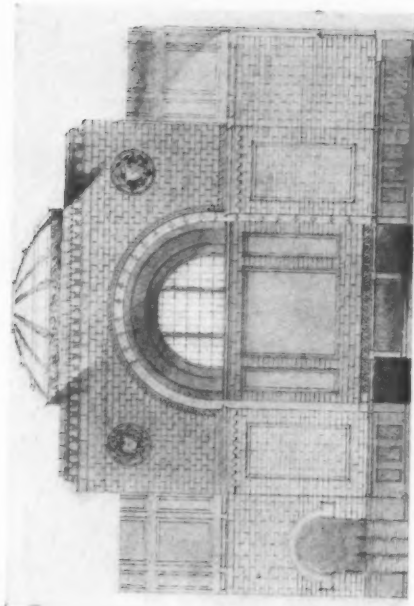
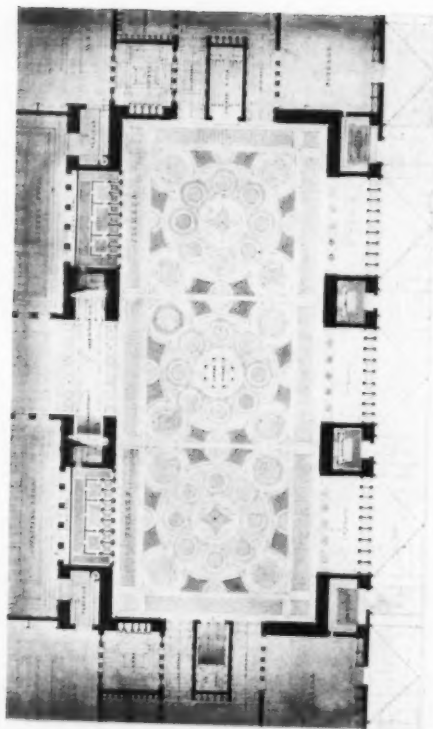
FIRST MEDAL:—C. Fuller, Columbia University, N. Y. C.

SECOND MEDAL:—E. Snyder, N. B. Hanes and L. Timotheeff, Columbia University, N. Y. C.

FIRST MENTION:—A. D. Reid, Carnegie Inst. of Tech., Pittsburgh; M. Gauthier and P. Simonsen, Atelier Hiron, N. Y. C.

SECOND MENTION:—C. P. Zimmers and W. Z. Bane, Carnegie Inst. of Tech., Pittsburgh; A. M. Dick, Columbia University, N. Y. C.; O. F. Cerny, Department of Archt. of Armour Inst. of Tech., Chicago; W. H. Speer, Atelier Denver, Denver.

H. C.:—Elsa M. Griesser, Carnegie Inst. of Tech., Pittsburgh; H. R. Robinson, Columbia Univ., N. Y. C.

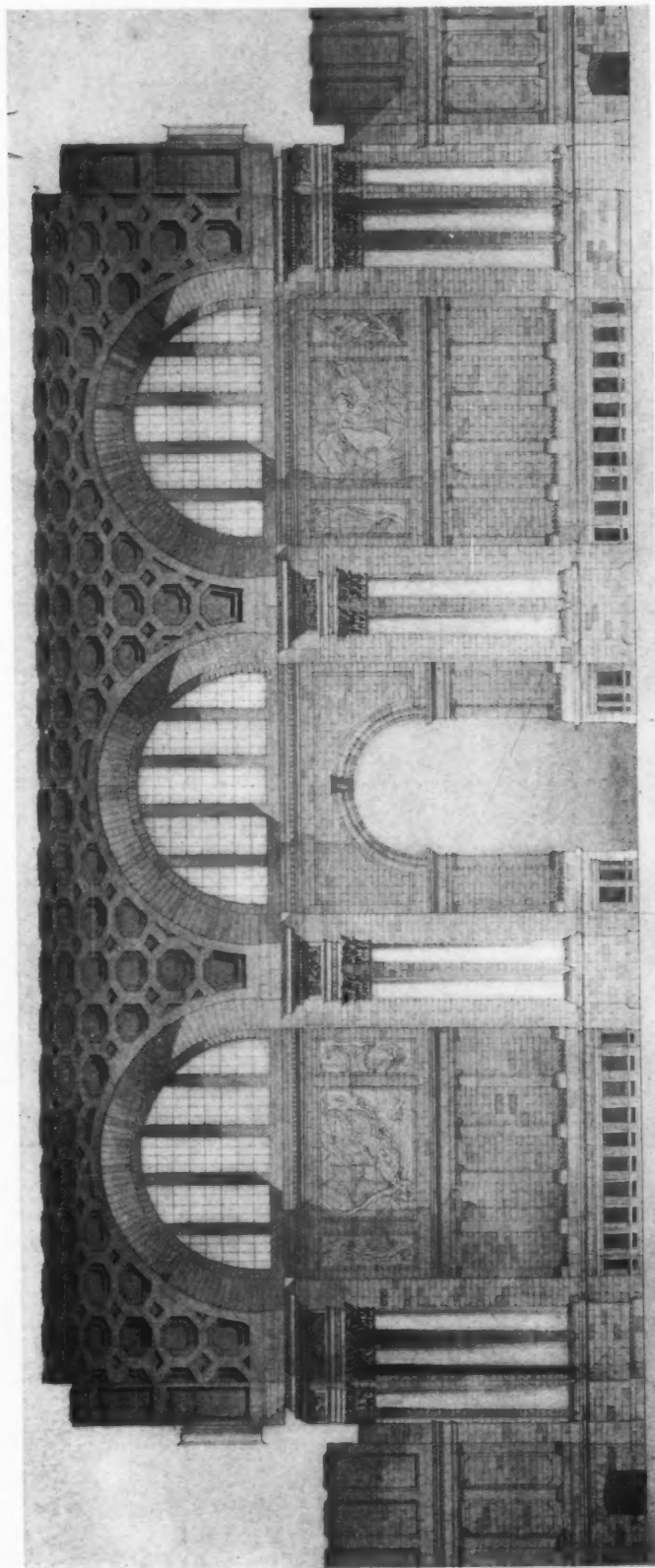
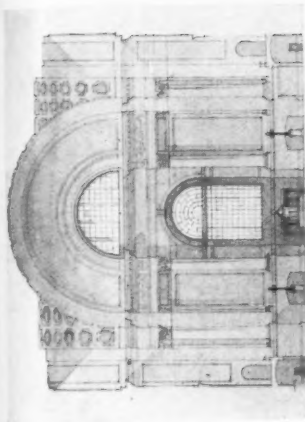
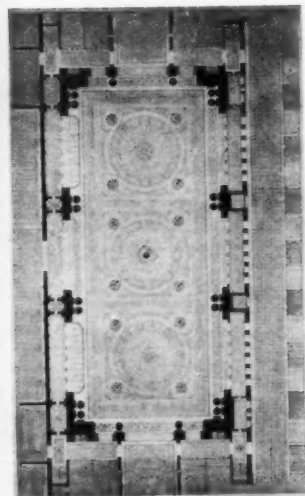


C. FULLER

FIRST MEDAL

CLASS "A"-VI PROJET—THE CONCOURSE OF A RAILROAD STATION
STUDENT WORK, BEAUX-ARTS INSTITUTE OF DESIGN

COLUMBIA UNIVERSITY

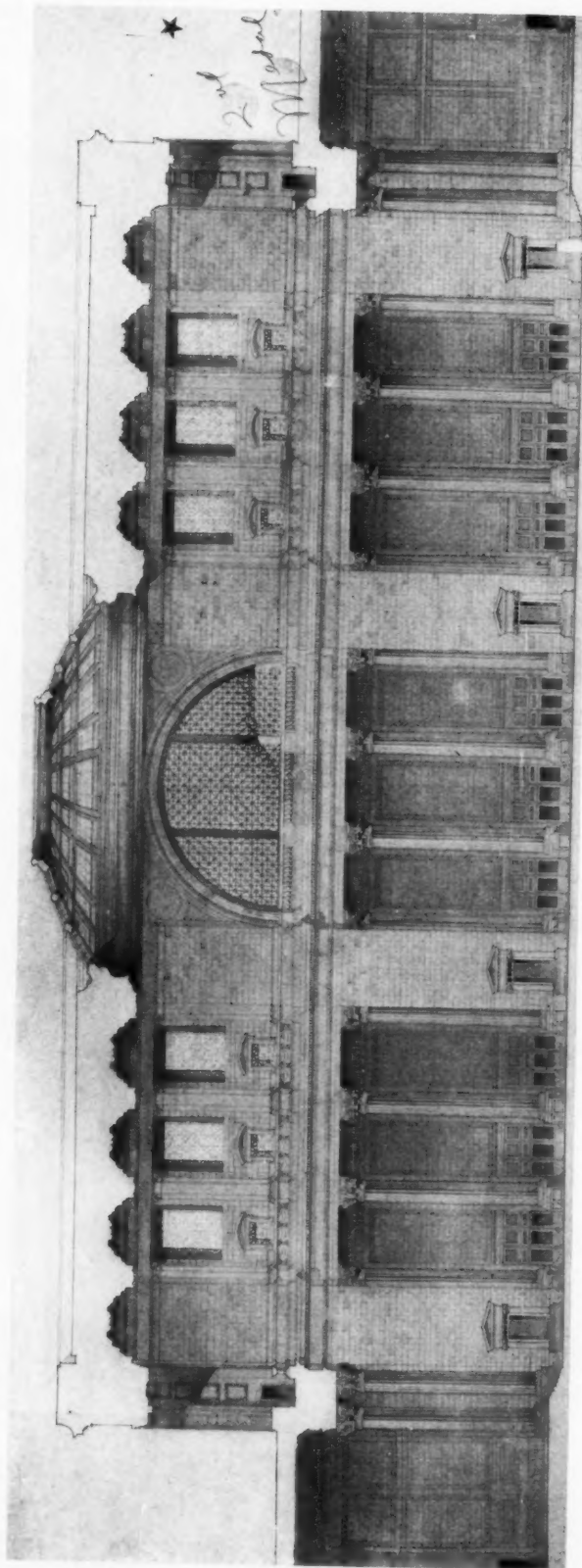
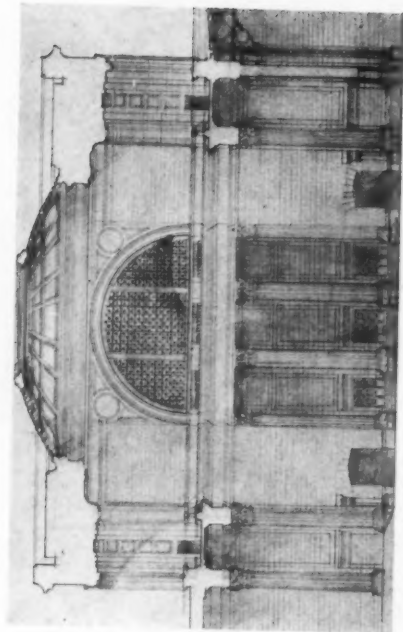
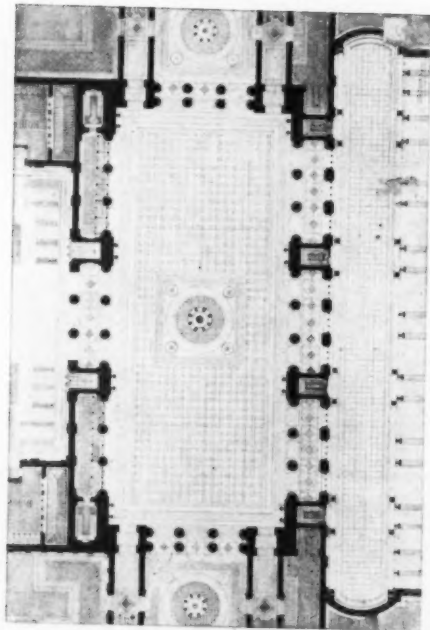


E. SNYDER

SECOND MEDAL

COLUMBIA UNIVERSITY

CLASS "A"-VI PROJET—THE CONCOURSE OF A RAILROAD STATION
STUDENT WORK, BEAUX-ARTS INSTITUTE OF DESIGN



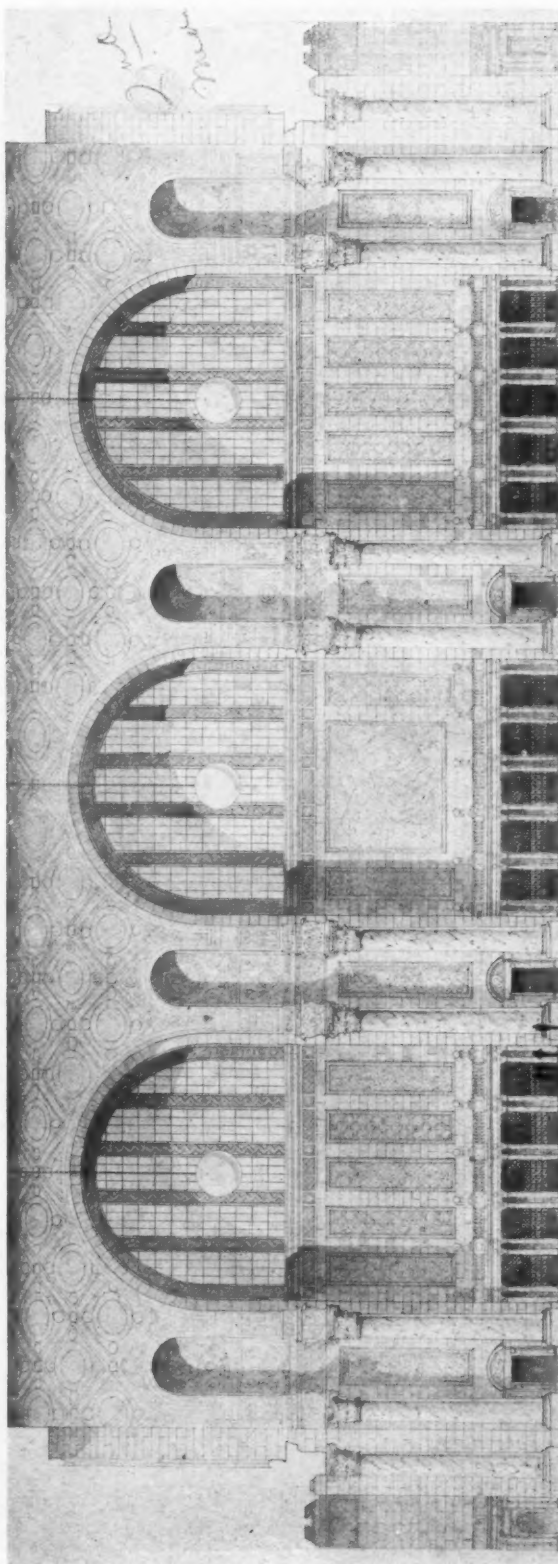
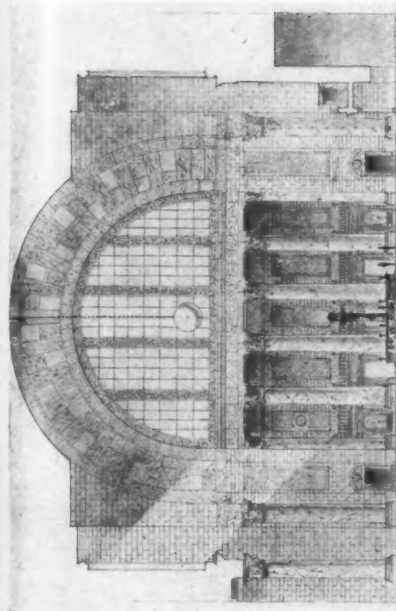
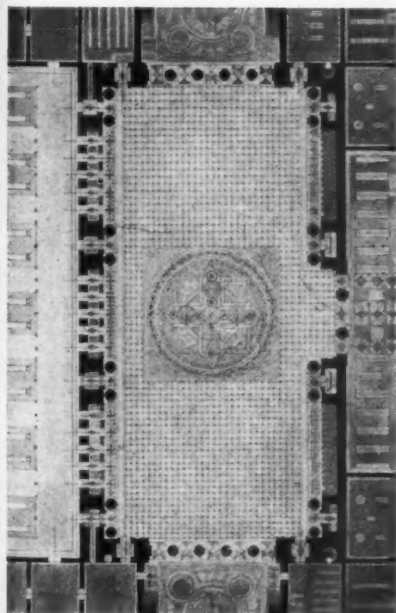
N. B. HANES

SECOND MEDAL

CLASS "A"-VI PROJET—THE CONCOURSE OF A RAILROAD STATION
STUDENT WORK, BEAUX-ARTS INSTITUTE OF DESIGN

COLUMBIA UNIVERSITY

CLASS "A"-VI PROJET—THE CONCOURSE OF A RAILROAD STATION
STUDENT WORK, BEAUX-ARTS INSTITUTE OF DESIGN

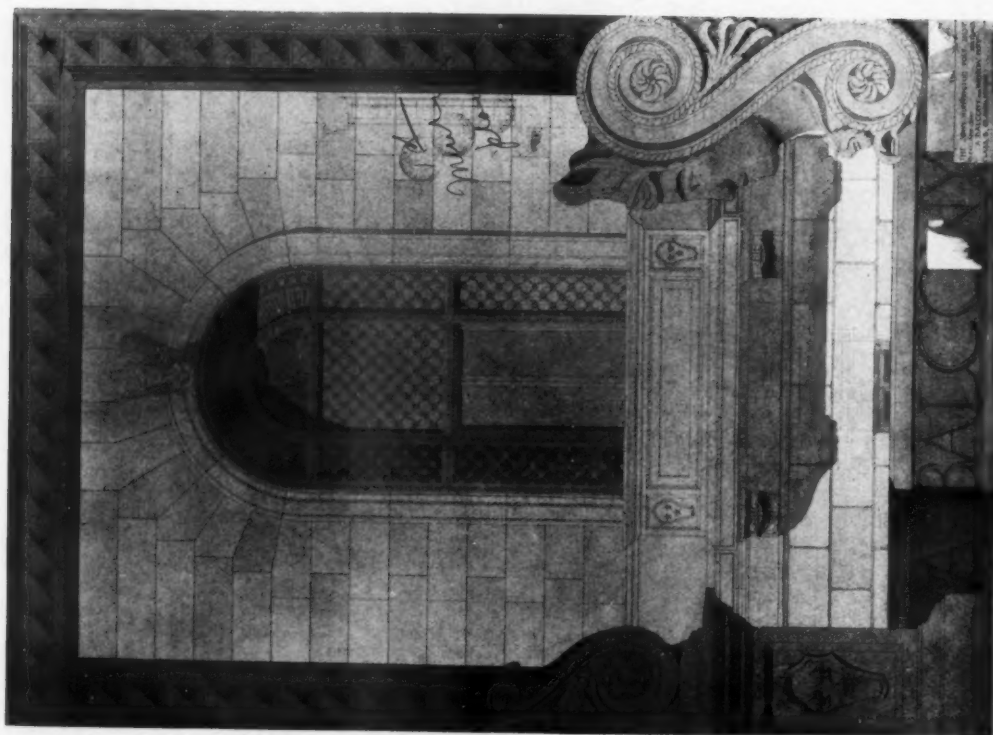


L. TIMOTHEEFF

SECOND MEDAL

CLASS "A"-VI PROJET—THE CONCOURSE OF A RAILROAD STATION
STUDENT WORK, BEAUX-ARTS INSTITUTE OF DESIGN

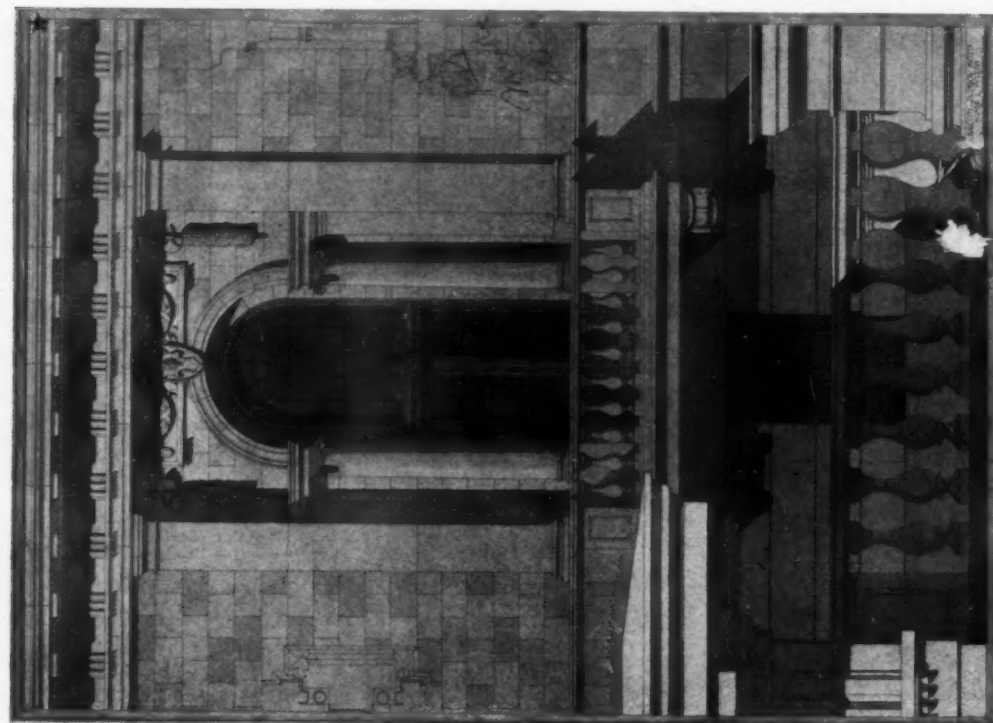
COLUMBIA UNIVERSITY



L. M. FABER

FIRST MENTION PLACED

JOHN HUNTINGTON POLY. INST.



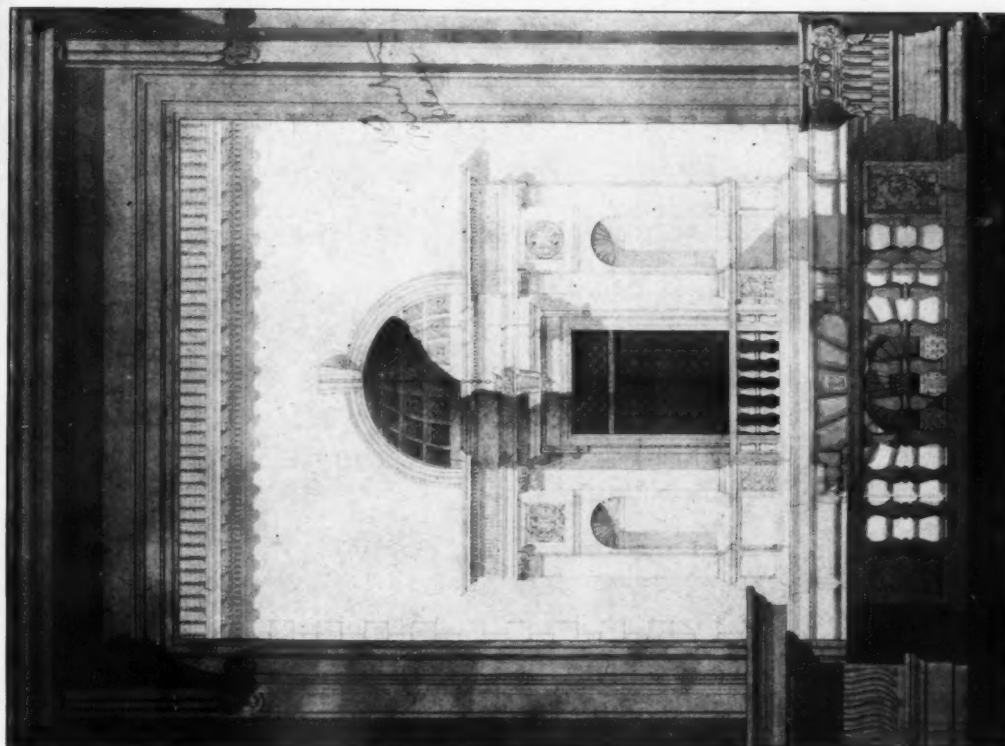
H. L. HYLTON

FIRST MENTION PLACED

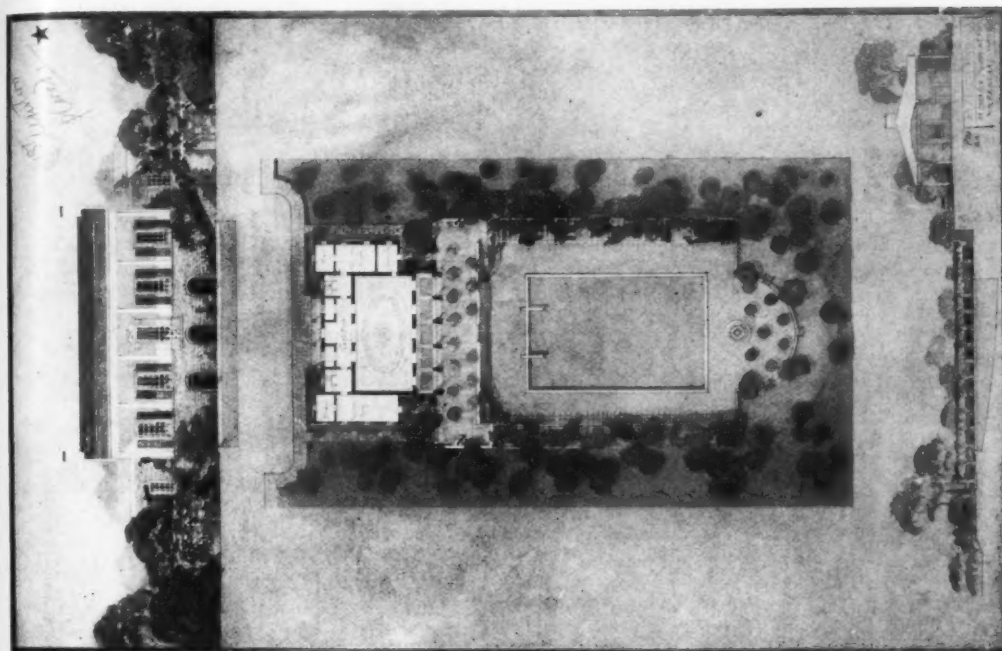
ATELIER DENVER

CLASS "B"-VI ANALYTIQUE—A BALCONY AND WINDOW MOTIF

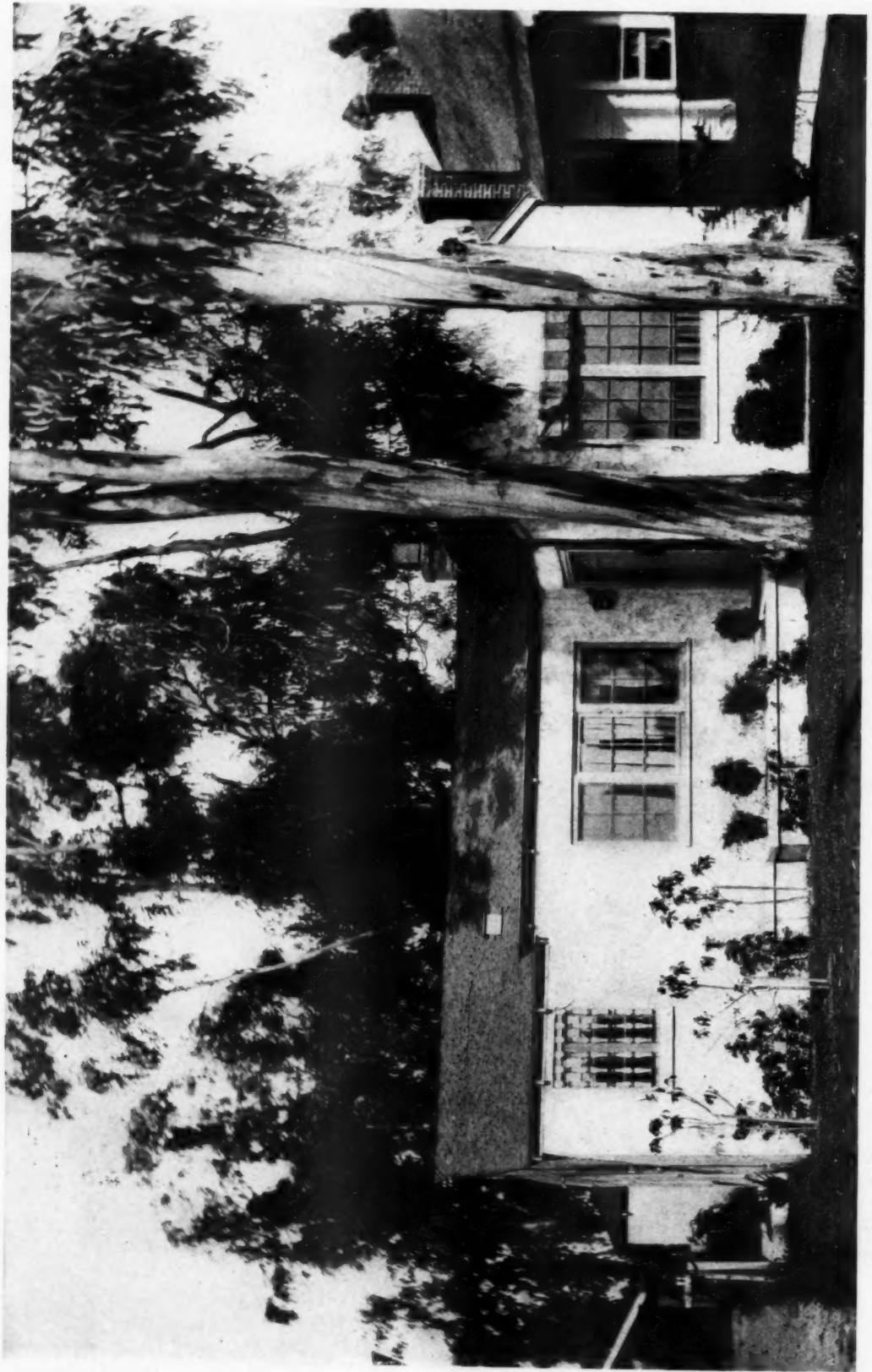
STUDENT WORK, BEAUX-ARTS INSTITUTE OF DESIGN



J. C. EHRLICH FIRST MENTION PLACED ATELIER SIBLEY
CLASS "B"-VI ANALYTIQUE—A BALCONY AND WINDOW MOTIF
STUDENT WORK, BEAUX-ARTS INSTITUTE OF DESIGN

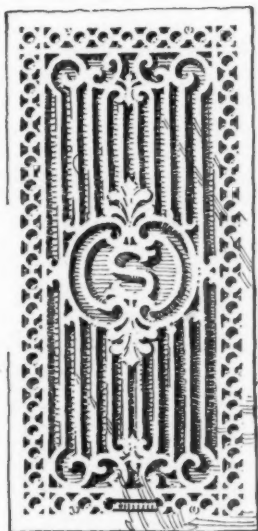


W. FERRARI FIRST MENTION PLACED YALE UNIVERSITY
CLASS "B"-VI PROJET—AN OPEN AIR SWIMMING POOL
STUDENT WORK, BEAUX-ARTS INSTITUTE OF DESIGN



HOUSE ON ESTATE OF THOMAS NICKOLS, LOS ANGELES, CAL.
PIERPONT & WALTER S. DAVIS, ARCHITECTS

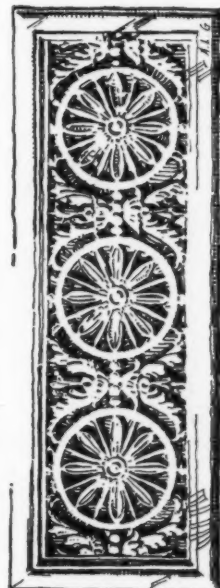
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Publishers, THE AMERICAN ARCHITECT AND THE ARCHITECTURAL REVIEW.

OUTLINE OF TENTATIVE SPECIFICATIONS FOR COMPRESSION SYSTEM OF REFRIGERATION (INCLUDING ICE MAKING EQUIPMENT)

(The Form of this bulletin conforms to the arrangement of Elements of a Specification, as given in Bulletin No. 5, ANALYSIS OF A SPECIFICATION, Revised January 5, 1923.)

I. CONTRACT AND LEGAL

1. Parties:
2. Drawings:
3. Agreement:
4. Terms of Payment:
5. General Conditions:
6. Regulations and Codes:
7. Standards:
8. Patents:

II. ECONOMICS

SCOPE OF CONTRACT:

9. Work Included:
10. Schedule of Main Items:
11. Work not Included:

METHODS OF ANALYSIS AND COMPARISON OF BIDS:

12. Methods:
13. Basis:
14. Form of Bids:
15. Conditional Payments:

III. GENERAL DESCRIPTIVE

SERVICE CONDITIONS:

16. Visiting Site:
17. Railroad Siding:
18. Working Limitations:
19. Working Facilities:
20. Water Pressure:

IV. PRELIMINARY PREPARATION

21. Field Measurements:
22. Shop Drawings:
23. Samples:
24. Models:

V. MATERIALS

25. Properties, Chemical and Physical:
26. Sizes, Weights, Gauges:
27. Quantities:

VI. DESIGN AND CONSTRUCTION

SHOP WORK:

28. Refrigerating Machine:
29. Condenser:
30. Automatic Water Regulator:
31. Liquid Receiver:
32. High Pressure Oil Trap:
33. Scale Trap:
34. Piping:
35. Direct Expansion Piping:
36. Purging and Vent Connections:

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| 37. Expansion Valves: | 70. Brine Balance Tank Insulation: |
| 38. Refrigerator System: | 71. Compressor Suction Pipe Insulation: |
| 39. Schedule of Refrigerators: | 72. Ammonia Accumulator Insulation: |
| 40. Refrigerator Coils: | 73. Drinking Water Cooler Tank Insulation: |
| 41. Pipe Hangers: | 74. Shell Brine Cooler Insulation: |
| 42. Schedule of Hanger Rod Sizes: | 75. Brine Pipe Insulation: |
| 43. Pipe Size Limitations: | 76. Water Supply and Connection: |
| 44. Plates and Sleeves: | 77. Guard Railings: |
| 45. Refrigerator Coil Drip Pans and Drains: | 78. Automatic Can Filler: |
| 46. Shell Brine Cooler: | 79. Tools and Equipment: |
| 47. Ice Freezing Tank: | 80. Foundation Bolts, Templates, etc.: |
| 48. Freezing Tank Coils: | 81. Gauge Board and Gauges: |
| 49. Brine Tank: | 82. Thermometers: |
| 50. Ammonia Accumulation: | 83. Hydrometer: |
| 51. Brine Agitator, Motor and Starter: | 84. Refrigerant: |
| 52. Brine Pump, Motor and Starter: | 85. Calcium Chloride: |
| 53. Motor Starter: | 86. Supplies: |
| 54. Brine Pumps (Steam Driven): | 87. Wiring and Conduit: |
| 55. Ice Cans: | 88. Finish: |
| 56. Ice Crane and Hoist: | 89. Protection of Work: |
| 57. Ice Can Dump: | |
| 58. Drinking Water Cooler: | |
| 59. Drinking Water Circulating Pump: | |
| 60. Drinking Water Filter: | |
| 61. Air Agitating System: | |
| 62. Low Pressure Blower: | |
| 63. Motor and Starter for Blowers: | |
| 64. Air Conditioner: | |
| 65. Air Headers, Laterals, Fittings and Hose: | |
| 66. Core Pumping Set: | |
| 67. Core Needles: | |
| 68. Frame Work of Ice Tank Cover: | |
| 69. Ice Freezing Tank Insulation: | |

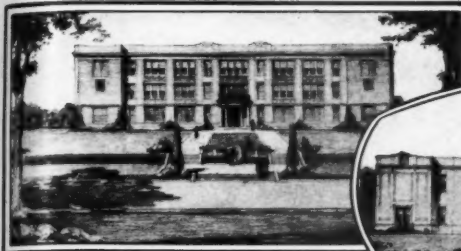
VII. SCHEDULES

90. Shop Production:
91. Field Operations:
92. Shipment and Delivery:

VIII. RESULTS

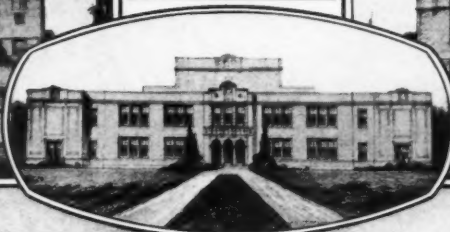
93. Inspection and Performance:
94. Guarantees:
95. Tests:
96. Rejections:
97. Insurance:

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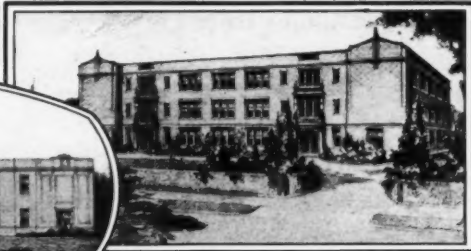


Barrett Specification Bonded Roof on High School, St. Cloud, Minn. Arch: Tyrre & Chapman. Cont: Lawrence Construction Co. Roof: Minneapolis Roofing & Corning Co., all of Minneapolis, Minn.

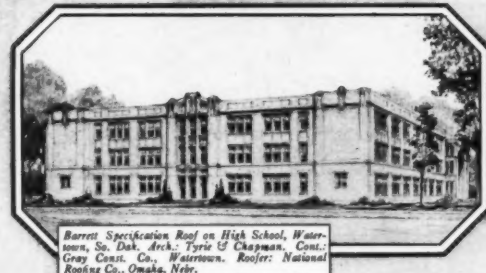
Bonded Roof on High School, Brookings, S. Dak. Arch: Tyrre & Chapman. Cont: A. M. Wold-Mark Const. Co., Brookings. Roof: Jas. Hagg, St. Paul, Minn.



Barrett Specification Bonded Roof on High School, Aurora, Minn. Arch: Tyrre & Chapman. Cont: A. C. Thomas-Guile Construction Co., St. Paul. Roof: Walker-Jamar Co., Duluth, Minn.



Barrett Specification Bonded Roof on Grade School, Marshalltown, Iowa. Arch: Tyrre & Chapman. Cont: Ed. Murer Co., Des Moines, Iowa. Roof: Barrick & Son, Des Moines, Iowa.



Barrett Specification Roof on High School, Watervorn, So. Dak. Arch: Tyrre & Chapman. Cont: Gray Const. Co., Watervorn. Roof: National Roofing Co., Omaha, Neb.

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Burning brands falling on the slag or gravel surface of these roofs burn themselves out without doing serious damage. If a fire inside the building weakens the roof-deck, the Barrett Specification Roof has the necessary tensile strength to support itself over a large area, thus effectively blanketing the fire. Barrett Specification Roofs are given base rating by the National Board of Fire Underwriters.

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(1) The Barrett Specification (for flat or nearly flat roof construction) prescribes the number of layers of Specification Felt, the amount of Specification Pitch, the top coat of pitch poured (not mopped) and finally the wearing surface of firmly embedded gravel or slag. No supervision by the architect is necessary to see that quantity and quality of materials are right.

(2) The man who lays the roof must have a name for dependability. Only such men can obtain the Bond for the owner. No supervision by the architect is necessary to make sure that a dependable man is laying the roof.

(3) Highly trained Barrett technical men are on the job to see that The Barrett Specification is followed in every detail. No supervision by the architect is necessary to be sure that his client gets a roof in which every detail of material and construction is exactly according to the specification.

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FORTY YEARS AGO

Excerpts from THE AMERICAN ARCHITECT, October 20-27, 1883

THE subject of establishing a uniform standard time throughout the United States, which has for some time been under discussion among engineers and others, is now on the point of acquiring a very general interest, through the movement which has been initiated for the adoption by railroads of the scheme prepared by a committee of the American Society of Civil Engineers, and generally approved by scientific men. Under the arrangement proposed, the trains upon all railroads which decide to adopt the new system will be run by a schedule of time taken, not from the clocks of the particular town from which they start, but according to the mean solar time of places upon certain agreed meridians, which are taken at fifteen degrees, so that the solar time at each meridian will vary exactly one hour from that of the standard meridians next on either side of it. Those who travel much will appreciate the relief which the new system would afford in practice, and it is not surprising that the officers of railroads aggregating nearly 60,000 miles in length have promised their adhesion to the reform.

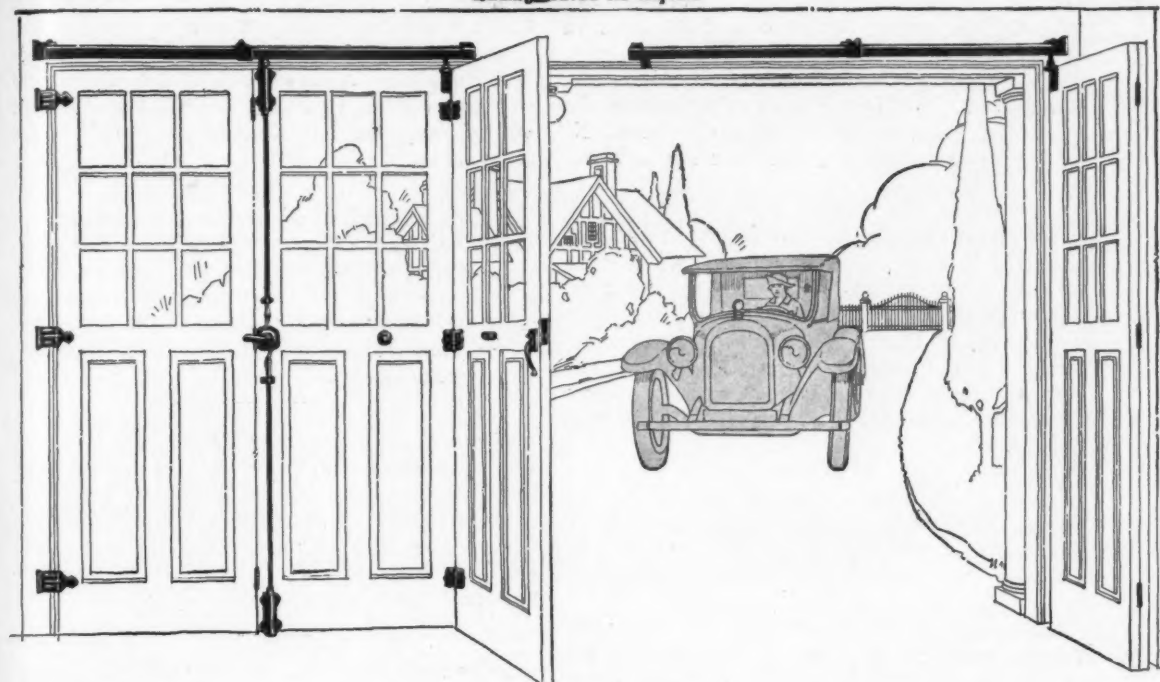
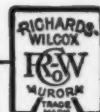
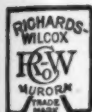
* * *

A question of very great importance to the architects of public buildings is raised in *La Semaine des Constructeurs*. It seems that what we call a "city architect" in a certain town in France made plans some years ago for buildings for municipal purposes. A commission of the municipal council approved the plans, and they were sent to the higher authority, the Council of Civic Buildings, which directed that certain unimportant modifications should be made in them, which was done, and they were put in hand for execution. The buildings are now nearly completed, and are tumbling down. The contractor asks for his money, but the city refuses to pay for the building until the architect shall have accepted it, and this the architect hesitates, very naturally, to do. A commission of experts has decided, unanimously, that the plans are vicious in several points; and the

question is, who is pecuniarily responsible for the failure? Must the cost of reconstruction fall upon the architect, or does the approval of his plan, both by the municipal council and by the higher authority, with, moreover, the alterations made in his scheme, relieve him of strict accountability; and in this case, is the city bound to pay the bills? As to the responsibility of the architect for loss caused by defects in his plans, *La Semaine* asserts without hesitation that the approval of the plans by the two councils does not in any way relieve the architect from the consequences of his carelessness or ignorance. It further says, "If, however, the architect executed the work as the hired agent of the town, that is, as a salaried employee, the town must pay the cost of reconstruction made necessary by the faults of the plan, since no legal responsibility attaches to an architect unless he has been paid by a percentage on the cost of the work, and not by a regular salary." The principle upon which this reasoning is based forms a part of the common law of this country as well as of France, and takes the form that any person doing work for another person, and paid regular wages, is to be considered the agent or servant of his employer, and the employer is accountable for the faults or carelessness of his servant; while a person doing work for another under a contract, or for a fixed price agreed upon between the parties, is no longer an agent, but is responsible for all the consequences of his own misdeeds, or those committed by all the persons whom he in his turn employs.

* * *

Illustrations: House of Col. J. D. Platt, Dayton, Ohio, Bruce Price, Architect, New York, N. Y. "The Everett," Bachelor Apartment House, Washington, D. C., Joseph Hornblower, Architect, Washington, D. C. The Van Schaick Free Reading Room, Westchester, N. Y., F. C. Withers, Architect, New York, N. Y. Competitive Design for Billings Hall, University of Vermont, Rossiter & Wright, Architects, New York, N. Y.



The most important part of any garage

Any style of roof will keep out the weather—any kind of building material will protect a car. But unless properly designed, the garage doors will be an endless source of trouble and expense—may even cause personal injury or damage to the car.

Because garage doors are opened and closed several times a day, in all kinds of weather, they must be operated with a minimum of time and effort, and wear and tear on the doors. The modern garage doorway, which meets these special requirements to the fullest extent, is equipped with—

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Garage doors hung on *Slidetite* slide and fold inside, flat against the wall, leaving a wide, clear space. Meets every requirement, from the one-car garage to doorways 30 feet wide. Doors move smoothly, with little effort. They cannot sag, do not expose a large surface to

strong winds, and will not slam shut. When closed, *Slidetite* equipped doors fit tight and are absolutely weather-proof. *Slidetite* meets the exacting needs of the most important part of the garage in the most satisfactory way.

You will find it a great source of satisfaction to your clients to recommend *Slidetite*—either for a new garage or the remodeling of an old one. Write for *Slidetite* book D-29. Contains many practical suggestions and illustrations of modern garage doorways. *Slidetite* may be obtained through hardware and lumber dealers everywhere.

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PERSONALS

It is announced that George Alexander, Jr., architect, has moved his office to 2996 Bedford Avenue, Brooklyn, N. Y.

Rodier & Kundzin, architects, announce the opening of offices at 1216 Eighteenth Street, N. W., Connecticut Avenue at Jefferson Place, Washington, D. C.

Announcement is made that Harry D. Hughes, architect, has recently opened an office for the practice of architecture in the Citizens Building, Cleveland, Ohio.

Norton & Townsend, architects, formerly at 839 Chapel Street, New Haven, Conn., are now located in their own building at 405 Temple Street, same city.

Joseph J. Gunther, architect, announces the opening of an office for the general practice of architecture in the National Bank Building, Far Rockaway, N. Y.

Announcement is made that G. Meredith Musick, architect, has opened an office for the practice of architecture at 320 Guardian Trust Building, Denver, Col.

The Osborn Engineering Company, architects and engineers, have moved their offices from 2848 Prospect Avenue to Rooms 223-227 Euclid and Seventy-first Street Building, Cleveland, Ohio.

Little & Browne, architects, announce that owing to the demolition of the Mason Building, 70 Kilby Street, Boston, they have moved their offices to Room No. 305, 114 Federal Street, Boston 9, Mass.

Ralph W. Yardley, A. I. A., was among those recently licensed to practice architecture in Tennessee. He is supervising engineer in charge of the new Memphis Municipal Auditorium now under construction.

The Rochester Associated Architects and Engineers, Inc., announce the opening of an office for the practice of architecture and engineering at 600 Duffy-Powers Building, Rochester, N. Y. Manufacturers' catalogs and samples are desired.

Edwyn A. Bowd, architect, Orlie J. Munson, associate, announce the removal of their offices from 127 West Allegan Street to the Wilson Building, 100 Allegan Street East, Lansing, Mich. Manufacturers are requested to send catalogs and samples.

Kenneth MacDonald, architect, formerly of Couchot & MacDonald, 234 Pine Street, San Francisco, has opened an office in the Brack Shops Building, Los Angeles, Cal. Work now under way under the firm name of Couchot & MacDonald will be completed, but all new work will be taken independently.

John Galen Howard, architect, announces his association with E. Geoffrey Bangs, Henry C. Collins, Henry Temple Howard and Charles F. B. Roeth, architects, for the practice of architecture under the name of John Galen Howard & Associates, architects, First National Bank Building, San Francisco, Cal.

Glenn Allen, architect and manager of construction, announces that his offices in the Georges Building, Stockton, were recently completely destroyed by fire and that he has opened new offices in the Union Block, 41 South Sutter Street, Stockton, Cal., where he will be pleased to receive manufacturers' trade catalogs and samples.

Raymond Carey, architect, formerly of Winnipeg, Canada, has entered into partnership with H. H. Esselstyn, engineer, for the practice of architecture and engineering under the firm name of Esselstyn & Carey, with offices at Belle Isle Bridge, Detroit, Mich. Manufacturers are requested to send catalogs and samples.

John W. Weiss, A. I. A., architect, and George W. Niestadt, structural engineer, who have been associated with F. E. Davidson for the past ten years, have formed a partnership for the practice of architecture and engineering with offices in suite 620 Monadnock Block, Chicago. Mr. Davidson will continue the practice of architecture and engineering at 53 West Jackson Boulevard, Chicago, where he has been located for the past eighteen years.

Henry J. Moloney, architect, formerly with Welles Bosworth and Thomas M. Jones, architects, and John J. Hallahan, bank equipment engineer, formerly with Art Metal Construction Company and Canton Art Metal Company, announce the formation of a partnership for the general practice of architecture and bank equipment engineering, under the firm name of Moloney & Hallahan, architects and engineers, Canadian Pacific Building, 342 Madison Avenue, New York City. Manufacturers are requested to send catalogs and samples.

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4 Styles

for exposed and concealed piping. Made of solid brass with nickel plated dial and handle. Style D mixes steam and cold water.



Style B
For Concealed Piping

The Powers Shower Mixer

completely eliminates those unexpected "shots" of hot and cold water caused by pressure changes when adjoining showers or other plumbing fixtures are used.

When the ordinary shower mixer is set to give water of the temperature desired, and cold water is drawn from adjacent showers, flush valves, etc., the reduced pressure on the cold water line allows a "shot" of hot water to reach the bather. The Powers Shower Mixer removes this obstacle to complete enjoyment of a safe and comfortable bath.

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A simple all-metal pressure balancing valve instantly equalizes the pressure of hot and cold water before they enter the mixing chamber, so that regardless of pressure changes, a Powers Mixer always holds the temperature of the water where you want it.

Bul. 154 gives full information and roughing-in dimensions. May we send it?

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BOOK NOTES

ART TRAINING FOR LIFE AND FOR INDUSTRY

THIS small book reminds us of things that are very apt to be overlooked. Its reading will induce speculative thought as to how some desirable things can be accomplished.

As the title indicates, the book is divided into two parts. The first part emphasizes the necessity for art appreciation as totally distinct from art knowledge, its desirability and value to its possessor. Art is not considered as that thing with a big A, but rather as a thing that should be common to every person. The second part explains the economic value of art in industry. This is well known to manufacturers and producers of fine things who realize the necessity of trained minds and hands in production rather than automatic machines. The lack of skilled artisans is known to everyone and suggestions are made for correcting this condition which places the United States in a secondary position as a producer of fine things. It is a small book and so written that it entertains as well as instructs. Everyone will be benefited by its reading.

Art Training for Life and for Industry. By Charles Alpheus Bennett. 62 pages, 5 1/2 x 8. The Manual Arts Press, Peoria, Ill. Price \$1.00.

MANUAL OF INFORMATION ON CITY PLANNING AND ZONING

THIS is a reference book for those interested in city planning and zoning. It is introduced by a brief statement of principles and procedure, followed by a list of organizations active in this work. Suggestions for a library and lists of publications devoting space to the subject, schools that include courses of study, municipal appropriations for the work of city planning commissions and other related data are included. A

complete bibliography of books and articles on city planning and zoning, published in America and many foreign countries, is given. This is arranged in classified form and is accompanied by a subject index. This manual is a valuable addition to any library including works on this subject.

Manual of Information on City Planning and Zoning, including references on regional, rural and national planning. By Theodora Kimball, Librarian, School of Landscape Architecture, Harvard University. 199 pages, 7 x 10, cloth. Harvard University Press, Cambridge, Mass. Price \$3.50 postpaid.

FRAGMENTS D'ARCHITECTURE ANTIQUE

THIS, Volume II of the Library of Architectural Documents, consists of selections from H. D'Espouy's "Fragments d'Architecture Antique" which was originally published in two volumes. In preparing the original work, M. D'Espouy, professor at l'Ecole des Beaux-Arts, selected drawings from those made by winners of the Grand Prix de Rome during their studies under the direction of the French Academy in Rome. Aside from the illustrations of Roman work, a large portion is that of other Italian cities and Greece.

The draftsmanship of the illustrations is of the highest order, making the work of especial value to students. The selections have been made with care and discrimination and they will be of use to designers and lovers of classic architecture. The price of the book places it within the possibilities of every architect's and student's library.

Three succeeding volumes will illustrate Gothic, Romanesque and Spanish architecture.

Fragments d'Architecture Antique. One Hundred Selected Plates. H. D'Espouy, professor at l'Ecole des Beaux-Arts. 9 x 12. Pencil Points Press, Inc., New York. Price \$6.00.

DECORATION PAINTED by W. FRANCKLYN PARIS and
FREDERICK J. WILEY for the CHILDREN'S ROOM
in the DETROIT PUBLIC LIBRARY

CASS GILBERT, Architect

THIS is a pictorial map representing the geographical outline of the State of Michigan with the physical facts embellished.

The right border is a decorative arrangement of the French Royal coat of arms centered against a background picturing the gardens and fountains of Versailles, the royal residence of Louis XIV under whose reign Detroit and the surrounding territory were settled by the French.

The left border has a round shield such as the early redskin carried. The background is a woodland landscape.

The lower border consists of two tablets inscribed with mottoes in Latin with small medallions between. The right hand inscription reads: *Tamen Fit Sibullus Arbor*, which is the motto of the University of Michigan, while the inscription to the left which is the motto of the State of Michigan, reads: *Si quaeris Peninsulam amoenam circumspice*.

Within this border are outlined in a space 18 feet by 13 feet, the waters of Lake Superior, Lake Michigan, Lake Huron and Lake Erie. The land which environs them is a vista of trees and prairies, with here and there a group of Indian tepees or a windmill to indicate Chippewa or Hiron villages or white settlements.

Although the map is painted in the tempo of 1700 there is introduced by historical license a picture of the Battle of Lake Erie which Perry fought on September 10, 1813, in Put-in-Bay near the Western end of Lake Erie. The British and American sloops, brigs and ships of war are shown, but their number and size have been reduced to come within the frame formed by the painted waters of the lake.

Near the site of what is now the City of Detroit, the artists, W. Francklyn Paris and Frederick J. Wiley, have painted a picture of what was once Fort Ponchartrain, a stockade within which the hundred or so French settlers of Detroit lived, traded and fought under La Mothe Cadillac, the first governor of the territory.

Set in small frames at the two lower corners are, at the right, the Church of Ste. Anne, built on the site of the little log chapel erected by Cadillac in 1701 just outside the stockade and repeatedly destroyed by the Indians and rebuilt and, at the left, an Indian encampment.

Two figures outlined against a golden halo complete the composition. One, in the upper right hand corner, represents *le roi soleil*, as Louis XIV wished to be known, mounted on a white horse, and the other in the left margin shows an Indian chief in all the feathered glory of his rank.

(See other side)



DECORATION FOR CHILDREN'S ROOM, DETROIT PUBLIC LIBRARY

CASS GILBERT, ARCHITECT

PAINTED BY W. FRANKLYN PARIS AND FREDERICK J. WILEY