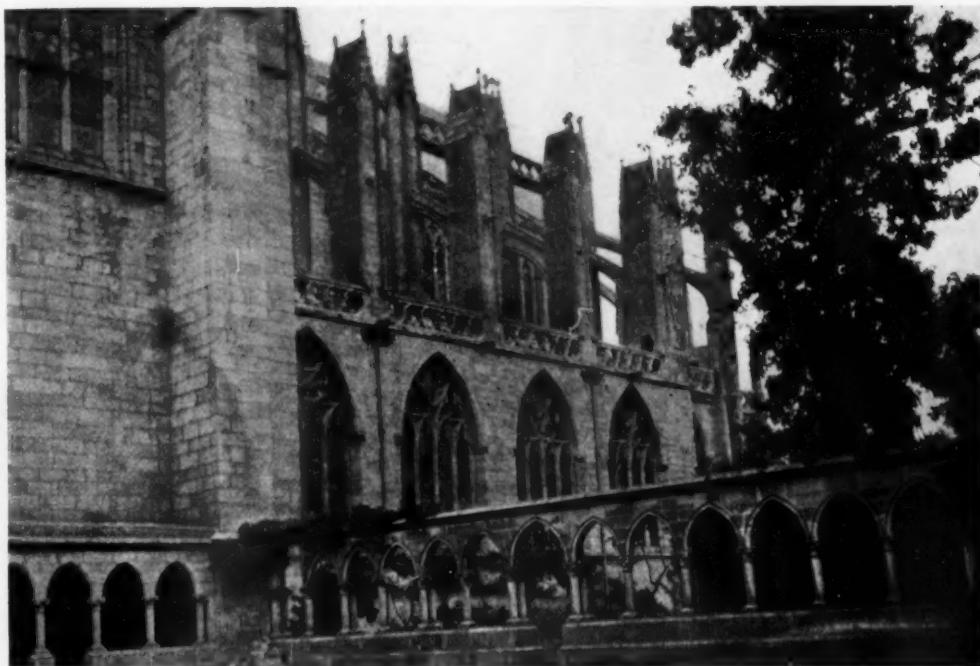


THE AMERICAN ARCHITECT

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THE CHEVET FROM THE BISHOP'S GARDEN

The cloisters which have been re-erected here have archæologically nothing to do with the cathedral of Quimper, but compose charmingly with the ancient monument. The flying buttresses of the ambulatory are seen to advantage from this point of view.

Architectural Rambles in Brittany—III

The Cathedral of Quimper—I

By A. KINGSLEY PORTER

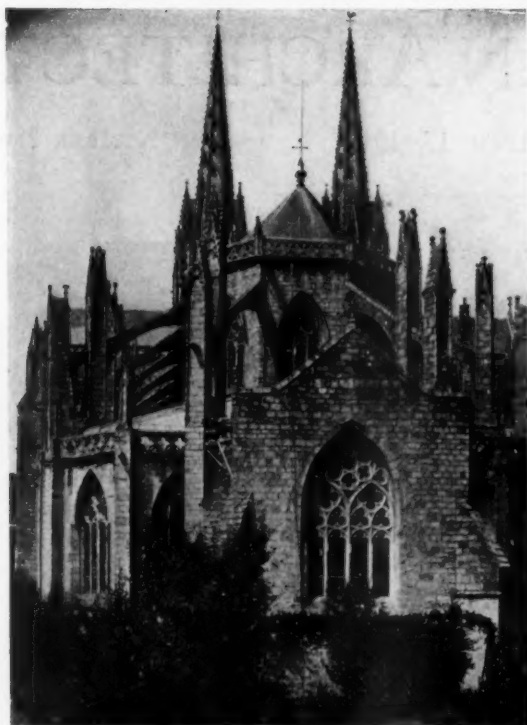
THE city of Quimper is probably chiefly famous for its pottery. It has, however, an even greater claim to fame in its cathedral, certainly the most conspicuous and the most interesting monument of Gothic art in the entire province of Brittany. If it is inferior to the great masterpieces of the Ile-de-France in artistic value, it possesses in revenge extraordinary archæological importance, and has been enriched by the imaginative Celtic temperament with an unusual wealth of legend. Considered purely as a work of art, it is

by no means inferior to many cathedrals of England which enjoy an international reputation. The monument, from every point of view, merits being better known than is actually the case.

Celtic poetry surrounds the history of the cathedral from its very beginnings. St. Corentin established his hermitage about the end of the fifth century on the site of the present city of Quimper. Here he was found one day by Grallon, King of Cornouaille, who was so edified by the saint that he caused him to be consecrated bishop, and

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VIEW OF THE CATHEDRAL OF QUIMPER FROM THE EAST

The design of the ambulatory chapels is unusual. The exterior wall is straight and unbroken, even by buttresses. The division walls are carried up to form a double set of struts placed close together. The flying buttresses are of a single flight.

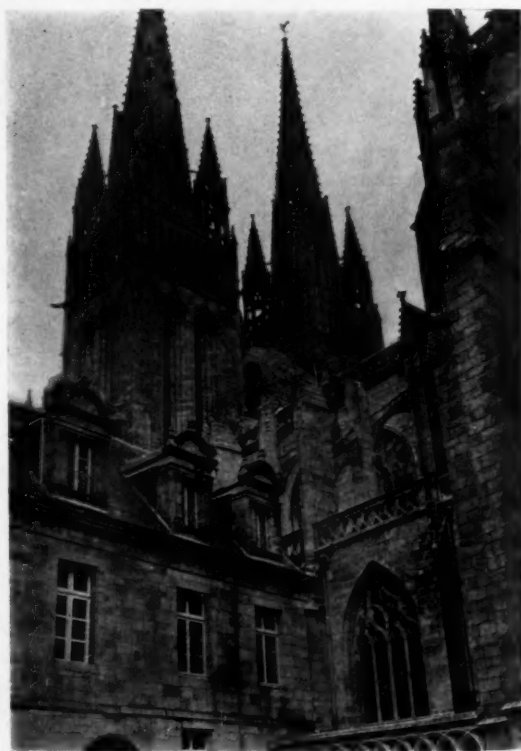
presented him with a portion of the royal château, in which was built the first cathedral of Quimper. In memory of this event a statue of King Grallon was set up on the gable of the cathedral between the two towers. Below it was placed a rhyming inscription in flamboyant French, comparing Grallon to Constantine and St. Corentin to Pope Sylvester. In 1793 the statue and inscription were destroyed by the revolutionists. In 1858 the statue which at present exists was erected in the place of the old one, but the inscription was never replaced.

Before the Revolution the statue of King Grallon was the object of a curious and picturesque ceremony, an account of which was written by Cambry in 1794. This has been reprinted by Le Men in his excellent monograph on the Cathedral of Quimper, from whom I translate:

"Every year at Quimper on the feast of Ste. Cécile at two o'clock in the afternoon, the entire clergy of the cathedral mounted on the platform between the two towers of the cathedral where was the statue of King Grallon. There was sung a hymn with full chorus, accompanied by musicians. Mean-

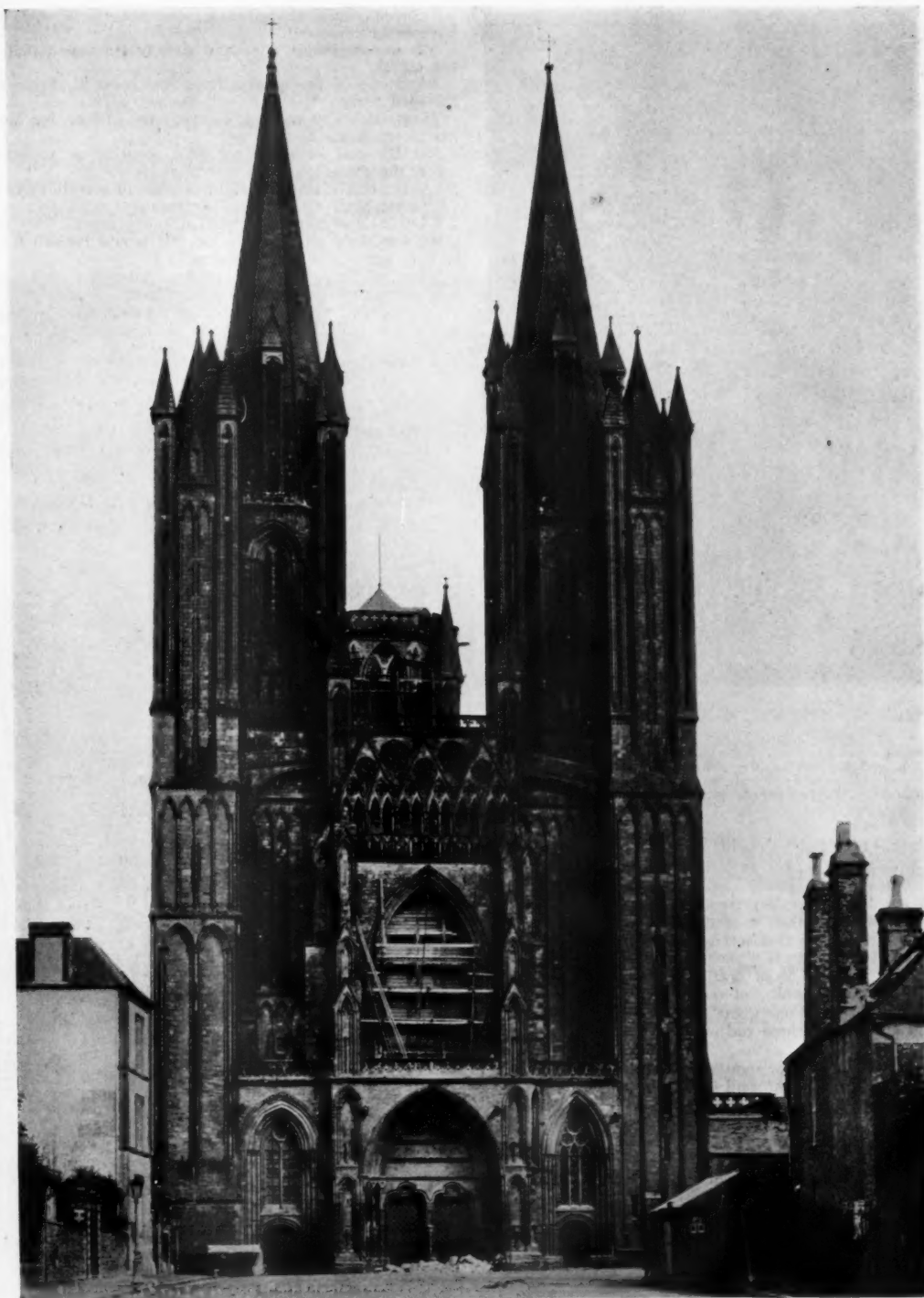
while, one of the townsmen mounted astride upon the horse, holding a bottle, a glass and a napkin. This man then filled the glass, presented it to the statue of the king, swallowed it, wiped off the mouth of the statue and threw the glass into the square below. The crowd rushed to catch it. A prize of a hundred crowns was offered to any one who could catch it without breaking it, but no one ever succeeded in doing so. . . . The ceremony ended by placing a branch of laurel in the hand of King Grallon."

Not all the legends connected with the cathedral are as benign as that of King Grallon. The ballad of the three red monks collected by Hersart de la Villemarqué is localized either in the cathedral of Quimper or in one of the neighboring churches, possibly the abbey of Locmaria, the architecture of which has been referred to in an earlier paper. This tale still lives, and I heard it told not long ago of a Spanish cathedral in almost precisely the same form as is found in the very ancient Breton legend. As I am not acquainted with the Breton language, I



ANOTHER VIEW OF THE SPIRES FROM THE BISHOP'S GARDEN

The false gable of the façade here appears between the towers. Remains of the ancient cloister can be seen in the lower edge of the picture. The design of the flamboyant tracery of the windows of the nave is of interest.



FACADE OF THE CATHEDRAL OF COUTANCES

The cathedral of Coutances possesses one of the most beautiful façades in Normandy. For boldness of conception, mastery of proportion and power of massing, the towers are, perhaps, unsurpassed in mediæval architecture. Their effect is

produced in no small measure by the extremely elongated proportions of the pointed openings and arcades and by the use of very tall and slender shafts. Both these features were carried over in the much later façade of Quimper.



CHOIR OF THE CATHEDRAL OF QUIMPER

This view is taken looking down from the northern clear-story. The profile of the archivolts of the nave arcade and the manner in which this and the system are adjusted to the abacus is clearly shown in this photograph. It will be seen that the profiles lack the decision and character of French work of the same period.

translate Hersart de la Villemarqué's French version:

"All my limbs tremble, tremble with sorrow, when I see the ills which strike the earth.

"When I think of the horrible event which took place near the city of Quimper a year ago.

"Little Catherine Moal was walking along singing a song, when three monks, in complete armor, joined her.

"Three monks on their great horses covered with armor from head to foot; three red monks in the middle of the road.

"Come with us to our monastery, come with us, beautiful young girl; there you shall lack neither gold nor silver."

"With your leaves, sirs, it is not I who shall go with you; I am afraid of the swords which hang at your sides."

"Come with us, young girl. No ill shall befall you."

"I shall not go, sirs. One hears terrible tales."

"Let evil tongues wag. A thousand times cursed be all evil tongues."

"Come with us, young girl, have no fear."

"No, indeed, I shall not go with you, I should rather be burned."

"Come with us to the monastery, you shall live in ease."

"I shall not go to your monastery, I prefer to remain outside."

"Seven young girls of our country have gone there, they say."

"Seven young beautiful marriageable girls, and they have never come out."

"If seven young girls have already gone, you shall be the eighth."

"And one of the monks threw her upon his horse and galloped away."

"Toward his monastery, carrying the girl on his horse, her mouth gagged."

"At the end of seven or eight months, or something more, there was alarm in that monastery."

"At the end of seven or eight months, or something more."

"What shall we do now, my brothers, with this girl?"

"Let us put her in a hole in the ground. The best place would be under the cross. It would be still better to bury her under the high altar."

"Let us bury her this evening under the high altar, where none of her family will ever go to seek her."

"At the fall of day all the heaven was torn asunder; rain, wind, hail, the most terrible thunder."

"Now a poor knight, his clothes drenched by the rain, was traveling late, beaten by the storm."

"He was traveling here and there seeking shelter, when he came to the church of the monastery."

"And he looked through the keyhole and saw a little light burning in the church."

"And the three monks on the left who were digging under the high altar, and at the side the young girl, her little naked feet bound."

"The poor young girl was weeping and begged for mercy."



INTERIOR OF THE CATHEDRAL OF QUIMPER

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"Sirs, in the name of God, leave me my life."

"Sirs, in the name of God, leave me my life. I shall walk during the night, and I shall hide myself during the day."

"And the light went out and the stranger stood at the door without moving, stupefied."

"Then he heard the young girl lamenting in the bottom of her tomb."

"I beg for my child the oil of baptism."

"Then extreme unction for myself, and I shall die satisfied."

"My lord bishop of Cornouaille, awake, awake! You are there in your bed lying on the soft feathers."

several years and demanded back from his friend the money which he had entrusted to him, the latter replied that he had received nothing. The faithless agent was called before the judge of the church, but since the defrauded man had no witnesses to prove the justice of his claim he demanded that the case should be settled by a solemn oath before the image of the crucifix. Both the contestants went to the cathedral, and at the moment when the faithless agent was confirming his lie by a false oath, the two



EXTERIOR OF THE CHAPEL OF THE SACRAMENT FROM THE SOUTH

This chapel is archeologically the most puzzling portion of the cathedral. It has been believed that it is the Romanesque chapel of Notre-Dame, known to have existed in the XI century, and that it was merely rebuilt when it was joined to the cathedral in the XIII century. Although it abounds with irregularities and indications of having been rebuilt (the angle buttresses, for example, must be as late as the XV century) no portion of the existing structure can be earlier than the XIII century. Below the great windows may be seen a door and a window. The purpose of the latter is obscure, but it probably served to allow persons in the garden to take part in services, without entering the chapel. The tracery of the windows is in the style of the last quarter of the XIII century, but that of the ambulatory window, seen to the extreme left, is of the early years of the XIV century.

"You are there in your bed on the soft feathers, and there is a young girl who is groaning in the bottom of a hole of hard earth, asking for her child the oil of baptism and extreme unction for herself."

Less dramatic, but also full of mediaeval poetry, is the legend of the three drops of blood, which is more closely localized in the Cathedral of Quimper.

"An honorable bourgeois of Quimper and the possessor of a large fortune had, before undertaking a pilgrimage to the Holy Land, confided the care of his family and the administration of his goods to one of his friends in whom he had the greatest confidence. When he returned after an absence of

feet of the image of Christ, which were placed one above the other and attached to the cross by a single nail, separated, and three drops of blood miraculously fell upon the altar-cloth." The crucifix and the cloth with the three drops of blood are still preserved as relics in the cathedral.

Still another legend is connected with the central tower of the cathedral. This was built of wood in 1469. In 1620 it was set on fire by lightning and completely destroyed with the exception of the base, which may still be seen under the roof. The fire of the cathedral church seems to have produced a deep

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impression upon the inflammable Breton imagination. Here is a contemporary account of the occurrence, translated from the original document published by Le Men:

"The public appearance of a horrible and very terrible devil on the cathedral church of Quimper-Corentin, in Brittany, the first day of this month, February, 1620, which devil consumed a tower by fire, and there ensued great thunder and lightning. . . . And to know the beginning and the end, the

truth is that on the aforesaid day at half-past seven in the morning, there was a clap of thunder and terrible lightning; and there was visibly seen a horrible and terrible devil in the midst of a great wave of hail, and the devil seized the tower above the cross. The said devil was green, and he had a long tail of the same color. . . .

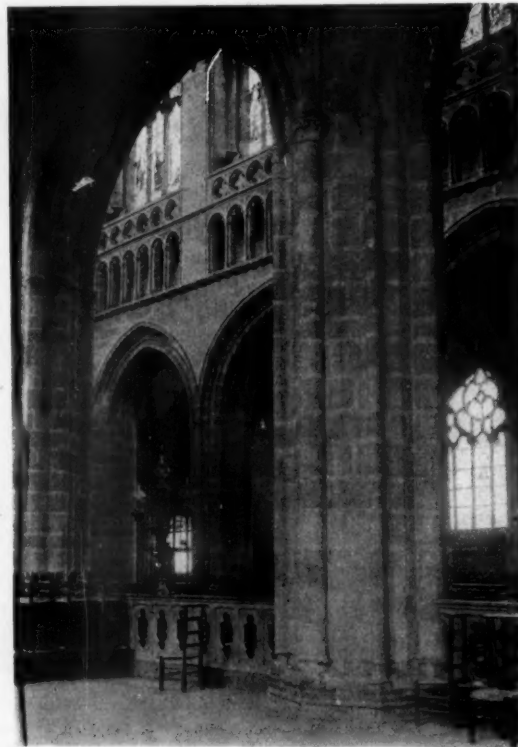
More than four hundred men tried to put out the fire, but could accomplish nothing. Processions went about the church, and in each of the other churches prayers were offered. All this time the fire went on increasing in intensity. Finally they brought out holy relics in the nave of the cathedral near and in front of the fire. The chapter, in the absence of the bishop, commenced to conjure the evil devil, which every one clearly saw in the

fire, now green, now yellow, and now blue. They hurled against the demon many *Agnus Dei*, more than one hundred and fifty barrels of water and forty or fifty cartloads of manure; nevertheless, the fire continued. As a last resource, they threw on a barley cake, costing four sous, in which had been put a holy wafer. Then they took some holy water and the milk of a woman of good life, and all that was thrown upon the fire; and immediately the devil was obliged to take flight, but before he went he made such a great noise that they all thought they were burned."

Thanks to the admirable researches of Le Men, the sober history of the cathedral has been put upon a solid foundation, so that it is possible to assign a date to almost every stone. The church was begun with the construction of the choir in the year 1239. By 1261 the nave of the choir had been completed as far as the level of the vaults. The north ambulatory was finished before 1280, and the altar of the eastern chapel was consecrated in 1295. The ancient altar with the inscription is still extant, and

is archæologically by no means the least interesting feature of the cathedral. This eastern chapel offers a puzzling problem. It is at present dedicated to the Holy Sacrament, but is believed to be identical with the chapel of Notre-Dame, which it is known existed in the eleventh century near the cathedral of Quimper, and in which was buried Alain Carnart, already known to us as the founder of the monastery of Ste.-Croix of Quimperlé. It is the theory of Le Men that this chapel was originally separated from the cathedral, and that it was joined to the latter only in the reconstruction of the thirteenth century. He finds a proof of this theory in the irregularities of the chapel, and in the deflected axis of the cathedral. I confess, however, that I am by no means convinced

that such was the case. There are many indications of alterations of the fifteenth century, but no fragment of masonry, no scrap of decoration in the existing chapel is anterior to the thirteenth century. In the exterior of the eastern wall are visible the traces of an opening, obviously older than the present traceried window. Le Men supposed that this was the apse arch of the old Romanesque chapel, but the character of the masonry makes it evident that such cannot be the case. I have in my possession a photographic reproduction which shows a square Gothic apse to the east



NAVE OF THE CATHEDRAL OF QUIMPER

This is one of the most beautiful monuments of the fifteenth century in all France. The mouldings disappear and interpenetrate, but there is yet little tendency to suppress capitals. Both the details and the general design are of unusual excellence.



FACADE OF THE CATHEDRAL OF QUIMPER, NEARER VIEW

For description see page 461

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of the existing lady chapel. Le Men, who wrote in 1877, apparently knew nothing of this construction, which has since disappeared, so I suppose it to have been a restoration added after his time and subsequently removed. I suspect, however, that the restoration may have been correct, and that there was originally a square eastern apse. When this was destroyed the eastern traceried window was moved into the eastern wall of the main body of the chapel.

From 1295 to 1335 work upon the cathedral seems to have been suspended. Then the southern ambulatory was built. The eastern chapel of the southern ambulatory is dated 1336. As was the case with almost all French cathedrals, work proceeded very slowly during the fourteenth century. The explanation, of course, is to be found in the economic and political disorders consequent upon the Hundred Years War. The city of Quimper seems to have suffered with peculiar intensity in this unhappy age. In 1345 Charles de Blois took the city by assault, and caused fourteen hundred persons to be massacred by his soldiers. Long graves were dug near the cathedral, in which were thrown the bodies "in great pieces."

In 1349 the city of Quimper was decimated by the pest. The memory of this scourge still lives on in Breton legends. In view of such disasters it is not surprising that the construction of the cathedral progressed slowly. It seems, however, not to have been totally suspended, so that the south ambulatory was completely finished before the fifteenth century.

Improved economic conditions resulted in a great burst of building activity. The choir vaults were erected between 1408 and 1415. The choir windows were placed between 1417 and 1419. The western towers and the lateral portals were attacked in 1424, and carried to completion in 1445. The nave appears to have been finished in 1467, and the north arm of the transept was built between 1475 and 1486. The vaults of the transept date from 1487 and those of the nave from 1488-1493. The nave windows were placed between 1490 and 1500. The tracery of the clearstory is contemporary with the glass, and has a profile of different section from the amortizements left in 1467. The façade was finished in 1493, but the spires were not added until 1854.

It is, therefore, evident that the cathedral as a whole is a monument of the fifteenth century. This explains the artistocratic character which so strongly marks the building. It is the antithesis of the French cathedral of the thirteenth century which is imbued with a deeply religious feeling and is primarily an illustration of the Christian dogma. There is little religion in the cathedral of Quimper. The artists were interested, not in the glorification of God, but in the glorification of noble donors. The entire church

vibrates with the praise of the feudal nobility. Not St. Corentin, but the King Grallon, is placed on horseback upon the pinnacle of the western façade. In the central jamb of the western portal, the position of greatest honor, there was placed before the Revolution not the figure of Christ which has now been set there, but the portrait of the Duke John V, carved out of Kersanton. The decoration of this portal is formed not of choirs of angels and hierarchies of saints, but of the coats of arms of the royal family and of the Bishop Bertrand de Rosmadec. This architectural use of heraldry is in the highest degree intellectual and significant, and one



NAVE OF THE CATHEDRAL OF QUIMPER

The choir was begun in 1239 and completed with the exception of the vaults and the glass of the clearstory windows before the close of the thirteenth century. The design shows a mixture of French, English and Norman influences. In this photograph may be seen the S-shaped deflection of axis and the widening of the piers and walls.

cannot help recognizing the fact that it forms a motive of the highest merit considered from an artistic standpoint. It produces the same charm in the cathedral of Quimper as when carried over by the Renaissance architects in the châteaux of Touraine. The fact, however, that escutcheons have supplanted religious symbols is significant of the change that had been wrought in the spirit of the Gothic church. Much heraldry appears also on the

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keystones of the vaults. Like all the coats of arms in the church, these were defaced in the Revolution, and many have been incorrectly restored. It is nevertheless possible to identify the individuals to whom the great majority refer, and by this means the dates of construction for the cathedral can be verified. The study of these escutcheons clearly reveals the aristocratic character of the building, especially when it is remembered that the canons of the cathedral at this period were almost invariably members of noble families. Thus, the shields of the vaults in the cathedral that have been identified include six belonging to bishops, the shield of one bishop being four times repeated; twenty-four or possibly thirty belonging to canons; four belonging to the dukes of Brittany or their family, and one belonging to some other noble. Similarly, the stained glass windows all bore the shields of bishops, canons, the Duke and Duchess of Brittany or of noble families. The principal subject of the windows was the portrait of the donor, usually represented as praying to his patron saint. This saint was introduced, not for his own sake, but simply as a sort of heraldic device to indicate the first name of the donor. The popularity of the warrior saints,

Michael, Marguerite and George, is significant. Thus the praise of nobility was sounded throughout the cathedral church at Quimper. A Renaissance palace is not a more complete expression of the feudal ideal.

With reference to the illustration of the façade of the Cathedral of Quimper on page 459, this shows the ancient portion of the façade. The composition seems to have been inspired by the façades of Normandy, and especially by that of Coutances. The extreme elongation in the proportions of the windows in the towers and the use of shafts may well have been borrowed from that monument. The tracery of the window under the gable seems to show the influence of the English Perpendicular style. The chief defect in the composition of this façade is the fact that the screen wall between the two towers is carried considerably above the height of the nave, thus belying the true size of the latter. There are charming variations in the corresponding features of the two towers. Thus the tracery of the two windows in the lower story is different. Trefoils are introduced under the transverse bars in the great openings of the north tower, but not in those of the south tower. Originally there was a statue of the Duke Jean V in the center of the principal portal, but in the nineteenth century restoration a statue of Christ was placed here. The tracery of the tympanum of this portal is modern, as is also the inner row of voussoirs. The triviality of design and the inferiority of execution are in strange contrast with the charm of the old work. Above the portal may be seen the architectural use of heraldic motives.



Beaux-Arts Institute of Design

DIRECTOR OF THE INSTITUTE, LLOYD WARREN

DIRECTORS OF DEPARTMENTS

ARCHITECTURE, FREDERICK A. GODLEY

SCULPTURE, LLOYD WARREN

MURAL PAINTING, ARTHUR CRISP

Official Notification of Awards— Judgment of March 26th, 1918

PUPIN PRIZE COMPETITION

The gift of Prof. M. I. Pupin of Columbia University.

Offered for the ornamental treatment of some Scientific Appliance.

FIRST PRIZE, \$50.00. SECOND PRIZE, \$25.00.

For conditions governing this Prize Competition, see Circular of Information, Article VIII—Paragraphs 1 and 4.

PROGRAM

The Committee on Architecture proposes as subject of this Competition:

"A DECORATIVE NATURAL-GAS HEATER"

Several states on the western slopes of the Alleghenies employ natural gas for domestic uses; for illumination, for heat and for the *cuisine*. The gas burns with a blue flame, and, to produce heat, is mixed with air and is passed around and through terra-cotta logs, imitation coal or vertical asbestos screens, while the open flame is also used to a considerable extent.

The problem is to design a monumental gas heater applied to the wall at the end of a large hall. This wall is 40 feet wide by 20 feet high. Any one or all of the methods for employing the gas as described above may be used, and combined in a suitable architectural setting rather than treated as a fire-place of the usual type. The gases of combustion should be led away from the sources and gathered together into a common flue. The material may be any fire resisting material desired, latitude being given to produce a composition of great decorative quality, expressing the radiation of heat and light.

JURY OF AWARD: F. A. Godley, L. Warren, W. Lamb, R. M. Hood, L. E. Smith, F. L. Ackerman and H. Hornbostel.

Number of Drawings Submitted: 20.

AWARDS

FIRST PRIZE, \$50: F. J. Kuchler, University of Pennsylvania, Philadelphia.

SECOND PRIZE, \$25: M. W. Alley, Carnegie Institute of Technology, Pittsburgh.

PLACED THIRD: R. Bailey, Cornell University, Ithaca. PLACED FOURTH: L. V. Lacy, Cornell University, Ithaca. PLACED FIFTH: A. A. Scheffer, University of Pennsylvania, Philadelphia.

THE MUNICIPAL ART SOCIETY PRIZE CLASS "A"—IV PROJET

Through the generosity of the Municipal Art Society of New York City this Prize of \$50.00 for First Place and \$25.00 for Second Place, will be awarded annually on the fourth Class "A" Projet of the season.

The Committee on Architecture proposes as subject for this Competition:

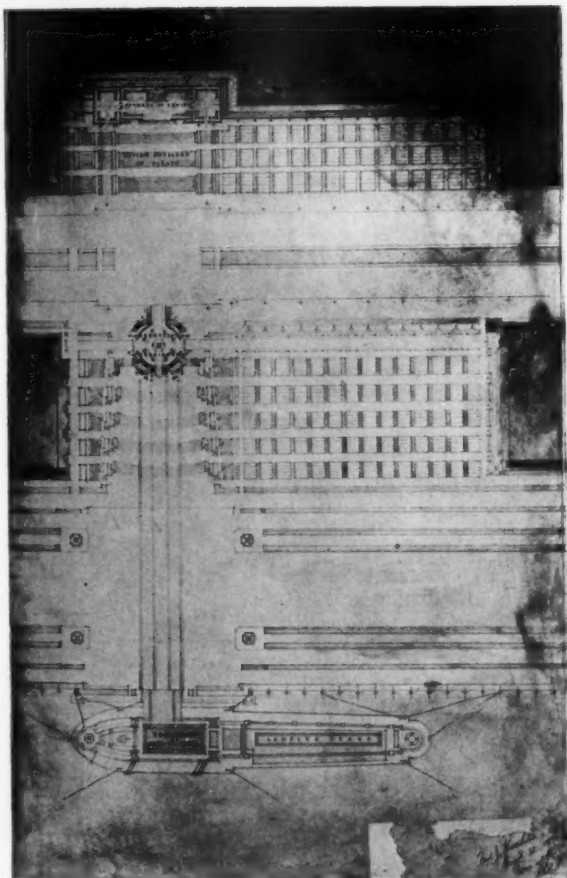
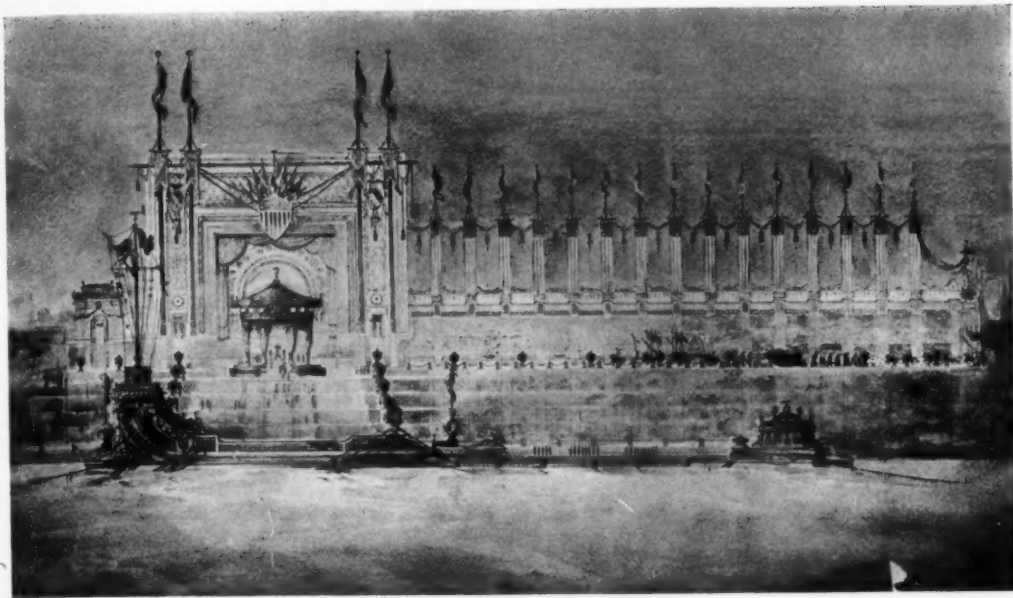
"THE DECORATION OF A LANDING STAGE AND A PAVILION OF HONOR FOR THE RECEPTION OF VISITING RULERS"

PROGRAM

At the victorious conclusion of the present war, fêtes and celebrations will be held in various parts of the United States, and to them will be invited, as guests of the Nation, envoys of our Allied Countries. In this program it is proposed to build a landing stage for their arrival in America, and to arrange about it a suitable decorative treatment for their reception. It must be kept in mind that a construction of this sort would be temporary, and the materials employed should be such as can be procured and put in place quickly, but with a maximum effect of splendor and magnificence, that such an occasion would demand.

It is assumed that the site selected is on the banks of the Hudson in New York City. Running parallel to and approximately at the level of the river is a parkway 250 feet wide. Two hundred (200) feet beyond and at a level of 40 feet above the river is a boulevard 150 feet wide, parallel to the parkway and within the park. The landing stage itself with its surrounding features shall extend out

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MUNICIPAL ART SOCIETY PRIZE



THE DECORATION OF A LANDING STAGE AND
PAVILION OF HONOR FOR THE RECEPTION OF
VISITING RULERS



FIRST PRIZE
F. J. KUCHLER
UNIVERSITY OF PENNSYLVANIA

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into the river not more than 200 feet. In width, parallel to the river, the distance to be disposed of for the integral parts of the problem described below, shall not exceed 550 feet.

The arriving guests will debark from small boats on the landing stage suitably decorated for the occasion, where there must be ample space for the receiving officials and the guard of honor. From here they will mount, by ramps or stair-cases or both, to the level of the top of the embankment, where, in a pavilion, they will be received by the President and dignitaries of the Government. The treatment of this pavilion, from which troops parading the boulevard may be reviewed, is left free, but there shall be arranged as part of it, or in connection with it, large stands for a great number of invited guests, for military and naval officials, and for bands, choruses, and military escorts.

The problem includes the treatment of the entire space as described above, from the further side of the boulevard out into the river.

JURY OF AWARDS: F. A. Godley, T. Hastings, C. W. Stoughton, F. L. Ackerman, H. W. Corbett, F. C. Hiron, E. V. Meeks, H. R. Sedgwick, L. Warren, J. H. Freedlander, L. Ayers, H. Hornbostel and J. Wynkoop.

JURY OF AWARD FOR PRIZE: F. A. Godley, T. Hastings, C. W. Stoughton, L. Warren, H. R. Sedgwick, F. L. Ackerman, J. H. Freedlander, L. Ayers and H. Hornbostel.

PROGRAM: The Decoration of a Landing Stage and a Pavilion of Honor for the Reception of Visiting Rulers.

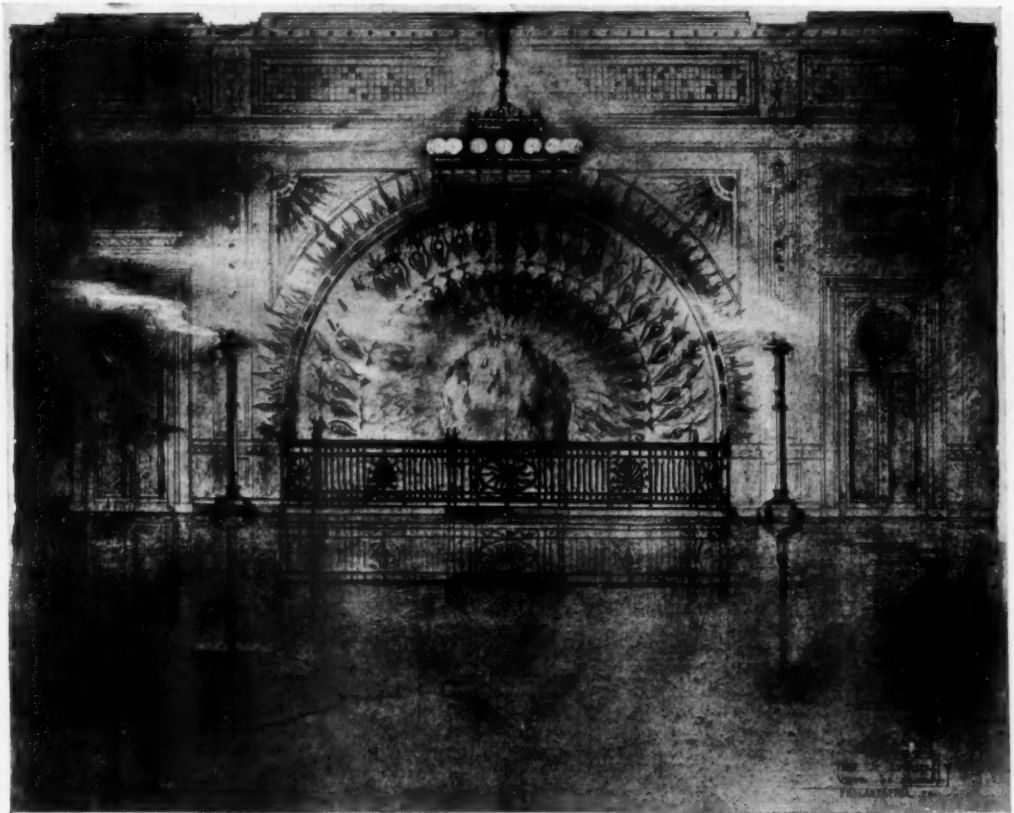
Number of Drawings Submitted: 22.

AWARDS

FIRST PRIZE, \$50: F. J. Kuchler, University of Pennsylvania, Philadelphia.

SECOND PRIZE, \$25: M. A. Bernhardt, University of Pennsylvania, Philadelphia.

FIRST MEDAL: F. J. Kuchler, University of Pennsylvania, Philadelphia.



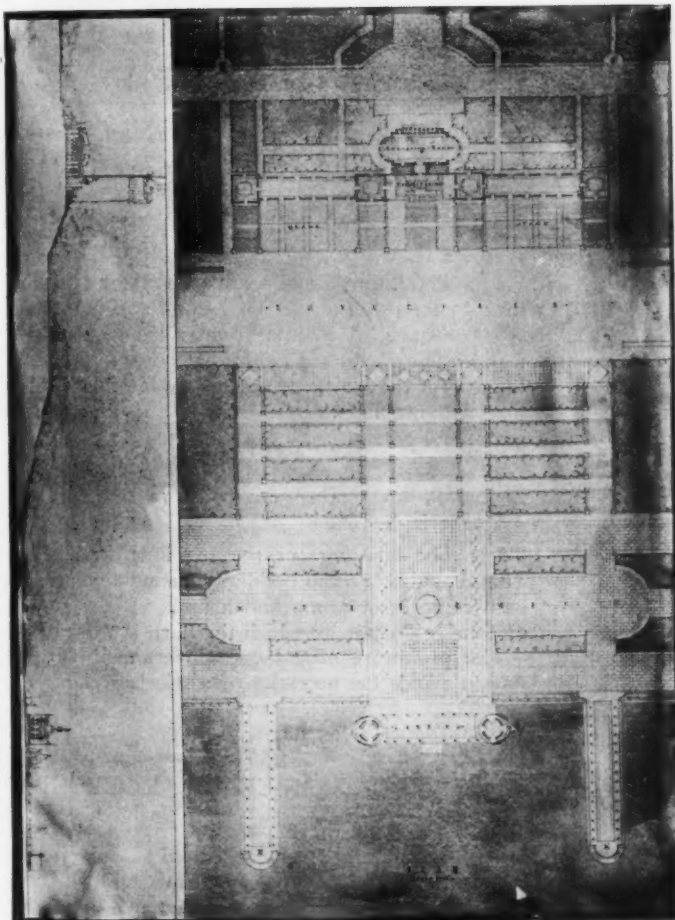
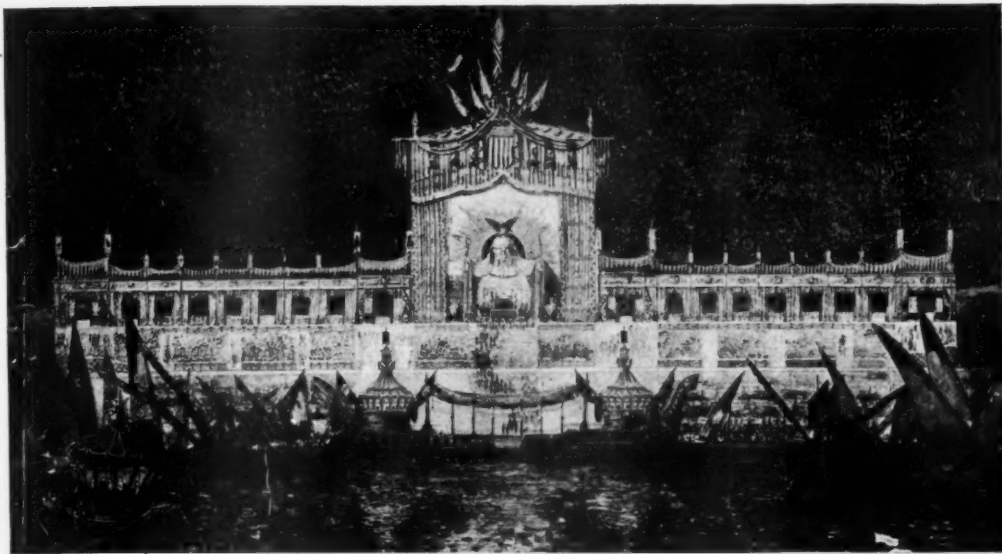
FIRST PRIZE

F. J. KUCHLER

UNIVERSITY OF PENN.

PUPIN PRIZE COMPETITION

THE AMERICAN ARCHITECT



MUNICIPAL ART
SOCIETY PRIZE



THE DECORATION OF A LANDING
STAGE AND PAVILION OF HONOR FOR
THE RECEPTION OF VISITING RULERS



SECOND PRIZE
M. A. BERNHARDT
UNIVERSITY OF PENNSYLVANIA

THE AMERICAN ARCHITECT



SECOND PRIZE

M. W. ALLEY

CARNEGIE INSTITUTE OF TECHNOLOGY

PUPIN PRIZE COMPETITION

SECOND MEDAL: A. N. Steinmark, Carnegie Institute of Technology, Pittsburgh; M. A. Bernhardt and J. H. Samuels, University of Pennsylvania, Philadelphia.

MENTION: M. S. Diamond, Columbia University, New York; R. Wolcott, C. L. Levy, W. G. French and K. Coffin, Cornell University, Ithaca; A. F. Skogse, Atelier Hiron, New York; R. P. Van der Poel and C. J. Schmitt, Syracuse University, Syracuse; E. F. Cullity, H. G. Stewart, A. C. Runzler, F. C. O'Dell and A. M. Pyke, University of Pennsylvania, Philadelphia.

H. C.: A. A. Scheffer, University of Pennsylvania, Philadelphia.

The next *projet* will be a large plan of a practical nature.

CLASSES "A" AND "B"—EQUISSE-EQUISSE

PROGRAM

CLASS "A"—"A LIGHT HOUSE ON CAPE COD"

Near the extremity of Cape Cod the sand dunes rise to a considerable height, forming steep cliffs of sand and clay, which extend in places for miles along the shore, leaving a shelving beach between their bases and the ocean. On the summit of these cliffs it is proposed to erect a light house, which, owing to its height above sea level, will be visible for many miles.

The problem consists of:

(1) The Light House—which should not be more than 55 feet high above the ground and is to be of brick or stone. It should be provided with a stairway leading to the top, and a balcony should be arranged for the lookout, at as high a level as possible that will not interfere with the projection of the beam of light.

(2) The Light-Keeper's House—which should comprise a kitchen, a living-room, and 3 bedrooms, with one bath.

(3) The building for the fog horn and bell.—This should be a small building housing a gas engine with compressor pump and a tank for the storing of compressed air by which the horn is operated.

The proximity of a large Government wireless station avoids the necessity of a wireless plant.

PROGRAM

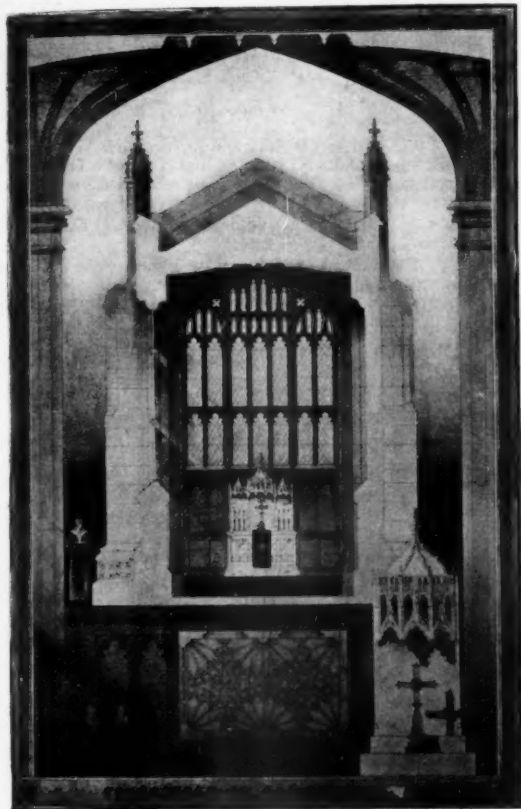
CLASS "B"—"A SEMI-CIRCULAR PERGOLA"

At the end of the main vista in a public park there is a fountain which consists of a pool, circular in form, and about 35 feet in diameter, in the center of which there are basins surmounted by a large

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figure. Owing to the fact that the view beyond the termination of this vista has suffered by the erection of some undesirable buildings, it has been decided to erect behind this fountain a semi-circular pergola which, when covered with vines will serve, to an extent, to restrict the view in that direction and to terminate the vista with an architectural feature. This pergola in relation to the fountain forms the subject of this competition.

The pergola will be formed of columns or piers upon which are laid projecting rafters to which the



MENTION HENRY P. WHITCOMB, CLEVELAND ARCHITECTURAL CLUB

CLASSES "A" AND "B", ARCHÆOLOGY.
IV PROJET.

vines will cling. The only dimension given is that of the pool, it being left to the competitor to design the pergola so that it will be in proper relation to the fountain and to the axis through the park.

JURY OF AWARD: W. Lamb, H. M. Woolsey, R. M. Hood, M. B. Stout and F. B. Chapman.



MENTION R. K. GALBRAITH, B. A. ATELIER, WASHINGTON
CLASS "B"—ESQUISSE

This Jury also served as Jury of Award for Classes "A" and "B" Archæology—Fourth Project and Measured Drawing.

PROGRAM

CLASS "A"—A Light House on Cape Cod.

CLASS "B"—A Semi-Circular Pergola.



MENTION A. F. SKOGSE ATELIER HIRONS
CLASS "A"—ESQUISSE

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Number of Drawings Submitted:

CLASS "A"—16.

CLASS "B"—12.

AWARDS

CLASS "A"—MENTION: J. W. Hershey, Carnegie Institute of Technology, Pittsburgh; A. F. Skogse, Atelier Hiron, New York; E. R. Froese, Atelier St. Louis, St. Louis; E. E. Weihe, Atelier A. Brown, Jr., S. F. A. C., San Francisco.

CLASS "B"—MENTION: R. K. Galbraith, Beaux-Arts Atelier of Washington, D. C., Washington, D. C.

CLASSES "A" AND "B" ARCHAEOLOGY— IV PROJET

"AN ORATORY IN THE TUDOR STYLE"

PROGRAM

Most of the larger castles of the feudal times possessed a small Chapel or Oratory where divine services for the immediate family of the feudal lord were held. These Chapels were dedicated to the particular saint toward whom the family had an especial reverence and under whose protection they placed themselves. The royal chapels as at Windsor and Westminster are examples of this idea developed into a much more extensive program to accommodate the large entourage of the royal family.

The private oratories, however, were much smaller, though sometimes treated with a considerable amount of richness, according to the resources of the owner, and were able to care for only a dozen or so worshippers at a time. It is such an oratory of the Tudor period that is the subject of this program. It is entered by a door from one of the larger halls of the castle and, projecting into a court, is lighted by windows on one or both sides. Opposite the door is the altar or shrine of the patron saint. The interior area is not to exceed 250 square feet. Particular study should be devoted to the vaulting, which may be of stone or wood at the option of the competitor.

Number of Drawings Submitted: 6.

The next archaeology *projet* will be in the period of Louis XV.

AWARDS

MENTION: H. P. Whitworth, Cleveland A. C., Cleveland; P. Friedman, Carnegie Institute of Technology, Pittsburgh; D. R. Wilkinson, Los Angeles A. C., Los Angeles; V. Balikdjian, Syracuse University, Syracuse.

H. C.: C. Pribek, Carnegie Institute of Technology, Pittsburgh.

One (1) Measured Drawing was submitted in this competition, on which the following award was made:

MENTION: W. S. Hoffman, Pennsylvania State College, State College.



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VOL. CXIII APRIL 17, 1918 No. 2208

The Melting Pot of Architecture

THE war passion that prevails to-day has, in every field of professional endeavor, forced long accepted theories, doctrines, points of ethics, and certain assumptions, into one great melting pot. It takes no prescience to foresee that from this crucible a new order of things will emerge when the war is over. We shall have to change our methods, revise a point of view the result of many years of observation. Everywhere there will be conditions so new and radical as to mean practically an entire change in all the habits and methods of long years of professional practice.

It is not prudent to maintain that the profession of architecture will be free from the effects of all these changes; nor will it serve our purpose smugly to entrench ourselves behind assurance which might lead to a prolonged continuation of conditions which are now very generally deplored.

Architects who delude themselves with the belief that their profession will be kept aloof from these great changes, that the matters affecting their work will emerge from this melting pot untouched, are "riding to a fall." Every thoughtful man realizes that there will be world wide changes in the future. We have had to do much thinking and we have had to think quickly. These mental processes have, or will, by the time this war is concluded, have led to conditions that in ordinary times would take decades for fulfillment. Most of these coming events are apparent. They may be foretold

with accuracy even now. It is, therefore, only common prudence to take such measures as will enable us to confront an inevitable condition.

If it is true, as has been claimed, that standardization will become an important element of accepted practice, the problem presented to architects in selling their professional services will then be a more serious one. There will be a large economic saving in materials, labor costs and time, and these things point to a strong commercialization of architectural practice. The artistic incentive to originality of design will be weakened to a greater extent than ever before. In every type of structure to which standardization may be applied, it will very largely eliminate elements of architectural practice.

Probably every other profession is more directly affected by war conditions than is architecture. All of these professions are gradually becoming shaped to meet what will inevitably come when the war is over. Thousands of projects planned and ready for execution are now awaiting the declaration of peace. There will be a rush for markets in this country and abroad and building operations in industrial and commercial types will without doubt be even greater than now. Speed will be necessary and will set aside every other consideration. Then will occur a period when standardization may be equivalent to speed and the greatest menace to architectural progress will be developed. This avalanche of construction work, gaining bulk every day by reason of its present retardation, and waiting only the signing of an armistice to start it on its irresistible course, cannot then be stayed.

These problems which will inevitably arise should engage our attention now, so that when the time comes, architects may find the work for which they are equipped and not witness its execution by less qualified men. If architects are not to suffer effacement they must demand that they be given the work of planning the building, suggesting its equipment, arranging for the accurate and efficient functioning of all its complex parts, and of every utilitarian feature that will make it a success. They must set aside the idea—they may very well forget it, for a time at least—that they are first of all artists. They must be first, last and at all times, practical, hard headed men. Any other course will see the profession so limited in its practice as to leave it stranded with but the Muses for companionship.

It is but common foresight that architects, not only as individuals, but as organized bodies of the profession, set all these important facts squarely before themselves and, as far as may be done, take such action as will prevent unpreparedness for conditions that should have been foreseen and provided for long before. This is a matter that may very

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properly absorb a great amount of time, all too short, given to the Convention of the Institute, to be held this month in Philadelphia.

In a characteristic letter from Mr. Willis Polk, printed in another column, he very correctly analyzes the present situation; and by precept, and what is more convincing, by actual practice, points out the safe road that the profession may follow.

It is a blunt statement, but none the less true, that it should be the cumulative duty of the Institute, and also of THE AMERICAN ARCHITECT, to establish and maintain the ideals of the profession. The ideals were long since established; their proper maintenance is now the all absorbing question.

When men in large practice find that, owing to the false position taken by certain men in the profession, their interests as architects are endangered, they will naturally detach themselves from such association. As in the case of Mr. Polk and many others, they can and will seek to overcome a generally well defined but erroneous impression as to their status, by accentuating the fact that their true relation to their work is as master builders.

This is the exact situation. It cannot be ignored, nor can the issue be clouded by sonorous arguments, emphasizing the esthetic heights to which the profession has soared in the past.

Ancient Builders and Modern

IN all that has been written of our heritage of classic architectural art, in all the controversies as to its origin and its influence on later styles, there has been scant reference to the master minds that created it.

In most instances the names of the architects or master builders are not known. There has been considerable contradictory attribution of authorship, and men whose *penchant* has been toward the scholarly and archaeological phases of architecture have spilled much ink in controversy.

What type of men were those whose work in architecture has survived centuries of criticism? Were they, judged by the time in which they lived and worked, similar in temperament to the men who now represent the highest phases of architecture?

An attempt to answer this question with accuracy is futile. We are "too far from the canvas," and what we see is through the mists of past centuries. Even scholars can only advance opinions, which in turn will be hotly combated by other equally profound men. We know with reasonable

certainty, and in most cases with absolute truth, the history of nations, their rise and fall. We know that the Greeks, leaders in arts, were, as long as they followed the path of rugged, manly endeavor, the masters of the known world. We also know that when they had relapsed into a pleasure-loving, effeminate race they were conquered, and that the Romans, possessing all the characteristics of vigorous manhood, ruled the world. Is it not reasonable to assume that the great buildings of Greece were created before this period of decadence, and is it not an equally correct assumption that in every other period where great things were accomplished it was when men were all that the name implies? There was then no distinction between the artist and the builder; to be one, in the best sense, was also to be the other. If men did not possess the afflatus of art they could not build. Their intimate contact with the materials they used bred a strong, manly attitude toward everything they did. The lines of their structures grew as the creation of strong, well matured minds. They were undoubtedly *men*.

While there can be no comparison between the complex conditions surrounding building operations now and those of that early period, it is fair to assume that while, during these many centuries, we have advanced to our present civilization, there exists, with little difference, the same relative degree of efficiency. It will now, as then, become a question of the survival of the fittest.

If it required practical, red-blooded men to create the masterpieces of architecture in classic times how much more vital is the necessity for the development of a similar type now!

While Petronius was the *arbiter elegantiorum* at Nero's court, and on his word depended the lines that controlled the draping of a toga or the method of lacing a sandal, Rome had reached a state of effeminacy and was nearing its fall.

Beau Brummel and Beau Nash dominated the cut and pattern of a waistcoat, ruled as to the length of a peruke, but they were not of the type of men that have made their country great, nor were the men who achieved greatness to be found among the followers of such men.

There are too many Petronii, too many Beaux Brummel in our present field of architecture. Too many fail to realize that the profession of architecture is but the higher work of the early master builder. We are not the descendants of Scopas and Phidias, but of Ictinus, Callicrates and Vitruvius.

Criticism and Comment

The Editors, THE AMERICAN ARCHITECT:

Your editorial of Dec. 12 and Mr. Young's letters have at least brought out a very decided expression of opinion from many eminent men of our profession, and have shown their loyalty to the Institute. I am most heartily in accord with what they have written in this respect, so it is unnecessary for me to enter the lists in its defense; but there are other sides of the subject that seem to have been lost sight of, about which I would like to say a few words.

First: There is in the architectural profession of this country to-day a decided feeling of unrest and a growing belief that we as a body do not stand in as favorable a light with the public at large as we should.

Second: Why is our profession so frequently ignored; and why are engineers and contractors employed to do work that rightfully belongs to the architects?

These are salient points which every observing man among us must admit exist, and he also must feel that there is, among the masses, a constantly increasing prejudice against the architect. The great majority of our people consider him a luxury that the rich are welcome to, but one that they can very well dispense with. By others he is classed as an arbitrary, dictatorial, impractical crank, who leads them into unnecessary expenses and tries to patronize them. Now what is the cause of this feeling, and what ground has the layman from his point of view for such impressions?

When I commune with myself, I am forced to admit that he has many, for it seems to me that in these latter days of our practice we have too much Art and not enough Architecture. The dictionaries tell us that architecture is the *art of building*, and Sturgis defines it thus: "The art and process of building *with some elaboration*, and with skilled labor." I have emphasized "some elaboration," for I believe that should be subordinate to skilled labor, sound construction and good planning. The men who seek our services want primarily to build; as a rule they care nothing about high art, and still less for a dissertation on period or style. They do not

want to be bothered with our code of ethics, and are not in the least impressed with the F. A. I. A. that we attach to our names. They expect and require direct, practical results, economically and logically worked out, and do not care to have us camouflage behind a glib tongue that discourses upon artistic compositions and harmonious decorations. They require, I believe, more practicability and less theory, less high art and more everyday common sense. Now don't get the impression that I am not an art lover, for I am in every sense of the word, but I have lived long enough in this world to know that you can't give art to the masses in large doses.

And you can't successfully patronize an American; he is too independent. While you may, and probably do, know a hundred times more about art and building than he does, you don't want him to get that impression; the moment you do, and commence to dictate to him arbitrarily or try to educate him up to your standard, he is more than likely to take offense, and will, if possible, throw you over and turn to the contractor or engineer, whom he considers less "highfalutin" and decidedly more practical.

I know that these words of mine will be like waving a red flag, but nevertheless they are homely facts that have come to my notice hundreds of times in the course of long practice. I have watched this growing distrust for years, have tried to analyze its cause, and reluctantly have come to the conclusion that we ourselves are mainly to blame for it.

Time was when an architect not only designed his building, but could, and sometimes did, construct every part of it, and did it well. Of course it is not to be expected that he should do this to-day, but what I contend is that he should be so well versed in the homely side of our profession—if you will—that he can tell at a glance if the work has been well and properly done. We have scores of men who can make beautiful drawings and discourse charmingly upon them, but mighty few who could lay a brick, cope a molding, wipe a joint or even know when such work has been done in the best possible way. This part of our service is delegated to a superintendent or clerk of the works, for whom

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the owner has to pay in addition to our fee, with results something like this: An owner once said to me, "I am paying an architect to erect a building for me; when I go to him about some point of construction, he invariably refers me to his superintendent or my clerk of the works, who both seem to know a darned sight more about practical building than he does. If I ever put up another building I am going to employ a good contractor. No more architects for me! When I engage a lawyer, I expect his advice and not that of a clerk in his office. And when a doctor is necessary I won't put up with services of his assistant, and why should an architect expect me to accept such?"

It appears to me that we are far too exclusive; are not democratic enough in our ideas. We work and strive too much for our own ideals, while paying little attention to those of others. We have placed the artistic side of our craft on such a high pinnacle and have thrown it so much into the limelight that the general public has come to consider us a body of visionary idealists with whom they had better have nothing to do.

This to me seems to be the great fault of our profession in this country to-day. We have been flying far above the average layman. We must come down from our high position and treat our patrons, whose servants we really are—be their social position ever so humble—more from their point of view, to establish in them a feeling of confidence; that we know how to build, and build well; and that we are not doing them a favor when we accept their commissions.

As to the second query:

What I have already written pertains to this point in a measure. There is, however, a nation-wide feeling among shrewd business men that an architect's services, for the ordinary run of work, are unnecessary; that his charges are excessive and that he is not either by training or inclination fitted to do simple, economical planning and construction. To illustrate:

A well-known financier once said to me, "I recognize and fully appreciate the artistic side of your calling, and if I were going to erect a monumental structure would surely employ one of you, subscribe to your code of ethics and pay your scheduled fees, but if I want to build a factory, storehouse, commercial or office building, why should I pay for one of your elaborate designs that I don't require, and which, if built, will cost me more to maintain, and from which I will not obtain one bit more of income than if it had been put up by a good contractor? Say my building is to cost \$100,000; your fee would be \$6,000. Now, almost any of these big contractors will furnish me with plans and erect a

substantial building that answers my purpose in every way for its actual cost, plus 10 per cent. I'll admit it will not be as artistic as if you had been employed, but what do I care about that? It is purely a business proposition with me and I can't for the life of me see why I should expend \$6,000 for art's sake." It will be said by many that a man can't erect a building successfully in this way. I can only reply that in the city in which I write, one of our leading citizens, a very wealthy man, who builds extensively, never employs an architect and advises his friends against them; says they are extravagant, impractical, and of no earthly use. Many are the clashes I have with him, but have never been able to convince him of the error of his ways. He maintains an office, hires a draughtsman or an engineer from time to time to prepare drawings enough to get by the building commission; buys most of his own material, and peddles the work out to various contractors. It's a most slipshod and unsatisfactory method, you will say—to which I fully agree. Nevertheless he has erected the largest buildings in the city; in fact, my own office is located in one of them. His influence against our profession is very apparent.

It is plainly evident that many of our government officials have the same opinion of us architects, like my friends just mentioned, and so are prone to ignore us. That this dispensing with the architect's services is growing to be a very common thing I can illustrate by another instance that came under my personal observation.

A certain young couple, well known to me, had erected a very pretty house; after they had occupied it for a while I had occasion to call. The good lady seemed slightly embarrassed at first, but when I commended her new abode she exclaimed, "I am glad you like it, for we have feared you would think it very strange that we had not employed you, for we like your work; but we simply could not afford to. We had just so much money to spend and had to curtail the expense in every way." "Whom did you employ?" I inquired. "No one," she replied, "we managed thus: Our house is built from one of the prize designs of the — competition. We wrote to the paper and secured a set of plans with an estimate of what it could be built for, for \$25. We sent for a contractor whom we knew did lots of work for you, and he figured the plans and agreed to build the house complete with very slight modifications for the sum named in the newspaper's estimate, which was a little over \$5,000; and this is the result. Don't you think he did a good job?" And I had to admit that he had. "You see, our plans only cost \$25 and we knew that your fees would be at least \$300." And she added, "I know it will not be pleasant for you to hear, but I feel it my duty to

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tell you that we have been so successful that a number of our friends who are contemplating building are going to do as we did."

Another thing that the layman does not understand, and objects to, is our schedule. "How is it," said a friend to me, "that you fellows charge more for your services on a small simple building than you do on a large complicated structure? You want 10, 12 or 15 per cent on a little house that will cost, say, \$5,000, yet are willing to take from 4 to 6 per cent on a building that costs \$500,000. That seems to me all wrong." And no amount of painstaking explanation on my part could change his views. Another friend asked, "Why is it that you of the Institute of Architects all demand the same fees? As I understand it, you have established a certain schedule which you are supposed to live up to. I don't know or care if you all do, but why do you have such a code? No other profession does. Are you all of one calibre and mold? You must have some men that are far better than others, but it seems to me that you class them all alike. Now we have eminent lawyers, doctors and engineers to whom we expect and are willing to pay large fees for their services, and why should not some of you architects be classed in the same way? You are a queer lot and I don't understand your methods of doing business."

When sentiments like these are constantly cropping out among one's friends, what must be the comments of our enemies? To me these straws, which certainly show the direction of the wind, are conclusive evidence that there is something radically wrong, not only with our code of ethics and system of fees, but with our attitude toward our clients, and that there is needed a sweeping change of some kind.

That the Institute is in any way responsible for the conditions I have briefly outlined I do not for a moment admit. Nor do I believe that the formation of a new national organization would benefit us in the least. What is required is a unification of our interests on simple business lines, and united individual efforts on our part to restore the public confidence and to teach them that we are practical *builders* with sound business sense, and not visionary idealists.

WARREN R. BRIGGS.

Bridgeport, Conn.

The Editors, THE AMERICAN ARCHITECT:

Your issue of the 20th instant containing an interesting discussion under the heading "Criticism and Comment" prompts me to observe as follows:

The present practice of architecture is no different from the practice of architecture in days gone by, except that perhaps expression in archi-

tecture has advanced. The practice of this very great profession, however, has not, in my opinion, kept pace with such advance in expression. I appreciate and deeply sympathize with your purpose to give helpful and wide publicity to such matters, but I am afraid that aims in expression and aims in practice have diverged to such an extent that they are no longer complementary. You will note from my letter-head that I have relinquished all pretensions to being an "architect," I only pretend to be a "builder." I have not, for some years, been a member of the San Francisco Chapter of the American Institute of Architects. Automatically, in not being a member of the local chapter, I have ceased to be a member of the Institute. My interest in the profession of architecture is, however, not less on that account—if anything it is greater; but such interest—the establishment and maintenance of such ideals—should be the cumulative duty of the Institute as a body, and the policy of such a journal as yours, rather than of an individual such as I. I now call this attitude of mine to your attention. The following definitions of the word "architect" are submitted:

One whose profession it is to devise the plans of buildings or other structures and direct their construction. One who contrives or builds something.

One versed in the art of building and the various styles of architecture. One who plans or designs buildings and superintends their construction.

A man charged with the preparation for a building, its plan and design, and with the supervision of the work of the builders who actually put it up and finish it. Obviously, an architect may be charged with any part of the work, and may leave it to another at any stage of the proceedings. The man is equally an architect who, having undertaken the task of carrying the whole building to a conclusion, dies after the lot is chosen, the drawings made, and the main lines are staked out upon the ground. Equally is he an architect who, taking charge of a building nearly finished, carries it to completion, including its decorations and final preparation for use. The term signifies nothing more than head workman or director of the workmen, and the exact duties of the architect vary with the epoch, the country, the kind of building, and the wishes of the owner.

An originator, a contriver of structures, a chief and presiding builder.

In view of the foregoing, I think that the Institute and journals such as yours, ought now take steps to regain the esteem and confidence of the public in this most useful and perhaps sacred profession. To this end rely upon my unflinching interest and the full extent of my energy.

San Francisco.

WILLIS POLK.

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The Editors, THE AMERICAN ARCHITECT:

The discussion that has developed through your columns in connection with the effort of a few members of the profession to take soundings has been decidedly interesting and worth while, even though at times a little amusing. Of course, it is not to be expected that the profession will put aside all the shams of precedent; that it will look squarely and thoroughly into the conditions with which we are going to be forced to deal after this war is finished. Architects are human; they are grown-ups who insist on taking very seriously in maturity things that in childhood would have been recognized as merely delightful pretenses. But this is not a trait peculiar to the architectural profession. It is found in all professions, even in business. It is the basis of many institutions that are dear to us—our dignified “secret” societies that dress us up in strange clothing, always for a worthy purpose, of course; our Red Cross buttons without which we would not support that great organization; and a host of other outward and visible evidences of our juvenility. Where does one find a man or woman devoid of make-believe?

Of all the peculiarities of the architectural clan, none is more striking than its attitude toward advertising. And yet this can hardly be denominated a peculiarity, for the attitude of architects is precisely the same as the attitude of physicians, of lawyers, of all the other professional people.

Just what is this attitude? Dare I put aside pretense and answer the question?

It is a wild seeking after advertising, combined with an utter abhorrence of the idea of paying for advertising.

It is an hallucination that publicity obtained through devious underground channels is legitimate; that publicity obtained in what non-professional people regard as legitimate channels is horribly “un-ethical.”

It is a grown-up parallel of the attitude of the visiting small boy that dares not ask for a second helping of ice cream, but wishes it all the more because he has not the courage to run counter to convention and ask for it.

It is a strange fact that the professions all are bound by fetters of conservatism so great that they must view their problems of to-day through Victorian eyes. Thus, professional men visualize advertising even to-day as something having to do with the activities of P. T. Barnum, with the promotion of panaceas, with the sale of salted stocks and watered bonds. And even with this vision, they run after advertising, they get all they can of it—but they will not pay for it. No, indeed!

What is Advertising?

At this point I turn to my dictionary (Standard, edition of 1912) for enlightenment. I get more than I expected.

The word is not in the dictionary!

Perhaps this explains why architects know so little of the subject.

But I do find the verb *to advertise*, thus defined: “To make known by a public notice, especially by printed statements; publish abroad; commend to the public; as to *advertise* an actor.” Thus we have unimpeachable authority to the effect that actors are advertised, even if we are not told that they advertise.

The word *advertisement* also yields an interesting definition: “A public notice, statement or announcement, usually printed (as in a newspaper, circular, poster or handbill), giving information, stating a want or fact, or apprising of an intention, coming event, etc.; specifically a paid announcement in a newspaper or other public print; as ten columns of *advertisements*.”

I must get a new dictionary. One that omits a definition of the substantive *Advertising* is indeed obsolete. But I can frame my own definition and I can improve greatly on the material I have quoted.

Advertising is the dissemination of facts through a paid medium of legitimate character.

Advertising is the antithesis of what most architects, lawyers, physicians and other professional people think it is.

Advertising is a legitimate, cheap publicity, an illegitimate means of spreading the truth.

Advertising spreads only the truth, because the spreading of untruth is not advertising. Publicity asks no questions.

The circus poster with its “greatest,” “grandest,” “most stupendous,” is publicity; it is not advertising.

There is no such thing as fraudulent advertising. There is fraudulent publicity.

These things are misunderstood, because it is only within the last few years that men concerned with the business of advertising have awakened to the dangers growing out of the prostitution of this great force; that laws have been enacted surrounding advertising with protection against quackery and misuse; that advertising standards have been created, making my definition of advertising possible. But these things have happened, and it is altogether likely that the professions will hear of them two or three generations hence.

I have said that advertising is the dissemination of facts through a paid medium of legitimate character. Let us examine into this statement to see how it works out in the case of an architect.

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Assuming that I desire to advertise; that the articles of religion of the profession have been changed so that I may advertise; assuming, moreover, that I select a newspaper of recognized standing as the medium and stand ready to pay for my advertising. What may I say?

May I announce that I am the greatest architect in the United States? Perhaps I believe that I am, but it is clear that the statement is not one of *fact*. It is not susceptible of proof. An architect's standing and ability are merely matters of opinion. No, I shall be getting outside the range of advertising with any of that sort of matter. That is circus publicity.

May I say that I belong to an architectural society, membership in which is a badge of respectability and standing? Yes, if it is a fact.

May I say that I specialize in churches? Yes, if it is true that I do churches by preference and in greater extent than other work.

May I tell the location of my office and the hours when I shall be in it? Yes, for these are indisputable.

Now, let me inquire, what benefit might I derive from advertising, if it is surrounded with these many restrictions?

Assuming that I do endeavor to specialize in churches and that my neighbor across the hall prefers to do factories and warehouses; is it not better that the public shall be kept completely in the dark, so that perhaps he will get the church work which he abominates and I shall have the doubtful pleasure of doing the warehouses and factories? If my answer be based on precedent, on the present attitude of the profession, I shall have to say that it is better, much better. But I do not believe it.

According to present standards of ethics, however, if by indirection and wire-pulling I can induce the editor of the publication in which I may not advertise to give me some *free* publicity, if I can get him to say editorially that I am the greatest architect in the United States, all is well and no canons have been violated, even though I know that I have bred a lie.

Who has not seen that ancient and hackneyed stage scene, the young lawyer awaiting his first client? Complete inaction. Yawns. Stretches. Wonders if he should not have been a chauffeur. Door of outside office opens. Perhaps it is a client! Gets busy. Shuffles papers. Grabs telephone. Ruffles hair. Prospective client enters in time to hear conversation with J. P. Morgan. Greatly impressed. Retainer. All is well.

That is strictly legitimate, if we believe the code. It is not advertising. It is not a gross mercenary thing such as putting a tablet on a building under construction indicating that So-and-so is the archi-

tect and as such is responsible to the state, the municipality and the public for the building's soundness and compliance with law. Certainly not!

If I choose to wear my hair long, by my speech to convey the impression that, but recently removed from dear London or Paris, I am barely able to hold in leash my contempt for this unlettered portion of the globe; if I affect a Norfolk jacket and a golf shirt, but abandon my wrist watch because men, fighting men, are wearing them now, I am within the code. I am not an advertiser. True, I am an undoubted seeker after publicity, but that is entirely another matter.

As a feather in the balance against all the horrors he has wrought, Wilhelm of Hohenzollern has accomplished one bit of good. This war which he started is chasing a lot of silly illusions out of the world. Effeminacy, as we knew it before the war, is no longer a characteristic of the world's workers, male or female. It is no longer the thing to be a *poseur*. We are becoming a people of he men and she women, facing facts. It is no longer the thing to say "limbs" when you mean legs. Prudery no longer stands as a barred door against progress in social science. We are progressing in a thousand ways.

Is it not, then, time to abandon professional prudery? Is it not time to put our profession on a business basis. In your paper, not long ago, I read the statement that someone had defined architecture as "a noble profession, but a hell of a business." Let's knock the hell out of it. The engineers will do it, if we do not.

It is a treasonable idea, of course, but I would like to see some representative organization of architects undertake a great national campaign of advertising on behalf of the profession, having for its purpose the dissemination of the truth about the architect's qualifications, functions, methods and performance. I believe that such a campaign of advertising would restore the profession to the standing it ought to have but has forfeited or nearly so. To illustrate: I never gave any thought to the Pullman car until I began to read about it in the advertising pages of the magazines. Before that advertising began to appear, a Pullman car was just a normal to-be-expected part of railroad service. But I have learned much from that Pullman advertising and in addition to learning much I have uncovered and given thought to much that I knew all along, but knew subconsciously. I have come to realize that Pullman service did not generate spontaneously; that it is the product of a plan; that bad as it sometimes is, it aims at perfection and is infinitely better than it might have been if many men of great ability in their peculiar business had not devoted their lives to making it as good as it is. Of

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course, I knew most of these things, before the Pullman Company began telling me about them in the magazines. But we all know many things that we fail to realize. The public knows much about architects, but how much does it realize of what it knows? Far too little, obviously.

Individually we can do nothing. A web of professional precedent surrounds us. We are helpless, unless help may be expected from our profes-

sional organizations. Will they do anything?

Like other professional men, I am a coward. I dare not say these things, for I lack the courage of a leader. Perhaps you, Mr. Editor, may not permit me to say these things in your columns; but if you do, I shall add to this, perhaps, some further observations that, for want of the name I dare not use, will bear the signature:

JUNIUS, JR.

Nominations for Officers of the American Institute of Architects

In accordance with Article IX, Section 2, of the By-laws of the American Institute of Architects, a group of nine members of the Institute has submitted the following nominations:

For President, Thomas R. Kimball of Omaha; First Vice-President, Elmer C. Jensen of Chicago; Second Vice-President, William Stanley Parker of Boston; Secretary, William H. Schuchardt of Milwaukee; Treasurer, Edgar V. Seeler of Philadelphia; Board of Directors, Edward W. Donn of Washington, Robert D. Kohn of New York, S. S. Labouisse of New Orleans, and Ellis F. Lawrence of Portland, Ore.

No Ban on Building Operations

Secretary of Treasury McAdoo is not opposed to any building operations that are necessary "to protect the health or to provide for the comfortable needs of our people." This is the secretary's own statement made in a letter to President Gompers of the American Federation of Labor.

This letter and a somewhat similar statement made by Secretary McAdoo to a committee of lumbermen which recently called on Mr. McAdoo brings to an end the storm of protest engendered by a previous statement from Secretary McAdoo, which was interpreted in some quarters as advocating a partial cessation of building operations during the war.

The secretary's letter to Mr. Gompers said in part:

"I have your letter of Feb. 15 inclosing copy of a resolution adopted by the Building Trades Council of San Francisco in which it is stated that I have been reported in the public press as having 'appealed to property owners not to construct any

homes or buildings during the war.' This is entirely erroneous. I have said that building operations which are not required to protect the health or provide for the comfortable needs of our people, or to supply facilities for the proper conduct of business essential to the successful prosecution of the war, should be postponed.

"As you know, I have no authority to direct that building operations be curtailed. I have merely suggested that unnecessary building of that kind be postponed until the end of the war. Such postponement would, I am sure, help win the war, but every patriotic man must be determined by his own conscience in the matter and must decide for himself if he can postpone the erection of a contemplated building until the war is over. Compliance with this suggestion may cause some inconveniences which are to be greatly deplored, but such inconveniences are unavoidable incidents to war. The situation must be viewed from a national and not from a local standpoint."

Dayton Architects Are Preparing Maps for Aviators

Made in water colors, a gigantic war map, 20 by 30 feet, is being constructed by the Dayton branch, American Institute of Architects, to be used in the aviation training at Wilbur Wright field. When complete the map will be one of the largest of any being used in any of the aviation schools in this country.

The map is so designed that it will give the students ready reference as to observation and will be studied from a balcony in which the cadets will be stationed while perusing it. Work on the map was begun several weeks ago. Dayton architects volunteered their services and from six to eight men have been engaged on it almost daily for several weeks.

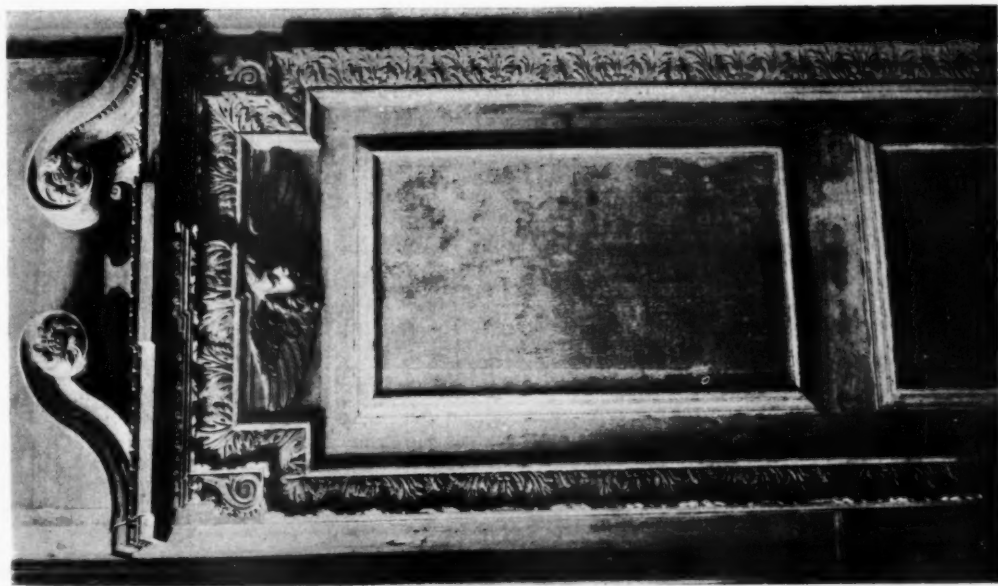
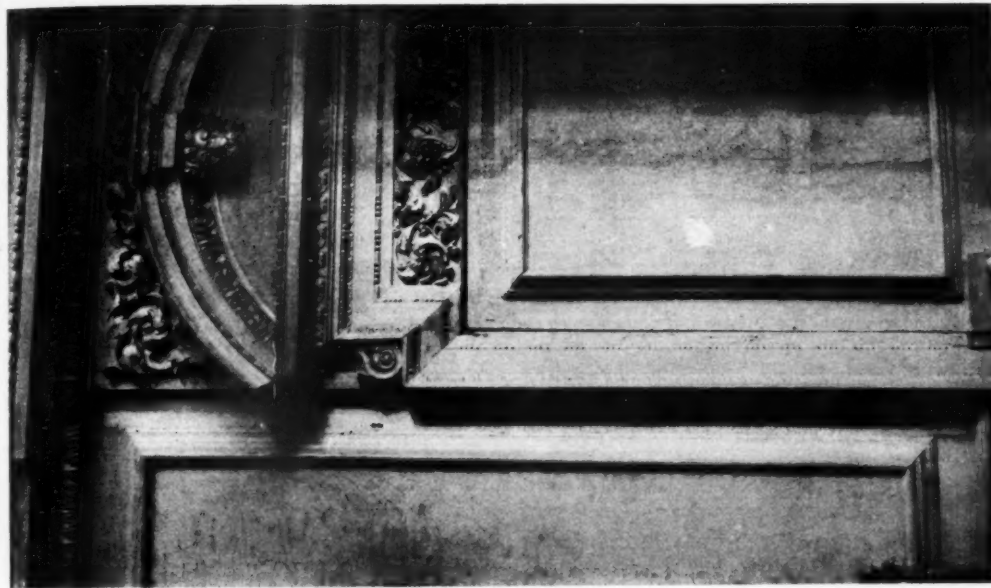
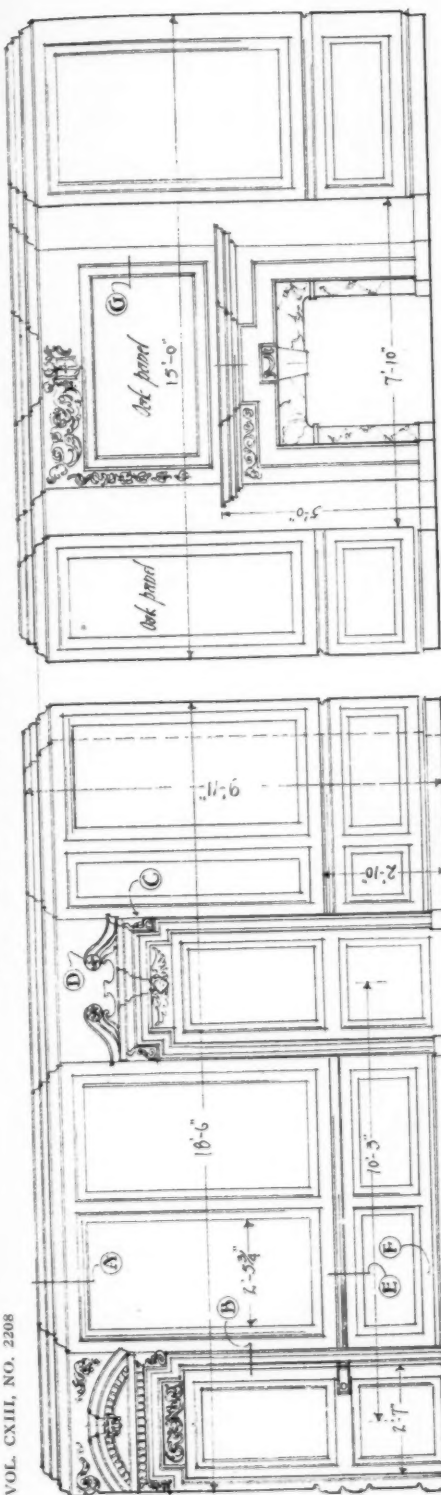


PLATE 134

PANELLED ROOM, FROM CLIFFORD'S INN, LONDON

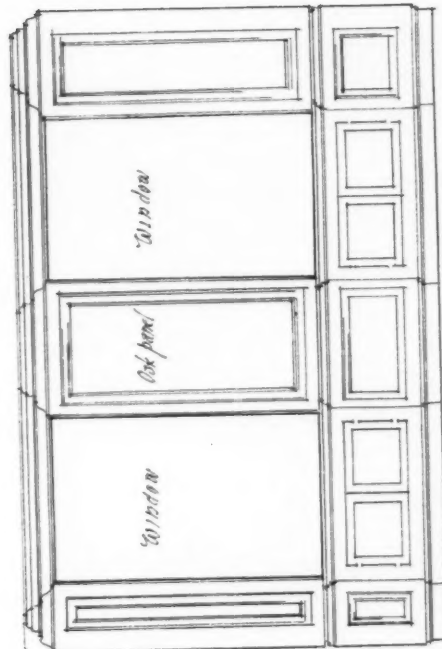


ENGLISH DETAILS
NO. 11



Side opposite similar but reverse hand

End opposite window



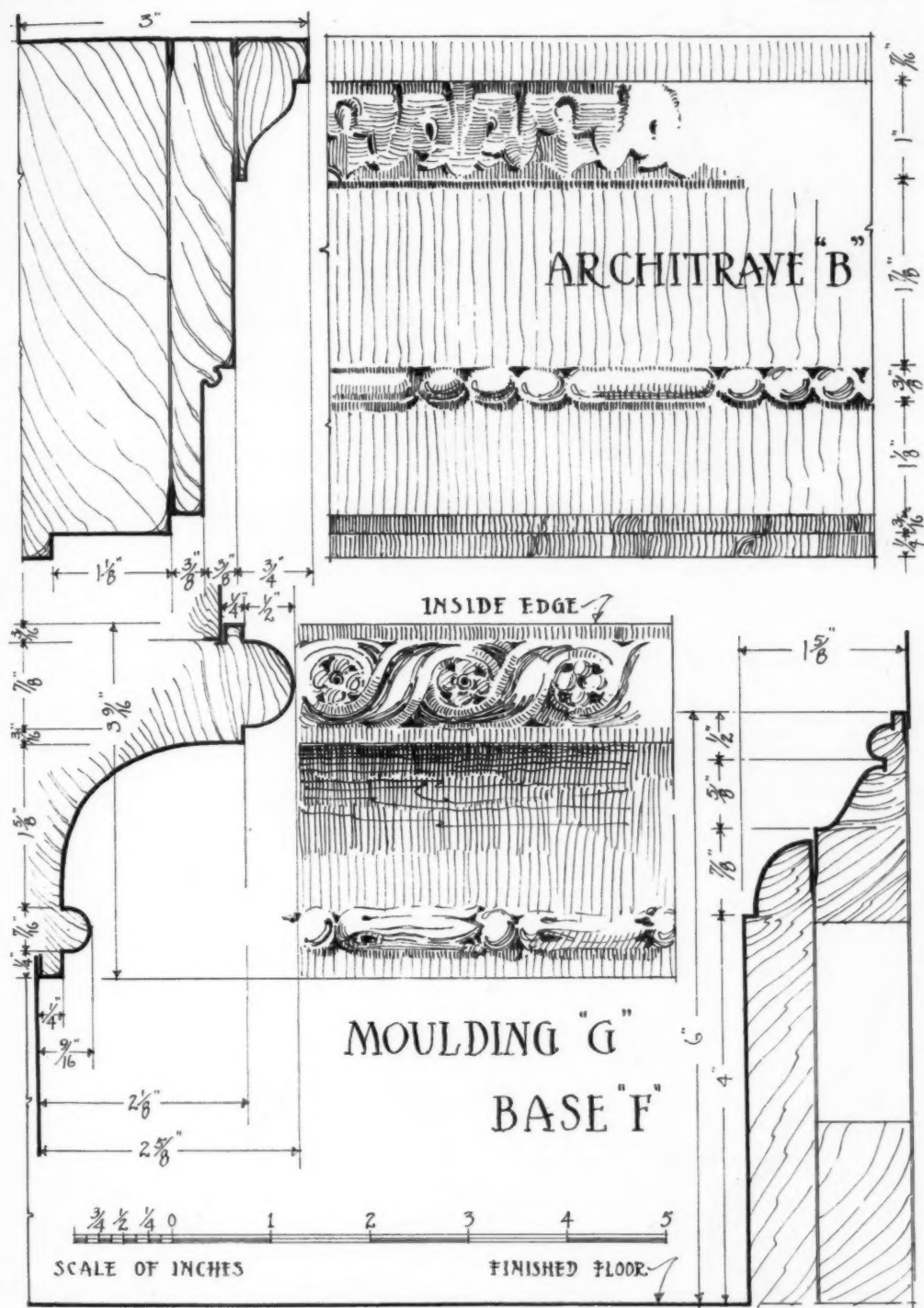


PLATE 136

PANELLED ROOM, FROM CLIFFORD'S INN, LONDON

ENGLISH DETAILS
NO. 11

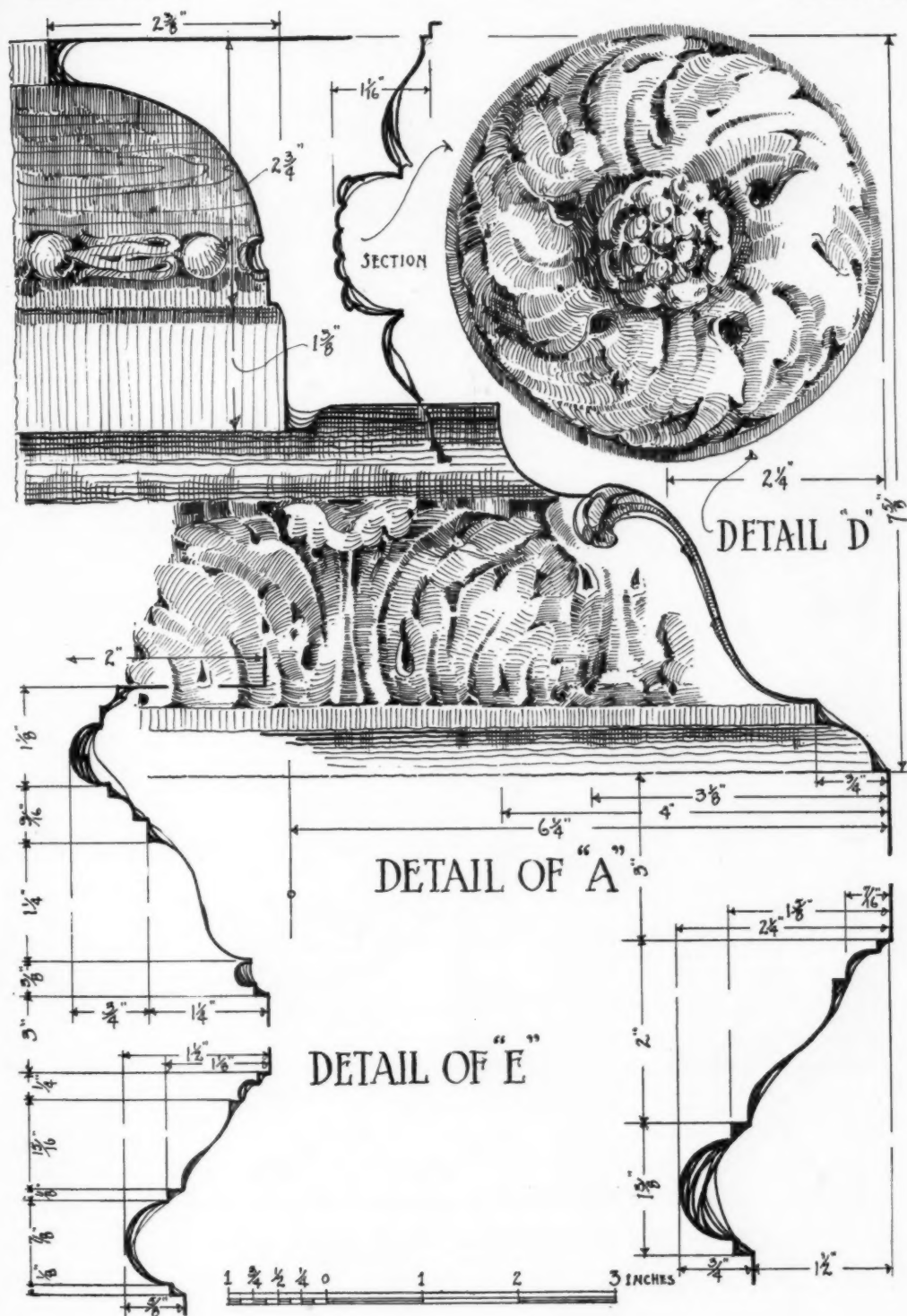


PLATE 137

PANELLED ROOM, FROM CLIFFORD'S INN, LONDON

ENGLISH DETAILS
NO. 11

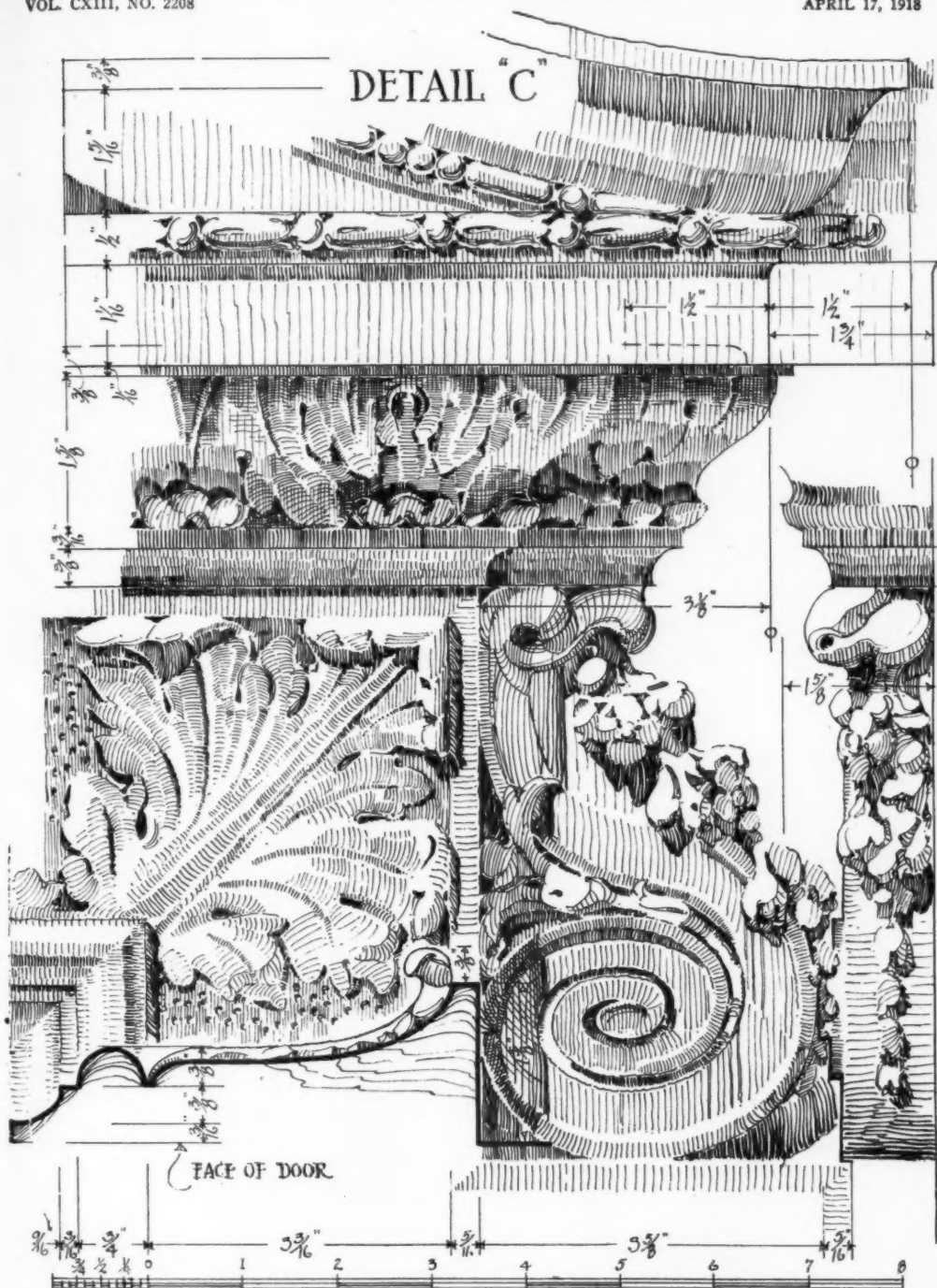


PLATE 138

PANELLED ROOM, FROM CLIFFORD'S INN, LONDON

ENGLISH DETAILS
NO. 11



THE UNIVERSITY OF CHICAGO
LIBRARY
1960



FRONT ELEVATION—ON FIFTH STREET



PLATE 139

STARK STREET ELEVATION

FIRST NATIONAL BANK, PORTLAND, OREGON
COOLIDGE & CARLSON, ARCHITECTS





MEZZANINE FLOOR



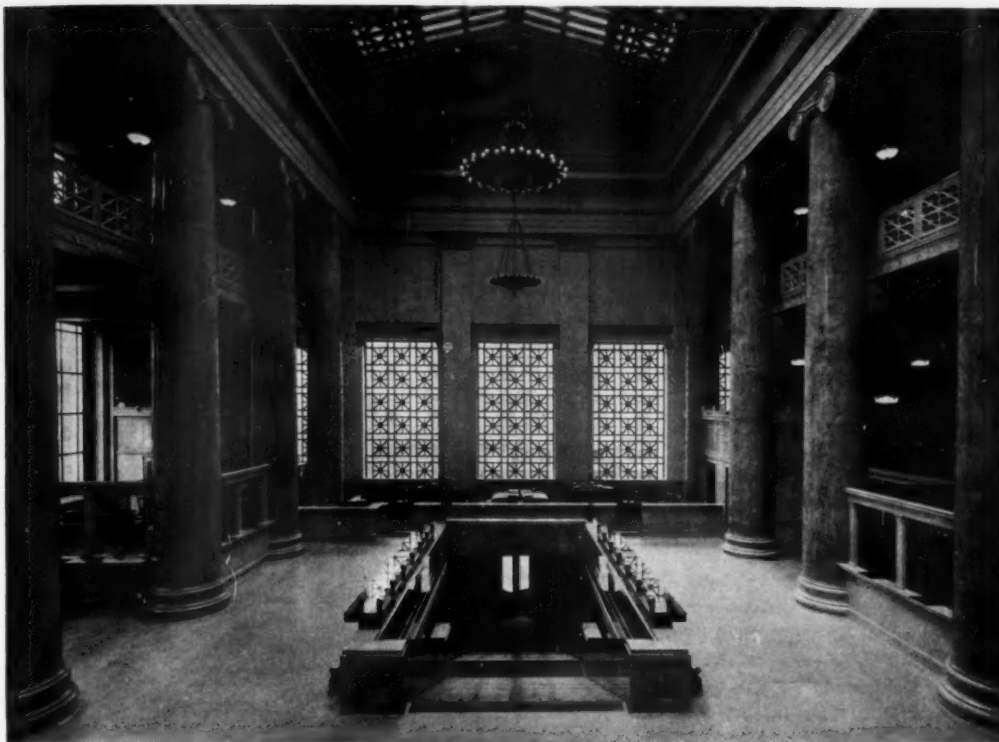
PLATE 140

MAIN STAIRWAY

FIRST NATIONAL BANK, PORTLAND, OREGON

COOLIDGE & CARLSON, ARCHITECTS





GENERAL VIEW, SECOND FLOOR, LOOKING EAST



PLATE 141

VIEW ON SECOND FLOOR

FIRST NATIONAL BANK, PORTLAND, OREGON
COOLIDGE & CARLSON, ARCHITECTS



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English Details

PANELLED ROOM FROM CLIFFORD'S INN, LONDON

This handsome interior, one of the finest exhibits of the South Kensington, came from a house at Clifford's Inn. It is an admirable example of the woodwork of the latter Renaissance, which with its robust character and richness of ornament, is very characteristic of the work of Wren and his followers.

In the prefatory note to a booklet, describing this particular room, recently published by the Museum, and written by Mr. Oliver Brackets, Mr. Brackets says that the panelling was covered with several coats of paint when first brought to the Museum. This has been removed, disclosing a surface of fine tone and marking. "There is no reason for supposing that the wood was painted at the time when the panelling was first erected at Clifford's Inn. The date to which it belongs—the early period of Wren—was characterized by a certain severity in the treatment of interior decoration; ceilings for the most part were left in white plaster, and walls were wainscotted in wood, usually oak or walnut, the natural surface of which was intended to form a background for the carved and upholstered furniture of the time. The galleries at Hampton Court present a typical example of this treatment of interiors. It was not till the eighteenth century that color and gilding became the fashionable medium for the decoration of rooms, and then inferior woods, such as pinewood, were used for the construction."

Architecture No Longer a One-Man Profession

Architecture, to meet present-day conditions, must be a highly-organized business and not a one-man profession, as it used to be, says the *Contract Record* of Montreal. Two circumstances, at least, are directly contributing to this. The first is that modern conditions, especially in the field of industrial endeavor, have made obsolete the small ways of handling big problems. The task of the present-day architect in designing industrial buildings is not comparable to that of many years back. He has to supply the needs of a complicated and intricate organization—an organization that, in most instances, has been developed to a point of high efficiency. This economic situation has required architecture to adjust itself into a highly organized business that it may cope with the problems of its highly organized clients.

The need of eliminating the one-man idea in the architectural profession is no less essential in almost

all lines of building design, let alone the industrial field. Architecture, like engineering, has become a specialized profession—that is to say, it now involves so many divisions and subdivisions that masters of all are rare. There is the creating and designing, the structural part, the mechanical part, the supervision, and the business and administration, and to cope with all of these there is a call for a business organization of specialists, if a large amount of building is to be efficiently controlled.

Another reason for the passing of the one-man idea lies in the competition being met by architects from large building organizations which perform architectural as well as contracting services. These large corporations are gaining ground because they have every facility for financing construction. A Canadian writer regards the intentions of such companies as purely mercenary, and thus opposed to the interests of good design. He says: "It can easily be seen that the building corporation's interest being to sell an article at a profit, they are not going to obtain the best possible solutions of the problem unless it is to their monetary advantage to do so. * * * Undoubtedly, then, if building gets into the hands of business corporations whose sole interest is profit, architectural design will not arrive at the development which it would if controlled by the architect, whose object should be to lead the client to the best solution of the problem in hand."

Whether this is so or not, we cannot get away from the fact that such corporations are competing with architects to the latter's detriment. If the architectural profession is to be maintained on the same basis as heretofore, it means that the profession must be organized. It will have to adjust itself into a business proposition if it is to compete successfully with these new conditions.

Explorations in the Southwest

The American Museum of Natural History has made an excavation and exploration of one of the best preserved examples of prehistoric pueblo architecture in the Southwest. The ruin is situated in the Animas Valley, in northwestern New Mexico, directly across the river from the town of Aztec.

This project, which was undertaken in the summer of 1916, has been financed by Archer M. Huntington and J. P. Morgan. Although the work of investigation has not yet been completed, the discoveries made have quite surpassed the expectations of the investigators. The pueblo proved to be in a good state of preservation, showing the type of construction and materials used; it contained a large assortment of implements, utensils and ornaments of various sorts.

City Planning and the Small House

John Molitor, Chief of the Bureau of Housing, Department of Health, Pennsylvania, has recently written the following admonition with reference to the importance of the small house in city plans:

There could be no greater civic asset than carefully safeguarded laboring men's neighborhoods. The good results of every housing code would be greatly enhanced if they were applied in neighborhoods created and maintained over extensive acres, carefully and permanently safeguarding the surroundings of the laboring man's home. Self-initiative could not be encouraged more than by giving the laborer protection similar to that given in the developments for better homes.

Great commercial highways may be planned, but suppose the abutting blocks are not properly planned, is it not evident that the street will prove a failure? Residential streets may be mapped out, but suppose we forget the housing element in this subdivision, can an economic and healthful layout of houses be effected? Generally speaking, it can not. Volumes have been written extolling the virtues of the small house, and it can safely be said that almost every one approves of it. Better morals, a sense of responsibility, and increased pride follow in the wake of these small houses, and when the three characteristics mentioned have been instilled into a person, higher ideals and efficiency result. Crowding? Yes, just as much congestion or overcrowding could take place in these houses as in any tenement, but it does not. Sanitary conditions are vastly better. Sunshine and air are more abundant. To-day "small house" building is an art of itself.

That the small house aids in the distribution of population is also a fact which has an important bearing on the "city plan." Comparing the density of population, for example, in any tenement district with the population in an average small-house district gives astonishing results. In planning or providing for future extensions, etc., the ultimate service necessary can easily be determined, and this in itself is a wonderful help to either a city builder or planner. Naturally, there are adverse transit effects created in a "small house" plan, and one of these is the length of the local distribution lines. If the transportation problem is properly solved, rapid transit lines will carry to distributing stations and the local surface lines can be comparatively short.

This is the era in which a man is judged, not by the number of hours he works, but rather by how much he produces. In other words, efficiency is the measuring rod. Can any one doubt that environment affects efficiency? Is it not reasonable to suppose that a workman will desire to work where he

can find the best living conditions? For the past twenty-five years great corporations have been removing to the open country, establishing new communities and providing the "small house" for their workmen. How, then, can we plan a great industrial zone without due consideration to the housing of its workmen, and is it not true that the "small house unit" has a vast controlling influence?

Evenness of distribution of population produces a higher moral plane, greater sense of responsibility, and appreciation of various benefits provided and will tend to produce a natural protection for these qualities. With this co-operation greater projects can be planned and supported, and in time no man will be so ignorant as not to appreciate the greatest work of art that man has ever produced—the modern healthy city.

Thus we see that the small house and the inhabitants thereof play an important part in the drama of city planning, and it remains for us to get our thoughts together and perfect this element which has such wide influence. Beautify it, spare no effort to make it the most comfortable place in the world for its dwellers, and they will return the effort put forth in their behalf many fold. The inward thought of man is just as readily influenced as it is expressed by his home. Why lose this splendid opportunity for molding characters?

Plan, plan well, but forget not the real element of all good and effective planning—the small house.

The Soldier of Industry

In all the shipyards of the country, states *The Annalist*, in all the foundries of the country, in all the factories of the country where materials essential to the prosecution of the war are produced, there is a man who pounds the rivets with which ships are pieced together, who pulls out of the blazing furnace molten plate with which the machinery of agriculture and manufacture is made, who turns metal into bullets and shells with which the tides of battle are turned. He is the soldier of industry fighting a battle 3,000 miles away from the European front, but a battle which must be won before the United States and her allies can carry that great conflict over there to a complete and decisive victory.

This man is labor. Think of him, however, not in the terms of war, not in the terms of patriotism, not in the terms of any economic, social, or political principle so abstract that he becomes an abstract quantity himself. Think of him rather in the simple terms of hours and wages, in the simple terms of a family to clothe and to feed, and realize that the nation must take care of this soldier in the factory

as it takes care of the soldier in the trenches—must see to it that he is paid well, that he is housed well, that he is fed well, that he is clothed well—in short that he is provided with all the material equipment required to render him capable, in the popular phrase of the day, of 100 per cent efficiency.

Structural Steel

The steel industry is practically marking time pending the results of the hearings between the manufacturers and the War Industries Board, now being held in Washington. A new scale of steel prices, involving a considerable increase over the current figures, has been asked, effective when the present scale expires. There has been but a limited amount of new business registered for private construction, although there are a number of important operations out for estimates that, if let soon, will have a tendency to alter the market situation. Government construction remains as the dominant factor in the market for fabricated material, and there are bright prospects of increased orders from this source. The Quartermaster Department is preparing its schedules for material to be used in the erection of a number of piers, storage warehouses and other structures on the Atlantic seaboard, and there is still a considerable amount of tonnage to come from other departments for military and naval building work. According to the report of the Bridge Builders and Structural Society for the month of February 55½ per cent of the total capacity of the bridge and structural shops of the country was contracted for.

Good Housing Agitation

In his capacity as president of the Boston Chapter, A. I. A., Ralph Adams Cram has recently appointed an executive committee selected from Boston architects prominent in the profession to take active part in a campaign for better housing.

Headed by Edwin S. Dodge, chairman, this committee comprises C. H. Blackall, W. Stanley Parker, Charles Collins and Walter H. Kilham, and it will be responsible to a general committee of about twenty other members of the profession of which R. Clipston Sturgis was elected chairman.

The plan is to urge social, civic and labor organizations to unite with architects in a comprehensive and far-reaching discussion of good housing. When the various societies have united, it is probable that an appeal for funds will be made, and propaganda undertaken to awaken community interest in every possible way.

230,000 Building Ships

YARDS WILL NEED 150,000 MORE MEN IN NEXT SIX MONTHS

Shipyards are now obtaining their labor through the United States Employment Service, and it has been announced that up to this time there has been no shortage of labor except of skilled mechanics. Approximately 230,000 men are now engaged in shipbuilding, and 150,000 more will be needed in the next six months.

"There is a shortage in all yards of men who have had actual experience in shipbuilding," the statement of the employment service says. "So far as reported, the number of men needed for building wooden vessels within the next month is 4000, within three months 6000 more, and within six months 7000 more, or a total of 17,000 men for wooden shipbuilding in the next six months.

"Men needed for building steel vessels within a month are about 25,000, within three months 42,000 more, and within six months 65,000 more, or a total of approximately 132,000 men needed for steel shipbuilding in the next six months.

"There are at present about 230,000 shipbuilding employees."

Planning An Ideal City

Following upon the heels of prosperity, the better building idea has taken a strong hold in South America. *The American City* has an interesting account of activities in this direction. "The municipal authorities," it states in an article on Buenos Aires, "have organized a commission for the encouragement of architecture in the business as well as the residential parts of the city, and a prize—a gold medal and diploma—is offered each year for the most attractively designed structure erected. The owner of the building is also relieved of the payment of the taxes that would be ordinarily assessed against the property for a specified time. The building line and the height of the structure relative to the width of the street are carefully established, and the law regarding them strictly enforced."—*Bulletin of Municipal Art Society*.

Chicago's Boulevard Improvements

Anyone who has a good suggestion to make for beautifying the new Michigan Avenue extension in Chicago is invited to submit it to the Architects' Committee Headquarters, 608 National City Bank Building, Chicago. The architects on the committee are determined that the completing of the boulevard system shall make Chicago one of the beautiful cities in the United States.

Substituting Other Materials for Wood

An interesting report on the substitution of other materials for wood has recently been published by the Government. It may be obtained upon request and the remittance of fifteen cents to the Superintendent of Documents, Washington, D. C. This report is a statement in part of the recent investigation of the Federal Trades Commission and the Forest Service into certain conditions in the lumber industry. It is now for the first time available to the public.

The report is illustrated with charts showing the relative trend in prices of lumber, brick, cements, and structural iron for twenty-five years ending 1915. There are also charts showing (in part) the consumption of building brick, of iron and steel structural shapes, of natural and Portland cement, of clay building materials and of cut and wire nails. A graphic study of building permits in twenty of the larger cities of the country is included. The increasing use of metal trim and metal furniture is also shown.

To Fix Liability for Preventable Fires

The National Fire Prevention Association has resumed its campaign for the enactment of city ordinances in regard to liability for preventable fires. They would fix the liability for cost of extinguishing fires upon those who ignore fire prevention orders.

It is stated that the law as urged will follow that enacted in Cleveland, Ohio, as a type.

The enactment of an ordinance of this character would undoubtedly measurably decrease the annual fire loss. The work of the N. F. P. A. in this cause should receive very general support.

Day Labor Plan Rejected

The Construction Division of the War Department, convinced that the day labor plan of construction is slow and ineffectual, has rejected this method of building. Prominent men have done this, men whose experience and knowledge in the building fields are unquestioned. They are so sure of the greater cost and poorer workmanship to be expected under that system that they intend to handle all the work under their jurisdiction by general contract. In the greatest building program yet known, this decision should accentuate certain facts and conditions too often overlooked.

Engineer Officer Runs Town in France

The kind of work that some of the Engineer Reserve officers have to tackle in France is indicated by a recent letter received in this country from Capt. John F. Osborn of Boston, who writes to *Engineering News-Record*:

"I have had charge of two companies of the regiment practically since I landed in France. We have been doing a large amount of construction work under trying conditions. We have been building what amounts to a small town, with water-works, sewerage system, electric lighting, etc., and I have had to be mayor, chief of police, fire department, judge, court and all. I have had under me nearly a thousand men and it is really some little job to look after the food, clothing, medical attention and all. I have quite a contractor's organization worked up which would be of considerable value to some contractor if it could be turned over entire. Osbornville, as the men have called this division of the landscape, has grown very fast.

"The regiment got together for review the other day and it certainly made a fine appearance. The band, whose instruments were paid for by the Boston Society of Civil Engineers, is certainly a fine addition, and is much appreciated by the men. The generosity of the society made it possible to give these hardworking boys the pleasure of listening to and marching to the martial tunes we love so well. An engineer regiment is not allowed a band, but the help of the society was such as to give the boys something which would have been greatly missed."

Personals

P. Thornton Marye, architect, Atlanta, Ga., has received notice that he has been commissioned as a major in the quartermaster's construction corps of the national army, and is leaving at once for service.

R. A. Curry, architect, has established architectural offices in the Union Building, No. 4 The Bund, Shanghai, China, and will be interested in receiving manufacturers' samples, catalogs and export prices.

Harry Creighton Ingalls, architect, announces the removal of his offices in New York City from 15 East Fortieth Street, to the Equitable Trust Building, 347 Madison Avenue, where, in addition to his own practice, he will carry on the architectural practice of F. Burrall Hoffman, Jr., during the latter's absence with the army.

Industrial Information

Corrugated Fire Doors

The Merchant & Evans Company of Philadelphia in a catalog illustrating their "Almet!" fire doors and shutters and their Star ventilators presents a series of very pertinent facts regarding the importance of fire doors and shutters and the efficacy of their products. In a general description of their fire doors they call attention to "a double panel of heavy corrugated galvanized steel, lined with the best grade of sheet asbestos and bound in a rigid, continuous frame of $3/16" \times 2\frac{1}{2}"$ bar steel.

"This frame is reinforced on all edges by an extra heavy binder of galvanized steel, thus forming a box for the panel and preventing the damage that always occurs to fire doors of other types.

"There is ample provision for expansion and contraction so that any distortion or warping of the door is impossible. The construction provides a series of regular air spaces, properly insulated and covering the entire area of the door. This reduces radiation of heat to a minimum."

They give a short specification which can be used as standard for their products, and also present the "Regulations for the Protection of Openings in Walls and Partitions Against Fire," adopted by the National Fire Protection Association.

Elaborate diagrams and photographs, together with descriptive text matter, portray the Merchant & Evans fire doors and shutters in a variety of uses.

The Star ventilator, manufactured by this company, is also shown in this catalog. Various sections are given showing its construction and operation.

The four standard types of ventilators manufactured by this company are as follows:

1. New Standard "Star" Ventilator.
2. New Fire Retarding "Star" Ventilator.
3. Skylight "Star" Ventilator.
4. Fire Retarding Skylight "Star" Ventilator.

The stock sizes of these ventilators run from 3" to 96". They are made up in galvanized iron, steel or copper. Special designs and materials can be obtained at the specification of the purchaser.

Series of Standard Specifications for Building Materials

The first of Nolan's series of standard specification forms and condensed descriptions of building materials consists of specifications and data for tin roofing. The special data for this number was furnished by the N. & G. Taylor Company of Philadelphia.

These bulletins, which are available at a price of 25 cents, are recommended by the A. I. A., and are edited to conform as far as possible to the standards of that body.

The purpose of the series is to have placed in the hands of architects, engineers, contractors and others interested in building, in permanent, standard form for filing, brief and accurate data for specifying and using building materials and appliances. Thomas Nolan, the editor of the series, is a Fellow of the American Institute of Architects, and professor of Architectural Construction at the University of Pennsylvania.

In this issue the topics taken up are: How a Tin Roof Should Be Laid—which is illustrated by a number of cuts; Color Suggestions for Tin Roofing—the artistic possibilities of roofing tin; Information for Architects—covering painting, roofing weights; weight of sheathing boards, snow load and wind pressure; Some Roofing-Tin 'Don'ts'; and information as to the covering capacity of roofing tin.

Corrugated Steel Cores

Berger Corrugated Steel Cores, one of the building specialties of the Berger Manufacturing Company, Canton, Ohio, is advertised as an economical type of floor construction for large span work. Floors built in this manner, it is stated, can be carried on bearing walls, or on steel or reinforced concrete.

This material in itself constitutes steel forms, on which concrete is cast, forming T-beams at the juncture of the cores. Additional reinforcement can be made in the concrete T-beams, although little

reinforcement is needed, due to the light dead load.

Some of the additional merits of this type of construction lie in the facts that pipes can be laid between joists; the air spaces beneath the cores make the floors sound-proof; there are no beams or girders projecting on the ceilings below—which means a uniform plastering surface, and the fact that this material is light in weight, not bulky or easily breakable, all of which make for easy transportation.

"Concrete in Industrial Housing"

"Concrete in Industrial Housing" is the title of a recent booklet issued by the Portland Cement Association, 111 West Washington Street, Chicago, Ill.

The vital question of housing is taken up in its relation to concrete; the advantages of concrete houses, as seen by this organization, are set forth, and ample illustration is offered of the part which concrete is now playing in the solution of this great national problem.

A statement is made at the end of the pamphlet to the effect that the Portland Cement Association is at the service of those interested in housing questions, and that it will co-operate with them, without obligation, so far as it is able.

Wood Finishing

In a book entitled "Letters on Wood Finishing," Pratt & Lambert, Inc., Buffalo, N. Y., present to the architectural profession useful and most attractively assembled information on this subject.

This bound book has been issued in response to a general request that this material, originally published in a series of monthly letters, be assembled in permanent form.

The manner in which this work is handled is in itself worthy of comment, while the subject matter is of a sort to interest every architect. There are additional letters on such fascinating subjects as cold water paints; enamel finish—its possibilities and desirability; the charm of American walnut; the "Oak Period"—and many others.

This material is available to architects on request, and is worthy a place in any architectural file.

Hand-Power Elevators and Dumb Waiters

The Sedgwick Machine Works, 128 Liberty Street, New York City, issues a number of descriptive catalogs, illustrative of their products. In catalog M the leading types of Sedgwick hand-power elevators and dumb-waiters are shown. Cuts display the entire mechanism of this equipment, which is said to be made up of carefully selected, high-grade materials throughout.

The catalog states that estimates on completely installed outfits will be furnished on request.

In addition to this catalog, descriptive matter is available on automobile elevators, brass tube dumb-waiters, fuel lifts, gravity lifts, hospital elevators and invalid elevators.

Flood Lighting

Flood lighting has become an established branch of illuminating engineering. It is now possible to meet the predetermined requirements for "bringing out" during darkness, with daylight clearness, the beauties of architecture, the commercial value of signs, to illuminate large areas of land and water and to permit the maintenance of an effective watch on property under guard.

Bulletin No. 303 of the Crouse-Hinds Company, Syracuse, N. Y., illustrates and lists the various types of flood light projectors and reflectors developed by that company. A large amount of engineering data on projectors is given, with accompanying diagrams.

The purposes and possibilities of each type of fixture shown are set forth, together with data as to style, weight and prices. Dimensioned measured drawings are also given.

H. W. Johns-Manville Company Opens New Branch

The H. W. Johns-Manville Company, whose home offices are at Madison Avenue and Forty-first Street, New York City, announces the opening of a new branch office at 1015 A Street, Tacoma, Wash., where complete stock of Johns-Manville products will be available.

Department of Architectural Engineering



PLACING SLABS ON ROOF

FACTORY FOR THE SILVEX COMPANY, HELLERTON, PA.

Gypsum a Structural Material

THE fire-resisting and insulating properties of gypsum are well known through long usage. Its properties as a structural material have been investigated by Mr. Willis A. Slater, Assoc. M. Am. Soc. C. E., of the Laboratory of Applied Mechanics, University of Illinois. These tests were made during 1914, 1915 and 1916 in accordance with a comprehensive plan, and Mr. Slater's reports have been drawn upon for the design standards and much of the test data here presented. Gypsum is successfully used as a structural material and can be accepted as such, subject to certain limitations. This usage, as a structural material, corresponds with the conclusions drawn from the test data and verifies their correctness.

The first division of the tests was made to establish the structural properties of the material, the second division consisted of load tests to determine the applicability of reinforced gypsum to roof or floor construction. Of 1,200 tests 1,000 were compression tests, 75 were pull-out tests to measure bond strength, 40 to observe corrosive action, 12 to

determine the modulus of rupture of unreinforced gypsum in tension, 50 tests of reinforced T beams 8 feet long, and the balance miscellaneous load and fire tests and the effect of storage in temperatures



PLACING ROOF SLABS IN WINTER

AMERICAN SPIRAL PIPE WORKS, CHICAGO
DAVIDSON AND WEISS, ARCHITECTS

THE AMERICAN ARCHITECT

between 100 and 200 degrees (Fahr.) on the strength.

Tests made on small specimens composed of a structural grade of gypsum developed the fact that the attainment of maximum compressive strength depends on the dryness of the material rather than upon the age. Strength increased with age after the set had taken place because the drying progressed with age. Specimens dried at 100 degrees (Fahr.) showed a temporary high strength as soon as dried,

of water. The strength 24 hours after set had taken place was about 50 per cent of that of dry specimens.

The effect of immersion in water was to reduce the strength almost immediately by 50 per cent, but after soaking 182 days the strength was still about 40 per cent of the strength of the dry specimens, or 769 lb. per square inch. The addition of hydrated lime causes a reduction of compressive strength approximately proportional to the amount of lime



INTERIOR VIEW SHOWING GYPSUM ROOF SLABS IN PLACE
WHITNEY GLASS COMPANY, GLASSBORO, N. J.
THE DeVORE-McGORMLEY COMPANY, ARCHITECTS

but this strength soon fell to about the same as that of specimens dried at ordinary temperature. The permanent strength of dry specimens mixed to a standard consistency, and with one-tenth of one per cent of retarder was about 1,900 to 2,000 pounds per square inch, whether dried at 100 or 70 degrees (Fahr.) regardless of the size of the specimen.

The strength fell off regularly with an increase in the percentage of gaging water. The range in strength was from 380 lb. per sq. in. for 53 per cent of water to 2,350 lb. per sq. in. for 35 per cent

added. With ten per cent of lime the reduction was about 30 per cent.

The bond strength of one-day-old specimens was not affected by the addition of hydrated lime. Dry specimens with added lime up to 4 per cent of the weight of the gypsum showed a reduction in bond strength but the addition of more than 4 per cent caused no further loss. Bond specimens tested at one day showed only about 12 per cent of the strength of dry specimens having no lime. This is in contrast with the fact that the compressive strength

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at the age of one day has been given as about 50 per cent of the compressive strength when dry. The average bond strength for the pull-out specimens of standard consistency, 36 per cent water, was 500 lb. per square in. With 34 per cent water it was 640 lb. and with 39 per cent it dropped to 360 lb.

Bars embedded in gypsum specimens stored in a dry place showed an initial corrosion which was no greater at the age of 243 days than it was at the age of eighty-one days, but which was made less by the addition of hydrated lime in quantities up to about 6 per cent of the weight of the gypsum. Embed-

The tests on T beams clearly indicate that the same principles which are used in the design of reinforced concrete beams are applicable to the design of reinforced gypsum beams. The use of the quantity $d - 1/2$ as the arm of the resisting moment seems justified by the results of the tests. The necessity of anchoring the ends of the rods, in many cases, in order to develop the maximum strength of the beam, is apparent. Plate anchors and U-hooks prove to be about equally effective for this purpose.

The modulus of elasticity of dry gypsum appears to be about 1,000,000 lb. per sq. in. and to be nearly constant for all stresses within the range of strengths found.

An upward deflection amounting usually to about $1/4$ in. and in certain cases to as much as $1/2$ in. was found in the beams previous to testing them. An expansion of the gypsum during the setting or drying process seems to take place and the restraint of this expansion on the reinforced side of the beam seems to be responsible for the upward deflection. It has been ascertained that the most of the expansion occurs soon after the first set has taken place and at the end of 24 hours the expansion seems to be greater than at any time later.

The effect of freezing and thawing on the strength of gypsum has been investigated by Prof. James S. Macgregor at Columbia University. The beams were tested on spans of 6 and 10 feet.

The conditions of making and testing were as follows:

1. Tile made under normal conditions and tested green or wet.
2. Tile made under normal conditions then frozen, thawed out and tested both wet and dry.

3. Tile made with ice water and cold gypsum, then frozen, thawed out and tested both wet and dry.

Considered on a basis of a live load of 50 lb. per square ft. the lowest factor of safety for an H section beam 25 hours old and tested wet was 3.7. For this form of beam tested dry the lowest factor was 6 and the highest 6.8. For the frozen and thawed specimens the lowest was 6.2 and the highest 9.1. In these specimens the mixture was made with 38 lb. of water to 62 lb. of gypsum.

The design of reinforced gypsum is based on the same general formulae that apply to the design of reinforced concrete. Standard notation follows.



VENTILATING DUCTS ON ROOF, WITH REINFORCED GYPSUM CEILING AND CURVED SIDE WALLS POURED ON THE JOB. STRAIGHT WALLS MADE OF FACTORY CAST TILE WITH ONE SMOOTH FACE
SAXON MOTOR COMPANY, DETROIT
H. H. LANE, ARCHITECT

ment of a steel specimen in gypsum for a period of two years with a thorough wetting of the specimen at intervals of 13 weeks did not cause enough loss by corrosion to produce a measurable decrease in the thickness of the steel specimen. Tests made by the United States Bureau of Standards indicate that where the steel is entirely embedded and protected from water and damp air there is no liability of progressive corrosion and that gypsum has no inherent property that is conducive to corroding steel.

The addition of any retarder appears, generally, to cause a decrease in the compressive strength proportional to the amount of retarder added. This falling off is more marked for specimens tested dry than for those tested wet or 50 per cent dry.

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NOTATION

- f_s = tensile unit stress in steel.
 f_g = compressive unit stress in gypsum
 f'_g = ultimate compressive unit-strength of gypsum determined from 3 x 6-in. cylinders, or any other cylindrical test specimen whose height is twice its diameter.
 f_v = unit shearing stress in gypsum.
 f'_v = unit shearing stress in gypsum with adequate web reinforcement.
 f_u = unit bonding stress in gypsum.
 f'_u = to be used when adequate anchorage is furnished.
 E_s = modulus of elasticity of steel.
 E_g = modulus of elasticity of gypsum.
 n = elasticity ratio = $E_s/E_g = 30$.
 M = bending movement, inch pounds.
 A = area of steel in tension.
 b = breadth of beam.
 d = depth of beam to center of steel in tension.
 k = ratio of depth of neutral axis to effective depth, d .
 j = ratio of lever arm of resisting couple to depth, d .
 z = distance, top to resultant of compression.
 jd = arm of resisting couple = $d - z$.
 p = ratio of areas, steel in tension to rectangle, bd , = A/bd .
 kd = distance from top of beam to neutral axis.
 q = allowed bearing unit stress between gypsum and anchor plates or loop bar.
 B = area of anchor plate for each bar.
 h = mean diameter of loop for loop bar.
 a = diameter of reinforcing bar.
 m = number of reinforcing bars used.
 l = length of bar.
 V = total shear.
 Σ_o = sum of the perimeters of tension bars.
 π = 3.1416.
 For T beams:
 b = width of flange.
 b' = width of stem.
 t = thickness of flange.
 in which all stresses are in pounds per square inch and all dimensions in inches.

For rectangular beams:

$$f_s = \frac{M}{Ajd} = \frac{M}{pjbda^2}$$

$$f_g = \frac{2pf_s}{k} = \frac{2M}{kjbda^2}$$

$$f_v = \frac{V}{bjd}$$

where

$$k = \sqrt{2pn + (pn)^2} - pn$$

$$j = 1 - k/3$$

For T beams:

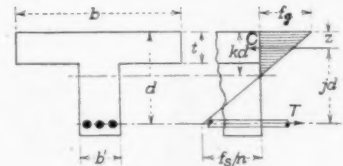
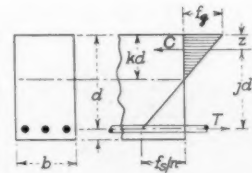
$$f_s = \frac{M}{Ajd} = \frac{M}{A(d-t/2)} \quad (4)$$

$$f_g = \frac{M}{bt(d-t/2)} \cdot \frac{kd}{(kd-t/2)} \quad (5)$$

$$f_v = \frac{V}{b'jd} \quad (6)$$

where

$$kd = \frac{2ndA + bt^2}{2nA + 2bt}$$



For either rectangular or T beams:

$$f_u = \frac{V}{\Sigma_o jd} = \frac{V}{m\pi a jd} \quad (7)$$

Equation (7) to be used when no anchorage is furnished.

$$f'_u = \frac{1}{2} \frac{V}{\Sigma_o jd} \quad (8)$$

Equation (8) to be used when adequate anchorage is furnished.

$$q = \frac{\pi a^2 f_s}{8B} \quad (9)$$

Equation (9) to be used when anchorage is furnished by means of a plate rigidly attached at its center to the reinforcing bar.

$$q = \frac{\pi f_s}{8} \frac{a}{h} \quad (10)$$

Equation (10) to be used when the anchorage is furnished by means of a U-hook on the end of the reinforcing bar.

- (3) The working stresses are expressed in terms of the ultimate strength dry and of the ultimate strength wet. In all cases the lower of the two values shall be used. Stresses and moduli are given in pounds per inch.

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	WET	DRY
$f_g =$	.22 f'_g	.44 f'_g
f'_g = for beams without web reinforcement	.015 f'_g	.030 f'_g
f'_g = for beams with adequate web reinforcement	.040 f'_g	.080 f'_g
$f_a =$ for beams without anchorage	.01 f'_g	.02 f'_g
$f'_a =$ for beams with anchorage	.05 f'_g	.10 f'_g
$q =$	.40 f'_g	.80 f'_g
$f_s =$		16,000
$E_s =$		30,000,000
$E_g =$ (for dry gypsum from mixture of standard consistency)		1,000,000
$n =$ (for dry gypsum)		30

The form face is brushed with clear oil (press oil), using a long-handled whitewash brush. A roof is generally poured in 3-ft.-wide strips, and as the material sets in about fifteen minutes after being poured the centering can be made in panels, removed and reset in advance of the work.

In one installation of this kind the shallow T beams were formed by placing 2 x 4 scantlings laid flatwise, 6 in. on centers, to core out the spaces between the T beams. These cores were dressed and had beveled edges to provide the necessary draft. The entire contact face of the form was sandpapered and shellacked before being placed in position and oiled. In each T beam stem was placed



INTERIOR VIEW SHOWING GYPSUM ROOF SLABS IN PLACE
AMERICAN SPIRAL PIPE WORKS, CHICAGO
DAVIDSON AND WEISS, ARCHITECTS

As yet the use of reinforced gypsum has been confined principally to roof slabs. Owing to the light weight of the material (77 lb. per cubic foot) this material is especially adapted to being pre-cast in any favorable location and carried to the building and set in place. Aside from a hoisting apparatus to raise the slabs to the roof, the work can be placed entirely by hand and no piece requires more than two men to place in position.

Some work has been cast in position on the roof. In this case a tight dressed-face form is necessary, and draft must be allowed for all vertical faces.

a 1/4-in. rod supported on small pre-cast blocks of gypsum. Over the tops of the T beams was placed a 3-ft. strip of wire mesh as bonding steel to restrain the expansion of the gypsum. The supporting purlins were from 6 ft. to 6 1/2 ft. on centers.

The mixing was done in standard corrugated iron ash cans. A dasher or mixer consisted of a long handle with a heavy horizontal looped wire dasher attached to the end. The bags of gypsum were placed along the strip to be poured, untied and made ready for quick action. The cans were filled two-thirds full of water for one bag of gypsum and

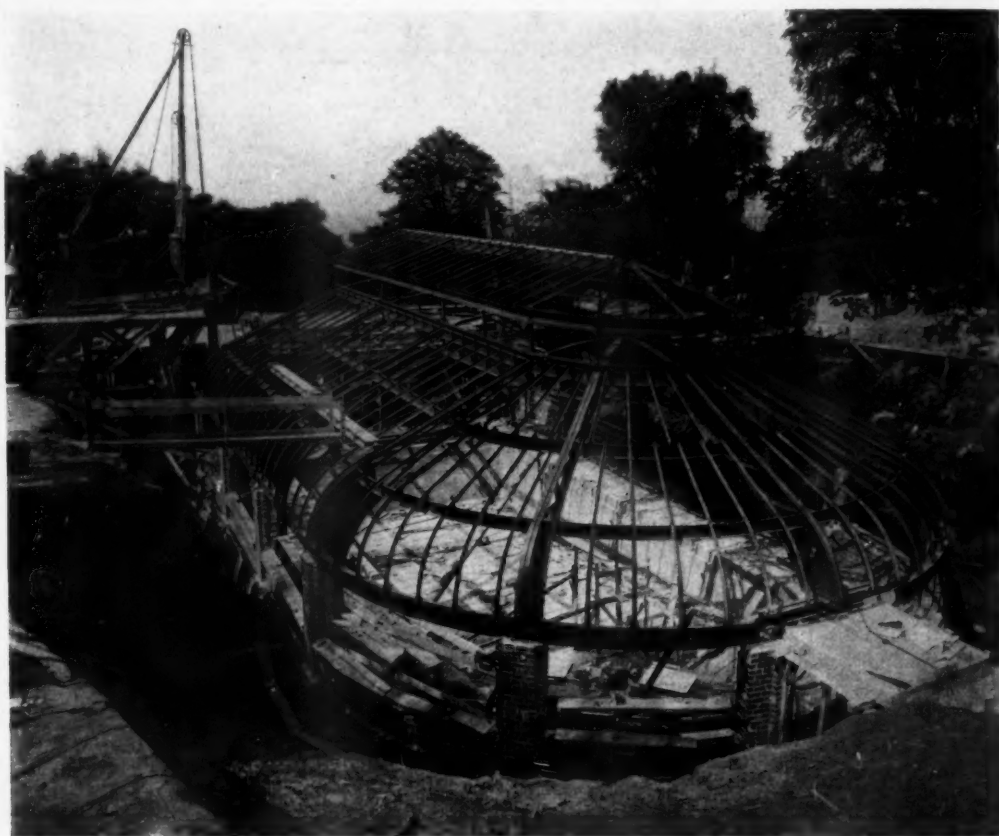
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churned vigorously and poured into the form. A wood strip was placed at the outer edge of the 3 ft. strip which served as a bulkhead and as a screed for leveling the top surface. A sufficient water supply and hose were furnished to fill the cans quickly.

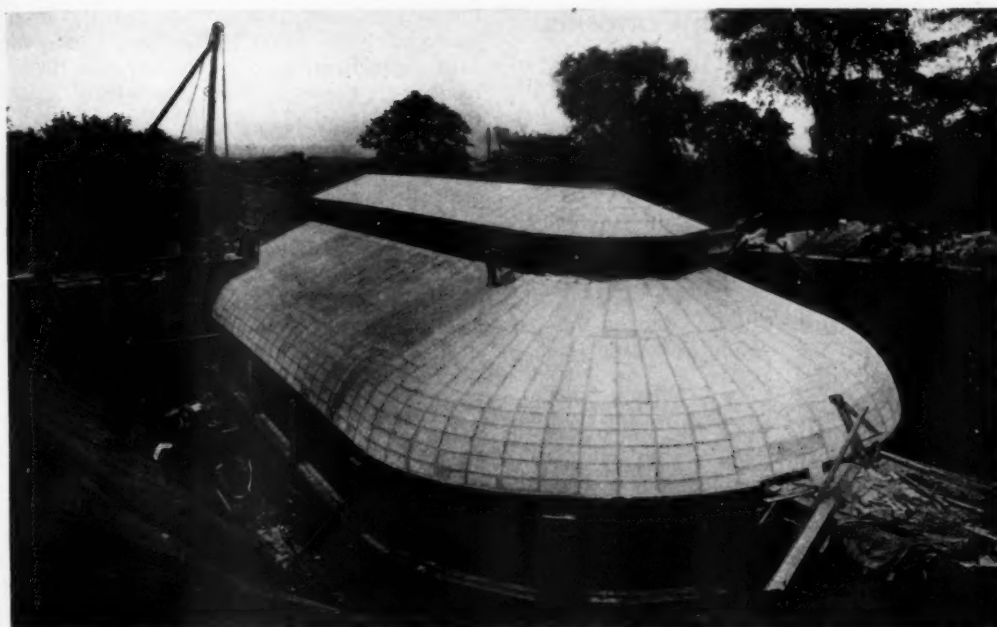
On a roof sloping 6 in. per foot a stepped platform was used to provide a horizontal working floor, and the soft gypsum paste had to be restrained from flowing down. For the latter purpose, top forms were not successful as the thin paste came up through any crevice or hole. But by holding a bulkhead board on top of the screeded surface of the slab just poured, and pouring the paste from a pail against the face of the board, the gypsum was held and could be spread out upward along the roof the moment it thickened enough to hold shape. Pouring a strip was begun at the gutter and proceeded to the ridge, this being done the same as on a flat roof. The forms were taken down early and only four sets of the 3-ft. wide panels provided.

Like all materials, gypsum has its structural limitations, but where lightness and sufficient strength for light duty work is desirable, it is satisfactory. It must be protected from constant saturation in order to prevent corrosion of the steel. Its unique properties of quick setting and not being affected by temperature conditions make it specially adaptable to quick construction. Its insulating qualities retard the transmission of heat through roof surfaces and at the same time prevent condensation of the moisture carried in the air upon its surface. In addition it has the well-known fire-resisting and sound-deadening qualities which are not new to its users.

With the data here presented it is possible for architects and engineers to design the use of reinforced gypsum. Attention should be given in the construction of the work to some features that are not so important in the use of reinforced concrete. One of the important elements affecting the strength



FRAME WORK OF ROOF WITH CURVED SURFACES AND IRREGULAR SHAPED PANELS
SWIMMING POOL FOR CHARLES DEERE WIMAN AT MOLINE
O. A. ECKERMAN, ARCHITECT



THREE INCH SOLID GYPSUM TILE CUT AND FITTED ON THE JOB TO CURVED SURFACES AND IRREGULARLY SHAPED PANELS

SWIMMING POOL FOR CHARLES DEERE WIMAN AT MOLINE

O. A. ECKERMAN, ARCHITECT

of reinforced gypsum appears to be the percentage of water used in making the plastic material. The percentage of water referred to is in the terms of weight. As a result of the scant attention usually given to the amount of water used in reinforced concrete construction, this matter in connection with the use of gypsum must receive careful attention.

It is proposed that the working stresses be based on the ultimate crushing strength of a cylinder whose height is twice its diameter and based either on a dry or wet test piece. There is scarcely any community in these days that does not afford facilities for simple compressive tests, and in the absence of such a testing apparatus any intelligent architect or contractor could construct such an apparatus on the lever principle and at a nominal expense.

A test cylinder 24 hours old can be considered as a wet specimen; and a dry cylinder (3 in. in diameter and 6 in. in height) should be in a condition of constant weight within a period of 15 to 20 days when exposed, during the time drying, to a temperature of 70 degrees Fahr. under normal conditions. To hasten the drying (to constant weight) of dry test cylinders to within a week or less the specimens should be kept in a temperature not to exceed 100 degrees Fahr.; and, if desired, the

process of evaporation or drying may be hastened by fans or other artificial means. It is important, however, that the tests be made on both wet and dry specimens and the least value obtained used.

It is true that this procedure involves an effort, but it is the only rational manner of establishing a working stress in materials whose strength is based on a combination of elements. As it requires but little time and simple equipment to determine the ultimate strengths of gypsum, there is no reasonable objection to the method proposed. In the case of reinforced concrete a period of twenty-eight days would be necessary for testing, and this time is not always available, hence the general use of arbitrary working stresses. Those accustomed to testing concrete are aware of the fact that under some conditions the arbitrary working stresses are much too low and are so established to make safe the use of variable materials and possible careless workmanship.

With the use of the method of establishing the working stresses as proposed, there is no doubt but that the use of this material can be employed with safety and economy, as it is based on the materials actually used on the job and not on a supposed or assumed condition.

Protecting Steel from Corrosion

IT is claimed by some persons that the rusting of iron and steel is due to the unlike polarity of different parts of the material, thus setting up galvanic currents. To have a galvanic current requires, as is well known, an electrolyte which is usually an acid. This acid condition comes from vegetation sometimes and through the pollution of streams by sewage and the wastes of factories of different sorts.

Mr. Montgomery Meigs, *M. Am. Soc. C. E.*, states in a recent issue of *Power* that he was led to the belief that if the solution was made alkaline there would be no electrolysis.

To test this out, two pieces of commercial angle iron were cut from the same bar and placed in separate jars filled with river water, but to the water in one jar a handful of spent lime was added, while that in the other jar was left natural. Before immersing the two specimens in the water thus prepared they were sandblasted to remove all mill scale and rust except one face that was left as it came from the mill and one face of each specimen, in addition to sandblasting, was polished to a fine surface. Both specimens were immersed in the jars on the same date, Oct. 2, 1915. The one in the natural river water began to rust immediately and is now covered with a thick coating, and much oxide has fallen off and covers the bottom of the jar. The other remains exactly as when put in. The polish on this specimen, immersed in lime water, is as perfect as on the day it went into the jar. The sandblasted side shows no rust whatever, but on the natural side there is one small speck about $\frac{1}{8}$ in. in diameter which is brown in appearance, but there seems to be no appreciable increase in area or thickness of this brown spot from month to month.

This protective action of lime water is made use of by English hostlers, who are accustomed to take the highly polished steel bits from the horses' bridles when they come in from a trip and throw them into a bucket of lime water to prevent their rusting before they get time to give them their daily polishing. Mr. Meigs finds that lime water is effective in preventing rust in the bottoms of steel hulls, which nearly always have more or less bilge water in them, often from condensation of atmospheric moisture when there is no leakage. Whitewash is also an excellent preservative of steel in inclosed places like the air tanks in steel gates, where it effectually banishes rust and at a fraction of the cost of paint. It needs occasional touching up where condensation water drips from the top of the tank. It is a cheap remedy where applicable, but, of course, it will not stand abrasion or where

the steel is under running water. It has been used for coating the tanks of the 50-ft. gates of the Mississippi River lock at Keokuk, with the best of results. It seems to show that where the acid of the water is killed with lime, no electrolysis can take place.

The experiment is easy to make, but it seems not generally known what a good and cheap preventive of rust lime is, when mixed with water. Many persons may find several uses for this simple protective and possibly someone may find a way to combine lime with a paint that will stick to the metal under water, making an ideal coating for steel.

Dumping Coal into the Sky

TO many persons the subject of smoke prevention has been associated almost entirely with the idea of clearing the atmosphere, preventing damage to merchandise and other material things and as a health measure. Many consumers look upon the outpouring of smoke from their chimneys with complacency because they are not personally disturbed or their products damaged by smoke. To such, the efforts of Smoke Prevention Bureaus and agitation by private organizations appeared to be purely an altruistic occupation.

Such was the complacent feeling of the officers of the Gambrinus Stock Company of Cincinnati until they realized the absolute waste of dumping coal into the sky to be scattered by the four winds. As successful business men they took immediate measures to conserve this waste.

Ignition and deflection arches were installed and an increased air supply provided in two of their furnaces. The results accomplished by these alterations are stated by Smoke Inspector Gordon D. Rowe of that city to be very gratifying. "A four-hour observation, taken after these furnace changes were made, showed an aggregate of two minutes of smoke. Prior observations had shown from fifteen to thirty minutes during almost any single hour of the day." In other words, this company now is wise enough not to dump a portion of its coal supply through its chimney into the sky.

Winter will come again and with it a possibility of a coal shortage. Now is the time to prepare for that contingency by saving the smoke by consuming it in the furnace. By this means less coal will be consumed and a more livable condition will prevail. If, unfortunately, the available coal supply is inadequate for our needs these persons who dump their coal into the sky and have a voluminous cloud of steam ever present at their exhaust heads will be very unpopular among their fellows who are suffering from lack of warmth and comfort.



DETAIL IN GARDEN, VILLA BORGHESE, ROME, ITALY

THE AMERICAN ARCHITECT