

OCTOBER 1934 • THE NEBRASKA STATE CAPITOL

AMERICAN ARCHITECT

A High Peak of Architectural Progress

Some little while ago there appeared on this page a saying to the effect that progress is a blind succession of events fully exposed only through the agency of a capable interpreter. This issue of American Architect is proof of that contention. The Nebraska State Capitol—to which the issue is entirely devoted—is much more than an excellent example of unusual monumental design or even a symbol of democratic government. It marks an important period in the history of building progress. In many ways the architectural genius of Bertram Grosvenor Goodhue dramatized in this design a peak in the history of building accomplishment. As a break from the precedent of tradition the Nebraska State Capitol did much to advance a new and more virile architectural philosophy. From the engineering standpoint the building embodies the cumulative results of American energy, inventive skill and organizing ability; and from all combined points of view it stands as a remarkable interpretation of innumerable events that have shaped the progress of American art, industry and democratic government. For any one of these reasons American Architect might be proud to publish the Nebraska State Capitol. In combination they make an entire issue necessary to present exclusively a most outstanding example of architectural progress » » »

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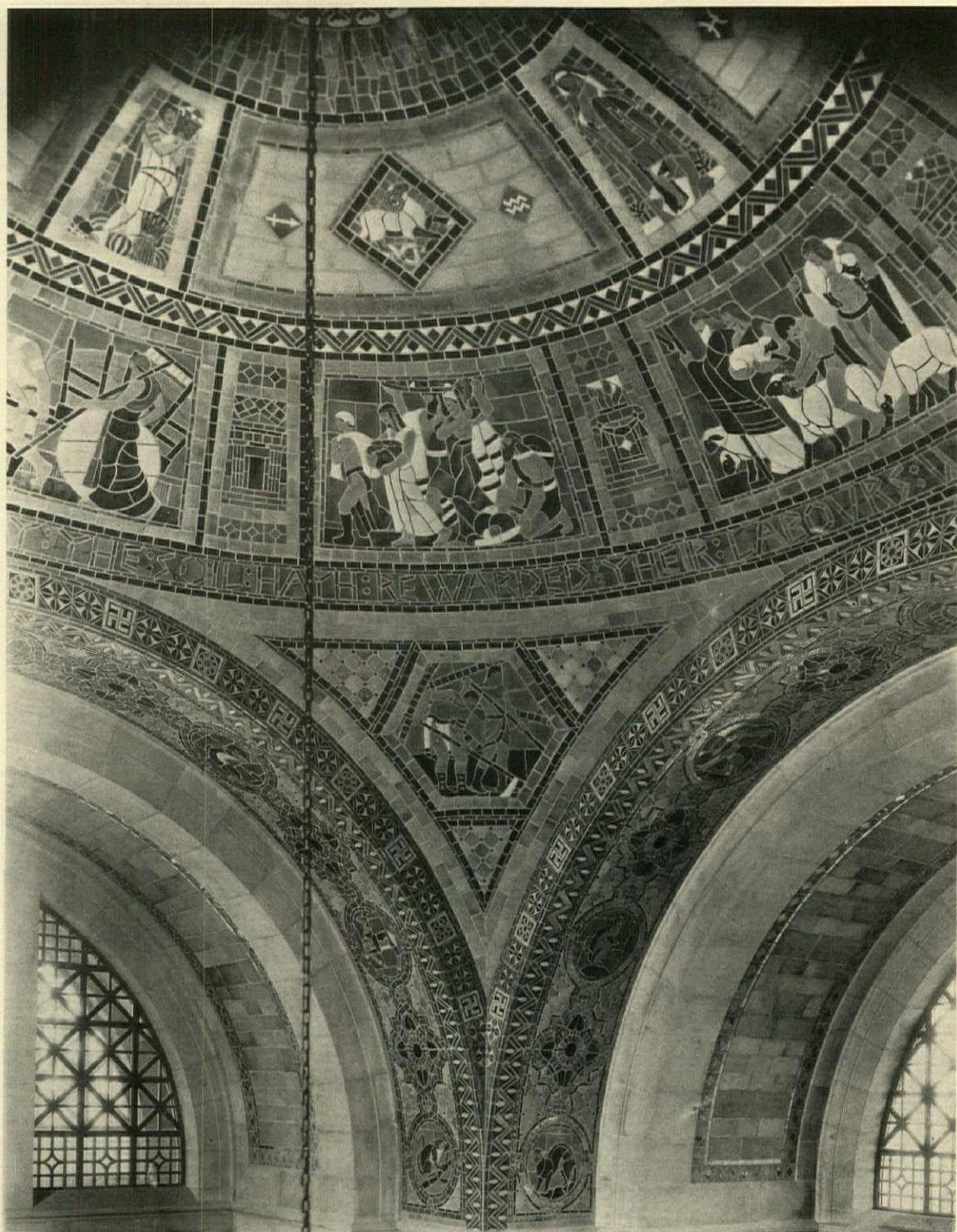
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FOR OCTOBER 1934



North Vestibule in the Nebraska State Capitol, Lincoln, Nebraska
 BERTRAM G. GOODHUE, Architect

and
 BERTRAM G. GOODHUE ASSOCIATES, Consulting Architects

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The Nebraska State Capitol

BY CHARLES HARRIS WHITAKER

NO building in the long pageant of mankind can be singled out as clearly marking the moment of a human transition, whether technical or esthetic. Transitions, as told by buildings, are never as clear as a stroke of lightning. The Capitol of Nebraska, however, is a strikingly revealing building. Although it is, in itself, neither a beginning nor a culmination, it amplifies and clarifies certain principles that have been too much overlooked in the art of building even as it likewise sounds a triumphant note in the history of building in the United States.

In the competition by which the architect was chosen there were some new ideas injected; and it is not risking too much to aver that had it not been for these new ideas, the result might not have been so glorious a success as it turned out to be.

First of all, however, there should be some solid, sober praise for Nebraskans. They built a Capitol without debt. As we now look backward over the sombre picture of debt and taxation, praise for such unusual common sense can scarcely be too loud. The people of Nebraska held fast to the faith that the way to build a Capitol was to pay for it out of current income.

Second, there must be equally hearty praise for the Nebraska Chapter of the American Institute of Architects. Suppressing all natural desires and convictions, singular and collective, it urged the State authorities to invite a group of nationally known architects to compete for the honor of designing the Capitol. Third, in numerical order, yet having also played his due part in the actions already recited, there must be hearty cheers for Thomas Rogers Kimball, the professional advisor chosen to write the competition program. He had been President of the Institute, had sat long on its Board of Directors and he knew by heart the theory, history and results of the competition code. Basically—in common with many others—he did not believe in competitions. He felt them to be a direct denial of the claims set up by the architect. To him, they were not an assertion, but a confession.

Although he conceded, in accepting the advisorship, that a competition here seemed the best way, he saw his task as an utterly impersonal one. Thus he put all his effort into writing a program that would act as a magnet to attract the last ounce of skill that lay waiting its chance. He cast aside all thought of framing such technical mandates, formulas and regulations as would interfere with what he believed the one justification for the competition—to get the best possible building. He knew that in a competition the names of the jurors usually outweighed all the rest of the program, for, as each competitor scanned the list and summed up the known style tastes and fancies of the jurors, it was wholly natural that each should begin to think of his scheme in terms that would be likely to appeal to the majority vote. Why not?

IN order to get rid of such handicaps and temptations, the Nebraska Capitol program contained the unheard-of proviso that the names of the jurors would not be made known until all the drawings had been turned in. The program became a simple statement and an honest invitation to competence, ability, skill, talent and genius!

To say that the announcement of an unknown jury created consternation is to put it mildly. "What are we to do?" said some of the competitors to me. "How can we design a building when we don't know the names of the men who will judge the drawings?"

"Well," I said, "why not use the program as a guide. Why not read it and accept it as a statement of the problem? It seems to me that it sets you free to use all the brains you have—not in trying to capture the jury by playing up to the known preferences of its members—but by designing a building in the same spirit with which any competent craftsman sets out to contrive anything for a purpose. The purpose here is a Capitol. The program says so, makes the purpose plain and defines the needs. The people of Nebraska want those needs served in the best possible way for the money



Drawings submitted by Bertram G. Goodhue in the final competition held in 1920. The Capitol Commission sought a man who could design a "practical working home for the machinery of state" and an "inspiring monument"

they propose to spend. They want, also a fine building. What else is there to it? The whole set-up seems like straight common sense. Why not go to it in that spirit?"

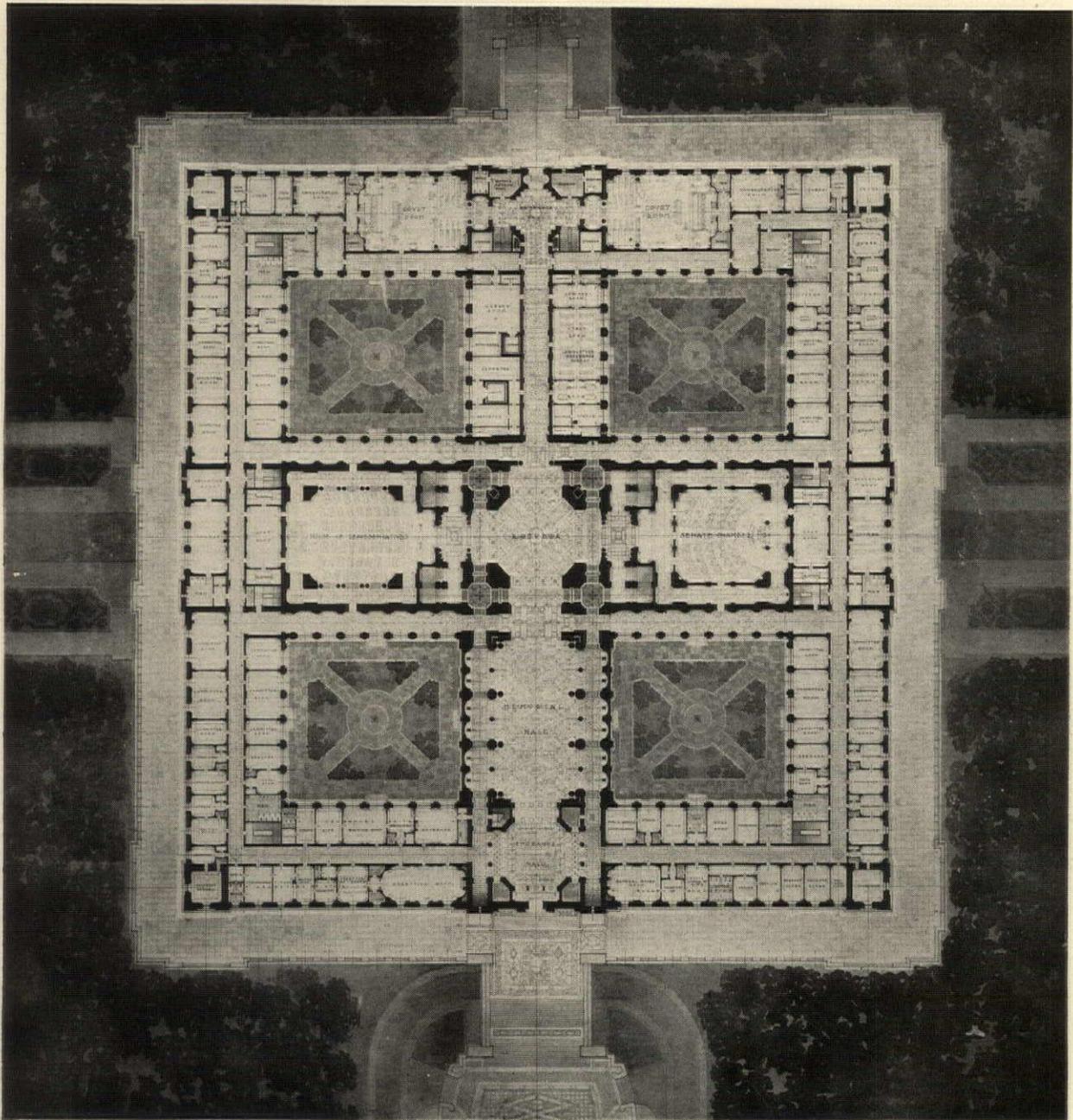
Bertram Grosvenor Goodhue, whom we elect to exalt and applaud as the fourth in this numerical sequence—even as time will ultimately place him first—read the program as though it were a direct message from Olympus. "Never, in any competition," he said to me, "have I been set free as in this one."

The building so plainly confirms his words and the result of that freedom as to leave no further need for proof. Goodhue studied his problem, meditated and reflected on the State of Nebraska, its geography, its history, its lore, its occupations; he looked at the rolling prairies and the life that there went on; he did not—as did most of the other competitors—think only of the seven hills of imperial Rome.

He thought of a building, even though it were a State Capitol, in terms of use, of structural simplicity and economy and of how to give the most space for the least money while still obtaining an impressive monumental form. There can be no doubt that it was because of this approach to the problem that he won the prize.

On the other hand, there can be no doubt that when Goodhue spoke of the freedom he felt as he studied the program and the problem, he, himself had set himself free! One cannot ignore this coincidence. It was a prime determining factor in the form of the building.

Whether or not Goodhue at the beginning became a Gothacist by accident—as I suspect—he had reached a point at the time of this competition where he could no longer resist the simple logic by which any craftsman worthy the name looks at the job before him. The rare coincidence is that



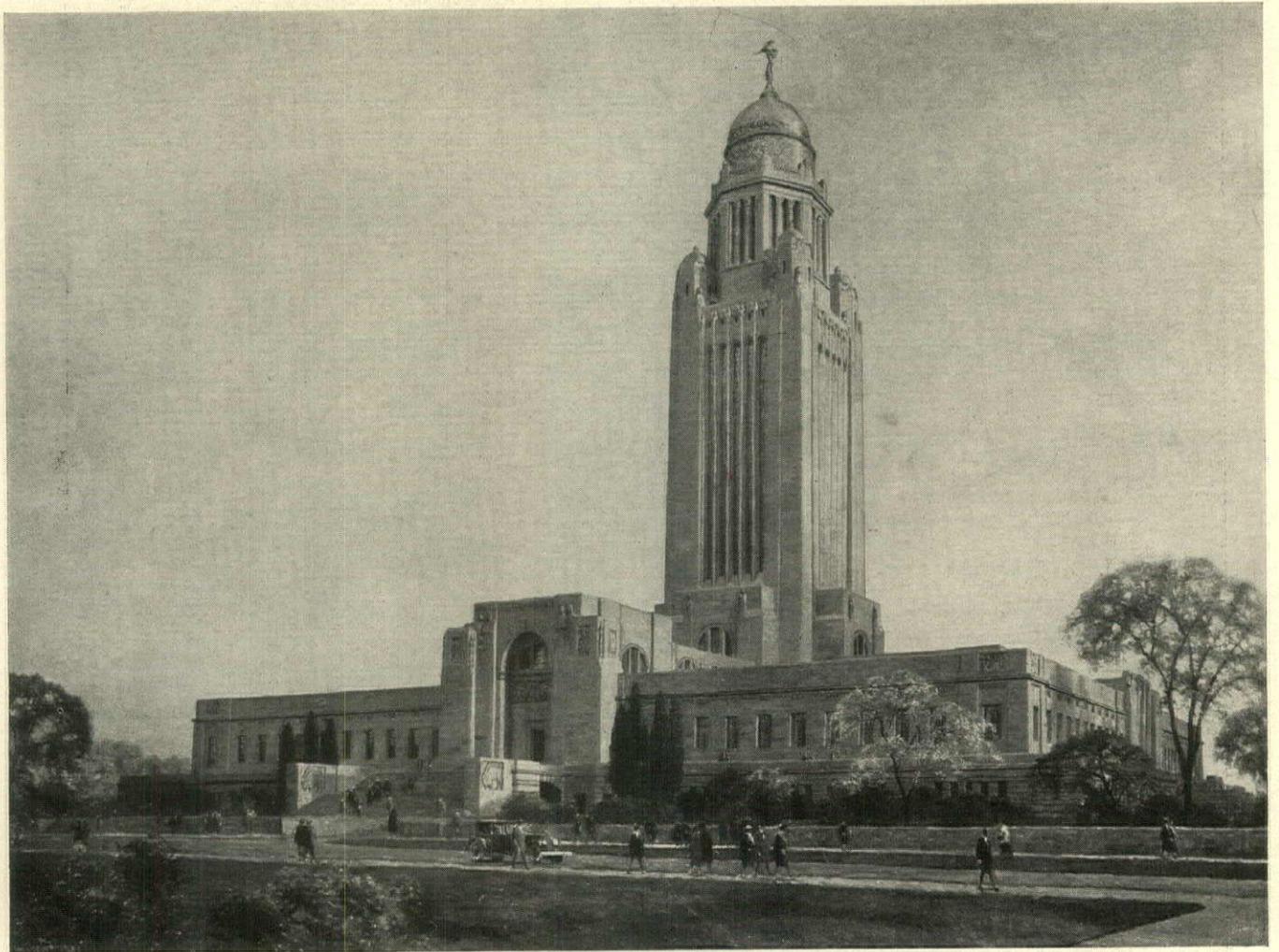
it was exactly in such a spirit that the program invited him to look at this very job!

Following the methods which had made him famous, one might have expected that he would produce a brilliant Gothic Capitol. There are plenty of good precedents, so far as the style goes. But the terms of the program made it plain that the winning solution would not only have to give the most building for the money, but also that the designer would be obliged so to compose the simple elements of his plan as to express a quality in keeping with the dignity of the function.

Goodhue, at that very moment, was completely ready to begin just such a study. He was, in fact, straining at the leash. He was tired of imitating. He wanted to create! And into this want—this

genuine craftsman urge—the Capitol program fitted like an old shoe to a tired foot. It is beyond question that it was because of this mood and its urge to take complete advantage of the freedom invited in the program that Goodhue won the award. He gave what the program asked for.

It has often been said that he won the competition by using a tower instead of a dome. It would have been truer to say that he won by using his brains rather than by relying on an historical imitative process. He chose a tower, it is true; but he did so because the tower was vital in his plan for getting the most for the least money. The space within the tower walls could be used. What to do with the space within a dome has never been discovered, except to spend much money in embroider-



Preliminary studies of the Capitol made after the competition was won. Above: perspective rendering of the main façade by James Perry Wilson. In this drawing the entrance has been revised from that shown on the competition drawings. Below and on the opposite page: office studies done in pencil by Austin Whittlesey. From left to right they are, the main entrance, interior of foyer and one of the inside courts



ing it and then to furnish visitors with a printed placard that will explain the embroidery which they can examine only by submitting to a pain in the neck!

The tower added the soaring note that seems fitting to the chief public structure in a State. It could be seen as far as a dome and it enjoyed no less a traditional dignity. But, chief of all considerations, it provided a large amount of useful space. Goodhue's idea was that within it there could be stored the State archives. As a matter of fact, however, the number of floor levels was later halved and the space converted into offices.

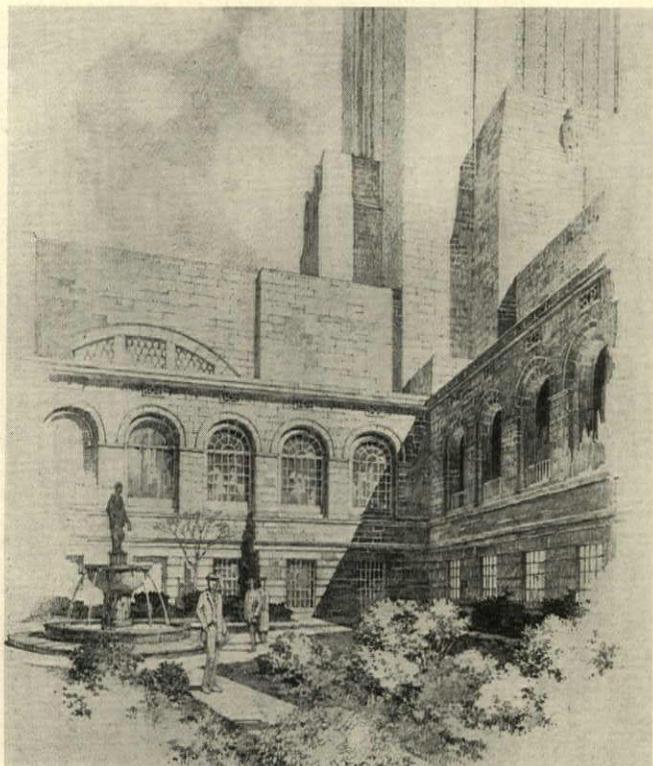
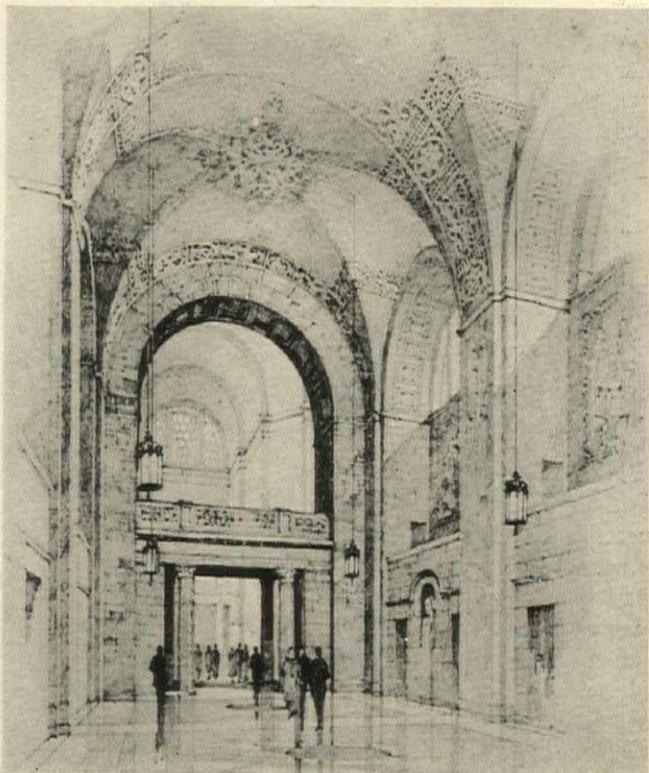
Goodhue died long before the Capitol was erected, but few changes were necessary in the design. Chief of these may be noted the top of the tower and the manner in which it joins the shaft. Goodhue had this under study at the time of his death, for he was not satisfied with the competition design. There were also some minor rearrangements of windows due to the final shifting of the legislative chambers (the original hall for the representatives became that for the senators and vice versa.) Other than these, the original form of the building was not altered.

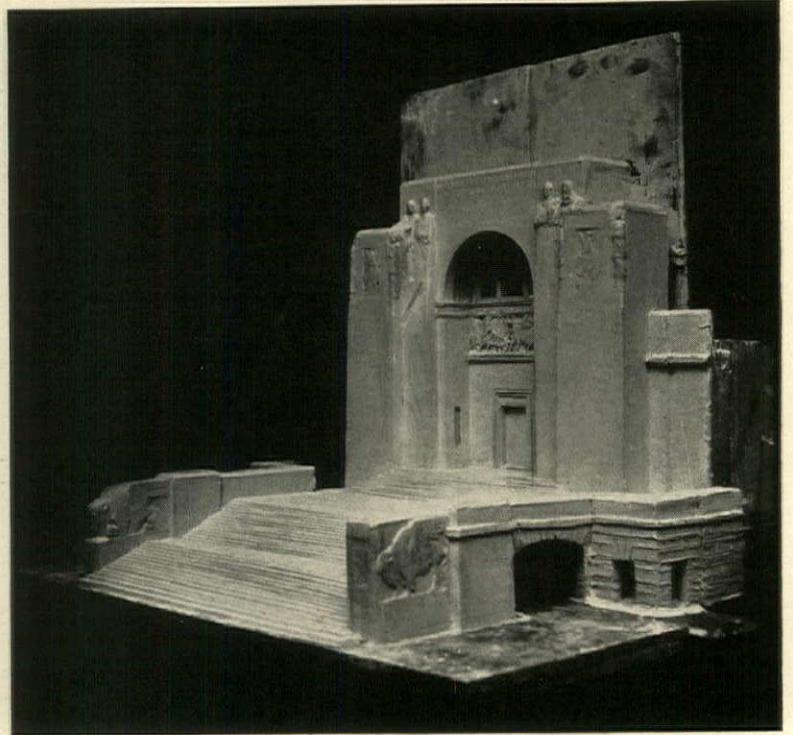
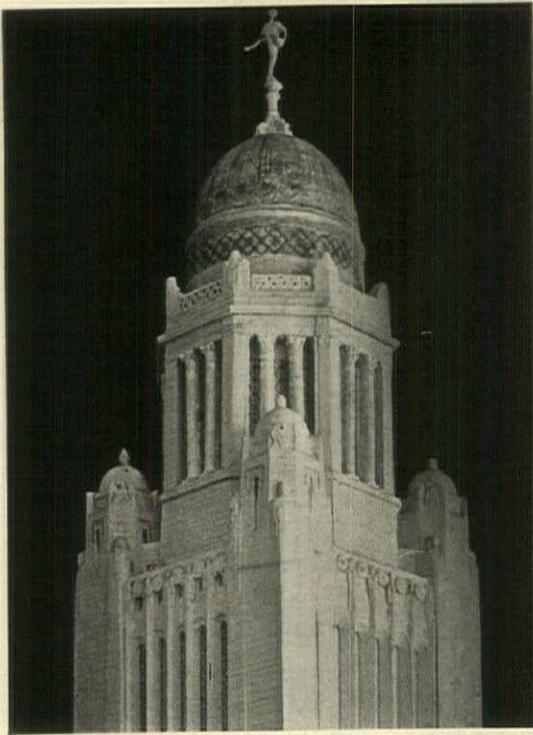
At this point, one faces the two major criticisms that have been offered. As their validity is likely to become more and more a weighty factor in the future of buildings, whether public or private, they are perhaps worth more than passing notice. First, as pure modernists observe, Goodhue could have got more space for the same money—the present building offers no chance for future harmonious additions—by the logical use of a straight skyscraper

form. Here, where a building has to satisfy a highly centralized series of State functions, the modernists say, is one of the few justifiable uses for a skyscraper. Not only could the necessary space be had for less money, with a fitting and dignified form, but the building could have been so set as to offer plenty of surrounding space. Thus it would have been in scale with human beings, something that is utterly impossible when the skyscraper is set on a city street.

It is also asserted that because Goodhue declined to accept the craftsman challenge in its widest sense—and thus refused to break completely with the historical and representational method in building design—he was led into accepting the pictorial quality of forms that preceded the Classic Grecian temples with no consideration of why these forms were so treated. Thus he confused the purity of his new form by using an archaic symbological treatment that is not understandable to more than a handful of people in the United States. This ancient method of using a building as an historical record and as means of issuing public proclamations by the use of pictorial symbology was rendered useless by the invention of movable type. Whether that was for good or ill may be debatable; but the fact remains that people learned to read type and not symbols. Also, by the same token, it set builders free—if they only knew it—to do what they should do: bring the art of building to a point where all superfluities may be discarded—just as all great artists end by throwing away the useless.

One cannot look at the Nebraska Capitol without





Clay and plaster models were much used in studying the design. Above are two early studies from which the finally executed work shows much change. At the right are shown studies for the winged buffaloes originally intended to flank the entrance steps. On facing page: model of "The Sower," a cast bronze tower finial by Lee Lawrie that symbolizes the agricultural foundation of human existence. The figure itself is 19 feet tall and stands upon a base 13 feet high. Their combined weight is 8½ tons

at least admitting that Goodhue was here studying his problem with the instinct of a craftsman to whom the first problem is that of contriving whatever will best perform the function to be satisfied. He does not begin with a form or an ornament, but with a function. Indeed, it is axiomatic—once we are free of all preconceived, traditionally imposed or "authoritatively" determined notions of esthetics—that whatever perfectly fulfills a function is itself the right form; and in this buildings are no exception.

It is because Goodhue's philosophy about buildings was undergoing a profound change and developing steadily in these directions as well as the freedom of the competition program that the Nebraska Capitol stands as a landmark. However valid may be the criticisms—and no one would have been more sensible about them than Goodhue—the building derives its impressive nobility and dignity from the simplicity of the form that Goodhue conceived as the solution of the problem. There can be no doubt, had he lived, that he would have pushed his way steadily towards a complete divorce from the historical representational process of imitative design; and at last would have won his way to the pure craftsman's point of view. Then there would have arisen a building in which the only collaborators would have been the workmen.

Therefore, in no spirit of criticism, but rather as a profound tribute to a genius that was never untrue when his nature loyally questioned nor ever unready to accept the everlasting challenge to do better, I risk the prophecy that he would have been satisfied eventually with a form where no more would be needed than the play of pattern, texture and color as these flowed over and through the surfaces and derived their glory from nothing but the materials. I cannot remember our talks on these matters without thus declaring my faith not only in him, but also in the ultimate economic simplicities to which buildings must attain in any civilization that proposes to continue.

It is because of these signs, as well as because of the intrinsic qualities of the Nebraska Capitol, that it stands both as a significant and a challenging building. In a perplexed world it points to some plain truths and to one principle that man can never successfully defy. It is not only an evidence of the genius that no civilization can afford to neglect, but it is also a legacy from one of the most fertile imaginative brains that the art of building has ever known. That Goodhue died was a pity; but that his ideas for and his concept of this building were so loyally carried on by his disciples and successors is also a part of the tribute the Nebraska State Capitol so richly merits.



Highlights on the Capitol's History

BY JOHN EDWARDS

Chief of Guides, Nebraska State Capitol

LINCOLN might never have been the seat of Nebraska's government, and the Capitol designed by Bertram Goodhue never constructed, if the first Governor of Nebraska had not died soon after taking his oath of office. This tragedy, which occurred in October, 1854, had a profound effect on the history of the State.

Francis Burt, a South Carolina lawyer and editor, was appointed by President Franklin Pierce to be Governor of Nebraska Territory. This vast region, five times the size of the present state, was organized by the Kansas-Nebraska Act of 1854. Burt was a delicate man. The rigors of his western trip so aggravated an illness he had that when he reached his destination—Bellevue, on the Missouri River—he was put to bed. In about a week he regained enough strength to be sworn into office. Two days later he was dead.

Had Burt lived, Bellevue would have been the Territorial Capital. A political deal which located it at Omaha, eight miles to the north, would never have taken place; probably the rift that resulted between residents north and south of the Platte River could have been avoided. When statehood came, if the Capital were moved, it was thought likely that it would go west a hundred miles or so to some point on the Platte. As it was, when Nebraska was admitted to the Union in 1867, the more populous South Platte district was able to name a site south of the river—the present Lincoln.

There were two Territorial Capitols in Omaha. There have been three State Capitols in Lincoln. The new \$10,000,000 building, now complete after more than twelve years of construction, is on the site of the first two state houses. The struggle for the new Capitol is comparable to the earlier fight for the location of the capital city. Sentiment which finally crystallized in the enactment of the Capitol bill had its beginning about the turn of the century. The old building was in a deplorable condition when in 1919 the Legislature passed House Roll Number 3, the Mears-Tracewell bill. It provided for the erection of a Capitol at a sum "not to exceed \$5,000,000," and authorized the Governor, Samuel R. McKelvie, to appoint a commission to oversee the work.

Governor McKelvie signed the bill February

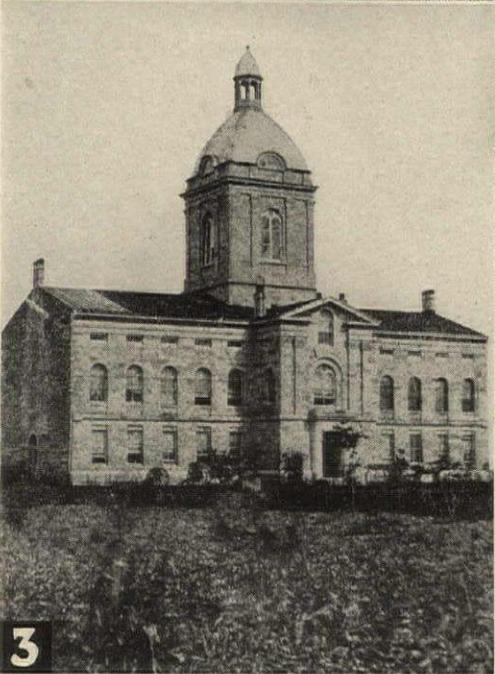
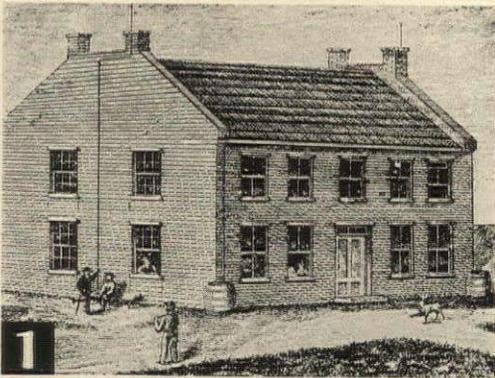
20, 1919, and the next day announced the membership of what he intended to be a non-political, non-partisan commission. As Governor he became Chairman; the Secretary of the Department of Irrigation, Highways and Drainage, George E. Johnson, Acting Secretary. The appointive members were Walter W. Head of Omaha; W. E. Hardy of Lincoln, and W. H. Thompson of Grand Island. It was a well-balanced selection—three prominent Nebraskans from the State's three first cities; a banker, a merchant, a lawyer and United States Senator; two Republicans and a Democrat.

Both Mr. Hardy and Senator Thompson are members of the Commission today, Mr. Head having resigned in 1930 when he moved from the State.

Governor McKelvie was succeeded as Chairman by Governor Charles W. Bryan who served from 1923 to 1925, and from 1931 to 1935 and in the interim by Adam McMullen, from 1925 to 1929, and Arthur J. Weaver, from 1929 to 1931. The Secretary, Mr. Johnson, was replaced in 1923 by Roy L. Cochran.

The Capitol Commission, at a meeting in June, 1919, retained as its professional advisor, Thomas Rogers Kimball, Omaha architect and a Past President of the American Institute of Architects. The concept of the competition later held as a means of selecting an architect is summarized in Mr. Kimball's resumé of the program: ". . . it is sought to avoid the cramping effects of competition . . . and if possible to recall those collaborative methods wherein a group of creative artists working under the leadership of an architect have been responsible for the creation of monumental masterpieces in the past. This competition seeks a man, not a plan."

CAPITOLS OF NEBRASKA. 1. A two-story brick structure completed in 1854 and costing \$3,000 was located at Omaha as the first Territorial Capitol. 2. The second Territorial Capitol at Omaha. It was completed in 1858, cost \$130,000, and was built of brick painted lead gray. 3. The first State Capitol completed on the site of the present structure in 1869 at a cost of \$76,000. It was built of native limestone and lumber. 4. The second State Capitol built on the site of the first in 1888 at a cost of \$691,000. 5. The present Nebraska State Capitol, construction of which took 12 years and was finished in 1932. Total cost was close to \$10,000,000



Two competitions were held. The first was open only to Nebraska architects; the final was a nationwide competition, in which the three winning Nebraska firms competed with a selected group of nationally-prominent firms. Eight Nebraska architects entered the State contest. Irving K. Pond of Chicago was engaged as architectural judge. He assisted the Commission in selecting the designs of Ellery Davis of Lincoln; John Latenser and Sons of Omaha, and John McDonald and Alan McDonald of Omaha.

Invitations to enter the final competition were sent to Cass Gilbert, Bertram Grosvenor Goodhue, McKim, Mead and White, H. Van Buren Magonigle, John Russell Pope, and Tracy & Swartwout, all of New York City; Zantzing, Borie, Medary and Paul P. Cret of Philadelphia; and Bliss and Faville of San Francisco. Cass Gilbert was the only one declining to compete. The designer of the winning plan was to become architect of the new Capitol.

Three non-competing architects were chosen through a ballot of the competitors to act as a jury in selecting the winning plan. They were Waddy B. Wood, Washington, D.C., James Gamble Rogers, New York City, and Willis Polk of San Francisco. They gathered at the Executive Mansion on June 23rd, 1920. In the third-floor ballroom, the plans, identified by number, were tacked on the walls.

Through a process of elimination, the jury reduced the designs to six, then four, and finally three. On June 26th, a final verdict was reached. It was what even William Woods, the old colored cook and "handy man" who "sort of goes with the Mansion," said he suspected: that Number 4 excelled all others in "utility and reasonableness of cost and beauty of design." A sealed envelope was broken to reveal the name of Bertram Grosvenor Goodhue. Second place was awarded to John Russell Pope, third to McKim, Mead and White, and fourth to Zantzing, Borie, Medary and Paul P. Cret.

GOODHUE'S design included in addition to a tower, a low base, two stories high, 400 feet square which was later enlarged to 434 feet square, thus increasing the total cubage from 7,500,000 to 10,000,000 cubic feet. The Capitol, as it has been built, has 72 per cent of its floor space available for office or storage purposes, the remaining 28 per cent includes corridors, stairways and Memorial Hall, in the tower.

Almost from the beginning, it was realized that Goodhue's design could not be properly constructed within the statutory limitation of \$5,000,000. The first drawings in fact, anticipated that the tower might have to come at a later day, for they provided a temporary roof above the rotunda. The decision to construct a larger Capitol than had been originally planned, and a desire to build the tower and provide the building with a pretentious interior, meant considerably increased expenditures. The design and spirit of the new Capitol captured public

imagination and there was but little opposition to the necessary additional cost.

Of those opposing the increased expenditures, many objected only because the Capitol Commission was unable to state the exact final cost of the building. "It will be within \$10,000,000," the Commission said. Mr. Head, however, referred to the building as "a \$10,000,000 Capitol," and such it has since been called. It was not expected then that the Commission would spend nearly \$300,000 as its share for a joint heating plant with the University of Nebraska. Yet, withal, the Capitol is nearing completion with total expenditures, including the heating plant, of approximately \$9,770,000.

NEBRASKA is one State entirely free of bonded indebtedness. A clause in the Constitution, jealously guarded by its citizenry, prohibits a bonded debt in excess of \$100,000. So the Capitol had to be constructed on a "pay-as-you-go" plan. Tax levies were .22 of a mill annually, or 22 cents on an assessed property evaluation of \$1,000. The last levy was spread over the fiscal years 1931-32 and 1932-33, .11 of a mill each year.

The Capitol was erected on the site of the old building without disturbing State offices. This was accomplished by building the new Capitol around the old and by carrying on the work in sections. State activities were thus accommodated without paying outside rentals during the period of construction.

Early in 1922 many trees on the square were cut down and their stumps blasted out and a railroad line seven blocks long was built to afford transportation of materials to and from the grounds at a minimum freight rate. More than a mile of switching tracks were laid on the grounds. This was Nebraska's only State-owned railroad—the butt of many jokes and many complaints of irate property-owners along its route. Yet the railroad, which cost the Capitol Commission \$20,000 plus an operating expense of about \$105,000, made possible a saving of approximately \$100,000 in the cost of hauling materials.

For more than ten years an average of three carloads of material a day were hauled over the "Capitol and H." A total of 10,567 carloads went over the line. These carloads, which a Capitol Commission engineer estimated would make a train 42 miles long, carried a total of approximately 600,000 tons.

Ground-breaking for the building took place April 15, 1922, when Governor McKelvie plowed a furrow across the lawn. On Armistice day of the same year the cornerstone was laid along with the one from the old Capitol.

State offices were moved into the completed portions of the first section of the Capitol in December, 1924. Construction of the second section—including the inner cross except for the west wing—was finished in 1928; the third section—the tower—in 1930; and the fourth—the west wing—in 1932. Today the only important unfinished work is interior mural decoration.



Ceiling of North Vestibule symbolizing the gifts of nature

A Record of Successful Experiments

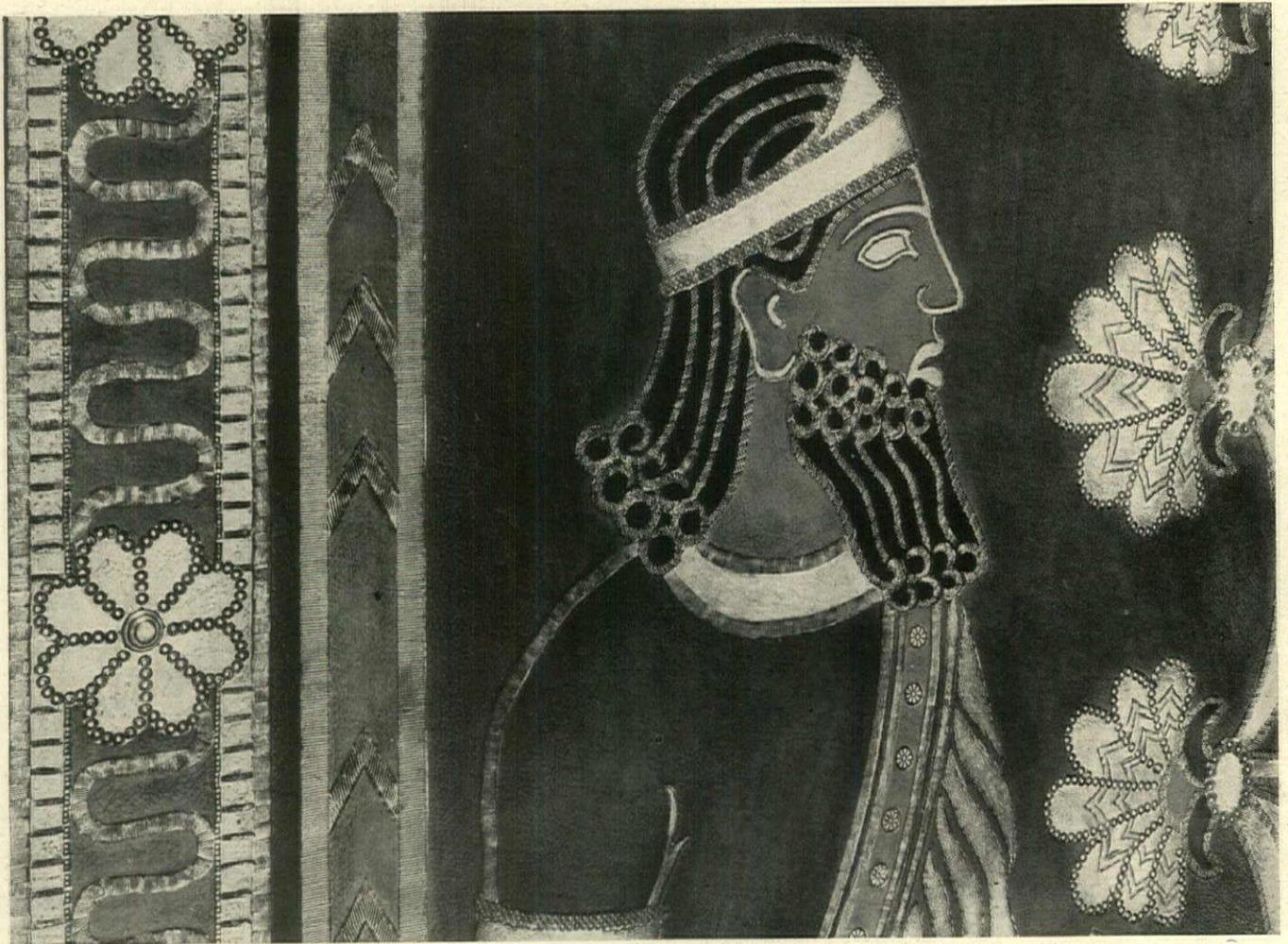
BY HARRY F. CUNNINGHAM, A.I.A.

It has been said that "the History of Architecture is merely the record of a series of experiments." In tune with this hypothesis, the Nebraska Capitol may well be examined in the light of its experiments. Many of the experiments in the Capitol have to do with the uses of specific materials.

Mr. Guastavino had opportunities for his marvelous vaults there, which he might never have had in such number and in such variety in any other building since Santa Sophia. The combination of Perry Wilson's faultless vaulting diagrams, Miss Meiere's exquisite, but very masculine artistry, and Mr. Guastavino's technical skill, resulted in the finest decorative tile vaults the modern world can

boast of. They cost their maker more than he got for them, but he was doing something he had never done before and he didn't quite know how to figure it. But he is of that rare sort of craftsman who finds delight in the well-doing of his job whether there be material profit in it or not. Look at Miss Meiere's Senate Chamber ceiling, for example, and tell us—if you dare—that this experiment was not a success.

The Foyer and Rotunda floors were intended, originally, to be done after the manner of those in Siena Cathedral—marble slabs with figures engraved in the surface and the graved lines gilded. This proved to be too costly, so large-scale mosaic was used, the tesserae being about $\frac{3}{4}$ " square, of black



Details of spécial doors opening from the Rotunda. Above: door of the House Chamber is leather covered and tooled with a design by Hildreth Meiere. The door is shown in full color on page 32. On facing page: carving in polychromed wood from the doors of the Senate Chamber designed by Lee Lawrie

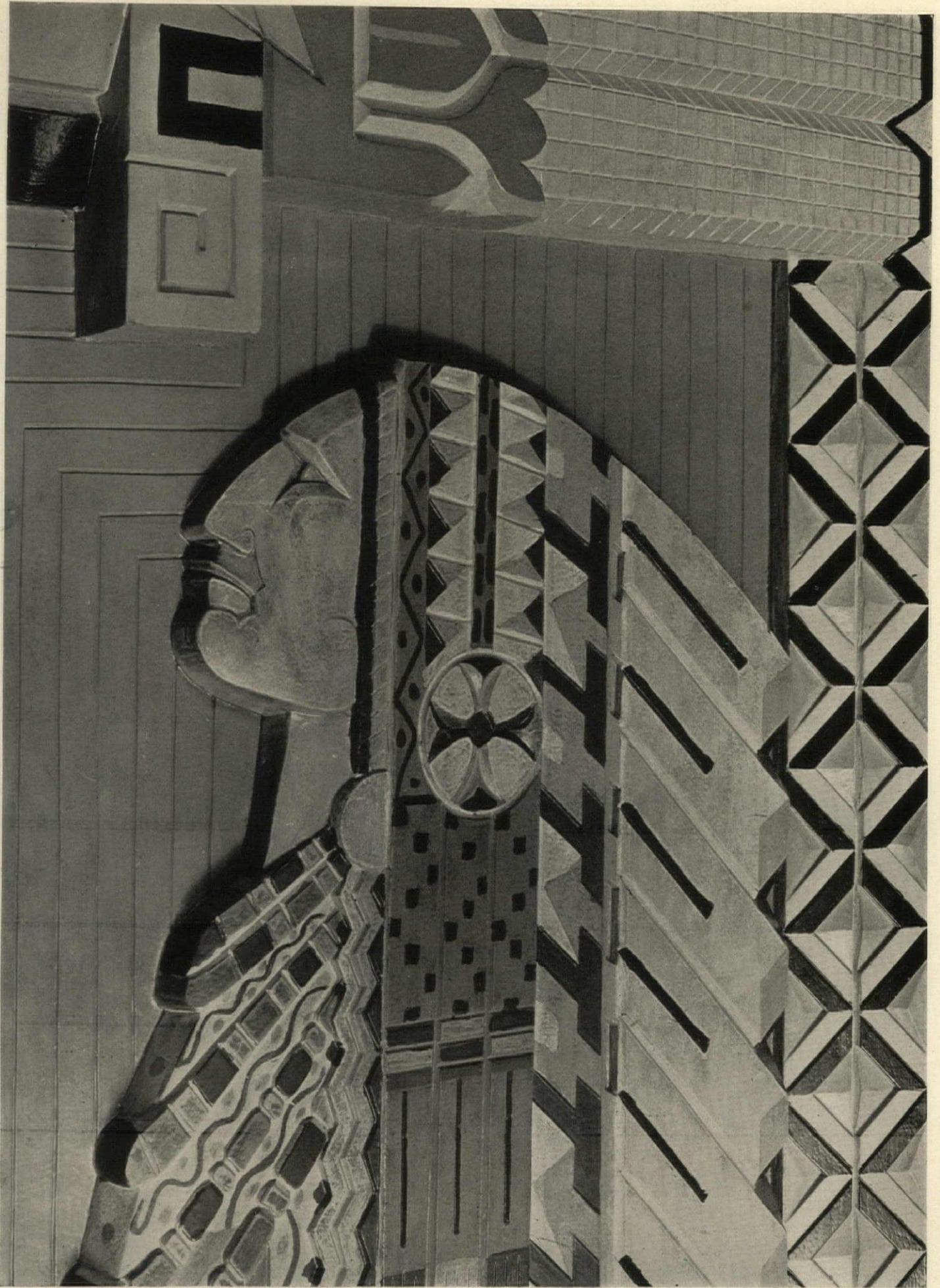
marble and buff marble. Dr. Alexander determined the subjects for the panels and Miss Meiere made the cartoons, the final ones being drawn at full-size, with a brush, on heavy brown paper. Some of the brush-drawn lines were thick in spots and thin in others—they were what the Japanese painter would call “living lines.” The patient workmen in de Paoli’s shops, chipped away at the little squares of marble until they could lay pieces on the lines and exactly reproduce them in the stone. The stones were pasted down onto the brown paper cartoons and then cut up for shipping to Lincoln. Out in the Capitol, they were laid down in their grout, and—when the paper was removed—the pictures were there in their “living lines,” their buff and black squares, exactly as they had been drawn with the brush on the heavy brown paper in Miss Meiere’s studio. The clever way in which the tesserae were laid, in some cases, to suggest modelling planes, gives a life to these large-scale mosaics which even many old mosaics fail to show.

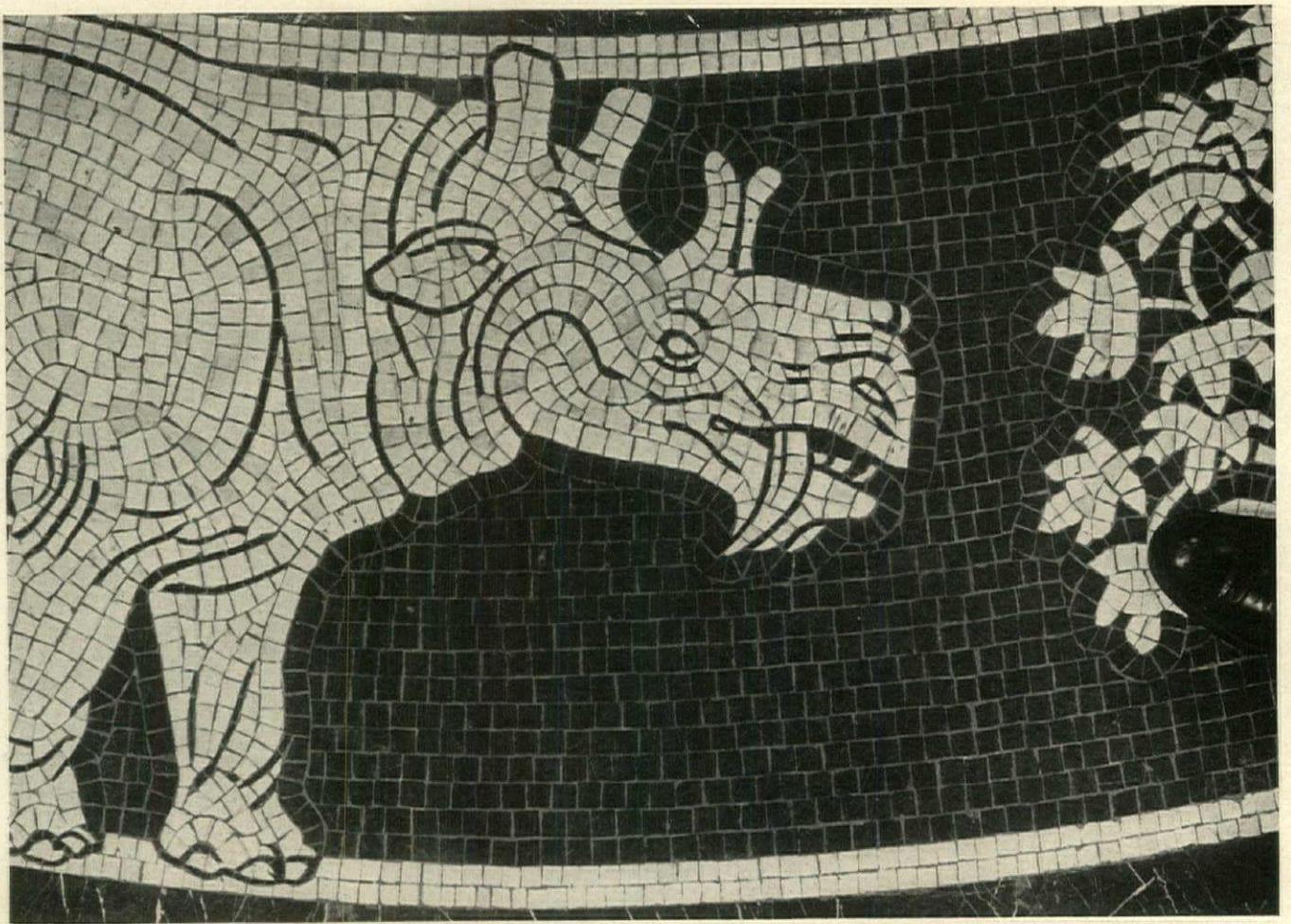
There are some bronze grilles in the Foyer and

Rotunda floors. Heat is intended to pass through these grilles, so it was necessary that there be as many holes in them as possible and that the holes be as large as might be. It was remembered that persons would be walking over those grilles. It was remembered also, that persons of the gentler sex wear heels, which are, sometimes, amazingly small. So, one had the pleasant job, for some days, of measuring the heels of all the charming girls one knew, in the effort to discover just how small a lady’s heel can be. It was discovered that the largest opening in these grilles must be slightly smaller than $\frac{3}{8}$ " by $\frac{5}{8}$ ", for that was exactly the size of the smallest heel one found.

Many of the doors—double-swing doors, usually—are covered with pigskin. The pigskin is held to the doors with specially designed bronze studs. In designing these doors one was forced to learn the customary sizes in which hides may be had, for the locations of rails in the doors have a certain relation to the sizes of the hides.

The Foyer windows are “glazed” with onyx—a





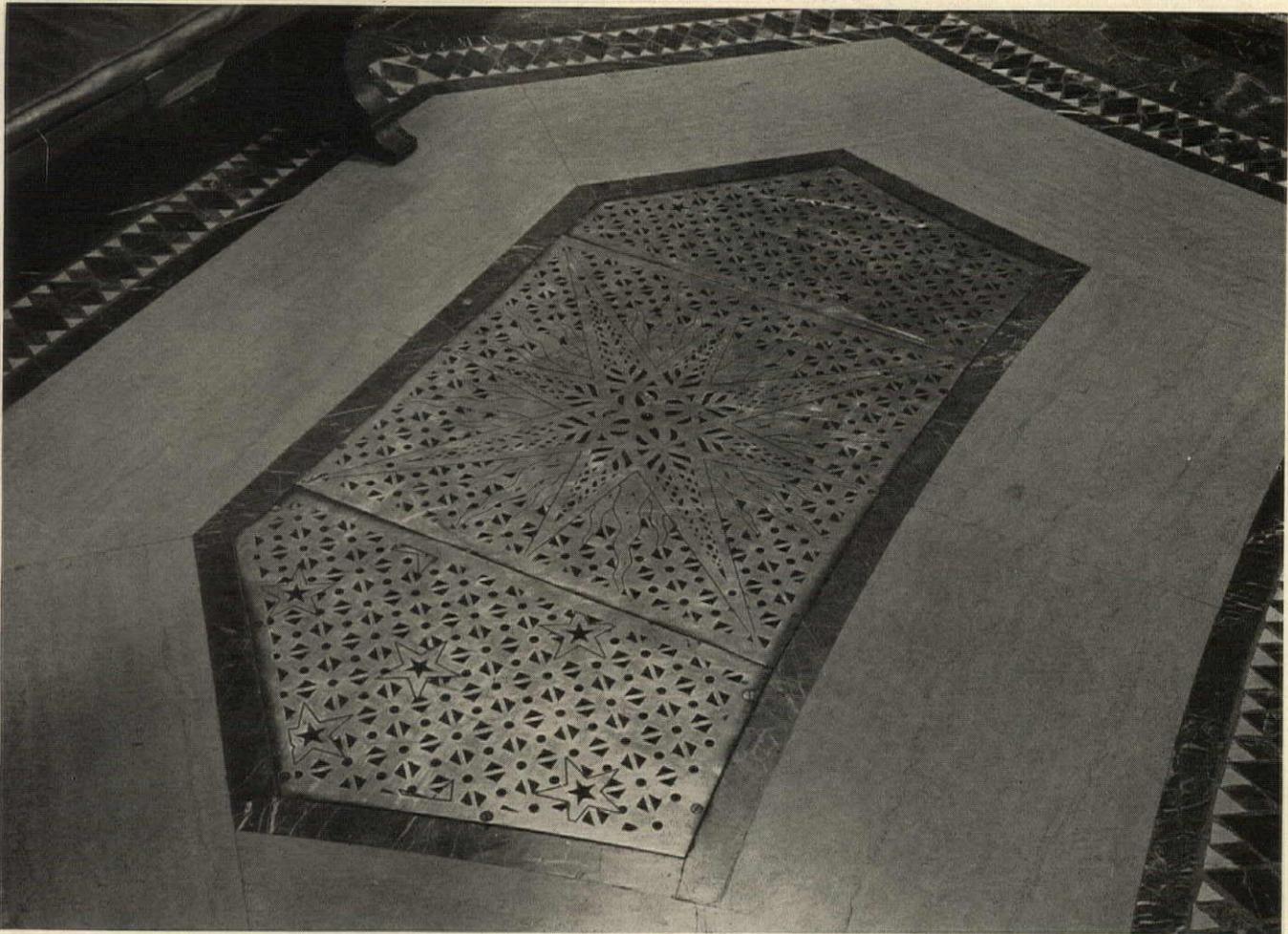
Buff and black marble mosaics were used in executing the floor designs.
Detail of border in Rotunda symbolizing fossil life of the Great Plains



Miss Meiere's cartoons for the floor mosaics were drawn with "living lines."
Rotunda floor panel symbolizing Air

sort of grille-work. The openings in the grilles are filled with thin slabs of onyx, $\frac{3}{8}$ " thick. The light which comes through these onyx-filled openings is quite the softest and mellowest light that one can find in any building. Onyx was employed, also, for the railings of the Rotunda galleries. It is very beautiful in these railings, but has the appearance—to this commentator—of being too fragile.

There is a great lighting fixture in the Rotunda—it hangs from 'way up in the Rotunda dome and can be raised and lowered by means of a windlass on the floor above. The fixture weighs some 3,500 pounds. I happened to be in the Capitol on an inspection trip, at the time this fixture was hung. As I admired it from one of the Rotunda galleries, I noticed that it was swinging slightly. Also, it was rotating a little, back and forth. I remembered the great pendulum which swings with the earth's motion in the National Academy of Sciences Building in Washington, and this swinging, rotating lighting fixture gave me a good case of the "jitters." I feared the thing would never stop swinging and rotating. I discussed it with William Younkin, the Supervising Architect of Construction, but we came to no conclusion. The next morning, however, all



Bronze grilles in the Rotunda floor were designed with a thought to the heel sizes of ladies' shoes

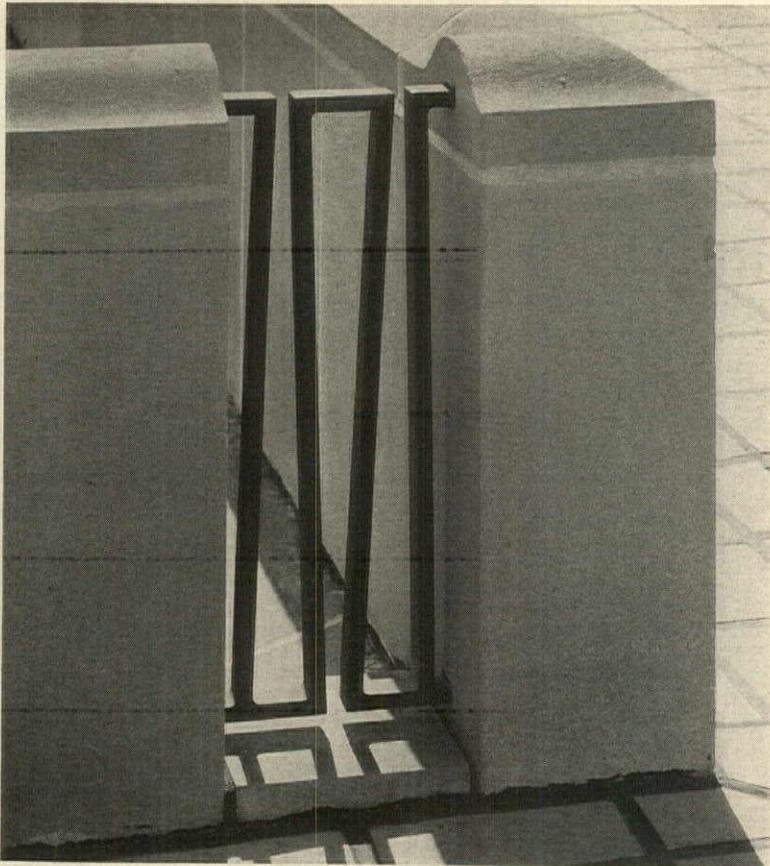
fears were laid to rest, for the fixture itself had come to rest and moved no more.

It is amusing to remember that there are the twelve signs of the Zodiac in a sort of "equatorial" circle around the fixture, and the Sign of the Bull had stopped exactly opposite the door to the House Chamber. Happily enough, one of the Representatives noted that coincidence and he was annoyed at what he supposed was a deliberate "wallop" at the august body to which he belonged. One hastens to add that no such "wallop" had been intended—it had been quite overlooked. Later, the Sign of the Bull turned away from the direction of the House door, as the cables and the chain got into their final tension positions, and the Bull no longer looks in any particularly significant direction.

One of the most interesting experiments on the building—one for which there was no precedent—was offered by the doors to the Senate Chamber. Lee Lawrie had made a gorgeous model for the Rotunda side of these doors—they were to be carved, rather deeply on that side and left plain, like slab doors, on the Chamber side. Anyone who knows wood and the tricks it can do, will appreciate the dangers locked up in a pair of doors with one

side deeply carved and the other perfectly plain. The depth of the carving (nearly two inches) made it necessary for the doors to be four inches thick. They were built up of mahogany two-by-fours, set so that the grains of adjacent pieces ran contrariwise. The finest mahogany obtainable was used. A solid slab door, four inches thick, was made up in this way. It was carefully cut to size, with a slight draft, and a heavy bronze angle frame was "sweated on," so to speak.

Through the doors, horizontally and vertically, heavy bronze through-bolts were run and screwed into the bronze frame, the bolts passing where there was the least carving and the greatest thickness. After nearly five years, the doors show no slightest sign of checking, warping or cracking; and it is safe to predict that they never will. The carved side (the Rotunda side) is painted in characteristic Plains Indians colors. Pale persons—and most persons, alas, are "pale"—are shocked at the raw, strong colors used. Indians like those colors though, and these are "Indian Doors." Also, those "wild Indians" among artists and architects I know, who are not afraid of honest pigment bravely applied, like these doors and dare to admit it.



Left: bronze rails in the terrace parapet were designed as connections to care for the expansion and contraction of the stone. On facing page: detail of bronze handle on the Senate Chamber doors, which are shown on page 75

Opposite the Indian doors—across the Rotunda—is another pair of gorgeous doors. These doors give entrance to the House Chamber and are covered with leather. They are decorated with color and they are tooled for all the world like some enormous, old, medieval book of great price. The designs, by Miss Meiere, were beautifully carried out by Irving and Casson and the workmanship is as exquisite as the designs are distinguished. This pair of doors shows the “White Man’s Tree of Life,” and the opposite pair shows the “Red Man’s Tree of Life.”

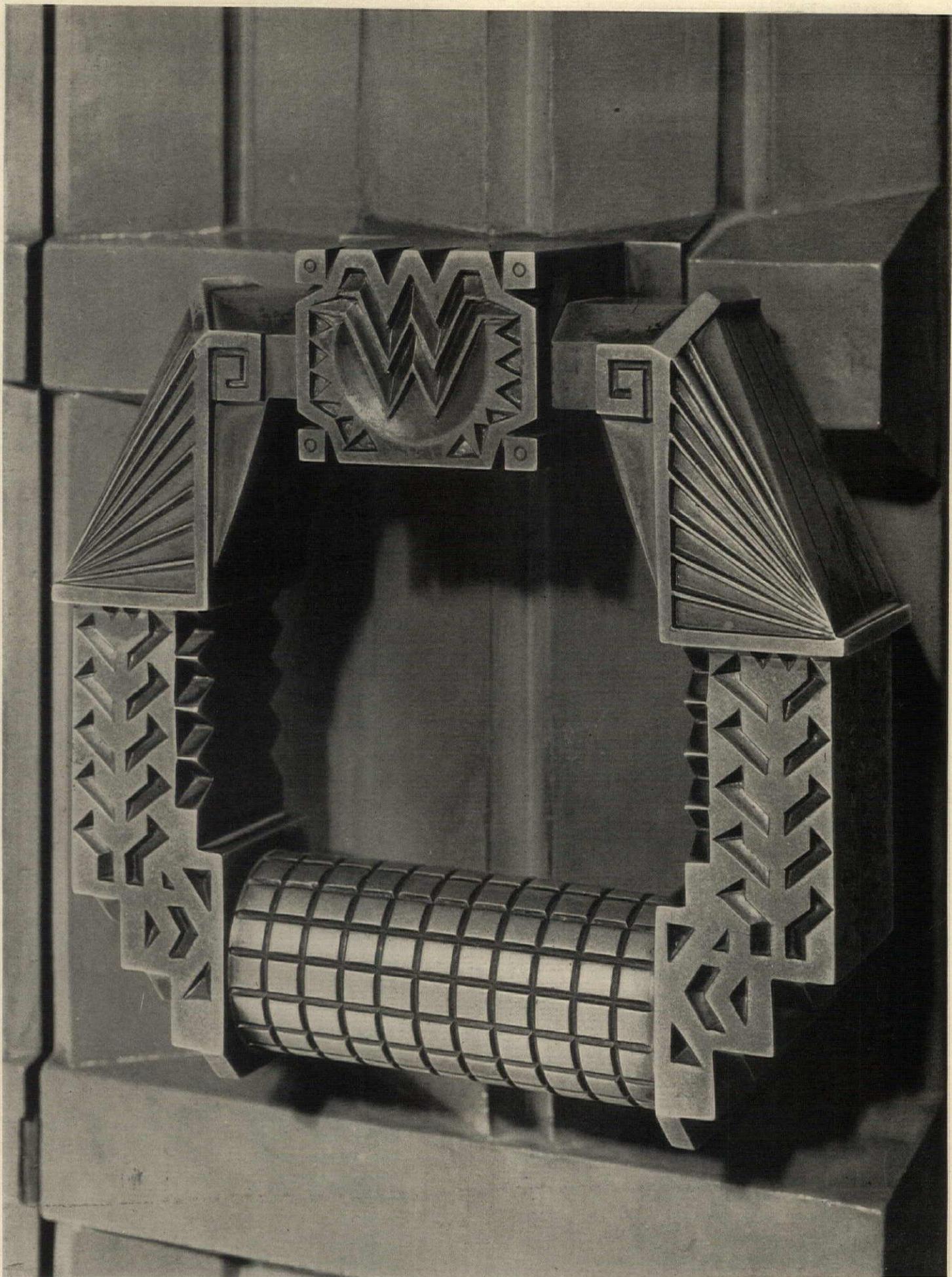
The bronze handles on the Senate Chamber doors are interesting and beautiful and they offer an excellent example of the care expended upon little things in the Capitol, for, after the design for them was made, young Howard Swenson spent over two weeks of devoted labor in the study of the detail of these handles and in making a model from which the founder made his pattern.

The tile covering on the dome—gold tile it is—was an interesting thing to work out. It was obviously necessary that every precaution be taken to prevent the possible falling of any of these tile from such a great height. Each tile is anchored to each adjacent tile, both vertically and horizontally. Each horizontal band of these gold tiles becomes, thus, a solid belt and no link of the belt can possibly slip or fall.

An interesting experiment in the use of color in shadow was tried in the panels at the tops of the windows in the “lantern” of the Tower. These

panels are of bronze, as the windows themselves are, and the colors were enameled onto the metal. Red, white and blue were used; white where the shadow was deepest, red where there were reflected lights from below, blue where the lights were strongest. The result reads beautifully from the ground, some four hundred feet below, and the colors illuminate the shadows under the soffits at the window heads most agreeably.

And speaking of the Tower “lantern” brings to mind the experiment in the use of structural glass for the landings in the stair which goes around the lantern between its inner and outer walls, to give access to the house-tank room inside the topmost dome. The stairs proper are of concrete, the necessary risers occurring at the solid piers in the eight angles of the lantern. Between the runs of stairs in these angles, it was necessary to provide horizontal platforms and, because these platforms run directly across the great windows, it was necessary that they cast as little shadow as possible. So, clear structural glass, about $1\frac{1}{4}$ ” thick, was used for these landings, the levels of which were adjusted to come exactly in line with horizontal muntins in the inner and outer windows. These windows are glazed with straw-colored rippled glass and there is so little shadow noted from the glass platforms that one who is not “in the know” would never suspect their presence. The use of the straw-colored glass in the windows softens the lights and seems to kill all shadow. Also, it gives that “dim religious light”







Above: detail of tower buttresses. Strong relief of the carving is in powerful contrast with the simple surfaces of the limestone walls. Figures represent Lincoln, the Great Emancipator, left; and Pentaour, an Egyptian scribe, representing the dawn of history, right. On facing page: detail of column cap in the North Vestibule

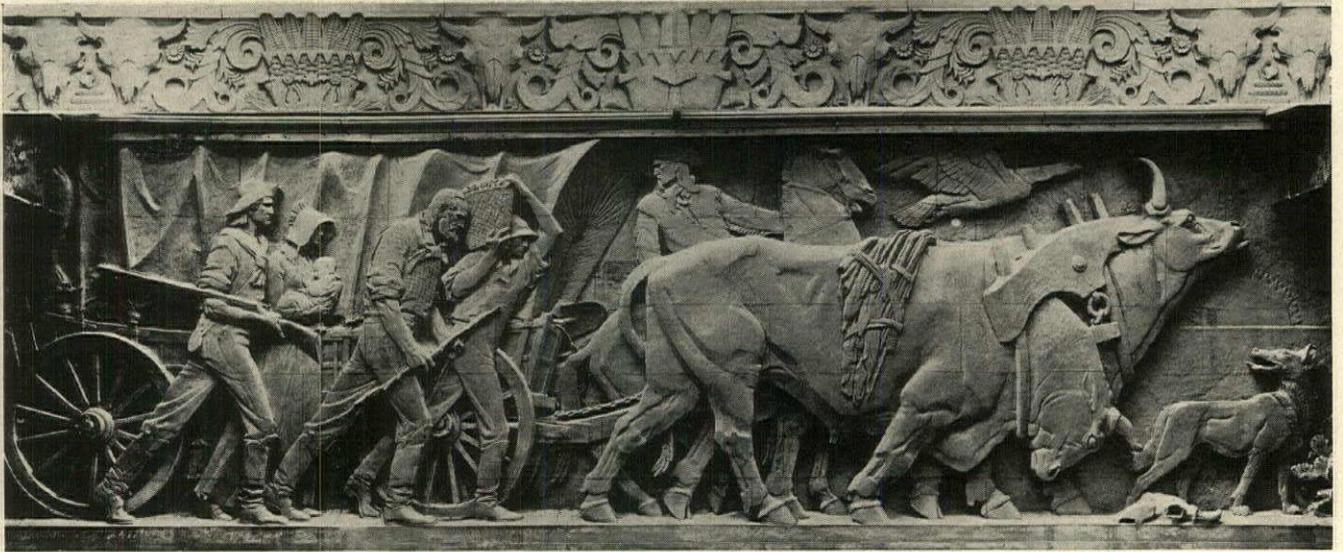
which the black-green-gold color scheme of the Memorial Chamber demands.

One of the most significant experiments in the building—since it solved a problem which had never been solved before—was the correction of the expansion of the terrace at the first floor level. This terrace, over four hundred feet long on each of the four sides, was originally divided into twenty-foot sections, with a generous expansion joint between sections and another at the wall, as well as one at the outer parapet. The covering of the terrace was of concrete, with a gravel surface. Every terrace of this sort has given trouble. There is one in Denver—I think it is on the Mint; the west terraces of the Capitol at Washington and the great terrace of Bancroft Hall at the Naval Academy, are other examples of terraces that have never been satisfactory. So, there was no precedent to go by.

The solution was found, almost by accident, as one walked across an asphalt street in Lincoln on a very hot day, and the resilience of the asphalt was noted as one's foot sunk slightly into the material. "Here," one reflected, "here is the solution for the terrace difficulty." So, to put a lot of

thought and a lot of work into a few words, the old covering was removed, the old expansion joints were cleaned out and enlarged, and a pad of asphalt was laid down. On top of the asphalt pad, 12" square buff tile were laid in asphalt, with wide asphalt joints between the tile. Thus, the covering itself may be said to have an expansion joint every twelve inches, instead of every twenty feet, and the asphalt pad itself might be called a continuous expansion joint over four hundred feet long. At the angles in the parapet, the stone was cut out and a bronze rail, detailed so as to have considerable spring in it, was inserted. It now seems entirely satisfactory.

I remember a remark which Tom Kimball of Omaha, who might be called the "Granddaddy" of the Capitol, made when the scheme for this asphalt pad was explained to him. He looked at the sketches and listened to the description and finally this wise old fellow said, "Why, that is the most sensible idea I ever saw come out of New York." Which classic phrase may as well be stretched to cover the whole Capitol and, thus, provide a refrain on which this rambling conversation may well close.



Symbolism and Inscriptions

Illustrations are from original plaster models and drawings

BY HARTLEY B. ALEXANDER, HON. A.I.A.

EARLY in February, 1922, I received a note asking me to join the Nebraska Capitol Commission at a luncheon in Lincoln. Mr. Goodhue was a guest and this was my first meeting with him. He told me that he hoped that I would be willing to prepare a set of inscriptions for the Capitol about to be built, and he handed me a memorandum covering places on the exterior and the interior where inscriptions were called for. The memorandum, brief and to the point, listed for the exterior:

1. Frieze below main cornice of low parts of building—names of the counties of Nebraska.
2. North elevation, central pavilion—Mercy, Wisdom, Force and Equity, constant Guardians of the Law.
3. Inscription over north central door, four lines of about 12 letters each.
4. South elevation, central pavilion about 44 letters in one line.
5. Two panels on cheeks of north steps, about 9 lines of about 7 letters each.

The first was incorporated into the building. The second also was adopted—with modification for both architectural and dramatic reasons—the four great guardians becoming Wisdom with the lamp for her

crown, a bearded male Justice, and Power, tempered by Mercy whose hand is raised to stay his half-drawn sword.

The third inscription was to occur below the panel of the Pioneers, sketches of which Lawrie had already made. A passage from Burke, "The principles of true politics are those of morality enlarged" first occurred to me. This seemed too subtle and not sufficiently challenging for the entrance. The adopted inscription, composed for the word pattern, is surely more in harmony with the vigorous suggestion of the Pioneers: "The Salvation/of the State is/Watchfulness/in the Citizen." On the south elevation, the 44-letter inscription was to form the cornice decoration above the windows of the state law library. The selection of "Political Society exists for the sake of Noble living" for this location is a justifiable modification of a passage from Aristotle.

The parallel panel inscriptions on the faces of the parapets of the north steps was a problem in composition. Shortening the panels from nine to seven lines, I submitted: "Honor to/Pioneers/who broke/the sods/that men/to come/might live"; and "Honor to/Citizens/who build/an House/of State/where men/live well." Goodhue's letter of com-

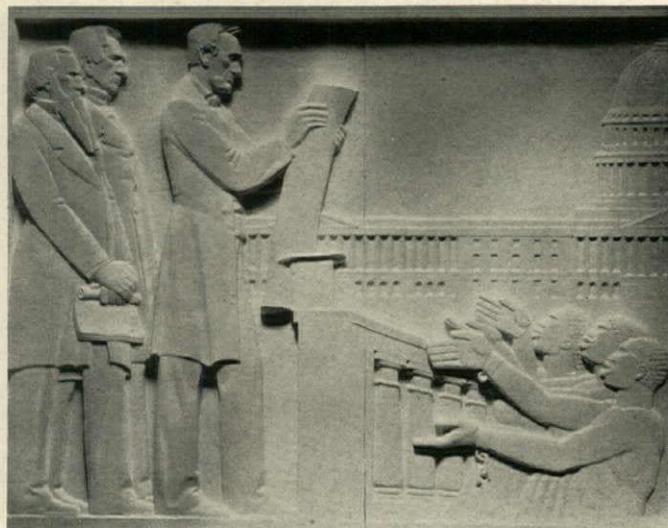


HONOUR TO
CITIZENS
WHO BUILD
AN HOUSE
OF STATE
WHERE MEN
LIVE WELL

ment is interesting as indicating his keen sense of lettered decoration: "The first inscription, 'Honour to Pioneers,' etc., is almost thoroughly satisfactory, the only 'out' is the O C O in the next to the last line. This however, is hardly changeable. In the second inscription there is serious trouble in the two spaces that come one over another between 'an house' and 'of state.' You will notice that we have taken distinct liberties with both these lines, spreading out the H in 'house' and the F in 'of' and the S in 'state.' As the inscription was first drawn the spaces were almost equal and directly above one another. I don't like to accent letter variants in inscriptions as important as these, but don't see any way out of it."

It will be noted that I had written "honor" and that Goodhue had unconsciously substituted "honour." Later he telegraphed: "Am disturbed about omission of U in 'honour' in inscriptions. Prefer U on both artistic and philological grounds especially since fourth line at right reads 'an house.' Please wire decision." My decision was immediate accord, although I explained that a regard for a certain type of public sentiment had been in my mind. Almost the first critical letter to appear in the Nebraska press was a protest against Angliciz-

Entrance balustrades form the first unit of symbolism. The buffalo and maize express the life of the prairies with inscriptions that memorialize Nebraska's Indian tribes by quotations from their rituals, songs and legends. Directly above is the inscription on the face of the west balustrade at the North Entrance. On facing page: pioneer panel above the North Entrance doorway symbolizes the coming of the white man to a new land



Relief panels in the terrace circuit symbolizing the spirit of law as shown in history. Above, left: The Establishment of The Tribune of The People. Above, right: Solon Giving a New Constitution to Athens. Below, left: The Mayflower Compact. Below, right: Lincoln's Proclamation of Emancipation

ing our *American* spellings—and with a V for a U in HONOVVR!

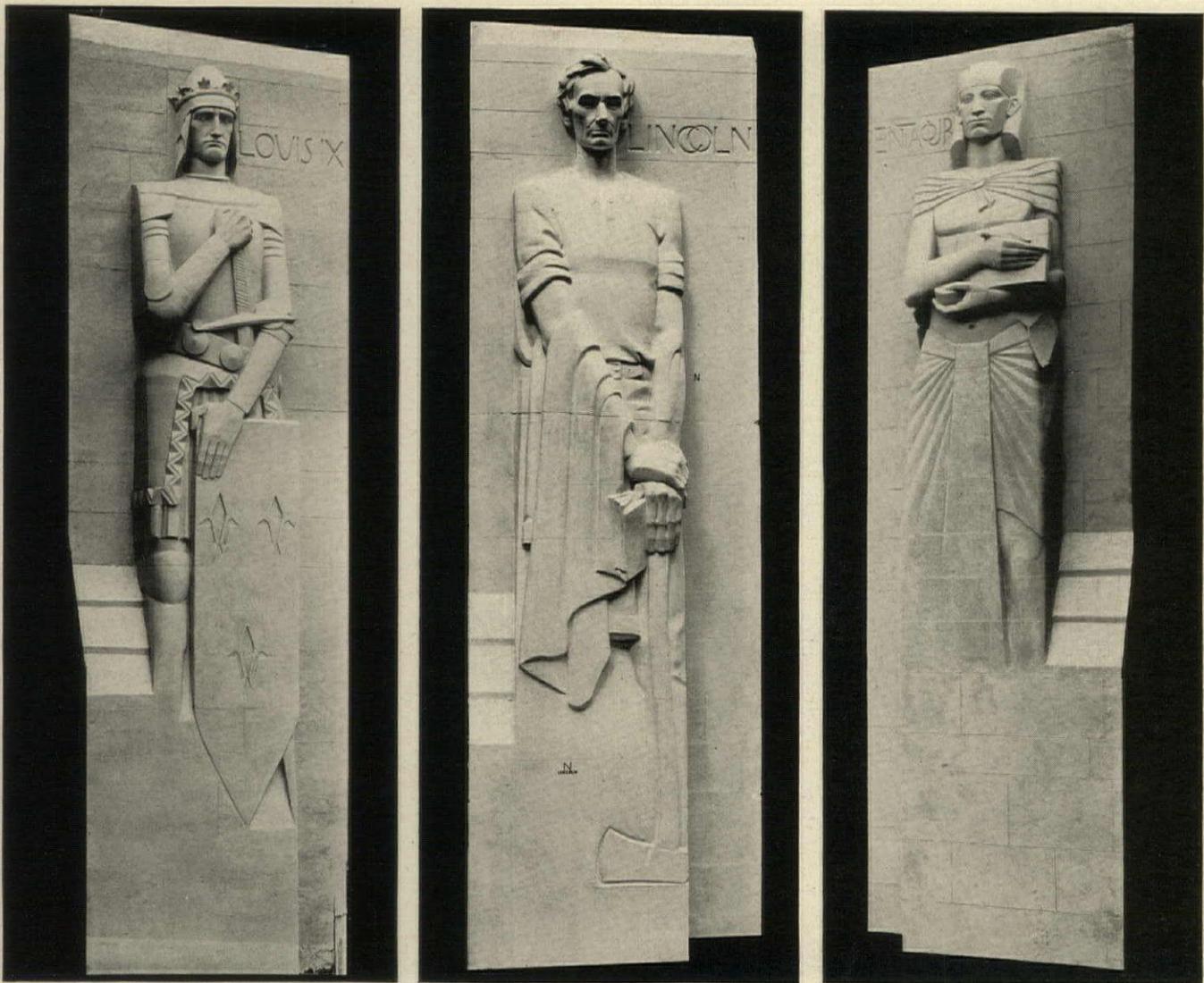
In our first interview, Goodhue indicated in a rough sketch that he was considering buffalo figures in low relief for the cheeks of the parapets at the north entrance. It was agreed that the inscription for these reliefs would celebrate the original inhabitants of Nebraska. The first detailed sketch which I received showed winged buffalo. I objected on the ground that they were false to all American lore. In Indian tradition there is nothing to suggest winged bison. The bison, however, is associated with maize, the Indian's greatest bequest to the race which has succeeded him. I urged, therefore, that a maize design be substituted for the wings, and that names of tribes that had once included Nebraska in their hunting grounds and passages from their poetry be tests for the panels.

Goodhue at first regarded my letter as "distinctly disheartening," feeling that "to take the wings off the buffalo would entirely destroy the

value of the symbolism,"—though he added with amusing humor, "I will show your letter to the sculptor and see what he thinks, and in the meantime, what we meant by the wings on the buffalo was that the buffalo had to all intents and purposes taken to them." The final outcome gave us the two fine designs, one of the bull, the other of the buffalo cow and calf, treading a feathered earth, while behind them are the hills of maize, which to the Plains Indian were the bison's gift to mankind.

Initial problems demonstrated that the whole decorative scheme was interbound with that of inscriptions. Goodhue was determined, as he said, that there should be no meaningless or pretentious ornament on the building and that its symbolism should be native, appropriate and unified.

My first task then was to plan a scheme of symbolism with a view to its readableness and significance for a Nebraska public. The essential plan of the building itself, and the distribution of its masses gave the clue. The first story, earth-clinging, forms



Heroic figures on the tower buttresses symbolize present ideals rooted in a living past. Of eight such figures the three above are, left to right: The Age of Chivalry—Louis IX; The Liberation of Peoples—Abraham Lincoln; and The Dawn of History—the Egyptian scribe Pentaour

a dramatic platform upon which uprears, like the circumvallation of an olden town, the low horizontal square of the outer edifice. Within this wall-like structure the transepts shape the four courts, while at the crux the central tower sweeps sheerly upward. It is geometrically simple. And its horizontal and vertical movements are readily symbolically translated as the level progress of history and the rising altitudes of the ideal. Goodhue's first notes implied that; they lacked only the details.

It was but natural to record the History of the Law, the traditions of which the pioneers brought to the prairies. Eighteen panels show: the Mosaic Law, Deborah Judging Israel, Solomon, these for the ancient Orient; The Constitution of Athens, The Law of the Twelve Tables, the establishment of The Tribunal of the People, Plato depicting the Ideal State, Orestes before the Areopagites, Justinian's Code, symbolizing the gift of the Graeco-Roman world; the Anglo-Saxon Code, Milton defending free speech, Burke speaking for America, furnish-

ing the British contribution; then, for the races of America, Las Casas pleading the cause of the Indian, The Mayflower Compact, The Proclamation of Emancipation; and finally three devoted to Nebraska's history, The Louisiana Purchase, The Kansas-Nebraska Bill, and the admission of the State, thus completing the circuit of the Capitol and a symbolism of more than three thousand historic years.

The series is broken on the south facade by balustrade panels representing the Magna Charta, flanked by our Declaration of Independence and the Framing of the American Constitution, while above are the stately figures of the great lawgivers who have shaped Occidental destinies.

The decoration of the exterior of the tower, rising above the record of the law, fittingly symbolizes those ideals of culture which the law protects and nourishes. Eight great figures were determined upon for the lower buttresses of the tower. Namely an Egyptian scribe for history, a prophet of Israel

for vision, a Greek philosopher for reason, an emperor for statecraft, an apostle for faith, a saintly king for chivalry, Newton for the science of nature, and last, Lawrie's beautiful Lincoln for the liberties of peoples.

An elaborate symbolism was originally planned for the upper portion of the tower, but experience and wisdom left the purity of the upper structure to speak for itself. Below the rim of the dome there is a frieze of thunderbirds, the soil's own symbol of the life-bringing rains of spring and summer, and at the apex rises the buoyant bronze of the Sower upon his pedestal of sheafed wheat and maize—symbol of the bread of life and the hope of the future for an agricultural domain.

Before his death Goodhue had settled upon the general character of the decoration of the interior as determined by the plan and approved the outline for the interior symbolism. He had assigned to Augustus Vincent Tack the mural decoration of the Governor's suite; to Hildreth Meiere the tile mosaics of the vestibule. The vestibule was to typify the gifts of Nature to Nebraska soil; the foyer, image of the settlement and future of the land; and in the great rotunda were to be represented man's attainments. Completing the cross, right and left the two chambers of legislation were to commemorate the human drama, one chamber being devoted to the world of the Red man, the

other to the coming of the nations of the White. The detailed working out of this outline proved to be a labor of years; it was for me to set the themes and for Lee Lawrie and Hildreth Meiere to put them in beautiful form.

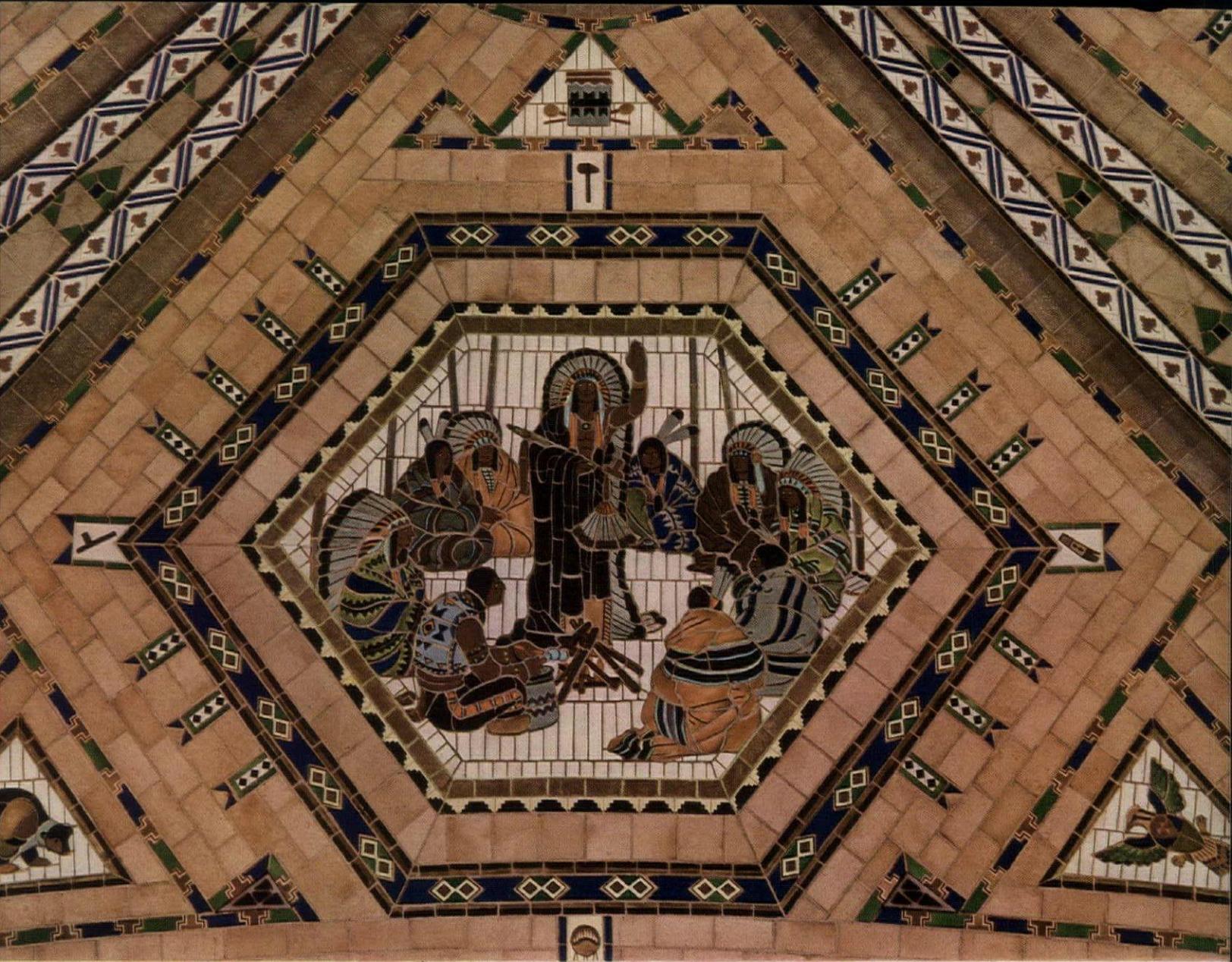
In the process of developing the Capitol's symbolism the thought which kept recurring to me was that somewhere in the building should be told the story of life which Nebraska's subsoil so richly exemplifies. The idea of expressing this story in the floor of the rotunda came in the summer of 1925 when with Miss Meiere, I visited Siena. And it was an exciting hour in which we laid the plan.

From Italy, too, came the first suggestion for the great rose of the Virtues which fills the rotunda dome. The Senate Chamber decoration is based upon local symbolism of the Plains tribes. It forms, I venture, the sincerest and most adequate memorial to an Indian culture which has yet been given form in the United States. The House Chamber, in the golden frieze which adorns the ceiling, recalls the various sovereignties—Spanish, French, American—which made history and a new era on the plains.

Upward, under the dome of the tower, is the Memorial Chamber. The interior is high, quiet, breath-taking and silencing, with the beauty of altitudes. Within it is to be that memorial to heroism without which no house of state can fulfill its office in society.

Cartoons for symbolic decoration of the interior. Above, left to right: Earth, the Life Giver; The Tradition of The Past; and the Water Genii. The center panel is in the ceiling of the Foyer; the other two are in the floor of the Rotunda. Below is part of the gold-leafed frieze on the ceiling of the House Chamber





COLOR IN THE NEBRASKA STATE CAPITOL

Throughout the decorative elements of the Capitol interior color is, with but few exceptions, an inherent part of the decorative materials themselves. But since the theme of symbolism as evidenced by both forms and inscriptions is complete, no attempt was made to use color according to any symbolic tradition. Choice of colors was influenced by the desirability of harmony, and the delineation with more than ordinary forcefulness of an involved variety of pattern. Thus, in the ceiling of the Senate Chamber—a portion of which is shown above—the colors of the panels, similar in tone to those actually used by the Indian tribes depicted, set the key for the surrounding designs. At the left on this page is a detail of the wall tapestry in the Senate Chamber. A detail of the ceiling of the Rotunda is shown on the following two pages



TEMPERANCE

WISDOM



FAITH

JUSTICE



Leather covered doors to House Chamber, designed by Hildreth Meière

Not in the Specifications

BY OSCAR H. MURRAY

Bertram Grosvenor Goodhue Associates

It has been suggested that if the "story of the job" could be written free from technicalities, it would make interesting and exciting reading.

We doubt it. All well-conducted architectural jobs should be like the well-conducted expedition of which Roy Chapman Andrews speaks—without adventures. There were complications—there were hazards and headaches—but they yielded to patience and tact, and considering the size of the job and the length of time the operation took, it is remarkable, as one looks back on it, that it went with so little friction.

The idea for the Nebraska State Capitol germinated in the soul of Bertram Grosvenor Goodhue, who, when invited to enter the competition, grasped the significance of the opportunity presented by Nebraska as a setting for his conception. It flowered in the drafting room, under the same skillful guidance, nourished by the ideas brought to it from many sources, all flowing through channels fashioned by him. It came to full and final fruition under the hands of his successors.

It is unfortunate, but true, that the actions of an honest man can be distorted in the mind of one—shall we say—whose business it is to deal with dishonesty. When the new Capitol was started, the reverberations of the scandals connected with State buildings in Pennsylvania had not yet died away. Thus it was that when the clerk-of-the-works asked specific instructions about approving limestone for the facing of the building which was a tawny yellow and which had a few travertine holes and coarse shell markings in it, trouble began. Mr. Goodhue told him that this was exactly the kind of stone for which he was looking to produce the effect he had in mind—something quite opposed, probably, to the "classic" type of masonry generally associated with public buildings. And the architect was put in the position of telling the citizens why he liked what he liked, and why it was the proper kind of stone for that particular building. This he had to do in the face of opposition which had on its side the general feeling that graft was to be expected in any public building operation and which was supported in some quarters by direct malice. He came through to a complete vindication of his personal and artistic integrity. But those of us who were closest to him have no doubt but that the ordeal shortened his life.

One other effect it did have, however. It stirred

up an interest in the building among the people of the state which has never flagged. This interest, inspired no doubt by the same influence which inspired the first investigation, was responsible for a further searching of the hearts of Mr. Goodhue's successors and the Capitol Commission.

This time it centered about the construction of the terrace, which had been causing the architects much concern. The problem was to meet the different degrees of expansion on the north, south, east and west sides of a building over 400 feet in each direction, under a temperature ranging from 25° below zero to a sun temperature of some 130° in the summer. They had found that the two types of expansion joints in the terrace, one of which was in the surface finish, alternating with one running completely through the slab, worked in one direction, but not in the other—in short, they functioned as expansion joints, but not as contraction joints. Relaying the terrace in tile laid in a rock asphalt bed with asphalt joints proved the solution.

Once under way, the investigation branched out into marble columns and acoustic tiles, and the public learned that if you want a fine marble column or rich wall panelling, you must accept a certain proportion of marble which has been waxed and cemented. And if you do not want to accomplish acoustical and decorative effects with perishable materials, you must use materials more costly because more permanent. All of which educated the public—at the expense of the architect.

One of the problems of construction was to maintain the old Capitol building during the initial stages of the construction of the new one. This, coupled with the fact that the State of Nebraska conducted the building operations on a "pay as you go" basis, necessitated the erection of the new building in four separate operations.

The first consisted of the foundation work for that part of the building which comprises the outer hollow square. The second operation, which became the First Section in the drafting room, consisted of the north and south portions of the superstructure of the outer square, leaving gaps at the east and west through which the old building could be removed. Originally the second section was to include the cross-shaped section comprising the two chambers, the foyer and the library, together with the base of the tower, while the third was to be the tower itself.

It became evident that this scheme would entail building the tower with the roof of the central unit as a working platform. So the scheme was changed and three-quarters of the central crossing were built, including the tower base. This became the Second Section, the Third Section being the upper part of the tower. Then we "backed out of the hole" and built in behind us, the Fourth Section being the House Chamber and Lounge and West entrance.

The House Chamber wing was the only one where a major change from the original plan was made. The original Legislative Chamber was intended for the Lower House. When the furniture was laid out, it became apparent that while it might be possible to crowd in a hundred legislators, they would be too cramped for convenience or dignity. This chamber, therefore, became the Senate's which had a membership of only thirty-six. And the west wing of the central crossing was redesigned in plan to accommodate the larger legislative body.

THE manner of writing the specifications for the First Section was unusual. Each trade had a separate specification and bidding form, and there was issued as well a general contract form embracing all the trades. Under the terms of the general contract the contractor was obligated to name his sub-contractors, and not only that, but he agreed to accept any sub-contractor who had submitted a lower figure on any trade if the same were acceptable to the Commission. By this means the Commission had the opportunity to sublet all the trades directly if it was in the interests of economy to do so. Actually it so worked out that substantial saving was effected in the first estimate by the substitution of some sub-contractors for those whose figures were used by the low bidder. Incidentally the temptation to "shop" the bids in the major trades was removed.

During the whole job only two men lost their lives, and neither of them on the building itself. One of them was engaged in unloading earth from the excavation in another part of the town, and the other was going home from his work when a derrick arm slipped and dislodged a stone from the old building. A near tragedy during the excavation of the foundation pits was only averted by the courage and quickness of the assistant clerk-of-the-works, who slid down the bucket cable to dig out two men caught

in a rush of quicksand. For a \$10,000,000 operation this is perhaps a record.

With but one exception, there were no financial failures among the contractors or sub-contractors engaged on this work—something of a record on public work, particularly in these trying times.

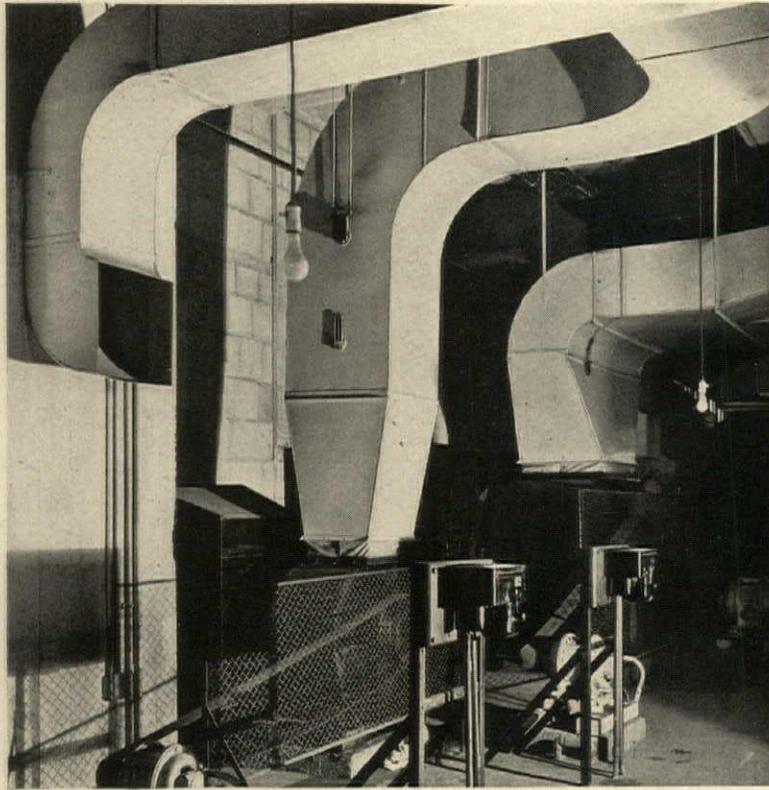
At the letting of the contracts for the First Section, the architects, foreseeing possible future difficulties on subsequent sections, asked for a bid per cubic foot of stone in quarry blocks, sufficient to complete the entire building to be delivered over a period of years. Of course, the state was taking a gamble that the price of stone would not fall—but the quarry was taking an equal chance that the cost of production would not increase before the job was finished. Actually, the price in the market came down somewhat, and the state was given the benefit of this to the extent of some 12½ cents a foot, in the latter part of the job.

One of the problems to which we gave much time and study was the material and construction of the gold tile dome on the top of the tower. We could have made it of metal and gold leafed it; but Mr. Goodhue had set his heart on tile after the manner of the domes in Mexico with which he was so familiar. As for the gold, we hope that it will be as permanent as the rest of the dome. At any rate, we know it will be more permanent than one set of gold glazed tiles which were submitted as samples, and which were exposed to the weather on our roof at the office. These tiles, after about three months of weathering, began to look reddish in color, and when we went out to examine them, the gold came off in our hands. That was one of the occasions when we were devoutly thankful for the delay in the completion of the model for the tower. Had this work been on time, we might conceivably have gone ahead and approved this tile.

But such are the chances and changes of this transitory life. The job is done and we are both glad and sorry. Whether it is well done, time will show. From a structural standpoint, it is as honestly done as if it had been carried out under the eyes of its author—which is as high praise as we can offer. Generations to come can appraise it as an architectural accomplishment much more truly than can we, who are so close to it.

On the verdict of the future we rest our case.





An Outline of Mechanical Service Equipment

MEYER, STRONG & JONES, ENGINEERS

STRETCHING an ample mid-western block-and-a-half in length, an equal distance in width, and with low main structure, the Nebraska State Capitol furnished welcome relaxation to engineers accustomed to the severe space restrictions of skyscraper design. There was room for everything when the heating and ventilating layout for this Capitol building was made.

The use of steam from the nearby State Power Plant instead of installing boilers, further simplified the space problem. Incoming pipes carrying steam at 100 lbs. pressure reach the Capitol through a tunnel. Conventional reducing valves lower the high pressure steam to two pounds for mains and five pounds for service water heaters. Two are required for the tempering stacks, two for the direct radiation, and one for the water heaters.

The steam leaving these valves is apportioned to three major uses. The first demand is to feed 800 units of direct radiation equalling a 60,000 square foot load. The second division is 50,000

square feet of equivalent direct radiation supplying the tempering stacks of the ventilating system. The third service amounts to approximately 3,000 square feet of equivalent direct radiation for the water heaters. The very amplitude of available space in plan area might have proved a serious obstacle in the old days before vacuum systems and vacuum pumps. As a matter of fact, the longest main is 864 feet long, nearly a sixth of a mile. Two separate sets of vacuum pumps are used, one set at the steam entrance room for the direct radiation, and the other group in the central supply fan room for the tempering stack returns.

In spite of the exceedingly long mains, no expansion joints or loops are needed. The design made use of natural breaks of the building to secure enough bends in the normal pipe travel. Here again the advantage is with the low, broad building, for the high vertical risers of fifty story buildings can seldom avoid frequent special expansion provisions.

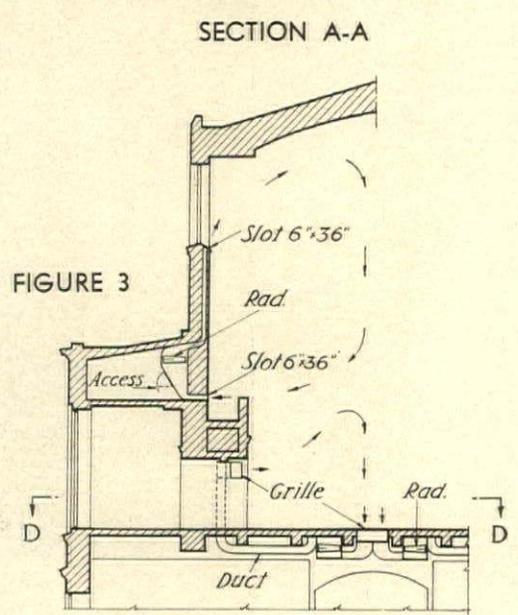
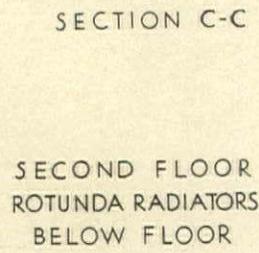
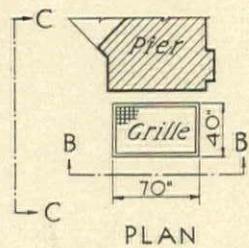
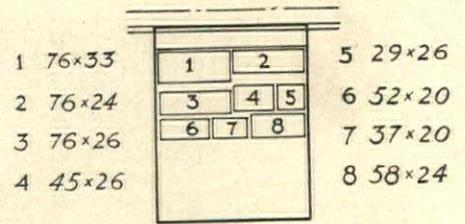
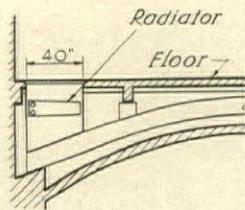
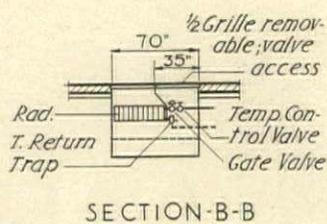
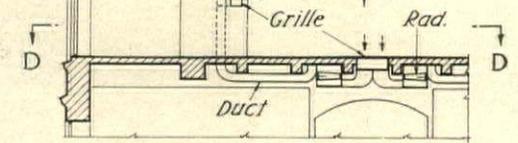
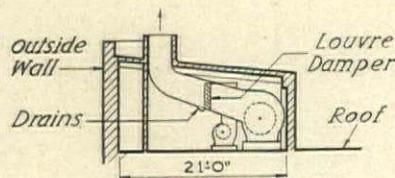
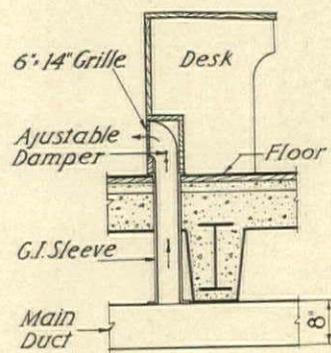


FIGURE 1

SECTION C-C
SECOND FLOOR
ROTUNDA RADIATORS
BELOW FLOOR

FIGURE 3



ROOF PLENUM EXHAUST

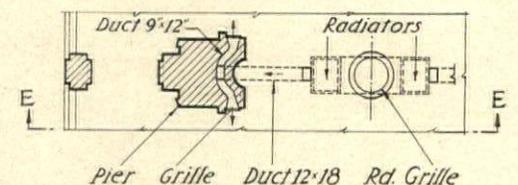
FIGURE 5

SECTION E-E

EXHAUST DUCTS UNDER
DESKS IN SENATE AND
HOUSE CHAMBERS

FIGURE 4

FIGURE 2



PLAN AT D-D

In the foyer and rotunda, standard indirect radiators are set into the floor as shown in Fig. 1. However, where it was desired to reverse the direction of air flow and where adjoining construction was not adaptable, use was made of indirect radiators in which the air travel doubles back within the radiation box itself, as shown in Fig. 2.

In the Governor's Room it was possible to build out under the window so that ample wall depth allowed the use of a concealed three-deep pipe coil. In Fig. 3 an intricate arrangement of concealed radiation is employed in which both inlets and outlets are narrow slots each 6" x 36". The space under a set-back is utilized to allow an appreciable widening of the draft enclosure to hold the cast-iron finned radiator. Although the air seems to follow a rather tortuous path, the 14' stack height gives sufficient chimney effect to assure excellent heating results.

The largest share of the total space allotted to heating and ventilating is occupied by the ventilation duct work. Over 40,000 cubic feet are steel en-

closed for this purpose. This is about equal to the cube of a good-sized residence. And yet this mass of sheet steel is fitted into otherwise unused spaces to such an extent that it is little exaggeration to say the Capitol would not be one inch smaller in general dimension if there were no ventilation system.

There are nine supply blowers and seventeen exhausters to supply 121,000 c.f.m. of outside air and to exhaust 159,000 c.f.m. Of this latter quantity 31,000 c.f.m. comes from the exhausts.

For those who enjoy thinking in round figures, it will be of interest to know that 250 tons of sheet metal, 52 tons of steel angle-iron for reinforcing, 5 tons of copper sheets, and 200 gallons of paint were used in the duct work. The fact that the fans and motors required one-thirtieth of a square foot of floor space per c.f.m. of air supplied is another interesting figure.

A special, separate system of ventilation is provided for the House and Senate chambers. The supply air in each case is introduced at the balcony

level through large grilles, and the distribution of the air is achieved by the exhausts. These are located in the bottom front of each Legislator's desk. The exhaust detail is shown in Fig. 4, where the special method of register control through use of a hooked rod inserted through the grille face may be observed.

Since distribution is perhaps the greatest problem of modern air-conditioning, the method used here is worthy of careful note. For the purpose of clearing out smoke and heated air there is also an auxiliary top exhaust in each chamber.

An unusual feature of the exhaust system in these chambers is the broad plenum duct extending under the entire floor. It is only 8 inches deep and forms a large pancake-like accumulator, from which air is drawn to the roof and exhausted to the atmosphere. Again, only a broad, low building makes this feasible without excessive headroom allowances.

Exhaust outlets on the roof are of modern type. Instead of employing the old style goose-neck end-pieces, a straight-up section is used and is out of sight below the parapet. This construction is shown in Fig. 5. The internal drain trough and louvred damper furnish weather protection for the fan.

The liberality with which thermostatic control instruments have been used assures even temperature maintenance in each separate part of the building. Since most rooms would be occupied by transient people, it was decided to adopt the "concealed adjustment" type of instrument, so constructed that only the operating personnel can control the temperature.

The control of the temperature of the ventilation air required great accuracy. Since all the heating is accomplished by direct radiators, the air supplied for ventilation must be at the "minimum comfortable" temperature to avoid over-heating. On the other hand the air could not be too cool for comfort at the velocity of delivery. Properly adjusted duct thermostats were used for this purpose.

If the ducts for ventilation are the biggest space consumers, the steam pipes form a second network occupying less space, and a third and smaller group would be the temperature control lines. A fourth system is formed by the electric wires, more intricate, perhaps, but needing the least space of all.

In the Capitol the total connected load is 1,050 K.W., of which 450 K.W. is for lighting and 600 K.W. for power requirements.

Just as special ventilation methods were used for the House

and Senate chambers, so, also, the lighting problem was treated differently in this part of the Capitol. In the general offices and other occupied areas, working light is provided by general illumination from ceiling fixtures. In the Senate and House chambers the overhead lights are supplemented by local working lights installed at each desk.

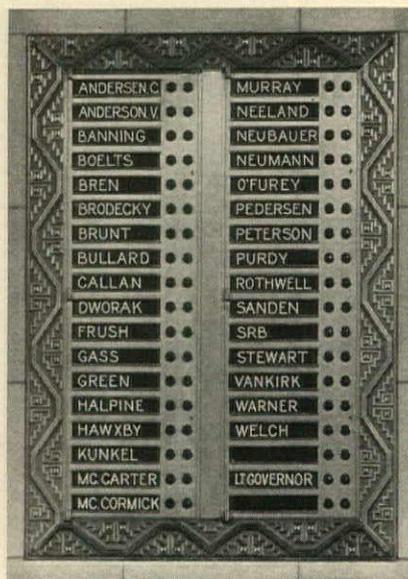
A feature of the legislative room is its novel electrical voting installation. A large indicating board is situated back of the Speaker's platform which shows the vote of each member as he registers his decision by pushing one of the buttons on his desk. There are three buttons on each desk, one for "aye," one for "no," and one for the page call. These votes are also recorded at the Clerk's desk; control switches are provided for both Speaker and Clerk.

Pioneer engineering, at the time it was installed in this building, is to be found in one phase of the telephone installation. Two wire lines were laid in fibre conduit one inch under the floor surface at three and eight feet respectively from the outer wall and extending generally around the building. Upon completion of the building, as the desks were placed, it was only necessary to drill through one inch of concrete and the fibre conduit in order to wire the phone at each desk; only in a few cases was it necessary to use wall outlets.

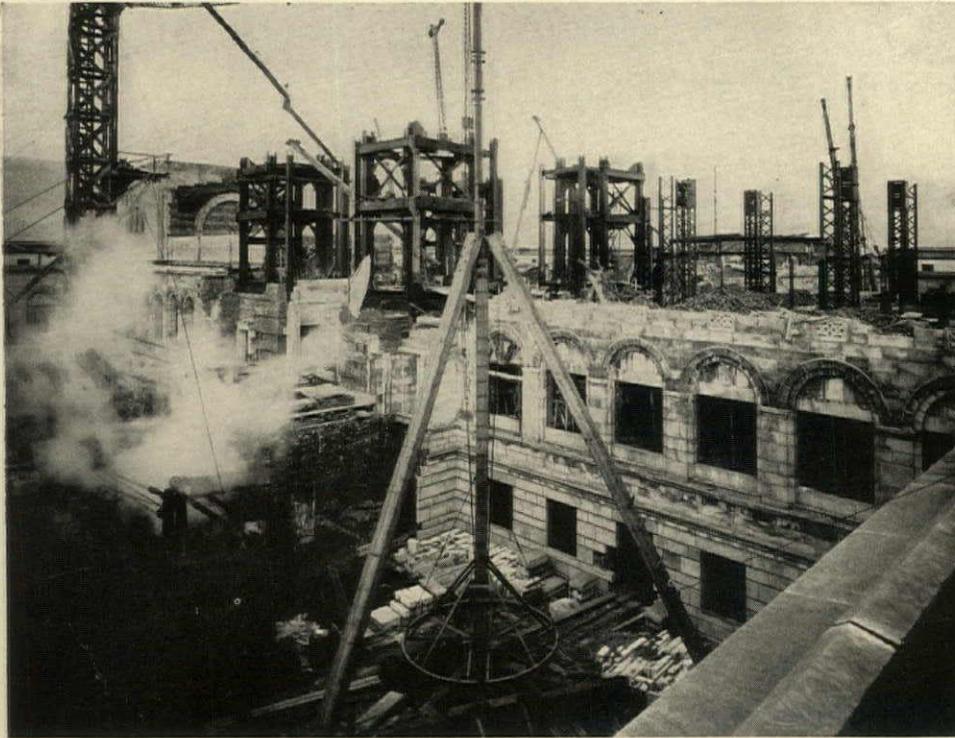
Thirty-nine Fire Alarm Stations are distributed throughout the Capitol. Twenty-seven of these are of the flush mounted, break glass, pull lever type, twelve have special design bronze doors and are of the open door, pull lever type. Two ten inch, single stroke, direct current, alarm bells are located on the basement and first floors. A modern control panel completes the installation.

In viewing the completed structure of this Nebraska State Capitol and considering the problems met and solved during its planning and erection, the greatest is perhaps least apparent today. This building was put up in four separate sections over a period of ten years, with complete stoppages of months or years between each construction period. At each stage, the completed sections were occupied, and appropriate plugs for the pipes, end fittings for the ducts, and terminals for the wiring were temporarily installed.

If the three dimensions of space caused a minimum of difficulties, the fourth dimension of time more than equalized matters, so that, the Nebraska State Capitol is but another example of the maxim every architect and engineer knows so well, that the job without "headaches" is yet to be built.



Voting panel in Senate Chamber



The Story of the Capitol's Construction

BY EMILE H. PRAEGER

Structural Engineer

THE structural design of the Nebraska State Capitol reflects an interesting light on and a compromise with its architect's philosophy.

Goodhue belonged to the school which believes the outward expression of a building should be an honest reflection of its construction. While not opposed to the use of new materials and improved methods of construction, he did believe in the honest expression of whatever materials or methods were employed. The architecture of the Capitol expressing as it does a masonry building, was therefore intended to be built of masonry.

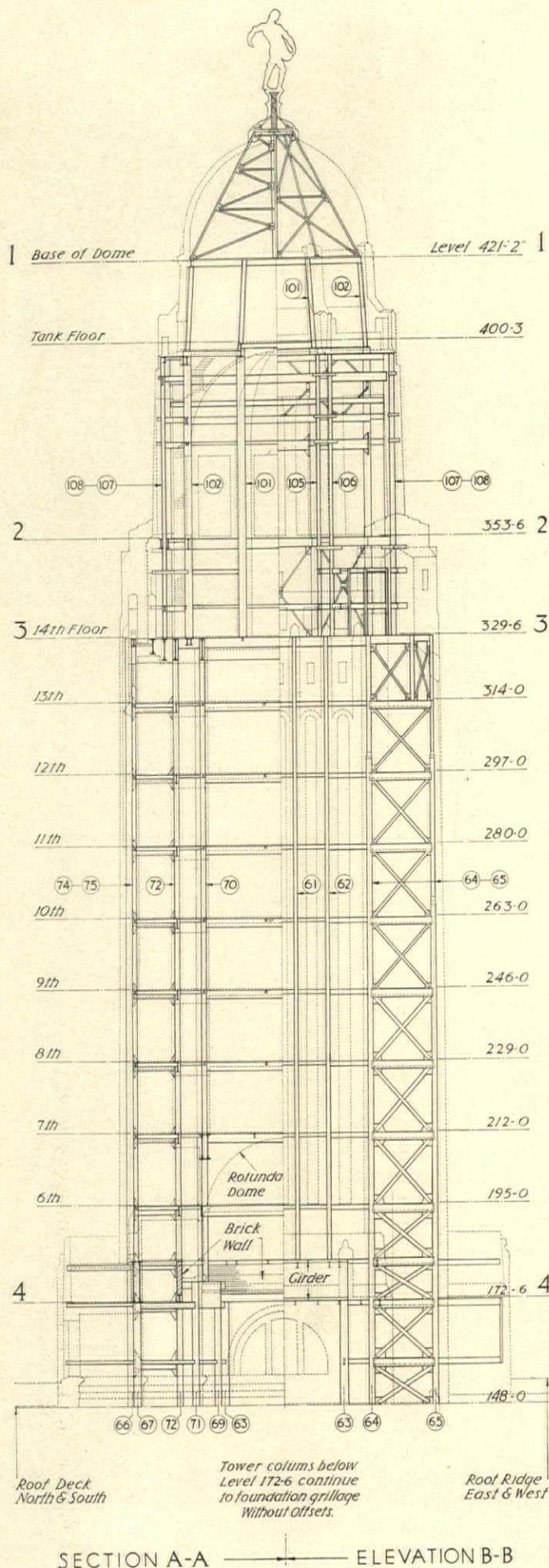
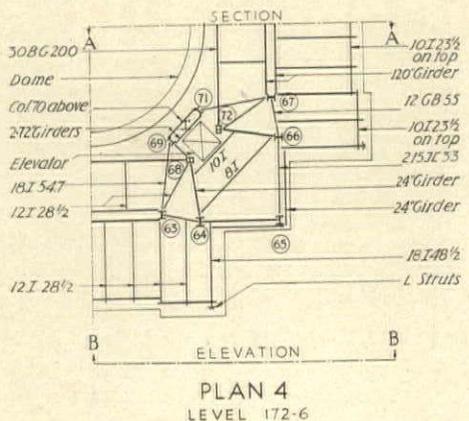
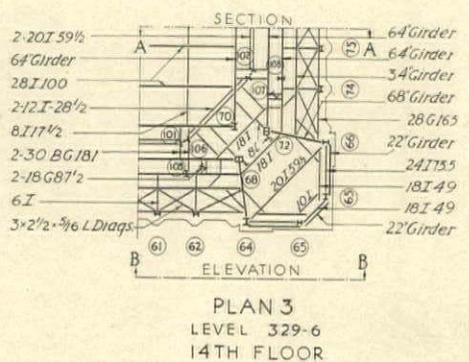
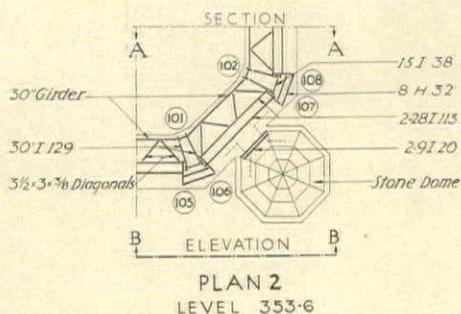
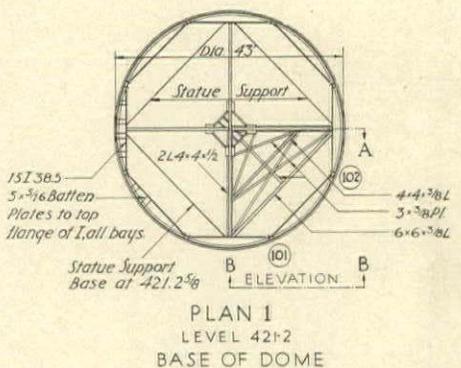
Although it was evident from the beginning that it would be a hopeless task, an attempt was made to design the Capitol wholly of masonry materials. It was only after careful analyses were made and the difficulties indicated in detail, that Mr. Goodhue finally conceded, regretfully, to the use of steel for the skeleton of the 400 foot tower. There was

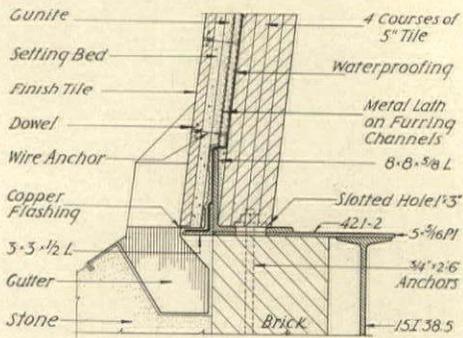
no opposition to the use of steel for floor beams, girders and other secondary members, but in the case of columns and lintels, this material had to be avoided wherever possible.

The base surrounding the tower presented no unusual problems; and with one possible exception, the entire building other than the tower is designed as a bearing, wall-masonry structure with stone and brick walls, steel and concrete floors and comparatively few interior steel columns.

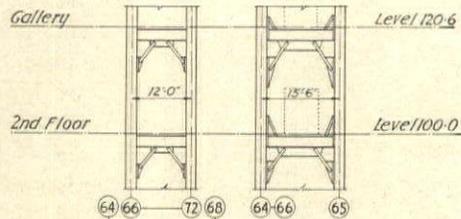
The one exception mentioned was not realized by Mr. Goodhue until he happened to notice it while visiting the job during construction. At the service entrance in the basement at the rear of the building there are two large arched door openings in the main exterior wall. The soffits of the arches are quite close to the underside of the terrace floor construction above; and heavily loaded floor girders take bearing over the arches from the interior. It

STRUCTURAL PLANS AND SECTION OF THE NEBRASKA STATE CAPITOL TOWER

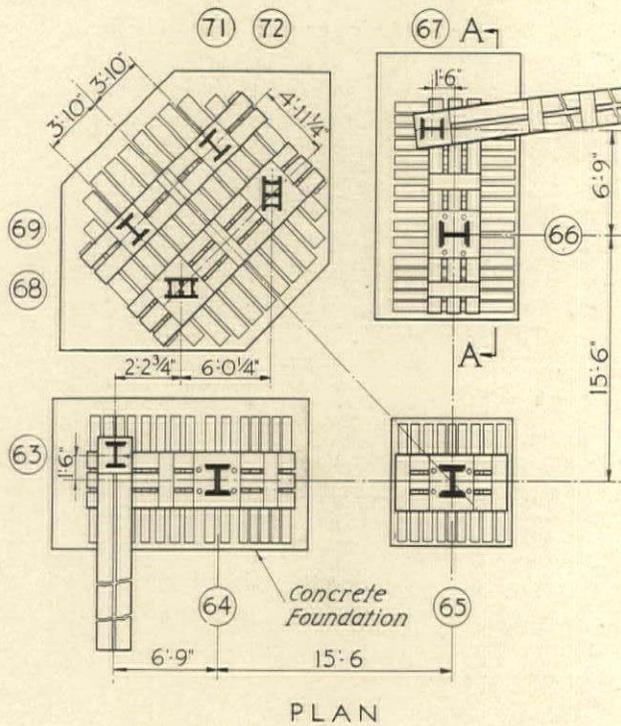




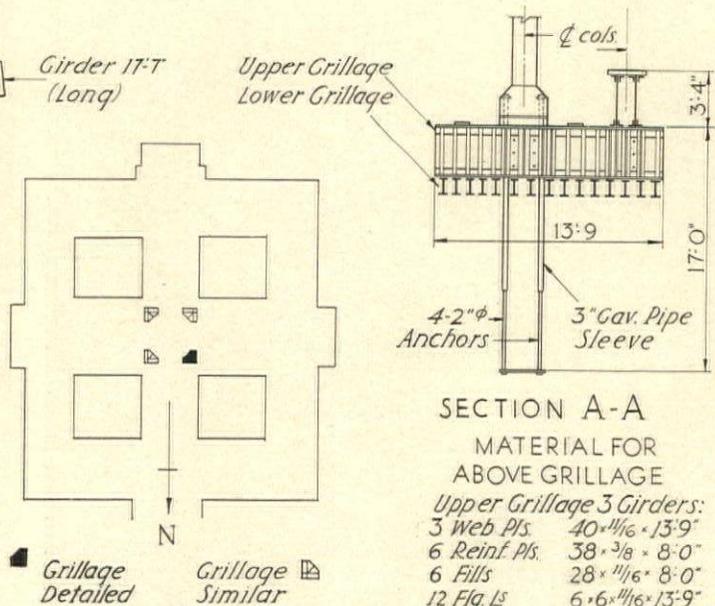
DETAIL AT BASE OF DOME



TYPICAL WIND BRACING
From Rotunda Gallery to First Floor
Level 1st Floor 82.0, Basement 62.0



PLAN



SECTION A-A

- MATERIAL FOR ABOVE GRILLAGE
- Upper Grillage 3 Girders:
- 3 Web Pls. 40 x 11/16 x 13'-9"
 - 6 Reinf. Pls. 38 x 3/8 x 8'-0"
 - 6 Fills 28 x 1/16 x 8'-0"
 - 12 Flg. Ls 6 x 6 x 1/16 x 13'-9"
 - 36 Stiff. Ls 6 x 4 x 1/2 x 3'-3 3/8"
 - 96 Stiff. Ls 4 x 4 x 1/2 x 3'-3 3/8"
 - 18 Fills 8 x 1/16 x 2'-4"
 - 24 Fills 4 x 1/16 x 2'-4"
- Lower Grillage:
- 30 Channels 15 x 40 x 8'-0"
- Channels are back to back.

DIAGRAM SHOWING LOCATION OF GRILLAGE

DETAIL OF GRILLAGE FOR TOWER COLUMNS

was found necessary to frame these girders into wall girders or spandrels at the floor level directly over the arches. Unfortunately, Mr. Goodhue happened by while the wall girders were being placed and before the floor girders had been installed and was chagrined at what he considered a breach in honest masonry construction.

The tower grows naturally out of a base formed by the phalanx of the terrace and executive wings, rising gradually to the crossing formed by the Foyer, Library, House and Senate and then reaches up to the dome in bold yet graceful strokes. At the pinnacle the bronze "Sower," standing on a huge bronze base, towers some 400 feet above the surface of Nebraska's farm lands.

The transition of the tower from the square plan takes place at the Memorial Hall floor level, some 120 feet below the base of the statue. The dome is supported on a base formed by the battered cir-

cular wall which starts above the level of the structural tile ceiling of the Memorial Hall. Below this circular base the tower changes in plan to an octagonal shape with a stair winding its way around the exterior walls.

It might have been possible to construct the tower above the Memorial Hall floor without resorting to steel. Directly below this level, however, unsurmountable difficulties were encountered when an attempt was made to carry the masonry by means of arches or lintels and transfer the accumulated wind stresses through the structure to the foundations. After a careful analysis it was evident that further trial would only result in waste of time and Mr. Goodhue consented to abandon hope for a purely masonry tower.

In order safely to carry the upper part of the tower, which is set in from the section below, an intricate mass of heavy steel girders was necessary at



"The Sower," Lee Lawrie's heroic bronze figure, at the start of his journey to the pinnacle of the Capitol's tower, 400 feet above ground. The huge casting with the bronze base upon which it stands weighs 8½ tons

the Memorial Hall level. Below this level the plans of all floors above the rotunda are typical, and except for the floor directly below the Memorial Hall, this entire space, some 120 feet high, was designed to be used as a library stack. In the usual construction of library stacks, the stacks and stack floors are self-supporting for their entire height; and it was the original intention to use this type of construction in the tower. However, in order to obtain adequate horizontal bracing and stiffness and to transmit the wind loads to the wind bents, structural floors of concrete and steel in the form of horizontal trusses were used at every other stack floor level. The stacks have not as yet been installed and as there is ample space in the top floor or "attic" of the low wings surrounding the Library to meet present storage requirements, it is doubtful that the tower will ever be used as originally contemplated.

In each corner of the tower, there is a stairway and an elevator and it is in these locations that the main columns and wind bracing bents are located. There are also exterior wall columns in the continuous narrow window mullions and two rows of interior columns which extend from above the rotunda dome to the Memorial Hall. These columns carry only the dead and live floor loads.

At the base of the tower above the roofs of the cross wings, there is a terrace on each side forming a transept and on the interior the tile Rotunda ceiling dome, the lower course of which is composed of thousands of different shaped and different colored pieces of tile forming the finished ceiling design. This dome is supported by a marble colonnade surrounding an observation passage, high above the floor of the Rotunda.

At the sides of the Rotunda on the main floor level are unobstructed passages leading to the Foyer, Library, House and Senate. The exterior walls of the tower are directly above the arched tile ceilings over these passages and here, as well as at the sides of the dome, heavy steel girders were necessary to carry the intermediate columns to the four corners of the tower.

In most tall buildings the framing is arranged in square or nearly square bays and the main columns extend from the foundations to the roof in an uninterrupted vertical line. In such designs, provision for wind stresses is a comparatively simple matter. Due to the architectural requirements noted above, the locations of the principal tower columns were restricted to a comparatively small area in each corner. It is in these corners that the extremely heavy dead, live, and wind loads are brought to the foundations.

Information relative to the character of the soil and its suitability for a tower structure was vague and indefinite; and it was decided to make large scale loading tests. The necessity of such tests is apparent when it is realized that the loads in the

different parts of the building vary greatly. The total weight of the low building was computed to be approximately 145,000 tons distributed over an area of approximately 155,000 square feet. The tower, however, comprising an area of only 6,400 square feet, weighs some 35,000 tons, and the resultant wind load increases this total considerably.

Directly under the surface, the ground consists of a mixture of silt and clay, known as loess. Borings at the site of the Capitol indicated that the depth of this stratum varied from 17 feet to 32 feet, below which a bed consisting of a mixture of sand, gravel and clay to depths varying between 5 and 20 feet, was encountered. Rock, known as Dakota sandstone, was directly below.

In order to determine the comparative bearing values of the loess and the rock, large scale load tests were made. Upon the loess, an area of 16 square feet was loaded and at a load of approximately 8 tons per square foot, the soil failed. Up to 3 tons per square foot the settlement was gradual and there were no signs of failure.

The rock was tested on two areas: 1 square foot and 4 square feet. During the 1 square foot load the settlement was gradual up to 63 tons when the rock failed. The test on the 4 square feet area showed a gradual settlement up to 92 tons, when failure occurred. These large scale load tests, requiring a superimposed loading of some 736,000 lbs., are unusual in building construction.

After considerable study, the decision was reached that it would be advisable to carry the tower to rock; and, to avoid any possibility of unequal settlement, it was decided that the foundations of the low portions of the building should be carried to rock as well, spreading the load to a limit of 12 tons per square foot. At the tower four large concrete piers in each corner were installed from the basement level to rock. At the low wings piers, varying in diameter from four to seven feet and belled at the bottoms, were installed under the basement walls on approximately 20 feet centers and the walls were reinforced to carry the wall loads to these piers by beam action.

The floor construction of the low wings consists of ribbed concrete slabs with spans varying from 22 to 32 feet. The roofs of these wings are of poured-in-place gypsum covered with copper roofing.

The construction of the terrace, which is 20 feet wide and about 440 feet on each side presented a real problem. The space below the terrace is used for offices and the question of insulation and water tightness was important. Expansion joints were provided at the building wall and at the terrace parapet around the entire perimeter. Transverse joints were also installed at intervals of approximately 20 feet. At intervals of approximately 80 feet the transverse joint in the surface was extended through the structural slab below, copper dams being installed at these locations. Temperature insulation was obtained by using terra cotta

blocks laid flat and directly upon the structural slab.

Membrane waterproofing, using fabric instead of the usual felt was placed over the terra cotta blocks and protected from damage during construction by a layer of cement mortar. The finished surface, originally of exposed aggregate mortar but later replaced by tile, was laid upon the mortar protection coat.

AT the limits of the construction of the first contract, the protection coat over the waterproofing was extended a few inches beyond and down the side of the terra cotta block insulation to protect the waterproofing lap for the next construction. On an inspection trip about one year after the installation of this mortar bed, it was noticed that in all similar locations at the limits of construction, the mortar which originally was in contact with the waterproofing was now from three to four inches beyond its original position and this in spite of the fact that an expansion joint through this bed was only some 20 feet away. Nebraska is subject to a wide range of temperature changes and it is probable that the sheet of mortar, after expanding was cracked and therefore did not return to its original location when the temperature lowered. This action was probably repeated during each increase in temperature and the movement of the mortar bed was therefore accumulative. The method used in correcting the difficulty has been described elsewhere in this magazine.

Cohesive tile construction is used in many places throughout the building, both for interior decorative ceilings and for structural floors and roofs. The ceilings of the Entrance Lobby, Foyer, Rotunda, House, Senate, Memorial Hall, Rotunda floor and Tower Dome are only a partial list of the locations where this ingenious medium was used to advantage.

In the construction of the Tower Dome, the necessity of securely anchoring the surface tile was important. After the completion of the dome, the exposed surface was thoroughly waterproofed and metal furring channels were installed over the entire surface and secured to an angle tension band at the base. Heavy wires were fastened to the furring channels at approximately the levels of the tile joints and these extended out to be later fastened to the tile dowels. Galvanized metal lath was then secured to the channels and a 1" layer of Gunitex was applied directly over this and the surface was left rough to ensure a satisfactory bond.

The surface tile was then applied, placing the mortar bed and tile continuously from the bottom to the top. Brass dowels were inserted in grooves which had been made in the bottoms and tops of all tile during manufacture and the dowels and tile were secured back to the furring channels by means of the wire anchors. Provision was also made for expansion and contraction of the entire surface as well as "breathing action of the dome."



B E R T R A M
G R O S V E N O R
G O O D H U E

• Bertram Grosvenor Goodhue was born in Pomfret, Connecticut, April 28th, 1869. He died in New York City, April 24th, 1924, just four days prior to his fifty-fifth birthday. Between those two dates lies the development of a vivid personality and the brilliant expansion of architectural genius. It was an unusual development as judged by orthodox standards. Goodhue had no formal education. The deep and varied culture of the man grew from his driving zest for knowledge and understanding. There is little question that his architectural achievements, his graphic essays in pure design, even the personal expressions of his philosophy, sprang from the mind of an artist who was born, not made. Even at the age of nine Goodhue had decided that architecture was to be his life work. At seventeen he was a draftsman in the office of Renwick, Aspinwall and Russell; within four and one-half years he became chief draftsman in the Boston office of Cram and Wentworth; later he was made a partner in the firm which was afterwards changed to Cram, Goodhue and Ferguson. This association continued until 1914 when Bertram Grosvenor Goodhue became an architectural entity in New York.

• The Nebraska State Capitol marks the culmination of a remarkable career. This building also reflects the brilliant duality of its designer. Bertram Grosvenor Goodhue was a romantic and intense individualist—almost iconoclastic in his attitude toward smugness in life and architecture. Yet he also had a gift of understanding and a passion for truth that made "but-tresses butt" and made the designing of a building a collaborative effort in the success of which artist, craftsman, builder and office associates shared. Recognition of his rare qualities and accomplishments was widespread. In 1911 Trinity University awarded him the degree of Doctor of Science for preeminence in the architectural profession. He was a Fellow of the American Institute of Architects and in 1925 was posthumously given that body's highest honor, the Gold Medal. His leadership is signified in the generally accepted opinion that even the Nebraska State Capitol—his greatest work—had barely tapped the deep well of his talents.



THE NEBRASKA STATE CAPITOL
LINCOLN, NEBRASKA

BERTRAM GROSVENOR GOODHUE AND

BERTRAM GROSVENOR GOODHUE ASSOCIATES, ARCHITECTS

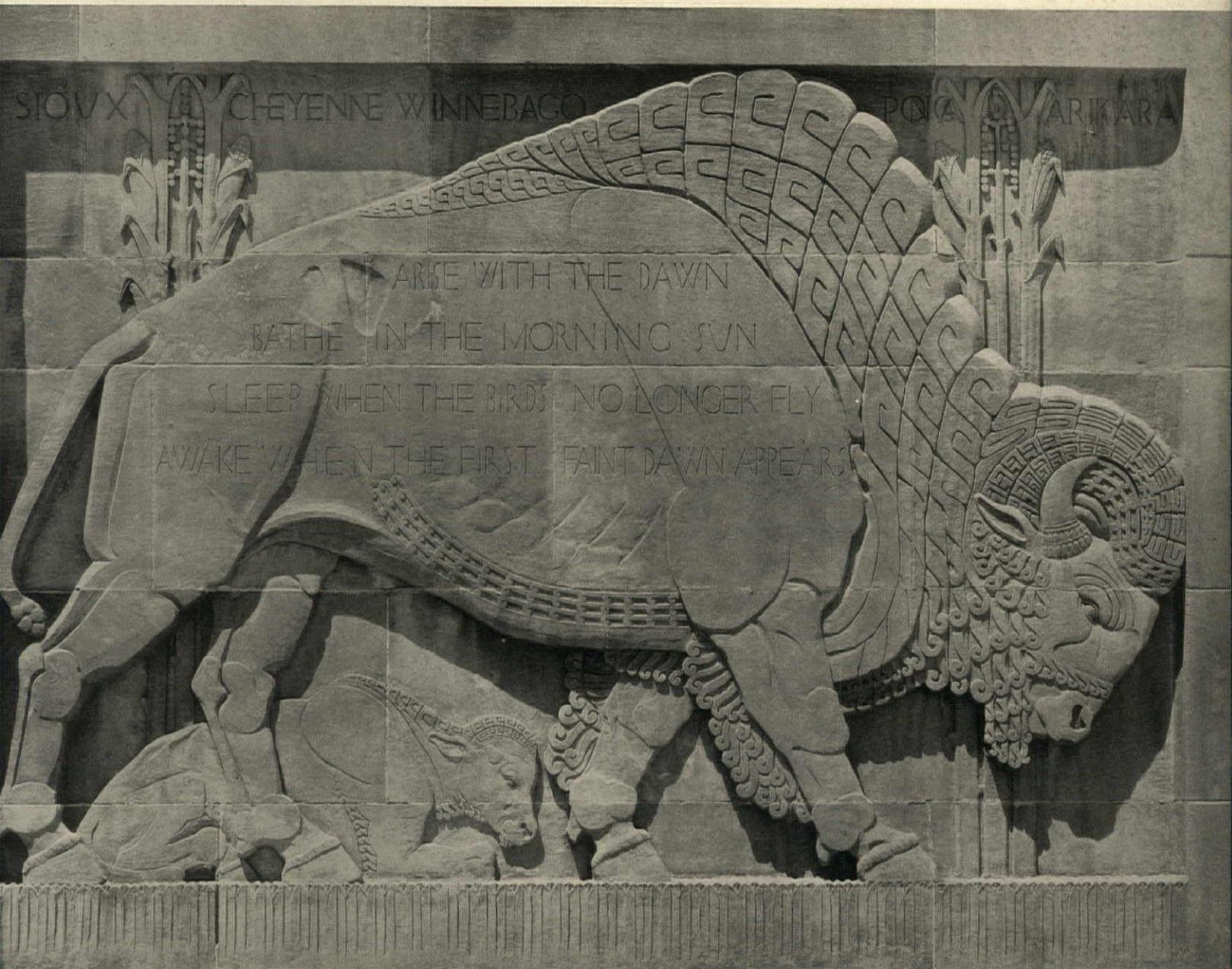
LEE LAWRIE, SCULPTOR

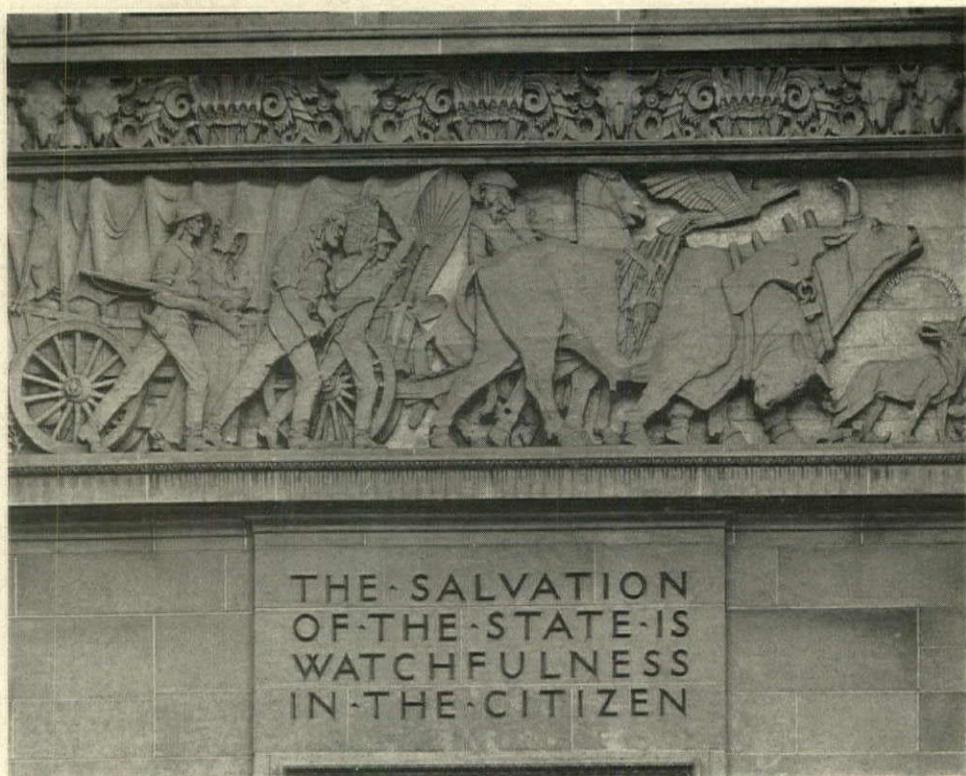
HILDRETH MEIERE, DESIGNER OF FLOOR AND CEILING DECORATION

Photographs by Samuel H. Gottscho



Details of balustrade and steps of North Entrance which is shown on page 45. The inscription on the buffalo cow was taken from tribal hymns of the Sioux Indians

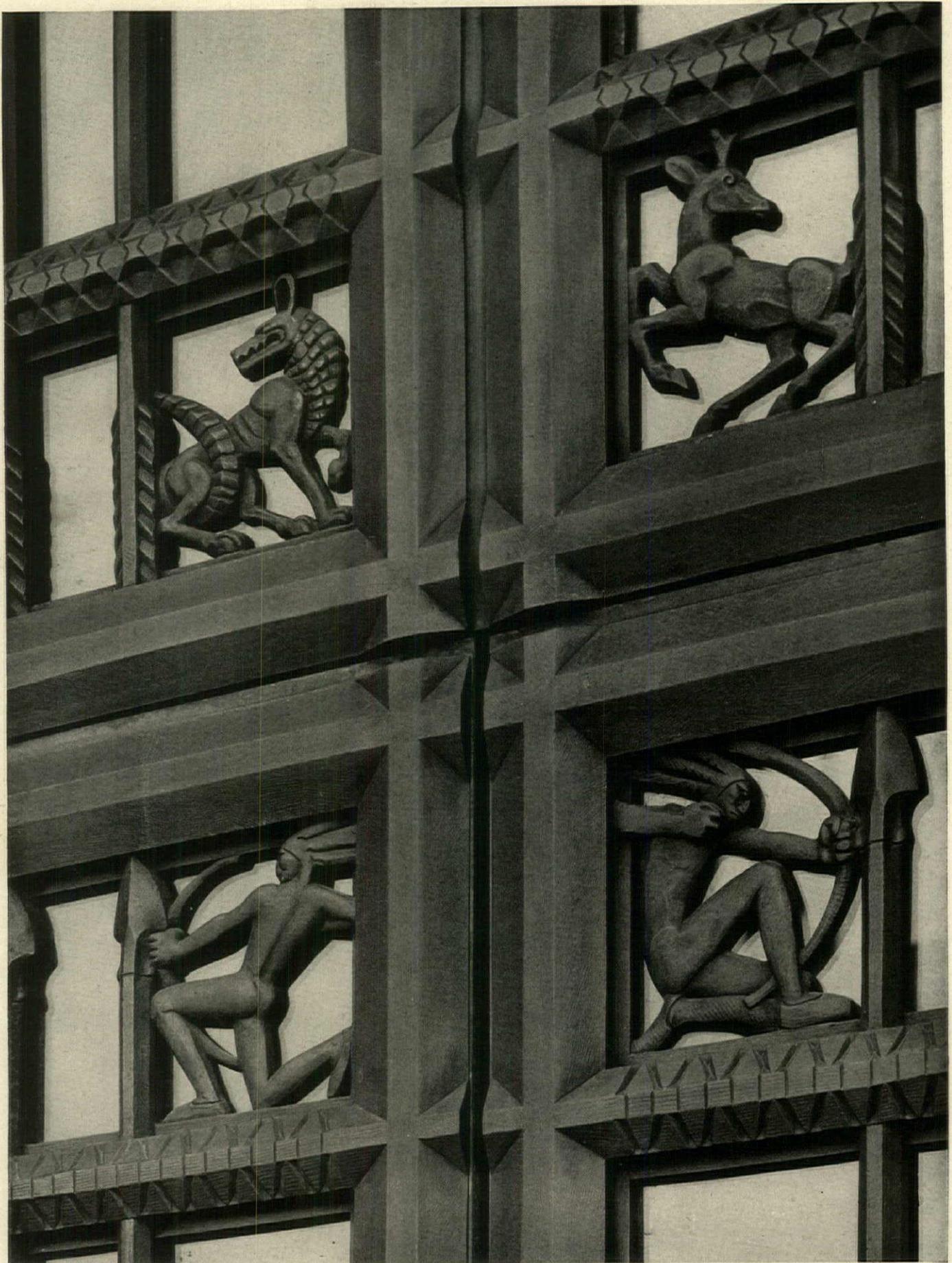




Details of North Entrance. Corn is the decorative motif used in the frieze and coffers of soffit. The background of the pioneer panel over the door is gold leaf



THE SALVATION
OF THE STATE IS
WATCHFULNESS
IN THE CITIZEN



Door Grilles of the North Entrance. Material is dark statuary bronze and the details, modeled by Lee Lawrie, symbolize life of the open prairies before the coming of the white man



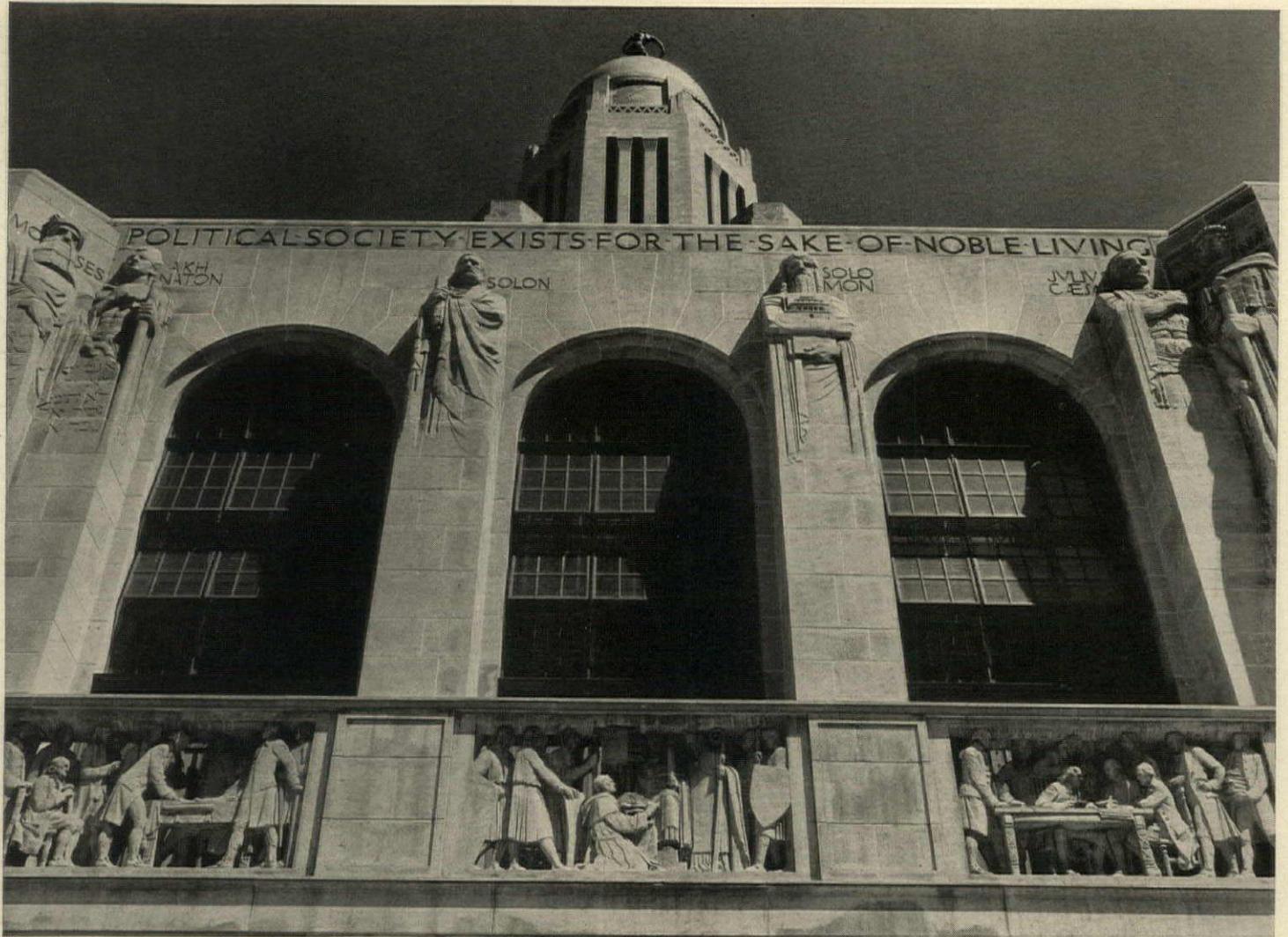


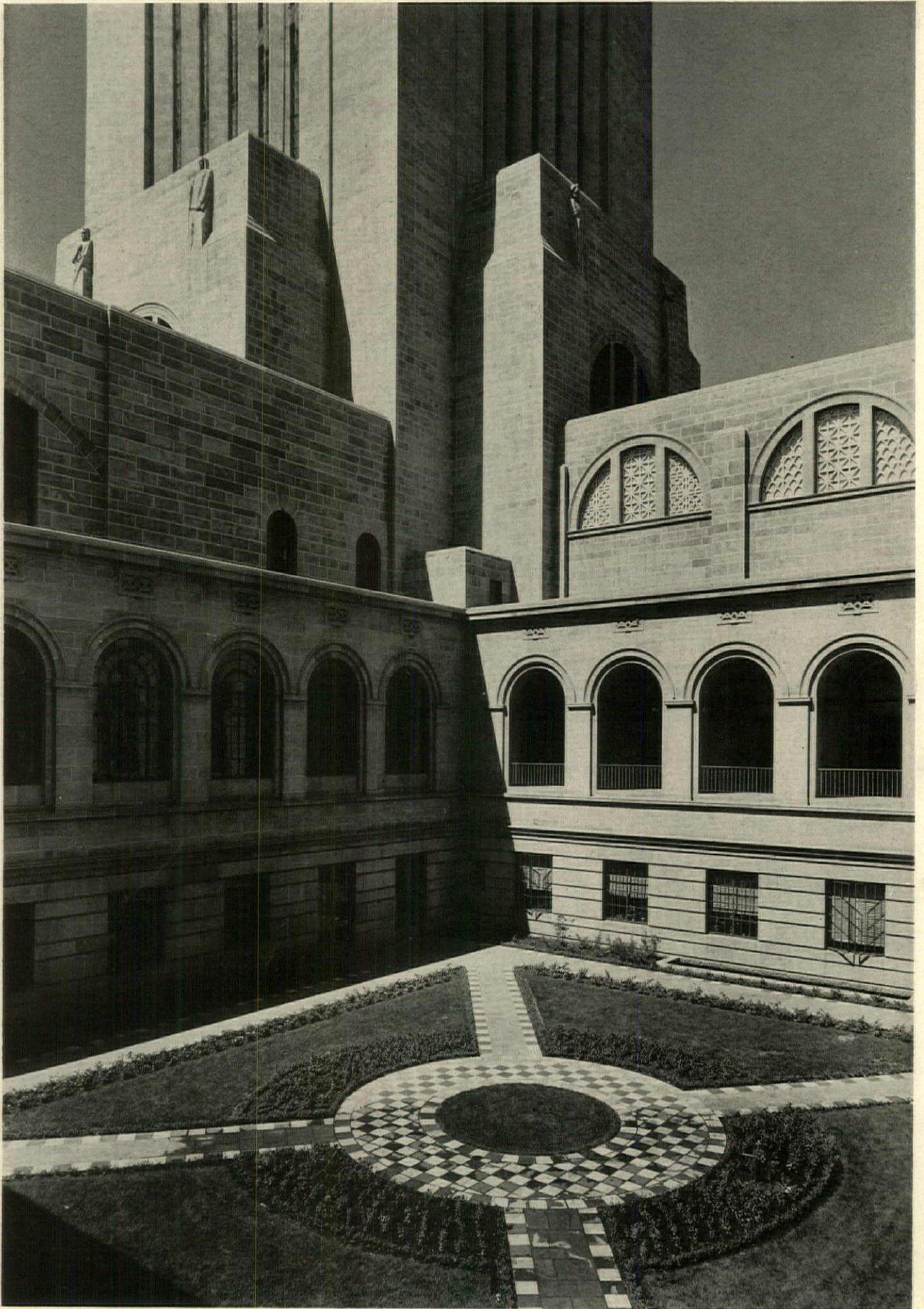
Sculptured pylons of the North Entrance. Above: Power and Mercy. The seal is that of the State of Nebraska. On facing page: Wisdom and Justice with the Seal of the United States of America

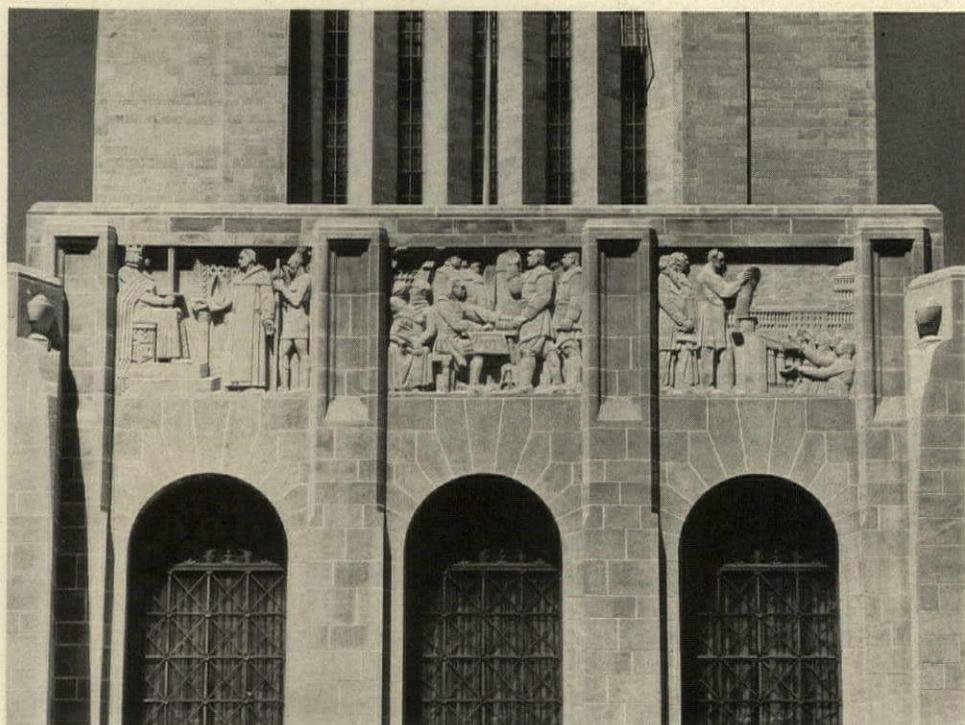




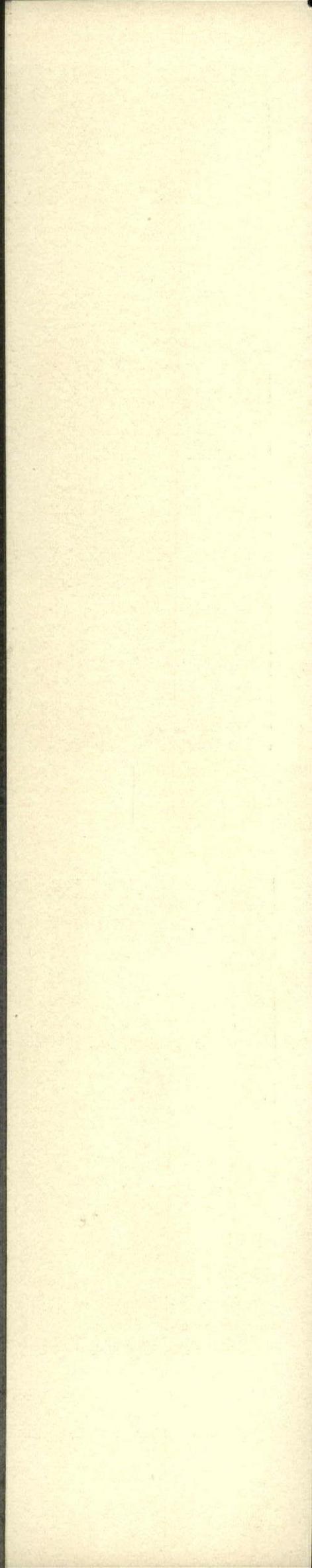
The South Façade. Panels of the pierced stone balustrade show the signing of the Declaration of Independence, the Magna Charta (detail on facing page) and the writing of the United States Constitution. Figures on the piers represent great law givers of the western world







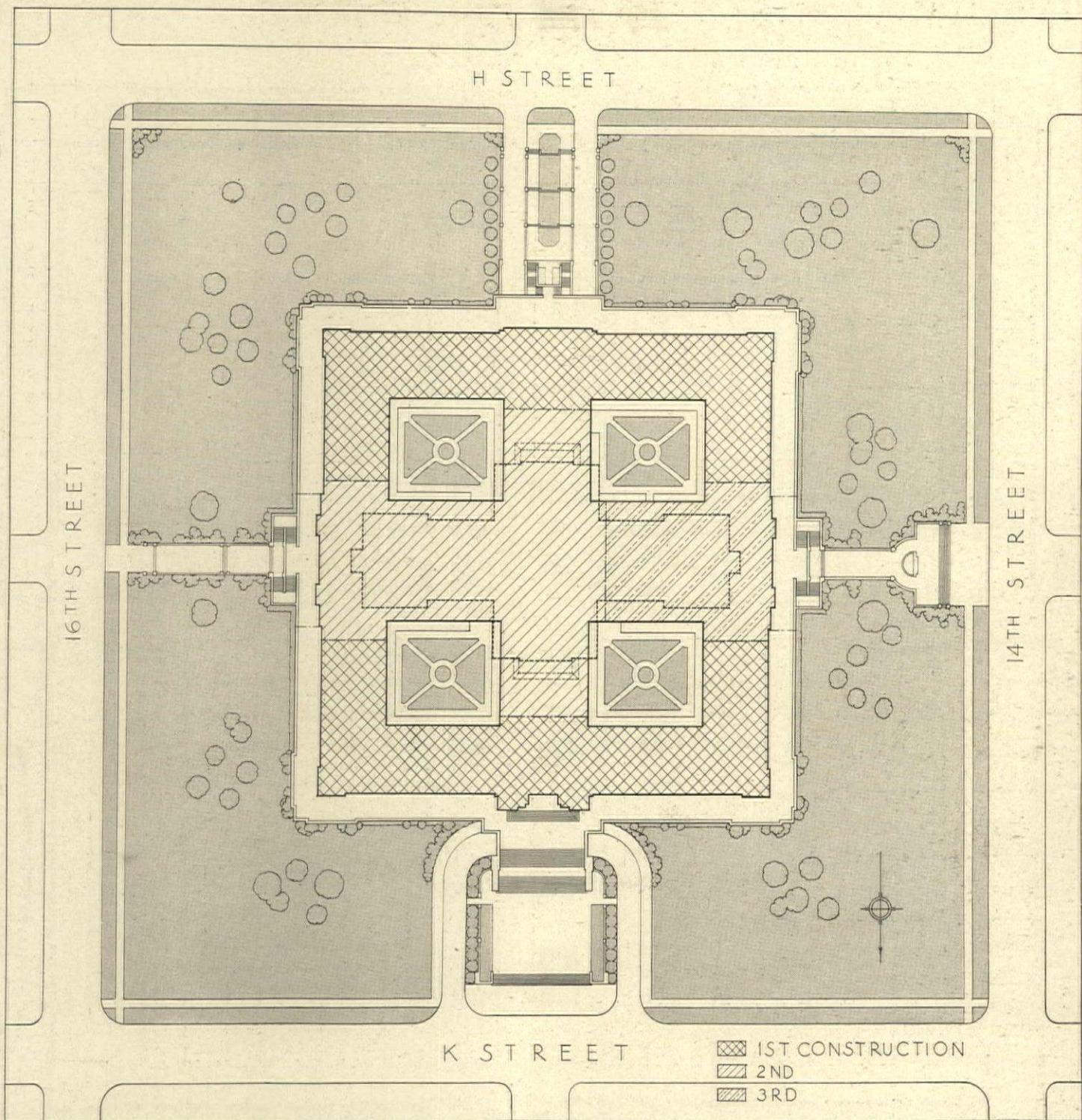
On facing page: One of the four interior courts. On this page: above, detail of a tower buttress; left, detail of the East Façade. Panels above the windows represent, left to right: Las Casas Pleading the Cause of the Indian; The Mayflower Compact; and Lincoln's Proclamation of Emancipation



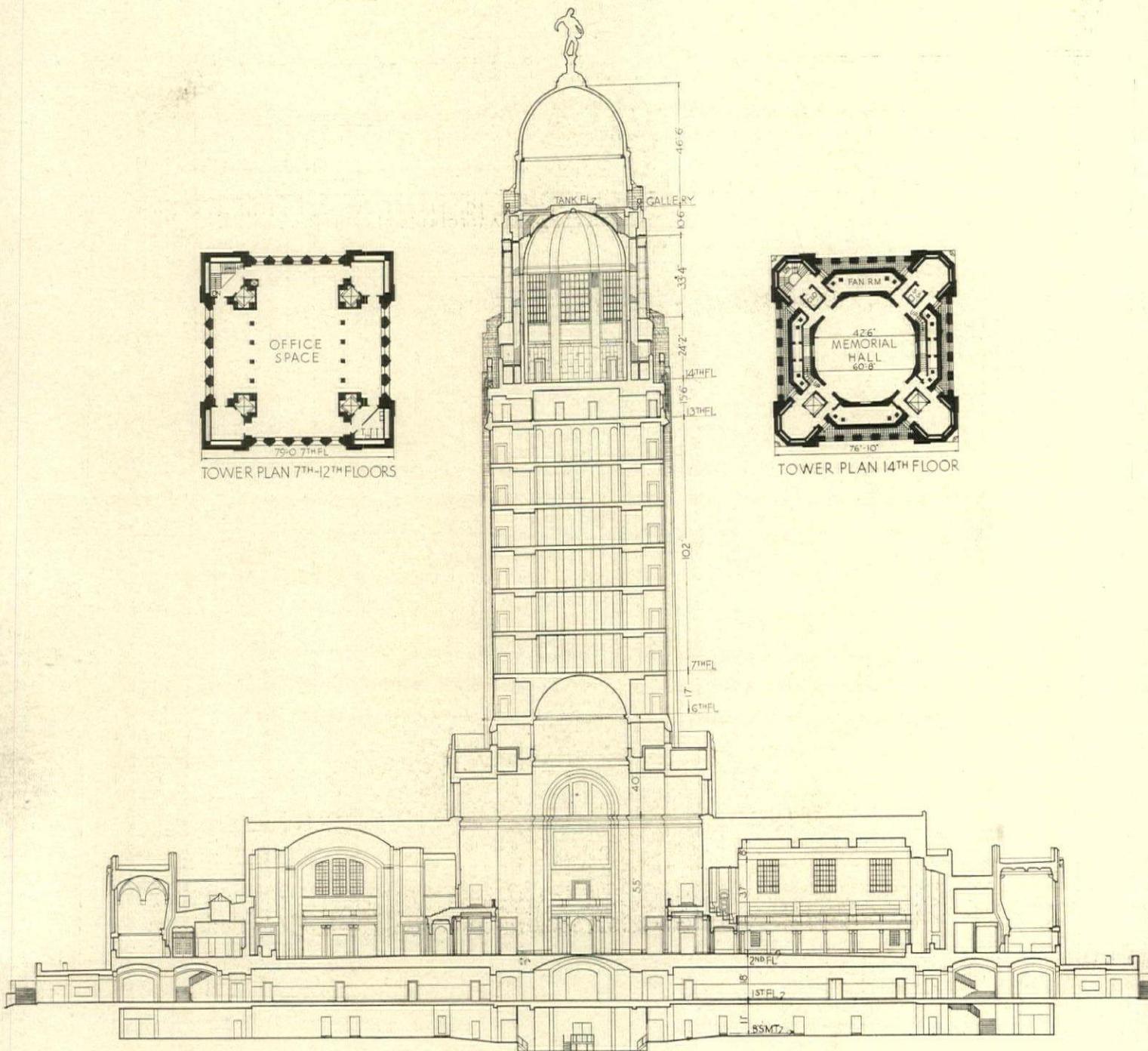
Details of pylon corners of the South Façade. The figures represent great law givers of the western world. Right: Charlemagne. On facing page: Hammurabi





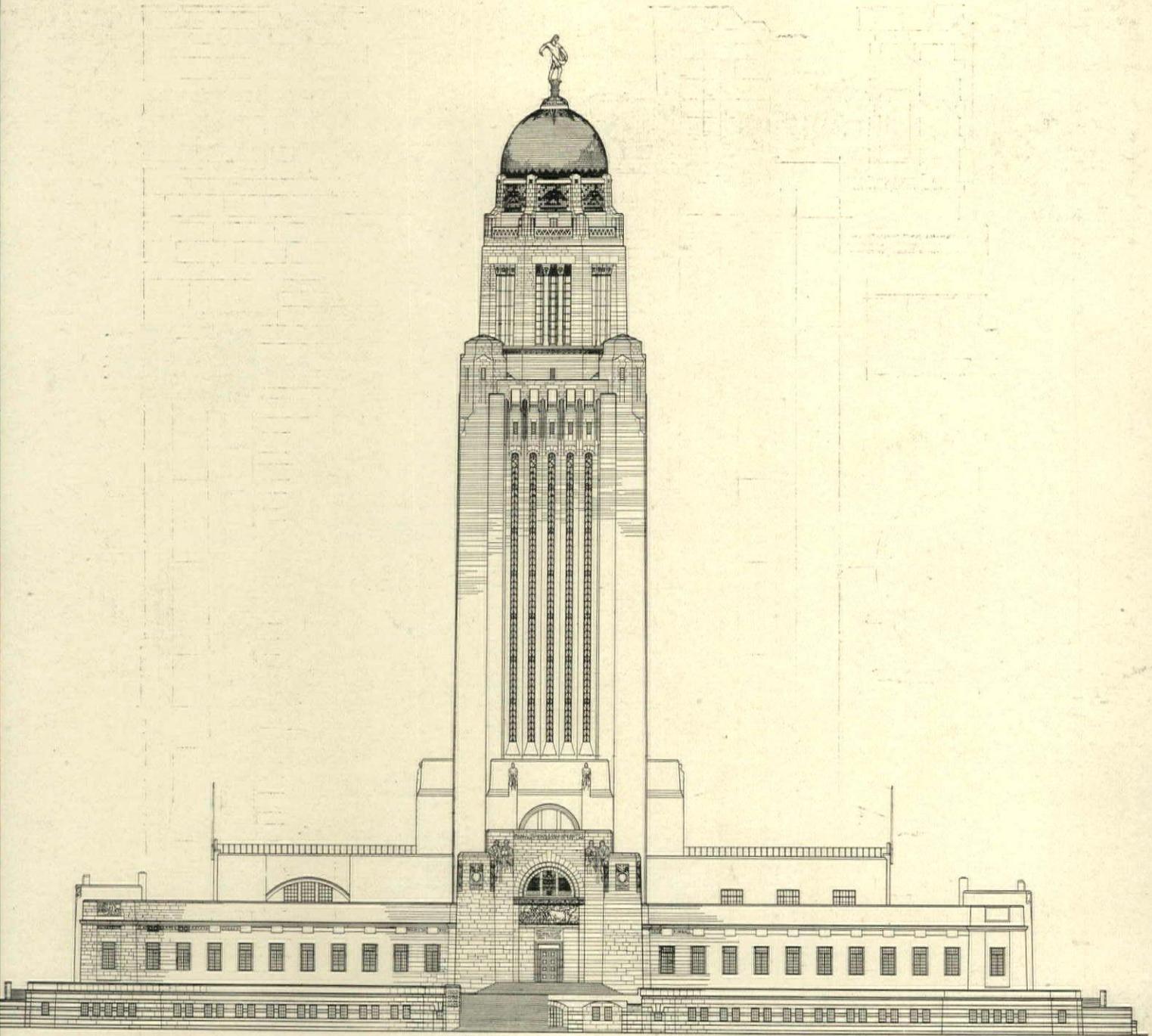


Plot Plan of the Nebraska State Capitol. Shaded areas indicate progressive stages of construction. Dotted lines in the center outline the old capitol building which was removed through a gap in the West Facade prior to the third construction program of the present Nebraska State Capitol. On facing page: tiled dome of the Capitol's tower. Colors are red, blue, yellow and gold. Patterns between termini of piers represent the Thunderbird, a central figure of symbolism in Indian folklore



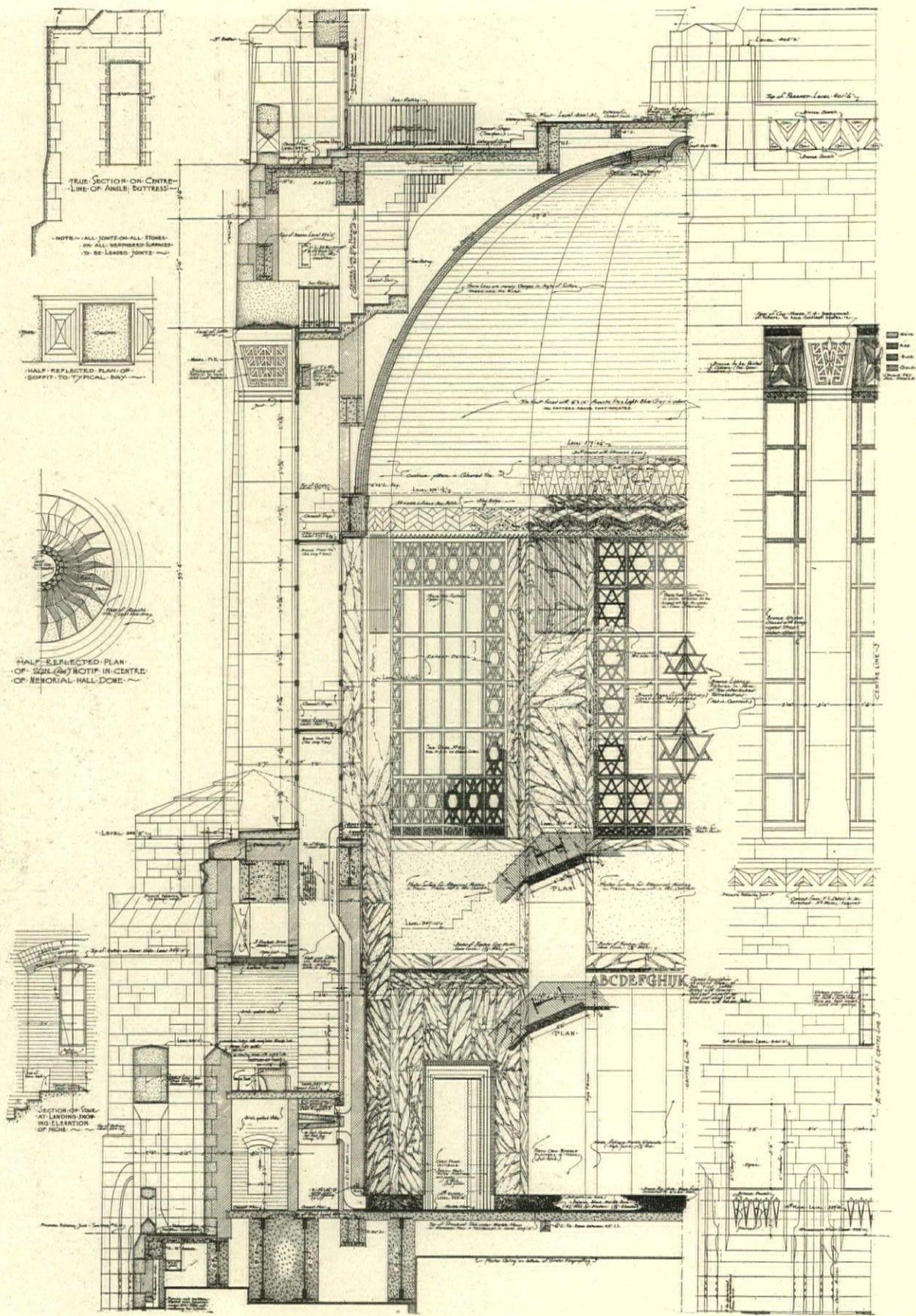
Section and Tower Plans, Nebraska State Capitol, Lincoln, Nebraska

BERTRAM GROSVENOR GOODHUE AND BERTRAM GROSVENOR GOODHUE ASSOCIATES, ARCHITECTS



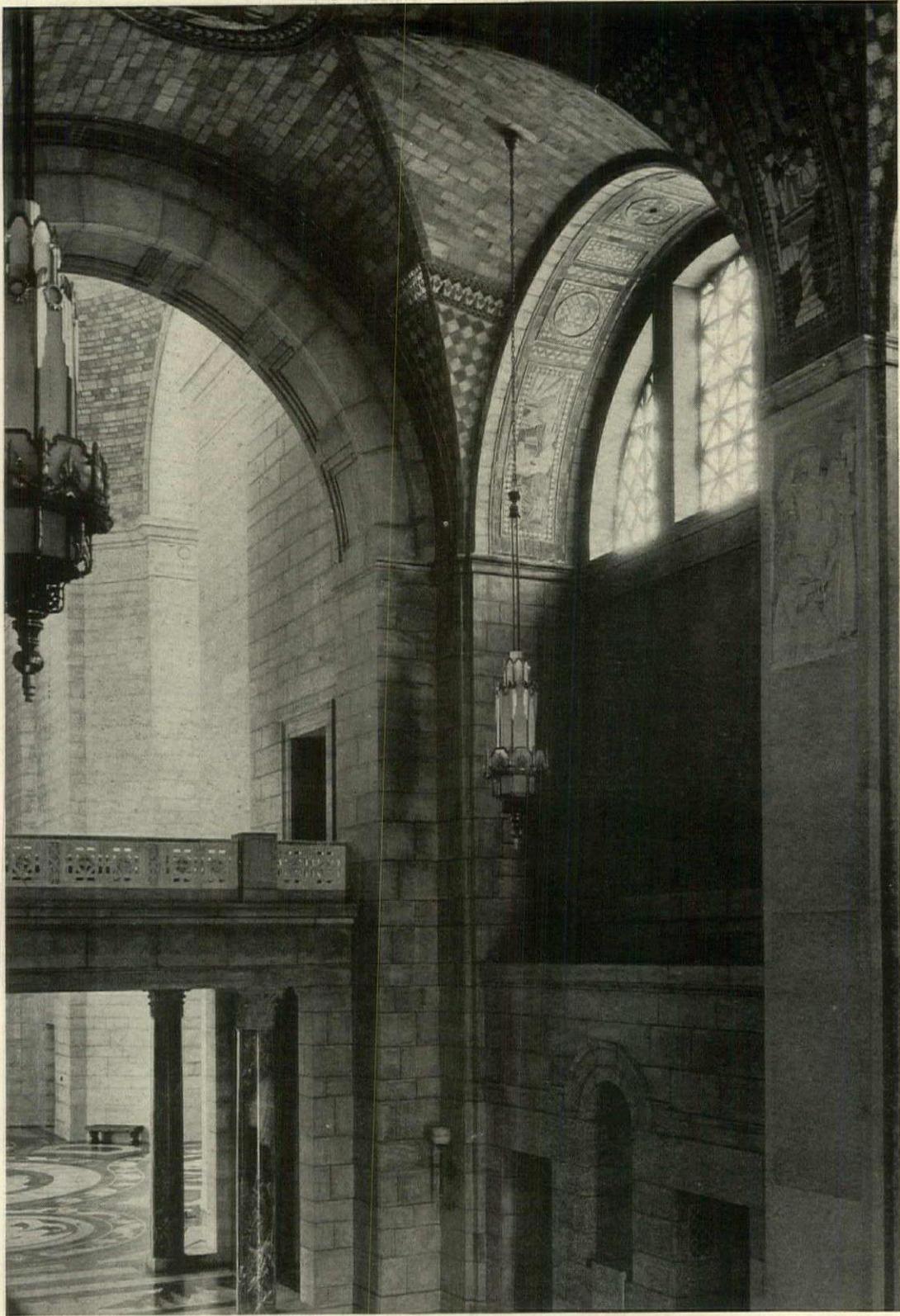
North Elevation, Nebraska State Capitol, Lincoln, Nebraska

BERTRAM GROSVENOR GOODHUE AND BERTRAM GROSVENOR GOODHUE ASSOCIATES, ARCHITECTS



Detail working drawing of the Tower, Nebraska State Capitol. On facing page: the Foyer of the Capitol looking from the Rotunda toward the North Vestibule. Murals will eventually cover the present blank wall spaces









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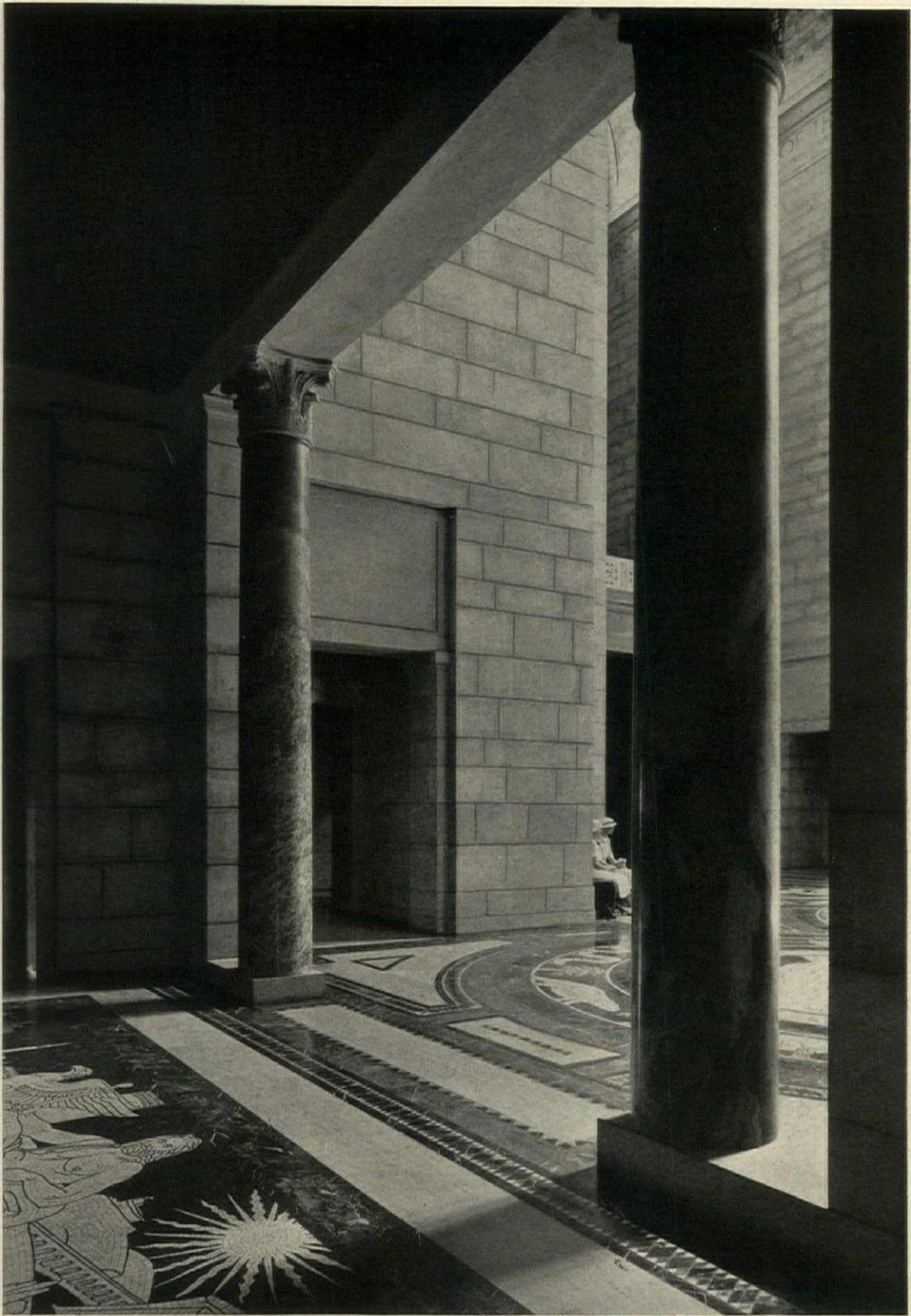
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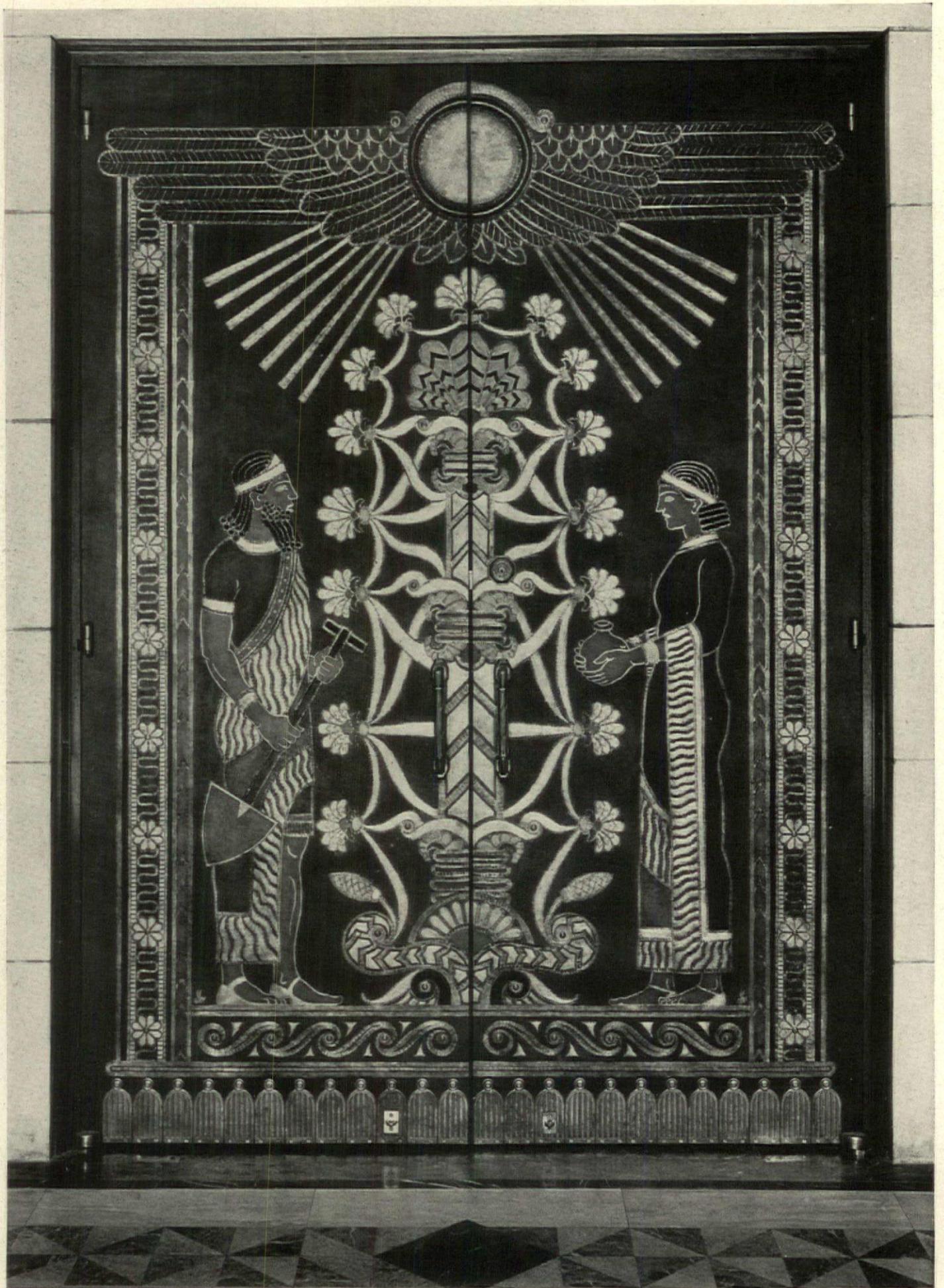
The Rotunda. The inscription in the frieze is of inlaid bronze; walls, limestone; floor, marble; balcony rail, onyx



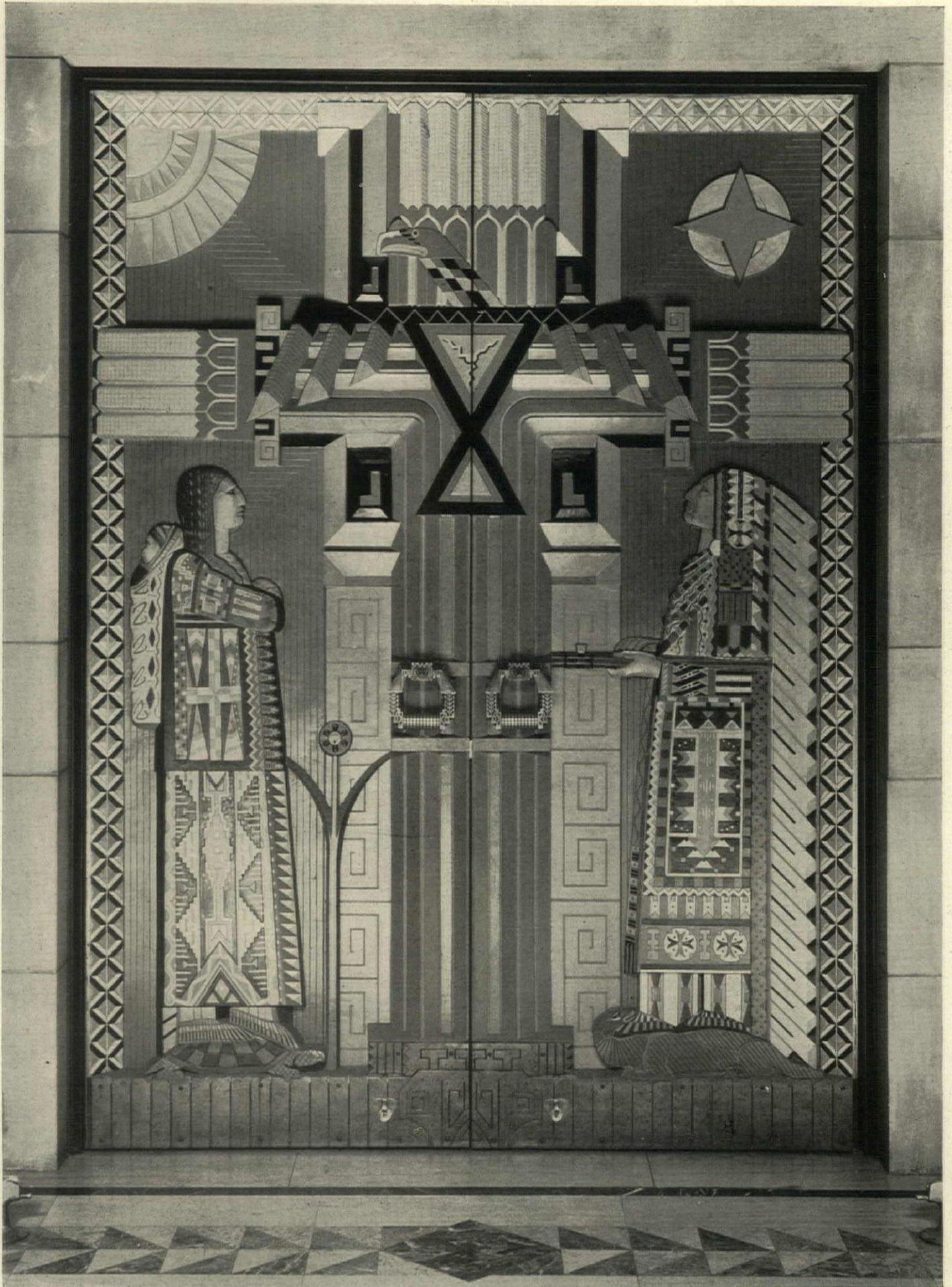
Details of the Rotunda. Floor designs are executed in buff and black marble with borders of dark green marble. On facing page: Detail of column cap in Rotunda







Tooled leather covered doors to House Chamber. Designed by Hildreth Meiere

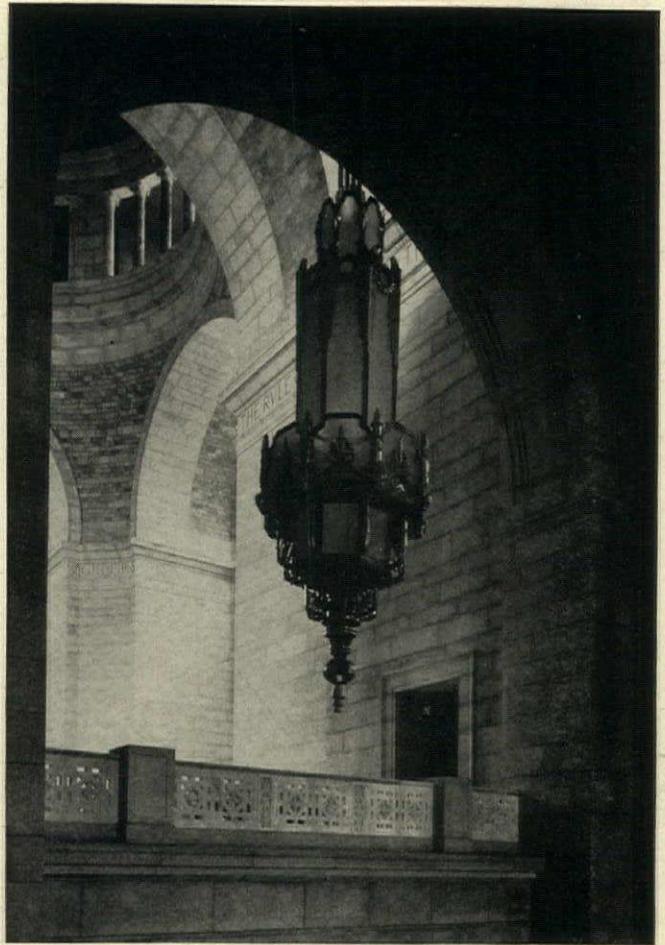


Wood carved doors to Senate Chamber. Designed by Lee Lawrie

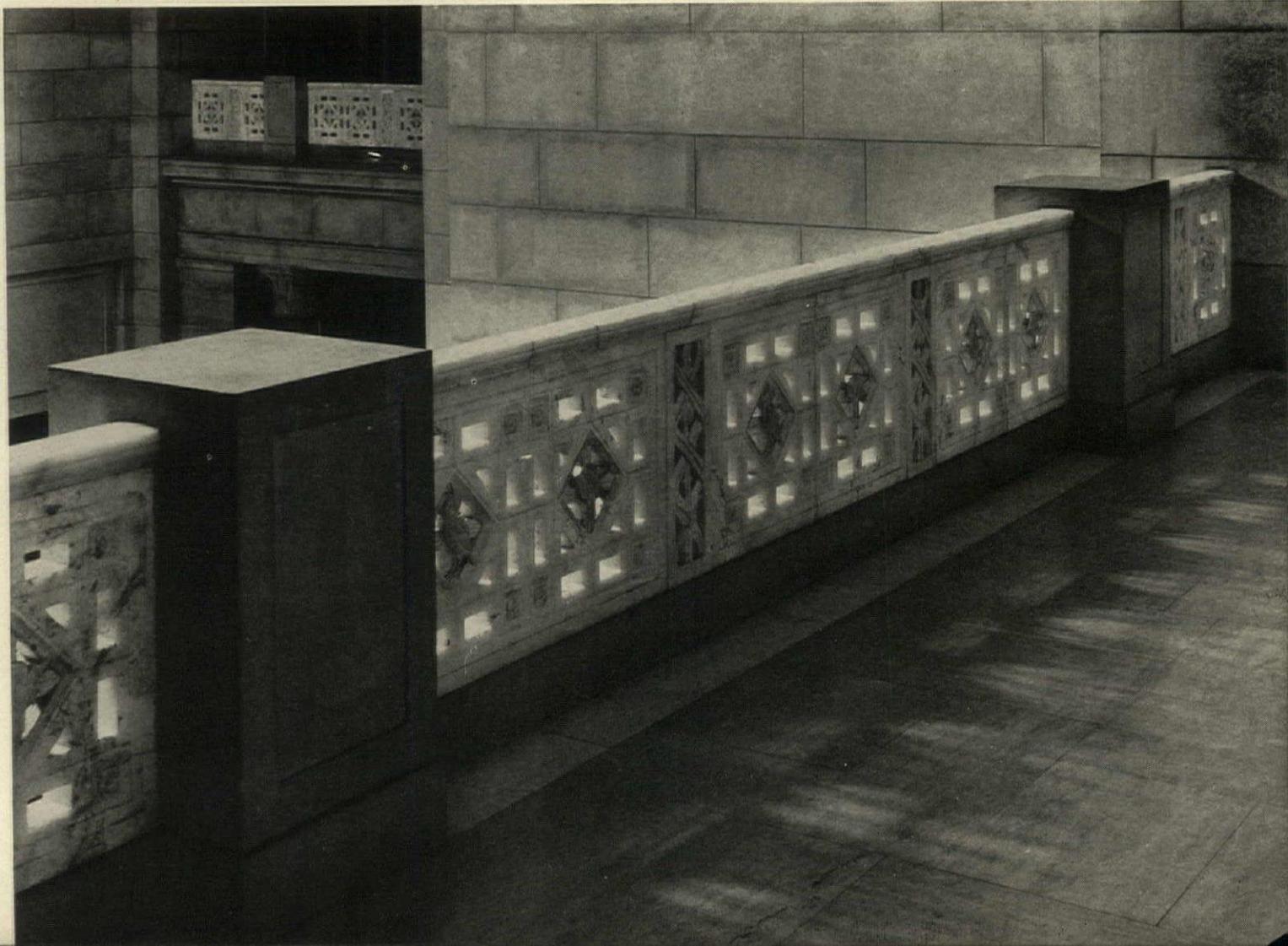


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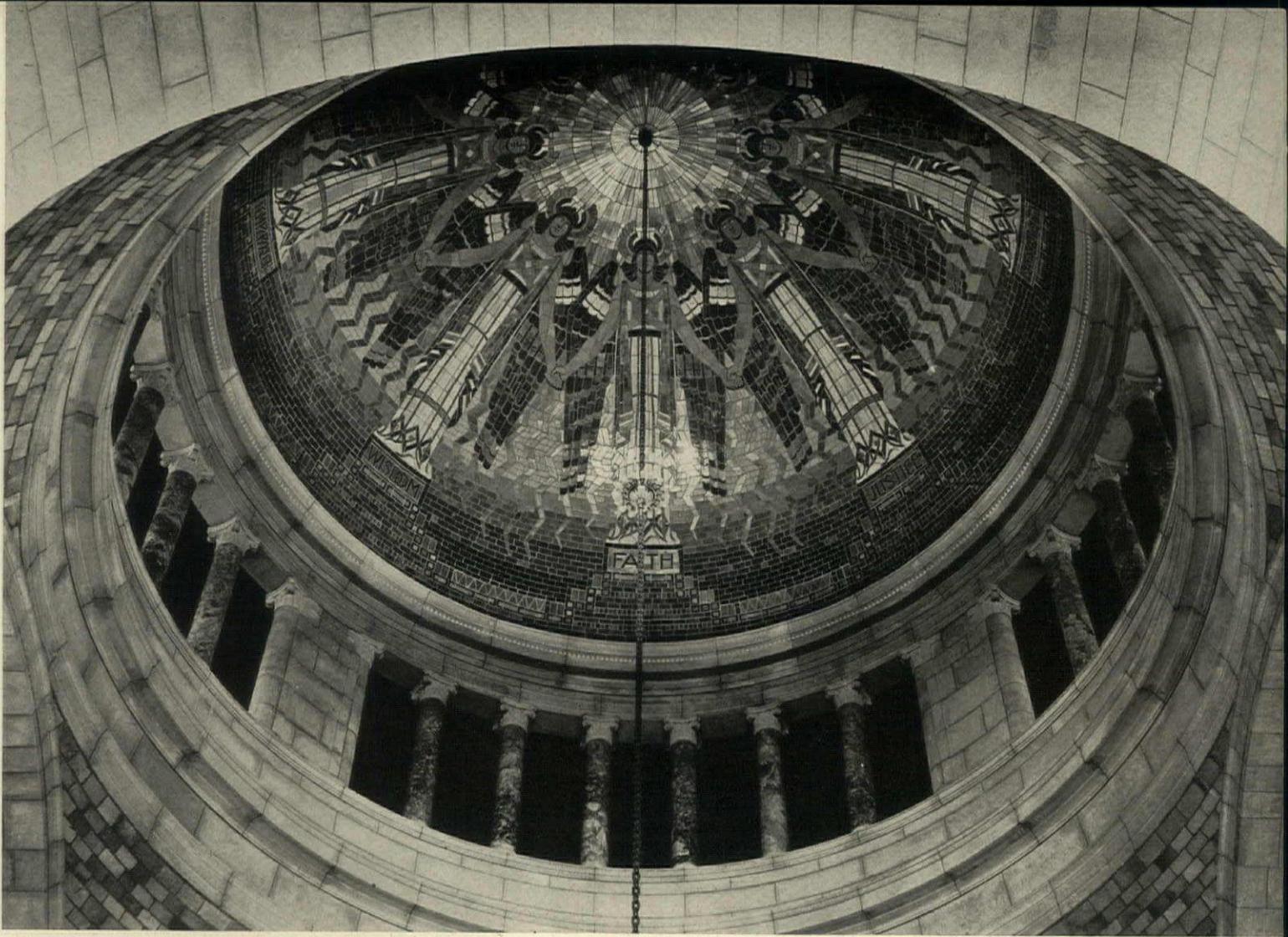
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DETAILS OF THE ROTUNDA



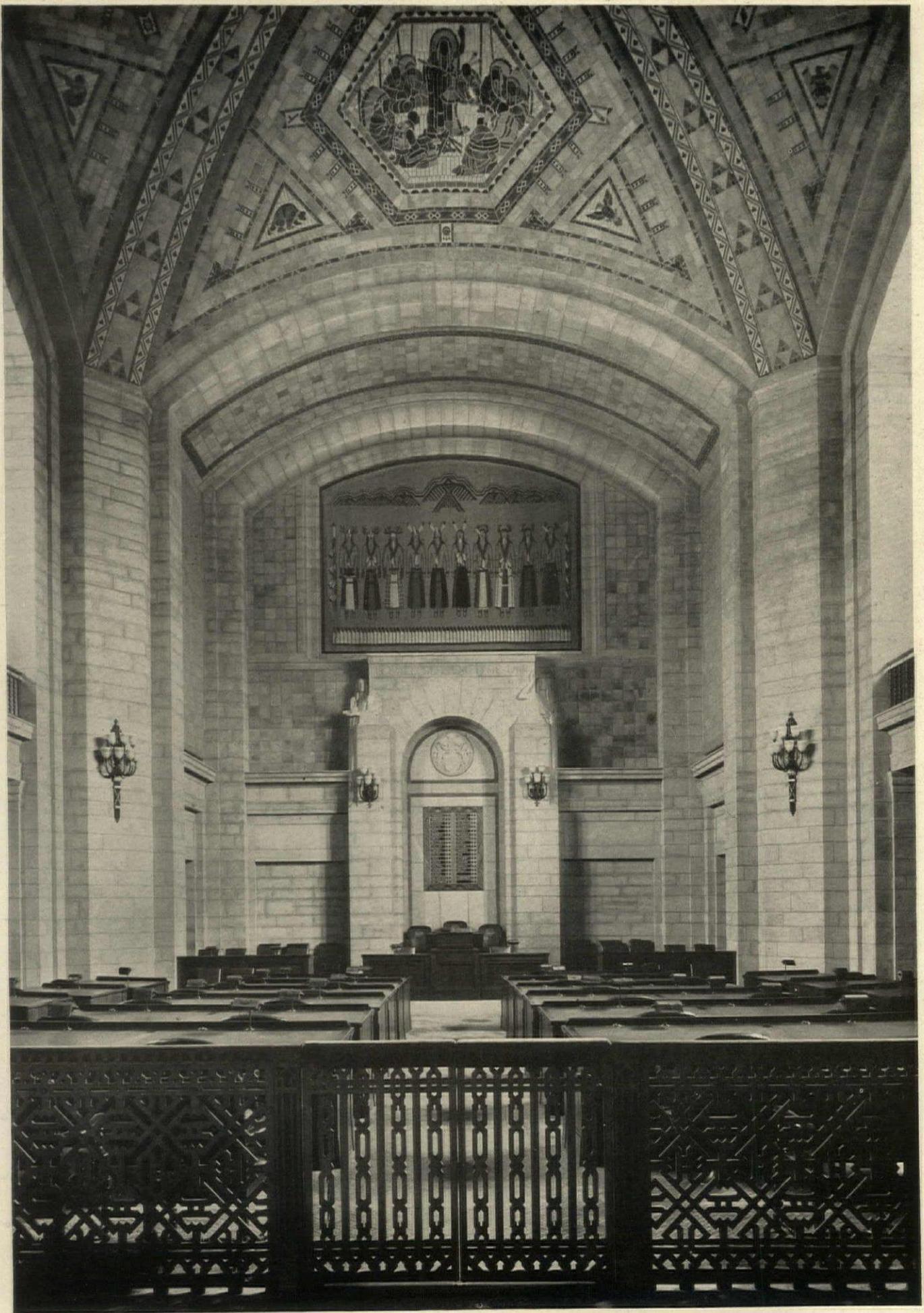


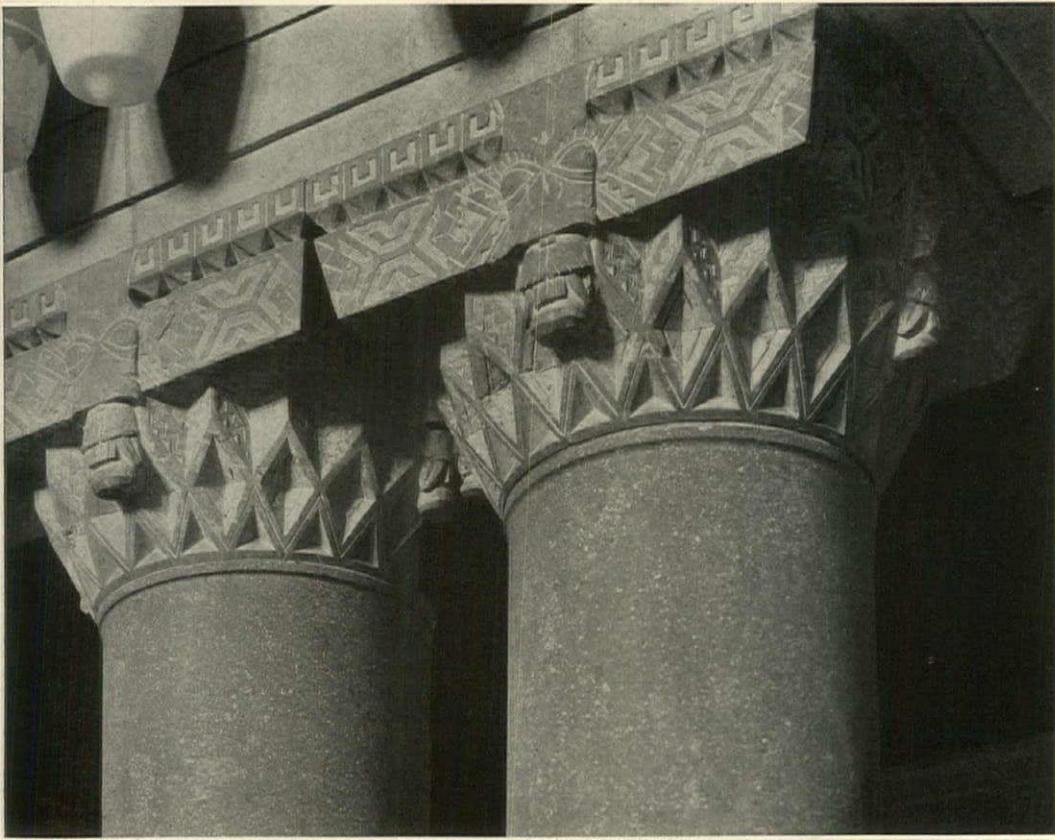


Details of the Rotunda. Above:
a general view of the dome,
a full color detail of which ap-
pears on pages 30 and 31

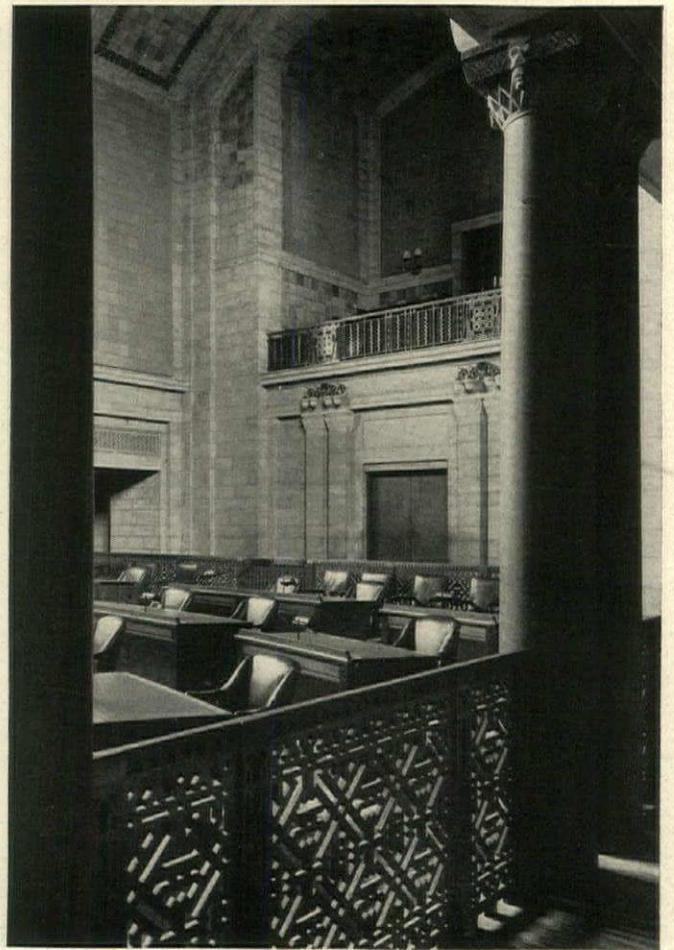


The Senate Chamber. Walls, limestone; rails, bronze; ceiling, acoustic tile; lighting fixtures, dull gold; furniture upholstery, dark brown. Indian life forms the basis for the decorative scheme. Above: detail of squaw tapestry. A portion of this and a detail of the tile decoration shown on the facing page appear in full color on page 29



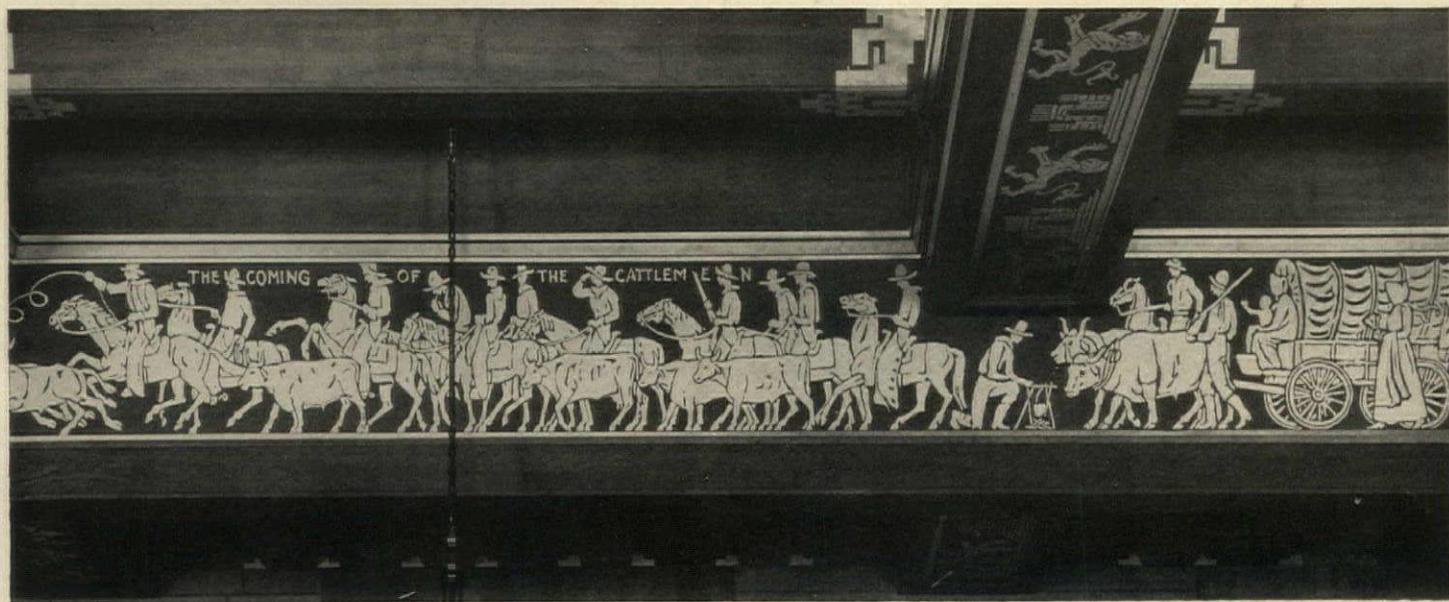


DETAILS OF THE SENATE CHAMBER

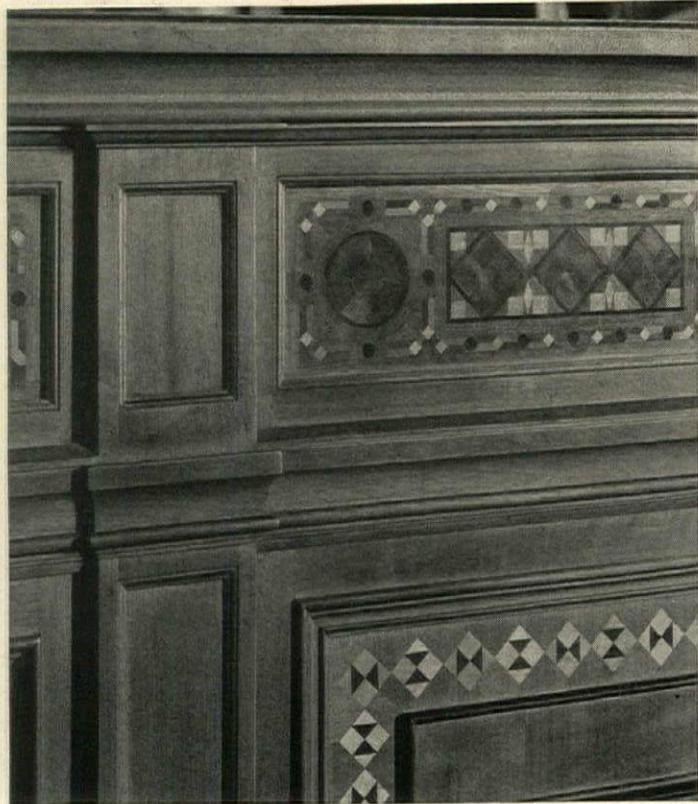
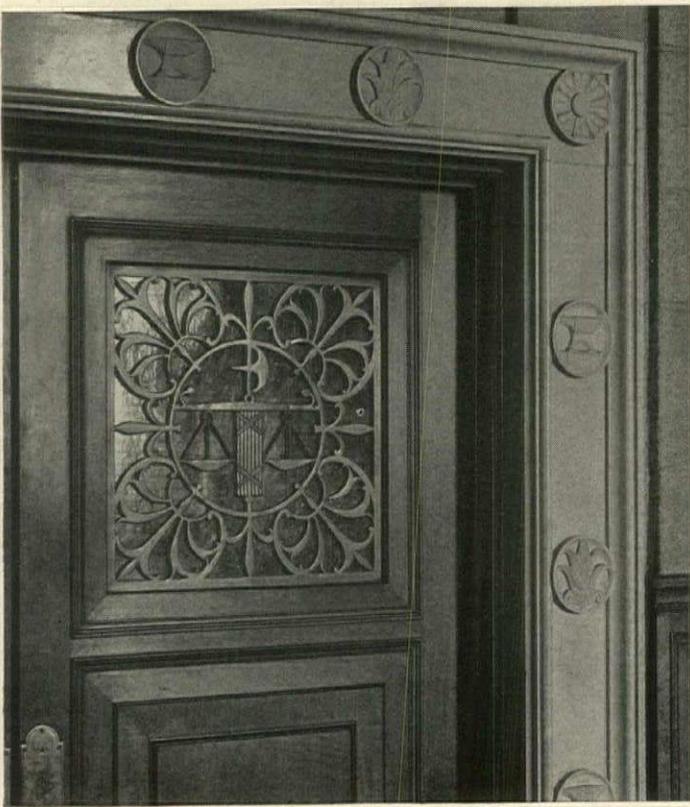
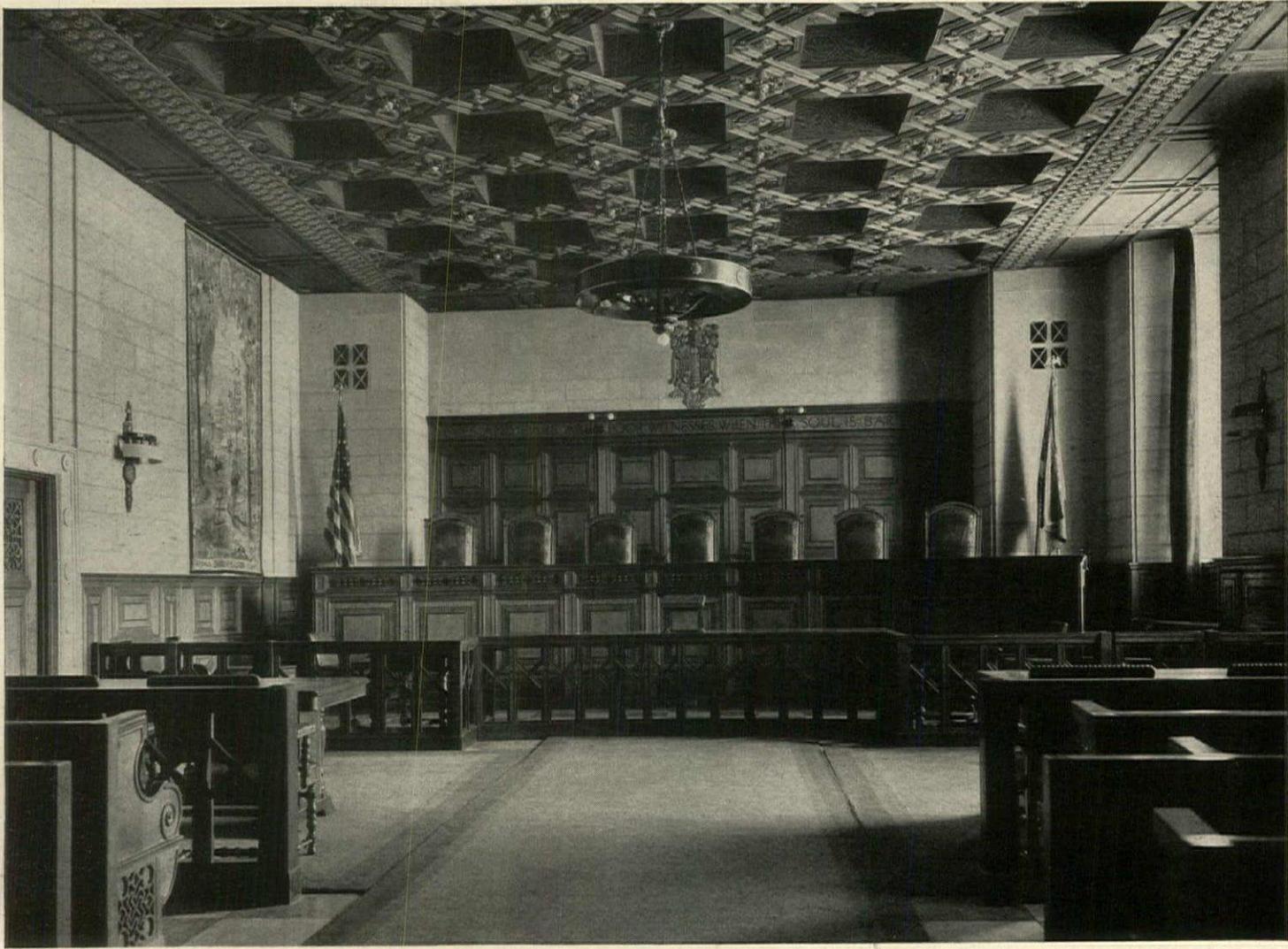


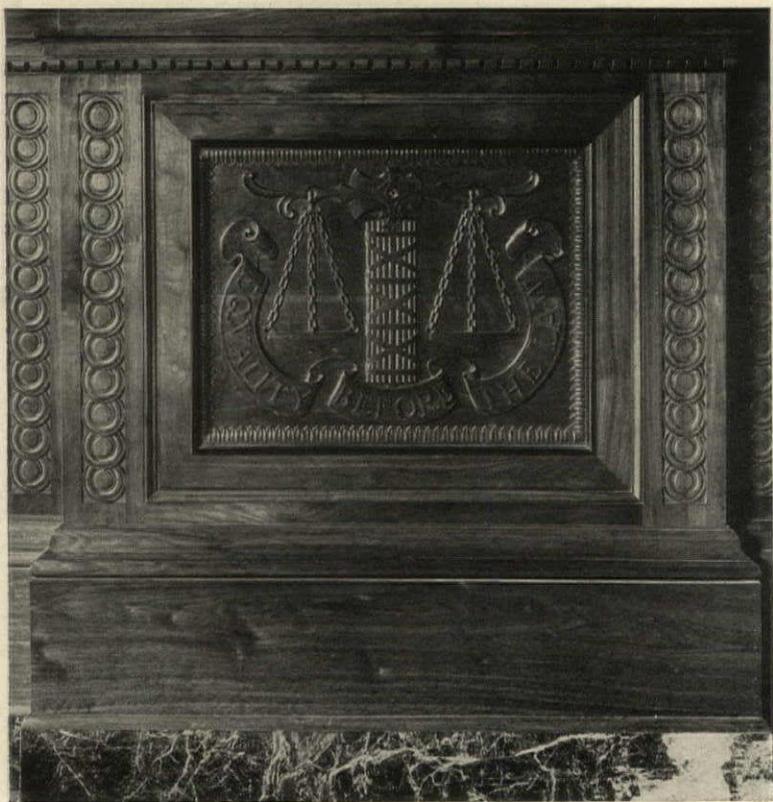






The House Chamber. Walls, limestone; balcony facia, Hauteville marble; columns, imported marble of various types; ceiling, walnut with decorations in gold leaf; furniture, walnut; lighting fixtures, black and gold. Ceiling decoration represents the coming of the white man to the plains

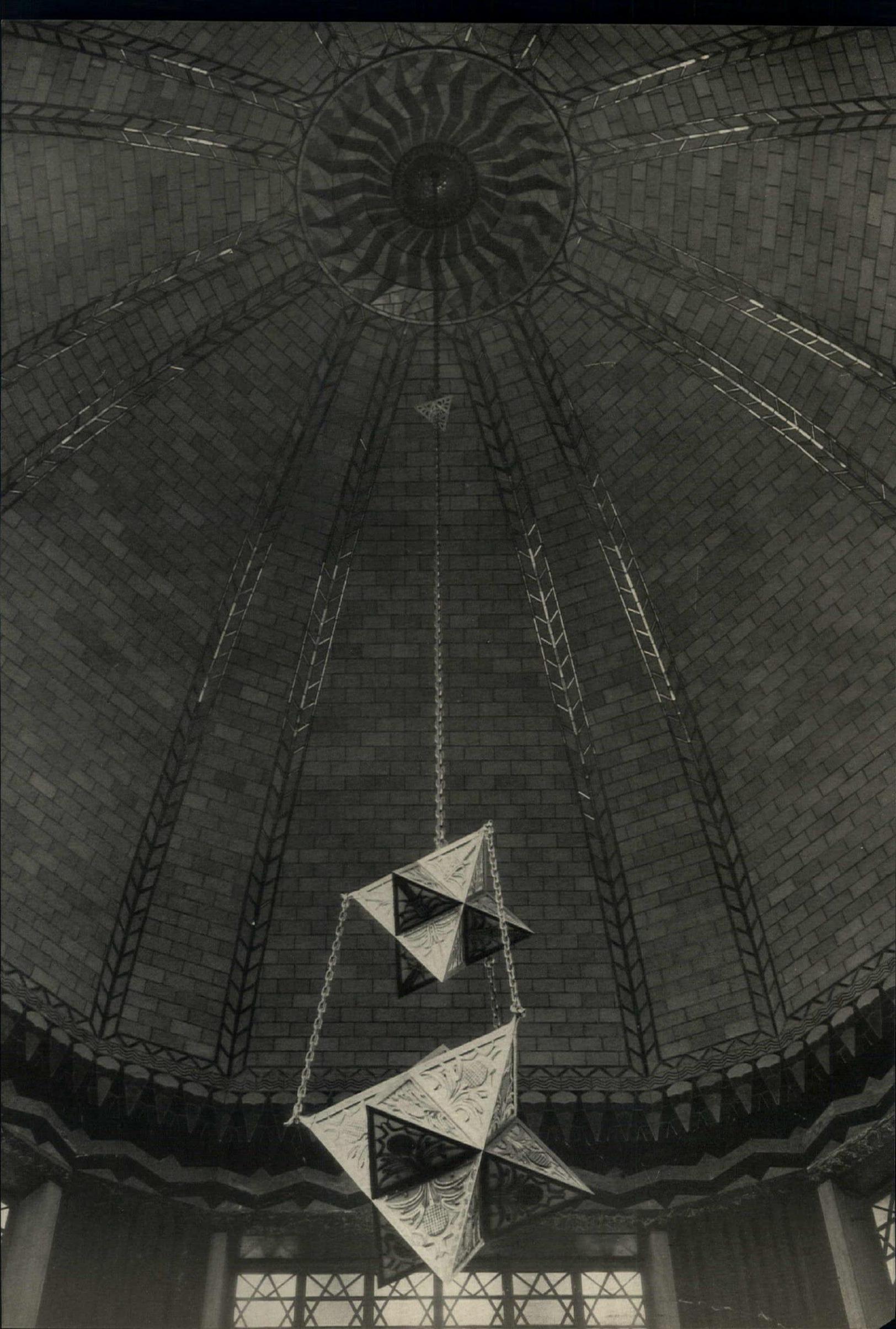




Supreme Court Rooms. Above: Court Room Number Two; walls, walnut wainscot with painted plaster above; ceiling, walnut decorated in color; floor, marble; furniture, walnut. On facing page: Court Room Number One; walls, acoustic tile; wainscot, walnut with inlay of various woods; trim, Kasota stone; ceiling, walnut with painted decoration; floor, marble



Memorial Hall. Wainscot, trim, pilasters and floor are of marble ranging from black to dark green and buff. Inscriptions, gold; grilles and window sash, bronze; ceiling, buff and gold acoustic tile. Panels below windows will eventually contain murals







Above: the Senate Lounge. On facing page: Governor's Reception Room. Decoration and murals in this room were painted by Augustus Vincent Tack. On following page is a detail of plaster ceiling in lawyers consultation room





Seal of the State of Nebraska

BERTRAM GROSVENOR GOODHUE once expressed himself to the effect that the ideal building design would result from collaboration of architect, artist, craftsman and builder. Though he was the firm directing hand in the basic design of the Nebraska State Capitol, the following have been in no small way responsible for the execution of the building after Mr. Goodhue's death, and to them should be given credit in their respective fields: . . . The BERTRAM GROSVENOR GOODHUE ASSOCIATES—FRANCIS LAURIE S. MAYERS, OSCAR H. MURRAY and HARDIE PHILLIP. These men as a group succeeded the architectural firm of Bertram Grosvenor Goodhue. Associated with them were WILLIAM LE FEVRE YOUNKIN, AUSTIN WHITTLESEY, ERNEST JAGO, CARL BEILER and HARRY F. CUNNINGHAM . . . LEE LAWRIE, Sculptor; HILDRETH MEIERE, Designer of Floor and Ceiling Decorations; and AUGUSTUS VINCENT TACK, Muralist; . . . HARTLEY B. ALEXANDER, who Mr. Goodhue declared had founded a new profession as coordinator of decorative design, inscriptions and symbolism; and who throughout the progress of the work was in the closest touch with architect, artist, sculptor and craftsman.

A C K N O W L E D G M E N T

As a record of an outstanding American architectural achievement, this issue of *American Architect*—like the building it portrays—is the work of many minds and hands. Obviously it would be impossible to list here all those who, by many means, have contributed to it. Particularly helpful has been the generous cooperation of the following individuals. Editorial citation and special appreciation is therefore tendered to:

OSCAR H. MURRAY, of Mayers, Murray & Phillip; LEE LAWRIE; and HILDRETH MEIERE. Individually and together they have made available many per-

minent documents and original data of various sorts.

JOHN EDWARDS, Chief of Guides, Nebraska State Capitol. His unflagging interest and help assisted much in the complete and accurate presentation of the contents of this issue.

SAMUEL H. GOTTSCHO, Architectural Photographer. With but few exceptions illustrations of the Capitol reproduced herein were taken from his excellent photographs. His camera record was made expressly for *American Architect* and constitutes the first complete publication of the building.

A s | t L o o k s

RADIO COOPERATION

ONLY recently has radio found a voice to speak for the building industry. Apparently, advertisers have considered building too technical or too prosaic to interest a lay audience. But the firm of Johns-Manville has found the contrary to be true. They are now conducting a radio program to stimulate remodeling; and throughout their time on the air the use of an architect is urged as the best insurance of satisfactory results. Johns-Manville is to be congratulated, not alone upon its progressive method of stimulating public interest in building activity, but also because the company is conscientiously promoting the wider interests of the entire building industry. Manufacturers of tooth paste recommend frequent visits to the dentist. Great insurance companies use advertising to educate people to rely upon the advice of doctors. And in the same spirit of professional cooperation, Johns-Manville is recommending consultation with an architect. No better advice can be given.

LIMITED KNOWLEDGE

TECHNIQUES in architectural education have—at least in theory—an important bearing on architectural practice. But in the past active participation of architects in educational matters has proved somewhat less than effective, for students have continued to graduate puffed with the theoretical importance of a First Mention Esquisse on A South American Capitol Building.

One well-known architect has found a practical way to do this educational duty, however. Recently he was asked to serve as a judge of a B. A. I. D. problem "A Place for an Exiled Monarch." He thanked the school for honoring him. But he declined to serve on the score that his knowledge of exiled monarchs was too limited to permit his being a proper judge of what they required!

FOOD FOR THOUGHT

KARL T. COMPTON, President of the Massachusetts Institute of Technology, once said, "... We are entering an age in which conditions for success will be intelligent planning based on research and general cooperation in a planned economy. Research and cooperation are the key ideas." This statement offers much food for thought. Almost more than any single profession, architecture is concerned with planning and depends for its success on the effectiveness of research and cooperation

with other organizations in the building industry. In the last decade research of new materials, methods of construction, design and equipment have given the architect new tools with which to plan. Within recent months the Administration has been formulating ideas for large-scale planning in a variety of forms—planned finance, building activity and land use. Verily, we are fast approaching—perhaps even living in—the age of planned economy about which Dr. Compton speaks.

LET THE BUYER BEWARE!

A REMARKABLE document is "The Survey of Terms Used in Designating Qualities of Goods" issued by the Consumers' Advisory Board of the NRA. Looking toward uniform terminology in designating graded goods, it says: "Our study has revealed the shocking fact that much of the terminology now in use means one thing to the seller and a very different thing to the buyer. . . The buyer is frequently misled into believing goods to be one or two grades higher in quality than they are in fact." Although building materials are in general graded more consistently and clearly than most consumer industries, the report shows that much improvement is possible. For example, in flooring the best grade is usually called "clear" or "special," the second grade "first" or "select," the third grade "second" or "No. 1 Common," etc. The Board found that the phrase "caveat emptor" remains effective insofar as trade terminology helps the inexperienced consumer to buy what he wants. Apparently there is ample evidence to support the Board's finding.

A NEW COST IN BUILDING

THE building industry has been called upon to bear nearly 40% of the cost of NRA Code Authorities, according to the August 27th issue of the *Blue Eagle*, NRA newspaper. This percentage is higher than any other industry or related groups of industries of a comparable nature. Budgets for the support of Code Authorities totalling \$16,506,440.61 were approved August 20th. Of this figure \$6,342,096.75 must be borne by Industrial elements that in combination make the construction industry. Not included in this sum are assessments made against the builders' supplies trade and the retail lumber industry, nor does it include the shares of many industries—such as trucking—only partially related to the business of building. Of the total assessment general contractors must pay \$2,750,300 and plumbers \$1,332,131.

To The Editors

The significance of all these figures is just this: Assessments for support of NRA Code Authorities must inevitably be passed on to the consumer of industrial products. Sums assessed against any business directly concerned with construction activity will add just so much more to the cost of building, to say nothing of increased prices resulting from reduced hours and increased wages. It seems obvious that—if building activity is to expand according to the hopes of Government—costs must be lowered, not increased. Assessments such as those mentioned will hardly produce the desired result.

UNSCIENTIFIC RESTRICTIONS

BUILDING codes and local building ordinances have as their purpose the protection of life and property. But few of them make provision for changes in construction methods or permit the adoption of economies and improvements that have been established as being sound. Their variation between different towns, counties and states introduces unnecessary difficulties for architect and manufacturer alike. In a few communities active steps are being taken to challenge limitations imposed many years ago. In El Paso, for example, an organization of lumber dealers is seeking evidence to present to the city authorities to support their appeal for a revision of the highly restrictive fire zones which now embrace areas where masonry veneered frame and semi-fireproof construction appear to be logical and entirely safe. Such activities, conducted with the broad interests of the public in mind and with a view to eliminating unnecessary restrictions, should aid in stimulating construction.

YOUTH POINTS THE WAY

ARCHITECTS of the next generation, now students in architectural schools, seem utterly to have discarded traditional forms and to relish the new freedom of design and composition which characterizes the modern movement. Apparently they no longer regard the columnar orders as elements of architecture; rather these are looked upon only as studies in composition, proportion, symmetry, balance and the use of light and shade. Unless rigidly required by their instructors to work in a period style, the vast majority of present-day students are designing in the modern spirit. In one competition involving interior lighting of a cathedral, only three students out of nearly 200 relied upon traditional light sources; all the rest found modern ways of "designing in light."

THIS IS PRAISE INDEED!

BUILDING activity in the form of repairs and modernization is but "chicken feed" compared with the great volume of new work which can be confidently expected as a result of the National Housing Act. This is the opinion of Mr. Mark Sullivan of the New York *Herald Tribune*. To the Federal Housing Administration Mr. Sullivan—a seasoned political commentator of many years standing—gives a judicious measure of praise. It is a competently manned body, he says, and "For several reasons it inspires more confidence in its practicability than some others of the improvised organizations of recovery." But the new system of residential financing which the FHA is now developing is by far its most important job. Mr. Sullivan estimates an existing housing shortage at about 3,000,000 and thinks that as many as 3,000,000 men might be put to work as a result of success with FHA. Such activity might even be the stimulus for business recovery all along the line. Mr. Mark Sullivan, as an arch-Republican, has not always been either generous nor optimistic in his attitude toward recovery efforts of the Administration. His attitude toward the FHA is, therefore, indicative of the fundamentally constructive nature of the FHA and the National Housing Act.

TWENTY YEARS AGO

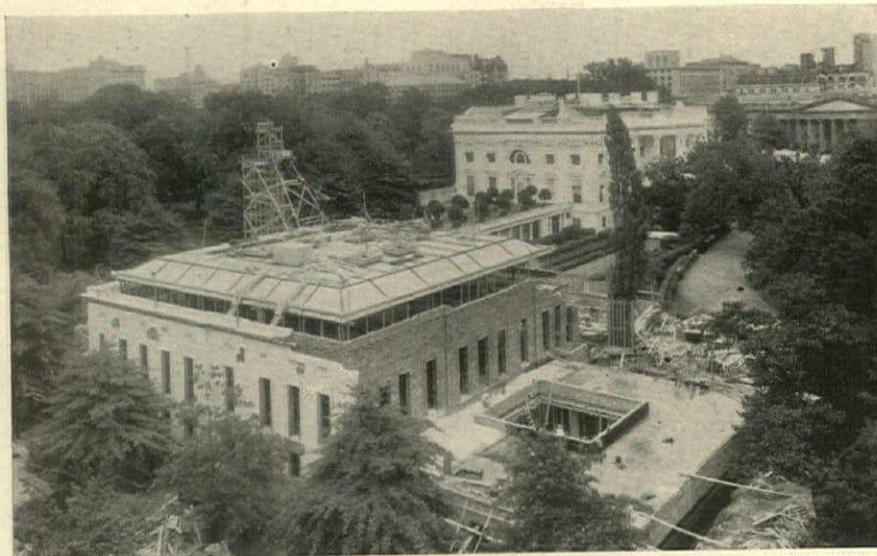
IN an article recently published by a New York Daily, it was stated . . . that New York City was greatly overbuilt. Particularly was this true, according to the authorities quoted, of apartment buildings, hotels and office buildings. In fact, the insurance company was represented as unwilling to make further loans on this character of property, under existing conditions." This quotation appeared in *AMERICAN ARCHITECT*, October 25, 1911, more than twenty years ago. In spite of the outlook of that time New York has witnessed an era of building construction that was unprecedented.

TWELVE TIMES A YEAR

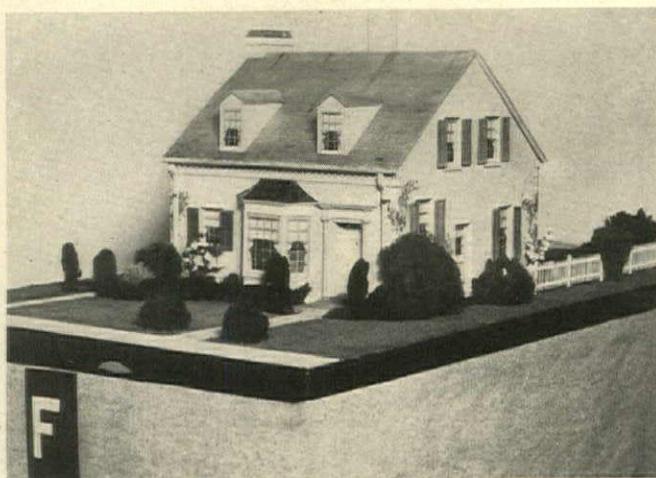
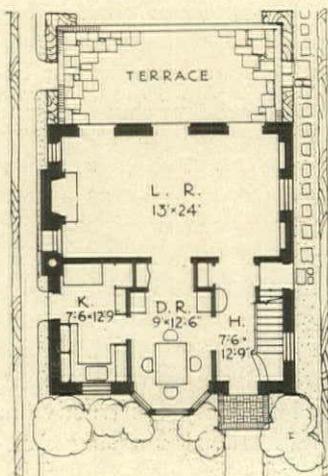
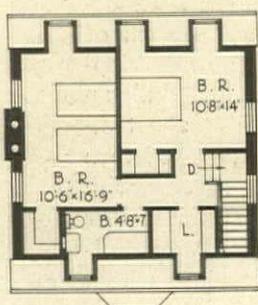
WE are glad to announce that beginning with the September Issue, *AMERICAN ARCHITECT* resumed monthly publication. Monthly publication will in no way affect the number of copies to which a subscriber is entitled under terms of any subscription contract. Although some subscriptions may be reduced in terms of months, volumes need not be interrupted, as adjustment to the new publication schedule will be made on a copy for copy basis.

THIS PAGE: Right, White House Executive Offices, remodeled and enlarged under the Modernization plan, are nearing completion. Eric Gugler, architect. Below, the public this house out of six exhibited in a competition sponsored by the St. Louis Chapter of the A. I. A. Fred Hammond, architect.

OPPOSITE PAGE: Above, model of exposition palace with cable-suspended glass roof. Beaudouin and Lods, architects. Below left, Col. Horatio B. Hackett, Director of Housing Division of the P. W. A., shows plans of new Washington, D. C., housing to Dr. Ernest Kahn, Miss A. M. Samuel, and Sir Raymond Unwin, European housing officials. Below right, Handkerchief Map of Washington, D. C. Printed in colors, it is being sold for benefit of Parkway development as an activity of the American Civic Association. Designed by Mildred G. Burrage.



UNTERWOOD & UNTERWOOD



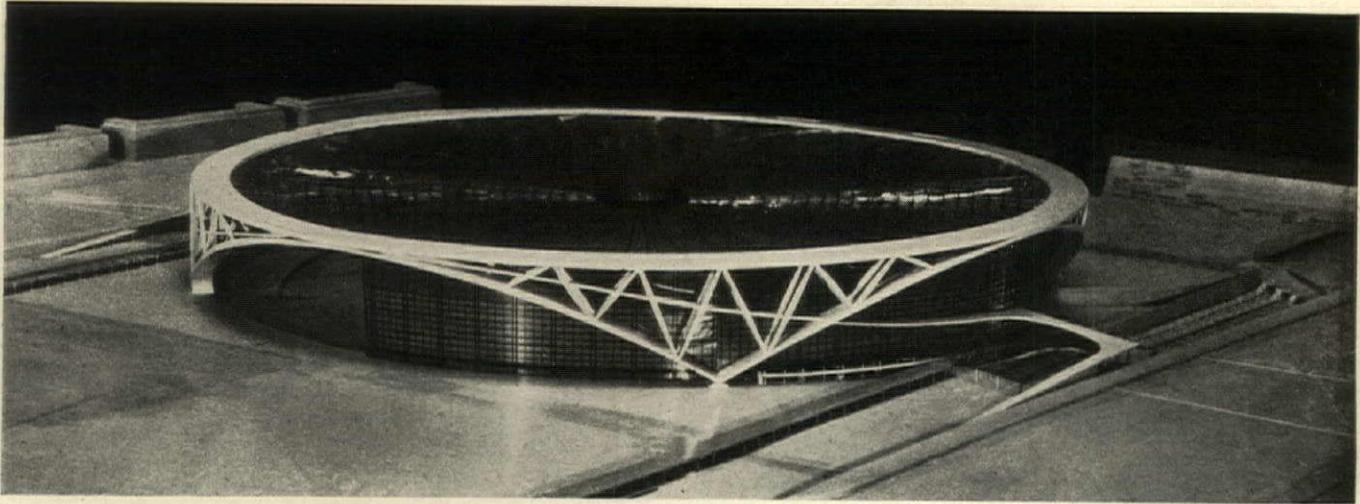
Trends and Topics

- A remodeling service to architects is offered by the F. H. A. It consists of a series of "photographic publications" illustrating aims and possibilities of the Better Housing Program. Known as Visomatic productions, this series illustrates and discusses, by means of photographs and charts with accompanying recorded script, various features of the modernization and repair program. It should facilitate the work of architects concerned with educating property owners, financial houses, and others, along this line. Three hundred outfits are being distributed and may be procured, with an experienced-operator, from Western Union offices.

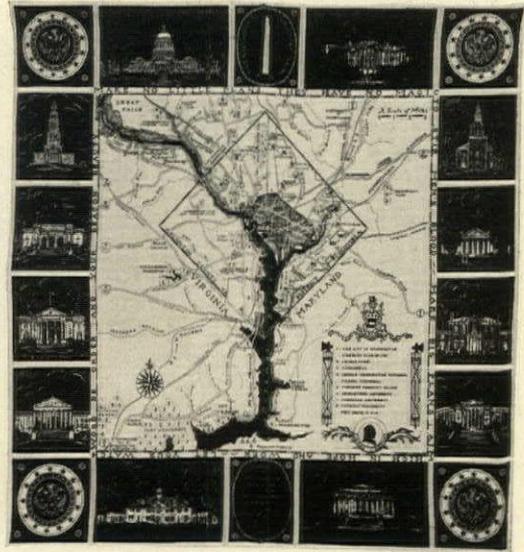
- Building permits increased 16.5 per cent for the first eight months of this year, compared with the corresponding period last year, as reported by Dun

and Bradstreet. Actual gain in August over July was 1.5 per cent, contrasting with a normal seasonal decrease of 9.8 per cent. August volume showed a gain of 6.3 per cent over August, 1933.

- Supported by a web of eight-inch cables 150 feet above the ground, a suspended glass dome, 1300 feet in diameter, is one of the striking features of an exposition palace designed by Beaudouin and Lods, architects, for a competition sponsored by the French Technical Bureau for the Utilization of Steel. The program called for the covering of a huge rectangular area without the use of interior supports. In the circular design submitted, the architects decided upon a structural system requiring only four bases, two opposite quadrants of the cylinder being enclosed by fixed glass walls. The



ACME



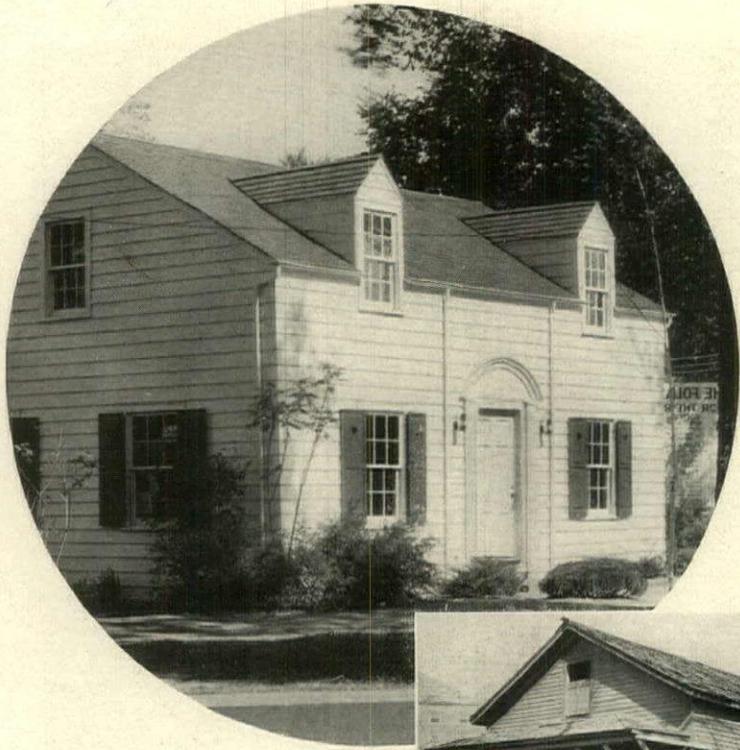
of the Times

other two may be opened or closed by means of glass portals moving on a geared track with electric drive. For the success of their design the architects rely upon the effectiveness of easily comprehended forms and economy of structure, intending thereby to avoid the high rate of obsolescence of more ornate contemporary building.

- Ernest John Russell, President of the A. I. A., says that in the program of the Federal Housing Administration lies the salvation of the architectural profession. Little work besides housing is in prospect, he thinks, probably until 1936. "Architects must adjust themselves to new conditions," says Mr. Russell. "If the architect is to have his rightful share in this new program, he must grasp the theory that his function in the community is as definite and as essential as is the function of the physician or lawyer."

- Six radio broadcasts on architecture are announced by the American Federation of Arts. Three will deal specifically with the modern room, the modern house, and the modern city. Other talks will deal with painting, sculpture, photography, the motion picture, and stage design. The programs will be broadcast every Saturday night from October 6 to January 26 at 8:00 o'clock, Eastern Standard Time.

- It is encouraging to note a substantial decrease in new applications for governmental refinancing under the H. O. L. C. Since only those property owners who are in actual financial distress may apply for such assistance, it may reasonably be construed that an increasing number of them have regained the standing which makes them eligible for loans under the N. H. A. (Continued on page 112)



THE PROBLEM OF THE DAY is how to get business...

The national publicity campaign to stimulate modernization and repair work sponsored by the Federal Housing Administration opens new markets to architects. . . .

AMERICAN ARCHITECT will pay \$50 each for accepted articles dealing with successful ways of securing modernization projects. Details are given below. . . .

How do YOU Secure Modernization Work?

ADDITIONS, alterations, remodeling, modernization and repairs are the immediate vital concern of the Federal Government. Upon their stimulation Washington relies for recovery of the capital goods industries, particularly building. Millions of pieces of printed literature, miles of newspaper columns are being published to make this pump-priming effort successful. Will architects benefit from this effort? Can they help make it go?

There is nothing about modernization work that is difficult for architects except getting the business and making it pay. The modernization of elevators in an office building, the development of a new store front or a shop interior, or the introduction of an extra bathroom in a house, are architectural tasks just as familiar as the task of designing a new structure.

But in the days when larger projects were available few architects sought the small work of a sort now being stimulated by the National Housing Act and the simplified financing it offers. In consequence the great majority of property owners who might take advantage of this act are not accustomed to calling upon architects for guidance in this field. Yet five and ten dollar fees, if necessary, are better than none. The number of small commissions an architect can

handle in spare time will easily pay the office overhead, and some of these clients may later on bring larger work to the architect who has helped solve their small problems.

It is obvious that architects should be engaged for many of these minor projects but it is also obvious that architects who want this sort of work will have to find methods of getting it, for little will walk into the office of its own accord.

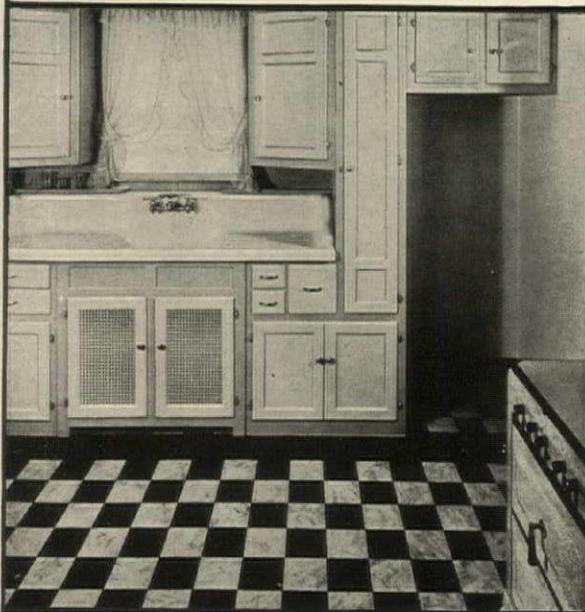
AMERICAN ARCHITECT believes it is more important to publish articles telling how to get this sort of business than it is merely to show illustrations of alterations and additions done by others.

If you have a successful way of getting modernization work or a practical idea of how fellow architects may develop this new field, write an article about it. **AMERICAN ARCHITECT** will pay \$50 for each accepted article of this sort. Manuscripts should not exceed 2,500 words in length and may be shorter if you can tell the story in less space. Preferably, you should deal with actual experience and wherever possible you should submit photographs and drawings showing before-and-after conditions of one or more projects obtained as result of the method described.



FROZEN MUSIC

Ten thousand square yards of Sloane-Blabon Linoleum have been installed in the Nebraska State Capitol Building—a tribute to the beauty and lasting quality of this fine floor-covering. You will also find Sloane-Blabon Linoleum in such other recent outstanding architectural achievements as the Sterling Memorial Library at Yale; the Los Angeles County General Hospital; Station WCAU, Philadelphia; the Waldorf-Astoria and Rockefeller Center . . . not to mention the new U. S. Navy cruisers Indianapolis and Tuscaloosa, various types of U. S. Army planes, buses of the Southwestern Greyhound Lines and, of course, thousands of private homes.



Colorful, resilient, sound-absorbing and sanitary, Sloane-Blabon Linoleum is an ideal floor-covering for both "public" buildings and private homes. Available in a wide selection of patterns in both contract and household weights at leading stores and linoleum contractors throughout the country. Let us send you our "Linoleum Handbook," containing much information of value to architects. W. & J. Sloane Selling Agents, Inc., 577 Fifth Avenue, New York. (May we also remind you that linoleum is a product for which home-owners can borrow money under the National Housing Act.)

SLOANE-BLABON LINOLEUM

10 YEARS

EMPHASIZES THE CHOICE "CRANE THROUGHOUT!"

• Four units... four separate contracts... yet all called for Crane plumbing exclusively! • Nebraska State Capitol Building, already cited as one of the nation's most beautiful structures, has as its claim to fame not only fitness of architectural line and design but also fitness of interior equipment. • The beauty and permanence of equipment, walls, interior decoration is assured by Crane quality in hidden fittings as well as in the open. Selection on merit alone called for "Crane fixtures" in both plumbing and much of the heating installation. A word of appreciation is due:

ARCHITECTS: Nebraska State Capitol Building: Bertram Grosvenor Goodhue and successors, Mayers, Murray and Phillip.

CONTRACTORS:

First Unit—Robert Parks Plumbing and Heating Co.,
Omaha, Nebr.

Second Unit—B. Grunwald, Inc., Omaha, Nebr.

Third Unit—B. Grunwald, Inc., Omaha, Nebr.

Fourth Unit—Newberg & Bookstrom, Lincoln, Nebr.

• As an architectural achievement, the people of Nebraska may well be proud of their new state capital building. Those charged with its maintenance will appreciate to the full what Crane quality means as a guaranty of future satisfaction for all who enjoy its facilities.



CRANE

CRANE CO., GENERAL OFFICES: 836 SOUTH MICHIGAN AVE., CHICAGO, ILL.
NEW YORK: 23 WEST 44TH STREET

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PERSONALS

• Of the 190 architects who submitted designs in the Seventh Annual House Beautiful small home competition, Harvey Stevenson and Eastman Studds of New York won first prize of \$500 in class one, for houses of eight rooms or less. Second prize of \$300 went to William Wilson Wurster of San Francisco. H. Roy Kelley of Los Angeles won first prize of \$500 in class two, for houses of nine to twelve rooms; second prize of \$300 going to Wauldron Faulkner of New York. Richard J. Neutra of Los Angeles was awarded a special prize of \$300 for the house best exemplifying modern construction and design. The judges were William Lescaze, Thomas Harlan Ellett, and Edmund B. Gilchrest, architects; Stewart Beach, editor of House Beautiful; and Ethel B. Power. The purpose of the Competition was to select from examples submitted the best houses built recently in the United States and coming under the classifications mentioned above. Judgment took place in New York where an exhibition of fifty houses opened on September 4. The exhibition will visit the larger cities in a nation-wide tour which will last nearly a year.

• E. Dean Parmelee announces removal of his office to 175 Main Street, White Plains, New York.

• Leon F. Urbain announces a new office address at 1517 Olive Avenue, Chicago, Ill.

• Mr. Georges Dengler, Premier Grand Prix de Rome, 1931, has been appointed by the University of Pennsylvania to the Faculty of the Department of Architecture as Professor of Design.

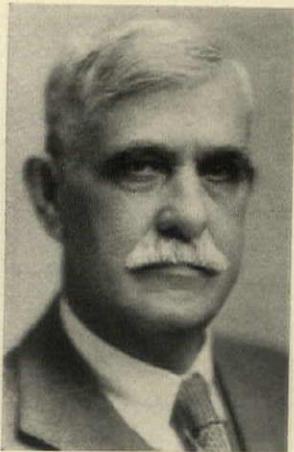
• Jan Ruhtenberg, Swedish architect, will teach design in the School of Architecture of Columbia University. Mr. Ruhtenberg, formerly an associate of Mies van der Rohe, is a graduate of the University of Leipzig.

• Barber and McMurry, architects, announce removal of their offices from the General Building to the Wright-Cason Electric Company Building, 517 West Church Ave., Knoxville, Tenn.

• Mario Corbett has closed his office for a period of four months. His new address is 463 Greencraig Road, Brentwood Heights, Los Angeles, Cal.

• Syracuse University's Department of Architecture announces two additions to its faculty: Professor L. C. Dillenback, for the past four years Professor of Design at the Columbia University School of Architecture, as Professor of Design; Mr. Erwin O. Christensen, for four years Educational Director of the American Federation of Arts, as Carnegie Lecturer on the History of Architecture and Art.

DEATHS



• Thomas R. Kimball died in Omaha, Nebraska, on September 7th. He was 72 years of age and had been a resident of Omaha for many years. Mr. Kimball won national recognition through his work on the Nebraska State Capitol Commission where he was responsible for the writing of the program which led to the selection of Bertram Grosvenor Goodhue as architect.

He was born in Cincinnati and studied at the University of Nebraska, the Massachusetts Institute of Technology, the Cowles Art School in Boston, and later with Harpignien in Paris.

Mr. Kimball designed many of Omaha's finest buildings, among them the public library, the old Burlington station, and St. Cecilia's cathedral, and acted as architect in chief for the Trans-Mississippi exposition in 1898. He served two terms as president of the American Institute of Architects and was long a member of its board of directors.

• Charles Kotting died in Detroit August 23. Mr. Kotting was born in Amsterdam, Holland, 71 years ago and came to Detroit at the age of 23. He was a member of the firm of Chittenden & Kotting, which designed the Detroit Boat Club and many houses in Michigan. He was treasurer, and later president, of the Michigan Chapter of the American Institute of Architects.

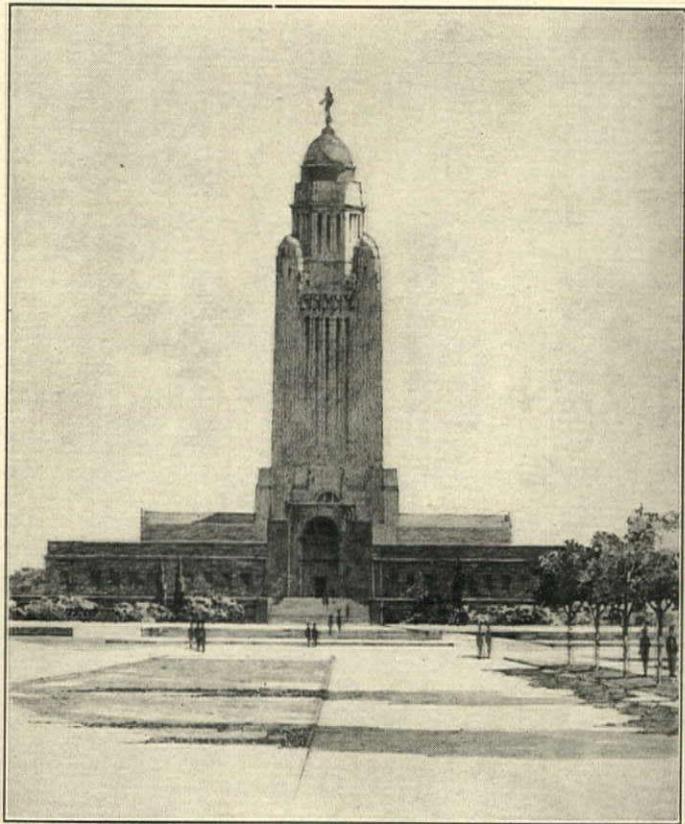
ANNOUNCEMENTS

• A housing exhibition will be held in The Museum of Modern Art, New York, N. Y., from October 17 to November 5. Three floors of the museum will be given to the display of models, plans, graphs, charts, and photographic murals depicting housing conditions in the United States and the development of city planning abroad. The exhibition will be held under the joint auspices of The Museum of Modern Art, the New York City Housing Authority, Columbia University, and the housing section of the Welfare Council. Langdon W. Post, Tenement Commissioner of New York, is honorary chairman, and Dr. Carol Aronovici chairman.

• St. Louis architects will join with contractors, building supply and furniture dealers, etc., in a Modern Home Exposition to be held in the new Municipal Auditorium, November 10 to 18, inclusive. In connection with the exposition, the Chamber of Commerce will provide 1,000 house-to-house canvassers to stimulate interest in home improvement. Publicity and radio campaigns have been conducted to assure maximum attendance.



THE NEBRASKA STATE CAPITOL



PLANS BY

BERTRAM GROSVENOR GOODHUE

DRAWINGS BY

MAYERS, MURRAY AND PHILLIP

PENCILS BY

KOH-I-NOOR

● The beauty of the new Nebraska State Capitol is a tribute to the genius of the late Bertram Grosvenor Goodhue, who made the preliminary plans, and to his successors, Mayers, Murray and Phillips, who later rendered the plans to completion.

The Koh-I-Noor Pencil Company is proud to pay an added tribute to the artistry of these men, and proud to announce that all of the plans, drawings and renderings were made with Koh-I-Noor pencils.

The unvarying quality of Koh-I-Noor Pencils, and the effective results obtained from their use are acknowledged by outstanding architects throughout the country.

KOH-I-NOOR PENCIL COMPANY

373 Fourth Ave., New York City



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American Radiator Co.
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strip Co.
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New Britain, Conn.

Crane Co.
Chicago, Ill.

Curtis, Towle & Paine
Lincoln, Neb.

Davidson Co.
Des Moines, Iowa

DePaoli Co., Inc.
New York, N. Y.

Edgewater Tapestry Looms
Edgewater, N. J.

Edward Edinger Co.
Cedar Rapids, Ia.

General Bronze Corp.
Long Island City, N. Y.

General Cable Company
New York, N. Y.

General Electric Company
Schenectady, N. Y.

General Fireproof Co.
Youngstown, Ohio

George Brothers
Lincoln, Neb.

Gladding, McBean Co.
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B. Grunwald, Inc.
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port Co.
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Johns-Manville Corp.
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Johnson Service Co.
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Kinnear Mfg. Co.
Columbus, Ohio

Korsmeyer Electric Co.
Lincoln, Neb.

Lahr Hardware Co.
Lincoln, Neb.

Latsch Bros.
Lincoln, Neb.

Libbey-Owens-Ford Glass Co.
Toledo, Ohio

Lincoln Telephone & Telegraph
Co.
Lincoln, Neb.

O. B. McClintock Co.
Minneapolis, Minn.

Marshall's Nurseries
Arlington, Neb.

Metz Construction Co.
Springfield, Neb.

C. Edison Miller Co.
Lincoln, Neb.

House of State Where Men Live Well"

ON the West Balustrade of the Nebraska State Capitol's Main Entrance is the quotation which heads these pages. The builders who were chosen to erect this magnificent building may well be proud of the job they have done. With equal force this statement can be applied to craftsmen who made the innumerable items of material and equipment to bring into actual being the architectural dream of Bertram Grosvenor Goodhue. Listed here are those who have had a share in the construction of this building. It is possible that the roster is incomplete; but it contains as many names as were obtainable from a number of authentic sources.

- | | | |
|--|---|---|
| Miller & Paine
<i>Lincoln, Neb.</i> | Omaha Fixture & Supply Co.
<i>Omaha, Neb.</i> | Spencer Turbine Co.
<i>Hartford, Conn.</i> |
| Mohawk Carpet Mills
<i>New York, N. Y.</i> | Omaha Steel Works
<i>Omaha, Neb.</i> | Standard Planing Mills
<i>Lincoln, Neb.</i> |
| Montgomery Elevator Co.
<i>Moline, Ill.</i> | Orchard & Wilhelm Co.
<i>Omaha, Neb.</i> | Stillwater Mfg. Co.
<i>Stillwater, Minn.</i> |
| Moravian Pottery & Tile Co.
<i>Doylestown, Pa.</i> | Ostrander & Eshleman, Inc.
<i>New York, N. Y.</i> | B. F. Sturtevant Co.
<i>Hyde Park, Boston, Mass.</i> |
| Mosaic Tile Co.
<i>Zanesville, Ohio</i> | Otis Elevator Company
<i>New York, N. Y.</i> | Sunderland Bros. Co.
<i>Omaha, Neb.</i> |
| Mosler Safe Co.
<i>Hamilton, Ohio</i> | Pittsburgh Plate Glass Co.
<i>Pittsburgh, Pa.</i> | Frank C. Sutton
<i>Lincoln, Neb.</i> |
| Mueller Mosaic Co.
<i>Trenton, N. J.</i> | Rambusch Decorating Co.
<i>New York, N. Y.</i> | Tompkins-Kiel Marble Co.
<i>New York, N. Y.</i> |
| Nash Engineering Co.
<i>South Norwalk, Conn.</i> | Remington-Rand Co.
<i>Buffalo, N. Y.</i> | Tuttle & Bailey, Inc.
<i>New Britain, Conn.</i> |
| National Electric Products Corp.
<i>Pittsburgh, Pa.</i> | Renou, Coulaz & Riesen
<i>New York, N. Y.</i> | The W. S. Tyler Co.
<i>Cleveland, Ohio</i> |
| Nebraska Bridge Supply &
Lumber Co.
<i>Omaha, Neb.</i> | Oscar C. Rixson Co.
<i>Chicago, Ill.</i> | United States Radiator Corp.
<i>Detroit, Mich.</i> |
| Nebrasaka Cement Co.
<i>Superior, Neb.</i> | Roman Bronze Works, Inc.
<i>Corona, Long Island, N. Y.</i> | Vermont Marble Co.
<i>Proctor, Vt.</i> |
| Nebraska Decorating Co.
<i>Lincoln, Neb.</i> | J. L. Roscow
<i>Lincoln, Neb.</i> | Waller Signs
<i>Lincoln, Neb.</i> |
| Nebraska Nurseries
<i>Lincoln, Neb.</i> | Rudge & Guenzel
<i>Lincoln, Neb.</i> | Warren Webster & Co.
<i>Camden, N. J.</i> |
| Nelson, Johnson & Doudna
<i>Omaha, Neb.</i> | Russell & Erwin, Inc.
<i>New Britain, Conn.</i> | Western Electric Supply Co.
<i>Lincoln, Neb.</i> |
| Neumaji Marble & Tile Co.
<i>Moose Lake, Minn.</i> | Sargent & Co.
<i>New Haven, Conn.</i> | Western Glass & Paint Co.
<i>Lincoln, Neb.</i> |
| Newburg & Bookstrom
<i>Lincoln, Neb.</i> | Schricker Electrical Co.
<i>Lincoln, Neb.</i> | Western Venetian Blind Co.
<i>Kansas City, Mo.</i> |
| Newman Bros., Inc.
<i>Cincinnati, Ohio</i> | Shaw Furniture Co.
<i>Boston, Mass.</i> | Williams Nurseries
<i>Lincoln, Neb.</i> |
| Olson Construction Co.
<i>Lincoln, Neb.</i> | W. & J. Sloan Selling Agents,
Inc.
<i>New York, N. Y.</i> | Yale & Towne Mfg. Co.
<i>Stamford, Conn.</i> |

The Readers Have a Word to Say

• HELP OR HINDRANCE?

Editor, AMERICAN ARCHITECT:

IN line with the efforts of your esteemed publication and the profession in general with regard to distributing Federal buildings among private architects, I believe you should be fully informed by each practitioner as he meets with the exigencies of this problem.

First let me quote from the July AMERICAN ARCHITECT, page 41: "Private architects will be engaged on all post office projects which cost more than \$60,000, according to an announcement of the Procurement Division of the Treasury Department.—The announcement of the Procurement Division is in line with the policy of employing private architects for public work, a procedure for which AMERICAN ARCHITECT has for many years been a strong advocate." This was again referred to on page 136 in your discussion of the accomplishments of the last convention of the Institute in Washington.

As far back as October, 1932, the writer applied for appointment as architect for a proposed post office building in Cranford, N. J. The funds were subsequently sidetracked. The project among others was revived in June, 1934, and \$93,000 appropriated for site and building. I again applied for appointment. Let me now quote in part from a letter dated August 9th from the office of Mr. L. A. Simon, Supervising Architect, addressed to a congressman who had interceded in my behalf.

"The Federal buildings authorized under the 'Emergency Appropriation Act, Fiscal Year 1935' are in most cases for comparatively small structures.

"As a general policy these buildings, where they adapt themselves to standard characteristics of design, as in the case of Cranford, N. J., Post Office, will be handled by the Procurement Division of the Treasury Department. By doing so, the placing of the contracts and putting men to work will be greatly expedited.

"A comparatively few Federal buildings of larger size have been assigned to individual architects who will come to Washington on a salary basis, and take charge of the design and preparation of drawings and specifications, utilizing the facilities of the Procure-

ment Division. These architects will be assigned to two or more buildings geographically grouped in the general locality of their home offices. Assignments have already been made for buildings in this category."

From the above letter of Mr. Simon's I am forced to conclude that either your report of the new policy was incorrect or that the authorities in Washington have no thought of awarding such work to private architects on a fee basis. Again let me refer to the last part of the second paragraph, to wit: "By doing so, the placing of the contracts and putting men to work will be greatly expedited." Just how solicitous is the Treasury Department of this? On March 3, 1933, the department appointed architects for Federal buildings in Rahway, N. J., and Summit, N. J. The gold shovel has been ready, but not a teaspoon of earth has been upturned. In both of these cases the architects have been put to considerable annoyance and expense, due to revisions, delay and inaction.

Is it possible that the governmental departments, charged with the duties of producing architectural services, are so jealous of their entrenched positions that every conceivable obstacle is foisted upon the appointed practitioner so that the profession will be discouraged from seeking such appointment due to its unprofitableness?—C. F. Ackerman, Newark, N. J.

On page 9 of the September American Architect is a statement of this magazine's policy regarding Governmental policies toward architects. The question in the last paragraph of this letter is beyond the Editors' ability to answer.—Ed.

• ABLE, BRILLIANT, FRESH

Editor, AMERICAN ARCHITECT:

SOMEONE kindly sent me a copy of the July AMERICAN ARCHITECT. In this issue I found an article by Charles Whitaker which is so able, so brilliant, and so fresh that I cannot refrain from commenting on your breadth of judgment and sincerity of purpose in publishing it. Sweeping away century old cobwebs about Art and getting down to a fresh vision of reality and of people. More power to you in your endeavors.—George G. Elmslie, Architect, Chicago, Ill.

• REGISTRATION LAW PROBLEM

Editor, AMERICAN ARCHITECT:

IN the July, 1934, issue you will find an article by Mr. Louis C. Dittoe, Architect from Cincinnati, O.

In reference to a state law so written as to refuse building permits on plans prepared by other than registered architects, for construction work in excess of a \$4,000 valuation, I would like to state my case. I have been a reader of AMERICAN ARCHITECT for many years. I am 51 years old and have been in the building construction line for about 31 years and about 24 years as designer and builder of better homes.

I did not have an opportunity to go through college. However, I finished grammar school and later went to night school to study mathematics. I also had an I. C. S. architectural course.

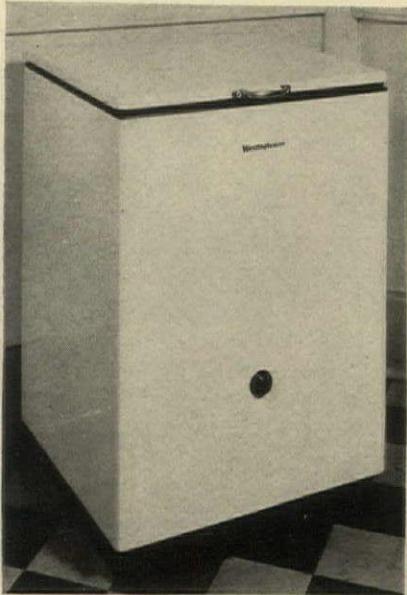
My practical experience in the building construction business and many years of study on architectural work makes me quite proficient in the building construction work. However, I have no college degree of any kind and in all probability I would not be able to pass the examination to get my architectural registration certificate.

Still I know that I am capable of drawing plans and writing specifications for almost any type of building. There are a good many men besides myself who are just as capable of doing architectural work, and who, also, may not be able to pass the examination for a registered architect. What do you propose for us to do who have practically spent a lifetime in the building construction line and studied architectural work for many years? Do you want us to stop drawing plans which is our life work?

I appreciate the fact that you are trying to protect the college graduate.

It seems to me that there should be some concession made when they pass a law for architectural practice in each respective state as per Mr. Dittoe's idea. Men of my type should be permitted to continue their practice as in the past. However, there may be a local board of examiners who would pass on each respective person's ability in the construction line.—G. O. Dallman, West Allis, Wis.

New Materials and Equipment

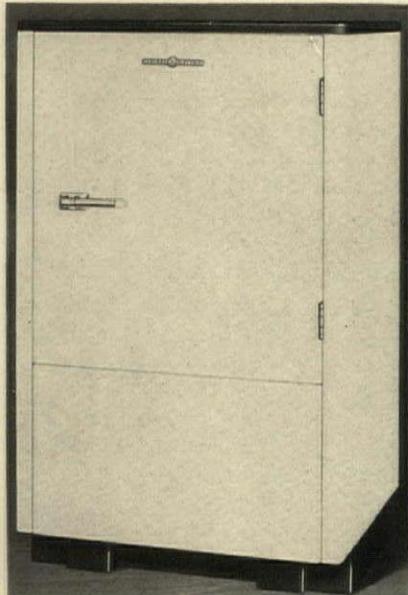


Westinghouse Chest Refrigerator

342M A chest type refrigerator, 36" high, 22 $\frac{7}{8}$ " wide and 20 $\frac{1}{4}$ " deep, and of 2 cu. ft. capacity, is a new product of Westinghouse Electric & Mfg. Company, Mansfield, Ohio. This model has a hermetically sealed refrigerating unit, a one-eighth h.p. motor, and is controlled by a temperature selector located on the outside of the cabinet. White High Bake Dulux is the exterior finish while the interior is of one-piece porcelain. The base of the model, finished in black, is slightly recessed.

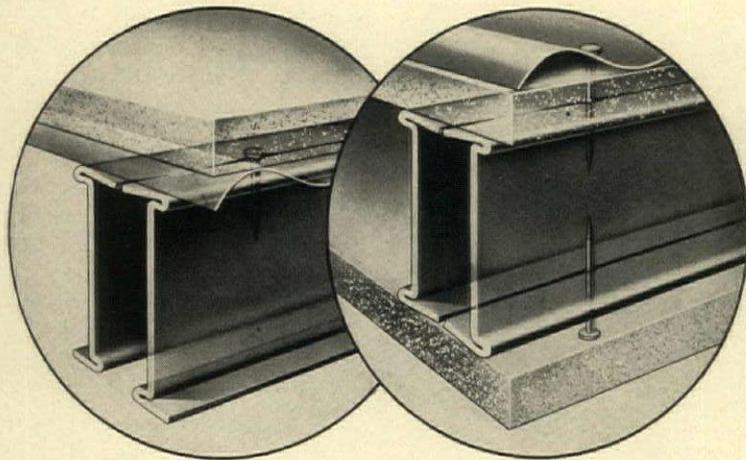
Domestic Water Heating System

343M A completely controlled automatic domestic water heating system for steam and hot water plants, is announced by The Burnham Boiler Corp., Irvington, N. Y. For steam systems the boiler is equipped with a Taco Indirect Hot Water Heater piped to the storage tank. The heater has a Spencer-Klixon Control, wired to an automatic firing device, which maintains boiler water temperature as desired. For hot water systems the boiler has in addition the Thrush Circulator and the Thrush Flow Control Valve. Either system can be equipped with a Burnham-Taco tank, combining heating unit and tank in one apparatus.



G-E Flat Top Refrigerator

346M A new flat top model refrigerator, designed primarily for apartment houses, is announced by General Electric Company, Cleveland. This model is 37 $\frac{1}{2}$ in. high, 23 $\frac{3}{8}$ in. wide and 20 in. deep, and of 3 cu. ft. capacity. Cabinet has a flush door, a one-piece steel inner lining and steel outer panels with insulation sealed between. The insulated top is covered with a removable steel panel. The condensing unit is accessible from the bottom panel. Finished in Glyptal-baked enamel outside and white porcelain inside, with polished chrome finish on semi-concealed brass hardware.



Steel Roof Deck

344M The Universal Metal Sections Company, Cleveland, has introduced a new type of steel roof deck construction which uses one standard size section cold-rolled from No. 16 gauge hot-rolled, copper-bearing strip steel into various stock lengths. The sections are spaced upon their supporting purlins at distances depending upon purlin spacings, roof load and required fibre stresses. Corrugated steel sheets are fastened to these sections, with or without insulation and waterproofing.

Magazine Feed Boiler

345M A lower-priced addition to its line of magazine feed boilers burning No. 1 Buckwheat Anthracite

has been announced by Spencer Heater Company, Williamsport, Pa. This unit, to be known as the C-N Spencer, burns chestnut-size anthracite or coke and embodies the principles of magazine feed boiler construction developed by this company. It can be had with the metallic jacket recently introduced by Spencer at slight additional cost.

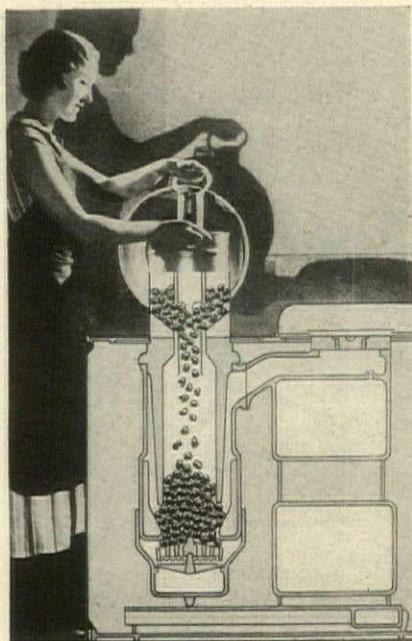
Oversize Underfloor Duct

347M A Fiberduct raceway designed to provide greater capacity for underfloor wiring has been introduced by General Electric Company, Bridgeport, Conn. This raceway has a cross-sectional area of 5 sq. in. and accommodates 144 pairs of No. 22 twisted wire. It is of the oval-top and closed-bottom type.



Weston Foot-Candle Meter

348M A meter which measures light values, whether daylight or artificial, has been introduced by Weston Electrical Instrument Corp., Newark, N. J. Colored areas on the scale indicate whether the light is suitable for any task or location. Wherever placed, the pointer instantly indicates the prevailing light intensity by means of a photonic cell which transforms light energy into electrical energy.



The Aga Stove

349M A high efficiency, thoroughly insulated, coal-burning cooking stove, invented by a Swedish scientist and successfully introduced in England, is now offered in America by A. G. A. Company, New York. The Aga stove burns a maximum of one and a half tons of anthracite coal a year. It has a hot cooking plate, a simmering plate, a fast oven and a slow oven. The exterior surface of the range is cool at all times, but by lifting the insulated covers of the cooking surfaces, some of the heat may be released to warm the kitchen.

Humidity and Temperature Control

350M A combination thermostat and humidity control has been developed by Minneapolis-Honeywell Regulator Company, Minneapolis. In the thermostat in this control the bi-metallic actuating element tips a mercury switch, thus making or breaking the circuit as required to turn heat on or off. Human hair is the actuating element of the humidity control. This element also tips a mercury switch. The unit is housed in a case 6 in. high, 3½ in. wide and 2½ in. deep, and can be used on either low or line voltage circuits.

Crosley Chest Refrigerator

351M The Crosley Chest Shelvador Electric Refrigerator is a new product of the Crosley Radio Corporation, Cincinnati. This unit is opened at the top, and its recessed door has racks for small food articles. It has a capacity of 4.2 sq. ft. of storage space.

Electric Plate Warmers

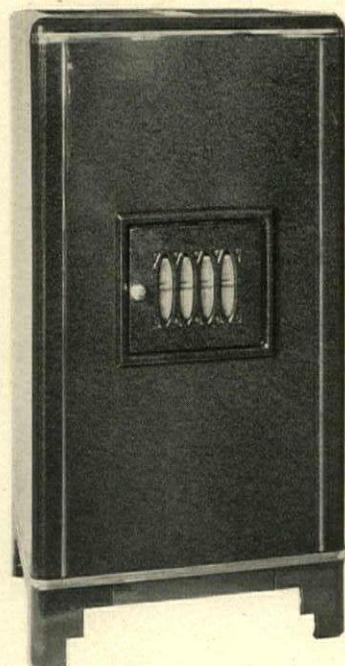
352M Janes & Kirtland, Inc., New York, have added electric plate warmers to their White House Line of kitchen equipment. The cases of these units have double walls between which is 1½" of Asbestoscel and ½" dead air space insulation. Doors are double walled, insulated and recessed into frame. Chromolox units serve as heating elements and are controlled automatically by a thermostat. Portable or built-in models are available.

"Zipcord" Lamp Cord

353M A lamp cord with a "zip" construction that permits opening of the sheath and separation of the conductors has been developed by the Wire Division of the U. S. Rubber Company, New York. The cord, consisting of two parallel conductors, is rubber jacketed. This rubber jacket divides evenly when the conductors are pulled apart, assuring perfect insulation for each conductor without injuring its dielectric properties.

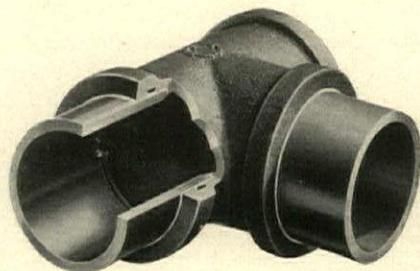
Stedman Rubber Flooring

354M The Stedman Rubber Flooring Company, South Braintree, Mass., has introduced their Reinforced Rubber Tile Floors in ⅛" thickness. This new gauge material is made by the same formula as the usual ⅜" and ¼" thicknesses; it is available in the same range of colors, but it costs less.



Space Heaters

355M Circulating heaters of modern design have been introduced by Heater Division of Motor Wheel Corporation, Lansing, Mich. The top grilles of these units project the warmed air at a 45 degree angle instead of straight toward the ceiling. Also a low priced oil burning radiant type heater is offered. All models employ the MW Dual-Chamber oil burner.



Threadless Bronze Fittings

356M Working together, the Air Reduction Sales Company, Walworth & Company, and Handy & Harmon have perfected a new threadless bronze pipe fitting. A brazing alloy, Sil-Fos, is incorporated as a ring in each opening of the new Walseal fitting. Installation consists of slipping the pipe into the fitting and then applying an oxy-acetylene flame. When the white Walseal ring appears, the joint has been made. There is no danger of clogging as each outlet contains just the right amount of Sil-Fos. The finished joint is said to be vibration-proof, corrosion-resistant, and will not creep. This new fitting will be manufactured by Walworth Company, New York.

•• ITS PILE IS ANCHORED

There was the man who walked over his wife's carpet in spiked golf shoes, and sent its pile in circulation all over the room. There was the pet cat that clawed up little fur balls, to his mistress' frenzy. But these things happened to a loose-pile carpet—NOT SEAMLOC!

Chase Seamloc has a protection for its beautiful, erect wool pile. Every little tuft is safely anchored in a firm cement square that insures it against wear-hazards. This same patent backing permits cutting any direction without binding, seaming without sewing. It lies flat, hugs the floor, is water-proof, color-fast.

For wall-to-wall, or individual inlaid patterns, for a beautiful range of modern colors, surface textures and grades . . . see Chase Seamloc.

CHASE SEAMLOC CARPET

PRODUCT OF *Goodall-Sanford Industries*

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FOR OCTOBER 1934

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**ARCHITECTURE IN ENGLISH
FICTION**

By Warren Hunting Smith. Published by Yale University Press, New Haven. Indexed; 236 pages; size 5 $\frac{3}{4}$ x 9; price \$2.50-paper.

WRITTEN primarily as a dissertation for the degree of doctor of philosophy, this volume will be chiefly interesting to those architects with a taste for minute research. Certainly the book is the result of a tremendous amount of study and application to literary detail. But it is difficult to see what purpose the book serves beyond recording in 222 pages of closely printed text the fact that architecture has been duly recognized by authors of many novels.

LANDSCAPE ARCHITECTURE

By Katherine McNamara. Published by Harvard University School of Landscape Architecture, Cambridge, Mass. Indexed; 209 pages; size 8 $\frac{1}{2}$ x 11; price \$2.00 pressboard—\$2.50 cloth.

TO those architects interested in developing their knowledge of landscape architecture this volume should prove a valuable source of informative material. It is a thorough bibliography compiled in the Schools of Landscape Architecture and City Planning at Harvard University, covering technical, professional and esthetic parts of landscape architecture.

**SOUTHERN PINE MANUAL OF
STANDARD WOOD CONSTRUCTION—12th Edition**

Published by Southern Pine Association, New Orleans, La. Illustrated; indexed; 188 pages; size 4 $\frac{3}{8}$ x 6 $\frac{3}{4}$; price \$1.50.

ARCHITECTS who in former years have found this Manual of practical assistance in the design and specification of all types of buildings will be interested to learn that the twelfth edition was made necessary by a change of grading rules to conform to the manufacturing standards set forth in American Lumber Standards. Other new material includes a new column formula developed by the Forest Products Laboratory of the Department of Agriculture and information on the bow-string truss.

**MAPS AND CHARTS MADE BY
THE SLUM CLEARANCE COM-
MITTEE OF NEW YORK—1933-34**

Indexed; 127 pages; 11 $\frac{5}{8}$ x 17; price \$5.00.

AS indicating the preliminary technique of slum clearance, the maps and charts prepared by the Slum

Clearance Committee of New York are invaluable to architects and others who may be in intimate touch with slum clearance problems in any portion of the country. The 243 charts which form the contents of the book were prepared as a basis for a public housing program in New York City. The book was not prepared for general sale, but a limited number of copies may be obtained from Mr. R. H. Shreve, Director of the Slum Clearance Committee of New York, 11 East 44th St., New York City.

**TOWARD FULLER LIVING
THROUGH PUBLIC HOUSING
AND LEISURE TIME ACTIVITIES**

By Abraham Goldfeld. Published by The National Public Housing Conference, 112 East 19th St., New York, N. Y. Illustrated. 56 pages; size 6 x 9 3/16; price 25c—paper.

PRIMARILY this is a compilation of available facts concerning five outstanding American experiments in organized community life. The author, as Supervisor of the Lavanburg Homes, a community housing development in New York's slum area, has had a wide background of experience on almost every phase of America's housing problem. His observations and reports in this booklet, though perhaps of no direct technical application for architects, has, however, a direct bearing on the requirements of integrated housing projects.

**BOECKH'S MANUAL OF
APPRAISALS**

By E. H. Boeckh. Published by The Rough Notes Co., Inc., Indianapolis, Ind. Illustrated; indexed; 271 pages; size 5 $\frac{5}{8}$ x 8 $\frac{3}{4}$; price \$5.00.

MORE and more today architects are being called upon to appraise the value and condition of structures. Appraisal work apparently has become something of a profession in itself; and this volume, designed as sort of a handbook, sets forth a practicable technique based on the experience of a well-known appraising organization. In addition to a general discussion of appraisal methods and detailed instructions on the use of the Manual, the volume contains cubic foot costs of a wide variety of structures usually met with in appraisal work. Included in the price of the book is a pad of appraisal report work sheets.

**STEEL CONSTRUCTION
2nd Edition**

Published by the American Institute of Steel Construction, 200 Madison Ave., New York City. Illustrated; indexed; 352 pages; size 6 $\frac{1}{8}$ x 9 $\frac{1}{8}$; price \$2.10.

THE American Institute of Steel Construction has compiled this book as the only manual of the sort which contains all information regarding all the rolled steel sections manufactured in this country. It is divided into five parts which include data most frequently used by structural estimators and designers; tables of allowable loads; standard specifications and codes commonly employed in structural steel-work; and a variety of tabulated data useful in cases of occasional reference. The book is clearly indexed and carefully illustrated and should prove a valuable addition to the architect's or engineer's library.

**YEAR BOOK—NEW YORK SO-
CIETY OF ARCHITECTS—1934**

Published by New York Society of Architects, 101 Park Ave., New York City. 321 pages; size 6 x 9 $\frac{1}{8}$; price \$5.00.

THE 23rd edition of this volume contains all laws relating to the building industry in New York City. The editors have done a very thorough job in compiling a series of codes which, though specifically adapted for use in New York City, serve as standards for many other cities throughout the country. In addition to the New York City codes the book contains practical notations on window areas, stair treads and risers, weights of various materials and tables of safe loads for wood floor beams, columns and girders.

**MODERN FURNISHING
AND DECORATION**

By Derek Patmore. Published by The Studio Publications, Inc., 381 Fourth Avenue, New York City. Illustrated; 98 pages; size 7 $\frac{1}{2}$ x 10; price \$4.50.

WITH their characteristic care the publishers of this volume have produced a beautifully arranged book. Most of it is devoted to explanations of sixteen full-color plates and thirty-two black and white illustrations that range from general views of modern interiors to a decorative painting by Picasso. A short text outlines the essentials of room arrangement and interior decoration. Though not intended primarily for the professional man, architects will find pleasure and profit in a study of the illustrations.



**CONSIDER YOUR
CLIENT'S
BUSINESS**



Custom-built floor in the new San Francisco store of A. G. Spalding & Brothers. Kent & Hass, architects. Says the store manager: "This floor has an almost magical way of drawing people to the center and rear of the store. They stay and shop. Business is good."

... and CONSIDER ARMSTRONG'S LINOLEUM

OVER and over, experience has proved that the *right* floor, like an attractive store-front, can help build business for retail stores and shops. The San Francisco Spalding store is just one case out of many.

For this store, architects Kent & Hass specified Armstrong's Linoleum because they knew they could depend upon it—could stake their reputation on it. Also, it has these other advantages:

VERSATILE. The floor above is only one example of the limitless design possibilities of Armstrong's Linoleum. No design that you can lay out on your drafting board is too intricate for reproduction in Armstrong's Linoleum.

DURABLE. These modern floors don't show wear. Traces of scuffing, shuffling feet can be removed quickly by washing with a mild soap, and waxing with Armstrong's Linogloss. Year in and year out, they retain their sparkling beauty.

PRACTICAL. These are quiet, resilient floors—comfortable underfoot. Maintenance cost is low.

ECONOMICAL. Armstrong's Linoleum costs no more than other

types of floors—is cheaper than most floors.

Armstrong Floor Contractors everywhere employ trained layers, assuring you of satisfactory installation and faithful rendering of your design. Send today for the addresses of these contractors nearest you, and for "Public Floors of Enduring Beauty." Armstrong Cork Co., Floor Div., 1201 State St., Lancaster, Pa.



**Armstrong's
LINOLEUM FLOORS**

LINOTILE - CORK TILE - ACCOTILE - RUBBER TILE - LINOWALL

Trends and Topics

- Architects may give significant leadership to the Better Housing Program by serving as the nucleus for committees organized to "sell" the program in their respective communities, according to a recent publication of the F. H. A. which urges cooperation with contractors, retailers, and other agencies whose efforts are directed along this line.

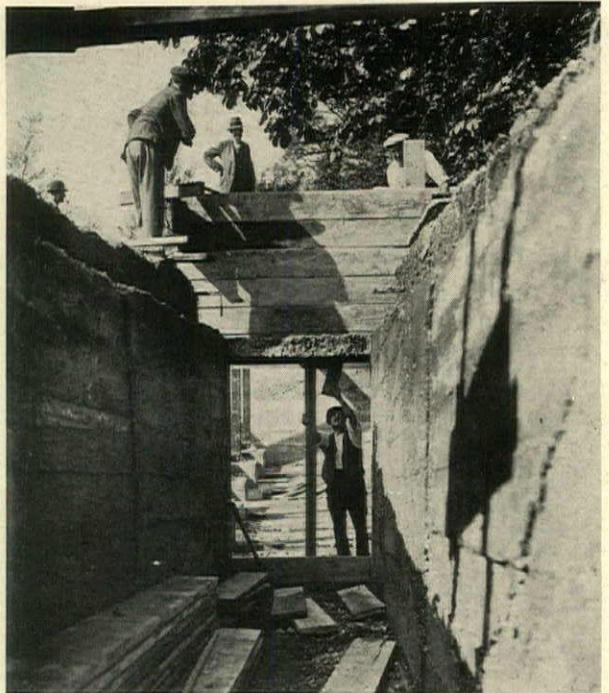
- Filing systems for architectural plates and articles "sufficiently simple to appeal to the average office yet not so simple as to be worthless" have been worked out by a special committee of the A. I. A. and will be mailed prepaid by the Secretary's Office upon receipt of one dollar.

- Designed to educate home-owners in the entire process of remodeling, with the particular view to making them conscious of the necessity of getting proper guidance in remodeling plans, a practical scheme is contained in a demonstration being conducted by the Wisconsin Association of Architects in conjunction with the Milwaukee Journal. Three out-moded houses, in separate sections of the city, have been selected by a group of Milwaukee architects for complete modernization. The houses will eventually be sold. The project has been given the support and cooperation of the Wisconsin Builders Congress, the Real Estate Board, and the Building and Loan Association.



Remodeling projects using precast concrete joists claim speed and efficiency for this type of construction, and provide a fire-safe and very adaptable treatment of floors and ceilings.

- An aid to metropolitan parking problems is suggested in a London news item. An underground parking area of one and one-third acres will be constructed in the heart of London's theatrical district, at an estimated cost of \$750,000. Entrance will be effected by means of a spiral driveway, and two high-speed elevators will transfer the cars when leaving. It is estimated that 600 cars can be cleared



ACME

An English housing project provides a bomb-proof shelter as a possible war-time refuge for three hundred persons. The shelter is 18 feet deep, 30 feet wide, and 40 feet long, and is constructed of several alternate layers of concrete and soil.

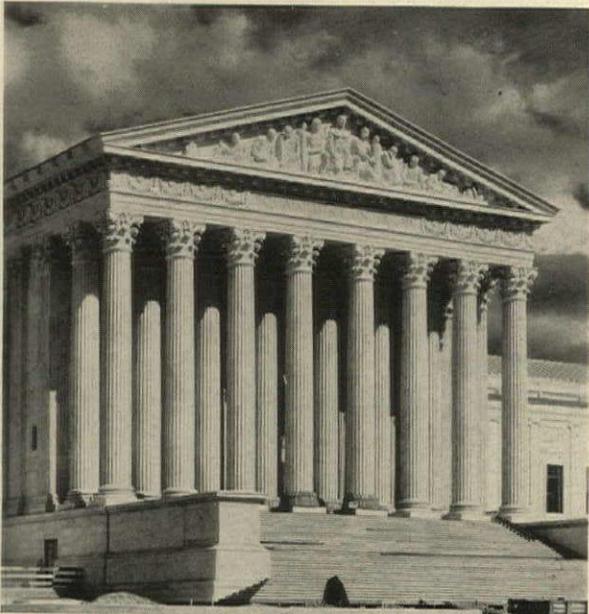
by this system in less than half an hour.

- An installment-payment credit plan is announced by the National Radiator Corporation of Johnstown, Pa. Patterned after the National Housing Act, it offers three-year terms without initial down payments to home owners in connection with the installation of heating equipment ranging from \$100 to \$2,000 in cost.

- That twenty-five per cent of Manhattan's homes are lacking in ordinary sanitary conveniences, and that living conditions described as "intolerable" are spread generally over the city, was revealed in a survey conducted by Langdon W. Post, New York Tenement House Commissioner. Similar conditions are known to apply in other cities all over the country, and the inevitable correction of this situation implies a large potential market for the services of architects.

- Drypoint etching with a new medium is described in an item in the Michigan Society of Architects' Weekly Bulletin. An aluminum plate, which is easy to work and less expensive than copper, is said to have given excellent results. An "Anodic Coating" harder than the plate itself is deposited on the plates which are offered in various degrees of hardness.

- Remodeled buildings comprise a travelling exhibition sponsored by the Architects Emergency Com-



UNDERWOOD & UNDERWOOD

Newest of the Capitol Building group in Washington, D. C., is the Supreme Court Building, designed by Cass Gilbert. Nearing completion, the structure is entirely sheathed in white marble and will cost approximately \$9,000,000.

mittee of New York. The exhibition will show "before and after" photos and plans of each building, with captions explaining to the layman the problem involved and how the problem was solved. Any groups interested in this exhibition or in the manner in which it was assembled may apply for details to Mr. R. W. Sexton, Architect's Emergency Committee, 115 East 40th Street, New York. The exhibition will open on October 16 in the Architects' Samples Corporation building, 101 Park Avenue, New York, where it will remain for two weeks.

• The Better Housing Institute of Philadelphia, Inc., is the newest agency formed for the purpose of correlating the various factors involved in the construction of small houses. The Institute, a privately owned project, will attempt to render a consulting and advisory service on house planning, financing and construction for the benefit of mortgage lenders. Efforts will be made to assure excellence of community planning and individual buildings and thus to provide some degree of centralized control over volume of house construction, its location, and other pertinent details even to the specifications, planning design, financing and sale of houses. Certification of excellence is planned by the Institute as one other means for creating a higher standard of small house building.

• Cubic-foot costs of present building construction are 40 per cent under those of 1928, according to a recent survey made by F. J. Knox and published in

a recent issue of the *Engineering News-Record*. The survey covered a minute cost comparison of four university classroom buildings of similar type and specification. The older, built in 1928-29 and finished much more simply than one now under construction, showed a high average cost of 68.68 cents per cubic foot. The low-cost building, finished in 1932, cost 31.32 cents per cubic foot. Building No. 4 now under construction had an estimated cubic-foot cost of 40.65 cents.

• For the benefit of candidates for an architect's license, courses in architectural practice will be conducted during autumn and spring, 1934-1935, by the College of Fine Arts of New York University. Planned to meet the requirements of the State Board of Regents these courses are for experienced draftsmen and graduate students. They constitute a review of architectural design, construction and practice.

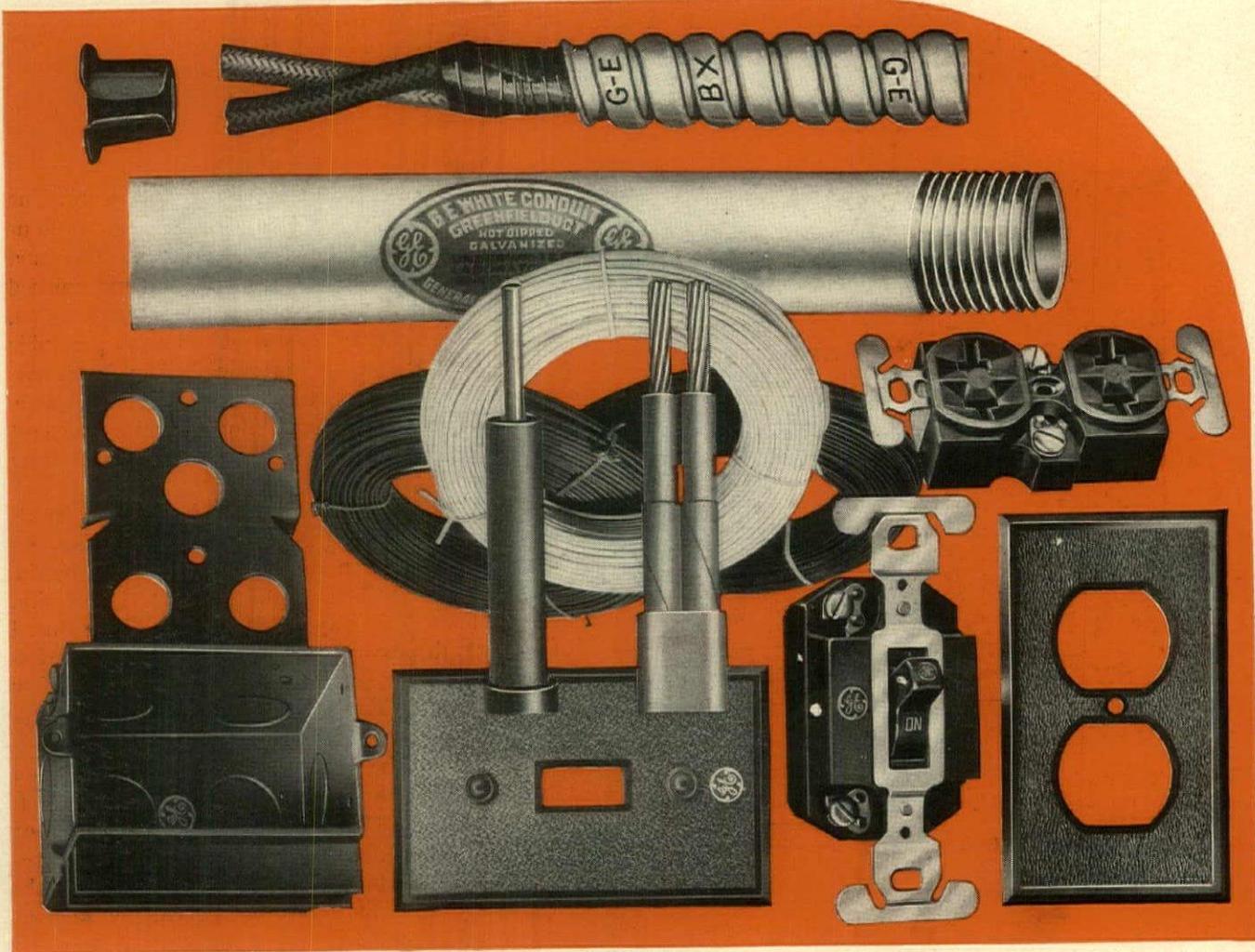
• Championing the cause of the architect in relation to the administration of public works program, A. J. Hammond, chairman of the Construction League of the United States, has appealed to President Roosevelt to correct certain unfortunate practices. He asks particularly that the Government employ demon-



UNDERWOOD & UNDERWOOD

James A. Moffett, Federal Housing Administrator, hears praise of the government's modernization campaign from leading industrialists. Among them, W. H. Upson, Jr., Secretary, Upson Co., Lockport, N. Y.; W. A. Irvin, President, U. S. Steel Corporation; George D. Crabbs, Chairman, Phillip Carey Co., Cincinnati, Ohio; Walter J. Kohler, President, Kohler Co.

strated leaders in the profession on works of a major character, instead of using distressed members of the profession to displace them—with resulting serious inefficiency. Mr. Hammond describes as a "crushing decision" the order barring private architects from employment by the Public Works Section of the Procurement Division on major building projects. His appeal is based upon the economies to be obtained by employing architects, and the building industries, in the customary ways.



On the Architect Depends the Fullest Success of FHA's Better Housing Program

The launching of the FHA Modernization program means that the battle is *just beginning* against conditions that have long stagnated all building in this country!

To Architects has fallen a lion's share of responsibility for the successful outcome of this huge drive. They will be called upon for leadership to keep this great movement active and to advise lending institutions, contractors and home owners.

Part of the FHA \$500,000,000 fund will be spent to improve electric wiring and lighting facilities in millions of buildings,

homes and garages. Your judgment and recommendations to institutions and individuals in the solution of their electrical problems, in many cases, will be considered final.



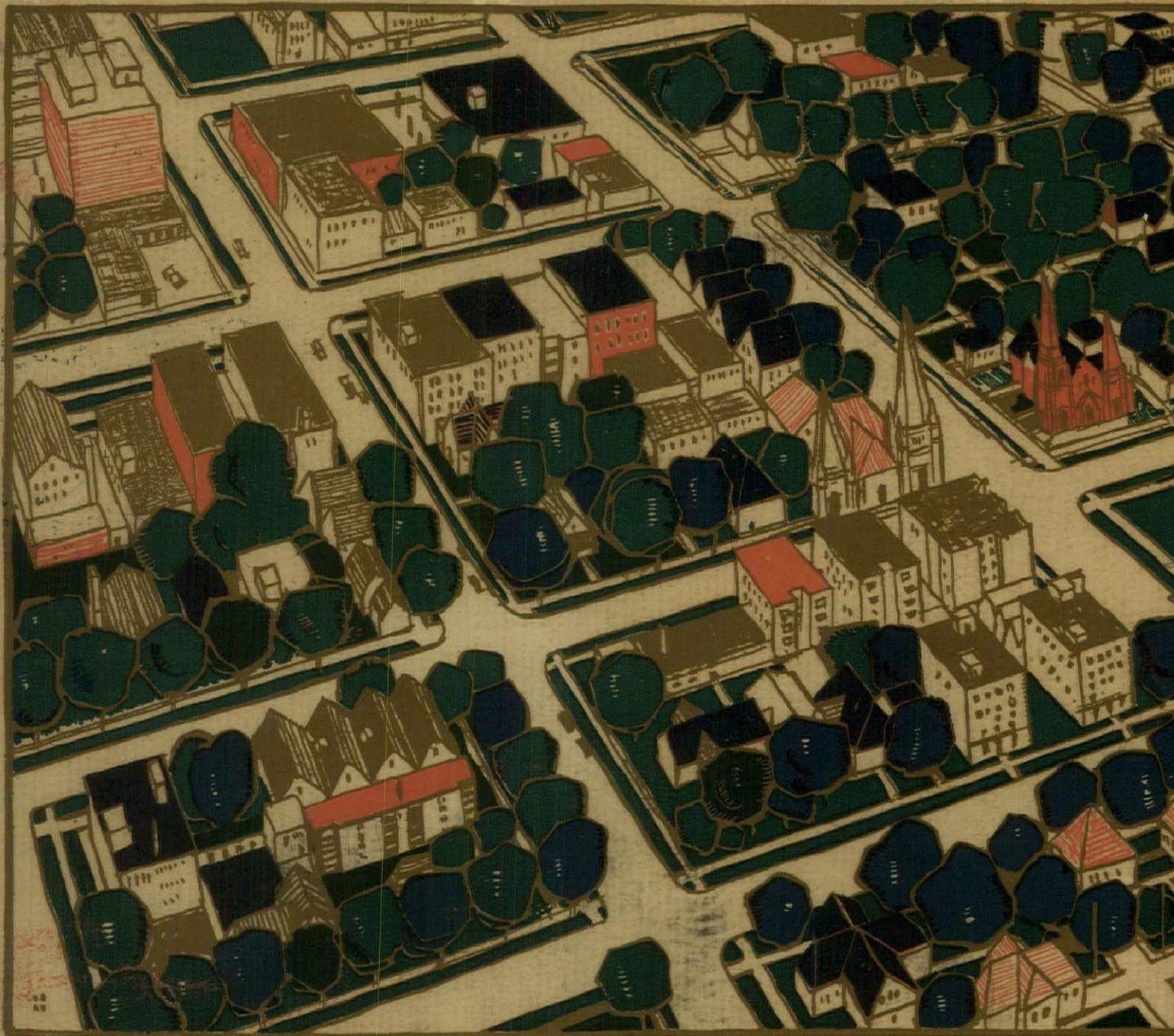
Great quantities of G-E Wiring Materials have been installed in the Nebraska State Capitol.

General Electric has compiled specific services to aid architects in selecting the right wiring systems and materials. As its contribution in sponsoring the FHA program these services are offered to you by the General Electric Company without any obligation. Write immediately for this information to Section CDW-1010, Merchandise Department, General Electric Company, Bridgeport, Connecticut.

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