

STORY OF BUILDING OF MINNESOTA'S NEW CAPITOL

IN the important task of building the new marble capitol of Minnesota, now almost completed, no contractors have taken so large a part as Butler Bros., of St. Paul, and their predecessors, the Butler-Ryan company. William Butler, of the present concern, is therefore specially familiar with the work of erecting the most remarkable monumental structure in the Northwest, and one of the most artistic public buildings on the American continent.

"The first work was done here," said Mr. Butler yesterday at the new capitol, "in the spring of 1896, eight years ago. But until two years ago we could do nothing whatever during the four coldest months. Now, as we expect to have the building finished by the end of this year, we have nominally spent eight years and a half on it, to be exact. But in fact, we—I am speaking for all the contractors—did scarcely any work during 1897. That year shouldn't be counted. And until the fall of 1902 we were unable to work in the cold weather. Making these allowances, the actual time consumed has been almost exactly six years—not a long period for a building that will cost, with site, furniture and equipments, about \$4,500,000.

"The building of the new state capitol," continued Mr. Butler, "will practically be completed next month, when we are to celebrate the semi-centennial of St. Paul. All the work at the capitol will be completed, in fact, before the close of 1904. Next year nothing will be left to do in the way of actual construction. The grounds must be improved next spring, and the distinguished artists who have been engaged to provide certain historical paintings for the capitol walls must finish their pictures in 1905. But the work of the builders will have been accomplished before the first of next December.

The construction of the new capitol was authorized by the legislature in the spring of 1893, more than eleven years ago. The site was chosen in the fall of the same year. In June, 1894, the board of capitol commissioners gave notice that designs for the building would be received by the architects early in the following September. None of the first set of designs was accepted. In April, 1895, a second competition was announced. The designs were to be submitted not later than Aug. 4, 1895. From among the forty-one designs secured then, that of Cass Gilbert, as is well known, was finally selected on Oct. 30, 1895.

"The first contract for the actual building of the capitol was dated May 5, 1896. It authorized George J. Grant, of St. Paul, to excavate and grade the site and lay a foundation of Winona limestone.

"The following day, May 6, 1896, the first sod was turned. Before the close of the year the excavating and grading was finished, the foundation was put down, and the steel beams were laid for the basement stories. Mr. Grant received about \$111,000 for his work. The Universal Construction company, of Chicago, was paid a little more than \$8,000 for laying the basement steel.

"During the season of 1897 the only work of importance was concreting the subbasement floor. The contractors were Lauer Bros. & Miller, of St. Paul, and the cost \$15,900.

Work Delayed in 1897

"Active building was delayed that year because the capitol commissioners couldn't realize money promptly under the conditions laid down by the legislature. But in the winter of 1897 the legislature amended the law so as to permit the commissioners to sell state certificates. These were to be paid out of future tax revenue. That made a way for meeting obligations as fast as might be necessary after 1897.

"So, early in the summer of 1897, the commission advertised for bids upon a contract for the general superstructure of the capitol, excluding the dome and including the structural steel. The bids were opened Aug. 10, 1897. Aug. 21 the commission awarded us our first contract.

"We were to erect the superstructure of granite and marble. The basement story was to be of St. Cloud granite; the interior walls and the backing of the exterior walls of Minnesota brick; the dome foundations of Kettle River sandstone, and the facing of the exterior walls, above the basement, of Georgia marble. The final cost of all this was about \$718,000.

"We began work in the spring of 1898, and finished the contract in the fall of 1900. We had to stop four months during each of the three years, as I've already explained, so that we completed the superstructure in two years of actual construction.

Corner Stone Laid in 1898

"July 27, 1898, the corner stone of the new capitol was laid by the late Gov. Ramsey, first territorial governor of Minnesota. Gov. Clough announced that the corner stone was set. The late Senator Davis delivered a splendid prayer. Prayers were repeated by Archbishop Ireland and the late Bishop Gilbert.

"At the end of 1898 the building had risen to the second floor level. The year 1899 brought the walls to the roof level, and before the close of the next season the general superstructure was completed, except the dome.

"In March of the same year—1900—bids were opened for erecting the dome proper. The foundations of the dome, as I've said, were all completed. This second contract was awarded to us on March 14, 1900.

"July 13, 1901, we secured a contract for building the steps and terraces of St. Cloud granite. They were finished during the summer and fall at a cost of \$239,000.

"In October, 1901, the contract for supplying the mechanical equipment

was awarded. It went to W. I. Gray & Co., of Minneapolis.

"By the fall of 1902 our firm had finished the dome at a total cost of \$286,000. The same season the mechanical equipment had been installed. This included a separate power house, a tunnel connecting the power house with the capitol, boilers, engines, heating and lighting and ventilating apparatus, plumbing, etc. The total payments to Gray & Co. on account of the mechanical equipment was in round numbers \$330,000.

Beat Jack Frost

"As soon as the heating apparatus was ready it was possible to heat the capitol. Beginning in December, 1902, we were able to continue work upon the interior regardless of Jack Frost.

"In 1902, also, we contract had been made for skylights. The total cost let to us in October, 1901. It amounted to something like \$83,000. Other contracts that we got in 1902 and filled the same year were those for the fire-proofing, \$142,000, and the metal 'furring' and lathing, \$61,000.

"Last year we finished the plastering, a little job worth about \$83,000, and we began to 'assemble' the material for the interior stone and marble work. Our contract for that job cost at rather more than \$750,000.

"This year we are finishing up the interior stone and marble, and the other contractors are putting in the woodwork, hardware, etc.

"The most important thing this summer, of course, has been the decorating. It has been done by a number of different artists and their assistants, and especially by E. E. Garsey, of New York. He is attending to the general decoration of the walls and ceilings.

"After the capitol is practically completed, and is turned over to the state officials and the legislature, the special paintings will still be lacking. These will occupy prominent places in the governor's reception room, the senate, house, and supreme court. The subjects to be painted, as the news-

papers have frequently announced, will be historical—such as the treaty of Traverse de Sioux, Hennepin's discovery of the Falls of St. Anthony, and the like. But the paintings will be on canvass, which will afterwards be fastened to the walls. It won't be necessary to do the work right here. As fast as the paintings are completed they will be brought here and put in position. Then they'll need merely a little touching to adjust them to the lighting conditions.

"No, I can't say that there have been any great difficulties to overcome in building the capitol.

Sand Foundation the Best

"The foundation, for instance, as laid by Mr. Grant, was placed upon sand. This is one of the best possible bases for a foundation, in spite of the New Testament parable. Of course, sand wouldn't do for a light structure set lightly upon the surface in the way that the Bible suggests. But when you put a heavy foundation down deep upon a thick layer of concrete over sand, the sand spreads out evenly under pressure—something like an air cushion. The building sinks, but it sinks evenly on all sides, and nothing can give way.

"The heaviest part, by far, of this capitol is the dome. It is supported on a broad stone base, and that rests upon a layer of concrete fifteen feet thick. There isn't any danger of the dome's falling down.

"It was the dome, too, that gave our firm the most worry—I mean the work of erecting the dome proper above the roof. It was an engineering as well as an architectural problem. Its success depended on applying accurately the principle of the arch. We managed to put every stone in place without miscalculating the strain in any direction.

"Every one isn't aware that this is one of the very few masonry domes of equally large size in America or Europe. We have made, in fact, three domes, each independent of the other. First, there is the inner dome that

forms the canopy of the rotunda. Next comes a brick cone that really supports the marble lantern above the dome. Then, outside of the cone, is the brick and marble bell that apparently supports the lantern. Any of the three domes could be torn down without disturbing the others.

Many Imported Marbles

"We have used a great variety of imported marbles for the interior. On the main stairway, for example, the polished, variegated balusters are of Grecian marble from Skyrros; the 'treads and risers,' that is, the steps, as well as the bases for the columns, are of Hauteville marble, a French product; the beautifully mottled stone of the big columns is Breche-Violet marble from Italy. The senate chamber is decorated with another French marble, the Fleur de Peche. It certainly does resemble, in color, the flower of the peach tree. At other spots you can see a light buff marble that the French call Eschallion, and a rich, reddish Numidian marble that is quarried in Morocco.

"Now the view through the entire building from east to west displays most of these magnificent stones. It's a remarkable feature in itself, the vista clear across a building of this nature. And standing at one end you can see no less than forty great columns of marble or granite.

"But I think that the commissioners, the architect, and the builders also are prouder still of our Minnesota stones. The St. Cloud granite used in the steps and terraces, the foundation, the basement story, and a number of the rotunda columns, is as fine a granite as the world produces. Then the purplish granite from Ortonville, which in several other of the rotunda columns, has been compared by some visitors to the porphyry they have seen in European palaces. These Minnesota monoliths of granite are twenty-two feet high. They weigh nine tons each.

"Speaking of columns, by the way, one of our firm's improvements in con-

structive methods was the invention of machinery to do the vertical fluting on big monoliths. Heretofore such fluting was always done by hand. By using our machinery we finish the work in one-tenth of the time formerly needed, and we do it more accurately than at that.

"Kettle river sandstone, another Minnesota product, was used in large quantity for the dome piers. It proved very satisfactory. All our brick, of course, has been made in the state, and we used an immense amount of it in interior walls. I've already mentioned the St. Cloud granite and the granite from Ortonville.

"But the biggest success of all these home products in the capitol is Kasota limestone. It's a familiar enough stone in the Northwest. It's been used for thirty or forty years in bridge piers and in the outer walls of buildings. But until the new capitol was built Kasota stone had never been employed for interior work.

"We have put it extensively throughout the building. The walls of the big rotunda are made up almost wholly of Kasota stone. We have found it can be carved as easily in elaborate designs, and that it takes a beautiful finish—hot glassy or metallic, but rich, deep and soft. The color of the polished stone is a delicate buff. It doesn't remain absolutely uniform, but varies enough to rest the eye and bring out a great deal of beauty that nobody had ever looked for.

"If any one doubts the fine qualities of Kasota stone in a polished state, he ought to stand in the capitol rotunda and look up at a point just below the lower balustrade. Then I could point out to him a band of Kasota stone and, directly above it, a band of the high-priced, imported marble that the French call Hauteville. He would admit that both of them are very handsome stones, and that the Hauteville marble was well worth sending for across the ocean. But I'd be willing to bet him a new hat that he couldn't distinguish the French marble from the Minnesota limestone."