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GREAT LAKES EXPOSITION

By JOHN S. KSEPKO, '38

LAST summer the city of Cleveland played host to hundreds of thousands of guests, commemorating the one hundredth anniversary of its incorporation. From a small village of five thousand people in 1836, the city named after Moses Cleaveland had grown to great size in 1936. Deciding to mark this stride with fanfare of trumpets, Clevelanders planned a celebration of outstanding importance in the industrial and commercial worlds; the result was the Great Lakes Exposition. There, on their Lake front, in record-breaking time, rose the Exposition buildings, where for the first time the Great Lakes expressed themselves, told their story of transportation, narrated the romance of iron and steel, and pictured and reviewed the years of scientific development. The Great Lakes Basin, boldly speaking, had a birthday party lasting three months.

In January, 1936, a committee headed by Dudley S. Blossom successfully raised the million dollar fund for the celebration, and immediately the plans for the most fascinating 150 acres of land in America started. A large vacant lot along the Lake front facing Cleveland's mall, a \$40,000,000 civic center, was the spot chosen for the show. Lincoln G. Dickey, with his staff of recognized experts in their respective fields, started to make plans. Albert W. Gonsior, an eminent engineer, and the man who built the Century of Progress in Chicago was made Chief of Exposition Construction. Engineers with their transits and other paraphernalia started staking locations for construction; foremen pored over blueprints; trucks rumbled up with materials; and carpenters, masons, plasterers, plumbers, electricians and other artisans swarmed over the lot. At times the total number of men at work on the various projects numbered over a thousand. Some of the outstanding tasks included a \$50,000 subway under East Ninth Street, connecting the main grounds with the amusement zone; \$100,000 steel frame bridge connecting the upper and lower levels of the grounds; \$100,000 land-

scaping program on the grounds proper; a central setting of a \$200,000 four acre outdoor garden; 1000 feet along the shore line to represent a striking woodland scene in the day time, brilliantly illuminated at night; approximately fifteen miles of asphalt paving 20 feet wide, designed to carry the heavy intramural bus traffic throughout the 150 acre show ground; six inch deep layer of asphalt covering the ground not included in garden plots, water supply, drainage and illumination.

Architects who planned the structures housing exhibits described their style as "simple, straightforward, colorful and severe." The exteriors with a combination of simple line and a lavish use of varied color established a trend in modern design just as did the buildings of the Columbian Exposition and the Century of Progress.

The construction work at the Exposition had the benefit of a million dollars spent in experimental work at Chicago's Century of Progress, developing a quick and inexpensive method of construction.

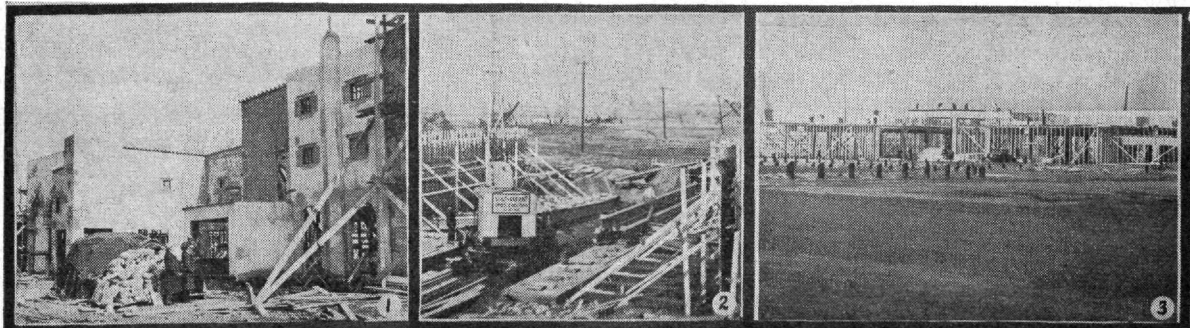
The range of exhibits which told the story of the manufactures and industries, not merely of the Great Lakes Area, but also of the entire United States, extended from such highly specialized and bulky products as blast furnaces down to jewelry, laces and objets d'art.

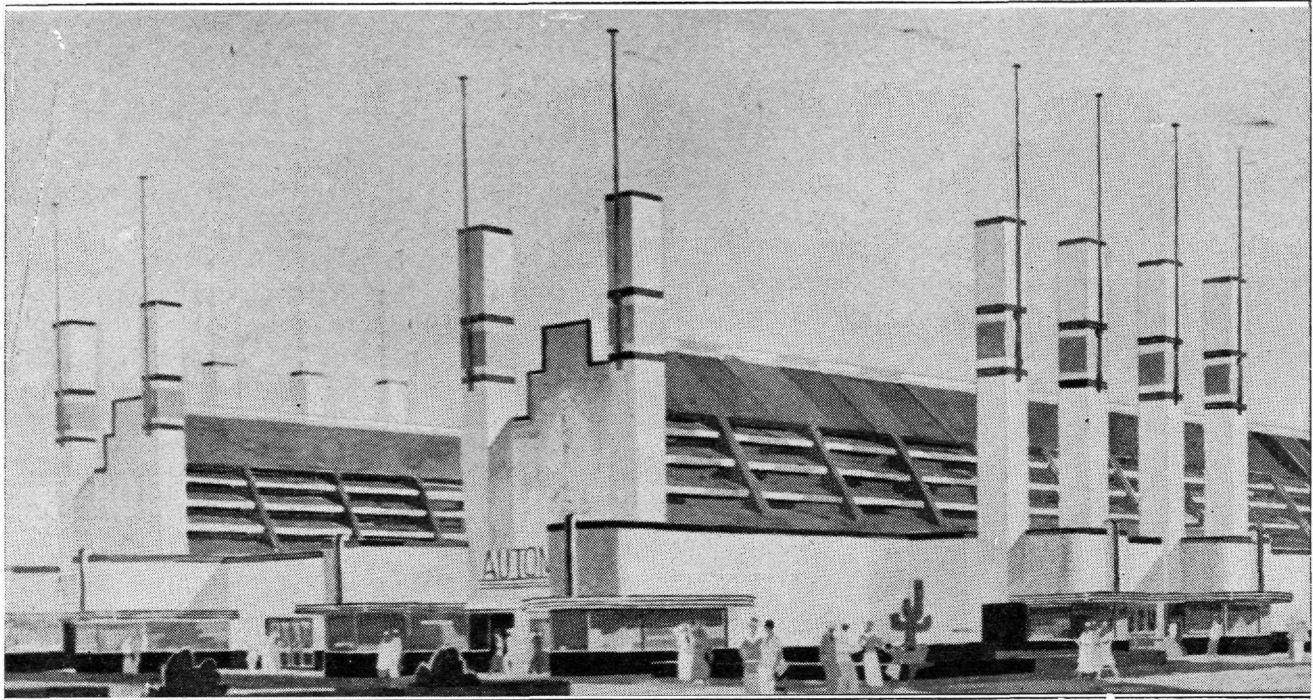
The basic theme of the Exposition was the Romance of Iron and Steel, heavy machinery and tool making; the scope of presentation indeed was wide, disclosing every phase of industrial, civic, business and social life. Although pure foods, agriculture and horticulture, gas, office and business equipment, printing, graphic arts and modern homes all came in for their due consideration, the accent of the big show rested with the exhibitions of iron and steel.

Romance of Iron and Steel

The Romance of Iron and Steel occupied a space 200 by 100 feet in which a picture of the industry was de-

PUTTING UP THE GREAT LAKES EXPOSITION





AUTOMOTIVE BUILDING

Cuts Courtesy of Great Lakes Exposition

veloped from prehistoric to modern times. The display was arranged by Dr. A. A. Bates, Associate Professor of Metallurgy, Case School of Applied Science, assisted by a committee of iron and steel technicians.

The display was pictured by means of a combination of models, mammoth photographs and dioramas. The ideas for it had been borrowed from three great European museums; the Deutsches Museum at Munich, one of the world's greatest industrial museums, the British Empire Exposition at Wembley, England, and the French Colonial Exposition at Paris.

The visitor entered, first, a reproduction of a chamber from a shaft mine. The chamber was built around a central pillar of iron ore with sections of track and mine cars. This was followed by a model of an open pit mine which was approximately 15 feet by 25 feet. A working miniature shovel lent life to the display.

In the center of the Iron and Steel display was a replica of a blast furnace, approximately actual size. The Bessemer display was a cross-section of a converter which, through an ingenious use of colors and lights, appeared to be in actual operation. Wherever possible the products of iron and steel were shown actually in miniature or photographically. The display of one manufacturer consisted of a miniature working model of the company's new continuous mill and pipe mill.

The Automotive Building

This building, 540 feet long and 228 feet wide, was styled in typical exposition architecture, with scissor trusses forming two long gable roofed buildings, the roofs having four continuous lines of large horizontal louvers

for ventilating purposes. The louvers were screened to eliminate dust and insects.

The space between the two buildings formed an interior, landscaped exhibition court. Surrounding the structures at the entrances were thirty-two gigantic pylons, reaching 70 feet into the air.

The entrances protected by marquees were indirectly lighted to form a horizontal line of brilliant illumination. A novel method of indirect lighting illuminated the louvers at night, giving the impression of a building banded by horizontal streamers of light. The gabled ends of the building were decorated with reliefs representing transportation. Each picture presented a different version of travel such as air, water, land and rail transportation.

One of the most unique exhibits in the Automotive Building was the most comprehensive display of trucks, tractors, and buses ever exhibited by an individual company anywhere in the nation. Occupying 10,000 square feet of this space, one motor company's exhibit, featured the latest developments in trucks, buses and tractor-trailers of all sizes and uses, designed by Count Alexis de Sakhnoffsky, world-famous creator of stream line design. At least twenty-five varied types of transportation vehicles are inserted in the display, stressing the contrast between modern, air conditioned, sleek stream lined jobs of today and the first trucks built by motor companies.

The Hall of Progress

The Hall of Progress was a sister building to the Automotive Building, a \$125,000 show house for public utility companies and the firms which supply appliances using their products.

The Hall of Progress pioneered in a new and unique type of building construction in this country; they used supporting members known as rigid frames in place of steel trusses or heavy steel girders. In this system of framing the columns and beams were designed as a continuous rigid unit. Each unit was constructed on the ground and raised into position with a minimum effort. Actual tests conducted at the Case School of Applied Science proved that the frames designed for the Hall of Progress were capable of withstanding several times their calculated load.

Horticultural Gardens

At the head of the Horticultural Gardens was a three story Horticultural Building, erected at a cost of \$40,000. Its foundations were 190 feet long and 60 feet wide, constructed of steel framework with wooden floors and walls. The foundations rested upon floating concrete footery. Three stories high it resembled the streamlined forward deck of an ocean liner, with three separate levels of out door terraces or decks. The building contained 20,000 square feet of exhibition space.

From the decks of the Horticultural Building the visitor could see a hillside covered with rock gardens, waterfalls, rare plants, a 500 foot panel of short green grass sloping downwards and terminating in a gigantic fountain and reflecting pool where aquatic plants and exotic fish were found. The cost of this plant paradise was \$178,000.

Exposition Lighting

The outstanding engineering feat at the exposition was the illumination. There was a greater intensity of light per acre than at any exposition in American history. A goal was set by the electrical engineers who felt that they were facing a challenge to make the Exposition just that. The challenge arose from the fact that Cleveland is the center of the lighting industry, both in research and in practice, of the country. Nela Park research laboratories and the National Electric Light Association are located in Cleveland.

Current which was used at the Exposition was sufficient for a normal city of about 50,000 people, the volume being between 8,000 and 10,000 kilowatts. All wiring was laid underground. About 250 illuminating standards beautified the wonder spot. The feature of exterior lighting, which alone cost about \$150,000 exclusive of the exterior illumination of the buildings, was 3,000 floodlights. The lighting of the streets and buildings was so carefully balanced that the bright colors of the roofs and walls of buildings were shown to the best advantage so that the pedestrians had ample light, but at the same time their eyes were protected from direct glare.

The seven seventy-foot pylons at the main entrance were illuminated with floodlights. At the top of each

pylon there was a series of three horizontal planes which served as reflectors for the lighting units between each plane, the lighting being in color. In each position of the grounds a different type of light standard was used.

These structures carried a nautical theme very effectively. On the mall adjacent to the ramp down to the Lakeside Exhibition halls there were twenty structures resembling ship's davits, each 40 feet high. On the main entrance axis between the bridge and the horticulture building there were 16 lighting standards representing the main mast of a sailing vessel. These were 70 feet high with a crow's nest 40 feet above the ground containing floodlights.

Along the edge of the Horticultural Gardens were 12 structures 35 feet high, the upper part of which had fins covered with chromium plated corrugated metal. The globes were uncovered and produced a sparkle as well as a scintillating reflection.

In the Horticultural gardens was a lane of mercury lighting standards which reproduced the foliage of trees and shrubs, as well as the blossoms of plants in their natural colors, the light rays having the effect of daylight. There was also a "shorty" mushroom light one foot high which illuminated paths, rock gardens, and flower beds.

One of the most interesting lighting accomplishments on the grounds was the combination of water and lighting, one a huge mobile color fountain and the other a bank of water cascades.

The Automotive Building and the Hall of Progress were lighted by a series of longitudinal louvres, the light being in color. The Marine Theatre, a great stage constructed in the harbor behind the breakwater with grandstand slats on the lakeshore, was lighted by Aurora Borealis lights, moving beams of the light radiated fan-wise from the center.

A special type of lighting was used in the "Streets of the World," international playground of the Exposition. The earliest type of street lighting used in the world was employed on the streets of Paris in the middle ages, where iron baskets resembling a large bird cage were filled with blazing pine knots. A kind of roof over the top of the basket protected it from the weather. To recreate the atmosphere of the Middle Ages in the international area, special lighting fixtures resembling those primitive iron baskets were suspended from poles and buildings in the section.

The electrical engineers for the Exposition were A. H. Heidenreich and F. R. Ritchie, with the co-operation of engineers of Westinghouse Electric and Mfg. Co., The General Electric Co., and Nela Park.

The Great Lakes Exposition presented instruction and amusement to all its guests and visitors; but especially to the engineer did it appeal. It is hoped that it may continue during the summer months of 1937.