Architecture: 'The Revolution Grows Old Quickly'
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'The Revolution Grows Old Quickly'

By ADA LOUISE HUXTABLE

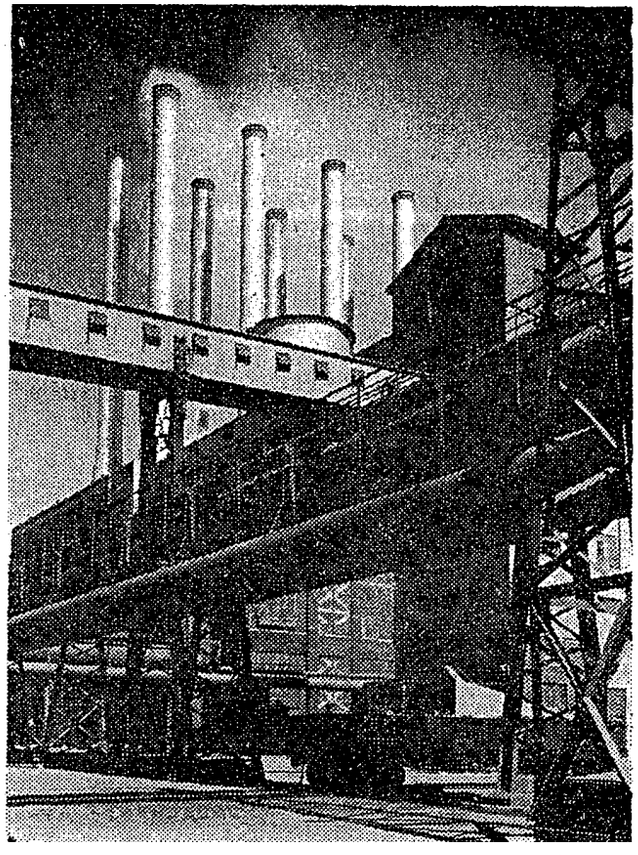
"It don't change," said a Ford worker of the River Rouge factory as the contract bargaining began between the United Auto Workers and the car manufacturers last week. "It's still the same nasty old plant."

The spotlight turned on the Ford plant by the negotiations reveals no beauty. The Rouge is 53 and showing her age. Twelve hundred acres of begrimed industrial clutter add up to a half century of operation and expansion. They also add up, behind the dirt and age, to a prime landmark of that singularly American contribution to the art of architecture, industrial building.

This fact has been universally recognized in that world of intellectual record-keeping that has little to do with labor negotiations. The Rouge is considered by scholars to be one of the most important structures in the history of architecture, in its functional, rather than its formalistic sense.

For the genesis of the mass-production plant, the physical expression of the moving assembly line, the programing of manufacture from raw material to finished product, Henry Ford has taken his place in industrial history. The man who worked with Henry Ford to build these factories is less well-known to the car-driving public. Albert Kahn, an architect who came to this country as a young immigrant from Luxembourg in 1879, and died in 1942, also made history. With his brothers, he formed the firm that pioneered the new industrial architecture for 20th-century American mass production techniques, and by the first decade of the century his name was synonymous with this innovative form of steel and concrete construction.

The office of Albert Kahn is celebrating its 75th anniversary this year. Its production includes structures on five continents. There are 1,000 buildings for Ford alone, and after 1905 the Kahn office could have been called builders to the automotive industry. Five hundred industrial plants in the Soviet Union were erected with those curious eye-on-the-future-foot-in-the-past techniques so characteristically Russian that are so maddeningly perverse to the American mind. (First in space, last with the putty knife.)



Ford Archives

The Ford River Rouge plant in 1938
"A picture of designed power"

Kahn's three quarters of a century of architectural and engineering activity will be marked by an exhibition at the Detroit Institute of Arts, opening Sept. 14. The Rouge is 53, and the revolution grows old quickly.

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Ford envisioned the Rouge superplant as early as 1915, three years after he built his first factory in Highland Park. His personal obsession with industrial self-sufficiency led to the idea, then unique, of a huge manufacturing complex with its own inland port, independent rail and water transportation, stockpiles of supplies, and unhampered spread of low buildings providing acres of unobstructed space for the free flow of materials and operations. The very act of housing this dynamic, large-scale industrial process was to create a new kind of large-scale architecture.

The Rouge began with the famous "B" building of 1917, a 1702-foot-long plant rushed into construction for the manufacture of Eagle boats during World War I. Kahn build an immense steel, glass and brick shell, using materials and equipment that were still a novelty in factory design: large spans of structural steel, unit heaters, cement tile, steel industrial sash and the glass-walled facades that gave the new buildings the name of "daylight factories." (Daylight has faded as air pollution has silted up windows.) After the war, the "B" building became an assembly plant for tractors and cars.

After "B" building, the growth of the Rouge was rapid and dramatic. Its design was set by Ford and his production engineers, who made detailed studies of functional requirements in scale models. (It is still a matter of conjecture whether Ford could read blueprints; certainly he preferred models.)

In 1918 and 1919, the foundry, powerhouse and coke ovens were added; by 1920, 24 miles of railroad track, including the all-important and almost legendary High Line, serviced the buildings and tied them together as a working group. By 1926, there were 93 structures (23 main buildings) on 1,115.12 acres, 93 miles of railroad and 27 miles of conveyors, and the project had been described with awe by every important industrial publication and visited by innumerable distinguished observers.

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In the 30's, Ford realized one of his fondest dreams, adding complete steel making facilities. A new press shop was also built by Kahn, almost one-third of a mile long, enclosing nearly 1½-million square feet and using 47,000 tons of steel—the largest steel order ever given for a single building up to that time. As the years went on, other architects added still more structures.

The method of planning and design changed little from the early days. Kahn outlined his part of the procedure as a combination of "functional design and businesslike execution."

Under functional design, he specified provisions for straight-line production, extreme flexibility, generous column spacing for free location of machinery, floors and ceilings strong and high enough for all loading requirements, good lighting and adequate ventilation, low first costs and minimum upkeep. Businesslike execution meant getting the buildings up fast, since provision of manufacturing facilities at the right time was always a matter of profit or loss on a very large scale. Of the automobile moguls, Kahn said, "They always wanted the plants yesterday." His businesslike methods impressed his businessmen clients and it was undoubtedly for them that he pronounced his notorious dictum that architecture was "90 percent business and 10 percent art."

It was a strong and startling architecture, however, and it was immediately labeled the "industrial esthetic."

The appearance of the Rouge at the peak of its fame in the 20's has been described by Allan Nevins and Frank Ernest Hill in "Ford: the Times, the Man, the Company." "The forms of the plant had an authority of their own, severely functional. The concrete-lined oblong of the slip; the storage bins with their dark hills of coal or iron ore and white hills of limestone, the sheer bulk of the foundry, the stacks of the blast furnaces and powerhouse, the authentic sweep of the High Line, the covered conveyors twisting like angular snakes from building to building—all give a picture of designed power . . ."

In America, Charles Sheeler made a memorable series of paintings based on the Rouge's utilitarian geometry. In Europe, architects were quick to appreciate the "machine esthetic" of its severe, fuctional forms that expressed the production process.

Technically, Kahn was indebted to such men as Ernest Ransone for the kind of reinforced concrete development that broke with traditional, wooden mill construction, and there were other architects making concurrent contributions. But the Rouge was the first mammoth project in which the American factory reached full-scale realization.

It outstripped everything before it, and its bigness was both in its size and its concept of design. It may be shabby now, but it has had a profound impact on the 20th century.

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