

MUNICIPAL ASPHALT PLANT, Between 90th and 91st Street at the East River Drive, Borough of Manhattan. Built 1941-44; architects Ely Jacques Kahn and Robert Allan Jacobs; industrial design by the Department of Borough Works of the Office of the Borough President of Manhattan.

Landmark Site: Borough of Manhattan Tax Map Block 1587, Lot 1 in part consisting of the land on which the described building is situated.

On November 25, 1975, the Landmarks Preservation Commission held a public hearing on the proposed designation as a Landmark of the Municipal Asphalt Plant and the proposed designation of the related Landmark Site (Item No. 2). The hearing had been duly advertised in accordance with the provisions of law. Fifteen witnesses, including Dr. George Murphy, Chairman of the Neighborhood Committee for Asphalt Green, spoke in favor of designation. There were no speakers in opposition to designation. The witnesses favoring designation indicated that there is great support for this designation among the members of the community. The Commission has also received many letters and other expressions of support for this designation.

#### DESCRIPTION AND ANALYSIS

The Municipal Asphalt Plant, built in 1941-44, was designed by the prominent New York City architects Ely Jacques Kahn and Robert Allan Jacobs for the Office of the Borough President of Manhattan. The asphalt plant originally consisted of the mixing plant--the main building which is still standing--and storage buildings for raw materials which were transported by means of a conveyor to the mixing plant. The parabolic arch form of the mixing plant building is an exciting visual highlight for motorists traveling along the East River Drive. Constructed of reinforced concrete, which is admirably suited to the arch form, the structure was an innovative and radical design for its day--the first of its kind built in the United States.

This plant replaced another asphalt plant on the site which had opened in 1914 to produce asphalt for the streets of Manhattan. The site on the East River at 91st Street had been originally selected because it provided a waterfront location near the geographical center of the borough, thus minimizing the trucking of raw materials through the streets. By the late 1930s the original asphalt plant was outmoded. The character of the surrounding neighborhood had changed from semi-commercial to residential, but the location was still felt to be the most appropriate site for a new asphalt plant. A new facility, planned as part of a project to upgrade the East River Drive, was initiated by Borough President Stanley M. Isaacs. Although it was to be an industrial structure, a standard industrial design was not desired; the Borough President wanted the new Municipal Asphalt Plant to be given an architectural treatment that would blend harmoniously with the East River Drive and the residential developments in the vicinity. The internal design and arrangement of the machinery was planned by the Department of Borough Works of the Office of the Borough President of Manhattan. This design was presented to Kahn and Jacobs who felt that the parabolic arch of the mixing plant was the most efficient form to house the plant equipment.

Ely Jacques Kahn (1884-1972) and Robert Allan Jacobs (b. 1905), who formed the partnership of Kahn & Jacobs in 1940, became noted for their commercial, industrial, and institutional structures. Building upon European precedent, they were leaders among American architects who introduced new architectural forms to this country. As a result of his work under Le Corbusier in Paris in 1934-35, Jacobs had acquired a breadth of experience which he imaginatively adapted to American requirements.



The unusual form of the mixing plant building of the Municipal Asphalt Plant was made possible through the use of reinforced concrete, still at that time a somewhat novel building material in the United States. Although experiments were made with the material in the second half of the 19th century in England, France, and the United States, it did not come into widespread use until the 20th century. Buildings by Frank Lloyd Wright in the United States and by Auguste Perret and Toni Garnier in France utilized reinforced concrete in new ways and for new building types early in the 20th century. Despite such pioneering examples, reinforced concrete was not in general use in the United States until World War II, partially because of the expense and difficulty of erecting the necessary formwork for concrete casting. Due to the high price of structural steel during World War II, reinforced concrete became a more competitive building material. Jacobs had become aware of the varied uses of this material while working for Le Corbusier in France. The dirigible hangars at Orly, designed by Eugène Freyssinet in the late 1920s were studied by Jacobs during his year in France, and provided precedent for the Municipal Asphalt Plant in form although not in exact construction technique.

The parabolic arch form used in the Municipal Asphalt Plant reduces bending stresses to a minimum and thus requires less steel reinforcement, making the use of such arch rib construction economical both in material and in construction of formwork. Francis S. Onderdonk, Jr., in The Ferro-Concrete Style describes the special qualities of the parabolic arch in these words: "The parabolic arch is characteristic of Ferro-concrete which in its absolute freedom to accept any form is well adapted to the ever changing curvature of the parabola. The parabola in turn expresses the monolithic quality of reinforced concrete by merging sides and top in one unbroken curve." The parabolic arch form in reinforced concrete has been most often used for hall-type structures and bridges, but it can also be admirably adapted to industrial structures as the Municipal Asphalt Plant which require large amounts of open unobstructed interior space.

The arched form of the mixing plant caused considerable controversy when it was under construction. Robert Moses, then Parks Commissioner, derided it as a "Cathedral of Asphalt." The structure was warmly defended in the New York Times by Walter D. Binger, Commissioner of Borough Works, who claimed responsibility for accepting the design. Other letters in the Times objected to the siting. Despite such negative reactions, the design was acclaimed by the Museum of Modern Art when it was exhibited in the show "Built in the U.S.A. 1932-1944" in the spring of 1944. The Municipal Asphalt Plant was also published in the March 1944 issue of Architectural Forum and praised for its functionalism. Dedication ceremonies for the plant were held on May 24, 1944; Mayor Fiorello LaGuardia stressed the value of the plant both for its current use and as a part of post-war planning.

Robert Allan Jacobs, who was responsible for the design, gave a detailed description of the construction of the mixing plant in Architectural Concrete (vol. 9 no. 2, 1943). He stated that novelty was not the basis for the design. The architects began with the idea of a conventional rectangular building for the mixing plant, but a study of the equipment layout revealed that a parabolic curve would be the most economical form, since a rectangular structure would have resulted in a large volume of unused space in the upper portion of the building, and would have required interior columns which would have interfered with the plant operation. The architects felt that an arch structure was the frankest approach: "the form literally follows the function." The building consists of four arched ribs spaced 22 feet on centers, each rising to a height of 84 feet 6 inches at the intrados and with a clear span of 90 feet, supporting a series of barrel vaults constructed of concrete panels. The side walls are pierced by steel sash windows about a third of the way up the walls. Originally the architects had planned to use conventional formwork to pour the concrete; this would have made it impossible to install the equipment before completion of the concrete work and also would have been slow and expensive. At the suggestion of the contractor structural steel ribs served as both form and reinforcement; this centering was worked out as an integral part of the rib, eliminating the majority of reinforcing bars. The steel ribs, reinforced by light angle trusses, were prefabricated in three sections and shipped to the site for erection. Concrete was poured simultaneously from both sides maintaining balanced pressure on the exposed steel framework. The end walls were stiffened by vertical members supported on horizontal girders, one of which forms part of the projecting canopy which shelters the entrance.



Three complete sets of asphalt mixing equipment were installed in the plant, set between the arched ribs. Many automatic mixing controls, complete electric heating to keep the liquid asphalt from congealing, automatic thermostatic controls and a dust collecting system were among the advanced features of the system. Plant capability was 900 tons of asphalt a day.

In 1968 operations at the plant ceased when asphalt production for all five boroughs was consolidated at a plant in Queens. The conveyor and storage buildings were torn down, but the mixing plant successfully resisted repeated assaults for three weeks by the demolition ball. A number of uses were proposed for the site, including a housing project and a new school. In 1972 a grass roots community organization began raising funds to convert the site into a much needed youth sports and recreational center which is now known as "Asphalt Green." Asphalt Green includes the only grass playing field for football, soccer, and softball on Manhattan's East Side, from 6th to 112th Streets between the East River and Central Park. It also includes outdoor basketball courts which are among the best in the City. In 1974-75 these facilities were extensively used by public, parochial, and private school groups, as well as by many other organized youth groups.

These valuable new Asphalt Green youth sports facilities were built and are maintained entirely with private funds raised by The Neighborhood Committee for the Asphalt Green, Inc., door to door in the community and from charitable foundations, notably The Vincent Astor Foundation and The Heckscher Foundation for Children.

The Neighborhood Committee now hopes to convert the mixing plant to a three-level indoor recreation center, including a full-sized gymnasium and an arts center, keyed primarily to the needs of all schools in the area and also to the community at large. The firm of Kahn & Jacobs has been engaged to design the new interior facility. Such a conversion would not only serve a great community need in conjunction with the Asphalt Green playfields, but would also provide a means of preserving one of the most notable and unique examples of modern architecture in New York City.

#### FINDINGS AND DESIGNATIONS

On the basis of a careful consideration of the history, the architecture and other features of this building, the Landmarks Preservation Commission finds that the Municipal Asphalt Plant has a special character, special historical and aesthetic interest and value as part of the development, heritage and cultural characteristics of New York City.

The Commission further finds that, among its important qualities, the Municipal Asphalt Plant, designed by the noted architects Ely Jacques Kahn and Robert Allan Jacobs, imaginatively adapted modern European architectural precedents to American requirements, that the parabolic arch form of the Municipal Asphalt Plant was an innovative and radical design for its day, that the technique of reinforced concrete construction made possible the use of the parabolic arch, that the plant served a necessary and important function when built, and that it has the potential for a new use for recreational purposes in the future in conjunction with the "Asphalt Green" youth sports and recreation center.

Accordingly, pursuant to the provisions of Chapter 63 of the Charter of the City of New York and Chapter 8-A of the Administrative Code of the City of New York, the Landmarks Preservation Commission designates as a Landmark the Municipal Asphalt Plant, between 90th and 91st Street at the East River Drive, Borough of Manhattan, and designates as its related Landmark Site that part of Borough of Manhattan Tax Map Block 1587, Lot 1 which contains the land on which the described building is situated.