At JFK International Airport.
Saarinen's design for the Water Tower, viewed from below (see page 20).

**BUILDINGS AND MONUMENTS**

Dulles Air Terminal, Virginia: 1,28-35,
TWA Terminal, JFK Airport, New York: 2,6-11
General Motors, Warren, Michigan: 3,18-21
MIT (Chapel), Cambridge, Massachusetts: 12-15
MIT (Kresge Auditorium), Cambridge, Massachusetts: 16,17
Ingalls Ice Rink, Yale University, Connecticut: 22-25
United States Embassy, Grosvenor Square, London: 26,27

Jefferson National Expansion Memorial, St. Louis, Missouri
better known as the Gateway Arch: 36-47

*Author's note: During many visits to the USA, in the 1970s & 80s I visited Dulles and TWA Airports and the MIT Chapel and Kresge Auditorium.*
<4>

EERO SAARINEN 1910-1961
EERO SAARINEN 1910-1961

A model of the St. Louis Gateway Arch.

Finnish-American architect and industrial designer noted for his wide-ranging designs for buildings and monuments. His father was an architect and in 1923 they moved to the United States. As a young man, Eero studied sculpture in Paris and then architecture at Yale, touring Europe for two years before returning to the United States in 1936 to work in his father's architectural practice. In 1948, he took first prize in the competition for the design of the Gateway Arch in St. Louis (not completed until the 1965). After his father's death he founded his own architect's office, being the principal partner until his death. His important works include the Kresge Auditorium and Chapel at the Massachusetts Institute of Technology. In addition to the Gateway Arch, he is perhaps best remembered for the TWA Flight Centre at the John F. Kennedy International Airport in New York and the Dulles Airport Terminal that serves Washington D.C.
TWA TERMINAL NEW YORK 1962
TWA TERMINAL NEW YORK 1962
TWA TERMINAL NEW YORK 1962
TWA TERMINAL NEW YORK 1962
TWA TERMINAL NEW YORK 1962
TWA TERMINAL NEW YORK 1962
MIT CHAPEL CAMBRIDGE MASS. 1955
Preparing to lift the Chapel Spire.
The Chapel stands in a reflecting water pool.
The curved walls of the Chapel interior.
(top) The steel reinforcing for the shaped, thin concrete roof.
KRESGE AUDITORIUM CAMBRIDGE 1955
GM TECH CENTRE WARREN MICHIGAN 1956
GM TECH CENTRE WARREN MICHIGAN 1956
The pool and water tower (see also page 3)
An American icon of modern architecture, the General Motors (GM) Technical Center stands as a model corporate research and development park. Thirty-one buildings were constructed between 1949 and 1985. Conceived in 1944 by Board of Directors Chairman Alfred P. Sloan, the center centralized GM’s research, design and engineering efforts. Vice President for Styling Harley Earl chose Eiel and Eero Saarinen to design the campus. Eero Saarinen’s International Style buildings are complemented by the grounds he planned with landscape architect Thomas Church. Saarinen also worked with GM’s Argonaut Division, which designed many of the structures. The center is listed in the National Register of Historic Places.
A thin shaped concrete roof design.
INGALLS RINK YALE NEW HAVEN CT. 1958
INGALLS RINK YALE NEW HAVEN CT. 1958
For many years, a well-known landmark in Grosvenor Square (visited by the author).
The United States now has a new London Embassy building.
Serves Washington D.C. and West Virginia.
Steel reinforcing for the giant concrete curved structural support columns.
<30>

DULLES AIR TERMINAL VIRGINIA 1963
<31>

DULLES AIR TERMINAL VIRGINIA 1963
DULLES AIR TERMINAL VIRGINIA 1963
<35> DULLES AIR TERMINAL VIRGINIA 1963
The Arch stands 630 ft wide at the base and 630 ft high (equivalent to a 60-storey building).
<37>

GATEWAY ARCH ST. LOUIS MISSOURI 1965
Completing the top of the Arch.
The shape is a catenary curve, inherently structural strong.
GATEWAY ARCH ST. LOUIS MISSOURI 1965
The completed Arch of concrete and steel weighs 43,000 U.S. tons, including 900 tons of stainless-steel skin. The hollow interior contains a transport tram system to top of the Arch viewing platform.
GATEWAY ARCH ST. LOUIS MISSOURI 1965

GATEWAY ARCH
ST. LOUIS, MISSOURI
JEFFERSON NATIONAL EXPANSION MEMORIAL

DESIGNED BY FINNISH-AMERICAN ARCHITECT EERO SAARINEN
CONSTRUCTION BEGAN FEBRUARY 12TH, 1963
COMPLETED OCTOBER 25, 1965
OPENED ON JUNE 19TH, 1967
COST: $13 MILLION DOLLARS

ARCH IS A "CATENARY CURVE" WHICH IS CONSIDERED
THE MOST STRUCTURALLY SOUND
ARCH SHAPE.
SHAPE A HANGING CHAIN FORMS
WONDERFUL AT BOTH ENDS.

PART OF THE
JEFFERSON NATIONAL
EXPANSION MEMORIAL
TALLEST NATIONAL MONUMENT
IN THE UNITED STATES

HEIGHT & SPAN WIDTH: 630 FEET / 193 M
TOTAL WEIGHT: 455,000 TONS / 50,000 T
STAINLESS STEEL SKIN WEIGHT: 900 TONS / 816 MT
FOUNDATION DEPTH: 60 FEET / 18.2 M
WIDTH OF ARCH AT BASE: 54 FT / 16.4 M
WIDTH OF ARCH AT TOP: 17 FT / 5.2 M
NUMBER OF SECTIONS IN ARCH: 142
THICKNESS OF PLATES FOR OUTER SKIN: 1/4" / 0.3 CM

TRAM SYSTEM COMBINES ELEVATOR, CABLE LIFT SYSTEM
NUMBER OF TRANSPORTERS: 2
NUMBER OF CAPSULES PER TRANSPORTER: 6

CAPACITY PER CAPSULE: 5 PEOPLE
DESIGNED CAPACITY OF TRANSPORTER: 6,600 LB TOTAL (2,700 KG)
TOTAL TRANSPORTER WEIGHT: 10,000 LB (4,500 KG)
TRANSPORTER SPEED: 340 FT/MIN OR
APPROX. 3 MPH (1.73 M/S)
WEIGHT OF COUNTERWEIGHTS: 13,000 LB (5,900 KG)
TRAVEL DISTANCE OF TRANSPORTER: 746 FT (228 M)
INTERIOR CAPSULE DIAMETER: 5 FT (1.5 M)

APPROXIMATELY 1 MILLION VISITORS
RIDE TRAMS TO TOP OF ARCH YEARLY

TRAMS IN OPERATION OVER 30 YEARS
TRAVELLING 260,000 MILES &
CARRYING OVER 25 MILLION PASSENGERS

BUILT TO WITHSTAND
EARTHQUAKES & HIGH WINDS
SWAYS NEARLY 13 INCHES IN WINDS UP TO 150 MPH
HOLLOW INTERIOR FACILITATES
TRAM TRANSPORT
& TWO 101-STEP
EMERGENCY STARWELLS
The two legs of the tram transport system each contain 8 passenger cars.
Inside one of the 5-seat tramcars.
The viewing platform where the public can see up to 30 miles to both east and west.
REFERENCES AND FURTHER READING

2009 Historic Photos of the Gateway Arch, Nini Harris, Turner Publications.
2017 The Making of an Icon: The Dreamers, the Schemers and the Hard Hats Who Built the Gateway Arch, Jim Merkel, Gateway Press.
2018 St. Louis: Then And Now, Maureen Kavanaugh & Elizabeth McNulty, Pavilion Books, London.

Looking at a model of the Arch tube tramway passenger cars.

THE ARCHITECTURE OF EERO SAARINEN