The Museum of Modern Art
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20th Century Engineering, an exhibition of enlarged photographs and plans of 193 projects from 28 countries, inaugurates the new garden wing galleries of The Museum of Modern Art on Tuesday, June 30. The exhibition, selected and installed by Arthur Drexler, Director of the Museum's Department of Architecture and Design, will remain on view through September 13.

Besides bridges, dams and stadia and enclosures for storage, work and public assembly, engineering at architectural scale shown in the exhibition also includes radar and telescope installations, highways, earth terracing and artificial islands.

"The problems engineers solve cut across economics, politics, art and science, affecting the lives of all men - on this planet now and eventually somewhere else as well," Drexler says in the wall label for the show. "Engineering is among the most rewarding of the arts, not only because it produces individual masterpieces, as beautiful as the Santa Luzia Dam in Portugal or the Theodor Heus Bridge in Dusseldorf, but also because it is an art grounded in social responsibility."

Both the subject and the method of presentation mark innovations for the Museum: 55 of the projects, selected for their beauty, historic interest or monumental scale, are shown in large scale photographs mounted on walls built in the center of the exhibition area; all 193 projects are shown in detail, including plans and explanatory text, in study alcoves around the perimeter of the gallery. Thus in effect two simultaneous exhibitions are on view; one for visitors with a general interest in the subject and one for specialists.

Almost one quarter of the exhibition is devoted to soaring vaults and domes of various materials. Reinforced concrete is used for an airship hanger in Orly, France, an exhibition hall by Nervi in Italy and a cable car terminal in Venezuela. Steel is used for a geodesic dome by Buckminster Fuller; for the 630 foot high Jefferson National Expansion Memorial by Eero Saarinen and Associates, now under

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construction; and for the largest steel dome to date, a stadium in Houston with a 642 foot span. Among inflatable structures is a dome of rubberized nylon built for the Telstar Antenna in Maine and an exhibition building for the Atomic Energy Commission made of an air-supported double nylon skin.

Bridges that span the Rhine, the Dora, the Danube, the Seine, the Rhône and a glacier in Switzerland are shown. Included are suspension bridges, thin shells, and the longest concrete beam bridge yet built (St. Maurice, Switzerland).

The section on towers includes a solar observatory in Arizona, an air traffic control tower designed by I. M. Pei, and water towers in America, Spain, Sweden and Finland.

Projects under the earth include an access tunnel to a power station in France, an underground shelter blasted out of solid rock in Sweden (now used as a garage), and a transonic wind tunnel.

Dams and spillways in Iran, Switzerland, Italy, China, Portugal, United Arab Republic, Algeria, Russia and Mexico are shown along with the largest dam of the T.V.A. in North Carolina. Earthworks range from canals and dykes in Europe to a man-made Japanese island built 33 feet above the ocean floor for an off-shore coal mine; and the banked earth bowl at the Olympic Ski Jump at Innsbruck, Austria, which includes bleachers for 600,000 spectators.

One section of the exhibition is devoted to columns and roofs, including some structures in which the columns become the roof. Work by Heinz Hossdorf, Felix Candela, Pier Luigi Nervi, Robert Maillart, and Frank Lloyd Wright is included.

Instruments include a 300 foot radio telescope in West Virginia, the largest to date; a 1,005 foot radio antenna in Budapest supported on a single point; a 2,063 foot tv antenna in North Dakota, the highest to date. Roads include a four level interchange in California, Italian and German viaducts and an elevated parkway in Brooklyn.

"Engineers have usually been regarded as artists in the craft sense only," Drexler says. "Their work has been admired for the excitement of its often monumental scale, and for its boldness and simplicity of design. Architects have

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sought to emulate these qualities and, more important, have tried to make the art of architecture as rational and functionally objective as the art of engineering.

"Because engineers must solve many different kinds of complicated technical problems their decisions must be rationally determined. But it is not true that technical problems admit one kind of solution only. No matter how rigorously objective an engineer may be, he must still make some decision independently of objective, demonstrable fact. It is in these subjective decisions that he will reveal his personal preferences, his sense of form, and those individual responses that make up taste.

"Engineering as an art affords us such individual characteristics as the aristocratic elegance and restraint of Robert Maillart; the extravagant playfulness of Felix Candela; the expressive rhetoric of Pier Luigi Nervi; and the etheral pragmatism of Buckminster Fuller."

Research for the 20th Century Engineering exhibition was directed by Ludwig Glaser, with the assistance of Ellen Marsh, both staff members of the Department of Architecture and Design.

A 96-page catalog will be published in a few weeks. Other architectural and design exhibitions on view at the Museum this summer are Two Design Programs: The Braun Co., Germany; The Chemex Corp., USA and selections from the Museum Collections, now on view in the new Philip L. Goodwin Galleries of Architecture and Design.

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Photographs and additional information available from Elizabeth Shaw, Director, Department of Public Information, The Museum of Modern Art, 11 West 53 Street, New York 19, N. Y. CI 5-8900.