Additional Resources in MSEL
Nervi, Candela, Menn

Books

Pier Luigi Nervi.
MSEL Call Number Libraries Service Center NA1123.N4 H8 1960

Superstructures: the world's greatest modern structures/Neal Parkyn
MSEL Call Number Eisenhower Stacks NA680.P277 2004 Quarto

Title: Candela, the shell builder. With a foreword by Ove Arup / Faber, Colin.
MSEL Call Number Eisenhower Stacks NA759.C3 F23 1963

Title: Félix Candela / supervisor Yutaka Saito; editor Naomi Miwa.
MSEL Call Number Eisenhower Stacks NA737.C255 C26 1995 QUARTO

Title: Builders in the sun; five Mexican architects / Smith, Clive Bamford.
MSEL Call Number Eisenhower Stacks NA758 .S6 1967 Q

Tips on finding these and more books on structures in the MSEL.

http://www.library.jhu.edu/researchhelp/engr/structures/books.html

Journal Articles

Title: Four great pours
In: Architectural Forum
Volume: v 115 Issue: n 3 Sept 1961 p 104-115
Abstract: Use of reinforced concrete to create 4 entirely different structural systems; stand of gigantic columns and huge ribbed beam for exhibition halls by Nervi and Morandi, tension roof hung from pylons for airport terminal by Eero Saarinen, and matched set of vaults for warehouse by Felix Candela.
MSEL Call Number Gilman Stacks NA1.A68
Database: Compendex

Title: Concrete butterflies roof bus station
In: Engineering News-Record
Volume: v 168 Issue: n 16 Apr 19 1962 p 30-32
Abstract: Spectacular structural form was combined with functional design and practical building techniques by Italian architect engineer, P.L. Nervi, in long span concrete roof for 13 million dollar George Washington Bridge Bus Station in New York City; long, 3-level building will consolidate scattered street loading stations for 2000 buses; design features roof system comprising 26 ribbed triangular elements and concrete Warren trusses, arranged in plan in diamond shaped groups of 4 concurrent with edges of triangular elements.
MSEL Call Number Gilman Stacks TA1.E63
Database: Compendex

Title: Thin reinforced concrete members from Turin exhibition halls
In: Civil Engineering
Volume: v 21 n 1 Jan 1951 p 26-31
Abstract: Indexed in Engineering Index 1950 p 421 from Technique des Travaux Sept-Oct 1949.
MSEL Call Number Libraries Service Center TA1.C59
Database: Compendex

Title: Concrete and structural form
In: Engineering
Volume: v 180 n 4683 Oct 28 1955 p 601-603
Abstract: Coordination of design and actual construction as exemplified by illustrated descriptions of some of author's own work in Italy, including exhibition halls, hangars, and new method for construction of roofs. From lecture organized by Instn Structural Engrs and Joint Committee on Structural Concrete.
MSEL Call Number Gilman Stacks TA1.E58
Database: Compendex

Title: Precast concrete offers new possibilities in design of shell structures
Authors: Nervi, P.L.
In: Civil Engineering (New York)
Volume: v 23 n 2 Feb 1953 p 33-36
Abstract: Structures assembled of precast elements such as hangar 340 ft long by 135 ft wide; most important application of precast members is corrugated skylight roof with 320 ft span in Exhibition Palace in Turin, Italy; author's design for arch of about 984 ft span to roof St Peter's Square Rome.
MSLE Call Number Libraries Service Center TA1.C59
Database: Compendex

Title: Understanding hyperbolic paraboloid Authors: Candela, F.
In: Architectural Record
Volume: v 123 n 7 July 1958 p. 191-195
Abstract: Basic shell action is summarized; types of shells; definition of geometry of hyperbolic paraboloid.
MSEL Call Number NA1.A68
Database: Compendex

Title: Understanding hyperbolic paraboloid Authors: Candela, F.
In: Architectural Record
Volume: v 124 n 2 Aug 1958 p 205-207 + 215
Abstract: Stress analysis for various types of hyperbolic paraboloids; shows how to analyze graceful thin shell in which outer edges are kept paper thin by thickening shell at other boundaries.
MSEL Call Number NA1.A68
Database: Compendex

Title: BRIDGE DESIGN AND REGIONAL ESTHETICS Authors: Billington, David
In: ASCE Journal of the Structural Division
Volume: v 107 n 3 Mar 1981 p 473-486
Abstract: Leading bridge designers have developed individual styles within limited locales, and those styles demonstrate similarities in personal esthetic ideas. An examination of the works of six major bridge designers characterizes these ideas and illustrates the striking fact that in each case these designers have done nearly all their major work in one well-defined region of a remarkably small area. The six bridge designers are: Thomas Telford (1757-1834), John Roebling (1806-1869), Gustave Eiffel (1832-1923), Robert Maillart (1872-1940), Othmar Amman (1879-1965), and Christian Menn (born in 1927). Their bridges are at least as good as, and probably better than, any of their time; there is a definite connection between the high quality of their work and its restriction to a small well-defined geographic region. Their works illustrate a series of individual styles that spring from local conditions rather than an international style.

MSEL Call Number Libraries Service Center TA1.A49 ST
Database: Compendex

Title: BUILDING BRIDGES: PERSPECTIVES ON RECENT ENGINEERING.
Authors: Billington, David P.
In: Annals of the New York Academy of Sciences
Volume: v 424 May 23 1984 p 309-324
Abstract: John A. Roebling (1806-1869) was a structural engineer and at the same time an engineering artist; he stands within a 200-year tradition of structural art. Begun with the introduction of industralized iron during the last quarter of the eighteenth century, this new tradition includes such engineers as Thomas Telford (1757-1834), Gustave Eiffel (1832-1923), Robert Maillart (1872-1940), Othmar Ammann (1879-1965), Eugene Freyssinet (1979-1962), and many contemporary designers such as Ulrich Finsterwalder (b. 1897) and Christian Menn (b. 1927). The goal of this brief review is to define this art form and to show something of its development after the completion of the Brooklyn Bridge.
MSEL Call Number Eisenhower Stacks Q11.N55 no. 424
Database: Compendex

Title: Approach to bridge design Authors: Menn, C.
In: Engineering Structures
Volume: v 13 n. 2 Apr 1991 p.106-112
Abstract: The most challenging aspect of a bridge engineer's work is conceptual design, i.e., the development of optimal concepts with regard to structural systems, span lengths, and cross-sections. Unfortunately, this important task is given far too little attention in engineering curricula at universities. Successful conceptual designs are the result not only of solid fundamental knowledge, but also experience, awareness of visual form, and creative fantasy. This article shows how optimal conceptual designs were developed for two bridges, one with difficult technical constraints and the other with complex constraints with regard to urban design.
Abstract type:(Author abstract)
MSEL Call Number Eisenhower Stacks TA630.E54
Database: Compendex

Title: PRESTRESSING OF CURVED BRIDGES. Authors: Menn, Christian
In: NATO ASI Series, Series E: Applied Sciences
Issue: n 74 1984 p 3-22
Conference name: Analysis and Design of Bridges (Proceedings of the NATO Advanced Study Institute).
Abstract: A review of some structural concepts, prestressing schemes, analysis methods, and fundamental behavior of curved prestressed concrete bridges is presented. The application of several structural schemes to curved bridges is presented. Equilibrium requirements, the effect of moment redistribution on equilibrium requirements, and the effects of external constraints are reviewed. An approximate method for the analysis of curved girder bridges is developed. A comparison with an elasticity solution demonstrates the applicability of the method. Based on the structural requirements and approximate analysis method presented, optimal prestressing requirements for the equalization of torsion in simple- and continuous-span curved prestressed box girder bridges are developed.
MSEL Call Number Eisenhower Stacks TG300.A581 1984
Database: Compendex

Title: SKEW SLAB BRIDGES. Authors: Menn, Christian

In: NATO ASI Series, Series E: Applied Sciences
Issue: n 74 1984 p 225-239
Conference name: Analysis and Design of Bridges (Proceedings of the NATO Advanced Study Institute).
Abstract: The applications, typical dimensions, structural behavior, analysis methods, and ultimate strength considerations of skew slab bridges are presented. The effects of cracking and inelastic behavior on the deflections and servicability of skew slab bridges are reviewed. The need for prestressing in order to control behavior and provide servicability is discussed. Theories of elasticity and plasticity are discussed with respect to their applicability to the design of skew slab bridges. It is shown that an inherent stress condition can be superimposed on the computed ultimate section forces with no effect on ultimate strength.