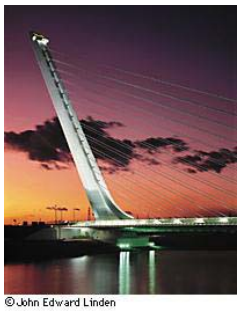

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Additional Resources in MSEL
Calatrava, Schlaich, Gehry

Books

Santiago Calatrava, conversations with students: the M.I.T.
MSEL Call Number Eisenhower Stacks NA1313.C35 A35 2002

Building a masterpiece: Milwaukee Art Museum
MSEL Call Number Eisenhower Stacks N582.M5 A52 2001 QUARTO

Santiago Calatrava: structures in movement: the architecture of Santiago Calatrava: an exhibition / conceived and curated by Alexander Tzonis.
MSEL Call Number Eisenhower Stacks NA1313.C35 A4 2001 QUARTO

What is a bridge? The making of Calatrava's bridge in Seville
MSEL Call Number Eisenhower Stacks TG88.P84 P65 1999 QUARTO

Santiago Calatrava's travels
MSEL Call Number Eisenhower AV Center DVD 1343

Calatrava: public buildings / edited by Anthony Tischhauser and Stanislaus von Moos
MSEL Call Number Eisenhower Stacks NA1313.C35 A4 1998 QUARTO

Calatrava bridges / Kenneth Frampton, Anthony C. Webster, Anthony Tischhauser.
MSEL Call Number Eisenhower Stacks TG 300 .F73 1996

Movement, structure, and the work of Santiago Calatrava / Alexander Tzonis, Liane Lefaivre.
MSEL Call Number Eisenhower Stacks NA 1313 .C35 T97 1995 QUARTO

Das rote Wunder [videorecording] / Hergestellt von Kopp Film; ein Film von Gert Kähler.
MSEL Call Number Eisenhower AV Center Video A6125

The art of structural engineering: the work of Jörg Schlaich and his team / Alan Holgate.
MSEL Call Number Eisenhower Reserves TA636.H65 1997 QUARTO

Frank Gehry, architect / J. Fiona Ragheb,
MSEL Call Number Eisenhower Stacks NA737.G44 A4 2001 QUARTO

Frank O. Gehry: Guggenheim Museum Bilbao / by Coosje van Bruggen.
MSEL Call Number Eisenhower Stacks N3213.B78 1998 QUARTO

Frank Gehry, buildings and projects / compiled and edited by Peter Arnell and

Ted Bickford
MSEL Call Number Eisenhower Stacks NA737.G44 A4 1985 QUARTO

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: Gehry: un moment de vérité
In: Architecture d'aujourd'hui 1993 Apr., n.286, p.78-91
Abstract: On the work of Frank Gehry. Includes an interview with the architect.
MSEL Call Number Eisenhower Stacks NA2.A8

Title: The myth of LA and the reinvention of the city / James Steele
In: Architectural design 1992 July-Aug., v.62, n.7-8, p.66-67
Abstract: Discussion on Frank Gehry's work.
MSEL Call Number Eisenhower Stacks NA1.A679

Frank O. Gehry / Olivier Boissière.
In: Architecture d'aujourd'hui 1989 Feb., no.261, p. [2]-41
MSEL Call Number Eisenhower Stacks NA2.A8

Title: Light structures: tensile, space, pneumatic structures.
In: Zodiac 1972, n. 21, whole issue.
Contents: 1. Ricera tecnologia e architettura / by Maria Bottero -- 2.Frei Otto and the Munich Olympic Games; from the measuring experimental models to the computer determination of the pattern / by Mick Eekhout -- 3. On the static analysis of the Olympic cable roofs in Munich / by J.H. Argyris, W. Aicher, T. Angelopoulos -- 4. New methods for the determination of cutting pattern of prestressed cable nets and their application to the Olympic roof, Munich / by Klaus Linkwitz -- 5. Strutture tensile di Monaco -- 6. Three-dimensional structures : a survey of buildings completed in recent years / by Z.S. Makowski -- 7. Tensegrity-Tragwerke / by Gernot Minke -- 8. Tensostrutture in Cavi di Acciaio / by Margherita Paolini -- 9. Graham Stevens' pneumatic works : photographed by Andrew Tweedie -- 10. Flächig stabilisierte Membrantragwerke zur Definition und Klassifikation "pneumatischer Konstruktionen" / by Gernot Minke -- 11. Single, double, dual structures, notes on the American pavilion at the Osaka Expo / by David Geiger -- 12. Bibliographical and biographical notes on the architects and contributors -- 13. Translations.
MSEL Call Number Moravia Park NA6.Z6

Title: Design of commercial solar updraft tower systems - Utilization of solar induced convective flows for power generation/Schlaich, Jorg; Bergermann, Rudolf; Schiel, Wolfgang; Weinrebe, Gerhard
In: Journal of Solar Energy Engineering, Transactions of the ASME
Volume: v 127 n 1 February 2005 p 117-124
Abstract: A solar updraft tower power plant - sometimes also called "solar chimney" or just "solar tower" - is a solar thermal power plant utilizing a combination of solar air collector and central updraft tube to generate a solar induced convective flow which drives pressure staged turbines to generate electricity. The paper presents theory, practical experience, and economy of solar updraft towers: First a simplified theory of the solar tower is described. Then results from designing, building and operating a small scale prototype in Spain are presented. Eventually technical issues and basic economic data for future commercial solar tower systems like the one being planned for Australia are discussed.

MSEL Call Number Eisenhower Stacks TJ810.J6B Available online
Database: Compendex

Title: NEW PARALLEL WIRE BUNDLE FOR CABLE-STAYED BRIDGES.
Authors: Schlaich, Joerg; Bergermann, Rudolf
Publication year: 1988 p 40-45
Conference name: Cable-Stayed Bridges, Proceedings. Nashville, TN, USA
Sponsor: ASCE, Structural Div, New York, NY, USA
Abstract: A parallel wire bundle is described which is twisted with a long lay length. It is corrosion protected by an inner fill and outer coating of polyurethane. It presents a specially shaped, metal-cast, fatigue-resistant anchorage.
Abstract type:(Edited author abstract)
MSEL Call Number Eisenhower Stacks TG405.A831 1988
Database: Compendex

Title: Air-inflated roof over the Roman amphitheatre at Nimes Authors: Schlaich, J.; Bergermann, R.; Sobek, W.
In: Structural Engineering Review
Volume: v 6 n 3-4 Aug-Nov 1994 p 203-214
Abstract: The central part of the nearly 2000-year-old Roman arena at Nimes, France has been covered during wintertime since 1988. The seasonal roofing is realized with a lightweight structure which is 5000 m² in plan and which covers up to 6000 seats. The structure consists of an air-inflated membrane-cushion which is nearly elliptic in plan with axes of 60 and 90 m, respectively. The cushion is the largest one which has been built to date. The forces within the membranes of the cushion are counter-balanced by a steel ring which is edging the cushion. The steel ring itself is supported by 30 columns. The facade is formed by transparent panels made of aluminum-reinforced polycarbonate. The entire structure has to be installed each year in October and removed the following April. This required the development of specific structural details and a lifting system which allows easy and quick erection. Requirements concerning the preservation of historical monuments asked for an implantation of the structure into the arena without any modification of the existing Roman building.
MSEL Call Number Eisenhower Stacks TA630.S828
Database: Compendex

Title: Engineering: Santiago Calatrava Authors: Petroski, Henry
In: American Scientist
Volume: v 85 n. 2 Mar-Apr 1997 p 114
MSEL Call Number Eisenhower Stacks Q1.A6
Database: Compendex

Title: Deftly 'twists' tower Authors: Reina, Peter
In: ENR (Engineering News-Record)
Volume: v 253 n 23 Dec 13 2004 p 24-26
Abstract: The 26,000-sq-m Europe's tallest residential tower in Malmo, designed by architecture-engineer Santiago Calatrava, is discussed. The tower, having a spiraling shape, rises out of two-level basement enclosed by a 30-m-dia cylindrical concrete wall. With its base slab reaching more than 6m down to limestone, above ground, the structure turns around a spine-like core as it rises. Tower floors are shaped roughly like an arrowhead, with three of their five perimeter walls being 17 m long and slightly curved.
MSEL Call Number TA1.E63 Available online on Academic Search Premier
Database: Compendex

Title: Seeking structural solutions Authors: Dorris, Virginia Kent
In: Civil Engineering (New York)
Volume: v 66 n. 11 Nov 1996 p 46-49
Abstract: Santiago Calatrava was born in Valencia, Spain in 1951. He studied art and sculpture while earning a degree in architecture at the Institute of Architecture of Valencia. He obtained a degree in civil engineering and a doctorate in technical sciences from the Federal Institute of Technology in Zurich, Switzerland. Calatrava stirred up international acclaim and controversy with a series of highly public civic and transportation structures made up of innovative forms. He uses three-dimensional forms to express simple ideas on geometrical or structural principles, often working from moment diagrams. His works bring a unique vision in the designs of bridges and buildings by synthesizing fine arts, architecture and engineering.
MSEL Call Number Eisenhower Stacks TA1.C59)
Database: Compendex

Title: Tension structures for solar electricity generation Authors: Schlaich, Joerg
In: Engineering Structures
Volume: v 21 n 8 1999 p 658-668
Abstract: Large scale solar thermal electricity generation is technically feasible and could soon become economically competitive, if more efforts for its introduction are made. In the two technologies developed by the author and his team, stretched metal membrane solar concentrators for heliostats and Dish/Stirling systems and the solar chimneys tension structures play a decisive role. Thus solar electricity generation has become a new and promising field of activity for structural engineers.
MSEL Call Number TA630.E54 Also Available via Science Direct
Database: Compendex

Title: Bridges of Robert Maillart Authors: Schlaich, Jorg
In: Concrete International: Design and Construction
Volume: v 15 n 6 Jun 1993 p 30-36
Abstract: As no other engineer in his time, Robert Maillart (1872-1940) not only explored and usefully applied the possibilities of reinforced concrete, but also accepted the material's sculptural challenge to build with it artfully and uniquely. With few exceptions, no contemporary engineer building with reinforced concrete can challenge this claim. Maillart succeeded in transforming new technical knowledge and talent into forms of equivalent expression. While the usual approach is to hope that good form will result from the technically correct solution, Maillart must have worked the other way around--coming upon inventive ideas while searching for the logical proof to the form he had conceived as true to the material and as beautiful.
MSEL Call Number Eisenhower Stacks TA680.C772
Database: Compendex

Title: Stress fields for nodes of strut-and-tie models Authors: Schlaich, Michael; Anagnostou, Georg
In: Journal of Structural Engineering
Volume: v 116 n 1 Jan 1990 p 13-23
Abstract: Truss models have been developed and applied to the ultimate strength design and detailing of two-dimensional reinforced concrete members loaded in their plane. Such a truss is composed of struts and ties which represent one-dimensional stress fields. The nodes, however, form two-dimensional stress fields whose bearing capacity also needs to be checked. The geometry of the nodes is only limited by the existing boundary of the plate, and not by the area formed by the intersection of the stress fields reaching the node.

This makes it possible to show that for any node with an arbitrary number of struts of equal stress intensity, a stress field can be found that satisfies the lower bound theorem of plasticity. This stress field consists of several triangular and rectangular areas, which are separated by lines of stress discontinuity. The stress state inside each of these areas is homogeneous, either one-dimensional or 'pseudo-hydrostatic.' An algorithm for the automatic generation of such stress fields is presented. It will further be shown that even if there are stress fields of different intensities, nodes as described can be formed. This is made possible by the introduction of 'transition stress fields' and by exploiting the concrete tensile strength.
MSEL Call Number Eisenhower Stacks TA1.A49ST
Database: Compendex

Title: Solar stretch Authors: Schlaich, Jorg; Bergermann, Rudolf; Schiel, Wolfgang
In: Civil Engineering (New York)
Volume: v 64 Issue: n 5 May 1994 p 47-50
Abstract: Cost has been the big drawback for solar energy generation, but with the development - by civil engineers - of a precise, cost effective stretched metal-membrane solar concentrator, electric power from the sun may become affordable at last. Three versions of prototypes were built and tested at the European Solar Test Center in 1991. With concentrators of 7.5 m in dia (44.18 sq.m), the Stirling engines cum generators are designed to produce 9 kW each at 1000 W/sq.m insolation.
MSEL Call Number Eisenhower Stacks TA1.C59
Database: Compendex

Title: Erection of cable-stayed bridges having composite decks with precast concrete slabs Authors: Schlaich, M.
In: Journal of Bridge Engineering
Volume: v 6 n 5 September/October 2001 p 333-339
Abstract: For the construction of composite steel-concrete decks of cable-stayed bridges, methods of erection and analysis have to be applied that, upon completion of the deck, accurately yield the prescribed dead load configuration of the deck regarding geometry and forces. During deck erection, no unwanted bending moments should be locked into the composite sections when the concrete slab is connected to the steel substructure. Such locked-in moments would bend the deck, cause concrete creep that is difficult to predict, and introduce the risk of deviations from the desired deck alignment and the corresponding distribution of forces. This paper presents a simple and practical method of erection and erection analysis for composite decks with precast concrete slabs. A two-step tensioning procedure of the stay cables is proposed that minimizes the effects of unwanted locked-in moments, making it easy to predict the geometry of the erection stages and to yield the desired dead load configuration of the deck. The met hod was successfully applied for the erection of the Ting Kau bridge in Hong Kong, a cable-stayed bridge of 1,200 m in length having a composite deck with a precast deck slab.
MSEL Call Number Eisenhower Stacks TG300.J58 **Available Online**
Database: Compendex

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