ARCHITECTURAL ENGINEERS

OF THE 20TH & 21ST CENTURY

UNDERGRADUATE RESEARCH PROJECT
SPRING 2008

UNIVERSITY OF TEXAS AT AUSTIN
COCKRELL SCHOOL OF ENGINEERING
ARCHITECTURAL ENGINEERING PROGRAM

OTHMAR AMMAN WILLIAM F. BAKER RICHARD BAUM HORST BERGER IRWIN CANTOR FIONA COUSINS PETER FLACK ROGER FRECHETTE BUCKMINISTER FULLER DAVID GEIGER MYRON GOLDSMITH JOHN HENNESSY NORMAN KURTZ SILVIAN MARCUS MARVIN MASS LESLIE ROBERTSON HERBERT ROTHMAN HAND SCHOBER RICHARD TOMASETTI PAUL WEIDLINGER ALAN LOCKE JON MAGNUSSON JOHN A. MARTIN ERIN MCCONAHEY JOHN SKILLING OVE ARUP CECIL BALMOND GUY BATTLE PATRICK BELLEW EDMOND HAPPOLD ANTHONY HUNT HANIF KARA IAN LIDDELL TIM MACFARLANE CHRIS MCCARTHY PETER RICE NEIL THOMAS JANE WERNICK MARK WHITBY CHRIS WISE JACK ZUNZ KLAUS BOLLINGER JURG CONZETT MANFRED GROHMANN PIERRE LARDY ROBERT MAILLART CHRISTIAN MENN MARC MIMRAM FREI OTTO JORG SCHLAICH MATHIAS SCHULER WERNER SOBEK MICHEL VIRLOGEUX

INTRODUCTION

Architecture and engineering are in the midst of a technical revolution. Not since the advent of structural steel has there been such a dramatic shift in aesthetics, form and construction. The reason for this change in buildings is the recent evolution of computer design, analysis and construction software. Forms that were once impossible to imagine, let alone design and construct, are now possible. Engineers are playing an increasingly important role in this achievement.

Of great interest to me as a university instructor teaching design to architectural engineering students, is a comprehensive chart ('Engineer's Atlas') in the AR September issue listing the old and new famous names in Architectural Engineering of the last century. This is the first time that I have come across such a list and it occurred to me that this would be good material to share academically with faculty and students.

Using this list, the students, T.A.'s and design professors this semester have produced nearly 60 concise research projects - one page documents - that introduce each of these accomplished engineers. Our goal is to provide a collection of introductions that a reader can flip thru quickly to familiarize themselves with the names of individuals and the architectural engineering firms that they founded. Some of the engineers are famous for their philosophical work as well as built work. All have created a legacy and have collectively elevated the respect for the importance of engineering in the design and construction of ambitious buildings.

> The "spectacular" architecture routinely featured in RECORD relies more than ever on the ingenuity, creativity, and yes, patience of the contemporary engineer. This species of professional, as much a creation of the modern era as anything else, now occupies a central place at the beginning of the design process, forever transforming how architecture relates to our cities, culture, and ourselves.

I must write a short disclaimer warning that the research in this collection has not been thoroughly cross-checked and verified and I would not be surprised if you find even simple grammatical errors - please forgive us for that. We have assembled this research quickly to broaden your perception of Architectural Engineering. I'm sure that some very important engineers have been left out and I welcome you to correspond with me to provide names of those that you feel should be included or to point out any errors that we might correct in the pages. This information is not for commercial use and should only be used for academic purposes.

-Gregory Brooks
UT Austin, March 2008

Gregory Brooks, Lecturer
Instructor for Architectural Engineering Design 1 & 2 courses
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http://www.ce.utexas.edu/profile.cfm?profilePK=74

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EDITOR'S NOTE: Modern consulting engineers and their ideas have spawned countless new practices throughout the world, resulting in some of the most inspiring projects of our time. We admit we have left out a few greats in our overview, but we see this as only a beginning to understanding the increasingly interconnected world of architectural engineering.

London

JANE WERNICK
Jane Wernick and Associates, structural
Innsbruck Ski Jump, Austria (at Arup)
(Zaha Hadid Architects)

TIM MACFARLANE
Dewhurst Macfarlane, structural
Apple store's glass staircases
(Bohlin Ciwynski Jackson)

EDMOND HAPPOLD (D)
Buro Happold, structural
Tierpark Hellabrunn Aviary, Munich

IAN LIDDELL
Buro Happold, structural
Millennium Dome, London
(Rogers Stirk Harbour + Partners)

OVE ARUP (D)
Arup, structural
London Zoo's Penguin Pool
(Berthold Lubetkin)

JACK ZUNZ
Arup, structural
Sydney Opera House
(Jorn Utzon)

PATRICK BELLEW
Atelier 10, environmental
Singapore Arts Centre,
(Michael Wilford Associates)

ANTHONY HUNT
Anthony Hunt and Associates, structural
Eden Project, England
(Grimshaw Architects)

NEIL THOMAS
Atelier 1, structural
Singapore Arts Centre
(Michael Wilford Associates)

HANIF KARA
Adams Kara Taylor, structural
Phano Science Center, Germany
(Zaha Hadid Architects)

GUY BATTLE
Battle McCarthy, mechanical
Endesa Headquarters, Madrid
(Kohn Pedersen Fox)

CECIL BALMOND
Arup, structural
CCTV Tower, Beijing
(Office for Metropolitan Architecture)

CHRIS MCCARTHY
Battle McCarthy, structural
Elephant and Castle Eco-Towers, London
(Hamzah and Yeang)

PETER RICE (D)
Rice Francis Richie, structural
Centre Georges Pompidou, Paris
(Renzo Piano and Richard Rogers)

CHRIS WISE
Expedition Engineering, structural
Las Arenas Bullring, Barcelona
(Rogers Stirk Harbour + Partners)

CENTRE POMPIDOU

MARK WHITBY
Whitby Bird, structural
The Circle, London
(CZWG Architects)

New York/Chicago

LESLIE ROBERTSON
Leslie E. Robertson and Associates, structural
Bank of China, Hong Kong
(Pei Cobb Freed & Partners)

RICHARD TOMASETTI/CHARLES THORNTON
Thornton Tomasetti, structural
Petronas Towers, Kuala Lumpur, Malaysia
(Pelli Clarke Pelli Architects)

FRED SEVERUD (D)
Severud Associates, structural
Dorton Arena, Raleigh, North Carolina
(Matthew Nowicki)

IRWIN CANTOR
Office of Irwin G. Cantor, structural
7 World Trade Center (original), New York
(Emery Roth & Sons)

SILVIAN MARCUS
WSP Cantor Seinuk, structural
Hearst Tower, New York
(Foster + Partners)

OTHMAR AMMAN (D)
Ammann & Whitney, structural
George Washington Bridge, New York

JOHN HENNESSY I (D)
Syska Hennessy, mechanical
United Nations Headquarters
(Wallace K. Harrison, Le Corbusier, et al)

NORMAN KURTZ (D)
Flack + Kurtz, mechanical
Petronas Towers, Kuala Lumpur, Malaysia
(Pelli Clarke Pelli Architects)

PETER FLACK
Flack + Kurtz, mechanical
World Financial Center, New Yo
(Pelli Clarke Pelli Architects)

HORST BERGER
De Nardis Engineering, structural
Denver International Airport (at Severud)
(Fentress Bradburn Architects)

MARVIN MASS
Cosentini Associates, mechanical
John Hancock Center, Chicago
(SOM)

TIME WARNER CENTE

DAVID GEIGER (D)
Geiger Berger, structural
Olympic Gymnastics Venue, Seoul, Korea
(Space Group)

BUCKMINSTER FULLER (D)
(New York), engineer/inventor
U.S. Pavilion at Expo '67, Montreal
(with Shoji Sadao)

RICHARD BAUM (D)
Jaros, Baum and Bolles, mechanical
World Trade Center, New York
(Minoru Yamasaki and Associates)

FIONA COUSINS
Arup, mechanical/environmental
Seattle Public Library
(Office for Metropolitan Architecture)

MATTHYS LEVY
Weidlinger Associates, structural
Rose Center for Earth and Space, New York
(Polshek Partnership Architects)

GUY NORDENSON
Guy Nordenson and Associates, structural
Linked Hybrid, Beijing
(Steven Holl Architects)

FAZLUR KHAN (D)
Skidmore, Owings & Merrill (Chicago), structur
John Hancock Center, Chicago
(SOM)

PAUL WEIDLINGER (D)
Weidlinger Associates, structural
CBS Building, New York
(Eero Saarinen)

AUGUSTINE A. DIGIACOMO
Jaros Baum & Bolles, mechanical
Freedom Tower, New York
(SOM)

ROGER FRECHETTE
SOM (Chicago), mechanical
Pearl River Tower, Guangzhou, China
(SOM)

HANS SHOBER
Schlaich Bergermann and Partner (New York), structural
Fulton Street Transit Center, New York (with Buro Happold)
(Grimshaw Architects)

HERBERT ROTHMAN
Weidlinger Associates, structural
San Francisco-Oakland Bay Bridge
(with T.Y. Lin)

MYRON GOLDSMITH (D)
SOM (Chicago), architect/structural
Robert R. McMath Solar Telescope, Arizona
(SOM)

WILLIAM F. BAKER
SOM (Chicago), structural
Burj Dubai
(SOM)

Europe

PIER LUIGI NERVI (D)
(Italy), architect/structural
Cathedral of St. Mary of the Assumption, San Francisco
(Pietro Belluschi)

MATTHIAS SCHULER
Transsolar (Germany), mechanical/environmental
Deutsche Post, Bonn
(Murphy/Jahn Architects)

EUGENE FREYSSINET (D)
Campenon-Bernard (France), structural
Airship hangars, Orly, France
Innovated prestressed concrete

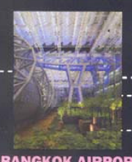
FREI OTTO
Atelier Frei Otto (Germany), architect/structural
Munich Olympic Stadium
(Behnisch Architekten)

MARC MIMRAM
Marc Mimram Engineers (France), structural
Solferino Bridge, Paris

JORG SCHLAICH
Schlaich Bergermann and Partner (Germany), structural
Munich Olympic Stadium
(Behnisch Architekten)

WERNER SOBEK
Werner Sobek Engineering and Design (Germany), structural
Mercedes-Benz Museum, Stuttgart, Germany
(UN Studio)

MICHEL VIRLOGEUX
(France), structural
Millau Viaduct, France
(Foster and Partners)



BANGKOK AIRPORT

Institute for Lightweight Structures and Conceptual Design, University of Stuttgart

PIERRE LARDY (D)
(Switzerland), structural
Innovated prestressed concrete

ROBERT MAILLART (D)
(Switzerland), structural
Vessy Bridge, Switzerland
Innovated reinforced-concrete structures

KLAUS BOLLINGER
Bollinger & Grohmann (Germany), structural
BMW Event and Delivery Center, Munich
(Coop Himmelb(l)au)

MANFRED GROHMANN
Bollinger & Grohmann (Germany), structural
BMW Event and Delivery Center, Munich
(Coop Himmelb(l)au)

CHRISTIAN MENN
(Switzerland), structural
Felsenau Bridge, Switzerland
Further developed prestressed concrete

Swiss Federal Institute of Technology, Zurich

HEINZ ISLER
(Switzerland), structural
Heimberg Indoor Tennis Center, Switzerland

JÜRG CONZETT
Conzett Bronzini Gartmann (Switzerland), architect/structu
Traversiner Footbridge, Viamala, Switzerland

Pacific Rim

SEATTLE PUBLIC LIBRARY

JOHN SKILLING (D)
Skilling Ward (Seattle), structural
World Trade Center (original), New York
(Yamasaki Associates)

JON MAGNUSSON
Magnusson Klemencic (Seattle), structural
Experience Music Project, Seattle
(Gehry Partners)

ERIN MCCONAHEY
Arup (Los Angeles), mechanical
San Francisco Federal Building
(Morphosis)

RON KLEMENCIC
Magnusson Klemencic (Seattle), structural
One Rincon Hill, San Francisco
(Solomon Cordwell Buenz)

STEVE RATCHYE
Thornton Tomasetti (Los Angeles), structural
San Francisco Federal Building (at Arup)
(Morphosis)

ALAN LOCKE
IBE Consulting Engineers (Los Angeles), mechanical
Phare Tower, Paris
(Morphosis)

TUNG-YEN LIN (D)
T.Y. Lin International (San Francisco), structura
Moscone Convention Center, San Francisco
(HOK)

HENRY DEGENKOLB (D)
Degenkolb (San Francisco), structural
Bank of California, San Francisco
(Anshen and Allen)

ROBERT E. ENGLEKIRK
Englekirk Partners (Los Angeles), structural
Getty Center, Los Angeles
(Richard Meier & Partners)

JOHN A. MARTIN
John A. Martin Associates (Los Angeles), structural
Walt Disney Concert Hall, Los Angeles
(Gehry Partners)

CHÉ WALL
Lincolne Scott (Australia), mechanical/environmental
30 The Bond, Sydney
(PTW Architects)

DARREN BILSBOROUGH
Lincolne Scott (Australia), mechanical
City Central Tower 1, Adelaide
(Woods Bagot Architects)

TRISTRAM CARFRAE
Arup (Australia), structural
The Watercube, National Aquatics Center, Beijing
(PTW Architects)

IKUHIDE SHIBATA
Arup (Japan), structural
Toyota Stadium, Toyota City, Japan
(Kisho Kurokawa Architects)

MAMORU KAWAGUCHI
(Japan), structural
World Memorial Hall, Kobe City
(Syowa Sekkei)

MASAO SAITOH
Katima Design (Japan), structural
Gymnasium, Sakata, Japan
(Taniguchi and Associates)

MATSURO SASAKI
Sasaki Structural Consultants (Japan), structural
Mediatheque, Sendai, Japan
(Toyo Ito and Associates)

Engineer's Atlas

- WORKED FOR FIRM/PERSON
- CURRENTLY WORKS FOR/WITH FIRM/PERSON
- COLLABORATED WITH FIRM/PERSON
- CONTRIBUTED TO THIS PROJECT
- INSPIRED BY FIRM/PERSON/SCHOOL

Sample Box

Engineer (D=deceased)
Firm (location), discipline
Notable project, project location
(Architect of key project)

Compiled by Russell Fortmeyer/Created by Corey Knepfer/Shostak Studi

LONDON

Technical Specialization

General Categories

Acoustics
Aerodynamics
R&D
Materials Science
Fire and Environmental Engineering
Structural Engineering and Design
Mechanical and Electrical Infrastructure

Other Specialties:

Architecture
Bridges
Civil Engineering
Communications
Corporate Resilience
Electronic Data Man Systems
Façade Engineering
Facilities Management
Financial Services
Fluid Dynamics
Geographic Information
Geotechnics
Microclimate Design
Offshore Engineering
Property and Construction
Public Health Engineering
Offshore engineering
Property and construction
Public health engineering
Rail
Seismic engineering
Tunnels

OVE ARUP

Arup

Office Locations – Americas, Australia, East Asia, Europe, Middle East
Website - http://www.arup.com/
Firm Population (2008) – almost 9000

History

Arup Group Ltd., or more simply Arup, is a globally based consulting firm that today offers engineering, design, planning and project management consulting services. Structural engineer Ove Arup founded the company named Ove N. Arup Consulting Engineers, in 1946. The firm has since changed names several times and expanded tremendously over the past 60 years with offices now in 37 countries.

Born in Newcastle, U.K., Sir Ove Nyquist Arup began his education in philosophy and mathematics at Copenhagen University. He later went on to receive an engineering degree at the Technical University of Denmark. Once graduated in 1922 he began working as a structural engineer for Christiani and Nielsen, a Danish civil engineering firm, and moved to London. In the early 1930's, he worked as a consultant to the Tectron partnership where he worked with senior partner Berthold Lubetkin. During this time, Ove Arup applied structural concrete ideas that had never been done before in residential housing. After leaving Christiani and Nielsen he worked with several different firms including J.L. Kier &Co., architect Erno Goldfinger and Maxwell Fry and joined MARS, a British architectural think-tank where his interest in modernist architecture grew. During WWII he was an advisor to the Air Raid Precautions committee, advising on ways to build bunkers and protect English citizens. After the war in 1946, he founded his now highly successful company.

Over the years Ove Arup continually pushed the boundaries and developed building techniques that allowed once impossible structures to be to be built. His personal drive for perfection, ingenuity and holistic mindset, coupled with some extraordinary breakthroughs in the architectural and engineering arena, was the driving force in his and his companies' success, which continues even after his death in 1988 to be the biggest name in Architectural Engineering

Research By - Ryan Siegfried
Spring 08 UT ARE

Sydney Opera House

Sydney, Australia
1973

Center Georges Pompidou

Paris, France
1977

30 St. Mary Axe

London, England
2004

Millennium Bridge

London, England

2002

Business Bay Signature Towers

Dubai, UAE

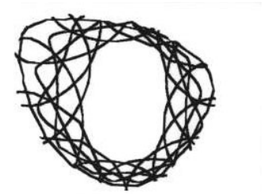
2011

Technical Specialization

Structural Engineering
Advanced Geometry

CECIL BALMOND

Director of Advanced Geometry Unit – Ove Arup & Partners Ltd.
Office Location - London
Website - http://www.arup.com



"Strands to seed intelligence"

History

As structural engineer and writer, Cecil Balmond specializes in the design of buildings with inventive and modern structures. He joined Arup in 1968. Since then, he has been able to promote engineering as a totally creative activity and giving a new meaning to engineering design. Now as a Deputy Chairman of Ove Arup and Partners and Director of Arup's Advanced Geometry Unit, Mr. Balmond is particularly interested in promoting an animated sense of geometry using numbers, mathematics, and music as fundamental sources.

Mr, Balmond has written several books and editorials for several external publications. Some of his works include "Number 9" and "Informal," both about his passion for numbers and how they are a science of beauty. His work is about the creative approach to engineering using patterns, mathematical reasoning, and advanced technology. This medium helps him generate unconventional designs, something that seems to defy gravity yet create stability.

He lectures and teaches in many architectural schools all over the world. In the United States, he has taught at Harvard, Yale and the University of Pennsylvania. He has been the recipient of many awards such as the Gengo Matsui Prize in 2002, and RIBA Charles Jencks Prize for Theory in Practice in 2003. In recognition of his technical contribution to Arup & Partners and the industry, Mr. Balmond was awarded the Arup Fellowship in 2004. He is considered a role model with world-class expertise.

Research By – Lizeth Gonzales
Spring 08 – UT ARE

CCTV Headquarters
Beijing, China, 2008

Pedestrian Bridge
Coimbra, Portugal, 2006

Casa De Musica
Porto, Portugal, 2005

Seattle Central Library
Seattle, USA, 2003

Serpentine Gallery Pavilion
London, UK, 2002

Technical Specialization

Consulting Engineering
Landscape Architects
Mechanical Engineering
LEED / Sustainability

GUY BATTLE

Battle McCarthy

Office Locations – London, England
Website - http://www.battlemccarthy.com
Firm Population (2008) – over 50

History

Guy Battle is an environmental and building engineer who specializes in the design of low energy sustainable buildings and environments. In addition to becoming a distinguished engineer, he has worked with Ove Arup & Partners and Perkins & Will in Chicago. He is a founding partner of the consultancy engineering practice of Battle McCarthy, founded in 1993. Here they combine the skills of Civil, Structural, MEP Engineers, Environmental Analysts, Landscape Architects, Environmental Planners and Artists to create a structure that utilizes its environment.

'We think naturally about each project, using fundamental physics as the starting point...' -- Guy Battle, Battle McCarthy

The practice has worked on a vast range of projects and has an international reputation for its work in delivering cost effective eco-friendly buildings. One example of how they work is University of Luanda. For this project they worked with Chicago architects, Perkins & Will. They studied the site's environment and determined that the prevailing winds could carry heat away from the structures, and by adding shading devices could further reduce the heat gain of the building. With this in mind they developed a design that created an architecturally pleasing shape for buildings that depend totally on wind and solar sources for their cooling energy.

He has been involved in a number of milestone projects, similar to this one, with some of the world's leading Architectural practices including Richard Rogers Partnership, Norman Foster and Partners, Alsop Architects, Kohn Pedersen Fox, Perkins and Will, Genslers and HOK.

Research By – Joshua Ramirez
Spring 08 – UT ARE

ENDESA Headquarters
Madrid, Spain, 2004

Bluewater Shopping Mall
Kent, England, 1999

Greenwich Millennium Village
Greenwich, England

Los Angeles Courthouse
Los Angeles, California, 2005

University of Luanda
Luanda, Angola

Technical Specialization

Sustainability Services
Design for comfort
Design for daylight
Energy efficiency design
Passive Design
Thermal storage
Heating and cooling
Ventilation and air supply
Renewable energy sys
Water conservation
Indoor air quality
Sustainable materials
LEED certification
Electrical distribution
Lighting
Fire Protection
Vertical Transportation
Data and IT services
Security
Façade Engineering

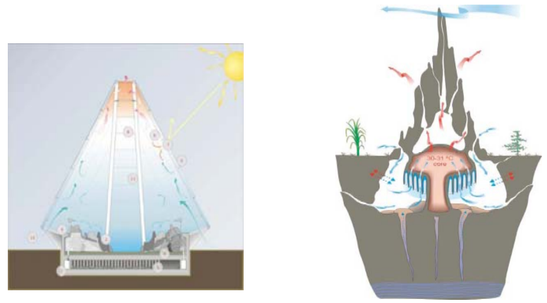
PATRICK BELLEW

Atelier 10

Office Locations – London, New York
Website http://www.atelierten.com/aboutus/patrick.asp

History

Patrick Bellew, Principal of Atelier 10 Consulting Engineers, is renowned for integrating innovative technologies into architectural design. He started working for Buro Happold in 1981 and then moved on to help establish Atelier 10, an engineering consulting firm that focuses on efficient and sustainable design. The firm started in London but now has offices in New York and New Haven in the USA and in Colchester in the UK. Having years of experience in integrating building and environmental systems with architecture, he is particularly knowledgeable in thermal mass energy storage technologies. He focuses on sustainable design projects all over the world and is establishing offices in the United States to help promote the rising green awareness. He is an Honorary Fellow of the Royal Institute of British Architects, a position held by only three people in this field. He is currently the Principal Director of the aforementioned Atelier 10 firm, and a lecturer in the Yale University School of Architecture.

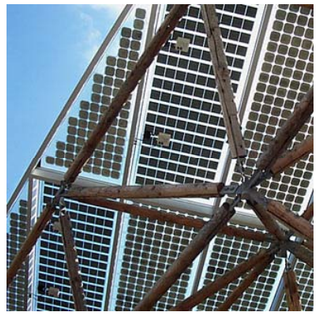


Sustainable Theory: Barossa Termite Mound Study

Research By – Jorge Bouffier
Spring 08 – UT ARE

The Earth Centre

Doncaster, England; 1989

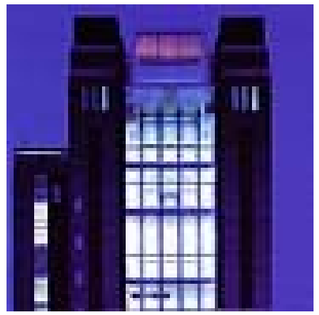


Great Notley Sustainable Primary School

Essex, England; 1997

Baltic Arts Center

Gateshead, England; 2002



Singapore Art Center

Singapore; 1997

Technical Specialization

Main Division

Structural engineering
Building services/MEP
Site Infrastructure
Specialist consulting
Planning and urban design
Transport
Infrastructure development
Water
Bridges and civil structures
Planning and policy advice
Master planning and design
Environmental impact
Environmental management

Other Specializations

Lightweight and long span
Sustainable Design
Fire Engineering
Ground Engineering
People Movement
Façade Engineering
Lighting Design
Acoustic consultancy
Security consultancy
Communications
Light rail
River engineering
Pedestrian comfort
Geo-environmental engineering
Moveable bridges
Tunnel, viaducts and underpasses

SIR EDMUND HAPPOLD

Buro Happold

Office Locations – International Locations
Website - http://www.burohappold.com/
Firm Population (2008) - 1700

History

Sir Edmund Happold, also known as Ted Happold, was a prolific structural engineer and designer. After studying geology at the University of Leeds and working for sometime, he returned to school to pursue a degree in Civil Engineering. He then worked with Alvar Aalto for a few years before joining the office of Ove Arup and Partners. Then Edmund Happold worked with Fred Severud in New York before returning to head the Structures 3 group at Arup where he worked on several significant projects including the Sydney Opera House and the Centre Pompidou.

His next position was as a professor and chairman at the University of Bath. Then in 1976, He began his own practice under the name of Buro Happold, which was established in Bath. Sir Happold founded his firm along with six of his colleagues, from Arup, that include: Ian Liddell, Peter Buckthorp, Rod MacDonald, Michael Dickson, John Morrison, Terry Ealey, and John Reid. The firm started by offering structural engineering services but quickly grew to provide a long list of services.

Edmund Happold was interested in the use of lightweight structures and tensile structures, as can be seen in many of his works. Buro Happold also grew as a firm with Happold using his academic research to power a prominent construction firm. An important philosophy that Sir Happold stressed was that architects and engineers should collaborate and understand each other to achieve innovative solutions and designs.

The Happold trust, established in 1995, was a charity that championed education and research in the construction field, including architecture, engineering, and design.

Research By – Mohamad Tassabehji
Spring 08 – UT ARE

Sydney Opera House

Sydney, Australia, 1973

Centre Pompidou

Paris, France, 1977

British Museum Great Court Roof

London, England, 2000

Eden Project

Cornwall, England, 2001

Emirates Stadium

London, England, 2006

Technical Specialization

Structural Engineering
Civil Engineering

ANTHONY HUNT

SKM Anthony Hunt

Office Locations - London, Sheffield, Edinburgh, Manchester, with the HQ In Cirencester.
Website - www.anthonyhuntassociates.co.uk
Firm Population – 70 employees

History

Anthony Hunt has been working in engineering since the early 1950s. He started off working with Felix Samuely & Partners, dealing mostly with lightweight steel frames and precast concrete floor systems. He then worked for two years with timber structures at Hancock Associates before beginning his own firm, Anthony Hunt & Associates, in London in 1962. In 1988, his firm joined YRM Partnership, Ltd. When YRM dissolved in 1997, Anthony Hunt along with 6 other directors re-established Anthony Hunt & Associates. In 2004, Anthony Hunt & Associates was purchased by Sinclair Knight Merz, changing the name to SKM Anthony Hunt. Anthony Hunt is strongly devoted to the coordination of architects and engineers in all his projects.

Anthony Hunt deals mostly with structural and civil engineering projects and specializes in steel structures. He is also involved in sustainable building systems such as solar hot water, photovoltaics, and fuel cells.
He is most well known for the Eden project in Cornwall and the Waterloo International Terminal in London.

Research By – Teresa L. Michalk
Spring 08 – UT ARE

Eden Project

Cornwall, UK

2001

Waterloo International Terminal

London, England

1993

Sainsbury Center

Norwich, England
1977

Schlumberger Laboratory

Cambridge, UK

1985

Pedestrian Bridge

England, UK

1999

Technical Specialization

Structural Engineering

HANIF KARA

Adams Kara Taylor

Office Locations - London, Croydon, Stevenage
Website - http://www.akt-uk.com/
Firm Population (2008) - 124

History

Created in 1995 by Robin Adams, Hanif Kara, and Albert Taylor, AKT is a design-led structural and civil engineering consultancy based in London. AKT was recently acquired by White Young Green, an international multi-disciplinary consultancy, with over 30 offices worldwide. AKT's rapid growth and need for a large management structure led to the takeover by WYG, but AKT retains its name. The firm has been involved with many high profile, award-winning projects throughout the United Kingdom and Europe and primarily works on commercial projects, though they have been involved in projects in all major sectors.

Hanif Kara, the principal engineer, is well for his innovative work. Before co-founding AKT, Kara worked at Allot & Lomax, Anthony Hunt Associates, and briefly owned a dry cleaning chain in London. As AKT's lead partner, Kara has worked with many well-known architects, including Zaha Hadid, Will Alsop, and Foreign Office Architects.

Kara has been involved in many award-winning projects, such as the has the Peckham Library, which received the Stirling Prize; the National Trust Headquarters, which won 17 design awards; and the RIBA European Award for the Phaeno Centre. Kara has also lectured at several well-respected architecture schools, serves as an examiner for the Institution of Structural Engineers, and is a member of the Design Review Panel at the CABE. In 2004, he was made an Honorary Fellow of the Royal Institute of British Architects, and is an appointed member of the Design for London Advisory Group to the Mayor. AKT will design the main footbridge for the 2012 Olympics in London, and Kara will continue to be involved with innovative, award-winning structures.

Research By – Lauren Alexander
Spring 08 – UT ARE

Asticus Building

London, England
2007

National Trust Headquarters

Swindon, England
2005

Phaeno Science Centre

Wolfsburg, Germany
2005

London School of Economics

London, England
2000

Peckham Library

London, England
1999

Technical Specialization

Main Division

Structural engineering
Building services/MEP
Site Infrastructure
Specialist consulting
Planning and urban design
Transport
Infrastructure development
Water
Bridges and civil structures
Planning and policy advice
Master planning and design
Environmental impact
Environmental management

Other Specializations

Lightweight and long span
Sustainable Design
Fire Engineering
Ground Engineering
People Movement
Façade Engineering
Lighting Design
Acoustic consultancy
Security consultancy
Communications
Light rail
River engineering
Pedestrian comfort
Geo-environmental engineering
Moveable bridges
Tunnel, viaducts and underpasses

WILLIAM IAN LIDDELL

Buro Happold

Office Locations – Bath, Belfast, Berlin, Birmingham, Dubai, Dublin, Edinburgh, Glasglow, Leeds, Los Angeles, London, Manchester, New York, Riyadh, Warsaw
Website – www.burohappold.com
Firm Population (2008) - 1700

History

Ian Liddell studied mechanical sciences at Cambridge. After receiving his degree he joined Ove Arup to work on the Sydney Opera house and South Bank Arts Centre. Two years into his professional career he went back to school at the Imperial College in London to pursue a post graduate degree in pre-stressed concrete and shell structures. He then explored the industrial design business but quickly returned to Arup to work on several of their projects. While working on these projects Liddell developed a close friendship with Ted Happold and when Happold decided to leave Arup to start his own firm in 1976, Ian and several other engineers went with him.

Liddell is best known for his work in lightweight and tensile fabric structures. He has won numerous awards for his work on structures like the millennium dome: a structure that spans nearly 80,000 square meters. He has also been influential in the development of software that aids engineers in the analysis of lightweight tensile fabric structures.

Liddell currently acts as a specialist consultant for Buro Happold and has recently been appointed Royal Academy of Engineering visiting professor for Cambridge University.

Research By – Nicholas Foran
Spring 08 – UT ARE

Millennium Dome

Greenwich, England, 2000

Millennium Tower

Glasgow, Scotland, 2001

Chelsea and Westminster Hospital Atrium

London, England, 1993

The Globe Theatre

London, England, 1997

Technical Specialization

Structural Engineering
Façade Engineering
Specialist Glass Eng.
Sustainability Services

TIM MACFARLANE

Dewhurst Macfarlane and Partners

Office Locations – London (Main)
Website - www.dewmac.com
Firm Population (2008) - 63

History

Tim Macfarlane is a part of an international structural engineering firm that specializes in the use of specialist glass elements to enhance the aesthetics and economic values of a building.

In 1985, Tim Macfarlane and Laurence Dewhurst founded the firm Dewhurst Macfarlane and Partners in London. The firm now extends its expertise to cities such as New York, Trinidad, Los Angeles, and to even the far reaches of Hong Kong.

Tim Macfarlane is famous for his various projects with massive roof spans, advanced cable structures, and outer skin design of buildings such as the Seattle Public Library in Washington state.

Although he is most known for its innovations in façade engineering of glass. He is also an Honorary Fellow of the Royal Institute of British Architects and is now a Visiting professor at Yale University.

Dewhurst Macfarlane and Partners produces many types of buildings from different sectors ranging from residential, civic community structures to museums and sustainable commercial buildings such as the various glass structure apple computer buildings around the world.

Lastly, Tim Macfarlane has worked with many famous and distinguished firms and people such as Jorg Schlaich of a structural engineering firm in Germany name Bergermann and Partners. The most notable and symbolic structure from this collaboration was the creation of the Munich Olympic Stadium in Germany.

Research By – Durand Cheung
Spring 08 – UT AR

Glass Enclosure to Quadrangle

Middlesex University
Hendon Harrow, UK 2005

Alpine House

Kew Gardens, London, UK
2004

David L. Lawrence Convention Center

Pittsburg, Pennsylvania,
USA, 2003

Apple Computers Flagship Store

Los Angeles, USA 2004

Seattle Public Library

Seattle Washington, USA
2004

Technical Specialization

Building Engineering
Civil Engineering
Structural Engineering
Landscape Architecture
Sustainable-Masterplanning
Building Simulation
Carbon Management
Research & Development

CHRISTOPHER MCCARTHY

Battle McCarthy

Office Location - London
Website - http://www.battlemccarthy.com
Firm Population (2008) - 50

History

Guy Battle and Christopher McCarthy founded Battle McCarthy Consulting Engineers & Landscape Architects as a partnership in 1993. In May 2000, with the addition of Patrick D'Cruz as Director, the company became Battle McCarthy Limited.

Christopher McCarthy has established a reputation for innovation, particularly in creating green projects that reduce operating costs and conserve energy. The increase in environmental awareness over the recent years has kept his firm in high demand and made him very successful.

McCarthy's firm has continued to be creative and successful, improving vastly on previous technologies, due to the integration of the design process between architects and engineers. Through the combined skills of civil, structural and MEP Engineers, environmental analysts, landscape architects, environmental planners, aeronautical engineers and artists, he continues to deliver inventive and environmentally beneficial solutions to building design.

Research By – Jeff Hull
Spring 08 – UT ARE

Endesa Headquarters

Madrid, Spain 2004

Bluewater Shopping Mall

Kent, England

Los Angeles Courthouse

Los Angeles, USA 2005

New York Jets Football Stadium

Manhattan, USA

University of Nottingham, Jubilee Campus

Nottingham, England 1999

Technical Specialization

Structural Engineering
Architecture
Large-span structures
Façade Engineering
Spanning structures
Glass engineering
Comfort-Energy str.
Light structures
Building structures
Complex geometries
Structures of objects

PETER RICE

Rice Francis Richie

Office Locations –France, Germany, U. A. E., and China
Website - http://www.rfr.fr/
Firm Population (2008) – over 100

History

RFR was created in 1982 by the Irish engineer, Peter Rice. It was based in Paris, France but soon expanded to offices in Germany, United Arab Emirates and China. RFR generates complex structures that merge innovative technical solutions to engineering problems as well as provide an elegant architectural design.

Peter Rice started his career with Ove Arup and Partners in 1956 by participating in the creation of Jorn Utzon's shells for the Sydney Opera House in Australia. Afterwards Rice worked with Frei Otto, a principal client of Arup's, on projects involving tension structures. In 1971, Rice went on to collaborate with Richard Rogers and Renzo Piano to win the competition held by the French government to design the Centre Pompidou in Paris. For the following years, Rice would continue to team up with internationally recognized architects such I.M. Pei, Norman Foster, Ian Richie, Richard Rogers, Renzo Piano, Paul Andreu and Kenzo Tange to create numerous and diverse structures.

Rice decided to establish his own practice in Paris with Martin Francis and Ian Ritchie while still while continuing to work for Arup for a while. In 1992 he became the second engineer to receive the RIBA Gold Medal for Architecture. Shortly after, Rice died from a brain tumor at the age of fifty-seven.

Rice Francis Richie continues to pave the way in technical expertise and the architectural originality of structures. Now headed by Kieran Rice, RFR is composed of experts from all over the world in the fields of engineering and architecture.

Research By - Paola Ramirez-Santarriaga
Spring 08 - UT ARE

Japan Bridge

La Défense , France 1994

Grande Arche

La Défense, France

Bioclimatic Greenhouses

La Villete in Paris, France
1981

Lloyds of London

London, England, 1984

Notre Dame de la Treille

Lille, France, 1999

Technical Specialization

Structural Engineering

NEIL THOMAS

Atelier One

Office Locations – London, Brighton
Website - http://www.atelierone.com
Firm Population (2008) - ~20

History

Neil Thomas founded Atelier One in 1989 after leaving the engineering firm of Buro Happold. The London based firm, which has been described as “the most innovative engineering practice in the UK” works closely with Atelier Ten, an environmental engineering firm.

Atelier One is known for simple structural solutions that are designed with input from other designers and engineers working on a project. They often work on projects that involve renovation of existing structures; for example, they turned an old flourmill into a multipurpose arts center, and have placed penthouse levels on existing buildings.

The firm has worked on diverse projects ranging from art galleries and performance halls to residences, bridges, sculpture, as well as stage sets for U2, Metallica, the Rolling Stones and the 2006 Winter Olympics Opening Ceremony. Neil Thomas’ philosophy on his projects is as follows: “Engineering is part of architecture, on these projects it is not taking over an architect’s role but it is also not a bolt on design, it is part of it.”

Several projects that Atelier One has worked on have received awards. Some of these include the Turner Prize for ‘House’ in 1993, the Cultural Center in Melbourne Australia won both the Australian Architects Prize and the Australian Engineering Excellence Award in 2003. A water sculpture that is positioned in a traffic circle won the Edward Marshall Trust Annual prize for public art in 2003, and that same year, the Singapore Art Centre earned the Singapore Architecture Award. In addition to these awards and honors, Mr. Thomas is a visiting professor of the Royal College of Art, and has co-authored and co-edited several books.

Research By – Dan Hemme
Spring 08 – UT ARE

Singapore Arts Centre

Singapore
2003

Federation Square

Melbourne, Australia
2002

Cloud Gate

Chicago, Illinois, USA
2003

White Cube at Mason’s Yard

London, England
2006

Cardiff Bay Visitors Center

South Glamorgan, England
1990

Technical Specialization

Structural Engineering

JANE WERNICK

Jane Wernick and Associate

Office Locations - London
Website - http://www.wernick.eu.com/
Firm Population (2008) - less than 100

History

Jane Wernick and Associates was founded in London in the fall of 1998. Today, the practice covers may types of consultations from furniture and sculptures to bridges, museums, and libraries. The goal of the firm is to be involved in the integrated design process by looking at structural engineering as part of the total design. The practice specializes in structures that play an important part in the overall architecture of the building. The firm is relatively small but by managing their growth and turning down projects that would require a rise in staff numbers, they are able to considerately employ highly qualified and experienced members. The practice does actively recruit engineering undergraduates for internships and they offer work-shadowing for school aged students.

Jane Wernick started the firm after many years of experience in both Europe and the USA. She worked for Ove Arup and Partners from 1976-1979 and 1982-1988. She then worked for Birdair Structures, Inc. from 1980-1981. She was Principal in Charge of Arup's Los Angeles office from 1986-88 and was an Associate Director of Arup in London from 1989-1998 where her most notable project was the Millennium Wheel. Jane specializes in working with irregular and complex geometries and lightweight structures. She has worked with architects such as Norman Foster, Renzo Piano, and Zaha Hadid and she and her buildings have received many awards over the years such as The Construction Outstanding Achiever Award in 2007. Her work is concentrated mostly in the UK and some of her more recent projects include the Singing Ringing Tree sculpture, Maggie's Centre for cancer support in Fife, renovation of The Young Vic theater, and the Ordrupgaard art museum.

Research By – Audrey Westfall
Spring 08 – UT ARE

Millennium Wheel

London, England, UK
1999

Singing Ringing Tree

Burnley, England, UK
2006

Maggie's Centre

Fife, Scotland, UK
2006

The Young Vic

London, England, UK
2006

Ordrupgaard

Charlottenlund, Denmark
2004

Technical Specialization

Structural Engineering
Building Services
Fire Engineering
Façade Engineering
Bridge Design
Geotechnical
Transportation Planning
Environmental Consultant
Sustainability Services

MARK WHITBY

Ramboll Whitbybird

Office Locations – 116 Noradic and UK offices
Website - http://www.whitbybird.com/whitbybird.asp
Firm Population (2008) – 6,500

History

Mark Whitby was born in 1950. He attended London University and graduated in 1972. He worked as a designer and site engineer before founding Whitby, Bird and Partners in 1983, where he is currently still directing the practice with the title of chairman. In between 1983 and today Mark Whitby has done some phenomenal things. Engineering Timelines is his brain child which is an organization to celebrate the heritage of British engineering. He was also director of the Institution of Structural Engineer's Education Trust. One of his passions has become alternative energy and sustainability, so much that he has given £50,000 to the Royal Academy of Engineers to see what the actual carbon footprint of nuclear power is. He is trying to make his life as self sufficient as possible by living in a small house in Hertfordshire with his wife and 5 children. One of Whitby's biggest accomplishments was being the president of the Institution of Civil Engineers (2001-2002). In July of 2007 his company has merged with Ramboll group where he is closely involved with clients and architects. He works on projects at the concept stage and at stage reviews, focusing on the total design and establishing design criteria and quality objectives. Interestingly he was a member of the British canoeing team at the 1968 Mexico Olympics.

Research By – Cameron Schmeits
Spring 08 – UT ARE

27-300 Finsbury Square

27-30 Finsbury Square, London EC2,2001

BBC W1 project

Langham Place, London W1,

Millennium Bridge, York

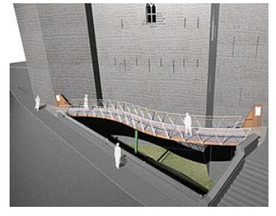
River Ouse, Rowntree Park, York, 2000

Stonehenge Experiment

field in Wiltshire, 1995

Pedestrian bridge for Caernarfon Castle

Wales, Easter 2008



Technical Specialization

Structural Engineering
Civil Engineering
Environment Infrastructure
Sustainable Design
Transportation
Inspection Services
Commercial
Public
Cultural
Residential Development
Experimental
Education
Television

CHRIS WISE

Expedition Engineering

Office Locations – London, England
Website - http://www.expedition-engineering.com
Firm Population (2008) – 40

History

Chris Wise, a structural engineer formerly of Arup, co-founded Expedition Engineering in 1999 with Sean Walsh. Wise's high profile stems from his work in the most technically challenging, financially delicate, and innovatively built projects. His significant projects, in collaboration with prominent architects Rogers, Foster, Hopkins, and Renzo Piano, have achieved new levels of environmental, architectural and structural integration and performance.

While working as Arup's youngest associate, Wise first became internationally renowned for the "wobble" in Millennium Bridge over the Thames. His track record includes work on Frankfurt's Commerzbank, the world's first "green" high-rise, and the award-winning American Air Museum in Duxford.

Wise became Imperial College's first Professor of Creative Design from 1998-2005, where he was the engineer behind the Constructionarium, a new experience-based learning tool for engineering students now on the curriculum of 8 universities in England. He became Royal Designer for the Industry in 1998, and became the 6th engineer to receive the honor of "Master" of the Royal Designers.

In 1999, he left Arup for his new firm, Expedition Engineering, where he and his team are currently responsible for artistically demanding and cutting-edge projects ranging up to £350 million. Wise is
now the senior partner of Expedition Engineering, associated with Sean Walsh (SE) and EdMcCann (CE).

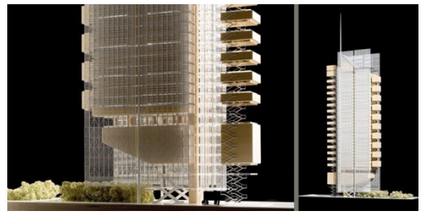
Research By – Kimberly Nguyen
Spring 08 – UT ARE

Millennium Bridge

London, England
2002

Torre Sanpaolo

Turin, Italy
2011



East Reef

Suffolk, England
1997

American Air Museum

Duxford, England
1997

Halley Vi Ice Station

Antarctica, Antarctica
2006

Technical Specialization

Structural Engineering

JACK ZUNZ

Arup

Office Locations – Headquarters in London with 86 worldwide offices
Website - http://www.arup.com/
Firm Population (2008) - 9000

History

ARUP began in 1946 when Ove Arup established offices in London and Dublin. Jack Zunz helped the growth of the company by setting up an office in Johannesburg, South Africa in the mid 1950's. Partnering with Michael Lewis, Zunz trained students who founded the South African Institute of Structural Engineering. In 1961, after the Sharpeville massacre occurred, Zunz moved back to the UK and helped a flourishing Arup engineering firm in the Sydney Opera House Project as the lead structural engineer. Senior partner Jack Zunz was very focused on the importance of education throughout his career, as well as in his employee's careers. Eventually in 1977 Zunz pushed the company to change the ownership from a firm to a trust and became chairman of the newly organized Arup.

Many famous projects such as the Sydney Opera House, Millennium Bridge, and BP Headquarters shown at the right displayed Zunz's technological advances and structural feats. Under the leadership of Zunz, Arup also worked on many other famous projects such as the Centre Pompidou and Coventry Cathedral. Throughout Arup's history they have become famous for building airports, conference and exhibition centers, healthcare, museums, galleries, performing arts, business, and retail facilities. Today Arup, thanks to Zunz's leadership is still flourishing firm in virtually every technical specialization.

Research By – Tyler Humes
Spring 08 – UT ARE

Sydney Opera House

Sydney, Australia

Centre Pompidou

Paris, France, 1971

Millennium Bridge

London, England, 2000

BP Headquarters

London, England

Coventry Cathedral

Coventry, England, 1966

EUROPE

Technical Specialization

Structural Engineering
Bridge Engineering
Tower Engineering
Seismic Engineering

KLAUS BOLLINGER

Bollinger + Grohmann

Office Locations – Paris, France, Vienna, Austria, Frankfurt, Germany
Website - http://www.bollinger-grohmann.de/

History

From 1972-1979, Klaus Bollinger studied civil engineering at the Technical University of Darmstadt. In 1983, with Manfred Grohmann, he founded the engineering firm, Bollinger + Grohmann in Frankfurt am Main. In 2003, the firm established a second office in Vienna, Austria, and in 2006, the most recent office in Paris, France. Beyond practices in the technical field of engineering, Bollinger has also served as a professor of structures at the University of Applied Arts in Vienna, Institute of Architecture, since 1994, and Dean of the School of Architecture from 1999-2003.

Bollinger is widely acclaimed for the way in which he collaborates with architects from the very beginning of the planning process, contrary to a separation of the structural and creative design, hindering the first to begin before the latter is complete. In fact, Bollinger considers himself, the structural engineer, a creative design partner to the architect. Bollinger co-authored a book, 'Workflow: Struktur-Archtecktur,' outlining his opinion of the significance of early cooperation. He does not have a representative architectural philosophy, or distinctive style. Rather, Bollinger assumes the approach of the architect, refining it where necessary, while striving for quality and innovative solutions to complex structures.

Due to this accommodating nature, Bollinger has partnered with a wide scope of architects and has been a large contributor in a variety of building styles. Bollinger and Grohmann have worked on projects with architects, such as Frank Gehry, Hans Hollein, Toyo Ito, Kauffmann Theilig & Partner, KSP, Albert Speer, Coop Himmelblau and Claude Vasconi. Bollinger has worked on residential, office, and commercial buildings, social structures, exhibitions and event buildings, as well as bridges, roofs and towers.

Research By – Stephanie German
Spring 08 – UT ARE

Infobox

Berlin, Germany 1995

North Jutland House of Music

Aalborg, Denmark
2004

Oval at Baseler Platz

Frankfurt, Germany
2004

Akron Art Museum

Akron, Ohio 2006

Musée des Confluences

Lyon, France 2007

Technical Specialization

Architecture
Structural Engineering

JURG CONZETT
Conzett, Brozini, Garmant AG

Office Locations - Switzerland
Website - http://www.cbg-ing.ch/
Firm Population (2008) - 19

History

Jurg Conzett is the oldest and best-known partner of engineering firm Conzett, Brozini, Gartman (CBG) founded in Chur, Switzerland. Along with Giafranco Brozini and Patrick Garman, the partnership has existed for 15 years. The firm is known for its work on bridges as well as large buildings. One of their most famous projects is the Traversiner Footbridge in Viamala. Conzett has contributed in the role of redefining structural engineering and architecture. He has worked with many of Switzerland's leading architects, such as Peter Zumthor and Meili and Peter. Conzett obtained a civil engineering degree from Laussane; he worked with architect Peter Zumthor, and went on to become an independent consultant. Conzett has been awarded honorary membership to the Institute of Architects and of the Royal British Institute of Architects (RIBA).

Research By – Carlos Serrano
Spring 08 – UT ARE

Neubau Centermall

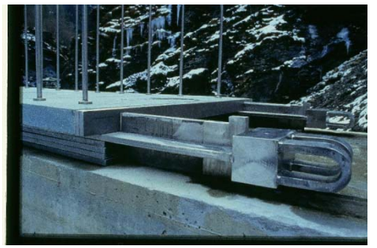
Spreitenbach, Switzerland
2008

Traversina Bridge

Graubunden, Switzerland,
2005

Punt da Suransus

Viamala, Switzerland,
1999



Transversiner Bridge

Viamala, Switzerland,
1996

Technical Specialization

Bridge Engineering
Seismic Engineering
Structural Engineering
Tower Engineering

MANFRED GROHMANN

Bollinger + Grohmann

Office Locations – Paris, France; Vienna, Austria; Frankfurt, Germany
Website - http://www.bollinger-grohmann.de/
Firm Population (2008) - 60

History

Manfred Grohmann studied Civil Engineering at Technische Hochschule Darmstadt. Grohmann cofounded the firm Bollinger + Grohmann with Klaus Bollinger in 1983. Grohmann and Bollinger are now both acclaimed structural engineers and have given numerous lectures at conventions and written several articles on the science of engineering and architecture. Despite cofounding a successful engineering frim, Grohmann has not left academics; he currently is a professor of structural engineering at Universität Gesamthochschule Kassel and is a guest professor at École d´Architecture, Paris and Städelschule Frankfurt/Main.

After a successful twenty years the partners founded a second office in Vienna in the beginning of 2003 and established a third in Paris in 2006. The firm's original and main office still exists in Frankfurt where the focus remains on structural engineering.

Bollinger + Grohmann projects include residential buildings, office and commercial buildings, public buildings, exhibition and event structures,as well as the classical structural engineering for bridges, roofs and towers.

The founders Manfred Grohmann and Klaus Bollinger still operate the firm to this day. Bollinger + Grohmann are recognized by architects as the structural engineer of choice for their premiere projects.

Research By – Matthew Homer
Spring 08 – UT ARE

UFA Palace
Dresden, Germany, 2008

Banking Center Dexia Bil
Luxemburg, 2006

Kunsthaus
Graz, Austria, 2003

Subway Station Frankfurt-Heddernheim
Frankfurt, Germany, 2003

New Fair Karlsruhe
Karlsruhe, Germany, 2003

Technical Specialization

Structural Engineering
Concrete Structures
Pre-stressed Concrete
Engineering Education

PIERRE LARDY

History

Pierre Lardy (1903-1958) grew up in Bern, Switzerland. After completing secondary school, he decided to pursue a degree in mathematics, at the *Eidgenössische Technische Hochschule* (*Swiss Federal Institute of Technology)* in Zurich. Lardy graduated from the ETH in 1928 and taught high school mathematics before returning to the ETH to study for an advanced degree in mathematics, during which he became interested in structures. Lardy decided to pursue a degree in structural engineering, which he received in 1936 with unusually high grades.

After graduation he opened a consulting practice, however, World War II disrupted his practice. In 1942, he accepted a position as an assistant to Professor Max Ritter, Professor of concrete structures at the ETH. Ritter began to study the most revolutionary idea in structures at that time: Pre-stressed concrete. In 1938, the Swiss Society of Engineers and Architects had formed a special committee to study pre-stressed concrete, and in 1942, Lardy became secretary and a researcher for this committee. Lardy quickly mastered the concept of pre-stressed concrete and began to put the principles of pre-stressing in writing for Swiss engineers in 1943 and 1944. As a result, Lardy was at the forefront of promoting pre-stressed concrete to the European engineers in the immediate postwar era.

Following Ritter's death, Lardy was named as his successor and began teaching concrete structures courses, some traditional, but some were new topics he introduced such as pre-stressed concrete. Among Lardy's students were Heinz Isler and Christian Menn.

Lardy helped set up a lab at the ETH, which performed experimental studies of the interaction of plates and beams for bridge decks and also model tests for studies of dams especially related to plans for the Grande Dixence Dam (Lardy had been asked to study the static behavior of this immense project high in the Alps above the Rhone Valley), which was at the time of its completion the world's highest concrete dam (285 meters compared to 221 meters for the Hoover Dam).

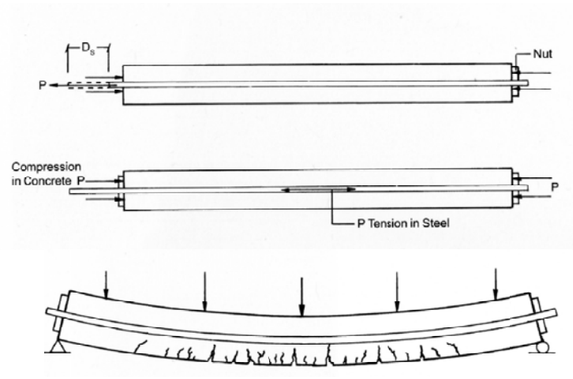
Lardy's Legacy also includes the Swiss code for concrete structures and the role he took in directing the International Association for Bridge and Structural Engineering. The code provided a bridge between academics and designers, as it satisfied both groups. His position as general secretary of the Swiss-founded IABSE which required him to act as a diplomat for structural engineering, during the restoration of international relations in Europe following World War II.

Research By – Yoav Wolfson
Spring 08 – UT ARE

Grand Dixence Dam

Valais, Switzerland,1965

Prestressed Concrete



Technical Specialization

Structural Engineering
Long Span Concrete Arch Bridges
Long Span Cable Stayed Bridges with Central Spindle Towers
Consulting Engineering

CHRISTIAN MENN

Office Location - Switzerland
Website - www.christian-menn.ch

History

Christian Menn headed a structural engineering firm in Chur, Switzerland from 1957 – 1971. Menn closed his office when he became a professor of structural engineering at the Swiss Federal Institute of Technology, which is also where Menn received his degree in engineering. He was influenced by his mentor Pierre Lardy, who was one of the innovators of pre-stressed concrete. Menn further developed pre-stressed concrete, which he used in the design of bridges, the emphasis of his structural engineering firm. Christian Menn currently works as a consulting engineer.

Some of Christian Menn's awards include:
2007: Bridge Design Award 2007, New York City Bridge Conference
2003: ACEC (American Council of Engineering Companies), Grand Award for excellence in engineering and architectural concept
1996: Honorary Doctor, The University of Struttgart
1989: Honorary Member, Swiss Society of Engineers and Architects
1982: Fritz Schumacher Prize for outstanding bridge design, Germany

Research By – Kelley Eads
Spring 08 – UT ARE 320L

Sunniberg Bridge
Klosters, GR, 1999

Ganter Bridge
Brig, Switzerland, 1980

Letziwald Bridge
Avers Cresta, Switzerland, 1960

Leonard P. Zakim Bunker Hill Bridge
Boston, Massachusetts, 2002

Grimselsee Bridge
Grimselsee, Switzerland, 2005

Technical Specialization

Structural Engineering
Consulting
Architecture

MARC MIMRAM

Marc Mimram Architect Engineer

Office Locations - Paris
Website - http://www.mimram.com/en/site.htm
Firm Population (2008) - 29

History

Marc Mimram is a DPLG (French Government Licensed) architect who was born in 1955 in Paris, France. His degrees include a Bachelor's in Engineering from Ecole Nationale des Ponts et Chausées, a Master's in Mathematics, a Master's in Civil Engineering from Berkeley, and a post-graduate degree in Philosophy.

He has taught at institutions such as Ecole Nationale des Ponts et Chausées, Ecole Polytechnique Fédérale de Lausanne, and at Princeton University. He currently teaches at the Ecole d'Architecture de Marne-la-Vallée.

Marc Mimram began his own Architectural Engineering/Consulting firm in 1981 in Paris, France. As an Architectural Engineering Firm, this company is known for combining the knowledge of architects, engineers, and economists into a team to work on a project. This firm has a wide repertoire of project experience. Such projects include bridges, sport facilities, theatres, museums, convention halls, residential buildings, offices, and train stations.

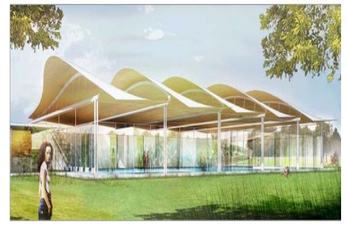
Research By – Marco X. Méndez
Spring 08 – UT ARE

Fenghua Bridge

Tianjin, China
2007

Indoor Water Sports Complex

Saint-Brevin-Les-Pins, France
2007



Carreau Des Halles

Paris, France
2007

Solferino Foot Bridge

Paris, France
1999

Toll Barrier, Les Eprunes

As Motorway (Toyes/Dijon), France
1994

Technical Specialization

Structural Engineering
Architect
Roof Engineering
Tensile Fabric Structures
Convertible Roofs
Umbrella Structures
Pneumatic Structures

FREI OTTO

Atelier Frei Otto Warmbronn

Office Location - Germany
Website – www.freiotto.com (in German)

History

Born in 1925, Frei Paul Otto is a German architect, architectural theorist, and engineer. He is most well known for his lightweight tensile and pneumatic structures and has pioneered advances in structural mathematics and civil engineering.

Frei Otto became interested in tent structures after being held in a French POW camp. Otto's desperate need for shelter and a lack of materials forced him to experiment in tent structures. Otto experimented with wire models and soap bubbles to define complex tent-like structures. As the projects increased with difficulty, he used computers to determine their shape and behavior and later founded a "development site for the lightweight" in 1957 and the Institute for Lightweight Structures at the University of Stuttgart in 1964.

In 1969, Otto founded his own company, Atelier Frei Otto Warmbronn; however, seeing himself as an innovator of ideas and catalyst for projects, Otto cannot fully take credit for most buildings that he has worked on. Instead, Otto acts mostly as a consultant on lightweight structures allowing him to partner with companies like, Jorg Schlaich, Werner Sobek, and Ove Arup.

Throughout his years, Otto has published many books on his knowledge of lightweight and tensile structures and his knowledge in these areas has won him many awards. Otto is an honorary member of the American Institute of Architects (AIA) and Royal British Institute of Architects (RIBA).

Research By – Cynthia Hua
Spring 08 – UT ARE

Munich Olympic Stadium

Munich, Germany, 1972

"City in Antartica"

Antartica, 1971

Gymnasium in Jeddah, Saudi Arabia

Jeddah, Saudi Arabia, 1980

Gridshell of the DEUBAU

Essen, Germany, 1962

Japanese Pavilion at the Expo 2000

Hanover, Germany, 2000

Technical Specialization

Structural Engineering
Civil Engineering

JŐRG SCHLAICH

Schlaich Bergermann und Partner

Office Locations – Stuttgart, New York, Berlin
Website - httphttp://www.sbp.de/en/fla/mittig.html
Firm Population (2008) - 78

History

Jörg Schlaich, born in 1934, got his start in building design as a student of architecture and civil engineering at the Technical School (TH) Stuttgart followed by study at Technical University in Berlin, where he met Frei Otto. While following scholarships from various bodies, Schlaich found himself completing a masters program at Case Institute of Technology in Cleveland, as well as an external doctorate back in Stuttgart where he performed research at the Otto-Gaff Institute on large reinforced concrete slabs.

Upon graduating, Schlaich took a position with his professor's consulting group Leonhardt und Andra. Schlaich stayed with this firm for 16 years where he completed work on concrete shell structures, cable-stayed structures, and structural membranes. By the end of his career with Leonhardt and Andra, Schlaich felt too constricted. In the ensuing departure in 1979, he and 18 colleagues left to form Schlaich und Partner, later to become Schlaich Bergermann und Partner.

Schlaich Bergermann und Partner now functions as a civil and structural firm geared toward designing sophisticated engineering structures ranging from wide-span lightweight roofs, bridges, and slender towers to innovative solar energy power plants. SBP focuses on achieving efficient, beautiful, and ecological designs through collaborating with design team architects and engineers to create holistic solutions. SBP does not limit itself to a certain type of building in which to specialize, but rather seeks to "contribute to the building culture" by utilizing diverse structural materials and methods.

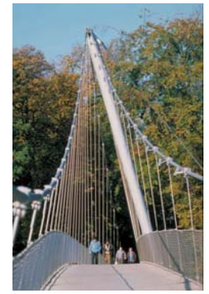
Research By – James Kleineck
Spring 08 – UT ARE

Roof over Buildings of the Olympic Games in Munich

Munich, Germany 1972

Glacis Footbridge

Minden, Germany 1995



Solar Tower

Mildura, Australia 2008

Haj Terminal, King Abdul Aziz International Airport

Jeddah, Saudi Arabia 1981

Heinrich Hertz Tower

Hamberg, Germany 1968

Technical Specialization

Façade Engineering
Mechanical Engineering
Public Health Engineering
Sustainability Services
Acoustics

MATHIAS SCHULER

Transsolar

Office Locations – Stuttgart, Munich, New York
www.transsolar.com
Firm Population (2008) – 32

History

In 1987, Matthias Schuler earned his Masters degree in Mechanical Engineering from The University of Stuttgart. He then worked as a scientific assistant at the Institute of Thermodynamics at the University of Stuttgart developing projects for low energy buildings. In 1992 he founded Transsolar in Stuttgart, Germany and became the technical director. Transsolar focuses on buildings that provide thermal comfort to its occupants with optimal acoustic and air quality while having a low environmental impact and low operating costs. In order to accomplish this, Transsolar utilizes the project's local climate along with local materials to produce structures that maximize the amount of daylight the building receives and engineer systems to incorporate natural ventilation to save on energy costs.

Today Mathias Schuler lectures in the Department of Architecture in both Stuttgart and Harvard Universities. He has also co-authored the book Glass Construction Manual in 1999.

Research By – Matt Sarik
Spring 08 – UT ARE

Nord/LB

Hanover, Germany

2005

Edutainment Center Klimahaus

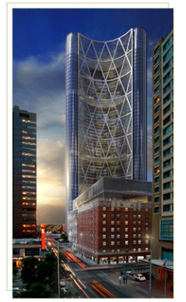
Bremerhaven, Germany

2008

The Bow

Calgary, Alberta

2010



Beijing Linked Hybrid

Peking, China

2008

Suvarnabhumi Airport

Thailand

2006

Technical Specialization

Structural Engineering
Façade Engineering
Green Technologies
Industrial Design
Temporary Design
Specialty Design

WERNER SOBEK

Werner Sobek Engineering and Design

Office Locations - Germany, USA, Russia, and Middle East
Website - http://www.wernersobek.com
Firm Population (2008) - 140

History

Werner Sobek Engineering and Design was started by Prof. Dr. Werner Sobek in 1992 with the Werner Sobek Ingenieure office in Stuttgart, Germany. Throughout the next 16 years, seven additional offices have opened up globally with all offices having an expertise in lightweight structural engineering. Werner Sobek tries to distinguish his works by not focusing on “how did we use to work and live” but on “how shall we work and live in the future.”

He started his professional career by completing his PhD in structural engineering at the University of Stuttgart, Germany in 1987. He then worked as an employee in the office of Schlaich, Bergermann & Partner in Stuttgart, Germany before starting his firm in 1992. He was the Director of the Institute for Structural Design and Building methods from 1991-94 and continues to teach as a professor at the University of Stuttgart in Germany and is a visiting professor at several other universities in Europe and the United States. Since his firm’s inception in 1992, he has received over 30 different awards in areas relating to design and engineering and is featured in over twenty publications.

The managing partners of the Stuttgart office include:
Dipl.-Des. Sven von Boetticher
Prof. Dr.-Ing. Klaus Sedlbauer
Dr.-Ing. Wolfgang Sundermann
Dr.-Ing. Thomas Winterstetter
Prof. Dr.-Ing. Werner Sobek

Research By – Andrew Barnes
Spring 08 – UT ARE

Mercedes-Benz Museum

Stuttgart, Germany
2005

Arcapita Headquarters

Manama, Bahrain
2009

Sony Center

Berlin Germany
2000

Audi Motor Show Stand

Frankfurt, Germany
2000

Technical Specialization

Structural Engineering
Bridge Specialist

MICHEL VIRLOGEUX

Office Locations - France
Website - http://en.structurae.de/persons/data/index.cfm?ID=d000033/

History

Michel Virlogeux is a French structural engineer and bridge specialist born in 1946 in Sarthe, Pays de la Loire. He studied at the Ecole Polytechnique in 1967 and at the Ecole Nationale des Ponts et Chaussees in 1970. From there he moved to Tunisia where he worked on road projects and gained his doctorate degree in structural engineering at the Pierre et Marie Curie University.

After his formal education, he joined SETRA, the technical service of the French highway system. In 1980 he became head of the Large Concrete Bridge Division, and in 1987 of the Large Bridge Division, Steel and Concrete. During twenty years with SETRA he designed more than 100 bridges. In 1995, he left SETRA to work as an independent consulting engineer where he participated in the construction of the 'Second Tagus Crossing' and the Millau Viaduct.

Dr. Virlogeux has received a number of awards for his bridges and contributions to Civil Engineering including the IABSE Prize in 1983, the 'Award of Excellence of the Engineering News Record', and the 'Gold Medal of the Institution of Structural Engineers', the 'Gustav Magnel Medal', and the 'Fritz Leonhardt Prize' In 2003 he received the IABSE Award of Merit in Structural Engineering in recognition of his major contributions leading to very significant progress in the field of civil engineering, in particular through the development of external prestressing, cable-stayed bridges and composite structures. Dr. Virlogeux is a member of the French Academy of Technology and remains a consulting engineer to this day.

Millau Viaduct
Millau, France
2004

Vasco da Gama Bridge
Lisbon, Portugal
1998

Normandy Bridge
Normandy, France
1995

Atrenas Bridge
Marvejols, France
1994

Re Island Bridge
La Pallice, France
1988

NEW YORK / CHICAGO

Technical Specialization

Structural Engineering
Civil Engineering
Mechanical Engineering
Electrical Engineering
Architectural Services
Construction Services

OTHMAR AMMAN

Amman & Whitney

Office Locations - New York City (corporate location), Boston (MA), Philadelphia (PA), Pittsburgh(PA), Washington DC, Richmond (VA)
Website - www.ammann-whitney.com
Firm Population (2008) – approximately 200 (corporate office only)

History

Othmar Ammann is most famous for his design of bridges in the early to mid 1900s. His first recognition came in 1907 in a report he wrote about the collapse of the Quebec Bridge. His knowledge of bridge design engineering became very well known after this report. Most of Ammann's works can be seen in the greater New York City area.

The New York Port Authority appointed him bridge engineer in 1925. In his design of the George Washington Bridge (1931), Ammann was able to complete the project six months ahead of schedule and under budget. The original design had steel structure with stone, but the Great Depression forced Ammann to reduce the cost of the bridge and get rid of the stone.

Other famous bridges he designed or participated in the design of include the Bayonne Bridge (1931) and the Golden Gate Bridge (1937). All of his bridge designs are suspension bridges except for the Bayonne Bridge which was an arch bridge.

In 1946, Ammann founded the engineering firm Ammann & Whitney with Charles Whitney. The firm completed the design of the Verrazano Narrows Bridge in 1964, which had the longest suspended span of 4,260 feet at that time in the world (today it is the eighth longest span). Ammann passed away in 1965, but his firm has continued to grow gaining recognition throughout the world. Even though Ammann focused mainly on bridge design, his firm is widely active in other structural engineering projects.

Research By – Chance Robinson
Spring 08 – UT ARE

Throgs Neck Bridge

New York, NY

1961

George Wahington Bridge

New York, NY

1931

TWA Terminal at JFK

New York, NY

1962

Bayonne Bridge

New York, NY

1931

Verrazano Narrows Bridge

New York, NY

1964

Technical Specialization

Structural Engineering
Civil Engineering

William F Baker

Skidmore, Owings and Merrill

Office Locations – Chicago and London
Website - http://www.som.com/content.cfm/www_william_f_baker

History

William Baker was educated at the University of Illinois, where he received a Master of Science in Civil Engineering in 1980. He received his Bachelor of Science in Civil Engineering at the University of Missouri, in 1975. Mr. Baker joined Skidmore, Owings and Merrill (SOM) in 1981. Since that time, he has worked on a broad range of engineering projects including designing structural systems for skyscrapers, as well as smaller, specialized structures and engineering collaborations with artists. He is widely recognized for his expertise in the fields of tall building design, innovative structural systems, and advanced structural analysis methods.

Mr. Baker is currently the partner in charge of Structural and Civil Engineering for the Chicago and London offices of SOM. His approach to structural engineering seeks to integrate form and aesthetics with function and innovation. Mr. Baker leads the Structural Engineering program to ensure that quality, material economy, and cost efficiency are customized to fit each project's scope and needs.

In addition to his work at SOM, William Baker's expertise has made him a frequent lecturer around the globe, and he is the author of numerous articles on innovation in structural engineering.

Research By – John Bosley
Spring 08 – UT ARE

Berj Dubai

Dubai, United Arab Emirates, 2009

Infinity Tower

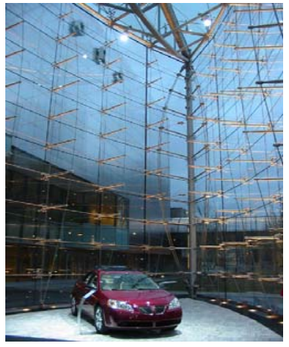
Dubai, United Arab Emirates, 2010

Millennium Park Pedestrian Bridge

Chicago, Illinois, 2004

GM Renaissance Center, North Pavilion

Detroit, Michigan, 2005



Technical Specialization

Heating,Ventilating and Air Conditioning
Electrical Distribution
Plumbing
Fire Protection
Automatic Control
Building and Energy Management
Emergency Power
Uninterruptible Power
Information Technology
Vertical Transportation
Security Systems
Lighting Design
Site Utilities
Master Planning
System Commissioning

RICHARD BAUM

Office Locations – New York City
Website - http://www.jbb.com/index.htm
Firm Population (2008) - 250

History

Richard Baum was a partner of the prestigious engineering firm Jaros, Baum & Bolles. Founded in 1915, Jaros, Baum & Bolles is a mechanical and electrical engineering consulting firm with over 11,000 projects all around the globe. They specialize in a wide variety of architecture, ranging from institutional hospitals to commercial high-rise office buildings. The firm is famous for projects such as the Bank of China in Hong Kong, the former World Trade Center in New York City, Sears Tower in Chicago, and the Messeturm Center in Frankfurt.

Richard Baum received his masters degree from Columbia University. Over the course of his career, he was involved in many prestigious organizations, including the National Academy of Engineering in 1983, the Fellow of the American Consulting Engineers Council, the American Society of Mechanical Engineers, Air-Conditioning Engineers, and the American Society of Heating Refrigeration. Richard Baum passed away in 2005.

Research By – Travis Riggs
Spring 08 – UT ARE

Lever House
New York, NY 1952

Seagram Building
New York, NY 1957

Sears Tower
Chicago, Illinois 1973

World Trade Center
New York, NY 1973

Pan Am Building
New York, NY 1963

Technical Specialization

Structural Engineering Design Consultation
Feasibility & Schematic Studies
Pre-Engineered, Pre-Fabricated Systems
Tensioned Membrane Structures
Long Span, Light Weight Structures
Concrete Structures
Steel Structures
Timber Structures
Special Foundations
Forensics Engineering

HORST BERGER

De Nardis Engineering, LLC

Office Locations – New York, U.S. A.
Website - http://www.denardis.com/index.html

History

Horst Berger, the principal consultant of De Nardis Engineering, LLC is a structural engineer and designer who has been named as one of the top three structural engineers in the past 125 years by Engineering News Record. He gained international recognitions for his developments in incorporating lightweight fabric structures into permanent architectural designs. During the last twenty years, more than 40 projects have been built using his architectural technology in fabric engineering including the United Terminal at the Denver International Airport. Mr. Berger was listed as one of the “The modern world's structural engineers who have contributed substantially to architecture” by Architectural Record.

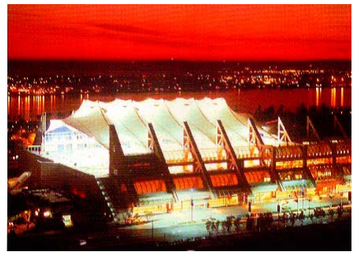
In 1968, Mr. Berger along with David Geiger formed Geiger Berger Assoc. and designed some of the most advanced projects of the period. In 1983, Mr. Berger formed Horst Berger Partners, and the team continued to work on developing numerous lightweight dome structures including retractable systems. Mr. Berger joined De Nardis Associates' Light Structures Division in 1994, which is now a unit of De Nardis Engineering, LLC. This reunited Mr. Berger with Joseph A. DeNardis, and other firm personnel, who started their careers at Geiger Berger Associates. Today, with its more than 45 years of experience, De Nardis Engineering is famous for originating designs that are innovative, economical, and technically refined.

De Nardis Engineering has experiences in diverse types of projects including residential and commercial buildings, educational and institutional facilities, stadiums, convention centers, skyscrapers, airport facilities and theatres. Some of their famous works are The San Diego Convention Center, The Mitchell Center, The New York Museum of Modern Art at Queens, Palm Spring Regional Airport Terminal, and Jay Street Tower.

Research By – Azrin Amin
Spring 08 – UT ARE

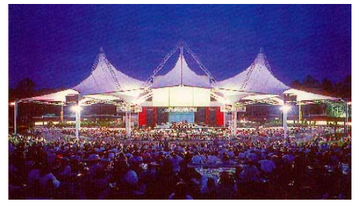
San Diego Convention House

San Diego, California, 1990



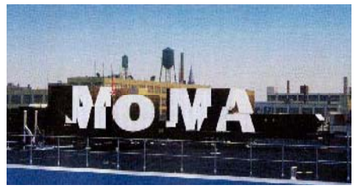
The Mitchell Center

Woodlands, Texas,1991



New York Museum of Modern Arts

Long Island City, New York, 2002



Denver International Airport

Denver, Colorado, 1994

Jay Street Tower

Brooklyn, New York, 2006

Technical Specialization

Structural Engineering
High-rise Building Design
Forensic Engineering
Blast Resistant Design
Sustainable Design
Building Alterations
Construction Inspections

IRWIN CANTOR

WSP Cantor Seinuk

Office Locations – New York, London, Los Angeles
Website - http://www.cantorseinuk.com
Firm Population (2008) – 8,000

History

Irwin Cantor is a renowned structural engineer, having worked on the design and construction of numerous major office buildings and institutional structures around the world. Cantor has founded and acted as principal for various companies, including The Cantor Seinuk Group, Office of Irwin G Cantor, and Hertzberg & Cantor. Cantor is currently President of Irwin G. Cantor PE and serves as commissioner for the New York City Planning Department. Cantor has twice received the Leader of the Industry Award from the New York Building Congress.

Cantor and structural engineer Ysrael A.Seinuk established WSP Cantor Seinuk in 1970, specializing in high-rise building design in severe wind and seismic environments. The company quickly became a top-tier structural engineering firm in New York City and has since worked on over 60% of the city's major buildings. Recent projects include replacing the buildings destroyed on September 11th. The Freedom Tower and the New World Trade Center have been recognized for its safety standards and environmentally friendly design. In 2006, WSP Cantor Seinuk received the Office Award Merit, Diamond Award for Excellence in Engineering and a LEED Gold Rating. This reflects the firm's longstanding ability and devotion to work closely with its clients, and ability to design complex structures around difficult site conditions and constraints.

Research By – Anna Hua
Spring 08 – UT ARE

World Trade Center New 7

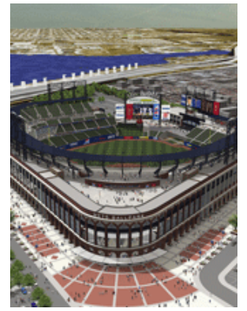
New York, NY
2006

Freedom Tower

New York, NY
2011

New Mets Stadium

New York, NY
2009



Time Warner Center

New York, NY
2003

Technical Specialization

Sustainability Services
Mechanical Engineering
Project Management
LEED Accredited

FIONA COUSINS

Arup-Environment

Office Locations – New York
Website - http://www.arup.com/environment/people.cfm?pageid=1653
Firm Population (2008) - 9000

History

Arup was originally founded by Ove Arup and his cousin in 1946 in London to provide advanced economic solutions for buildings. Over the years, Arup formed a reputation and made a name for themselves in the diverse field of architectural engineering.

Fiona Cousins started working for Arup in her last year of high school in 1985, and she has worked for Arup ever since then. With a background in mechanical engineering and a special interest in low energy use, she developed specialty in sustainability design. Currently she is the principle of Arup Environment branch in the New York office, as well as chair of USGBC of the New York chapter.

Fiona graduated with honors from University of Cambridge in 1989. In 2000, she acquired her Master's degree in Interdisciplinary Design for the Built Environment from the same institute. The following year, 2001, she became an LEED Accredited professional and continued her involvement with USGBC, as well as other green construction organizations.

Over the years, Fiona served on variety of projects around the world. Her first project was the Ligotto Bubble in Turin, Italy. In this all glass conference room, there are three layers of glass with low level air supply and high level return and an automatic umbrella that keeps tables shaded by tracking the worst effects of the sun. Gap in San Bruno was her first project in California and it later turn out to be one of the most famous early green buildings in the US. She also took a project management responsibility on the Seattle Central Library and delivered the LEED silver rate structure with 30% annual energy cost reduction.

Research By – Chendi Yang
Spring 08 – UT ARE

Seattle Central Library

Seattle, USA

Complete in 2004

Earthpark

Pella, Iowa

Complete in 2011

GAP

San Bruno, California

Complete in 1997

Blanton Museum at University of Texas

Austin, Texas

Complete in2006

Lingotto Bubble

Turin, Italy

Complete in 1996

Technical Specialization

Mechanical
Plumbing
Fire Protection
Electrical
Telecommunications/IT
Life Safety/Code
Light Design
Sustainable/Green
Infrastructure
Due Diligence

PETER FLACK

Flack + Kurtz Inc.

Office Locations – U.S.A, England, France
Website - http://www.flackandkurtz.com/index.htm
Firm Population (2008) – 350+

History

Flack + Kurtz Inc. was founded in 1969, by Peter Flack and Norman Kurtz, and has since become one of the industry's premier international engineering firms. The firm provides engineering services in mechanical, electrical, plumbing, fire protection, security, information technology, and architectural lighting design. Flack + Kurtz Inc. has a reputation for innovation and outstanding service which is evident in their expansive portfolio of world renowned buildings.

Starting in the 1970's Flack + Kurtz Inc. began to focus on energy-efficient design and has become an industry trendsetter in sustainable energy and lighting. Today, the firm is active in twenty-three countries with projects reaching as far as Barcelona, London, France, China, and Korea. From the initial building concept, Flack + Kurtz, prefers to work alongside architects to help determine the design and budget of the project.

Peter Flack is a recognized expert in the design of energy-efficient, cost-effective buildings and as the head of the firm has helped turn the company into a leader in the field. In 1951 Flack received a B.S.M.E in mechanical engineering from New York University and has become a licensed professional engineer in several states. His previous work includes the NRDC Headquarters and the World Financial Center in New York, and Disney Corporate Headquarters in California.

Flack + Kurtz Inc. will continue to stay on the leading edge of technology, creating more sustainable and architecturally brilliant buildings. Their expertise in a wide array of engineering services makes the firm an asset to the engineering industry and a leader in innovative design.

Research By – James Plantes
Spring 08 – UT ARE

San Jose International Airport
San Jose, California
2008

IDX Tower
Seattle, Washington
2002

Hearst Tower
New York, New York
2006

Stadium Australia
Sydney, Australia
1999

Solano County Government Center
Solano, CA
2005

Technical Specialization

Mechanical Engineering
Electrical Engineering
Plumbing Engineering
Sustainable Design
Structural Engineering
Facilities Management
Sustainability Services

ROGER FRECHETTE

Skidmore, Owings and Merrill LLP

Office Locations – Chicago, Illinois
Website - http://www.som.com/

History

Roger E. Frechette III is a Professional Engineer and is a LEED-Accredited Professional. He is currently SOM's Director of Mechanical, Electrical and Plumbing Engineering who will lead the sustainable building engineering attempts. He is also working to develop and advance mechanical, electrical and fire protection principles and practices for the firm. Frechette joined SOM after ten years at Boston working with Vanderweil Engineers.

Frechette's educational background consists of a Bachelor of Science in Mechanical Engineering from Southeastern Massachusetts University which he received in 1988. He is a licensed Mechanical Engineer and Professional Engineer in many states across the United States.

Before joining SOM he worked on the Mary Switzer Building which included completely replacing the infrastructure that is currently in place with energy efficient systems

Frechette is currently with SOM and has led an MEP and FP engineering project for the National Wildlife Federation Headquarters in Reston, Va. He also oversaw the design and installation of specialized systems that protect the nation's irreplaceable collection moving images. Roger Frechette worked on the University of North Carolina at Chapel Hill. Another project he is working on is the Dallas City Performance Hall where he is involved in the Programming, architecture, and MEP services for community theatre facility. He is also working on the Architecture, MEP, structural engineering, sustainable design, and landscaping of the Pearl River Tower which will be completed in 2009. In 2004, he received Congressional recognition for his management in the field of sustainable engineering.

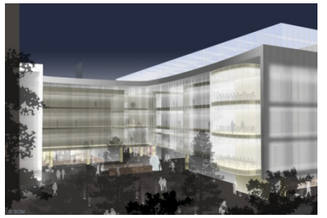
Research By – Victor G. Pulido
Spring 08 – UT ARE

Pearl River Tower

Guangzhou, China
Completion in 2009

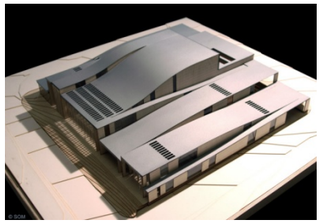
University of North Carolina Genome Science Laboratory

Chapel Hill, North Carolina
Completion in 2010



Dallas City Performance Hall

Dallas, Texas
Completion in 2009



Avery Fisher Hall at Lincoln Center Feasibility Study

Chicago, Illinois

201 Bishopsgate and The Broadgate Tower

London, United Kingdom

Technical Specialization

Philosopher
Designer
Architect
Artist
Engineer
Entrepreneur
Author
Mathematician
Teacher
Poet
Inventor

RICHARD BUCKMINSTER FULLER

Website – www.bfi.org

History

In 1947, Richard Buckminster Fuller contrived the concept of a half sphere that could span large diameters with no vertical support. His concept, which would become better known to the architectural community as the geodesic dome, became a founding platform for future design.

Fuller's vision was founded in the 1927 demise of his first company, the Stockade Building Company. The company's failure breathed life into Fuller's desire to seek efficient and productive design practices that would reap social benefits to all. In 1932, Fuller developed the Dymaxion Company to produce his innovative products. By 1933, Fuller had developed working models of the spherically designed Dymaxion House and the three-wheeled Dymaxion Car. The 3-D representation of these concepts exemplified the foundation of Fuller's philosophy and design.

Since such projects as the Ford Motor office building in Dearborn, Michigan, the Hilton auditorium in Honolulu, Hawaii, and the US Pavilion at Expo in Montreal, Canada, thousands of designs have been constructed utilizing Fuller's principle of the geodesic dome. The geodesic dome can be found in the US with the Climatron Botanical Garden, in Africa as inexpensive dome-shaped homes, and in Antarctica as weather stations.

Although Fuller had not graduated from college, he began his own faculty career in 1948 at various universities where his philosophies and methods were valued at all academic levels. He would go on to receive 53 honorary doctorates, register for 28 patents, write 28 books, receive the World Medal of Architecture in 1968 for his geodesic dome in Montreal, receive a 1969 nomination for the Nobel Peace Prize, and be awarded the Presidential Medal of Freedom in 1982.

Research By – Stephen Nemec
Spring 08 – UT ARE

Dymaxion House

Wichita, Kansas, 1948

Dymaxion Car

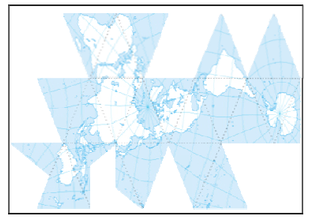
Bridgeport Factory, 1933

US Pavilion at EXPO

Montreal, Canada, 1967

Dymaxion Air-Ocean Map

Buckminster Fuller, 1946



Climatron Botanical Garden

Missouri, St. Louis, 1960

Technical Specialization

Structural Engineering
Mechanical Engineering
Roof System Design
Pier & Dock Design
Floating Structure Design
Wave Attenuator Design
Structural Design
Rehabilitation & Ren
Investigations
Budgeting and Estimating

DAVID GEIGER

Geiger Berger

Office Locations – Suffern, NY
Website - http://www.geigerengineers.com/

History

Geiger Berger, also called Geiger Associates, was founded in 1968 by David Geiger and his partner Horst Berger, in Suffern, New York to create an enclosure for the United States Pavilion during EXPO ’70 in Osaka, Japan. In the task to design an enclosure, David Geiger invented the low profile cable-restrained air-supported roof. The firm continued till 1988 when a new company, Geiger Engineers, was formed.

David Geiger received his bachelor’s, master’s, and doctoral degrees in civil engineering from Drexel University, the University of Wisconsin and Columbia University. Other than his academic accomplishments, Geiger received an award from the American Society of Civil Engineers for innovation, the American Institute of Architecture honored him for his lifetime work, and he was also the former president of the Habitat for Humanity in New York. Geiger contributed to the engineering of long span roof systems as he received over a dozen patents for such systems.

Geiger Berger, due to its experience and knowledge in air-supported roof systems, primarily designed and build domed stadiums and sports facilities. The firm owns a software which allows them to see the patterns in which the fabric must be cut to achieve a desired structure. A few advantages of these structures were the low cost, lightweight roof, and ability to still cover large spans and receive natural light during the day.

Geiger’s invention of the air-supported fabric roof system is used in more than half the domed stadiums in the world; it led to creation of certain structural membrane materials like Teflon coated fiberglass. During a business trip in Seoul, Korea, David Geiger died of cardiac arrest at the age of 54. Since Geiger’s death, Geiger Engineers continues his legacy designing and building using Dr. Geiger’s inventions.

Research By – Sergio Flores
Spring 08 – UT ARE

Riyadh International Stadium

Riyadh, Saudi Arabia, 1985

The Silverdome

Pontiac, Michigan, 1975

Stephen C. O’Connell Center

Gainsville, Florida, 1980

Carrier Dome, Syracuse University

Syracuse, New York, 1980

Haj Terminal

Jeddah, Saudi Arabia, 1982

Technical Specialization

Architecture
Structural Engineering

MYRON GOLDSMITH

History

Myron Goldsmith began his career in architecture after studying under Mies van der Rohe at Chicago's Armour Institute of Technology. He graduated in 1939 and was part of the Army Corps of Engineers from 1944 to 1946, after which he worked for a few years under van der Rohe while pursuing his Master's at the Illinois Institute of Technology. Inspired by the work of Italian architect and engineer Pier Luigi Nervi, Goldsmith received a Fulbright grant to study under him from 1953 to 1955. Upon his return to the United States, Goldsmith joined Skidmore, Owings, and Merrill, working first at the San Francisco office and then transferring to Chicago, where he distinguished himself as a master of both architecture and engineering and was named a partner in 1967.

Goldsmith is most famous for his design of the McMath-Pierce Solar Telescope at the Kitt Peak Observatory in Arizona and for the unrealized design of Ruck-a-Chucky Bridge in Auburn, California. He also collaborated with Fazlur Kahn on the Brunswick Building in Chicago, which utilized the concept of a "tube within a tube" and was at the time the tallest concrete structure in the city. His work integrates ideas of structure and geometry with elegance and delicacy, resulting in architecture that is "simple but not simplistic," of which the Ruck-a-Chucky Bridge is a perfect example.

In addition to his professional career with SOM, Goldsmith also maintained an active academic life, teaching and lecturing at the Illinois Institute of Technology beginning in 1961. During his career he was honored with numerous awards and exhibitions, and in 1972 he was elected to the College of Fellows of the American Institute of Architects.

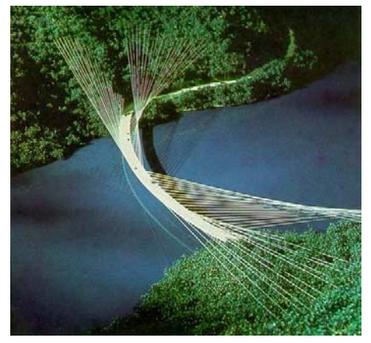
Research By – Forrest Bratton
Spring 08 – UT ARE

Solar Telescope
Kitt Peak, Arizona, 1962

Brunswick Building
Chicago, Illinois, 1965

Republic Newspaper Building
Columbus, Indiana, 1971

Ruck-a-Chucky Bridge Concept
Auburn, California, 1978



Technical Specialization

Building Systems
Electrical Engineering
HVAC
Fire Protection
Environmental Controls
Lighting
Plumbing
Mechanical Engineering
High Performance Design
Sustainability
Master Planning
Power Supply Mgmt.
Project Developing
Project Financing
Strategic Planning
Site Selection
Site Acquisitions
Audio/Visual Design
Communications Systems
Technology Infrastructure
Telecommunication
General Construction
Construction Management
Construction Cost Control
Scheduling
Project Management
Project Risk Management
Value Engineering
On-site Support
Safety Plan Development
Estimating
Inspection and Oversight

JOHN F HENNESSY

Syska Hennessy Group Inc.

Office Locations – New York City, USA
Website - http://www.syska.com
Firm Population (2008) - 600

History

Syska Hennessy Group Inc. began in 1928 with the partnership of two Mechanical Engineers, Adolph G. Syska, and John F Hennessy in New York City. John F Hennessy graduated from MIT and became the company's first Chairman and CEO. Their first nationally recognized building was the U.S. Post Office Building in Washington D.C. Syska Hennessy Inc. designed the Frisk Collection in New York City, which is regarded as the first fully air-conditioned museum. They were also one of the first firms to consider alternative sources of energy in their designs, creating two hotels in Brazil that used solar energy to heat their water supply.
Since its foundation, and with the leadership of John F Hennessy, the firm has been in charge of many high profile projects including: The Lincoln Center for the Performing Arts, the John F. Kennedy Center for the Performing Arts in Washington as well as the renovation to the Pentagon after the 9/11 attacks. John Magliano, an Electrical Engineer who became the CEO and Chief Engineer of Syska Hennessy. He is in charge of the "continual improvement of the technical capabilities of the firm and its people." The firm has now become one of the leading, consulting engineering, technology, and construction firms in the US. It is also one of the oldest engineering firms as well as a powerhouse in construction, with yearly revenue of over 100 million dollars.

Research By – Daniel Vargas
Spring 08 – UT ARE

Nokia Corporate Headquarters

Harrison, New York, 2006

2000 Avenue of the Stars

Century City, California
2007

Aladdin Hotel and Casino

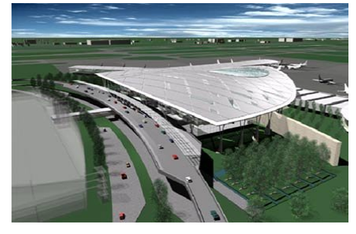
Las Vegas, Nevada, 1998

City of Hope

Duarte, California, 2005

Indianapolis International Airport

Indianapolis, Indiana, 2007



Technical Specialization

Mechanical Engineering
Electrical Engineering
Plumbing Services
Fire Protection
Sustainability Services
Communication
Security Technologies
Information Technologies
Lighting Design

NORMAN KURTZ

Flack & Kurtz Inc.

Office Locations – U.S.A., France, England
Website - http://www.flackandkurtz.com/
Firm Population (2008) – 350

History

Flack and Kurtz Inc. is an international engineering firm that specializes in mechanical and electrical engineering as well as many other consulting services. Founded in 1969 by Norman Kurtz and Peter Flack, Flack & Kurtz Inc. has since become a global leader in engineering consulting.

Norman Kurtz began his career in 1954 when he enrolled in Princeton University's School of Mechanical Engineering. During his time at Princeton, Kurtz was a member of Phi Beta Kappa, the Cannon Club, and the varsity basketball team. After graduating magna cum laude and earning three letter awards in basketball, Kurtz sought a Master's Degree in Mechanical Engineering at Stanford University. In 1969 Norman Kurtz became a founding partner in Flack & Kurtz Inc.

Before he died in 2005, Norman Kurtz served 22 years as an adjunct professor at the School of Architecture at Princeton and provided engineering services for several campus building projects. Kurtz lectured at MIT, Harvard Graduate School of Design, Columbia, and Cornell. He was an ASHRAE fellow and a member of the Council of Tall Buildings.

Flack & Kurtz has been involved in hundreds of projects throughout the years. Most notably, Flack & Kurtz worked on the Kuala Lumpur City Centre, the San Francisco Museum of Modern Art, Safeco Field in Seattle, the World Bank in Washington D.C., and the New York Times headquarters. F&K has won hundreds of awards including many AIA Design and ACEC Engineering Excellence Awards. In 2000, Flack & Kurtz was acquired by the WSP Group of London. Norman Kurtz stayed on as the chairman for the U.S. based subsidiary until he passed away.

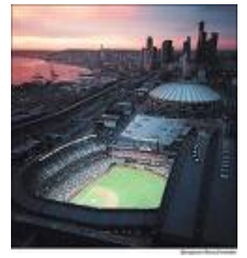
Research By – Dustin Bynum
Spring 08 – UT ARE

Petronas Towers

Kuala Lumpur, Malaysia 1998

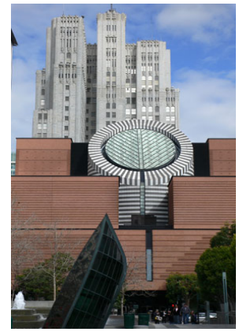
Safeco Field

Seattle Washington, USA 1999



Museum of Modern Art

San Francisco California, USA
1995



New York Times Headquarters

New York City New York, USA
2007

Technical Specialization

Blast Resistant Design
Construction Services
Existing Building
Alterations & Renovation
Feasibility Analysis
Forensic Engineering and
Structural Investigations
High Rise Building Design
Peer Review and Value
Engineering
Seismic Design
Special Structures
Structural Design
Structural Investigations
Tenant Work

SILVIAN MARCUS

WSP Cantor Seinuk

Office Locations - London (headquarters), permanent offices in 30 countries including: America, Europe, Africa, the Middle East, Asia, Australia
Firm Population (2008) – over 8,000

History

Cantor Seinuk was acquired by WSP Group in 2000. WSP provides management and consulting services to the built and natural environment. WSP was established in 1969 and has grown into one of the largest international consultancy groups in the world.

Cantor Seinuk WSP has a diverse profile in the design of major high rise office buildings, multi-family housing, hotel, retail, educational, sports, performing art and governmental facilities, as well as in health care, hospital, laboratory and criminal justice facilities. Cantor Seinuk currently has over 14 principals, among them are: Dr. Ahmad Rahimian, President and Jeffrey Smilow, Executive Vice President.

Silvian Marcus, who began his career with the company in 1972, is now the Chief Executive Officer of the firm. He is a world renowned concrete engineer with buildings valued at more than $20 billion in construction costs. He has managed numerous projects including, the mega structure Time Warner Center and the Solaire, the first environmentally advanced residential tower in America.

Some of his most notable structural work has been on the World Trade Center buildings. The first to be completed, the 7 World Trade Center which has been widely quoted as the world's safest and greenest skyscraper. It is one of the first buildings in the world designed to prevent progressive collapse due to an extreme event. With his team, he will also engineer the structure for the other World Trade buildings, including the Freedom Tower, scheduled to be occupied in 2011.

Research By – Rebecca Butler
Spring 08 – UT ARE

The Solaire

New York, NY, 2003

Time Warner Center

New York, NY, 2003

World Trade Center (Tower 3)

New York, NY, 2011

World Trade Center (Tower 7)

New York, NY, 2006

Freedom Tower

New York, NY, 2011

Technical Specialization

Mechanical Design
Electrical Power
Fire Protection
Plumbing
Telecommunications
Security
Audiovisual
Specialty Lighting Design
LEED / Sustainability
Mission Critical Design
Commissioning
Construction Services

MARVIN MASS

Cosentini Associates

Office Locations – U.S.A., France, and U.A.E.
Website - http:// www.cosentini.com/index.html
Firm Population (2008) – over 400

History

Consentini Associates was established in 1952 as a mechanical and electrical consulting firm. Its services have expanded to include most technical aspects of buildings, but it remains primarily a mechanical and electrical design firm. Over the years, Cosentini has grown into one of the largest and most renowned engineering firms in the country.

Marvin Mass, who began his career with Cosentini in 1952, is now the chairman of the firm. His innovations in building design include developing the water source economizer as opposed to the more common air source cooling device. He completed the first total energy and chilled water storage plants for New York City and worked with SOM to help create double deck elevators, such as the ones they used in the John Hancock Center in Chicago.

Mr. Mass is a long-standing faculty member at Harvard's Graduate School of Design and at Yale University. He has lectured at Cooper Union, the University of Pennsylvania, and Pratt Institute. Honors bestowed upon him include the Brown Medal of the Franklin Institute, the 1990 AIA Institute Honors, and a lifetime achievement award from the American Society of Heating, Refrigerating, and Air Conditioning Engineers.

His company, Consetini Associates, has experience in all types of buildings. Their portfolio encompasses work on skyscrapers all over the world as well as several signature Gehry works. They have renovated the Brooklyn Botanical Gardens and have coordinated systems in advanced research facilities. More recently, the firm has worked with owners to receive LEED certifications for buildings like the Memorial Sloan Kettering Cancer Center and Harvard University's 90 Mt. Auburn.

Research By – Eleanor Reynolds
Spring 08 – UT ARE

Guggenheim Museum
Bilbao, Spain, 1997

The Lou Ruvo Alzheimer's Institute
Las Vegas, NV, 2007

Harvard University 90 Mt. Auburn
Cambridge, MA, 2007

Four Times Square
New York, NY, 1998

Charles and Dee Wyly Theatre
Dallas, TX, 2009

Technical Specialization

Structural Engineering

LESLIE E. ROBERTSON

Leslie E. Robertson Associates

Office Locations – New York, NY
Website - http://www.lera.com
Firm Population (2008) – 75

History

Leslie E. Robertson Associates is a praised and recognized engineering firm specialized in structural engineering. The company's innovative nature establishes them as a prominent leader in the construction and design industry. With numerous projects around the world, the firm continues to excel with their exceptional designs. LERA is known for providing solutions to the most extravagant projects in order to satisfy the architect's desires.

Leslie E. Robertson, born in 1928, graduated from Berkeley with a degree in Civil Engineering. After practicing with numerous firms, he started his own business. His venture was a great success and LERA became involved in the completion of some of the world's greatest projects. For example, Robertson held the position as the lead structural engineer involved in the design of the World Trade Center. Some of his other works include the Shanghai World Financial Center and the Bank of China.

With the completion of nearly 130 projects, Leslie E. Robertson and LERA have established themselves as leaders of innovation. Their ability to successfully complete the structures of an architect's wildest dreams has propelled them to the forefront of the engineering community.

Research By – Vivien Micheloni
Spring 08 – UT ARE

World Trade Center

New York, NY
1973

Shanghai World Financial Center

Shanghai, China
2008

Bank of China

Hong Kong, China
1990

Canal Point

Dubai, United Arab Emirates
20??

Residences at Liberty

New Jersey, NJ
20??

Technical Specialization

Structural Engineering
Transportation
Infrastructure

HERBERT ROTHMAN

Weidlinger Associates, Inc.

Office Locations - New York, NY; Cambridge, MA; Washington, DC; Mountain Lakes, NJ; Mountain View, CA; Marina del Rey, CA; Albuquerque, NM; United Kingdom
Website - www.wai.com

History

Herbert Rothman, the son and nephew of architects, grew up in Queens and claims he “was bred to be an architect, but [he] decided [he] didn't have the talent." Instead, he pursued civil engineering at Rensselaer Polytechnic Institute and started working for Ammann and Whitney in 1945. In 1977, he joined Paul Weidlinger of Weidlinger Associates, Inc. and started the transportation engineering branch of the firm. Rothman is now retired, but is still a principle with Weidlinger.

Rothman prefers bridges over buildings because, unlike most structural projects, the engineer is in charge instead of the architects. At Weidlinger, he has found plenty of work in both bridge construction and preservation, mainly with suspension bridges along the Atlantic coast and in California. Two of Rothman’s most notable projects include the Oakland Bay Bridge in San Francisco and the Verrazano-Narrows Bridge in New York City. The Oakland Bay Bridge is composed of two suspension bridges, each designed to resist seismic loads by anchoring the cables to the bridge deck instead of the footings. The Verrazano-Narrows Bridge, a collaboration with Othmar Ammann, was the longest suspension bridge in the world when it opened. As a result of its large span, its two towers are not parallel to each other because the curvature of the earth had to be accounted for in the design.

Weidlinger Associates also specializes in high-rise buildings, infrastructure, forensics, and applied sciences. They are one of the few firms that employ scientists and PhD’s for research on the effects of wind, earthquakes, vibrations, and blasts. Blast engineering on federal buildings and prominent bridges has become especially important since September 11th.

Research By – Erin O’Malley
Spring 08 – UT ARE

Oakland Bay Bridge

San Francisco, California, under construction

Verrazano-Narrows Bridge

Brooklyn to Staten Island, 1964

Walt Whitman Bridge

Philadelphia, Pennsylvania, 1957

George Washington Bridge Renovation

New York City to New Jersey, Hudson River, 1927

Bronx-Whitestone Bridge Renovation

The Bronx to Queens, 1939

Technical Specialization

Structural Engineering
Glass Structures
Steel Structures
Tensile Structures

HANS SCHOBER

Schlaich Bergermann and Partner

Office Locations – Stuttgart, Germany, Berlin, Germany, New York, New York
Website - http://www.sbp.de/en/fla/mittig.html

History

Founded in 1980, Schlaich Bergermann and Partner is a civil and structural engineering design firm. Starting with basic high-rise structures and bridges, over the years Schlaich Bergermann and Partner has become an innovator in areas including tensile structures and solar energy power plants.

Hans Schober started working at Schlaich Bergermann and Partner in 1982 as a senior engineer and became partner in 1992. Prior to that, he was a structural engineer at Contractors Phillip Holmann AG in Frankfurt, Germany. In 2005, Mr. Schober became president of Schlaich Bergermann and Partner.

Mr. Schober received his PhD from the University of Stuttgart, where he specialized in structural engineering. He then went on to become a lecturer at the Institute for Concrete Structures. He has authored many papers, including “Freeform Glass Structures,” “Innovations with Glass, Steel, and Cables,” and “Innovatice Applications of Glass in Structures.”

Schlaich Bergermann and Partner specializes in bridge, tower, high-rise structure, and long-span roof design. Their work includes buildings such as, the Olympic Stadium Berlin and Three Pacific Place in Hong Kong. Recent projects include Time Warner Center in New York and Monumento 11 in Spain.

Research By – Bradley Moreno
Spring 08 – UT ARE

Stadium and Swimming Pool Foshan

Foshan, China, 2007

Trade Fair Hall 8/9

Hanover, Germany, 1998

Time Warner Center

New York City, NY, 2004

Monumento 11

Madrid, Spain, 2007

Moynihan Station

New York City, NY, to be completed 2018

Technical Specialization

Structural Engineering
Integrated Modeling
Forensic Investigation & Analysis
Multidisciplinary Consulting & Design
Exterior Wall Consulting
Historic Preservation
Building Evaluation & Rehabilitation

RICHARD TOMASETTI/CHARLES THORNTON

Thornton Tomasetti

Office Locations – United States, UK, Hong Kong, PRC, Russia
Headquarters – New York, NY
Website - http://www.thorntontomasetti.com/
Firm Population (2008) – 650 +

History

Thornton Tomasetti was founded in 1956 as Lev Zetlin & Associates before Charles Thornton and Richard Tomasetti purchased the firm in 1975. Soon after, they immediately began to branch out and enter the high-rise market with several innovative designs. Over the 50-year history of the firm, Thornton Tomasetti has provided building engineering services to clients worldwide on projects of all sizes and complexity. From tall towers and long spans, to innovative building systems and materials.

Charles Thornton is the founding principal and former Co-Chairman of the firm. He is currently a consultant to Thornton Tomasetti and an advisor to the Board of Directors. Dr. Thornton has been involved in renowned projects such as the Petronas Towers. He was also involved in the construction of Continental Center in New York, which is the tallest building supported by a tapered-precast-tip, shallow pile foundation system.

As the Chairman of Thornton Tomasetti, Richard Tomasetti has overall executive responsibility for the firm and its policies. He was involved extensively in the design and construction of Taipei 101 in Taiwan. The 101-story office tower is the tallest completed building in the world. He also worked on the innovative Terminal One at JFK International Airport, whose design set a new standard for airport terminal structures.

Both Thornton and Tomasetti are actively involved in academia as visiting professors in civil engineering. Their awards include LIFE Industry Leadership, The Best Structure, Leader of Industry, and Civil Engineer of the Year.

Research By – Christina Chen
Spring 08 – UT ARE

Taipei 101

Taipei, Taiwan, 2007

Petronas Towers

Kuala Lumpur, Malaysia, 1998

Soldier Field

Chicago, Illinois, 2003

Federation Building

Moscow, Russia, under construction

Modern Art Museum of Fort Worth

Fort Worth, Texas, 2002

Technical Specialization

Structural Engineering
Applied Mechanics
Consultant
Risk analysis
Forensic Engineering
Earthquake Engineering
Wind Engineering
Blast Engineering
Soil/Structure Interaction
Sustainability

PAUL WEIDLINGER

Weidlinger Associates Inc.

Office Location - Cambridge, Massachusetts
Website - http://www.wai.com
Firm Population (2008) – 300+

History

The engineering firm known as Weidlinger Associates Inc. was founded by Paul Weidlinger in 1949 as Paul Weidlinger, Consulting Engineer, in Washington D.C. In 1951 headquarters were moved to Manhattan and in 1974 the name was changed to Weidlinger Associates Consulting Engineers. With a move to Cambridge, Massachusetts in 1982 came the final name change to Weidlinger Associates Inc. In 1993, Dr. Jeremy Isenberg succeeded Paul Weidlinger as President and CEO and in 2006 Dr. Raymond Daddazio succeeded Dr. Isenberg to become the current President and CEO of Weidlinger Associates Inc.

Early on, Paul Weidlinger made a name for himself in the fields of high-rise buildings and high-strength concrete but today Weidlinger Associates Inc. is known for everything from innovative bridge design to hallmark infrastructure projects. This wide spread of specializations can be attributed to the renowned engineers Weildlinger chose to be his partners; Drs. Mario Salvadori, Melvin Baron, Herbert Rothman, Matthys Levy Jeremy Isenberg, and Raymond Daddazio. In addition to working with these engineers, Paul Weidlinger also collaborated with several distinguished twentieth-century architects including Marcel Breuer, Gordon Bunschaft, Walter Gropius, Eero Saarinen, and José Luis Sert.

More than 150 Weidlinger projects have received awards, and in 2004 Weidlinger received the top engineering award in the nation, the National Grand Conceptor Award from the American Consulting Engineers Council, for an in-depth investigation of the World Trade Center collapses. In addition to awards the firm has received, six of the principals have been honored by being elected to the National Academy of Engineers including Paul Weidlinger.

Research By – Nicole Brischetto
Spring 08 – UT ARE

Staten Island September 11th Memorial

Staten Island, New York
2004

Cheju Stadium

Cheju Do, Korea 2001

Tomorrow Square Tower

Shanghai, China 2003

Bank of China Headquarters Building

Beijing, China 2001

San Francisco-Oakland Bay Bridge

San Francisco, California
2008

PACIFIC RIM

Technical Specialization

Mechanical Engineering
Electrical Engineering
Plumbing Systems
Project Management

ALAN LOCKE

IBE Consulting Engineers

Office Locations – Los Angeles
Website - http://www.ibece.com
Firm Population (2008) - 45

History

Alan Locke has a wide range of experience designing and constructing mechanical systems with particular expertise in designing sustainable buildings. He has taught Engineering Design and Construction Practice at UCLA, USC, and SI-ARC for the past 10 years and is currently an adjunct professor of Climatology and Environmental Control Systems at UCLA.

Locke founded IBE Consulting Engineers in 1999 in Los Angeles, CA with the idea that engineering components should be integrated into the design of architecture. IBE designs mechanical, engineering, and plumbing systems that achieve measures such as energy efficiency, ease of maintenance, and system integration. Best known for their work in the UC Davis Activities and Recreation Center, as well as the Nevada Museum of Art, IBE works on a wide range of building types. Currently on the boards are office developments, a federal courthouse, museums and visitors centers, and a variety of educational institutions.

The cornerstone of IBE's design philosophy is the practice of sustainable building design. IBE believes that sustainability involves understanding the client's aims, and influencing the design goals to achieve a cost effective solution both in terms of initial and life cycle costs. With LEED accredited engineers on staff, IBE strives to implement each project with the fundamentals of sustainability. IBE's work in the Audubon Visitors Center received a Platinum LEED rating, while other buildings have received various other green awards.

IBE believes in an integrated design approach. Each member of the staff collaborates with consultants that are experts in their own disciplines to achieve an aesthetically appealing and sustainable final project.

Research By – Mason Welch
Spring 08 – UT ARE

UC Davis Activities Center

Davis, California
May, 2004

Nevada Museum of Art

Reno, Nevada
May, 2003

Akron Museum of Art

Akron, Ohio
July, 2007

Temple Bat Yahm

Newport Beach, California
July, 2002

USC Ronald Tutor Hall

Los Angeles, California
December, 2004

Technical Specialization

Structural Engineering
Civil Engineering
Seismic Engineering
Wind Engineering
Vibration Engineering
Building Renovation
Sustainable Design
Blast Protection

JON MAGNUSSON

Magnusson Klemencic Associates

Office Locations – Seattle (WA), Chicago (IL)
Website - http://www.mka.com/
Firm Population (2008) - 170

History

Magnusson Klemencic Associates was founded by W.H. Witt as the W.H. Witt Company in 1923. The company has gone through several name changes reflecting the leadership and engineering group changes that have occurred over the eight decades since the company's founding.

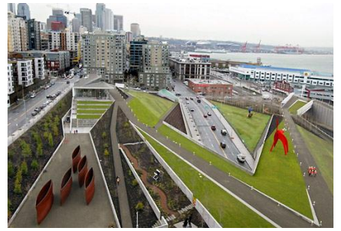
Jon Magnusson joined the firm in 1976 after receiving his Bachelor's degree in civil engineering from the University of Washington and his Masters' degree from the University of California, Berkeley. He rose to the position of CEO in 1988 and was named Chairman of the Board in 1998. He contributed to many of Seattle's most famous landmark structures and has been the principal structural engineer for one and a half billion dollars of construction in the last five years.

His staff of 170 people includes 117 engineers, organized into specialized groups. Magnusson Klemencic has designed projects worth a collective $43 billion (US) and has completed projects in 46 states and 44 countries, which have received 309 awards for engineering excellence.

Research By – Gray Slocum
Spring 08 – UT ARE

Olympic Sculpture Park

Seattle, Washington
2007



Bellevue City Hall

Bellevue, Washington
2006

Aqua

Chicago, Illinois
2008

Hawaii Convention Center

Honolulu, Hawaii
1997

Seattle Central Library

Seattle, Washington
2003

Technical Specialization

New Structural Design
Feasibility Analysis
Existing Facility Renov.
Structural Investigation
Seismic Retrofit
Value Engineering
Fall Protection

JOHN A. MARTIN

John A. Martin & Associates

Office Locations – Arizona, Beijing, California, Colorado, Hawaii, Nevada, Wyoming
Website - http://www.jamanv.com/index2.html
Firm Population (2008) – Over 400

History

John A. Martin & Associates was founded by John A. Martin in 1953 in Los Angeles primary as a structural engineering design firm.

John A. Martin's career started with a Bachelor of Science in Civil engineering from the University of California, Berkley in 1943. He worked in John Hennessy's firm and then went on and founded JAMA with principals Greg Clapp, S.E. and Steve Schiller, S.E..

JAMA is well-known for their structural work on the Walt Disney Concert Hall. The firm also designed the structural framing of many of the great hotel casinos in Las Vegas.

JAMA has all types of building in their portfolio. They started in the hotel casino field and expanded toward sports entertainment venues, theaters, convention centers, office buildings, residential projects, and more.

JAMA received two awards from the Structural Engineers Association of California in 2004 for their landmark design and best use of new technology in new construction on Walt Disney Concert Hall. They won three awards for their structural design of the Staple Center in Los Angeles. His work on UCLA's Royce Hall also won a Superior Structural Engineering Excellence Award, making the firm very well-established in the seismic field as well.

JAMA is affiliated with 21 offices around the U.S. and another in Beijing. The firm completes over 60 million sq. ft of new construction annually throughout the world. JAMA is now the biggest firm in the Las Vegas area.

Research By – Jason Lee
Spring 08 – UT ARE

Hawaii Prince Hotel
Honolulu, HI,1990

Colorado Convention Center
Denver, CO, 2005

Walt Disney Concert Hall
Los Angeles, CA, 2003

Staple Center
Los Angeles, CA, 1999

Paris Hotel/ Casino & Eiffel Tower
Las Vegas, NV, under construction

Technical Specialization

Mechanical Engineering

ERIN MCCONAHEY

Arup Los Angeles- USA

Website - http://www.arup.com/americas/
Firm Population: 128+

History

Originally founded in 1946 by Sir Ove Nyquist Arup, the global design and business-consulting firm simply known as Arup is internationally recognized through its projects in over 160 countries and is the creative force behind several of the world's leading innovative and sustainable building, transport and civil engineering projects. Arup's mission is to "shape a better world" by providing clients with "sustainable design solutions that balance economical, social, and environmental performance." The firm currently has 94 offices around the world, 11 of which are stationed in the Americas, among them Arup Los Angeles.

Erin McConahey, P.E. has been with Arup Los Angeles for 13 years in which she has had the opportunity to work globally, enabling her to become a lead engineer on a wide range of projects including museums, high-rise structures, laboratories, naturally ventilated spaces, retail, civic work, university buildings, offices, and schools.

McConahey earned both a bachelor's degree in mechanical engineering and a master's degree in structural engineering at the University of California at Berkeley. She is a Professional Engineer in the state of California and on the U.S. General Service Administration's (GSA) National Register of Peer Professionals. Her latest GSA work includes Bridging Documents for the new San Diego Federal Courthouse and the San Francisco Federal Office Building; a landmark project for the federal government due to its creative energy-efficient design through natural ventilation and natural day lighting, permitting the structure to significantly reduce its energy consumption while promoting a healthy and productive environment.

Research By – Ethny A. Nava
Spring 08 – UT ARE

Los Angeles County Art Museum

Los Angeles, USA, under renovation, estimated date of completion: 2010

Federal Building

San Francisco, USA, 2006

Prada Epicenter

Beverly Hills, USA, 2004

Denver Art Museum

Denver, USA, 2006

Technical Specialization

Structural Engineering
Civil Engineering
Seismic Engineering
Wind Engineering
Vibration Engineering
Building Renovation
Sustainable Designs
Blast Protection

JOHN SKILLING

Magnusson Klemencic Associates

Office Locations – Seattle, WA and Chicago, IL, USA
Website - http://www.mka.com/
Firm Population (2008) - 170

History

Formerly known as Skilling Ward Magnusson Brookshire, Magnusson Klemencic has been a structural engineering firm for more than eight decades since it's opening in 1923. Its offices have grown to include a wide variety of business entities to make it one of the most diverse structural engineering firms in the country.

John Skilling graduated from UW in 1947 and joined the engineering firm of W.H. Witt Co. He quickly advanced to principal with his "lightning-quick mind" and ability to think like an architect. John found his most notable success in the 1960s when the firm competed with prominent East Coast firms for the structural design of New York City's Twin Towers (WTC). The "hollow tube" proposal of John Skilling and his partners won them the competition. The project catapulted the company toward international recognition.

By 1983, John became chairman of newly renamed Skilling Ward Magnusson Brookshire. The company has expertise incorporating aviation, civic design, education, healthcare, housing, offices, retail, and sports. Other prominent projects include the inverted pyramid design of Rainier Tower, the 76-story Colombia Seafirst Center, and the Washington State Convention Center. In 1994, the American Institute of Architects recognized the late John Skilling as an honorary member.

Today, Magnusson Klemencic Associates continue to utilize technology to create new and innovative projects in engineering. The firm worked with the environment and received the first LEED Gold rating in Washington State.

Research By – Michael L. Monroe
Spring 08 – UT ARE

World Trade Center

New York City, NY 1973

Qwest Field

Seattle, Washington 2002

TWA Terminal

New York City, NY 1962

Highcliff Apartments

Hong Kong, China 2003

Hawaii Convention Center

Honolulu, Hawaii 1997