Welcome to our first newsletter — a sign in itself that we are making real progress in establishing ourselves as a working American branch of the Construction History Society.

The organizing committee has been hard at work in setting up the branch officially and reaching out to expand our growing mailing list. A brochure is at the printers and this newsletter will be issued quarterly. Next up will be a web-site linked to the main society.

In December we will be mailing out membership applications which we fervently hope you will promptly complete!

Important to our membership drive is to establish good relations with as many construction industry and history associations as possible. To date we have been in touch with ACEC, SHOT, National Building Museum, AGC and CMAA, all of whom have given encouragement. We have plans to contact SAH & SESAH, APT, AIA and ASCE in the near future. Please suggest who else we should be notifying of our existence.

Plans are in discussion for an initiating program next year, possibly in collaboration with one or more of the above groups. Ideas for content and location will be welcomed.

The organizing effort is being supported and funded by the College of Architecture at Georgia Tech to whom we are most grateful. This has enabled us to hire Harriett Groves on a part-time basis to take charge of all the many administrative functions involved in making something like this come together.

Please contact Harriett with any comments or suggestions for future newsletter content.

Brian Bowen, Professor of Practice, College of Architecture, Georgia Tech, Atlanta GA at 404-378-3779
brian.bowen@coa.gatech.edu

This is your newsletter and the only vehicle we have to keep in touch with one another. So please use this to let us know:
– your interests in construction history, your current research, précis of recent lectures, etc.
– books, texts & articles that your fellow readers should know about
– names and e-addresses of colleagues and friends that we can include on our mailing list.
For over 150 years, the Iowa State Fair has showcased the state’s agricultural production against a backdrop of late summer entertainment. While the Fair was a peripatetic event during its first three decades, the settlement and growth of Des Moines as a centrally located capital city eventually drew the Fair to permanent quarters on the city’s east side. This move was fraught with fiscal and thematic implications, and the event has ever since had to balance the purity of its educational and economic roots against the need to attract neighboring city-goers as well.

Beginning in 1902, this somewhat uneasy relationship led to a massive campaign to rebuild what were by then a set of tired, wooden animal barns, sheds, and grandstands dotting the fairgrounds. The structures that followed during the next 25 years were a unique blend of structural, functional, and environmental design, all wrapped in brick and terra cotta skins that presented a more civic frontage to the fairground’s streets. The architects of these barns had to contend with the combination of large crowds, hundreds of animals (usually accompanied by families camping out to keep an eye on the results of their labors), and the formidable combination of summer heat with the output and smells of the enclosed pigs, sheep, cattle, and horses.

While the first set of barns (housing horses and cattle) adopted more or less traditional forms, two later barns offered an unusually integrated solution. In 1907, the Fair Board constructed a low, sprawling structure to house the hundreds of swine brought for competition every year. The sheer footprint of the building meant that a simple, gabled roof solution would have been impossible. Instead, the Swine Barn featured a more or less flat metal roof, with a number of monitors that combined lighting and ventilation into a structural module that ran throughout the barn. Showings were located under the high, daylit monitors, while ranks of swine pens followed the structural lines of the lower roofs. Outside, a brick enclosure was designed to provide both a sense of civic presence, with symmetrical facades and elaborate, axial entries; more importantly, however, this enclosure offered huge, unglazed openings that permitted large quantities of air to ventilate the barn’s deep plan. In use for exactly a century now, the swine barn’s use of passive ventilation provides an intriguing glimpse into the vernacular knowledge at the time; while the barn interiors read as engineered, unselfconsciously designed structures, the exteriors are carefully composed along Beaux-Arts lines. Interestingly, where the two systems come together, the barns’ details seem surprisingly awkward, as if the engineering that went in to the metal and timber construction of the efficient roofs didn’t quite know what to do with the more urban nature of the brick exteriors.

A similar approach shaped the 1915 Sheep Barn; taken together, these structures formed for a time the largest agricultural buildings in North America and gave the Fair a set of scientifically designed but architecturally presentable structures that helped set the tone for the boom decades of Iowa’s rural economy. Well preserved, they stand today performing the same functions as they did when the opened; even though attendance has skyrocketed to an annual average of just over a million visitors during the Fair’s ten days each August, the barns remain, because of their clever integration of functional layout and environmental strategy, comfortable on even the hottest days. That the physics of air movement were so well understood alongside the aesthetic desire to ‘dress up’ the agricultural nature of these barns in a more civic enclosure provides an intriguing glimpse into the vernacular knowledge at the time; while the barn interiors read as engineered, the exteriors are carefully composed along Beaux-Arts lines. Interestingly, where the two systems come together, the barns’ details seem surprisingly awkward, as if the engineering that went in to the metal and timber construction of the efficient roofs didn’t quite know what to do with the more urban nature of the brick exteriors.

Thomas Leslie, AIA, is an Associate Professor of Architecture at Iowa State University and the author of Country Comes to Town: The Iowa State Fair (New York: Princeton Architectural Press, 2007).
My own interest in Construction History came about in 2005 when the Dean of the College of Architecture at Georgia Tech, Dr. Tom Galloway at that time, invited suggestions on how the College might move towards a better integration of its architecture, construction and engineering education. It had always seemed to me that any institution serving the construction industry should be introducing its students to the industry-at-large in which they would be building their careers, rather than only the discipline in which they had enrolled.

Given a free hand to develop a pilot syllabus, it became obvious that a substantial portion of the course should be focused on a history of how we have arrived at the industry structure and procedures we have today. The resulting program ended up with three themes:

- The Industry Today (the present)
- Its Historical Evolution (the past)
- Future Industry Directions (the future)

The course was delivered for the first time during the 2007 Spring semester and will be repeated next year. I am pleased to share the current topical outline with anyone who e-mails me at the address below.

As far as I can establish nothing exactly like this has been attempted before in North America, i.e., to trace the history of how our industry was formed. While there is of course considerable scholarship on selected periods of European construction history and on architectural history, little study seems to have been applied to the formation of the industry as an organizational unit and the procedures used to deliver its products. In particular, the Nineteenth and Twentieth Centuries in America are virtually a blank canvas and have been periods presenting challenges to me as this course was developed.

The course has convinced me that the study of construction history is not just antiquarianism, but has a very definite application in understanding our industry in order that we may make a contribution to its future improvement. As Andrew Saint said at the 2006 CHS World Congress: “if you want to make progress... it may be useful to know what has been done before you and to have a sense of where you are starting from”.

Research continues to improve and expand the historical component of the course. In addition to two specific projects that are in hand:

- **The Quantity Surveyor – Missing in Action in the USA**

  Once single price general contracting was established in the US in the second half of the Nineteenth Century, the situation was ripe for the introduction of a Quantity Survey that would be issued to the bidding contractors, that would be prepared by a professional measurer/quantity surveyor. Such a system had taken hold earlier in Great Britain and elsewhere. This did not occur despite pleas for its introduction by AIA, AGC and the Engineering Council in 1921. The research is directed to establishing why this was never implemented.

If any of our readers have anything to contribute to either of the above, I would be most grateful. In particular I need more information on the James Stewart Company, which was founded in Kingston, Canada in 1844 and continued in business until the 1950’s. I am especially interested in the later years after WW II.

We are compiling a list of any courses being taught that touch on any aspect of construction history, other than the history of architectural design. If you involved in, or are aware of any such course, would you please bring it to the attention of Dr. Anat Geva (anatgeva@archone.tamu.edu) Thank you!
In the area of the evolution of building technology/construction, there is almost no text that describes the full historical context of the development of Vitruvius's ideas of firmitas, commoditas, and venustas, translated as firmness, commodity and delight. Most of the books pertinent to this subject focus either on the issues of delight as part of history of art and architecture, a specific period in history, a specific geographical region, or a specific topic of building technology (i.e. materials, or building systems). Therefore, the survey book by Bill Addis Building: 3000 Years of Design Engineering and Construction is a welcomed addition to the literature on history of building technology/construction.

The book is organized chronologically in nine chapters:
- Ancient Times (1000 BC–500 AD),
- Medieval Era (500–1400),
- Renaissance (1400–1630),
- Age of Reason and Enlightenment (1630–1750),
- Engineering Becomes A Profession (1750–1800),
- The Harmony and Practice (1800–1860),
- Birth of Modern Building (1860–1920),
- Architectural Engineering (1920–1960),

It should be noted that the author divides the periods after 1750, known as Industrial Revolution and Modern Era, into smaller segments of time, and defines them not necessarily by the conventional period names, though these specific divisions help the reader to focus on a major event in the architecture/construction industry. It should also be mentioned that the chapter on Ancient Times ends with Ancient Rome while the chapter on Medieval Era includes the Byzantine period. This division is closer to architectural historians than to scholars in the field of history of building technology/engineering like De Camp (The Ancient Engineer) or G.R.H. Wright (Ancient Building Technology) who included the Byzantine as part of Ancient times/late antiquity.

The volume’s chronological arrangement is expressed through having different colors in the pages’ margins (i.e., blue for Medieval; orange for Renaissance; etc.), helping to distinguish between eras and topics. Furthermore, to help understand the context of a period in a glance, each chapter introduces its own table of contents and includes a time line of the important events pertinent to design, engineering, and construction.

The written style seems to better accommodate a survey textbook. The vast material covered in the book is read very fluently and is presented clearly for students to comprehend. The text is accompanied with a lot of colored and black & white images and line drawings, which are necessary for understanding the text. Some of the illustrations are published in the same high quality as the whole publication (i.e. good paper, good colors, etc.), while other images could have been published in better resolution, color, and size.

Three interesting appendices conclude the publication: (a) “Aims and Means” by Ove Arup, an article which is the precursor to Arup’s “Key Speech” from July 1970; (b) “Iron and its Alloys” which includes a table of the various properties of iron; and (c) “Concrete and Reinforced Concrete”. The latter two appendices are illustrated with a thorough timeline of the use of iron, steel, and concrete through history starting from antiquity and ending in the midst of the 20th century. Since this timeline is very important in understanding the development and use of these construction materials, and since the book also covers recent development in the construction industry, it was anticipated that this timetable would introduce the use of these materials beyond 1940s.

The book is the most recent volume on history of building technology/engineering/construction and one of the few that took the difficult task of covering a survey of 3000 years of Design Engineering and Construction. I would highly recommend this book as a textbook for survey courses on the topic. Furthermore, the book’s extensive bibliography and suggested further readings which are organized by engineering disciplines and notes on historical periods can serve as a resource for students, educators and scholars in the field.
BOOK LIST


The story of the initiation, design, construction, operation and dismantling of this gunpowder manufactory during the civil war. It is lavishly illustrated and produced, with the help of funding from the Watson-Brown Foundation Inc.

Architects to the Nation—the Rise and Decline of the Supervising Architect’s Office, Antoinette J. Lee; Oxford University Press, 336 pp, 2000

A history of this organization which designed federal buildings from the 1850’s to the 1930’s, including the running battle between this office and private architect.

Brunelleschi’s Cupola—the Past and Present of an Architectural Masterpiece, Giovanni Fanelli and Michele Fanelli; Mandragora, 287 pp, 2004

A two part text which first traces the design and construction of the dome and follows with an analysis of the structure and the source of its cracks.


Meigs of the Army Corps of Engineers, arrived in Washington in 1852 and spent 40 years there building the city’s water supply system, the Capitol dome and the Pension Building, now the National Building Museum.

Building Renaissance Venice, Richard J.Goy; Yale University Press, 256 pp, 2006

The book traces the complete process of creating important buildings, from the earliest conception in the minds of the patrons, through the choice of architect, the employment of craftsmen, and the selection of materials.

Ove Arup: Masterbuilder of the Twentieth Century, Peter Jones; Yale University Press, 364 pp, 2007

There is an extensive review of this in the New York Review of Books, May 10, 2007, by Witold Rybczynski


As its title implies this text addresses primarily architectural and structural design of several key Roman constructions, but does include theories on construction procedures.

Medieval Building Techniques, Gunther Binding; Tempus Publishing Ltd, 214 pp, 2004 English translation

A formidable graphic catalog of every known image featuring construction activity from the period. Each entry is dated, source stated and indexed by building tools included.

Skilled Hands, Strong Spirits—a Century of Building Trades History; Grace Palladino, Cornell University Press, 274 pp, 2005

This book follows the history of the building and construction trade unions from the 1880’s to date of publication.

BOOKS LOOKING FOR REVIEWERS

The following texts, which touch on aspects of American and European Construction History, have been published recently. If you have read any of these would you please volunteer to write a brief review for the newsletter? In addition, please send us other book titles (and reviews if possible) that will be of interest to our readers.


James Sutherland, Dawn Humm and Mike Chrimes, ed. Historic Concrete: Background to Appraisal (London: Thomas Telford, 2001)


The book includes much detail on the design and construction, begun in 1941 and finished in seventeen months. Vogel will lecture at the National Building Museum, Washington, DC on November 27th 6:30–8:00pm.

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Research for practicing designers is necessarily centered on projects. While we may be interested in other topics and may pursue them in our spare time, our main focus is on the work that pays our bills. My current research is thus split into two unequal parts: the mechanics of rowhouse renovation as seen in a dozen recent design and investigation projects, and the development of reinforced concrete structure as a pure research interest.

New York’s economy is booming and one result is that brownstone and brick rowhouses in Manhattan and Brooklyn are being converted from apartment use back to their original one-family use. In many cases these conversions require minimal intervention because the conversion to apartments was performed with little physical alteration.

This is particularly true in Harlem and some of the poorer Brooklyn neighborhoods, where original interior finishes were preserved in past years because there was little money available to alter them. In these cases, my work consists of investigating damage from aging and poor maintenance. There is a great variety of poor original construction details, including shallow mortise and tenons that cause splitting in both the supported and supporting beams; multi-wythe brick walls with no headers, diagonal headers that do not work, and continuous vertical joints; and lintels with such small bearing ends that brick is crushed.

The other alteration projects, usually in wealthy portions of the Upper East Side, often involve complete structural gutting, leaving nothing but the exterior walls. This type of non-preservation work is usually the result of a complete mismatch between new architectural programs (the installation of elevators and grand stairs, changing floor elevations, creating large shafts for new mechanical services) and the original joist layout.

The brick issues I have found in these buildings are discussed in a paper that will be presented at the 2007 APTI conference this fall. My other current writing project is revision of “Historical Building Construction” by adding information on reinforced-concrete frames and building foundations. This is ordinary archival research, although I am using as examples several buildings that I know from project work.
On the west side of New York City’s Grand Army Plaza is the eponymous Plaza Hotel. The French Renaissance château-style building, designed by Henry Janeway Hardenbergh, was built for $17 million.

When the Roebling Bridge opened, the toll for three horses and a carriage was 25 cents.

The ventilation building, part of the $48 million Holland Tunnel project.

William Thornton’s design of the U S Capitol.

1607 – Jamestown Settlement. Among the first settlers sent out by the Virginia Company are five carpenters and two bricklayers; after a year only one of the carpenters is left alive.

1807 – South wing of the US Capitol was completed for the House of Representatives. A wooden walkway across the vacant yard intended for the domed center building linked the House and Senate wings.

1867 – Roebling Bridge spans the Ohio River between Cincinnati and Covington.

1907 – Opening of Plaza Hotel in New York City and Union Station in Washington, D.C.


1927 – Holland Tunnel (New Jersey to New York) opens

1937 – Golden Gate Bridge, San Francisco, opens

1947 – Taft-Hartley Act passed, overriding a Truman veto, severely limited ‘unfair labor practices’ such as jurisdictional strikes, situs picketing, secondary boycotts and closed shops.

Source: 200 Years of Building America, The Associated General Contractors of America, 1975

NOTES FROM THE EDITOR

We invite your feedback with suggestions (and contributions) for content, layout and distribution. Also:

– we wish to highlight lectures, seminars, symposia and workshops likely to be of interest to our readers. Please send these to me.

– we have printed (thanks to Georgia Tech) a good-looking three-fold brochure to promote the Society. If you would like copies for your own interest and for distribution, please let me know and re-confirm your mailing address.

– if you are reading this and are not on our mailing list, please send me your e-mail address.

Thank you, Harriett...
The Society is dedicated to the study of the history and evolution of all aspects of the built environment—its creation, maintenance and management. It is a forum for scholars and professionals in the field to share, meet and exchange ideas and research. Membership is open to a wide range of construction related disciplines involved in the planning, development, design and construction of buildings and engineering infrastructure, in addition to those concerned with their operation and preservation. Members share a passion for examining how our existing structures were planned, designed and built, with the purpose of using this knowledge to better preserve what we have and to guide us in determining future directions.

The US branch of the Construction History Society is a distinct entity catering to the historical studies and interests of its members here in American. Membership in the US branch includes full benefits in CHS at large, including receipt of the Society’s Journal and newsletter and links to scholars in the field worldwide.

…the history of…
Land use & zoning
Urban planning
Development financing
Standards & codes
Professional services selection
Architectural competitions
Changing roles of the professions
Budget, estimating & specifications
Design techniques
History of consulting firms
Structural analysis
Structural forms
Building systems
Civil engineering
Design IT
Evolution of contracts
Methods of procurement
Methods of project delivery
Building trades, unions & guilds
History of construction companies
Organization of construction
Wages & costs
Tools, equipment & materials
Quality control & safety
Communication styles
Construction IT
Changes in facility use
Methods for dating structures
Preservation & conservation
Operations & maintenance IT
AEC education
Construction history in education
Bibliography of construction history
Archaeological construction history