



Illinois Section
Founded 1916

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ASCE Illinois Section

News

Vol. 53, No.7
September 2012

MAP-21: Transportation Legislation

By Matthew Huffman, P.E.

With the passing of the Federal Transportation Bill, known as MAP-21 (Moving Ahead for Progress in the 21st Century Act), on July 6, 2012, Illinois came out ahead as compared to other states. We have Senator Durbin and Congressman Costello to thank, who sit on their respective committees regarding transportation, along with all of our other federal legislators who got the bill through

the House and Senate. While many would like to have seen a longer multi-year program, MAP-21 is a step in the right direction. Illinois is fortunate to have a common voice regarding transportation, which is growing in numbers and is being recognized around the state and country. This transportation voice is called the Transportation for Illinois Coalition (TFIC - <http://tficillinois.org/>).

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President's Notes

William Cussen, P.E., LEED AP



I'd like to begin by Congratulating **Michael Goodkind**, an Executive Vice-president of Alfred Benesch & Company in Chicago, who was selected by ASCE National's Executive committee as recipient of the 2012 William H. Wisely American Civil Engineer Award. The award recognizes ASCE members who have made continuing efforts to promote appreciation for the history, tradition,

developments, and technical and professional activities of the Society.

The month of August was a busy month for the Section. To be a "local presence" available to Illinois Legislators, three of our members (along with ASCE National) attended the State Legislators conference at McCormick Place. Also the annual Region 3 meeting was held in Chicago; President-Elect Arrigoni presented information to the other Sections and Branches regarding our state legislative activities and Past-President King presented information regarding how the Section has used the state report card to educate others about the state of Illinois infrastructure. The Section also sponsored and attended a Transportation of Illinois Coalition event and Elgin Community College.

The Executive Board is busy planning for next year; some of the items that are being discussed are potential changes to the newsletter and additional changes to the Illinois Section website. The Executive Board is also in the process of deciding on committee assignments for the upcoming year. If you are interested in getting more involved, please contact President-Elect Arrigoni or me and we will get you assigned to a committee.

Currently the Section is working on the budget for next year which should be published in the October Newsletter. Unfortunately, due to the slow economy ASCE National has decided not to offer and State Public Affairs Grants (SPAG) next year. This year we received two SPAG's, one was for an Engineering Lobbyist in Springfield to keep us updated on upcoming legislation that could affect us as Engineers. The other SPAG was used to offset the cost of Legislative Reception in Springfield. Therefore, we will need to determine which event

Congratulations to Michael Goodkind who was selected as recipient of the 2012 William H. Wisely American Civil Engineer Award. The award recognizes ASCE members who have made continuing efforts to promote appreciation for the history, tradition, developments, and technical and professional activities of the Society.

was most beneficial to the Section and membership and work on funding one or both of the events next year. In the past, we have received help from the other Sections within the state to offset the cost; however this year I believe only the Central Illinois Section helped to sponsor the Engineering Lobbyist, and the Quad Cities Section helped sponsor the reception in Springfield. The American Public Works Association did help financially and with advertising this year, but we will need to find additional sources to help offset the cost of either of these events if we are going to continue them in the future. Should anyone have any ideas of potential assistance for either of these events please let me know. Based on the success of the members being able to speak with their State Legislators face to face this year, I believe we should at a minimum continue to host the legislative reception. **ASCE**

ASCE Illinois Section News

ILLINOIS SECTION NEWSLETTER

Mailed to all ASCE-IS dues-paying members
American Society of Civil Engineers
Illinois Section – Region 3

Communications Chair/ Newsletter Editor – Bryan Luke

Christopher B. Burke Engineering, Ltd.
9575 W. Higgins Road, Suite 600
Rosemont, IL 60018
847-823-0500
bryanluke@cbbel.com

Director of Advertising – Brian Pawula

847-922-6125
brianp@thomas-engineering.com

Pres. William Cussen (847) 394-6600
Pres.-Elect Lou Arrigoni (312) 345-8681
Sec. Patrick Lach (773) 792-8510
Treas. Mike MacKinnon (312) 878-4854

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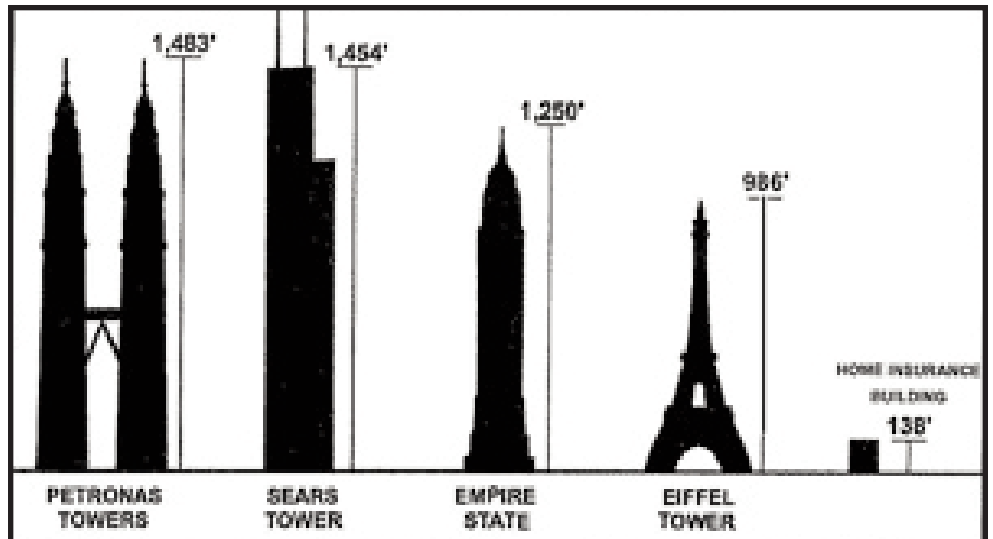
Home Insurance Building

Part three in the “150 Years of Engineering Excellence” series

No other symbols to the modern era are more convincing than the gravity-defying, vertical shafts of steel, glass and concrete that are called “skyscrapers.” Since their beginning over 120 years ago, skyscrapers now dominate the skyline of nearly every large city throughout the world. Can one imagine what the City of Chicago would look like today if the modern skyscraper were never developed? The development of the skyscraper allowed buildings to soar to new heights but also benefited the occupants by providing additional light and air. The Home Insurance Building in Chicago is considered to be the first American skyscraper.

No other symbols to the modern era are more convincing than the gravity-defying, vertical shafts of steel, glass and concrete that are called “skyscrapers.”

During the mid-19th Century, much of the technology necessary for the building of skyscrapers originated. This was a time of large-scale iron projects and the emergence of mass production techniques. These developments urged structural engineers to develop new building materials and structural analysis methods. This resulted in the development of the steel I-beam, use of reinforced concrete and other innovations that were crucial for the success of tall buildings. However, one of the key developments that made the skyscrapers



This diagram shows a comparison between the height of the Home Insurance Building and other well known structures around the world. Graphics provided by Aerodine Magazine.

possible was the invention of the safety lift, soon known as the elevator. Elisha Otis's invention in the 1850's opened up the possibility of taller buildings as, up until that time, buildings were limited to the height that people could ascend comfortably on stairs, normally no more than a few stories.

The emergence of the skyscraper in Chicago was due to several factors. These included a booming economy, the rise in value of urban space, the work of some brilliant engineers, and the devastating fire of 1871 which gave businessmen the opportunity to rebuild the downtown area. Engineer William Le Baron Jenney discovered that thin pieces of steel could support a tall building just as well as thick stone walls could. In 1879, he designed the first Leiter Building, which had an open facade of structure and glass, beginning the evolution. The Home Insurance Building followed in 1885 at the north-east corner of LaSalle and Adams Streets in Chicago. It was a 10-story

building supported by a metal skeleton of vertical columns and horizontal beams. Two additional stories were added in 1891, which increased the height of the building to 180 feet. The building broke no height records, but it was the first to contain features that characterized later skyscrapers. These features included the use of Bessemer steel instead of cast iron in the upper stories and its reliance on a steel and iron frame, not thick, load bearing masonry walls, to support much of its weight.

The steel necessary to carry Jenney's 10-story building weighed only one third as much as a 10-story building made of heavy masonry. Since the steel skeleton supports the weight of the entire building, the exterior walls were now only necessary for weather protection and this allowed the Home Insurance Building to have many more windows than other buildings in its era.

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Home Insurance Building

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The emergence of the less expensive steel frame in the Home Insurance Building made tall buildings practical and made possible the use of non-bearing facade elements.

The emergence of the less expensive steel frame in the Home Insurance Building made tall buildings practical and made possible the use of non-bearing facade elements. Not only did this change the appearance of buildings that followed the Home Insurance Building—with glass, steel, thin stone, and masonry curtain walls—but it improved the marketable space of the interior of the building by providing more usable space and light.

The Home Insurance Building was demolished in 1931, but it is considered today as the “Father of the Skyscrapers”. After Jenney’s accomplishment, the sky was truly the limit as to the height that buildings could now reach. This first skyscraper has transformed urban life, allowing larger numbers of people to work and live on smaller sites. **ASCE**

This article is Chapter 3 in the IS ASCE 2003 publication “150 Years of Engineering Excellence”. This article provided by the Communications Committee.



The Home Insurance Building with its steel and iron frame was calculated to weigh only one third as much as a heavy masonry building the same size. This extraordinary design allowed for larger windows and a modern exterior. Photo by City of Chicago Department of Planning & Development, Landmarks Division.

2012 ASCE Illinois Section Annual Dinner Meeting

at the

Union League Club Of Chicago



October 10, 2012

Special awards will be presented to outstanding engineers and projects that have made a difference in Illinois. Please come out and join your professional peers and consider inviting some aspiring future engineers!

Cocktails 5:30 pm

Dinner 6:30 pm

Program starts at 7:00 Sharp

- ~ A poultry dish will be served, so please let us know of any special dietary requests.
- ~ The Union League Club is located at:
65 West Jackson Boulevard
Chicago, Illinois 60604
- ~ Valet and Self Service Parking will be available along S. Federal St..
- ~ **Questions?** Please contact Sarah Harbaugh, our Section's Executive Secretary at illinoissection@isasce.org

**Take Advantage of Reduced Rates!
Register Before September 20th**

Website: www.isasce.org

Registration: <https://www.123signup.com/register?id=sycfp>

Registrations are due by:

Wednesday, October 5th



MAP-21: Transportation Legislation

(continued from page 1)

The ASCE Transportation and Development Institute (TDI) and ASCE Illinois Section have been a supporting member of TFIC for over five years. TFIC is a consortium of diverse organizations which unite together to form a common voice for all of Illinois regarding the transportation funding needs on the State level as well as nationally. Their board members and staff should be applauded for the effort put forth over the last year during the discussions of a Federal Transportation Bill, which ultimately resulted with a 2+ year Federal Transportation Bill. On the local level TIFC provided support for the passing of the 12 billion dollar Illinois Tollway—Move Illinois Capital Plan.

What does MAP-21 mean?

- Provides highway/transit authorizations for remaining 2 months of FY 12 plus all of FY 13 and FY14. Prior to this authorization funding was secured by 10 SAFETEA-LU extensions.
- Does not provide any rail authorizations.
- Funding is maintained at FY12 with some adjustments for inflation.

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Funding is also provided through FY13 for projects of Regional of National significance using General Funds (appropriation required). Illinois is increasing its portion of the highway funding from 3.52 percent to 3.67 percent.

- Regarding transit, the Rail modernization program is replaced by the State of Good Repair program and expansion of new starts program to include core capacity projects on existing lines, which could help CTA and METRA. Nationally transit spending is increasing by 13 percent from SAFETEA-LU (2006-2009).
- Requires development of national freight network (no special funding provided).
- Prohibits NHSTA safety money for red light or speed cameras.
- Congressional Budget office projects Highway Trust Fund balance to be exhausted in FY15.
- The environmental review process is streamlined and establishes transit/highway performance requirements and asset management plans.

While many would like to have seen a longer multi-year program, MAP-21 is a step in the right direction. Illinois is fortunate to have a common voice regarding transportation, which is growing in numbers and is being recognized around the State and Country.

- The current user fees are extended through the end of FY16.

More information can be found regarding the implementation of MAP-21 on the CMAP website at www.cmap.illinois.gov **ASCE**

Matthew Huffman, an engineer at Christopher B. Burke Engineering, Ltd., is the Section's Membership Chair and the T&DI Chair. This article provided by T&DI.

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- Al Truss, President, Fountainhead Group Consulting, Ltd.
BillQuick user

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www.hendricks_consulting.com

Mr. Florida State
Foster Foundation
38 Broadway Street
Fruita, CA 95020

Project ID: 11-001
Project Name: Long Beach Harbor
Manager: SM

Invoice Date	Invoice Month
Feb 1, 2011	1/2011

Billing From	Billing To
Jan 01, 2011	Jan 31, 2011

Invoice

Phase	Phase Description	Contract Amount	% Complete	Price Billings	Due Invoice
11.001010	Schematic Design	\$4,000.00	90%	\$0.00	\$4,000.00
11.001020	Design Development	\$4,000.00	90%	\$0.00	\$1,200.00
11.001030	Construction Documents	\$4,000.00	90%	\$0.00	\$1,000.00
11.001040	Construction Administration	\$2,000.00	90%	\$0.00	\$600.00
TOTALS:		\$14,000.00		\$0.00	\$7,800.00

Consultant Fees:

Description	Date	Units	Cost	Amount
Structural Engineer Progress #1	1/1/2011	1.00	\$8,000.00	\$8,000.00
				\$8,000.00

Reimbursable Expenses

Index	Date	Units	Cost	Amount
	1/1/2011	1.00	\$24.00	\$24.00
				\$24.00

Total Amount Due: **\$7,824.00**

Due Amount is due upon receipt

Account Summary

Bill To Date	Paid To Date	Balance Due
01/31/2011	01/31/2011	\$7,824.00

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Section Activities

S E P T E M B E R

T&DI

Board Meeting

Date: Tuesday, September 11

Time: 5:30pm

Place: Primera Engineers
100 S. Wacker Dr., Suite 700
Chicago, IL 60606

RSVP: By Monday, September 10th
to co-hosts Charlie Frangos
and Andy Walton at
cfrangos@primerachicago.com
or awalton@primerachicago.com

(Any ASCE member is welcome to attend.)

Geo-Institute

Dinner Meeting

Date: Wednesday, September 12

Time: 5:15pm Cocktails
6:00pm Dinner

Topic: 2009 TERZAGHI LECTURE:
Uncertain Geotechnical Truth
and Cost Effective High-Rise
Foundation Design

Speaker: Clyde N. Baker, Jr., P.E., S.E.

Place: The Parthenon
314 S. Halsted St.
Chicago, IL 60661

RSVP: Dhooli Raj at draj@collinsengr.com

Younger Member Group

Inaugural Bags Tournament and Networking Event

Date: Thursday, September 13

Time: 5:30pm

Place: Lizzie McNeill's Irish Pub
400 N. McClurg Court
Chicago IL 60611

T&DI

Seminar Program

Date: Thursday, September 20

Time: 7:30 to 8:00 Breakfast (included)
8:00 to 12:00 Morning Session,
12:00 to 1:00 Lunch (not included)
1:00 to 4:00 Afternoon Session

Topic: Asphalt Maintenance

Speaker: Tim Murphy
Murphy Pavement Technology, Inc.

Place: IIT, Rice Campus
201 E. Loop Rd.
Wheaton, IL 60189

PDHs: 6.0 Hours

Cost: \$100 ASCE,
\$125 Non-members and
Pay at the Door
\$50 Students

RSVP: By Tuesday, September 12th at
<https://www.123signup.com/event?id=sdddq>

Questions: Mukul Pal at
mukul.pal@hdrinc.com
or (773) 867-7213

Upcoming Activities

SEI Illinois Chapter (Co-Hosted with SEAIOI)

October Dinner Meeting

Date: Tuesday, October 2

Time: 5:00pm Cocktails
6:00pm Dinner/Presentation

Topic: What We Learned from the Indiana
State Fair Collapse Incident

Speakers: Scott G. Nacheman, MSc.Eng.,
AIA & Gary Storm, P.E.,
Thornton Tomasetti

Place: Cliff Dweller's Club
200 S. Michigan Ave, 22nd Floor
Chicago, IL 60604

PDHs: 1.0 Hour

Cost: \$45 - SEAIOI or ASCE members
\$65 - non-SEAIOI or
non-ASCE members

RSVP: By Thursday, September 27th to
office@seaoi.org

Questions: Contact Donna Childs at
(312) 726-4165 ext.200

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Section Activities

(continued from page 8)

2012 ASCE Illinois Section

Annual Dinner Meeting

Date: Wednesday, October 10

Time: 5:30pm Cocktails
6:30pm Dinner and Program

Join us for a special night of celebrating outstanding engineers and projects that have made a difference in Illinois!

Place: Union League Club
65 W. Jackson
Chicago, IL 60604

Cost: Before September 20th:
Regular Rate \$85 / Student \$50

After September 20th:
Regular Rate \$100 / Student \$75

RSVP: Wednesday, October 3rd at
<https://www.123signup.com/register?id=sycfp>

If your firm or organization is interested in sponsoring this year's American Society of Civil Engineer's Annual Dinner, please contact: Fran Miller at (630) 665-8585 or fmiller@geopier.com or Victor Van Santen at (773) 380-7966 or victor.vansanten@hdrinc.com

We thank you in advance for your consideration. Your sponsorship benefits ASCE by defraying the dinner costs for its members and provides your firm with prominent advertising before, during and after the event.

Des Plaines Public Library

Family Science Expo

Date: Saturday, October 13

Time: Noon to 4:00pm

Place: Des Plaines Public Library
1501 Ellinwood St
Des Plaines

This all ages event will highlight various engineering and science fields with hands-on activities. Volunteers are needed for 2 hr shifts, plus set-up/clean-up. Will be leading PBS Design Squad activities.

Contact: Stephanie Nurre at
snurre@cbbel.com
to volunteer and for more details

ASCE Region 3 Activities

Dam Breach Analysis Using the Hydrologic Engineering Center's River Analysis System HEC-RAS

October 24-26

Chicago, IL

Design of Cold Formed Steel Structures

November 1-2

Chicago, IL

Structural Design of Buildings and Industrial Facilities for Blast Loads and Accidental Chemical Explosions

November 14-16

Cleveland, OH



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Highway Structural Engineer

We are seeking a structural engineer for the design of highway structures (bridges, culverts, retaining walls, etc.) in our Springfield, IL office location. Pluses include: two or more years of experience in the design of highway structures, registration as a Structural Engineer in the State of Illinois, ability to work with minimal supervision and guidance, willingness to mentor junior engineers, qualification as a Team Leader for bridge inspections in the State of Illinois. Interested candidates are encouraged to email a brief description of their background and experience, along with a one page (maximum) resume to: resumes@lineng.com.

Illinois Section News & Secretary Report

AUGUST 2012

In an effort to inform Illinois Section members of the discussions at the monthly Board meetings, the Section Secretary contributes this monthly article to the newsletter. Any questions or comments on the Board activities are welcome by contacting Patrick Lach, at plach@heyassoc.com

■ Treasurer's Report

▲ Treasurer MacKinnon presented the Treasurer's Monthly Report.

■ Group Reports

▲ Groups presented a written report outlining previous and current month's activities.

■ New Business

▲ Sarah Ruthko gave a presentation on some of the latest Engineers Without Borders projects that they are working on. EWB is asking the Illinois Section for funding assistance for the projects. The Board will discuss this at the next meeting.

▲ The Region 3 Meeting is being held in Chicago in August and several Board members are attending on behalf of the Section.

▲ Transportation for Illinois Coalition (TFIC) is holding 3 information summits across the state. TD&I is sending six members

▲ Student Outreach – The Section participated in a Design Squad Event at the Taste of Chicago. The Section is also looking at helping out a local charter school.

▲ The Illinois Section Awards deadline is to be extended to attempt to get several more nominations for categories without any.

▲ The Annual Dinner is to be held at the Union League Club in Chicago on October 10, 2012.

■ Old Business

▲ The recent lobbying efforts undertaken by the Section will be discussed at the next meeting to determine the potential scope of these efforts for the next year.

▲ The Section sponsored the GEMS (Girl Engineers, Mathematicians and Scientists) annual event geared for high school girls interested in STEM-related fields.

The next board meeting is scheduled for Monday, September 10, 2012 at 5:30pm at MWH Americas, Inc., 175 West Jackson Blvd, 19th Floor. *Note that this is the second Monday of the month since the first Monday is on Labor Day.*

By Patrick Lach
plach@heyassoc.com

Land Surveying Education in Chicagoland through Southern Illinois University Carbondale

Would you like to train yourself or your employees to become licensed Professional Land Surveyors? If yes, SIU Carbondale offers its high quality land surveying courses in the Chicagoland area for those who cannot attend SIU Carbondale full-time. Along with the theoretical concepts, this program has a complete laboratory component where students learn the required field techniques and equipment used in today's practice. Generally, one course per semester is offered on weekends in the Fall, Spring, and Summer semesters. New students can now join the 24 credit hour sequence every summer by taking the Basic Surveying course. Those who have already taken an approved Basic Surveying course, or equivalent, can join the sequence in a Fall semester (Spring semester enrollments may be allowed depending on the pre-requisites).

Course offerings are subject to minimum enrollment requirements. If you are interested, please contact Mr. Brandon Edwards (bpedward@siu.edu) or Mr. Kyle Allred (kyallred@siu.edu) in the Department of Civil and Environmental Engineering, or call the Department at (618) 536-2368.