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AMERICAN SOCIETY OF CIVIL ENGINEERS

SAN BERNARDINO & RIVERSIDE COUNTIES BRANCH
LOS ANGELES SECTION , REGION 9-SINCE 1953

PRESIDENTS MESSAGE

July 2013

We are now into summer and the last quarter of this ASCE year. This year as President of your Branch it is amazing to me at how quickly the year flew by. Last month in June was our Annual Awards Banquet. Please see the article on page 6 to see who the big winners were for the Outstanding Civil Engineering Projects, the Honorable Mentions, and the Engineer's of the Year.

This year's annual banquet was a great success with proceeds from the meeting's sponsors to be saved for next years student scholarships. This year your branch awarded three $1,000 scholarships and the Younger Member Forum (YMF) awarded two $500 scholarships. All earned by deserving students from both Cal Poly Pomona and Cal Baptist who actively participate in ASCE at the collegiate level. The scholarship money this year was generated from last years Awards Banquet and the joint golf tournament with CLSA.

This year, on September 20th, your Branch will be hosting its first Annual Scholarship Golf Tournament to raise funds for next year's student scholarships. If you're a golfer this will be a fun tournament so come on out and have a great time. If you're not a golfer and the work is done for the day, come on out after work to the golf awards banquet and raffle after the tournament, with good food, drinks, and great raffle prizes, its sure to be a lot of fun, so please come on out and join us for the banquet. If you have time please stop by and give us a hand during the day. These golf tournaments don't just happen by themselves; these tournaments take a lot of hard work by dedicated people who like to share their time for the opportunity for students to continue their education. As you may have already guessed most of the work is done by your Board. However, putting on a golf tournament will take more manpower than the 7 people serving on the Board.

As always each month, I have a great time serving as your Branch President and I look forward to the challenges heading into the last quarter of this fiscal year.

NEWSLETTER

This Month in Engineering History

Michael Sampson, Assistant Newsletter Editor

Öresund Bridge

The Öresund or Oresund Bridge is a double-track railway and dual carriageway bridge-tunnel across the Oresund strait between Scania (southernmost Sweden) and Denmark. The bridge runs nearly 5 miles from the Swedish coast to the artificial island of Peberholm, which lies in the middle of the strait. The remainder of the link is by a 2.5 mile tunnel from Peberholm to the Danish island of Amager. The Oresund Bridge is the longest combined road and rail bridge in Europe, and connects two major metropolitan areas: Copenhagen, the Danish capital city, and the major Swedish city of Malmö. In addition it connects the road and rail networks of Scandinavia with those of Central and Western Europe. The justification for the additional expenditure and complexity related to digging a tunnel for part of the way, rather than raising that section of the bridge, was to avoid interfering with air traffic from the nearby Copenhagen International Airport, to provide a clear channel for ships in good weather or bad, and to prevent ice flows from blocking the strait. The construction of the Øresund Bridge, which was undertaken by a joint venture of Hochtief, Skanska, Højgaard & Schultz and Monberg & Thorsen, began in 1995, and was finished 14 August 1999. Crown Prince Frederik of Denmark and Crown Princess Victoria of Sweden met midway across the bridge-tunnel on 14 August 1999 to celebrate its completion. Its official dedication took place on 1 July 2000, with Queen Margrethe II, and King Carl XVI Gustaf as the host and hostess of the ceremony. The bridge-tunnel was opened for public traffic later that day. On 12 June 2000, two weeks before the dedication, 79,871 runners competed in Broloppet, a half marathon from Amager, Denmark, to Skåne, Sweden. In spite of two schedule setbacks – the discovery of 16 unexploded World War II bombs on the seafloor and an inadvertently skewed tunnel segment – the bridge-tunnel was finished three months ahead of schedule.

Initially, the crossing was not used as much as expected, probably because of the high tolls, but since 2005 there has been a rapid increase in traffic.

The cost for the Oresund Connection, including motorway and railway connections on land, was DKK 30.1 billion (equivalent to $5.7 billion USD) according to the 2000 year price index, with the cost of the bridge paid back by 2035. In 2006, Sweden began spending a further SEK 9.45 billion on the Malmö City Tunnel as a new rail connection to the bridge. It was completed in December 2010.

If you want to see more head over to YouTube and see what it looks like http://www.youtube.com/watch?v=rEu22iMzjrA

INSIDE THIS ISSUE

July Meeting

The Cadiz Valley Water Conservation, Recovery & Storage Project

Come join the San Bernardino & Riverside Counties Branch of ASCE and the Inland Empire Branch of APWA at our joint July luncheon as we welcome **Scott S. Slater**, from **Cadiz, Inc.**, as he discusses this unique water project planned for California's Eastern Mojave Desert.

Date: **Thursday, July 11, 2013**

Time: 11:30am to 1:30pm

Location: Canyon Crest Country Club
975 Country Club Drive
Riverside, CA 92506

Cost: $25 members w/ RSVP
$30 non-members or no RSVP
$15 students

Deadline: Please reserve by July 9, 2013

Additional Info: Matthew Addington
matthew.addington@cityofrc.us
(909) 477-2710

YMF Technical Tour
Palm Springs Aerial Tramway Tour

By: Mark Swanson, PE

A group of nineteen Section, Branch, and Student Members gathered at the base of Chino Canyon in Palm Springs on May 10, 2013 for what turned out to be an exciting and informative technical tour of the Palm Springs Aerial Tramway.

The tour started at the Valley Station (located at the base of Chino Canyon) which is located just off Highway 111 at an elevation of 2,643 feet, where the attendees were taken to exclusive areas such as the engine room, control room, and equipment loading dock.

While in the engine room, the group learned that the tramway is powered by a 1,100 hp Silicon Control Rectifier electric motor that requires 2,500 amps of power, and a 1,050 hp 12-cylinder diesel motor for a backup. The main motor is capable of moving the tramway of speeds up to 10 m/s while the backup motor can move the tramway up to 6 m/s. The engines provide power to the Main Drive Gear Box which then turns the main haul rope drive wheel, turning the cables which move the tramway. In 1963, when the tramway first opened, the tramway utilized a dual haul rope system, but this was replaced in 2000 with a single haul rope system. The haul rope is a 40mm woven wire rope that is approximately 13,100 feet long and weighs 4.2 pounds per foot. Attendees were also introduced to how bull wheels function and the 120-ton counterweights which keep tension on the track cables as the tram cars travel between towers.

Attendees learned about the tram cars which are manufactured in Switzerland by Rotair. The tram cars are unique in that the floor inside rotates. These are one of three in the world, the others being in Switzerland and South Africa. Each tram car has a payload capacity of 7-tons (total weight capacity of 11-tons) and can accommodate up to 80 passengers each trip. Below each tram car is a removable 800-gallon water tank which helps keep the 120,000 gallon water tank at the Mountain Station filled. When other supplies and/or materials are needed at the Mountain Station, the 800-gallon water tank is removed and the supplies and/or materials are attached to the bottom of the tram car and carried up. There are no resources at the Mountain Station, which has an elevation of 8,516 feet, everything such as water, food, food waste, construction materials, construction equipment, and all other supplies must be brought up via the tram cars.

After an in-depth discussion about the engines and tram cars, the tour proceeded to the control room where the group was introduced to the “brain” of the tramway which consists of a large master control board (a lot of buttons and switches) and several monitoring systems which track and record atmospheric conditions, tower movement, and tram car conditions. Several of the circuit boards used in the control room can only be purchased in Switzerland, so there is redundancy built into the controlling system in order minimize down time due to the lead time needed to obtain equipment from Switzerland.

The technical part of the tour took a back seat for a short time as the group departed the Valley Station aboard one of the tram cars en route to the Mountain Station. The views of the mountains and desert valley were breathtaking.

Once at the Mountain Station, the tour resumed with discussions about unloading equipment via a scissor lift, electricity, water supply, and wastewater. Electricity was installed separate of the tramway towers and required heavy use of helicopters due to the extreme terrain and limited accessibility. The 120,000 gallon water tank is located approximately 300 feet above the Mountain Station, made of wood and was purchased from the railroad when the tramway was constructed. It serves as the drinking water supply for the Mountain Station and is filled with the water carried up the mountain by the tram cars. The tour concluded with a short hike to the wastewater tanks and leech field where all wastes are conveyed, treated, and then discharged to an underground leech field.

This tour was one that all civil engineers should try to be a part of at least once, because the Aerial Tramway truly is an engineering marvel and it is tucked away in our own backyard.

Due to the popularity of this tour, we will be planning another tour later this fall, so keep your eye out for the flier and if you are interested, sign up early.

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Local Employment Opportunities

Santa Ana Watershed Project Authority has a new open position for a Watershed Manager, for additional information go to: http://www.sawpa.org/meet-us/careers/

City of La Verne is looking for a new Public Works Manager, for additional information go to: http://www.ci.la-verne.ca.us/index.php/docs/employment-flyers

2013 Annual Awards Program

The Branch's annual meeting brought out a packed house for the presentation of Project Awards and Student Scholarships, along with the presentation of the slate of officers for the 2013/14 San Bernardino / Riverside Branch took place on June 22 at the Holiday Inn in Ontario.

Undergraduate Civil Engineering scholarships of $1,000 each were awarded by the Branch to Kaitlyn Hayner (CBU), Stephen Fatland (CBU), and Steven Taylor (CPP). Additionally, the Younger Member Forum awarded two scholarships of $500 each to Christine Zheng (CPP) and Kevin Castillo (CPP).

The Civil Engineering Outstanding Project of the Year award was given to the City of Rancho Cucamonga for the $11 Million Public Works Services Center and Household Hazardous Waste Facility. The state of the art facility implemented several green building techniques focused on long term sustainability including: natural lighting, incorporating over 700 solar panels into building roofs, solar parking lot lighting, limiting painted surfaces and focusing on natural material finishes, California native and other drought tolerant landscaping, and subterranean drop irrigation. The project was presented by Bill Wittkopf, Public Works Services Director and and Mark Steuer, City Engineer.

The Project Improvement of the Year award was presented to the Riverside County Transportation Department for the recently completed $32 million Van Buren Bridge Project over the Santa Ana River. The award was accepted by Riverside County transportation director Juan Perez and transportation project manager Tayfun Saglam. The improvement project made it over several challenges including: construction over an active river bed, high groundwater, bedrock, monitoring and mitigating two protected species, and heavy rains. The new bridges maintain the major transportation link connecting communities on both sides of the Santa Ana River carrying 50,000 vehicle trips per day over the four permanent lanes. The bridges include barricaded sidewalks for safe pedestrian travel, decorative lighting, and are wide enough to accommodate a third travel lane and Class II bike lane in the future.

Honorable Mention Awards were presented to the City of Rancho Cucamonga for the Freedom Courtyard, AES Wind Generation, Inc. and Hydrologic Science, Inc. for the Wind Energy Generation Structure Improvements in the Coachella Valley, and County of Riverside Transportation Department & Economic Development Agency for the Mecca Street Revitalization Project Boys and Girls Clubhouse, and the City of Murrieta for the I-15 at

California Oaks Road Interchange.

Our profession is full of dedicated, hard working civil engineers. However, a few of our coworkers and colleagues stand out from the pack and deserve recognition as Civil Engineer of the Year for their dedication to the engineering profession. This year's winners included: Jeffrey Hitch with the City of Murrietta (Government Sector), Mark Swanson with AEI-CASC (Private Sector), and Julianna Gonzalez with the Riverside County Flood Control and Water Conservation District (Young Engineer).

The Branch would also like to extend a special thanks to all of our event sponsors!

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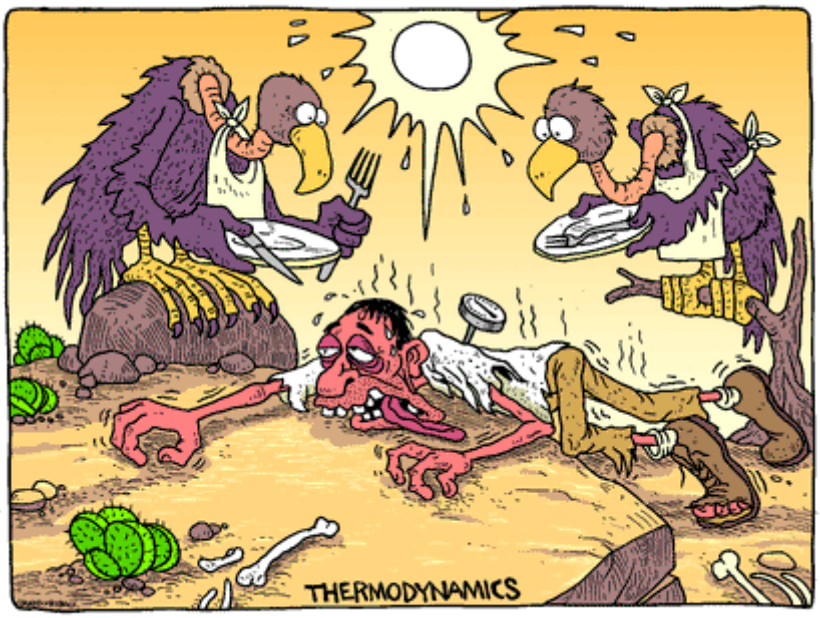

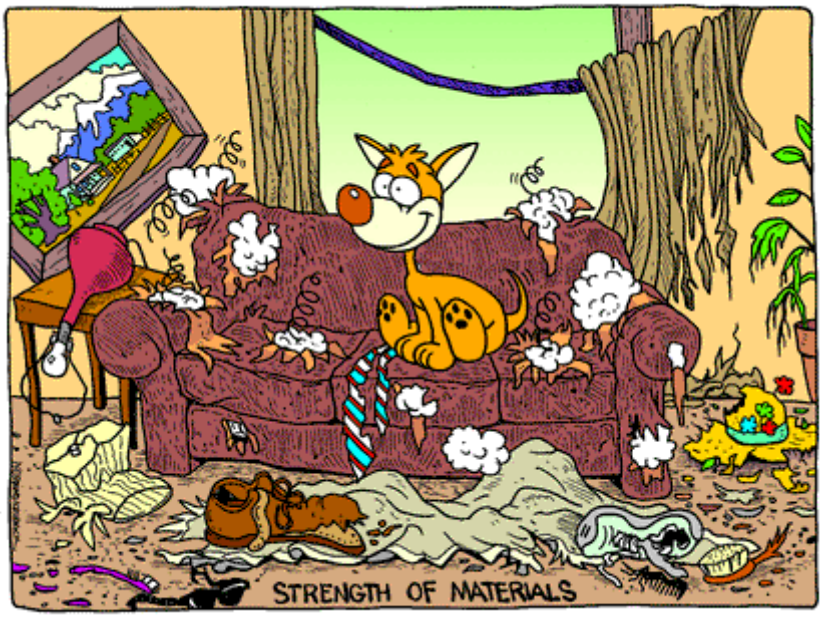

Cartoon By: Rand Kruback

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July 2013

July 11	Branch Joint Luncheon with AWPA at Canyon Crest Country Club in Riverside
July 18	Happ Hour With YMF, Location TBA (Riverside)
July 20	Rock Climbing with YMF, Location TBA

Membership Information

Type of Membership and Annual Dues (National)

Students:	Free
Associate Member:	$50 year of baccalaureate Degree and first year after, Then incremental increases to $205 over five years.
Member:	$205 annually
Affiliate:	$205 annually
Section (Branch) Dues:	$45/year

1. National ASCE Student Membership is now FREE! Those who have chapters or clubs still must be a member of them before joining National. Log onto https://www.asce.org/online/ fill out the short application and instantly become a member of ASCE or call 1-800-548-ASCE (2723)

2. Online Membership renewal available, go to https://www.asce.org/renewal/inforenewal.cfm. You need your membership number, all payments must be made with a major credit card. An e-receipt is transmitted to the member upon completion of the transaction.

NEWSLETTER INFORMATION

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