

Cuban-American Association of Civil Engineers, Inc.
Visit us at www.c-aace.com
Summer 2012, Issue No. 85

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# **INGENIERIA**, the C-AACE Newsletter, Summer 2012

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# **Committees**

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Cuban Patriotic Organization Liaison

Young Professionals

Maria Fernandez Porrata

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# **Announcements**

Do we have your email address? We are moving towards delivering all of our announcements and publications in electronic format. If you are not sure if we have your email address, please send it, with the subject "C-AACE email," to jacosta@chenmoore.com. That will ensure you will continue receiving the C-AACE Newsletter. Please send us a note to that effect at 2191 NW 97th Avenue Miami, Florida 33172.



# **Front/Back Covers**

The front cover (Monumento a Jose Marti in Havana's Plaza Civica) and back cover (El Morro, or the Castillo de San Pedro de la Roca in Santiago de Cuba) of this issue represent two monuments that transcend political power and time. For their history, please see page 18



# **President's Corner**

By Maria Fernandez Porrata, President

Welcome to our summer edition of "Ingenieria". I wish to express my sincere gratitude to all the member of the Cuban American Association of Civil Engineers who took the time to elect the 2011-2013 board of directors and trusted me as your newly elected President. I would like to thank all previous boards and past presidents for their leadership these fifty plus years in exile.

It seems that the elections were a long time ago, but, they took place during the summer of 2011. We were delighted and highly honored by the acceptance of our Congresswoman Ileana Ros-Lehtinen to grant us the honor of installing our new board. Congresswoman Ileana Ros-Lehtinen was the first Hispanic (Cuban-American) woman to be elected to the Senate of Florida and then to the Congress of the United States of America. Her speech about "What is an Engineer?" received much applause from the audience. Her humoristic fashion on exalting the duties of each of the Board members made the audience laugh; portions of the by-laws of our organization will never be remembered the same way when re-visited in the future. If you would like to hear the brief speech go to: www.youtube.com/watch?v=7BmQynlGOKY

As your new President, I am honored and privileged to serve you for the next two years. The Board and I look forward to working together on several on-going goals and new initiatives, which include the following:

# **On-Going Goals:**

Continue to work on the yearly tasks and many goals of the organization. I would like to mention a few that have been accomplished for the 2012 year, for example:

- → Our yearly "Dia del Ingeniero Gala"
- → Raise the funds needed to maintain the vision and mission of our organization
- → Endorse and support national engineering programs such as "Future City"
- → Initiate the Infrastructure Challenge Student Competition

# **New Initiatives:**

- → Obtain 501(c)3 Status for the organization
- → Establish the "Order of the Engineer" for the first time in the South Florida Region
- → Keep an active participation on other Cuban Patriotic Organizations
- → Unveil a new website in 2012
- → Increase membership and promote younger professional participation
- → Create a student chapter at each of the local universities FIU/UM/MDC
- → Raise awareness about our industry and its needs. Support the American Society of Civil Engineers in completion and dissemination of the 2012 Florida Report Card and the National Report Card, on infrastructure. I am pleased to have the honor to co-share the Florida Report Card 2012 which will be unveiled later this summer. I invite you to become advocates, please join us.
- → Construct of a monument dedicated to the Cuban engineer: "Busto al Ingeniero Cubano"

I have a great commitment to this association and will do my very best to fill the shoes left by our founding fathers and previous presidents. I will always honor them and follow the by-laws, rules and regulations. I thank each of you, volunteers, board of director's members, association members, students and you the reader for making this organization what we are and preserving its future.

I hope that you all have a great summer vacation and that I will see you at all our upcoming events.

Respectfully,

Maria Fernandez Porrata President

# Industry Spotlight Features: José "Pepito" Abreu, P.E.

By Delfin A. Molins, E.I.



In this edition of "Industry Spotlight" we will feature another prominent figure of our industry, whose executive leadership style has formulated the landscape of our daily business, local community and neighborhood infrastructure. José Abreu is a very close colleague, friend and mentor. I have known him since he worked with my father at H. J. Ross and Associates in the late '70s.

Pepito as his friends call him immigrated to the United States of America in 1968 at the age of 13. He came in the unaccompanied children's program through a third country (Spain) also known as the second wave of Pedro Pans. He stayed with his aunt (Nora) and uncle (Eduardo Penzol-Labandera) until his parents (Jose and Irma Abreu) came almost three years later. At the age of six, Jose Abreu Sr. introduced José to the engineer-in-charge of the restoration project of el "Banco de los Colonos" in Havana, thus influencing him greatly to become an engineer. In addition, his grandfather (Eduardo Fernandez Penzol-Labandera) was the Supervisor of Communications (Jefe de Movimientos) for the Cuban railroad system.

Today José is the Director of the Miami-Dade Aviation Department (MDAD). He directs the operations at Miami International Airport (MIA) and four general aviation airports in the Miami area. MIA handles more than 35 million passengers and two million tons of cargo annually, and is among the nation's busiest international passenger and cargo airports.

He oversees one of the largest airport expansion programs in the U.S., a \$6.4 billion capital improvement program that is adding new terminals, roadways and other infrastructure to MIA and the County's general aviation airports.

Prior to his July 2005 appointment as Aviation Director, Pepito served for two and a half years as Secretary of the Florida Department of Transportation (FDOT) under Governor Jeb Bush. In his role, he oversaw the operation of FDOT including seven districts and the Florida Turnpike Enterprise covering the entire state, 7,500 employees and an annual budget of \$9 billion. Prior to his appointment as FDOT Secretary, he served 18 years in progressively senior positions at FDOT, including eight years as District Six Secretary for Miami-Dade and Monroe counties.

He holds a bachelor's degree in Civil Engineering from the University of Miami and is a licensed Professional Engineer and Certified Engineering Contractor in Florida.

Throughout his career José serves on a number of boards, including the Cuban-American Association of Civil Engineers, Inc. (C-AACE) and the United Way Executive Board. Also, he served on the University of Miami, College of Engineering Industrial Advisory Board (IAB). In March 2008, he was appointed by the U.S. Secretary of Commerce to serve on the Travel and Tourism Advisory Board (TTAB). He is a Fellow of the American Society of Civil Engineers. He has received numerous awards including: the 1996 Distinguished Alumnus Award from the University of Miami College of Engineering; the 2000 Wilbur S. Smith Award; the National Highway Engineering honor; the 2004 Civil Government Award, presented by the American Society of Civil Engineers; and the Florida Engineering Society (FES) award for outstanding service to the profession in the category of government. He was also named one of the "100 Most Influential Hispanics" in 2003 by Hispanic Business magazine and one of the Top 25 Newsmakers of 2007 by Engineering News-Record magazine. In 2009, he received the Wright Brother's Award presented by the greater Miami Aviation Association and in 2010 he received the International Achievements Award presented by World Trade Center Miami. In 2011, he was named one of "Miami's 75 most influential people in politics, business sports and arts" by Poder magazine. Also in 2011, he received the Bob Graham Architectural Awareness Award presented by the American Institute of Architects.

Busy as Pepito is, he found the time earlier this year to have dinner with me and to share his philosophy of life and professional career. Here is what he had to say.

# How have your accomplishments prepare you for your position as Aviation Director?

"I don't really know of any accomplishments that I have made as an individual. It has always been as part of a team; therefore, I would say that being a team player all these years has definitely helped me in my position as Aviation Director."

# What is on the radar for the Capital Improvement Projects at Miami International Airport (MIA)?

"We do have many additional infrastructure needs. However, we can't continue doing business the way we have always done in the past. Selling and repaying bonds as part of the normal rates and charges process has put us in a position with a very high debt service. Therefore, the only way to get the amount of money we need to continue with our Capital Improvement Plan is to look into a public/private investment model; and to that end we have been negotiating with developers to establish a concept called "Airport City," which would include an office park, service plaza, and two hotels (one four-star and one three-star). These projects would be linked together by the newly inaugurated MIA Mover. I think this is the way to go since our ability to borrow money is capped, obviously, by our ability to pay it back. So, this is what I see in terms of the future."

# The state-of-the-arts South Terminal was completed a few years ago, which won our Project of the Year in Category III and the North Terminal has just been is almost completed. Terminal C and D are under renovations, when do you anticipate them to be completed? Will the other terminals be renovated and when?

"Well, at this point it's important to note that the North Terminal is 94% complete. Upon 100% completion, North Terminal will have 50 gates and will encompass the areas formerly known as Concourses A thru D in the old airport configuration. In other words, there is no such thing as Concourse C anymore. Likewise, the South Terminal encompasses Concourses H and J, and the Central Terminal encompasses Concourses E, F and G. We're currently only doing cosmetic renovations at the Central Terminal, again, due to our concerns associated with the debt service. So, we are thinking that perhaps the public/private investment approach may be the correct one for the Central Terminal as well. Let's keep in mind that the Central Terminal would only carry approximately five to eight percent of our passenger traffic, as opposed to approximately 70% of our overall passenger traffic at the North Terminal and the remaining approximately 22 – 25% of our passenger traffic at the South Terminal. Concourse G is our oldest concourse, but it's still in good shape for purposes of domestic traffic. We anticipate that we are going to do something with the public/private model on Central Terminal, but we would be looking at 2015-2016 to issue a Request for Proposals (RFP)."

MIA is bounded by NW 36th Street on the north, the Palmetto Expressway (SR 826) on the west, the Dolphin Expressway (SR 836) on the south and NW 42nd Avenue (LeJuene Road) on the East. Does the Aviation Department have any plans to relocate the MIA to a new remote location or will one of the existing airports, such as Opa Locka, Tamiami or Homestead, be developed to accept domestic routes?

"MIA which consists of approximately 3,300 acres is landlocked, and any future airport development beyond the airport's boundaries could be challenged from an economical, environmental and community point of view.

We are about half way complete with our 2035-2050 Strategic Master Plan. This comprehensive plan will identify future growth needs and development potentials for MIA and our four General Aviation (GA) Airports. As far as our four GA airports are concerned, Tamiami (TMB) and Opa Locka (OPF) presently offer a reliever function for MIA in terms of general aviation and aircraft maintenance activities. However, with the exception of OPF, the County's GA airports are not suitable to augment MIA's commercial operations due to a variety of reasons. The airport and infrastructure configurations at these general aviation airports would require extensive capital investment to accommodate the larger commercial aviation fleets, and the economical, environmental, and community impacts could also require extensive mitigation. OPF is also limited by County resolution limiting the development and implementation of any commercial aviation operations (Part 139)."

MIA is one of four airports to accommodate service of the Lufthansa Airlines new A 380 Airbus between MIA and Frankfurt. The other airports are New York's Kennedy, Los Angeles' LAX, and Washington, D.C's, Dulles. Please describe the complexity of this accomplishment. Can MIA accommodate any other airline carrier that would like to use this type of jumbo aircraft?

"MDAD has been following the development of the A380 and coordinating closely with Airbus since announcement the aircraft back in the 1990's. In 2003, MDAD submitted a Modification of Standards (MOS) request to FAA for approval. FAA's standards classify the A380 as a Group VI aircraft vis-à-vis the Group V for the 747, consequently requiring 100 ft. wide taxiways and 200 ft. wide runways in lieu of the 75 ft. wide taxiways and 150 ft. runways required for Design Group V airports such as MIA. The MOS request was to allow to the A380 to operate at MIA which is a Group V airport.

Knowing this was a critical issue for the airports, Airbus designed the A380 to operate fully within Group V airports such as MIA. On July of 2007, the FAA approved A380 landing operations on 150-foot-wide runways and taxi operations on 75-foot-wide areas clearing the way for A380 operations at MIA. Consequently, MIA did not require any expensive modifications to its runways or taxiways. Finally, on March 2010, our MIA A380 Operational Plan was approved by FAA Air Traffic Control and MDAD Airside Operations; one full year ahead of the first A380 flight into MIA.

Four airlines operating at MIA have ordered the A380. In June 10, 2011, Lufthansa (LH) commenced their A380 operations at MIA with a daily service between Frankfort and Miami. British Airways (BA) ordered 12 A380s; with expected first delivery in 2013. Air France (AF), has taken delivery of five A380s total order of 12 has expressed interest in MIA although not defined their route network yet. Virgin Atlantic (VS), has ordered six A380's with first delivery expected in 2014-2015.

The only developmental issue to accommodating additional A380s to operate at MIA would be the requirement by airlines, which operate the A380 of an additional passenger loading bridge to reach the second deck of the aircraft. This arrangement offers better passenger service and cabin class access differentiation, and thus provides for a simplified aircraft boarding process. Currently, we only have one gate at MIA (J17) with three loading bridges that accommodates the LH A380 aircraft. Consequently, having additional A380s would require MIA to retrofit additional gates to be A380 compliant, and obviously there is a cost associated with it. MIA would have to revisit the retrofit of gates once we get a firm commitment from another airline wanting to operate an A380 aircraft at MIA."

The car rental facility of the Miami Intermodal Center (MIC) is open for business along with the MIC/MIA Connector to transport passengers to and from the airport. What were its challenges in design, construction and funding?

"Well, the challenges were huge. I actually started working on this project back in December of 1989 and back then the transfer of funds from one federal agency to another – meaning federal transit and federal highway – was something that simply was not done. It took the first real multi-modal bill, ISTEA, to come about and give us some flexibility. Then we had to work with the Congressional delegation to come up with a mechanism which turned out to be TIFIA and with that the financial package was put in place. Financing was only one of the challenges; however, having to deal with this massive eminent domain situation for the rights-of-ways was very complex. I remember that at one point in time we were looking at spending \$300 million in acquisitions. The entire MIC project is worth approximately \$1.7 billion. The MIC turned out to be an immense challenge, but today it's a model for the entire nation. I can tell you the Chairman of the Congressional Transportation and Infrastructure Committee, John Mica, uses MIA and the MIC as examples of how to bring about intermodalism. That was just a concept back then. We were planning multi-modal projects here before they became popular. I'm very proud of that. The challenges have been immense from planning to construction and it's taken a long time to find the solutions that were right for us. The Environmental Impact Statement for the MIC cost \$19 million. So we've been at it for many, many years. I believe there were a total of over 2,000 public information meetings associated with the project. While the project was definitely a challenge, it is one that is paying off big time."

# The NW 25th Street Viaduct project from the westside of MIA to NW 87th Avenue is completed to just east of the Palmetto Expressway. The Florida Department of Transportation (FDOT) designed and built the first phase of this project and will also build the second phase. How will this project benefit the westside commercial portion of MIA?

"The NW 25th Street Corridor and Viaduct is a planned logistical backbone of MIA's Air-Cargo facilities, and by extension the Miami air-cargo industry. This crucial roadway improvement project was designed to save time and improve safety. The project separates NW 25 Street into two levels – a widened and reconstructed roadway at grade, and a newly constructed elevated viaduct spanning over the Palmetto Expressway (SR 826) to the west and touching down at NW 82nd Avenue. The Viaduct enables cargo hauling trucks to avoid at grade traffic and a series of four debilitating railroad crossings. The NW 25 Street transportation corridor is a Miami-Dade County east-west major arterial roadway, and is the only major access corridor from the Palmetto Expressway to MIA's west side and northside air-cargo handling facilities.

An estimated 2000 trucks use this road daily during a peak two-and-a-half-hour period. Before the improvements, NW 25 Street operated at a Level of Service (LOS) F far below the minimum recommended LOS D, and the Average Annual Delayed Traffic (AADT) approached 65,000. By 2012, it is estimated that approximately 2300 trucks are expected to use this road daily during the peak two-and-a-half-hour period. The actual and anticipated growth in freight volume generated by MIA's cargo development program resulted in a high level of roadway congestion. This threatened MIA's ability to retain and grow its dominant share of the international air-cargo market, which in turn threatens the County's ability to retain and grow a significant segment of its economic and employment base.

A cost-benefit analysis with a very conservative projection of losses resulting from missed connections of mostly perishable goods is estimated at over \$1 billion annually if improvements are not in place by 2015. The second or west phase of the NW 25 Street Project is expected to go into construction early 2012. This phase will extend the viaduct over SR 826 to NW 82 Avenue and also will include roadway improvements on NW 25 Street to NW 89 Court. It is anticipated to be completed by 2015 thus making a seamless transition of cargo from the Doral area to MIA's cargo city."

# What has been your greatest achievement in your Professional Career and what legacy do you want to leave?

"My greatest professional achievement I guess would be surviving 30 years in the public sector. I do believe that things in the public sector are more complicated because of the higher accountability associated with its governance. As far as leaving a legacy, I would hope that those that come after me would plan the work before they work the plan."

I would personally like to thank Pepito for granting me this interview and most of all sharing with me anecdotes of when he worked with my Dad at H. J. Ross and Associates. I will treasure them forever.

# **Announcement**

"Hispanic and Cuban-American Engineers Working for a Better Future", this is slogan for the Association of Cuban Engineers (ACE), a slogan that drives our planning as we fulfill this important mission. ACE, organized in 1960 to help Cuban professionals migrating to the US in validating their credentials, has become a professional organization that has evolved to meet the needs of the community and profession. Today, the AIC works in three main areas. First, in addressing engineering related issues in Cuba's future, specifically with respect to the physical infrastructure. Secondly, the AIC addresses the educational aspects of engineering and Cuban culture. And finally, the AIC provides business networking opportunities. The majority of these activities are co-organized with our sister organization the Cuban-American Association of Civil Engineers (C-AACE). Our recent and planned activities focusing on these main areas have included:

- → Engineering related issues in Cuba's future. ACE is involved in promoting awareness of Cuba Infrastructure needs by supporting student design competitions, encouraging the participation of engineering colleagues within the conferences of the Association for the Study of the Cuban Economy held every summer in the Miami area, and promoting activities that encourage professional and community involvement in Cuba infrastructure issues. The most recent student design competition was held on February 25, 2012 with excellent presentations by students from Florida International University, the University of Florida, and the University of Miami. The University of Florida team additionally participated in the student paper competition sponsored by the Association for the Study of the Cuban Economy, and they won first place. We are very proud of all of the students and a special congratulations goes to the UF team for taking an additional prize. We are currently in the process of planning the 2013 Cuba Infrastructure Challenge and are looking forward to student participation. Please contact the Chairs of the 2013 Infrastructure Challenge (Cristina Ortega, Cristina.Ortega@ch2m.com, and Jose Cueto, jcueto@hazenandsawyer.com) for more information about the challenge.
- → Educational aspects of engineering and Cuban culture. ACE promotes engineering education by sponsoring design competitions as described above and by facilitating scholarships. This past March 2012 a total of twelve scholarships were awarded to engineering undergraduate and graduate students. Our goal is to match our gracious scholarship donors with students of exceptional academic capability, while at the same time fulfilling financial needs. Please contact the Chair of the ACE Scholarship Committee (Robert Sanchez, rsanchez@ryder.com) for more information about the ACE Scholarships.
- → Networking Opportunities. One of the yearly premier events of the ACE, along with C-AACE, is the "Engineers Day" Gala, a black-tie event of celebration, food, music, dancing, and above all networking. Our Gala banquet held March 31, 2012 was an incredible success attended by over 340 individuals, with award ceremonies held for the ACE and C-AACE featured professional awards, as well as, ceremonies for student scholarship award recipients. Our next Gala is planned for the Spring of 2013. Please visit our web aic-ace.com for more information about the upcoming "Engineers Day" Gala.
- → In addition to the above highlighted activities, ACE also hosts professional networking breakfasts and Cuban culture-related activities. During our next Board of Directors Inauguration meeting scheduled for October 2012, we plan to include a presentation on the history of Cuban music by reknown Cuban Music Historian and Writer, Eloy Cepero. Please contact Helena Solo-Gabriele (hmsolo@miami.edu) for more information about this event. More details about past and future events and for membership information, please visit our web site at: http://aic-ace.com/

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# **Board Installation: My First Love...**

By Eduardo A. Vega, P.E.

It was September 28, 2011, I was with Natacha, my lovely wife, attending the Cuban-American Association of Civil Engineers Board's Installation. The installation was of great significance to me since I was being honored, like a few other members, to be included in the Board of this prestigious organization. Of more significance to me, it was the first time that I was democratically elected, with the help of very good friends, to be part of any organization. This election has built my confidence to run for bigger offices. I was expecting to have a memorable night and so it was.

To my pleasant surprise, as the new Board members were gathering to have a picture taking, my very first love Ileana, walked into the Hall to join us for the occasion. I had not seen Ileana in years. We have aged since our days in high school, however, her figure suggests someone much younger than her years. When she smiled after introducing herself, she still lit up the room and stopped my heart. Obviously, she did not recognize me, since I have considerably aged and put on more pounds than her.

After collecting myself, I briefly shared the story with our new President, Maria Porrata. The new President appeared more surprised than me so I had to calm her down. I told Maria, this is the same Ileana who went to the prom with me except that, as everyone knew, this is Ileana Ros-Lehtinen, our congressional representative, in Washington. In 1989, she became the first Cuban American and also the first Hispanic woman elected to the United States Congress. It is the same Ileana that shares my conservative views.

I have to recognize that I made a mistake when confessing the intimate story to Maria. In the next few minutes and in her very first inaugural speech, she eloquently introduced Ileana and then announced, to more than 300 attending the event, that a current Board member during his high school years dated the representative and pointed to me. Thank goodness that I had previously alerted my wife and equally importantly that Dexter, Ileana's husband, was not present. So I had no choice but to stand up and tell Ileana about our lovely days at school, our 1968 prom date and how proud I felt about her success by representing our community in Congress. On the other side of the Hall, she listened to me and stood very patiently. Still today, I wondered what went through her mind. Probably she said to herself; "Who the heck is this guy"? "I never dated anyone at Southwest High School"?

In reality, I was not living in the US during my high school years. I had never met Ileana before. I just made it up. Why did I make it up? We Engineers, in general, are known to be very boring people. We are kind of uncharismatic people that cannot produce good parties. So I told myself let's do something different this time. And you know what? Many colleagues left the party believing the story. So I did provide some entertainment and now is the time to tell the truth. I also want to take this opportunity to express my most sincere gratitude to Ileana for being so gracious



2011-2013 CAACE Board of Directors Installed with Ileana Ros Lehtinen as Key Note Speaker and Master of Ceremony



Congresswoman Ileana Ros-Lehtinen with Eduardo and Natasha Vega

at the installation dinner and being an accomplice to my inaccurate story.

More importantly, to convey to her an effusive thanks for all the good work she does for all of us who live in this community.

The pictures of the event tell the rest of the story. All of the newly elected board members and those present were elated to be inducted to our various duties by Rep. Ileana Ros-Lehtinen. Thank you Ileana for honoring with your presence. Finally, I am just hoping the Board invites Sofia Vergara to the next event. Believe me, I will make up another story.

# 2011 - 2012 Jose A. Vila-Espinosa Academic Scholarship

By Delfin A. Molins, E.I.

The Cuban-American Association of Civil Engineer, Inc. (C-AACE) recognized the recipients of the annual Jose A. Vila-Espinosa Scholarship at their annual Engineering Gala held on March 31, 2012 at the Coral Gables Country Club. This gala celebrates a milestone as our 51th year anniversary. The minimum amount that each student received was \$1,000. This was dependent on the availability of funding received by private donations.

The Jose A. Vila-Espinosa Scholarship was created during the late 1960's to aid financially disadvantaged Civil Engineering students at the University of Miami (UM) with a scholarship amount of \$500. When Florida International University (FIU) became accredited, our forefathers looked at FIU as another option and unanimous decision was made by the Board of Directors to include FIU in the Jose A. Vila-Espinosa Scholarship. By this time the C-AACE was collecting \$1,000 in donations and were awarding two (2) \$500 scholarships to each university students. In recent legislation, the Board of Directors of C-AACE has decided to include all universities in the State of Florida that have accredited Civil Engineering Programs. Today the C-AACE has evolved and collected over \$3,000.00 to award three (3) one thousand dollar scholarships on an average year.

Dr. Jose A. Vila-Espinosa was a professor of the Civil Engineering at the University of Havana during the late 40's, 50's through the early 60's. He taught structural, concrete, steel and pre-stress and post-tension concrete courses. Yes, pre-stress and post tension courses. During his teaching years at the University of Havana he always made time for his students, over and above his office hours. He would hold workshops and seminars to help students pass his classes and most of all understand the material. In Cuba during the early 50's, there were two bridges that were designed and constructed; one using pre-stress and one using post-tension methods. As a matter of fact, they are still in existence today. He was a consultant on both of these projects. This controversial French and German engineering design methodology was considered to be the forefront of modern structural design.

In exile later in his life, he would work for several well-known engineering firms in the South Florida area. His strategy with young civil engineering graduates was, "Let's analyze this together" or "How do you think we can solve this situation?" He would explain step by step how one would arrive at the solution. He took many young engineers under his wing and molded them into role models for other engineers. Today his legacy lives on in this scholarship that will memorialize him forever. Jose A. Vila-Espinosa was a genius, an engineer above all engineers, and a true humanitarian.

This year there were five applicants for the Jose A. Vila-Espinosa Academic Scholarship. Two (2) of the candidates were from FIU and one (1) candidates from each of the following Universities: University of Miami, Florida State and University of Florida. The criteria the C-AACE has been using for determining the winners of the scholarship follows. The score is determined by the candidate's cumulative grade point average based on maximum of 4.0. This is multiplied by the number of correct answers to the pre-determined five (5) questions asked at the interview that are worth 10 points each for a total of 200. Finally, there is the financial need of each candidate, which is also factored in.

This year's recipients were Yuriel Addine, E.I., Jorge Luis Azconegui, E.I. and Eloy J. Rodriguez, E.I.

Yuriel Addine was born in Cuba. He was a member of Cuba's Junior National Water Polo Team. In addition to athlete skills, he enrolled as a civil engineer student at Centro Universitario Jose Antonio Echeverria (2005-2008) before coming to Miami. Also, he acquired experience at Thunder Electrical Company as an electrician helper. Currently, he is a senior at Florida International University persuing a Civil Engineering bachelor's degree. He was the leader of the ASCE (American Society of Civil Engineers) steel bridge competition held in Tennessee.

Jorge Luis Azconegui was born and raised in Cuba until the age of 10 when he then came to the United States. He recently graduated with a Bachelor of Science in Civil Engineering from Florida International University (FIU) and was nominated Cum Laude for his high grade point average. He is a student at FIU pursuing his Master's Degree in Structures/Construction/ Geotechnical Engineering. Last fall he passed his Fundamentals of Engineering exam and has become one step closer to

(Continued on page 27)

# Dia Del Ingeniero 2012 Gala

By Delfin A. Molins, E.I. and Nelson Perez Jacome

The Cuban American Association of Civil Engineers (CAACE) and the Association of Cuban Engineers (ACE) celebrated its 51st Annual Engineers Gala Saturday March 31st, 2012 at the Coral Gables Country Club. The Gala boasted over 500 people in attendance, of which many were the "whos who" of Engineering in southeast Florida. The ceremony was beautifully mastered by Cristina Puig, who presented the awards to many prominent individuals and firms.

These awards include: the Fransisco De Albear Award (Lifetime Achievement Award) which went to Ester Calas, P.E.; the Luis P. Sanz Award (Engineer of the Year in Government Award) presented to Julio Brea, P.E.; and the Young Engineer of the Year Award given to Josenrique Cueto, E.I. The Category I Project of the Year Award was given to Miami-Dade Water and Sewer Department and Lanzo Construction for the 72" Force Main Slip Lining; and the Category III Project of the Year Award was given to FDOT District VI, APCTE, Marlin Engineering, and De Moya Group for the N.W. 25th St. Viaduct. The presidential award recipients also included many prominent organizations within the Cuban American community such as La Junta Patriotica Cubana, El Gobierno Constitucional de la Republica de Cuba en el Exilio, and the Miami Medical Team Foundation. In addition to the said awards three students received the Premio Vila (our scholarship). These students were: Jorge Azconegui; Yuriel Addine; and Eloy Rodriguez.



Cristina Puig 2012 CAACE Gala Master of Ceremony

After the awards ceremony concluded our members socialized and danced the night away.

We would like to give a special thanks to our sponsors, which made the event possible. Listed herein are their names in recognition of their generous support. THANK YOU!!!

Some of the memorable moments were captured by the many photos taken that night. Here are a few for your enjoyment.



MDWASD Table 2012



Bechtel Table 2012

"This Gala is the most widely attended by Engineers in the State of Florida" said Maria F. Porrata, President of the C-AACE. "We have engineers that attend from all parts of the United States as far as New York, New Jersey, Texas, California, and Puerto Rico. I am honored to be a part of such a dedicated group of Engineers." she added. The following CAACE Academy Awards of the Engineering Profession were handled out that evening:

• The most prestigious and most respected award is the Francisco de Albear Award named after the 19th century Cuban born civil engineer who was a model for the civil engineering profession. This Lifetime Achievement Award is given to Professional Civil Engineers who have achieved a distinguished and productive career. These individuals have been a living example of the Civil Engineering Profession by their exemplary contributions and participation in professional and service organizations as well as dedicating themselves to the betterment of the civil engineering profession. This award gives recognition to individuals who have made outstanding and unusual contributions toward the advancement of our profession. This year's recipient is Ms. Esther I. Calas, P.E. for her 36 years of dedicated public service to the people of Miami-Dade County while always upholding her engineering principals, public safety and high ethical standards..

Esther was appointed Director of Public Works Department in August 2005. She became the first Hispanic woman to head the Department and serve as the Chief County Engineer for MDC. With over 900 employees, the Public Works Department has an annual operating budget of \$140 Million and a capital budget well exceeding \$200 Million, supplemented by more than 120 contracts with \$59 Million in capacity for engineering, surveying, and soils investigation services and over 150 contracts totaling \$200 Million for construction and maintenance services.

During her 36 year career in engineering as a public servant with Miami-Dade County, she began her career in and includes 25 years in Public Works Department and has held a number of increasingly responsible positions as both a professional and administrator for Miami-Dade County Government.

Prior to her appointment as the Public Works Director, Ms. Calas spent 10 years as the Assistant Director of Highways, Traffic Engineering Division and Traffic Signals and Signs Division where she over saw key divisions and directed a team of technical and professional staff in the evaluation of feasibility studies, planning, design and development of the County's Transportation Improvement Program (TIP) and other important transportation related infrastructure improvement projects such as the Advance Traffic Management System (ATMS); all the while ensuring proper applications of professional traffic engineering principals for the safe and efficient transportation of vehicles throughout the roadway network of Miami-Dade County.

A true proven humble leader, she has meritoriously led her Department in the forefront of the community. Her energetic and noble efforts to respond to the needs of other, characterizes her in a class all by herself.

• The Luis P. Sanz Award (aka the Engineer of the Year Award in Government) is awarded annually to an exemplary Professional Civil Engineer who, through their projects reflects superior civil engineering skills and represent, through their participation on the profession, a significant contribution to the civil engineering progress and society. This year's recipient is **Julio Brea, P.E.** Public Works Director for the City of Homestead and City Engineer. Julio has over 27 years of experience in the field of Civil Engineering and specializing in the design, construction and operation of public utilities and infrastructure. Before coming to the City of Homestead in 2003, Mr. Brea practiced Civil Engineering for over 18 years as a consultant in both overseas and south Florida assignments. As Director of Public Works and Engineering Department, Mr. Brea is in charge of all technical/engineering and construction management of City projects. In addition, Mr. Brea is in charge of operations of Water Treatment, Wastewater Treatment and Solid Waste collections. During his 8 years with the City, Mr. Brea has been assistant City Manager and Interim City Manager. Mr. Brea holds a BS degree in Civil Engineering and a Master's Degree in Business Administration and is registered as a professional engineer in the State of Florida. (Continued on page 14)



APCTE Table



C3TS Table



Josenrique Cueto, E.I. Receiving the CAACE Young Engineer of the Year Award



Marlin Engineering Table



Julio Brea, P.E. Receiving the CAACE Engineer of the Year in Government Award



Eloy J. Rodriguez Receiving the CAACE Premio Vila

(Continued from page 12)

- The Jose A. Vila-Espinosa Scholarship is made possible thanks to the generosity of our members and corporate sponsors. This year we collected over \$3,000.00; and were able to award three (3) one thousand dollars scholarships. The three awards were given to **Yuriel Addine**, **Jorge Luis Azconegui**, and **Eloy J. Rodriguez**. Additional information on the Jose A. Vila-Espinosa Scholarship and this year's awardees can be found on page 10.
- The Young Engineer Award is given to a member of C-AACE who is less than 35 years of age, and who is judged to have contributed substantially to the status of the engineering profession, reputable, with integrity and mentor of young mind. This year's recipient is **Josenrique Cueto, E.I.** To him no task is too small or too large; he always goes above and beyond his call of duty to help a friend, a co-worker, and/or a member of our organization. His integrity, honesty and loyalty are pristine and genuine. He is a role model and mentor for young engineers.

Josenrique was born of Cuban parents and raised in Miami, Florida. Mr. Cueto attended the University of Miami where he earned a Dual Bachelor's Degree in Civil and Environmental Engineering. Mr. Cueto is currently employed by Hazen and Sawyer P.C. where he has gained experience in the assessment, design, construction and permitting of water and wastewater infrastructure in the United States, Latin America, and the Caribbean

Mr. Cueto is actively involved with several engineering organizations, serving on the board of the Cuban-American Association of Civil Engineers, the Miami-Dade Branch of the American Society of Civil Engineers, and Region VII of the Florida Section of the American Water Works Association. Last year his team won first place in the "Cuban Infrastructure Challenge" sponsored by the Cuban-American Association of Civil Engineers and the Association of Cuban Engineers.

- The Presidential Award is presented to an individual or group for their outstanding recognition and contribution to the community with a cause. This year the Presidential Award was presented to three organizations: La Junta Patriotica, La Constitución del 40 and the Miami Medical Team; for their continuous efforts to promote and maintain the Cuban Heritage, to stand firm towards a democratic and free Cuba, to help those in need and specially all of the efforts towards the reconstruction of Cuba during a democratic transition.
- The Cuban-American Association of Civil Engineers presents the Project of the Year awards by category depending on the total construction cost.

The recipient of the Project of the Year for Category I (\$1 to \$10MM) is the Miami-Dade County Water and Sewer Department project for the 72" Sewage Force Main "Slip-Lining" Rehabilitation approximately 1½ mile long.

Owner: Miami-Dade County Water and Sewer Department (MDWASD)

**Awarded to:** John Renfrow, P.E., Director **Design Engineering:** MDWASD Staff **Contractor:** Lanzo Construction, Inc.

MDWASD owns and operates a 72-inch diameter wastewater Pre-stressed Concrete Cylinder Pipe (PCCP) force main that, on an average day, conveys approximately 75 MGD of raw sewage. Concerns with the integrity of this conduit, placed in service circa 1978, motivated MDWASD to an emergency rehabilitation of the critical line to reduce the possibility of a catastrophic failure. Rehabilitation consisted of insert approximately 1½ miles of a smaller diameter (63" nominal OD) High Density Polyethylene (HDPE) structural liner pipe into the existing (72" nominal ID) pipeline.

The lowest bid received was for \$4.6M and Notice to Proceed (NTP) was issued to Lanzo Construction, Inc. (Lanzo) on May 16, 2011. The contract work was completed within four (4) months of NTP and the successfully rehabilitated pipeline was placed back into service in September, 2011.

(Continued on page 16)



Yuriel Addine Receiving the CAACE Premio Vila



Jorge L. Azconegui Receiving the CAACE Premio Vila



FDOT D6, APCTE, Marlin Engineering, and De Moya Group Receiving the CAACE Category III Project of the Year Award for the N.W. 25th St. Viaduct



La Junta Patriotica Cubana Receiving the CAACE Presidential Award



MDWASD and Lanzo Construction Receiving the Category I Project of the Year Award for the 72" Sewage Force Main "Slip Lining" Rehabilitation



CAACE President Maria Fernandez-Porrata and Family

# (Continued from page 14)

The recipient of the Project of the Year for Category III (over \$20MM) is the NW 25th Street Viaduct from the West end of the Miami International Airport (MIA) West Cargo to the Palmetto Expressway.

Owner: Miami-Dade County

Design and Construction: Florida Department of Transportation District Six

Funded by: State of Florida and Miami International Airport

Awarded to: Gus Pego, P.E. District Six Secretary and Jose Abreu, P.E., Aviation Director

**Design Engineer:** Marlin Engineering

Contractor: De Moya Group

**Construction Engineer Inspector:** A & P Consultant Engineers, Inc.

The \$117 Million N.W. 25th Street Viaduct Project (see page 7 for additional information) includes the roadway reconstruction of NW 25th Street from the Palmetto Expressway (SR 826) to N.W. 67th Avenue as well as the construction of a unique viaduct structure or elevated roadway situated over N.W. 25th Street. This project is the first Phase of the Master Plan to connect the Miami International Airport (MIA) West Cargo area to the Warehouse Center west of the Palmetto Expressway in the City of the Doral. In this first phase, the reconstruction of N.W. 25th Street includes widening the roadway by adding an additional westbound lane from the Palmetto Expressway (SR 826) to just west of N.W. 70th Avenue. The Viaduct, elevated about 30 feet, includes one eastbound and one westbound lane from just east of the Palmetto Expressway (SR 826) to NW 68th Avenue where it curves southbound ending at NW 22nd Street, the area known as MIA's West Cargo area. The viaduct westbound will provide direct access to Northbound Palmetto Expressway. MIA contributed \$50 million to the construction of the Viaduct first phase.

Many thanks for a very successful Gala, goes to the CAACE Gala Committee that was comprised of Sarah Borace, Co-Chair; Dalila Fernandez, Co-Chair; and members Josenrique Cueto, Nelson Perez Jacome, Maria F. Porrata and Delfin A. Molins.



From Left to Right: Victor J. Pujals, P.E., B.C.E.E.; Ana Martin-Lavielle; Nelson Perez-Jacome, E.I.; Kamil Gil; Brian Barakat; Michelle Alvarez Barakat; Pedro Giralt, P.E.; Maria Fernandez Porrata; Natasha Vega; Eduardo A. Vega, P.E.; Vivian Gil; Carlos M. Gil-Mera, P.E.



From Left to Right: Pedro and Vicia Giralt, P.E.; Maria Fernandez Porrata; Delfin Molins, E.I.; Mercy Robayna; Rafael Robayna, P.E.

# **2012 Gala Sponsors**

# Gold



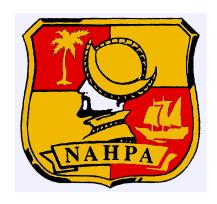


# **Silver**





# **Student Table Sponsors**







# **Table Sponsors**































# **Front and Back Covers**

Construction of the Memorial to Jose Marti in the Plaza Civica began in 1953, commemorating the 100th year of his birth. The Memorial has two main parts, a towering obelisque reminiscent of the Washington Monument, but in a five pointed star pattern and a marble statute of Marti. The sculpture of the statute was Juan Jose Sicre, one of Cuba's most renowned sculpturer who later died in exile in 1974. One of his sculptures, a bust of Marti is actually located in the University of Florida. Although the Plaza Civica was constructed prior to the current dictatorial regime, it was taken over as many other pre-1959 facilities and renamed as if to claim it as one of their own. The Memorial site hosted religious services by both Pope Paul and Paul Benedict.

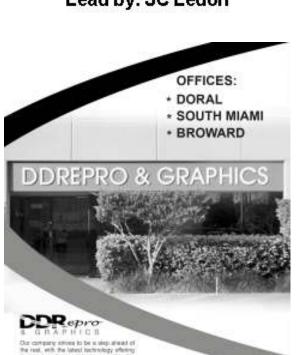
The Morro of Santiago de Cuba is actually named the Castillo de San Pedro de la Roca, overlooks the Bay of Guantanamo was designed in 1637 and completed in 1700. Since then, the fortress has been used for military purposes, a prison for political prisoners, and more recently a museum. Although the fortress has been damaged by pirates, earthquakes, hurricanes, and military battles, it has withstood the test of time. It was restored in the 1960s and is now considered the best preserved and most complete example of Spanish-American military architecture.

We are pleased to include within this cover to cover pictures of infrastructure in Cuba, some of the highlights of the C-AACE events during the past year, including the inaugural Student Infrastructure Challenge competition towards the future reconstructive efforts of Cuba.

# **GENERAL SPONSORS**



Miami Nites Band Lead by: JC Ledon









# **CAACE Young Professional's (YP) Group and Activities**

by Nelson Perez-Jacome, E.I., and Josenrique Cueto, E.I.

Over the past year the CAACE Young Professional (YP) Group has been extremely active, hosting several events to encourage participation in the association. Recent events have included the Young Professional Domino Night and the Cuban Guateque, both of which were well attended by young professionals and students from both the University of Miami and Florida International University.

In an effort to increase community service and participation, over the past year the Young Professionals have developed a relationship with Citizens for a Better South Florida (Citizens). Citizens is a nonprofit environmental education organization dedicated to community-based environmental education that inspires citizens to become good stewards of South Florida's environment. The organization was founded by a distinguished member of CAACE, Arsenio Milian, P.E., and operates out of an office near Little Havana. The CAACE Young Professionals have participated in various recent Citizens events, and plans to continue to collaborate with Citizens in providing environmental awareness in the community in which we live.

Over the next several months, the Young Professional Group is launching its next initiative which entails founding a student chapter of CAACE at Florida International University. YP Group leaders will be meeting with interested students over the course of the summer to develop a framework by which to establish the Chapter and ensure its future success. The CAACE Student Chapter will serve to encourage students to participate and become part of the Association at an early age and keeping them engaged and active in the organization through their professional careers.

The Young Professional's would like to thank the general membership, particularly the sponsors of the this year's events (APCTE, Chen Moore and Associates, Milian Swain and Associates, MCM, Nova Consulting and Triangle and Associates) for their generous support. The YP Group looks forward to continuing to offer quality programs for CAACE's younger members such as the once presented below.



# **Baynanza with Citizens**

On Saturday, March 17, 2012 the Young Professional Committee of the Cuban-American Association of Civil Engineers joined hands with Citizens for a Better South Florida to participate with Citizens in the annual MDC Baynanza. The event marked the Young Professional's first ever charitable event. Baynanza is a celebration of Biscayne Bay and its importance as one of the world's most dynamic and diverse marine ecosystems.

Our efforts consisted of restoring the natural habitat in Virginia Key, Florida. CAACE YP members together with Citizen's members, worked on planting mangroves, removing exotic and invasive species, and transplanted seedlings at the onsite nursery. After the work was complete our members went on a nature walk with the Citizen's group leader where

we learned the difference between the different types of mangroves.

This event was a milestone

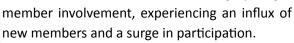
for the Young Professional's Group of CAACE, in that it provided a venue for our thriving and energetic youth to contribute to our community. Moreover, since the environment is so closely tied to civil and environmental engineering, the Citizen's Baynanza matched well with our organization.



# **Domino Night**

On June 17th, 2011 the Young Professional Committee of the Cuban-American Association of Civil Engineers hosted its first ever Domino Night. The event, which brought together the young engineering community, was hosted at Las Vegas Cuban Cuisine in Doral, Florida. The event was a success with over 50 individuals in attendance. The event had live music and fantastic food, courtesy of Las Vegas Cuban Cuisine. Throughout the night, several dozen domino games were played over mojitos and yucca frita.

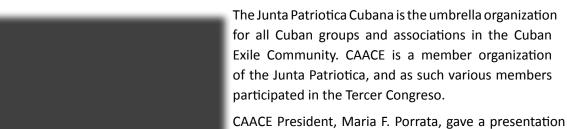
The Young Professional Domino Night marks the first of many CAACE events that will be geared to younger members. The association has been successful in its efforts to encourage younger



The CAACE YP group will continue to used events like this in the future to gather a strong young professionals group that will work a myriad of projects; from socials to charitable events. This first step set our group off to a fantastic start. Please contact Nelson Perez-Jacome at <a href="mailto:nperezjacome@apcte.com">nperezjacome@apcte.com</a> or Jose Cueto at <a href="mailto:jcueto@hazenandsawyer.com">jcueto@hazenandsawyer.com</a> if you want to hear more about the CAACE YP Group.

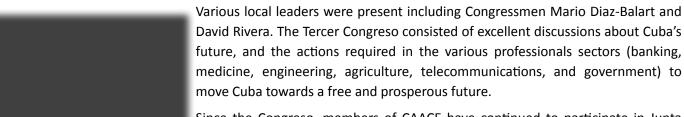
# La Junta Patriotica's Tercer Congreso Mundial

During the weekend of November 11-13 2011, the Cuban-American Association participated in the Junta Patriotica Cubana's Tercer Congreso Mundial por la Libertad, Democracia y Soberania de Cuba.



regarding the condition of Cuba's transportation infrastructure and actions necessary during a future democratic transition period. CAACE Vice-Treasurer, Josenrique Cueto gave a presentation titled "El Estado del

Medio Ambiente de Cuba desde una Perspectiva de Saneamiento Ambiental" which discussed Cuba's water and wastewater infrastructure and the actions and costs associated in improving the future level of service.



Since the Congreso, members of CAACE have continued to participate in Junta Patriotica events. On June 14th, 2012, Maria Fernandez Porrata was installed as the First-Vice President of the Junta Patriotica Cubana. This is the first time that a

woman is elected to this honorary position. The Cuban-American Association of Civil Engineers congratulates Maria on her accomplishment and representation of El Colegio.

# Guateque



The YP hosted its second social event, the YP Guateque, on February 23, 2012. The Guateque was held at Finnegan's River; and in keeping with tradition, boasted a roasted pig, hors d'oeuvres, and plenty of beverages. With over 40 members

attending the event, the YP Guateque proved to be an outstanding success.

The venue was highly praised, being that it was outdoors and adjacent to

the Miami River. Throughout the night CAACE members ate, danced, laughed, and even played dominos; under the stars.

The YP Guateque was more than just a social event, it proved to be a valuable recruiting tool. At the event we garnished interest in our organizations mission and recruited various members.



CAACE Members at the First ever CAACE YP Guateque







As always, we are planning for the future and will make an even better event for the next CAACE social. Stay Tuned...

# **Order of the Engineer**

by Jose Acosta, P.E.

On February 29, 2012, the Miami Branch of the American Society of Civil Engineers and the Cuban American Association of Civil Engineers held joint meeting and conducted an Order of the Engineer ceremony. Forty people attended the event at the Rusty Pelican Restaurant in Miami. Dr. Amir Mirmiran, Dean of the College of Engineering at Florida International University, and Dr. Tony Nanni, chairman of the Civil Architectural and Environmental Engineering Department at the University of Miami, spoke on issues affecting the status of the engineering profession and discussed their vision of the future of the profession in the terms of the next crop of engineers at their respective institutions. Jose L. Acosta, Josenrique Cueto and Maria Porrata-Fernandez conducted the Order of the Engineer ceremony.



Based on the model of the Canadian Ritual of the Calling of an Engineer, the Order of the Engineer was established in the United States in 1970 with the first Ring Ceremony being conducted by



students at Cleveland State University. The purpose of the Order of the Engineer is to call attention to the Obligation of all engineers to use their technical education ethically in shaping the world around them. Ethical practice of engineering occasionally requires great courage, and always requires that we maintain the highest standards of personal integrity.



# **Cuba Infrastructure Student Challenge 2012**

By Armando I. Perez, P.E., PhD

The successful Cuba Infrastructure Student Challenge 2012 event was the fulfillment of the efforts started in 2011 by volunteers from C-AACE and the Association of Cuban Engineers (ACE). The objective was to motivate university-level students in the United States to produce useful research on Cuba infrastructure issues, which could be put to use when there is a political transition on the island.

The planning work begun in 2011 included preparation of an implementation outline for the two organizations to follow, and a guidelines document for the students to use in submitting their papers and later preparing their presentations. Then, a Steering Committee was formed with volunteers from both organizations, to provide additional encouragement to the students and to organize the logistics of the Challenge, all the way to the judging of the student presentations. The Chair of the Steering Committee was Victor Pujals. He was supported by members Willy Gonzalez, Cristina Ortega, Yuray Rodriguez and Arnelio Alfonso. Dr. Helena Solo-Gabriele and Dr. Armando Perez served as advisors to the Steering Committee.

The Steering Committee enlisted a distinguished panel of judges to score the written papers and the presentations, using an Evaluation Form and instructions developed by the Committee. The judges were: Alice Bravo, Peter Martinez, Carlos Espinosa, Pedro ("Pete") Hernandez and Eduardo Vega to present a cross-section of infrastructure themes.

The presentations by the students took place on the morning of February 25, 2012 at the Casa Bacardi at the University of Miami. The event was ably chaired by Victor Pujals, who gave introductory remarks, introduced the judges, student teams and announced the results. Before the student presentations, Helena Solo-Gabriele spoke to acknowledge the generous contribution to the event by the Cuban Heritage Collection, located at the University of Miami's Main Library. She described the resources and activities at the Collection.

The results of the praiseworthy student papers and presentations were as follows:

**First place:** "Evaluation and Design of a Decentralized Alternative to Conventional Wastewater Infrastructure in Cuba" by the University of Florida team composed of Alex Arias, Jhon Cores, Tony Diaz and William Rodriguez. Their advisor was Miguel Morales, a PhD candidate. First place prize was \$1,200.

**Second place:** "A Water Quality Model of the Almendares River Watershed, Cuba" by the University of Miami team of Jeff Iudicello, Dylan Batterman, Matt Pollard and Cameron Scheid. Their advisor was faculty member Dr. David Chin. Second place prize was \$600.

**Third place:** "Cuban Health Care System" by the Florida International University team of Rachel Ruiz, Yuriel Addine, Claudia Calvo and Alejandro Maulini. Their advisor was Maria Fernadez Porrata. Third place price was \$300.

After the awards there was an excellent buffet lunch, during which the students, judges and other attendees engaged in collegial and lively exchanges of ideas. For those readers interested in viewing the event, you may use the following Internet link: http://www.clickeventonline.com/event/education/120225-CubaInfrastructureChallenge2012.htm

We should feel very proud of the participating students and extremely pleased with the levels of attendance and interest generated by this Challenge. Now the challenge to both our organizations, ACE and CAACE, is to make next year's event even better! Volunteers will be meeting soon to start the planning process. We hope we can count on your participation and support!



CAACE and affiliates at the 2012 Cuban Infrastructure Challenge

# **Cuba Infrastructure Student Challenge 2013**

By Cristina Ortega, EI

#### **OVERVIEW**

This event is sponsored by the Cuban-American Association of Civil Engineers (C-AACE, www.c-aace.org) and the Association of Cuban Engineers (ACE, www.aic-ace.com). It entails that university-level student teams formulate and present a project of their choice on Cuba's public infrastructure that relates to the engineering field in transportation, water resources, power/telecommunications or healthcare. Any questions regarding the competition guidelines should be directed to the Chairs of the 2013 Challenge Committee by contacting Cristina Ortega (cristina.ortega@ch2M.com, (305) 962-7149), or Josenrique Cueto (jcueto@hazenandsawyer.com, (305) 215-7954).

#### **HISTORY**

The C-AACE and ACE, through their infrastructure committees (transportation, water resources, power/telecommunications, and healthcare engineering), have encouraged university students in South Florida to submit papers on Cuba's infrastructure to the competition and to infrastructure sessions of the annual conference of the U.S.-based Association for the Study of the Cuban Economy (ASCE), an affiliate of the American Economics Association. The papers and presentations have been well received by professionals in attendance, and have stimulated student interest in this topic. The C-AACE and ACE hope that more engineering students, at the university level, will become interested in applying their skills to future efforts to upgrade public infrastructure in Cuba, and that in doing so they will collaborate with our associations, including becoming members and bringing their knowledge and new ideas to address this important topic. We believe that the complex issue of reconstructing Cuba's infrastructure will challenge students and provide them with valuable experience that will prove rewarding to them. Each student team will choose a project on their own. If student teams need any assistance in finding a problem statement to develop, they should contact the Chairs of the 2013 Challenge Committee (contact information given above).

#### **PURPOSE**

The C-AACE/ACE Cuba Infrastructure Challenge is intended to promote both (1) "real world" analysis and/or design experience for students interested in pursuing an education and/or career in public infrastructure engineering and related sciences; and (2) improve the body of knowledge on Cuba's infrastructure in these fields. This challenge invites teams of university-level students to analyze and/or design and present a project meeting the requirements of a problem statement that they have worked on together as a team.

#### **STUDENT CHALLENGE**

The engineering student challenge is about problems relating to Cuba's public infrastructure needs and its reconstruction in any of the fields listed above.

Examples of transportation projects include traffic analyses, evaluations of different modes of transportation including public transit, and design of roads and highways. Examples of water resources projects include hydrology and hydraulic analyses, such as sustainable withdrawal studies and flood control studies. Examples of water supply projects include water master planning and traditional design of supply, treatment and distribution systems. Examples of wastewater projects include traditional wastewater design projects, e.g. hydraulic capacity design, upgrades to existing systems, biosolids handling, etc. Examples of environmental projects include the current contemporary engineering topics, e.g., sustainability, water reuse, wetlands construction, ocean outfalls/coastal zone management, etc. Examples of telecommunications topics include plans for fiber optic cables, internet access, and cell phones access. Examples of topics that focus on power include the potential of using a smart grid systems in Cuba, projections of the future capacity needs, construction of new plants versus modernizing existing ones, modes of energy production (natural gas, combined cycle, solar, wind), and evaluation of transmission lines including the number of miles needed and state of present ones. Additional energy-related topics can include "green architecture" and building codes for energy efficiency in buildings. For healthcare infrastructure, examples include inventory of existing

healthcare equipment and needs for the current and future population, location and capacities of hospitals and their current state of operation, emergency transportation and access to hospital facilities, and supply chain management of medical supplies.

The scope and extent of the project should be at the level of a senior undergraduate or graduate engineering/science student. The students are expected to work with little assistance from an advisor and/or professor. The students are expected to work together as a team. They may use whatever references or resources they choose. Students may also work with the assistance of a practicing engineer monitor. Students may chooses a practising mentor on their own or they may contact Committee Chairs to be paired up with an C-AACE/ACE practising mentor, based on his/her area of expertise and the team's project topic. Students are expected to perform the necessary analysis for the project. This challenge is not intended to be limited to a research project or literature review. However, some literature review and/or research will be required.

For example, if the project involved a water distribution system expansion or upgrade, judges should verify that the team performed population analyses and design flow projections, hydraulic calculations, sizing of pipes, evaluation and selection of pipe material based on manufacturers' information, preliminary evaluation of costs and a brief evaluation on societal impact such as public health improvements and mitigation of traffic disruption.

All of the analyses should be submitted in a project notebook, clearly labeled and referenced.

#### **NATURE AND MANNER OF PRESENTATION**

It is important that a professional engineer possess the ability to communicate well. The challenge is intended to emphasize these skills. Scoring of the project will be judged through an evaluation of the written and oral presentations.

Written data (submitted in or electronic format) will be evaluated by the judges prior to the oral presentations. Scores on the written data will not be released until the completion of the oral presentations. The data will be available to the judges during the oral presentation for their reference.

Oral presentations will take place at an event in South Florida to be sponsored by C-AACE and ACE. Since our organizations lack an appropriate meeting place and facilities, our intent is to contract with an organization that will provide the meeting place and make logistical arrangements. One possibility might be the University of Miami's Institute for Cuban and Cuban-American Studies (ICCAS), who has good facilities and experience in handling conferences. The total presentation duration will be twenty (20) minutes followed by up to ten (10) minutes of Q&A. Five (5) minutes before and after the presentation will be provided for setup and breakdown of the presentation equipment. Each presentation team may consist of up to four (4) members, with one member serving as the team's audio-visual coordinator. This team member shall be strictly nonspeaking. In the event that a student team indicates prior to the conference that it is unable to travel to South Florida to give the presentation, arrangements will be made to provide high-quality teleconferencing capabilities.

#### **PRIZES**

The C-AACE and ACE will be awarding prizes for this program. The set of prizes shown below, which are subject to change each year, will be awarded at a joint event of the two organizations in the month of March.

PRIZE	AWARD	MONETARY VALUE
First	Scholarship	\$1,000
Second	Scholarship	\$500
Third	Scholarship	\$250
All other teams meeting	Participation Incentive	\$100
minimum submittal criteria		

Also, the members of teams scoring first place will be awarded a one-year free membership in either C-AACE or ACE. The award committee reserves the right to not make an award if the quality of the projects does not meet minimum professional standards.

#### SIGNIFICANT SUBMITTAL ITEMS AND DATES

Each entry will consist of the following:

- → An official letter of intent (LOI) submitted to the Steering Committee Chair, no later than October, 12<sup>th</sup>. This written submittal is not required to identify team members, but must include contact data for each team planning submittal, whether the team will need an assigned practicing mentor, and the proposed presentation topic.
  - → An updated entry form showing presentation subject, thesis statement, final team contact, membership and presentation team information in compliance with General Requirements, submitted to the Chair of the Steering Committee, no later than by December 7<sup>th</sup>.
  - $\rightarrow$  A project written data submittal (requirements below) and presentation materials (in electronic format) must be received by the Committee Chairs no later than January 11<sup>th</sup>.
  - → Final presentation materials in PowerPoint, overhead or other format. A/V equipment will be made available, including laptop computer, projector and screen. Other A/V needs including remote conferencing, if applicable, should be coordinated in advance of the presentation. The presentations will be made in February at a competition location to be named later.
  - → Final submittal of quality presentations to the ASCE Annual Conference Consideration post dated by May 20<sup>th</sup>.
  - → There is NO entry fee for the event.

# **GENERAL REQUIREMENTS**

The general requirements for the preparation of the entry are as follows:

- → Team size should be limited to a maximum of four (4), so that the learning and participatory benefits to each student are maximized.
- → Each member of each team must be a university student in good standing or a recent graduate who has left the university within one (1) year of the date of the competition.
- → The subject matter or presentation shall comply with the purpose of the Cuba Infrastructure Challenge

#### WRITTEN DATA REQUIREMENTS

Each entry shall include written data that complies with requirements set forth in the following section on "Written Data Requirements". Competition entries shall be both MS Word and PDF Formats provided on a CD or by email. Special indices, bookmarks, or other features are appreciated, but not required.

The following shall be included in the written data submittal (in the order shown):

- 1. The project name, entrant's university name, and team name shall be affixed to the disk and case (CD) or included as the file name.
- 2. Page one (1) of the report should be the completed Challenge Team Participation Form.
- 3. Page two (2) of the report should include a summary of the project team, including:
  - Each member's role in the effort
  - Acknowledgement of any others that assisted in the effort
- 4. A discussion of the project (not to exceed 5,000 words, double-spaced length). The discussion must cover the salient facts upon which the recommendation is made, give a clear analysis of the evaluation technique, and present a clear recommendation of action. Relevant data should be presented in the discussion in clear form.
- 5. Color diagrams, charts and photographs that reflect the unique features of the project. Each graphic/photo is to be identified with an appropriate descriptive caption.
- 6. Drawings, calculations, tables, and other supporting documents.
- 7. All entry materials become the property of the C-AACE and ACE.
- 8. A complete bibliography should also be included, if appropriate.
- 9. Manuscript should conform to one of the standard academic writing and citation styles.

#### PRESENTATION REQUIREMENTS

Each team will be allowed a thirty (30) minute block of presentation time. The time will be used to make a twenty (20) minute presentation directly followed by up to a ten (10) minute question and answer session led by the judges. PowerPoint files must be submitted by 8:00 a.m. on the day of Final presentations. No changes shall be allowed afterwards.

# **JUDGING CRITERIA/SELECTION**

The event will be judged by an impartial panel consisting of at least three (3) members of the C-AACE and ACE Board of Directors, and private industry (engineering consultant firms and manufacturers) representatives. The judging team shall have no direct affiliation/representation with any university participating or engineering firm involved as part of the project. All written data and oral presentations will be judged by the same panel of judges. Points will be awarded as follows:

Written Paper (50 points)				
1	Relevance and Originality of Subject Matter	10		
2	Organization and Sequencing	10		
3	Creativity and Thoroughness of Approach	20		
4	Use of Language (Grammar, Spelling & Punctuation)	10		
Oral Presentation (50 points)				
5	Organization and Delivery (Verbal Proficiency and	20		
	Non-Verbal Image of Presenters)			
6	Coverage within the Time Limit	10		
7	Proficiency in Answering Questions (Effectiveness	10		
	and Poise)			
8	Quality and Creativity of Presentation Materials	10		
TOTAL POINTS		100		

#### **INTERNET LINKS**

Internet links that may be of use for this event are listed below:

- → www.c-aace.org
- → www.aic-ace.com

#### **QUESTIONS OR COMMENTS**

Please review the entire package and contact the Association President(s) for any clarification on any of the rules or guidelines of the program.

Thank you for your interest and support!!!
We are looking for mentors among our membership. Please volunteer.

(Continued from page 12)

# 2011 - 2012 Jose A. Vila-Espinosa Academic Scholarship

becoming a professional engineer in the State of Florida. Jorge is not only a great student in the classroom; he is also a member of the American Society of Civil Engineers (ASCE).

Eloy J. Rodriguez was born in Matanzas, Cuba in 1982. After completing high school he made his way to Miami where he resides since 2003. He began his engineering studies at FIU in 2006 as a part-time student while working for Ingelmo Associates P.A., a local structural engineering firm. Eloy was a recipient of the Hispanic Scholarship Fund sponsored by FedEx in 2010, which motivated him to enroll full-time thereafter. Since then, he has become student member of ASCE and AISE. He is currently completing his last semester, projected to receive his Bachelor of Science in Civil Engineering in April of the present year.

Congratulation to the 2011-2012 Jose A. Vila-Espinosa Academic Scholarship recipients and good luck on your endeavors throughout your career!

# National Engineers Week Foundation Annual Future City® Competition Includes Miami's Own St. Thomas the Apostle School

By: Delfin A. Molins, E.I., Angie Ayan-Novo and Lisa Figueredo

# **About Future City Competition**

The 2011-12 Future City Competition attracted more than 330,000 students from 1,000 middle schools across the country. It has received national attention and acclaim for its role in encouraging middle school students to develop their interest in science, technology, engineering and math (STEM). Through hands-on applications, Future City competition participants discover how engineering is both accessible and can make a difference in the world. Visit <a href="www.futurecity.org">www.futurecity.org</a> for more information.

The annual National Engineers Week Foundation's (NEWF) Future City Competition is held from September, 2011 through February, 2012. The Future City Competition is a program of the NEWF - a formal coalition of more than 100 professional societies, major corporations and government agencies, dedicated to ensuring understanding of and interest in engineering and technology careers among young students and by promoting pre-college literacy in math and science. Founded in 1951, it is among the oldest of America's professional outreach efforts. Co-chairs for 2012 are Battelle and ASME. Major funding for the national finals comes from Bentley Systems, Incorporated and Shell. For more information, visit <a href="https://www.eweek.org">www.eweek.org</a>.

Imagine a city 150 years into the future designed around alternative energy sources to help solve our nation's energy crisis. Although there are politicians, engineers, and academics trying to solve this issue, groups of middle school students from across the nation including St. Thomas the Apostle Catholic School in SW Miami joined the search for solutions. Taking top honors at the South Florida regional event held on January 21, 2012 at Florida International University's (FIU) School of Engineering, was St. Thomas the Apostle School who proudly presented "Progressi Citta'" and once again had the opportunity to attend the National Future City competition in Washington, DC from February 18-22, 2012.



# **Energy** is the focus

This year's theme of Fuel Your Future: Imagine new ways to meet our energy needs and maintain a healthy planet was the motivation behind "Progressi Citta'". Italian for Progress City, "Progressi Citta'" and its distinct areas including historic district, hospitals, business center, recreational areas, universities, transportation options, and riverfront, were developed to include clean power sources, such as hydroelectric, wind, and solar power. "The students spent a good portion of their time doing research, writing essays, and presenting alternative energy sources before the city was even constructed. The main theme of the competition remained our focus and then the city was planned around the final energy sources selected," said Delfin Molins, Engineering Mentor.

As the students envisioned new ways to produce electric power, they identified the benefits and risks of their energy source solutions. They considered the safety, cost, efficiency, and appearance of their ideas. They also learned about the engineering disciplines that encompassed their solution, including learning and identifying the steps of planning and design processes.

# **Competition has many components**

The competition included the use of SimCity™ 4 Deluxe software to design a virtual Future City, a 500 word Narrative, a 1,000 word Research Essay on the energy alternative, a physical model built to scale using recycled materials which could cost no more than \$100, and a presentation before more than 28 Engineering judges. The students learned about city layout/

planning, waste and disposal systems, transportation infrastructure, health/medical services, planning schools for all ages, energy and water requirements, budgeting, taxes and engineering ethics to name a few.

"Progressi Citta' is really a perfect city and how the students imagined the cleanest and most energy-efficient city would be. They also began to envision themselves working, playing, and living in this city, which helped finalize the details. To watch each of them contribute in their own way and for this to take on a life of its own is what amazed me the most as I led this group," added Mrs. Ana Portela, Science, Robotics, and Future City teacher.

# **Past Experience**

The students met frequently to ensure the school's participation at the National Competition took place without a hitch. This



is the fourth time St. Thomas the Apostle School wins the South Florida Regional competition out of six times they have participated starting in 2006. The major highlight for the school was winning third place at the 2009 National competition. It was a defining moment for the school as the Future City Competition for St. Thomas is a product of the Genesis Program. Genesis was developed to encourage students to maximize their potential in the areas of science, technology, engineering and math (STEM) and this remains the focus.

"Genesis will remain an integral part of our school as it continues to inspire students to learn more about how science and engineering concepts can help change the world. Progressi Citta is a true representation of what is possible because of the Genesis Program and working as a team. Many teams start the competition, but only a few actually present at Regional. I am proud of our team as they finished what they started no matter how challenging it was," said Mrs. Lisa Figueredo, Principal of St. Thomas the Apostle Catholic School.

#### One more stop before Nationals

As the students prepared for their trip, they had one stop they were looking forward to and that was the Miami-Dade County Commissions Office. The students were invited to attend a board meeting to present "Progressi Citta" and display it in the building lobby for a day. The team of seventh graders include Julio Garcia, Jacob Gonzalez-Mir, Lauren Gordo, Megan Lopez, Sofia Marino, Emily Ocon, Victor Prieto, Fernando Puig, Jorge Raad, Catalina Rincon, Nicholas Robelo, Miguel Angel Rodriguez, Christopher Vazquez and Arsenio Viera. The team was led by Delfin Molins (Engineering Mentor from the Cuban-American Association of Civil Engineers, Inc.) and Ana Portela (Science, Robotics, and Future City teacher from St. Thomas the Apostle Catholic School).

#### The National Competition

At the Nationals 2011-2012 Future City Competition "Progressi Citta" placed 6th in the overall competition. The winner for this 2011-2012 was Arizona. However, Special Awards are also an integral part of the competition. A total of 19 organization judge and present Special Awards. Furthermore, the Cuban-American Association of Civil Engineers, Inc. (C-AACE) gives a Special Award for the "Best Historical and Cultural City" which went to a competing school from Wisconsin. Dr. Nina Rodriguez, P.E., Ph. D. for the past several years has been the Judge for C-AACE representative in Washington. She is the daughter of our long time member, Past President and currently Board Member Ricardo "Rick" Rodriguez, P.E.

"Progressi Citta" took the Special Award for the "Best Personal Transportation System" presented by the Ford Motor Company. "I am very proud of these 7th grade students at St. Thomas the Apostle School and what they have accomplished. They may not understand the full magnitude of the opportunity that the Future City Competition program offers at this time. However, in just a few short years from now they will be graduating from High School and that is when this experience will impact them. If out of these 14 students one or two of them study Engineering we will be ahead of the game. Additionally, I am also equally proud of their Teacher, Ana Portela, for her passion and resolve for teaching science and finally, the parents of all the participating students for their endless support to make this all possible," stated Molins.

# **Consultant's Corner**

# Miami Dade A&E Society (MDAES)

by Alejandro Toro, P.E., Secretary

The Miami-Dade A&E Society, Inc. is an organization formed and incorporated in 2004 for the express purpose of working to improve and streamline the procurement of architecture and engineering (A&E) services in Miami-Dade County. We currently have approximately seventy (70) member firms, including architects, engineers, land surveyors, and landscape architects. Since its incorporation, MDAES has been working with the Miami-Dade County Office of Capital Improvements- now the Internal Services Department- to develop implementable recommendations for revisions to Administration Order (AO) 3-39, which details the procedures for procurement of architectural and engineering services by Miami-Dade County.

# Florida Institue of Consulting Engineers (FICE)

by Robert Behar, P.E., President

The Consultants' Competitive Negotiation Act (CCNA) (Florida Statute 287.055), has served Florida's tax payers extremely well since 1973 in the procurement of A&E services by government entities. However, during 2012 Representative Fred Costello's HB 155 and Senator Bennett's SB 246 included proposed changes to the current CCNA Law. Senator Bennett's bill included the "Best Value" option by providing a definition for "best value selection" while maintaining the current CCNA option for agencies to utilize at their own discretion. The best value selection process creates a two-stage procurement process. Under stageone, agencies evaluate firms using the same criteria as established in current law. In stage-two, agencies may consider costs. SB 246 was heard in its first committee of reference, the Senate Regulated Industries Committee. This committee ultimately defeated the legislation by a non-favorable vote of 3 yeas to 7 nays. This was after the successful, coordinated efforts with the other design professionals, by our legislative consultants, and our members who weighed in repeatedly with members of the committee to express our concerns. The House companion was not heard in any of its referenced committees.

Senator Bennett's effort to repeal the current CCNA law did not end with this bill – in a late filed, hand-written amendment, Senator Bennett put language on SB 1626, a bill relating to state contracting by Senator Don Gaetz in the Senate Budget Committee. The FICE legislative team, headed by Executive Director Frank Rudd and our legislative consultant, Jon Johnson, who were both on the alert and quickly, notified Senator Bogdanoff. SB 1626 was placed on the Senate Special Order Calendar where an amendment by Senator Ellyn Bogdanoff was successfully adopted to remove this provision.

The CCNA subject was also discussed in the Government Efficiency Task Force (GETF) that meets every four years to develop recommendations to streamline government operations and reduce costs. In November 2011, the task force unanimously agreed on a proposal that would leave the current statute of CCNA in place but would add two options for state and local governments.

Option one would be the best value option to allow price as a factor from the beginning. Option two was proposed by a member of the committee, Ann Duncan, who based on her discussions with the DOT Secretary and is a modification of the best value option which allows qualification bids and price bids to be obtained at the same time. This price would not be considered until the short list of three bids is first established and then they would open all pricing at once before starting the discussions with number one. Although these recommendations passed in the GETF, they would not change the current law.

As FICE president, I have requested that each FICE Board member be required to visit their local legislator with the specific task of addressing CCNA. This effort will be coordinated by the FICE Professional Practices Committee and Samantha Hobbs our Government Affairs Coordinator. Once we have this in place, we will spread this plan to the rest of the FICE membership. This addresses our pro-active plan. Even with all that in place there is nothing that will stop a legislator from filing CCNA reform bill, as Senator Bennett tried this year. FICE Executive Director Frank Rudd and FICE's legislative consultant, Jon Johnson, will do their part by keeping an eye on any onerous attacks to the CCNA Law by working with our friends in the legislature to preserve the law.

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