

THE FIRST WORD

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Wallace Engineering Awarded 2004 EEA Grand Conceptor Award Bucher, Willis & Ratliff Receives Honor Award

Wallace Engineering, Tulsa, has been awarded the 2004 Grand Conceptor Award in the ACEC OKLAHOMA Engineering Excellence Awards competition. Wallace Engineering won the award for their panel assemblies and anchors used on the new Richard B. Fisher Performing Arts Center at Bard College in Annandale-on-Hudson, New York.

The Center offers an architecturally bold and dynamic environment for innovative artistic presentation. The



complex elements that constantly changed in form and topography to meet the undulating surface of the design.

The project required the development of over 700 individual panel forms. Each panel had to interface with the primary steel structure and develop the shape of the surface. Additionally, the panels acted as the primary water and air barrier for the building surface.

\$62 million, 110,000 square-foot Center houses two theaters; four rehearsal studios for dance, theater, and music; and professional support facilities.

The panel assemblies were separate, unique, and



joined the parts to the finished panels.

In several prominent areas of the building, the interior sides of the panels are the wall finish. This most notably occurs in the Lobby and the Entrance of the building. Because of this, the framing system had to be done in a controlled and regular pattern. It also had to be elegant in design and shape. This means the appearance of both the framing elements and the bracing and stability system of the panels had to be carefully planned.



One of the design criteria was also for all of the panel "fin" supports to be exposed on the underside, thus creating a tapestry of aluminum fins, cross-bracing, and rivets. The engineering had to adapt the aesthetic position of the secondary structural elements of each panel as well as how each of the over 600,000 fasteners

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2004 EEA Awards (Cont)

The exterior design calls for very exacting angles and curves that the panels fit flush with windows intersecting walls of differing materials. The skin has the appearance of multiple panels of sheet metal “shingles”, which float above or wrap around the building superstructure, creating a stunning effect.



The building surfaces and shape were defined using CATIA. This is a three-dimensional modeling program, which allows for the definition of complex shapes that would be impossible using traditional two-dimensional paper documents.

ACEC OKLAHOMA's 2004 Honor Award goes to Bucher, Willis, & Ratliff Corporation (BWR) for the Coffee Creek Channel Restoration project for the City of Edmond, OK.

In October 2000, Edmond experienced a 500-year rain event resulting in massive erosion and lateral migration of a regulatory floodplain placing public and private utilities as well as several residential homes in jeopardy.



BWR was selected to assess the situation, investigate and develop possible design options, prepare construction plans and bidding documents, provide limited construction management, provide as-builts, and prepare the Letter of Map Revision Request for FEMA including the modeling.

Design constraints included a shorter than normal time frame, limited budget, long stream reach, narrow project boundaries, sandy soils, headcutting, and a developing meander cut-off immediately upstream of the area of concern that could jeopardize any constructed project. To add to the challenge, Edmond desired something aesthetically pleasing and that would preserve the natural wooded habitat.

Considering the project objectives and constraints, BWR used several specific design elements, including:



- A horizontal alignment to move the creek away

from the threatened infrastructure while also minimizing encroachment of the creek onto the adjacent primary property owner and minimizing changes to the existing meander pattern.

- Grade control structures to maintain a stable channel bed and to compensate for the reduced channel length of the proposed alignment.
- A uniform typical section to provide a low-flow channel capable of conveying the 2-year discharge.
- Stone riprap was utilized to secure a fixed channel at the upstream and downstream ends of the project.
- A three-tiered approach for controlling horizontal alignment of the creek including, grade control structures to double as horizontal alignment control structures; native grasses and legumes; and, buried riprap to provide a stable toe for the main channel bank.

ACEC OKLAHOMA congratulates Wallace Engineering and Bucher, Willis & Ratliff on these two outstanding entries. Both firms are planning to enter these projects in the national ACEC Engineering Excellence Awards competition, and we wish both firms the best of luck in the national competition.

Safe Bridges, Roads Coalition Submits 297,000 Signatures to Secretary of State

Representing Oklahomans for Safe Bridges and Roads, Neal McCaleb, former State Secretary of Transportation and former Assistant Secretary (Indian Affairs) for the U.S. Department of the Interior, Monday, December 20th submitted more than 50 boxes with signed petitions from Oklahoma voters. The petitions, submitted to Secretary of State Susan Savage, call for a statewide vote of the people to decide upon a proposed constitutional amendment to reform transportation funding by creating a "lock box" trust fund independent of legislative control to pay for the repairs and maintenance of Oklahoma's ailing bridges and roads.

The group has asked Savage to swiftly certify the gathered signatures. The 297,688 signatures represent 75,000 more than the minimum 220,000 required (15 percent of the Nov. 2 General Election total) under state law.

The amendment seeks to incrementally raise the current fuel tax by 8-cents per gallon for diesel and 5-cents per gallon for unleaded fuels bringing both to 22-cents per gallon, close to the regional average. It is anticipated the increase would generate approximately \$150-million annually in new revenue to pay solely for the construction, maintenance and repair of Oklahoma's highways and bridges.

McCaleb along with a contingency of coalition leadership spoke about why they support funding reforms. "It is never a good time to raise taxes, however, we believe this is the best solution possible," said McCaleb.

Discussing why OSBR used the initiative petition process, McCaleb said, "Sending this issue straight to the people is the only realistic way Oklahomans can achieve an increase in transportation funding accompanied with the necessary constitutional reforms to make certain the money is used where it is intended to. In this state, history has shown if the Legislature controls the purse then motor and fuel fees will be diverted to non-transportation needs. It simply isn't wise to ask for an increase in funding without the constitutional lockbox to accompany."

Currently, the state diesel tax is at 14-cents per gallon, while motorists in the state pay more at 17-cents per gallon. Oklahoma has the lowest fuel tax rate at 14-cents for diesel and 17-cents for unleaded in an eight-state region including Texas, Louisiana, New Mexico, Colorado, Kansas, Missouri and Arkansas.

Citing the unusual tax advantage for diesel driving cars and trucks, McCaleb said, "Most other states in the nation tax diesel fuel at a higher rate than general motorist traffic.

"One semi truck is shown to do the damage of several thousand cars. The number of semi trucks on Oklahoma highways has doubled over the last several years and will increase by a whopping 48% by 2020. This is not an indictment on the trucking industry, but merely an encouragement by our coalition for them to join in concert with our efforts. Having a tax equal for cars and trucks is only common sense. If anyone knows the severity of the problem, it's the trucking industry at large. We invite them today to do what is right for Oklahoma and join our effort," said McCaleb.

The group also discussed the sheer number of safety risks that poor roads pose to drivers, "Oklahomans die in traffic fatalities at a rate 7 percent higher than the national average. This isn't solely caused by speeding teenagers or drunk drivers. Roadway condition is a significant factor in a third of all traffic fatalities," said McCaleb.

"One fourth of our roads are in critical condition - meaning traffic accidents are 56 percent more likely to occur on these roads," said McCaleb.

"A five penny increase in the fuel tax will cost the average Oklahoman, who drives a car 12,000 miles a year, \$2.50 a month. That's \$30 a year-a small price to pay for safer roadways," said McCaleb.

Funding levels for The Oklahoma Department of Transportation (ODOT) have dramatically dwindled over the last 20 years. Currently, ODOT has less funding for fiscal year 2004 than in 1985. In addition, ODOT has a rapidly growing \$8-billion backlog of construction and repair projects needing funding.

McCaleb closed by saying, "I urge voters to not hear the words 'tax increase' and tune out. Our highways are falling apart. They are dangerous to drive on. Our bridges are old and in severe need of repair. The Legislature has failed time and time again to address this tough issue. It is up to the people of this state to lead the way. And I whole-heartedly believe this initiative is the best opportunity Oklahoma will have to reform funding and make our bridges and roads safer. I urge voters to pass this initiative," said McCaleb.

Following the signature certification process, Gov. Brad Henry will set a date for a statewide special election. Depending on if there are any legal challenges to the petition, a vote of the people could come as early as this spring or not until late 2005 or early 2006.

ACEC OKLAHOMA Celebrates 50 Years of Service



Front Row (from left): P. G. Wilson, Bill Collins, Betty Jackson, Fred Delano, Jack Tumilty, Paul Sprehe
Back Row (from left): Don Vick, Steve Pembleton, Bob Zahl, Stan Rankin, Mike Homan, Ron White, Jerry Shepherd, Jim Cobb



ACEC OKLAHOMA President & CEO Jim Sullins and former Executive Director (1982-88) Bob Brandenburg are shown with plaque honoring the Past Presidents/Chairmen of the organization.

Some 50 ACEC OKLAHOMA Past Presidents, Members, Spouses and friends celebrated the 50th Anniversary of the organization on Friday, December 10th.

Fourteen Past Presidents and Past Chairmen of ACEC OKLAHOMA, the Consulting Engineers Council of Oklahoma (CECO) and the Consulting Engineers Association of Oklahoma (CEAO) attended. Other special guests in attendance were current ACEC Chairman of the Board Bill Howard of Boston, MA, and former CECO Executive Director Bob Brandenburg.

It was a fun evening, and it was great to see many old friends join together again. Past Presidents and Past Chairmen from four of the five decades attended, many of which are now retired and haven't been together for many years.

ACEC Chairman of the Board Don Vick led the festivities and was assisted by Past Presidents Bill Collins, Paul Sprehe, and Stan Rankin, each of whom took a nostalgic look at the decades in which their Presidency's occurred.

ACEC Chairman Bill Howard offered congratulations from ACEC and commented on how much he had learned about the history of ACEC and ACEC OKLAHOMA, especially the early years, from those in attendance.

The evening concluded with the unveiling of a plaque in honor and memory of the Past Presidents of the three organizations which will now hang at the ACEC OKLAHOMA office.

Federal Mileage Rates Increase for 2005

The Internal Revenue Service today released the optional standard mileage rates to use for 2005 in computing the deductible costs of operating an automobile for business, charitable, medical or moving expense purposes.

Beginning Jan. 1, 2005, the standard mileage rates for the use of a car (including vans, pickups or panel trucks) will be:

- 40.5 cents a mile for all business miles driven, up from 37.5 cents a mile in 2004;
- 15 cents a mile when computing deductible medical or moving expenses, up from 14 cents a mile in 2004; and
- 14 cents a mile when giving services to a charitable organization.

The 3-cent increase in the business mileage rate was the largest one-year rise ever. The primary reasons were higher prices for vehicles and fuel during the year ending in September. The charitable standard mileage rate is set by law.