



ACE MENTOR PROGRAM
ARCHITECTURE • CONSTRUCTION • ENGINEERING

Celebrating 10 Years of Mentoring in NE Florida

FOR IMMEDIATE RELEASE

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ORANGE PARK HIGH SCHOOL TEAM WINS NATIONAL AWARD FOR BEST BRIDGE DESIGN

Jacksonville, Florida, May 11, 2016 – For the second straight year, the Orange Park High School (OPHS) team earned a trip to Washington, DC after judges selected their entry as one of 9 finalists from 55 entries from across the nation. In the afternoon round of judging, OPHS student, Tom McClymont presented their project to a panel of judges. OPHS was selected as the best entry for the “Bridge Design / Redesign & Construction Challenge” category. After the evening round presentation, the OPHS team was ranked 3rd overall of the 55 national entries. The event was held on April 25th. The entire team was present, as well as mentors, Joe De Marco, Mary Ellen De Marco and Crystal Markley, and teachers, Doug Barrows and Ted Jahn.



Pictured left to right: Kenny Windham, Doug Barrows, Ted Jahn, Michael Mancil, Camden Dean, Brian Reed, Liam De Marco, Tom McClymont, Christopher Osborne, Natalia Cordero, Michael Nee, Destiny Childress, Joe De Marco and Mary Ellen De Marco

The proposed Unity Bridge will connect Jacksonville’s sports and entertainment district just east of the downtown business district with the Southbank and most of Jacksonville’s population via the I-95 corridor. The bridge will help connect and enhance proposed mega-developments on

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Career Directions for Students in Architecture, Construction and Engineering

both banks of the St. Johns River. Automobile and truck traffic will use 4 lanes designed and built to interstate highway standards. Local traffic will have ramps to access the stadium area and the Southbank. Two dedicated lanes will provide a river crossing for Jacksonville's Automated Skyway Express monorail system. The skyway expansion will connect stadium parking areas to downtown during the work week and downtown parking areas to the stadium during football games and other special events. Pedestrian and bicycle traffic will have a separate dedicated lane and observation decks. The pedestrian lane will connect existing sidewalks known as River Walks on both sides of the river. The overall construction budget is estimated to be \$357 million.

SUMMIT Orange Park High School Florida

UNITY BRIDGE

30°18'58.3"N 81°38'17.3"W



Jacksonville is a vibrant city in northeast Florida currently in the midst of major population growth and downtown revitalization. The St. Johns River flows through the center of the city. The natural beauty of the river is an asset to the city, but also causes issues with respect to travel into and around the downtown area.

Our team saw an opportunity to provide a creative solution for Jacksonville's traffic problems while designing an iconic bridge that will be a destination point in itself. Our design will allow people to downtown creating economic growth for downtown entertainment areas and small businesses that will go hand in hand with its growing population.

Existing bridges are worn down and overcrowded and research shows that they will be over capacity by the year 2035. Our site selection provides a direct, convenient connection to key entertainment areas as well as providing a more efficient route for commercial traffic to the port of Jacksonville.

Unity Bridge provides improvements to existing traffic patterns through major thoroughfares, public transportation, commercial traffic, pedestrian travel, and bicycle routes throughout the city. Having been on a course of recovery and revitalization for the past few years, Unity Bridge will be the final push to bring Jacksonville onto the world stage by providing more consumers and business for the city.

SITE SELECTION


- Able to easily connect to major thoroughfares and local thoroughfares.
- Available on already constructed, existing commercial truck routes, on other local roads.
- Impose traffic flow to downtown Jacksonville.
- Increase recreation capacity during emergency situations (i.e. hurricanes).
- Adjacent to Interstate 95, I-10, Jacksonville-Landmark Park, East, Jacksonville, and major thoroughfares on both sides of the river.
- The Skyway and Direct road-one development projects near site are valued at over \$1 billion.

IMPACT

- Bridge alignment was carefully selected to minimize community displacement by allowing natural water flow.
- Project location and cost estimate included provisions for age maintenance and environmental impact.
- Schedule plan allowing during weekday and weekend hours.
- Environmental impact. "Buildable Landfill" will be used prior during plan in order to protect marine life. The removal of construction debris and rubble will be through disposal on major roadways.

DESIGN AND STRUCTURE




- 10 lanes, 4 North / 3 South automobile, 2 Skyway, 4 monorail
- 120' main span, 100' approach span
- Roadway structure has grade, pedestrian structure cable stayed



North Bank

South Bank

	Length	Width	Clearance
Approach	120' inches	100' feet	100' feet
Mainspan	1200' inches	120' feet	100' feet
Approach	120' inches	100' feet	100' feet

SUMMIT Orange Park High School Florida

UNITY BRIDGE

The Unity Bridge not only fulfills Jacksonville's primary critical need for improved traffic flow throughout the area, but will also meet the future requirements of a growing city. Traffic congestion and major growth along the banks of the St. Johns River are significant reasons why both the location and design of the Unity Bridge supply a vital function to the city.

Unity Bridge will be an invaluable addition to Jacksonville because it will significantly improve connectivity between communities and businesses. It will transform a group of separate neighborhoods into a cohesive city that is easily accessible to all whether traveling by car, public transportation, or walking.

Better connections and traffic flow plus the innovative design of the bridge will draw people and events downtown. This will result in a positive economic impact for local commerce, especially to downtown businesses, hotels, and restaurants.

REVITALIZATION EFFORTS

- New cultural center and additional housing along the St. Johns River

DESIGN INSPIRATION

The team drew inspiration from historic steel-truss bridges across the world but had to create a new design.

A history of feasibility and design was implemented through an engineering design team working closely with local architects with the needs of the community.

COMMUNITY

- Unity Bridge will be a landmark project, providing a significant economic impact to the community.

DOWNTOWN JACKSONVILLE

- Increased need to travel within Jacksonville
- Increase area of connectivity
- Increased direct connection to entertainment and business centers
- Access to the Riverwalk on both sides

PORT OF JACKSONVILLE

- Offers an efficient route from 100 to the ports to further attract traffic.

PEDESTRIAN WALKWAY & OBSERVATION DECKS

- Walkway deck will include pedestrian observation deck
- ADA compliant guide for accessibility

TRAFFIC STUDIES

Traffic studies demonstrate the need for study bridge

- Current bridges are operating over capacity
- Unity Bridge will reduce traffic on existing bridges between 15% and 45%
- Two of the two bridges have been analyzed and substantially overcapacity as determined by traffic studies
- Unity Bridge will handle high traffic, based on comparison to the other two bridges
- Highway need bridge at high traffic

SEWER

- The design incorporates the following:
 - 2' diameter storm and sewage utility
 - 18" diameter storm and sewage utility
 - 12" diameter storm and sewage utility
 - 6" diameter storm and sewage utility
- Only major structure located at the main observation deck, as well as one additional on each shore making it accessible for all.





The National teams start earlier and are on a much more rigorous schedule than the other ACE students competing locally. The hours they and the mentors pour into competition is simply astounding, and this year we had two teams in the race –OPHS and a group of Homeschool students. Truly amazing work done by both teams. They have made the rest of the nation stand up and take notice of this Northeast Florida affiliate.

Our annual Year-End event will be held on May 20, 2016 from 9:00 AM to 1:00 PM at the UNF University Center, 12000 Alumni Drive, Jacksonville, FL 32224.

We'll be honored at our Year-End event to view the presentations from both our National teams. You'll be blown away!

Founded during the 2006-2007 school year with significant support from the Associated Builders and Contractors (ABC) and Haskell, the ACE Mentor Program of Northeast Florida, helps high school students explore potential careers in architecture, construction and engineering (ACE). Scholarships are given each year through the continued support corporate and personal donors, totaling over \$130,000.

This school year we had 90 registered students and 53 mentors. In addition to homeschooled students, local public high schools from three counties included Lee, Orange Park, Middleburg, and Creekside. Also, for the third time in our affiliate history, one of our mentors, Crystal Markley, was selected as one of six 2016 ACE-ENR Outstanding Mentors.

Through the program, mentors from local industry professional firms meet with students for two hours once a week for 16 weeks. During these sessions, students work in teams to create practical solutions for “real-world” projects. It’s an effective way for students to experience the reality of what architects, contractors and engineers do during a typical working day.

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