

# BEN CRELLIN, PE, LEED AP - PRINCIPAL STRUCTURAL ENGINEER

## PROFESSIONAL LICENSED STRUCTURAL ENGINEER - AZ, MA

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### PROFILE

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- Founding partner of structural consulting firm United Structural Design, LLC
- Master's-level licensed structural engineer with 10 years of professional experience in the building construction industry
- Possesses a comprehensive working knowledge of state-of-the-art structural engineering practices and current building codes
- Demonstrates ability to manage projects of moderate to large scope
- Builds lasting relationships with clients and colleagues through reputation and outreach activities
- Well rounded practitioner with extensive field experience complementing design work

Key strengths include:

Building design	Concrete design
Structural evaluation	Foundations
Remodels/Additions	Earth retention structures
Seismic design	Masonry design
Project management	Wood design
Sustainable design	Cold-formed steel
Building information modeling (BIM)	Technical writing
3D building analysis	Inspections and Field activities
Steel design	Corrosion mitigation

- **Industries:** Education (Higher Ed and K-12), Healthcare, Hospitality, Industrial and Manufacturing, Justice, Performing Arts & Entertainment, Public & Institutional, Religious, Residential, Retail, Technology
- **Certifications:** Licensed Structural Engineer (AZ, MA), NCEES model law structural engineer, Leadership in Energy and Environmental Design Accredited Professional (LEED A.P.), State of California Certified Disaster Service Worker (Cal OES Safety Assessment Program), Occupational Safety and Health Administration trained (OSHA 10-hour)
- **Computer Skills:** Bluebeam, Adobe Acrobat, Microsoft Office, Submittal Exchange, Newforma
- **CAD/Design Packages:** RAM structural system, RAM connection, RAM concept, RAM elements, Tedds, SAP2000, STAAD, RISA 2D/3D, MATHCAD, ANSYS, AutoDesk (Revit/ AUTOCAD)

### PROFESSIONAL EXPERIENCE

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**United Structural Design, LLC, Phoenix, AZ**

**Partner, Principal**

*March 2014 – Present*

Founding member/manager of United Structural Design, LLC a full-service structural engineering consulting firm. Responsible for business management and technical activities. Directs and provides full-service structural engineering services for building and non-building projects.

United Structural Design, LLC was founded in 2013 and began operations in 2014.

- Member of executive team responsible for strategic planning, budgeting, and operations

- Plans, organizes, and leads complex projects including development of construction documents and construction administration
- Responsible for developing financial and marketing strategies
- Responsible for development of proposals involved with winning long term contracts to provide engineering design services for major steel fabricator.
- Engineer of Record (EOR)

**AECOM, United States Agency for International Development funded Haiti Health Infrastructure Project**

*Port-au-Prince, Haiti*

**Lead Structural Engineer/Project Manager**

*March 2014 – December 2014 (10 months)*

Lead Structural Engineer for all construction projects within the USAID Haiti Health Infrastructure Program. Project Manager for the National University General Hospital and National Campus for Health Sciences.

- Responsible for quality assurance oversight of the projects, ensuring that construction progress is on schedule, within budget and meets code requirements.
- Served as liaison between AECOM and key program stakeholders, including USAID, Government of Haiti, contractors, sub-contractors, and the design team.
- Resolved technical issues with complex features such as conflicting design requirements, availability of suitable construction materials, and difficult local coordination requirements.

**PK Associates Structural Engineers, LLC, Scottsdale, AZ**

**Associate, Senior Engineer**

*July 2013 – February 2014 (8 months)*

Responsible for managing multiple building projects with complex architectural designs to completion including: conceptual design, detailed design, assisting with financial control, representing the company at project meetings, and supervising and reviewing work done by structural designers and E.I.T.s.

- Engineer of Record (EOR) for four building high school campuses
- Manager of dual campus Fast-Track education projects with parallel design and construction schedules
- Facilitated smooth execution of out-of-state projects utilizing Building Information Modeling (BIM). Creatively identified and determined structural solutions for complex architectural features for a 90,000 sq ft Court Building.

**CH2M HILL – Structural Design Group (formerly Paragon Structural Design), Phoenix, AZ**

**Structural Engineer**

*July 2006 – July 2013 (7 years, 1 month)*

Started professional engineering career at Paragon Structural Design LLC where I was given projects of increasing scope and complexity throughout my tenure. Responsible for engineering of multiple high profile public sector and not-for-profit projects including Higher Education, K-12, Justice, Religious, Performing Arts, Healthcare, and Public Safety. Transitioned focus to large Industrial and Manufacturing projects while working with CH2MHill Inc.

- In charge of projects' complete life cycles from schematic design to construction
- Known for providing excellent Services During Construction (SDC) including: Request For Information (RFI) responses, submittal review, and periodic site observations
- High seismic design experience under rigorous California Division of the State Architect (DSA) requirements
- Participated in international projects for confidential clients which required strict adherence to stringent intellectual property security policies
- Obtained security clearance for Arizona Department of Corrections and Intel Corporate projects
- Field engineer for multi-billion dollar fast-track microelectronics manufacturing project. Responsible for client deliverables, problem resolution, value engineering, and client relations

**University of Massachusetts Amherst, Amherst, MA****Research Assistant***May 2003 – June 2006 (3 years 2 months)*

Studied under Dr. Scott Civjan and published Master's Thesis, "Field Studies of an Experimental Concrete Admixture" and was involved in all of Dr. Civjan's research projects, including a parametric study of an integral abutment bridge which compared field data from integrated structural sensors to the behavior of 2D and 3D finite element models.

- Coordinated full-scale concrete placements for testing of an experimental concrete admixture
- Managed remote monitoring of an integral abutment bridge
- Managed corrosion monitoring protocol for reinforced concrete specimens subjected to an accelerated corrosion testing procedure
- Successfully completed large-scale testing of wood/concrete and steel/concrete composite beams

**ACADEMIC QUALIFICATIONS**

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**B.S., Civil Engineering**, University of Massachusetts Amherst, Commonwealth College Scholar, Departmental Honors, Magna Cum Laude (2004) - 3.5 GPA

- Author, Undergraduate Honors Thesis: Life-365 Service Life Prediction Analysis

**M.S.C.E., Structural Engineering**, University of Massachusetts Amherst (2007) - 3.9 GPA

- Author, Master's Thesis: "Field Studies of an Experimental Concrete Admixture"
- Co-Author, "Field Studies of Concrete Containing Salts of an Alkenyl-Substituted Succinic Acid", NETCR73, June 2008
- Co-Author, "Field Studies of Concrete Containing Salts of an Alkenyl-Substituted Succinic Acid Phase I", NETCR73, August 2007
- Contributor, "A New Admixture to Mitigate Corrosion Problems", Concrete International. August 2006, Pp. 2-6
- Contributor, "A New Admixture to Minimize Corrosion: Hycrete", Structure Magazine, Feb 2005
- Contributor, "Shear Behavior of a Continuous Metal Connector for a Wood-Concrete Composite System" Forest Products Journal. 54(6) Pp. 76-84. 2004

**CONFERENCES AND RELATED TRAINING**

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- California Governor's Office of Emergency Services Safety Assessment Program Training - June 2013 (4 PDH)
- 2012, 2013 Structural Engineers Association of Arizona Conference - June 2012, 2013 (9.0 PDH)
- Introduction to Revit Phoenix College - Fall 2011 (3 SCH)
- 10-Hour OSHA Course in Construction Safety and Health - January 2010
- NCSEA Winter Institute - March 2008 (15 PDH)

**PROFESSIONAL AFFILIATIONS AND VOLUNTEER EXPERIENCE**

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- Structural Engineers Association of Arizona (SEAOA); Member 2010-Present; State President 2012-2013; State Board Director 2011-2014; Convention Planning Committee Chair 2013; Practice Act Committee Chair 2012-Present
- National Engineers Week; Volunteer
- Future Cities Competition; Judge 2010-Present
- National Council of Structural Engineering Associations (NCSEA); Member 2010-Present; Structural Licensure Committee Arizona Representative
- American Society of Civil Engineers (SEAOA); Member 2006-Present

- ACEMentor 2008-Present
- Also volunteers annually for Habitat for Humanity, Construction, and National Engineers Week Educational Program.

## PERSONAL INTERESTS

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- Experience with international travel with extended trips to Haiti, Turkey, Uganda, Ireland, Mexico and England
- Lifelong sports enthusiast. Active in team sports including: soccer, roller hockey, beach volleyball, and basketball. Played club Rugby in college.
- Enjoys outdoor adventures. Completed Grand Canyon rim-to-rim hike in 2011
- Currently learning about digital photography and web design

## DISTINGUISHED PROJECTS

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- **Intel F42 – Chandler, Arizona**  
Programming, detailed design and services during construction to support a 1.3 million sq ft large-scale semiconductor campus expansion. The expansion included a new 200,000 sq ft high volume manufacturing facility, fab support and utility buildings, multi-story office, and site infrastructure upgrades.
- **City of Phoenix, Fire Training Academy – Phoenix, Arizona**  
This project consisted of a \$19,000,000, 28,000 sq ft, two-story training facility for the City of Phoenix Fire Department. Components included three apparatus bays, covered outdoor bleachers, and classrooms.
- **Maricopa County Downtown Court Tower – Phoenix, Arizona**  
A new \$340,000,000, 725,000 sq ft, 16-Story structure with a target of LEED Silver Certification. This project was Maricopa County's largest capital project to date. Noteworthy project features include 22 courtrooms, with the capacity to house 10 more in the future. The court tower features a separate entrance for victims of crime, neutral conference rooms for public defenders and county attorneys, and holding cells capable of detaining more than 1,000 inmates.
- **Arizona State University, Polytechnic Campus – Phoenix, Arizona**  
The Polytechnic campus, located in Mesa in the heart of the growing East Valley, is home to more than 6,000 students exploring ASU's professional and technological programs. The total project cost reached \$104,000,000; with 280,000,000 total sq ft of state-of-the-art research, laboratory and classroom space spanning four buildings. The LEED goal for the project was Silver, which was surpassed to receive LEED Gold by the US Green Building Council.
- **Gateway Community College, Integrated Education Building – Phoenix, Arizona**  
The Integrated Education Building (IEB) project at Gateway Community College consisted of an 80,000 sq ft multi-purpose building accommodating the needs of various student services and activities. Features included science labs, classrooms, indoor and outdoor art studios, collaborative spaces, library, conference rooms, learning center, and offices for faculty and staff. Student services included a café, performance space, career services area, and more. Spanning two stories, the facility totaled \$53,000,000.
- **Casa Grande Union High School District, Vista Grande High School – Casa Grande, Arizona**  
The \$59,000,000, 250,000 sq ft Vista Grande High School project included a state-of-the-art performing arts center and practice gymnasiums. The project also included a library that was designed to be a joint use facility with the City of Casa Grande.