

Stuart W. Baur, Ph.D, A.I.A.

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University of Missouri – Rolla

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Higher Education

Doctor of Philosophy in Civil Engineering (12/2002), **University of Missouri - Rolla**

Dissertation: Evaluation of the Interaction Equation for Hat-Shaped Sections of Cold-Formed Steel Construction

Advisor: Dr. Roger LaBoube, Professor of Civil Engineering and Director, Wei-Wen Yu Center for Cold-Formed Steel Structures

Master of Science in Civil Engineering (12/1998), **University of Miami**

Thesis: Evaluation of Cold-Formed Steel Connections Attached with Pneumatically Driven Pins

Advisor: Dr. Wimal Suaris, Professor of Civil Engineering

Bachelor in Architecture (5/1993), **University of Miami**

Bachelor of Science in Architecture (6/1988), **The Ohio State University**

Associates in Arts (8/1985), **Miami-Dade Community College**

Academic Experience

Classes taught:

Fall Semester 2002 ArchE 203 Architectural Engineering Design I

3 credits. Focus: Introduction to the interaction between architecture and the engineering disciplines. Theories of building and site design, technology as an integral component of design, plan and spatial organization, structural clarity, formal composition, and environmental context are considered as principle form determinants.

Prerequisite: Sophomore standing.

Fall Semester 2001 CE221 Structural Design in Metals

3 credits. Focus: The analysis and design of structural elements and connections for buildings, bridges and specialized structures utilizing structural metals. Both elastic and plastic designs are considered.

Prerequisite: CE 217 Structural Analysis with a grade of "C" or better

Spring Semester 1998 CAE212 Structural Laboratory (2 sections)

1 credit. Laboratory techniques. Tests for tension, compression, shear, bending and torsion. Models and similitudes. Buckling of columns. Review of current research. Laboratory 3 hours.

Prerequisite: ENG107. Corequisite: CEN211

Fall Semester 1998 CAE212 Structural Laboratory (2 sections)

1 credit. Laboratory techniques. Tests for tension, compression, shear, bending and torsion. Models and similitudes. Buckling of columns. Review of current research. Laboratory 3 hours.

Prerequisite: ENG107. Corequisite: CEN211

Supervisor: Professor Dr. Meridad Soltani, Associate Professor of Civil Engineering

Fall Semester 1997 ARC532 Structures in Architecture II

3 credits. Focus: The structural behavior of simple frame structures. Topics: techniques to determine basic system layout and preliminary dimensioning of key subsystems and members. Format: Problem solving exercises, and lecture. Prerequisite: ARC531

Spring Semester 1998 ARC533 Structures in Architecture III

3 credits. Focus: The structural behavior of complex structures. Topics: Prestressed systems, waffle and space trusses, curved structures and longspan buildings. Format: Problem solving exercises, and lecture. Prerequisite: ARC532.

Supervisor: Professor Denis Hector, Director of Graduate Studies and Associate Professor of Architecture

Student Supervision: 4 Undergraduate Students

Research Experience:

University of Missouri-Rolla School of Engineering

Graduate Research Assistant - Center for Cold-Formed Steel Structures

Comprehensive experimental study with Dr. Roger LaBoube under way to examine the interaction equation with experimental results for various hat-shaped sections used in cold-formed steel construction. This study includes the key parameters that influence the axial and bending strength: steel thickness, web depths and various intermediate stiffener configurations. The AISI design specifications for hat shaped sections are compared with those obtained from a series of tests which include stub column tests and negative bending tests. Further analysis using a finite strip program is compared with the AISI interaction equation and those results received from the experiment. The equations developed in this study can be used to predict the strength of various hat shape sections. Research project funded in part by private industry and the American Iron and Steel Institute.

University of Miami College of Engineering

Graduate Research Assistant - Civil, Architectural and Environmental Engineering Department

Comprehensive experimental study with Dr. Wimal Suaris was conducted to examine the shear and tensile strength of pneumatically driven pin connections used in cold-formed steel construction. This study included the key parameters that influence the connection strength: steel thickness and sheathing thickness. The shear design values given in the AISI design specifications for screw connections are compared with those obtained from a series of lap shear tests and a good agreement is obtained. Initial analysis of the AISI design equation for tensile failure due to pull-over yielded poor results when compared to the withdrawal test values. Upon further analysis it was determined the connection failed in punch shear mode and the results compared well with the ACI punch shear analysis. The new equation developed in this study can be used to predict the strength of pneumatically driven pin connections in cold-formed steel construction.

Conference Papers and Presentations:

Baur, S.W., and Suaris,W, "Evaluation of Cold-Formed Steel Connections Attached with Pneumatically Driven Pins" 15th International Specialty Conference on Cold-Formed Steel Structures (St. Louis, MO October 2000) pages 619 - 633.

Baur, S.W., and LaBoube, R.A., "Behavior of Complex Hat Shape Cold-Formed Steel Members" Structural Stability Research Council Proceedings 2001 (Ft. Lauderdale, FL May 2001) pages 403 - 417.

Publications:

The New South Dade Planning Charrette From Adversity to Opportunity, 1995
Historic Preservation & Tourism Study (page 5)

Architectural Record, March 1992

"Shop Till You Drop...Arquitectonica's Sawgrass Mills Mega Mall" (pages 84 - 91)

Funded Grants:

American Architecture Foundation, 2003 Accent on Architecture Grant

Professional Experience:

Bermello Ajamil and Partners, Inc. Miami, Florida

1993-1995

Projects included:



Homestead Motor Sports Complex

- D.C.A.D. Concourse A Phase II - Terminal Extension, Miami, FL
- American Airlines Hangar - Renovation, Miami, FL
- Homestead Motor Sports Complex - Race Arena, Homestead, FL

The Nichols Partnership, Inc. Coral Gables, Florida

1990-1993

Projects included:



Westin Hotel, RI



Sheraton Bal Harbour, FL

- All Nippon Airways Hotel - Retail/Office Center/Hotel, Miami Beach, FL
- Turbo Power - Commercial Warehouse, Miami, FL
- Hope Lodge - Cancer Center, Miami, FL
- Westin Hotel - Retail/Office Center/Hotel, Providence, RI
- Sheraton Bal Harbour Hotel - Renovation, Bal Harbour, FL
- Hyatt Eleuthera - Resort/Casino, Restaurants, Eleuthera, Bahamas
- Pittsburgh Mixed-Use Center - Retail Office Center/Hotel, Pittsburgh, PA

Arquitectonica International, Inc. Coral Gables, Florida

1988-1990

Projects included:





United States Embassy, Peru

- Sawgrass Mills - Retail/Commercial Center, Sunrise, FL
- Banque of Luxembourg - Financial Center, Luxembourg
- L.A. Arts Park - Fine Arts Center/School, Los Angeles, CA
- United States Embassy - Government Project, Lima, Peru
- Palm Bay Club - Condominiums, Miami, FL
- Three Palms - Retail/Office Center, Jupiter, FL

Professional Affiliations

American Institute of Architects

American Society for Engineering Education

American Society of Civil Engineers

Architectural Engineering Institute – National Conference Planning Committee (2002-2003)

Earthquake Engineering Research Institute

Structural Stability Research Council

Honors and Awards

Iron Arrow - *the highest honor attained at the University of Miami*

Omicron Delta Kappa - *national leadership honor society*

Greater Miami Chamber of Commerce *Leadership Miami* Graduate

Missouri Chamber of Commerce *Leadership Missouri* Graduate

Service

University Activities:

Architectural Engineering Undergraduate Committee (University of Missouri – Rolla) 2002 - Present

Building Equipment Committee (University of Missouri – Rolla) 2002 - Present

Solar Decathlon co-advisor (University of Missouri – Rolla) 2002 - Present

Common Call Campus Ministry (University of Missouri – Rolla) 2002 - Present

Beta Sigma Psi Advisor (University of Missouri – Rolla) 2002 - Present

Engineering Peer Counselor Coordinator (University of Miami) 1995 - 1997

Graduate Affairs Funding Allocations Committee (University of Miami) 1995 - 1996

International Bridge Building Competition Judge (Miami) 1996

Community Activities:

Habitat for Humanity 1992-1994

Optimists International 1999 - Present

Phelps County Historic Association 1999 - Present

Powell Addition Neighborhood Association 1998 - Present

Downtown Revitalization Committee, Design Committee Chair 2001 - Present

South Florida Museum of History - Tropical Pioneers 1994 - 1996