50 YEARS
Forensic Engineering, Investigation and Analysis Since 1970

S-E-A

Know.

Does your building design push the boundaries of style and innovation? Even the best designed and constructed buildings can find themselves at the center of a large claim and/or lawsuit.

Charles Shepard P.E., LEED AP

Civil/Structural Engineer

Mr. Shepard, from the S-E-A Cleveland office, is an accomplished Civil/Structural Engineer who brings his unique experience and expertise on high profile buildings, as he has been the Engineer of Record and Project Engineer for the building envelope systems for some of the most well-known buildings across the country. **Chuck's vast experience allows him to have a keen eye for the integrity of your building project.** FULL BIO CV

Contact

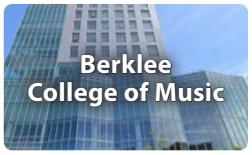
Cleveland Office
3500 State Rd.
Cuyahoga Falls, OH 44223

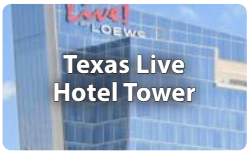
Email:
cshepard@SEAlimited.com

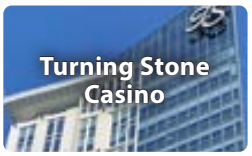
Phone:
(330) 923-2360

- Chuck can examine and evaluate existing structures and building envelope systems to determine the presence, extent, and/or cause of damage as a result of partial or full collapse, storm damage, water intrusion, fire, vibration, blasting, or other phenomena.
- He can also provide investigation and consultation for a variety of projects, including, but not limited to: structure, roof, and building envelope/fenestration failures, means of ingress/egress, code compliance and potentially defective construction and/or design.
- **He is experienced and ready to respond quickly.**

Take an in-depth look at some of Chuck's industry leading, iconic projects:





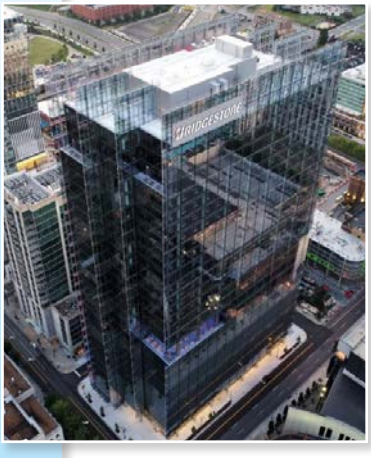


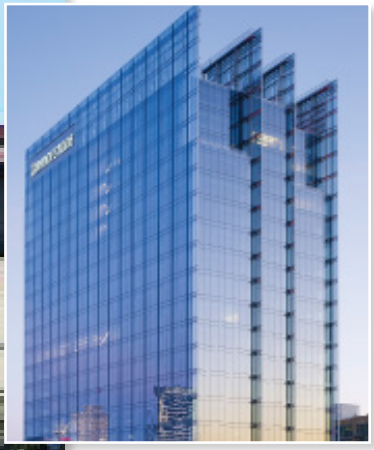
ROLE
Engineer of Record for the custom unitized curtain wall systems

DESIGN ATTRIBUTES
- Three custom unitized curtain wall systems
- Exterior wing walls
- Two story lobby area

BUILDING
Bridgestone Headquarters Tower

LOCATION
Nashville, TN



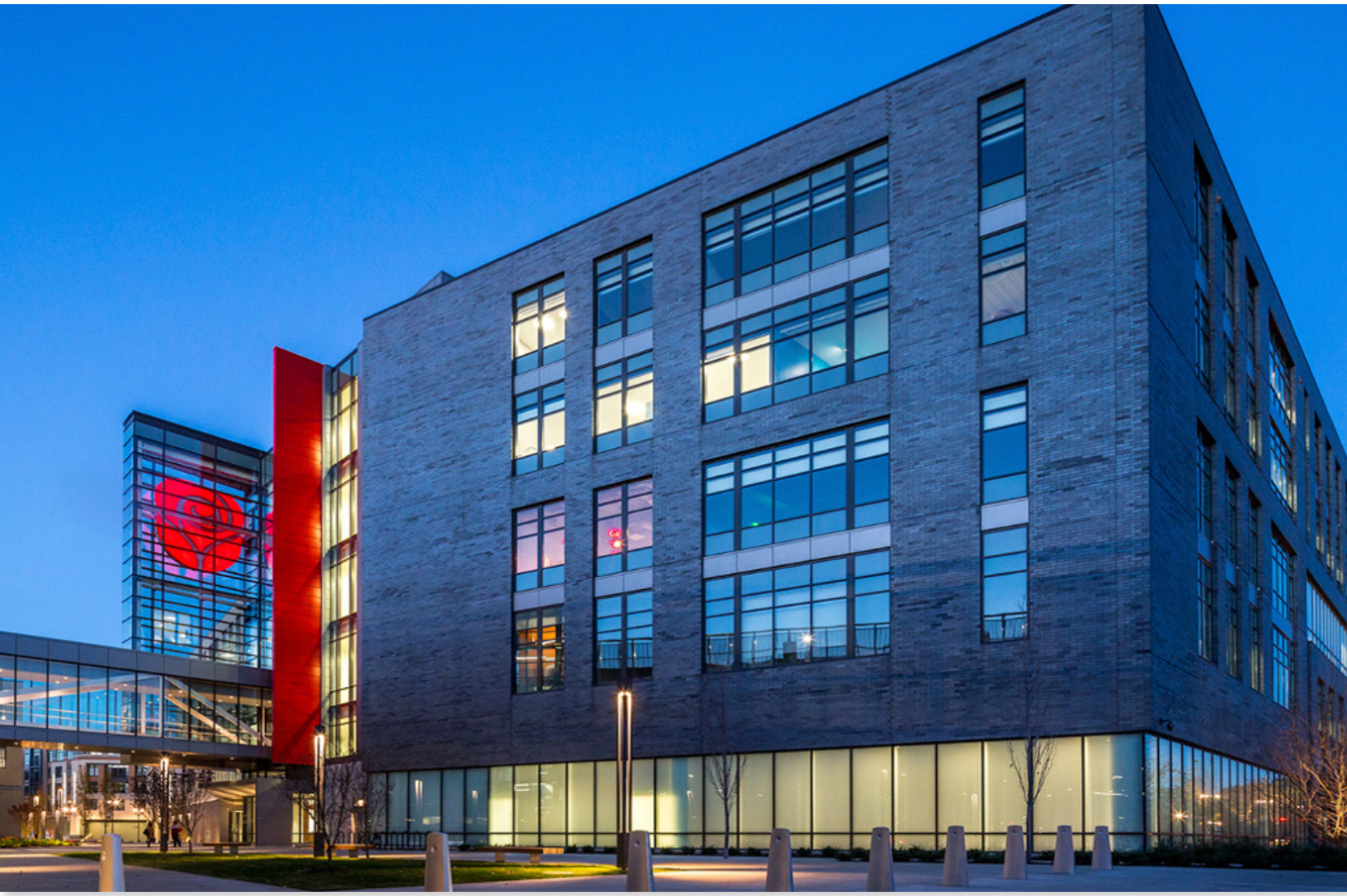


How can we help? Please contact Chuck for more information.

Charles Shepard, P.E., LEED AP
Civil/Structural Engineer
cshepard@SEAlimited.com
330.412.5984 *cell*
800.343.4366 *office*

S-E-A™
Know.

We test.
We investigate.
We reveal.
We explain.
So you **know.**



ROLE
Engineer of Record for the exterior curtain wall, window wall and storefront systems

DESIGN ATTRIBUTES
Three systems — curtain wall, window wall and storefront

BUILDING
American Greetings Headquarters

LOCATION
Westlake, OH

How can we help? Please contact Chuck for more information.

Charles Shepard, P.E., LEED AP
Civil/Structural Engineer
cshepard@SEAlimited.com
330.412.5984 *cell*
800.343.4366 *office*

S-E-A™
Know.

We test.
We investigate.
We reveal.
We explain.
So you **know.**

ROLE

Engineer of Record for the custom sloped glazed curtain wall system

DESIGN ATTRIBUTES

- Steel tube subframe
- Approximately 40 different glass planes

BUILDING

Akron Art Museum

LOCATION

Akron, OH

How can we help? Please contact Chuck for more information.

Charles Shepard, P.E., LEED AP
Civil/Structural Engineer
cshepard@SEAlimited.com
330.412.5984 *cell*
800.343.4366 *office*

S-E-A™
Know.

We test.
We investigate.
We reveal.
We explain.
So you **know.**

ROLE

Project Engineer for the custom unitized curtain wall systems and interior glazing systems

DESIGN ATTRIBUTES

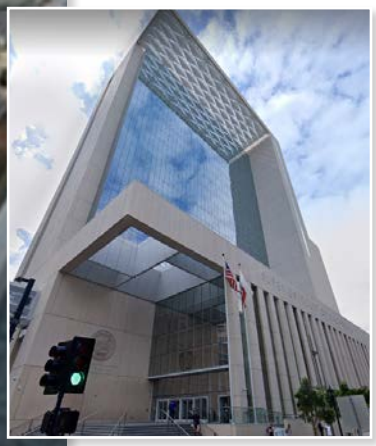
- Multiple custom glazing systems
- High seismic area
- Blast mitigation
- Ballistic glazing

BUILDING

San Diego Central Courthouse

LOCATION

San Diego, CA



How can we help? Please contact Chuck for more information.

Charles Shepard, P.E., LEED AP
Civil/Structural Engineer
cshepard@SEAlimited.com
330.412.5984 *cell*
800.343.4366 *office*

S-E-A™
Know.

We test.
We investigate.
We reveal.
We explain.
So you **know.**

ROLE
Engineer of Record for the custom unitized curtain wall systems

DESIGN ATTRIBUTES
- Two building campus
- Custom curtain wall systems
- Limestone panels
- Glass sunshades
- Aluminum sunshades

BUILDING
Novartis Institute for Biomedical Research (two buildings)

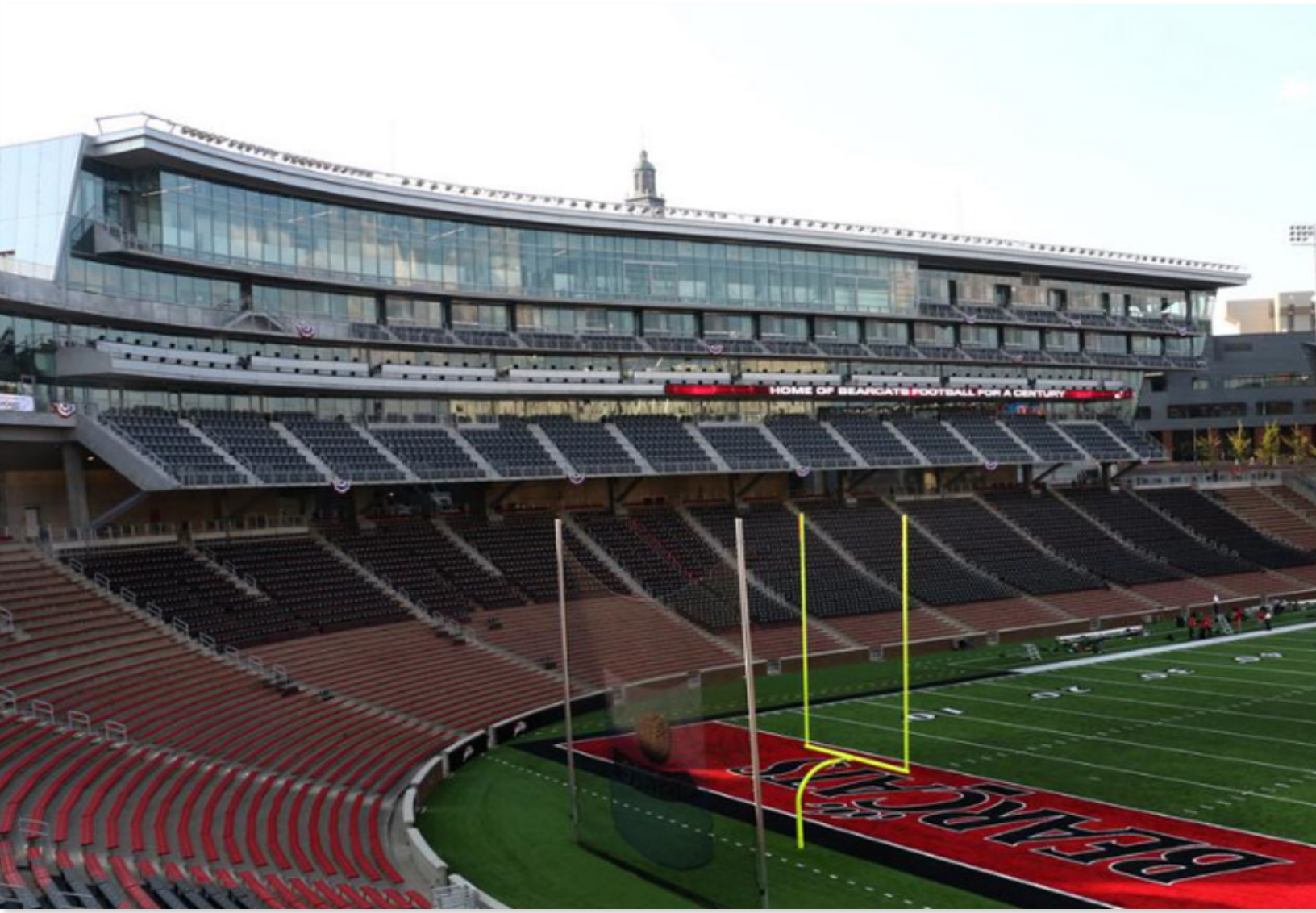
LOCATION
Cambridge, MA

How can we help? Please contact Chuck for more information.

Charles Shepard, P.E., LEED AP
Civil/Structural Engineer
cshepard@SEAlimited.com
330.412.5984 *cell*
800.343.4366 *office*

S-E-A™
Know.

We test.
We investigate.
We reveal.
We explain.
So you **know.**



ROLE
Engineer of Record for the custom glazing systems at the press box and loge seating areas

DESIGN ATTRIBUTES
Custom glazing systems with narrow site lines to minimize obstructive views

BUILDING
University of Cincinnati — Nippert Stadium

LOCATION
Cincinnati, OH

How can we help? Please contact Chuck for more information.

Charles Shepard, P.E., LEED AP
Civil/Structural Engineer
cshepard@SEAlimited.com
330.412.5984 *cell*
800.343.4366 *office*

S-E-A™
Know.

We test.
We investigate.
We reveal.
We explain.
So you **know.**

ROLE

Engineer of Record for the custom unitized curtain wall, punched opening windows and unitized metal panel wall

DESIGN ATTRIBUTES

- Custom curtain wall system
- Custom window system
- Unitized metal panel wall

BUILDING

Berklee College of Music

LOCATION

Boston, MA

How can we help? Please contact Chuck for more information.

Charles Shepard, P.E., LEED AP
Civil/Structural Engineer
cshepard@SEAlimited.com
330.412.5984 *cell*
800.343.4366 *office*

S-E-A™
Know.

We test.
We investigate.
We reveal.
We explain.
So you **know.**

ROLE

Engineer of Record for the custom unitized curtain wall, punched opening windows and storefront

DESIGN ATTRIBUTES

- Custom curtain wall system
- Custom window system
- Sloped glazed storefront

BUILDING

Texas Live Hotel Tower

LOCATION

Arlington, TX

How can we help? Please contact Chuck for more information.

Charles Shepard, P.E., LEED AP
Civil/Structural Engineer
cshepard@SEAlimited.com
330.412.5984 *cell*
800.343.4366 *office*

S-E-A
Know.

We test.
We investigate.
We reveal.
We explain.
So you **know.**

ROLE

Engineer of Record for the custom unitized curtain wall, ribbon window and storefront

DESIGN ATTRIBUTES

- Custom curtain wall system
- Custom ribbon window system
- Storefront

BUILDING

Boro Block C

LOCATION

Tysons, VA

How can we help? Please contact Chuck for more information.

Charles Shepard, P.E., LEED AP
Civil/Structural Engineer
cshepard@SEAlimited.com
330.412.5984 *cell*
800.343.4366 *office*

S-E-A

Know.

We test.
We investigate.
We reveal.
We explain.
So you **know.**

ROLE
Engineer of Record for the custom stainless steel metal panel wall system

DESIGN ATTRIBUTES
- Large stainless steel panels (3 ft x 20 ft)
- Developed proprietary panel system

BUILDING
National Museum of the United States Army

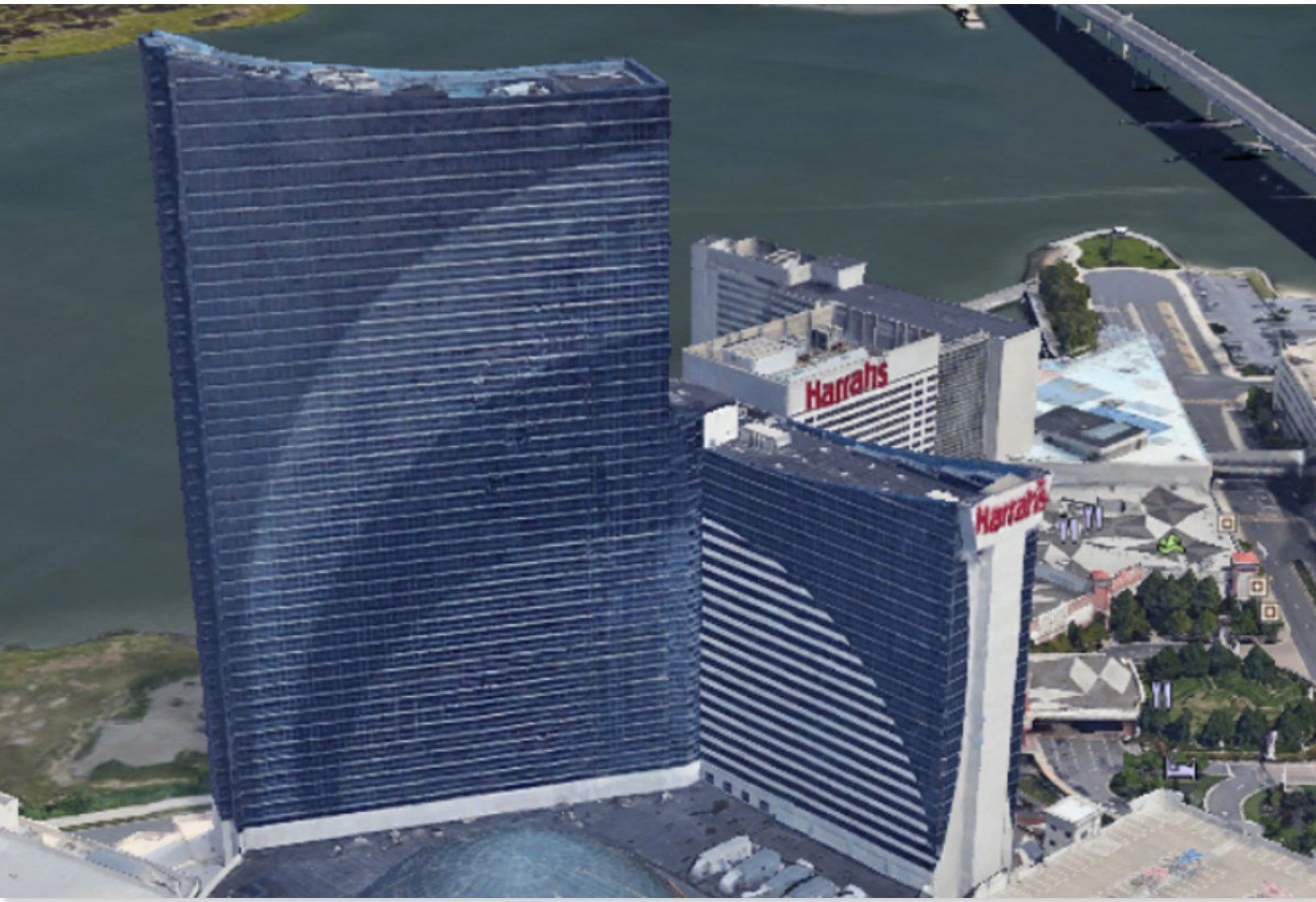
LOCATION
Belvoir, VA

How can we help? Please contact Chuck for more information.

Charles Shepard, P.E., LEED AP
Civil/Structural Engineer
cshepard@SEAlimited.com
330.412.5984 *cell*
800.343.4366 *office*

S-E-A™
Know.

We test.
We investigate.
We reveal.
We explain.
So you **know.**



ROLE

Project Engineer for the custom unitized curtain wall systems

DESIGN ATTRIBUTES

- Coastal wind speeds
- Custom unitized curtain wall
- Precast panels in curtain wall system

BUILDING

Harrah's Bayview Tower and Harrah's Resort and Casino (two buildings)

LOCATION

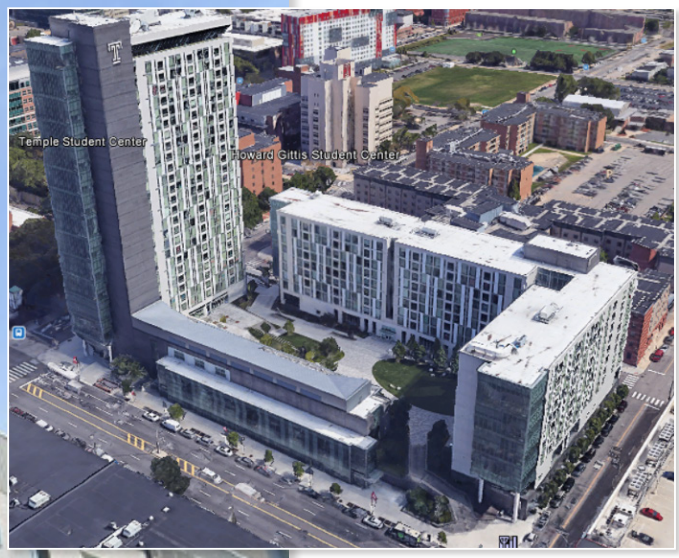
Atlantic City, NJ

How can we help? Please contact Chuck for more information.

Charles Shepard, P.E., LEED AP
Civil/Structural Engineer
cshepard@SEAlimited.com
330.412.5984 *cell*
800.343.4366 *office*

S-E-A™
Know.

We test.
We investigate.
We reveal.
We explain.
So you **know.**



ROLE

Engineer of Record for the custom unitized curtain wall systems and custom vent windows

DESIGN ATTRIBUTES

- Custom unitized curtain wall
- Custom vent windows

BUILDING

Temple University — Morgan Hall Buildings

LOCATION

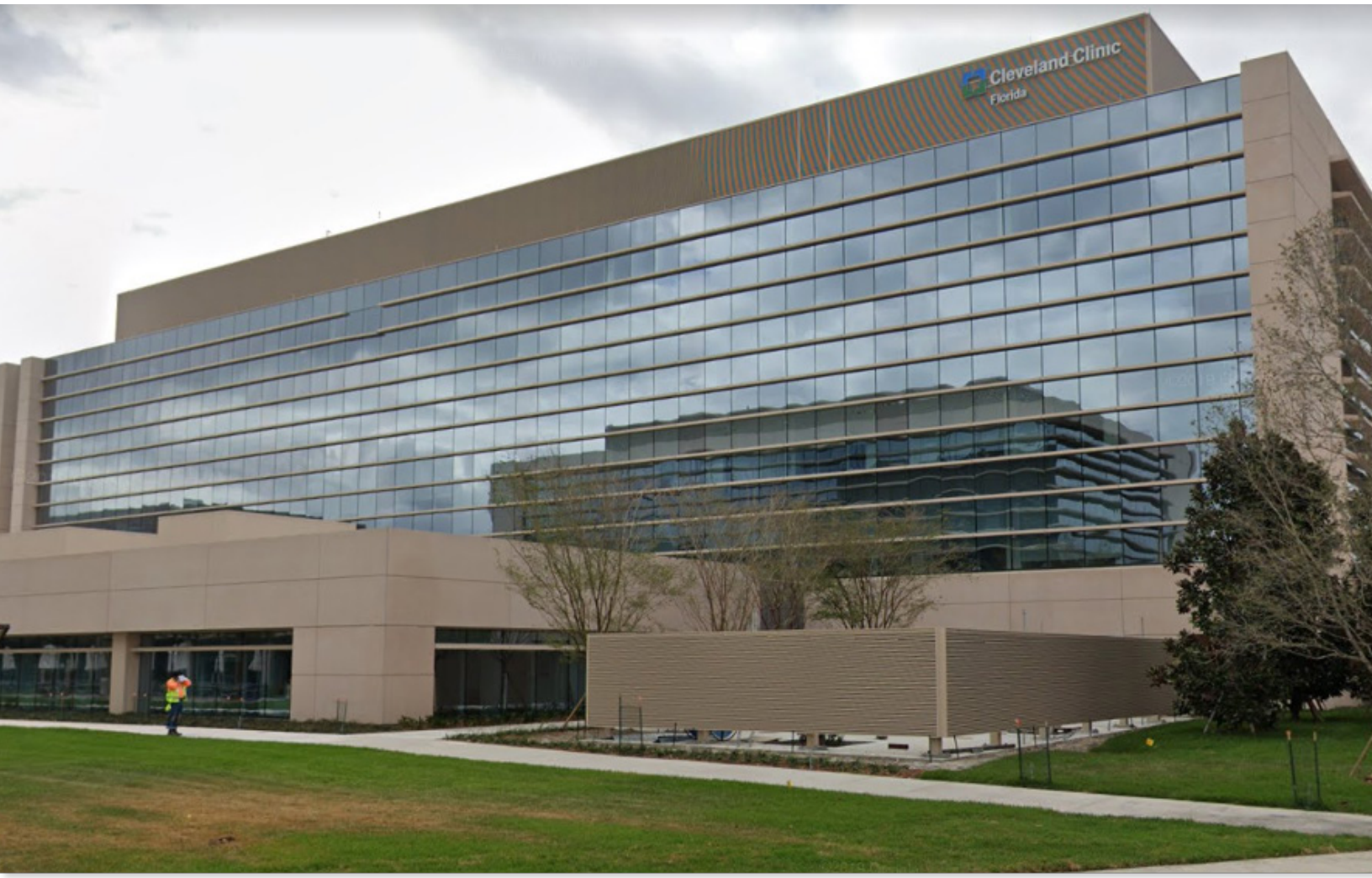
Philadelphia, PA

How can we help? Please contact Chuck for more information.

Charles Shepard, P.E., LEED AP
Civil/Structural Engineer
cshepard@SEAlimited.com
330.412.5984 *cell*
800.343.4366 *office*

S-E-A™
Know.

We test.
We investigate.
We reveal.
We explain.
So you **know.**



ROLE
Engineer of Record for the custom unitized curtain wall system

DESIGN ATTRIBUTES
- Hurricane wind speed
- Broward County design criteria

BUILDING
Cleveland Clinic Expansion

LOCATION
Weston, FL

How can we help? Please contact Chuck for more information.

Charles Shepard, P.E., LEED AP
Civil/Structural Engineer
cshepard@SEAlimited.com
330.412.5984 *cell*
800.343.4366 *office*

S-E-A™
Know.

We test.
We investigate.
We reveal.
We explain.
So you **know.**

ROLE
Engineer for custom unitized curtain wall systems

DESIGN ATTRIBUTES
Custom unitized curtain wall design

BUILDING
Turning Stone Casino

LOCATION
Verona, NY

How can we help? Please contact Chuck for more information.

Charles Shepard, P.E., LEED AP
Civil/Structural Engineer
cshepard@SEAlimited.com
330.412.5984 *cell*
800.343.4366 *office*

S-E-A™
Know.

We test.
We investigate.
We reveal.
We explain.
So you **know.**

ROLE

Engineer of Record for the custom unitized curtain wall system and structural glass wall system

DESIGN ATTRIBUTES

- Custom unitized curtain wall
- Folded structural glass wall system

BUILDING

Little Caesars Global Resource Center

LOCATION

Detroit, MI

How can we help? Please contact Chuck for more information.

Charles Shepard, P.E., LEED AP
Civil/Structural Engineer
cshepard@SEAlimited.com
330.412.5984 *cell*
800.343.4366 *office*

S-E-A™
Know.

We test.
We investigate.
We reveal.
We explain.
So you **know.**

3500 State Road
Cuyahoga Falls, OH 44223
330.923.2360 • 800.343.4366
Fax 330.923.2365
www.SEAlimited.com

Charles V. Shepard, P.E.

cshepard@SEAlimited.com

Education

University of Akron — *Akron, Ohio*
Bachelor of Science in
Civil Engineering
December 1997

Experience

Civil/Structural Engineer — **2019 to Present**
SEA, Ltd. — *Cuyahoga Falls, Ohio*
Performs investigations, examinations, and evaluations of existing structures to determine the presence, extent, and/or cause of damage to building components as a result of partial or full collapse, storm damage, water intrusion, fire, vibration, blasting, impacts, or other phenomena. Provides investigation and consultation for a variety of projects, including, but not limited to, structure, roof, and building envelope/fenestration failures, glazing systems (storefront, window wall, and curtain wall), metal panel cladding systems, means of ingress/egress, code compliance, and potentially defective construction and design.

Engineering Department Manager — **2018 to 2019**
Wheaton & Sprague Engineering, Inc. — *Stow, Ohio*
Supervised and mentored a team of engineers. Responsible for producing and reviewing structural engineering design calculations for building façade and fenestration systems, particularly glass and aluminum curtain wall systems, storefront and entrance systems, window systems, and metal panel cladding systems. Also responsible for producing and reviewing structural engineering design calculations for other various types of architectural components, including sunshade systems, canopies, structural glass walls, and glass guardrail systems. Projects included high-rise and mid-rise office buildings, hotels, casinos, hospitals, condo-miniums, museums, sports arenas, primary and secondary educational facilities, collegiate buildings, and secured government buildings. Job functions also included coordination with drafting, review of project specifications, and approval of shop drawings. Was also responsible for determining project scope, cost estimate, and preparing proposals.

Senior Project Engineer **2008 to 2018**
Wheaton & Sprague Engineering, Inc. *Stow, Ohio*
Responsible for producing and reviewing structural engineering design calculations for building façade and fenestration systems, particularly glass and aluminum curtain wall systems, storefront and entrance systems, window systems, and metal panel cladding systems. Also responsible for producing and reviewing structural engineering design calculations for other various types of architectural components, including sunshade systems, canopies, structural glass, and guardrail systems. Projects included high-rise and mid-rise office buildings, hotels, casinos, hospitals, condominiums, museums, sports arenas, primary and secondary educational facilities, collegiate buildings, and secured government buildings. Job functions also included coordination with drafting, review of project specifications, and approval of shop drawings. Was also responsible for determining project scope, cost estimate, and preparing proposals.

Senior Project Engineer **2006 to 2008**
Urban Engineers *Erie, Pennsylvania*
Responsible for the structural design of the primary structural systems of assigned building projects while working under the guidance of the Structural Practice Leader. Projects included the design of commercial structures using steel, concrete, wood, and CMU. Job functions included calculation preparation, framing design, supervision of drafters, shop drawing submittal review, and site visits for construction administration.

Project Engineer **1998 to 2006**
Harsh Engineering Services, Inc. *Ravenna, Ohio*
Responsible for producing structural engineering design calculations for building façade and fenestration systems, particularly glass and aluminum curtain wall systems, storefront and entrance systems, window systems, and metal panel cladding systems. Projects included high-rise and mid-rise office buildings, hotels, casinos, hospitals, condominiums, museums, sports arenas, primary and secondary educational facilities, collegiate buildings, and secured government buildings. Job functions also included review of project specifications, shop drawings, and peer review of third-party engineering calculations.

Professional Registrations

State of Colorado, License No. 39598
District of Columbia, License No. PE907699
State of Florida, License No. 73521
State of Georgia, Registration No. PE047007
State of Illinois, License No 062-061922
State of Indiana, Registration No. PE12000385
State of Kentucky, License No. 36032
State of Louisiana, License No. PE.0045250
State of Maryland, License No. 45298
Commonwealth of Massachusetts, Registration No. 49979
State of Michigan, License No. 6201056743
State of New Jersey, License No. 24GE05610900
State of North Carolina, License No. 049902
State of Ohio, Registration No. PE67502
State of Oklahoma, License No. 26451
Commonwealth of Pennsylvania, Registration No. PE073920

State of South Carolina, License No. 37785
State of Tennessee, Registration No. 118518
State of Texas, License No. PE113963
Commonwealth of Virginia, License No. 4020 53478

Certifications

LEED Accredited Professional, GBCI No. 10169042
ICC Residential Building Inspector, Certification No. 9317404
ICC Commercial Building Inspector, Certification No. 9317404
SAIA Competent Person Training: Suspended Scaffold, Certification No. 38832
FGIA FenestrationMasters® Professional Certification

Professional Affiliations

American Society of Civil Engineers (ASCE)
National Council of Examiners for Engineering and Surveying (NCEES)
National Roofing Contractors Association (NRCA)
International Code Council (ICC)
Fenestration and Glazing Industry Alliance (FGIA)

Seminars and Additional Education

- 2022 – RedVector, "International Residential Code (IRC): Significant Changes"
- 2022 – RedVector, "International Building Code Essentials: Code Administration, Enforcement, and Building Planning"
- 2022 – RedVector, "International Building Code Essentials: Life Safety"
- 2022 – RedVector, "International Building Code Essentials: Structural Safety"
- 2022 – RedVector, "International Building Code & More: Code Officials and Code Process"
- 2022 – RedVector, "International Building Code & More: Family Residence, Existing Structures, and Historic Buildings"
- 2022 – RedVector, "2015 International Building Code: Significant Changes to Structural Provisions"
- 2022 – ASCE, "Architectural Concrete: Design and Construction Strategies to Maintain Appearance & Limit Water Intrusion"
- 2022 – RedVector, "Concrete Standards and Requirements"
- 2022 – RedVector, "The Importance of the International Building Code in the Design and Construction of Safe Building"
- 2022 – RedVector, Hurricane Mitigation Techniques and Inspection
- 2021 – RedVector, 2015 International Building Code Essentials - Health Safety
- 2021 – RedVector, ASHRAE Essentials: 90.1-2016 Energy Standards for Buildings Except Low-Rise Residential Buildings
- 2021 – RedVector, Structural Design Philosophies ASD & LRFD
- 2021 – RedVector, 2015 International Residential Code Essentials - Structural
- 2021 – RedVector, 2015 International Residential Code Essentials - Health and Safety
- 2021 – RedVector, Handling, Placing and Finishing Concrete
- 2021 – RedVector, Hurricane Damage Investigations: Wind vs. Water
- 2021 – RedVector, Hurricane Damage: Wind vs. Water Determination
- 2021 – RedVector, "Wind Design Using ASCE 7-16"
- 2020 – RedVector, "Introduction to Sustainable Roof Technologies"

- 2020 – RedVector, “Roofing Materials – Concrete Tiles”
- 2020 – RedVector, “Roofing – Flexible Membrane Edge Design”
- 2020 – RedVector, “Roofing – Flexible Membrane Wind Load Design”
- 2020 – RedVector, “Roofing – Flexible Membranes”
- 2020 – RedVector, “Historic Preservation: Roofing for Historic Buildings”
- 2020 – RedVector, “Leak Detection for Roofs”
- 2020 – RedVector, “Roofing Materials – Asphalt Shingles”
- 2019 – American Society of Civil Engineers, “Investigation and Repair of Wood Structures”
- 2019 – American Society of Civil Engineers, “Design Snow Loads for Complex Residential Roofs”
- 2019 – American Society of Civil Engineers, “Hurricane Resistant Glazing Systems – How to Ensure Installation of a Safe and Secure Building Envelope”
- 2019 – American Society of Civil Engineers, “Curved Glass Design and Applications”
- 2019 – American Society of Civil Engineers, “Wind Design for Components and Cladding”
- 2019 – American Society of Civil Engineers, “Hurricane Design of Glazing Systems”
- 2019 – National Roofing Contractors Association, “Roofing 101 Module 5: Roof Flashings and Accessories”
- 2019 – National Roofing Contractors Association, “Roofing 101 Module 4: Steep-Sloped Roof Assemblies”
- 2019 – National Roofing Contractors Association, “Roofing 101 Module 3: Low-Sloped Roof Assemblies”
- 2019 – National Roofing Contractors Association, “Roofing 101 Module 2: Roof System Basics”
- 2019 – National Roofing Contractors Association, “Roofing 101 Module 1: The Basics”
- 2019 – American Society of Civil Engineers, “Deflection Calculation of Concrete Floors”
- 2018 – Elco, “Causes and Controls of Fastener Failures”
- 2018 – American Society of Civil Engineers, “Structural Thermal Bridging in the Building Envelope”
- 2018 – American Society of Civil Engineers, “Structural Testing of Curtain Wall Systems”
- 2018 – American Society of Civil Engineers, “Seismic Design of Curtain Wall Systems”
- 2018 – American Society of Civil Engineers, “Significant Changes to the Wind Load Provisions of ASCE 7-10 and Coordination with the 2015 IBC and 2015 IRC”
- 2018 – American Society of Civil Engineers, “Aging Infrastructure, Risks, and Making Tough Decisions”
- 2016 – National Council of Structural Engineers Associations, “Steel Curtain Walls”
- 2015 – American Society of Civil Engineers, “ASCE 7-10 Snow Load Provisions”
- 2015 – American Society of Civil Engineers, “Introduction to ASCE 7-10 Windloads - Part III of III”
- 2015 – American Society of Civil Engineers, “Introduction to ASCE 7-10 Windloads - Part II of III”
- 2015 – American Society of Civil Engineers, “Introduction to ASCE 7-10 Windloads - Part I of III”
- 2015 – American Society of Civil Engineers, “Design and Construction of Low-Rise Building for High Wind Loads and Hurricanes”
- 2015 – Powers Fasteners, Inc., “Causes and Controls of Fastener Failure”
- 2014 – DuPont, “Designing with Structural Laminated Glass Interlayers”

- 2014 – Cambridge Architectural, "Architectural Mesh Systems: Design Freedom and Functionality"
- 2013 – Hilti, "Cast-in-Place Channel: Hilti HAC"
- 2013 – Applied Technology Council, "Wind Design for Tornadoes"
- 2012 – National Council of Structural Engineers Associations, "ASCE 7-10 Significant Wind Load Provision Changes"
- 2011 – American Society of Civil Engineers, "Designing Aluminum Structures"
- 2010 – RedVector, "Building Pathology: Members and Connections"
- 2010 – RedVector, "Building Pathology: Introduction"
- 2010 – RedVector, "Wood Design: Beam Design"
- 2010 – RedVector, "Deck Building Basics"
- 2010 – Momentive Performance Materials, "Weathersealing Using Silicone"
- 2010 – Tremco, "Glazing Systems"
- 2009 – Powers Fasteners, Inc., "Concrete Anchors and Cracked Concrete"
- 2009 – RedVector, "Basic Wind Loads II: The Law and Implementation"
- 2009 – RedVector, "Basic Wind Loads I: ASCE 7-05 Revealed"
- 2008 – Titan, "Quality Assurance (Part I): QA as Applied to Design, Engineering and Construction"
- 2008 – American Institute of Steel Construction, Inc., "AISC Seismic Design: Updates and Resources for the 21st Century"