BTC

Professional Profile

Charles Sietmann, RRC, RRO, REWO, CCCA, CIT
Principal - Building Enclosures
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Charles Sietmann is Principal – Building Enclosures at Building Technology Consultants, Inc.

REGISTRATIONS

- Registered Roof Consultant **(RRC)**
- Registered Roof Observer **(RRO)**
- Registered Exterior Wall Observer **(REWO)**
- Certified Construction Contract Administrator **(CCCA)**
- Certified Level I Infrared Thermographer **(CIT),** with Roof Specifics, conforming to the guidelines of American Society of Nondestructive Testing
- International Concrete Repair Institute **(ICRI)** Certified Concrete Slab Moisture Testing Technician, Grade 1
- FAA Certified Remote Pilot with a small Unmanned Aircraft Systems (sUAS) Rating

PROFESSIONAL EXPERIENCE

Charles Sietmann has been involved in the evaluation, testing and repair of construction defects since joining Building Technology Consultants, Inc. in 2005.

His professional experience includes:

- Repair construction **contract administration** and field observations on **building envelope** rehabilitation projects including **low-slope roofing**, **steep-slope roofing**, concrete balcony rehabilitation, **waterproofing** of terraces and parking garages, window replacements, and building facade **renovations**;
- Investigation of deterioration, **water leakage** issues, and construction deficiencies in **building envelopes**;
- Repair design and preparation of **contract documents**;
- Repair contract **bidding** assistance;
- Destructive and nondestructive **testing**; and
- Aerial evaluations, including facade evaluations and roof evaluations, using an **Unmanned Aerial System** (UAS or drone).

EDUCATION

Charles Sietmann earned an **Associate of Science** degree in Drafting and Design from **ITT Technical Institute** in Mount Prospect, Illinois in 2007. While attending ITT Technical Institute he was named to the highest honors list all seven quarters attended. In addition to his studies at ITT Technical Institute, he has continued his studies at several community colleges.

Since his graduation, he has attended numerous seminars and symposia related to construction technology, roofing, waterproofing, building envelopes, construction specification practices, building codes, and construction contract administration.

PUBLICATIONS

- Sietmann, C. and Wolf, J. "**Sealants: Limitless Options with Limitations**", Sealant, Waterproofing and Restoration Institute (SWR Institute) Applicator Magazine Spring 2023.

- Sietmann, C. and Farahmandpour, K. "**The Reroofing of an Iconic Structure in Memphis**" IIBEC Interface, The Technical Journal of the International Institute of Building Enclosure Consultants, July 2021.

AWARDS

- **IIBEC-Chicago Past President's Award,** 2019. This award is given to the outgoing IIBEC-Chicago Chapter President in recognition for their leadership and professionalism to the Board and Chapter.

- **IIBEC Emerging Professional Award of Excellence,** 2022. Created in 2014, the Emerging Professional Award is given to an IIBEC member who has shown exceptional professionalism, leadership, and/or contributed to the building enclosure industry at an early stage of their career.

- **IIBEC-Chicago Volunteer of the Year Award,** 2023. This award is given to an IIBEC-Chicago Chapter volunteer in recognition and appreciation for their support and active involvement as a volunteer at chapter events.

- **IIBEC Excellence in Building Enclosure Consulting (EBEC) Award** in the Exterior Wall category, for the Balcony and Parapet Wall Repairs Groves of Palatine Condominium Buildings Project, 2024. This award recognizes outstanding contributions by building enclosure professionals, their collaborators, and their clients in support of the design, delivery, and advancement of building enclosure performance in various categories.

- **IIBEC Award of Appreciation**, 2025. This award was given in recognition of service to the IIBEC Board of Directors as Region III Director from 2021 through 2025.

PROFESSIONAL ACTIVITIES

- Member of **International Institute of Building Enclosure Consultants** (**IIBEC** – formerly **RCI**, Inc.)
  - Current **Interim Director of Region III**
  - Past Member of **Document Competition Subcommittee**
  - Past Member of **Building Enclosure Symposium Committee**
- Active Member of **IIBEC-Chicago** (Formerly Chicago Area Chapter of RCI, Inc.)
  - **Past President, Vice President, Secretary, and Director**
  - Past Chair of **Marketing Committee**
  - Past Chair of **Chapter Service Award Committee**
- Current **Treasurer** of CAC-Building Envelope Foundation NFP **(CAC-BEF)**
- Member of Building Enclosure Council - Chicago **(BEC)**

REPRESENTATIVE PROJECTS

FedExForum – Memphis, Tennessee

Responsible for **evaluation** and **contract administration** services for roof replacement. Services during contract administration project included **review of contractor's payment requests**, processing of **change orders**, and **performing construction observations** during the construction phase for the roof replacement.

Completed in September of 2004, FedExForum is an iconic structure in Memphis. The facility serves as the venue for Memphis Grizzlies and University of Memphis basketball games and other major events. The facility primarily consists of 3 interconnected buildings; the dome structure that houses the main arena, a multi-level building that houses support areas, and a parking structure. The dome structure consists of a steel frame with 36 perimeter columns and girders, each forming a 10-degree sector of the dome. Earlier in the life of the structure, leaks and deficiencies in seams of the TPO dome roofing system prompted repairs. These repairs had not been effective in addressing water leakage issues in several areas. As such, an evaluation of the existing roofing system was performed by BTC to assess the condition of the roof.

The evaluation included several diagnostic tools, including high-voltage leak detection, up-close and unmanned aerial system (UAS) visual surveys, a thermographic survey using a UAS, and microscopic examination of roof samples removed in the field. BTC recommended that a roof rehabilitation project be implemented. BTC then prepared design documents to include a new system with a new fully-adhered thermoplastic Elvaloy Ketone Ethylene Ester (KEE) roof membrane. The construction phase of the project posed challenges, primarily due to ongoing events at the arena, and difficulties accessing the 135-foot-tall and 470-foot-diameter dome.

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East Water Place Townhomes – Chicago, Illinois

Responsible for assistance in the preparation of **design documents** and **contract administration** services for roof replacement, including rooftop decks. Services during contract administration project included **review of contractor's payment requests,** processing of **change orders,** and **performing construction observations** during the construction phase for the replacement of the main roofs at each of the 8 buildings.

The East Water Place complex consists of eight 3-story wood framed buildings, constructed between 1996 and 1998. Four of the buildings include 6 townhome units and the other four buildings include 8 townhome units, for a total of 56 units. The exteriors of the buildings are primarily clad in brick and stone masonry. The roof assemblies consist of a 2-ply modified bitumen membrane, placed directly over plywood roof sheathing. Insulation was placed within the ceiling cavity below the roof sheathing. The roofs also include extensive rooftop decks. The existing roof membrane had reached the end of its useful service life and required replacement. As part of the project, BTC designed replacement of the rooftop decks including new composite decking and aluminum railings.

Groves of Palatine Condominiums – Palatine, Illinois

Responsible for assistance in the preparation of **design documents** balcony and parapet wall improvements. **Contract administration** services for repairs included **review of contractor's payment requests,** processing of **change orders,** and **performing construction observations** during the construction of this multi-phased repair project.

The Groves of Palatine Condominiums include four 7-story buildings constructed between 2002 and 2005. The floors of each building consist of hollow core precast concrete planks supported on steel framing and concrete masonry walls. The exterior walls of the building are primarily clad in brick and stone masonry. The exterior walls at the first floor of each building consist of exposed concrete.

Each building includes 56 balconies and 2 rooftop terraces at each end. The 2nd floor balconies are located over occupied storage space and include a waterproofing membrane and pavers. The balconies at floors 3 through 7 are uncoated, solid, precast concrete slabs supported by masonry walls and piers. The rooftop terraces are enclosed by brick masonry parapet walls with cast stone accents and metal coping caps.

La Grange Tower Condominiums – La Grange, Illinois

Responsible for assistance in the preparation of **design documents** for roof replacement and for exterior facade repairs. **Contract administration** services for the facade repairs included **review of contractor's payment requests,** processing of **change orders,** and **performing construction observations** during the construction of this multi-phased exterior facade repair project.

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La Grange Tower Condominiums is a 10-story residential building originally constructed in the 1960's. The building's exterior walls consist of brick veneer and 4-inch-thick concrete masonry unit (CMU) back-up walls. Parapet walls extending above the roof consist of multi-wythe brick masonry. Structural frames and floor/roof slabs for the building consist of cast-in-place reinforced concrete.

There are several distinct low-slope roof areas at the building. The main roofs on the north and south ends of the building consist of gravel-surfaced built-up roofing systems. Public roof deck areas on the east and west sides of the building consist of concrete pavers over a waterproof membrane. Above the 1st floor garage, is an approximately 10,000 square foot low-slope roof, consisting of gravel-surfaced built-up roofing system. In several areas throughout the facade, BTC had observed cracking of brick masonry and deterioration of the masonry mortar joints.

The Abbey Resort – Fontana, Wisconsin

Responsible for **evaluation** and **contract administration** services for the roof replacement. Services during contract administration phase included **review of contractor's payment requests,** processing of **change orders, progress meetings** with Ownership, Management, and Contractor, and **performing construction observations** during the construction phase for the roof replacement project.

The Abbey Resort is a multi-building resort consisting of 7 buildings that house guest rooms, suites and other amenities. There is also a series of commercial buildings at the site which were not included int the original evaluation and roof replacement scope. The guest buildings are typically 2- or 3- story wood frame buildings. These buildings are connected via covered links. The building roofs consist of gable roofs, originally covered with 3-tab asphalt shingles with a nominal slope of 3 inches in 12 inches. The roof framing system of the guest buildings consists of timber beams and conventional wood trusses. Over the guest rooms and suites, the framing consists of timber beams running parallel to the slope of the roofs. These beams are typically spaced at approximately 4 feet on center. Cementitious wood fiber planks (CWFP) span these beams to form a roof deck.

During construction, the existing shingles, underlayment, and plywood sheathing were removed. Expanded polystyrene insulation and a new wood sleeper system were provided over the existing roof deck. New plywood and a **thermoplastic roof membrane** system, complete with decorative ribs simulating a standing seam roof, were provided.

Eddystone Condominiums – Chicago, Illinois

Responsible for assistance in the preparation of **design documents** and **contract administration** services for window replacement. Services during contract administration project included **review of contractor's payment requests,** processing of **change orders, progress meetings** with the Association, Property Manager, and Contractor, and **performing construction observations** during the construction phase for the window replacement project.

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Eddystone is a 22-story building originally constructed in 1927. The building structure consists of reinforced concrete floor slabs supported by structural steel and concrete framing. The exterior walls are clad in brick and limestone masonry. The windows were originally wood frame windows with single panes of glass. The windows were designed to be replaced with **aluminum-clad wood** windows.

St. Regis Condominiums – Lombard, Illinois

Responsible for assistance in the preparation of **design documents** and **contract administration** services for the roof replacement. Services during contract administration project included **review of contractor's payment requests**, processing of **change orders**, **progress meetings** with the Association, Property Manager, and Contractor, and **performing construction observations** during the construction phase for the roof replacement project.

St. Regis Condominiums is a 90-unit residential building. This 7-story building has an approximately 18,000 square foot roof that had reached the end of its service life. BTC designed the replacement of the existing built-up roof with a new thermoplastic Elvaloy **Ketone Ethylene Ester** (KEE) roof membrane. The roof replacement included new insulated perimeter edge boxes and a pre-finished fascia. New area dividers provided better control of the rooftop drainage. New galvanized steel exhaust fans were designed and fabricated to replace the original fans.

Pointe at Lincoln Park – Chicago, Illinois

Responsible for assistance in the preparation of **design documents** and **contract administration** services for multiple construction phases at this 153-condominium unit development. Services during contract administration of this multiple prime contractor project included **review of contractor's payment requests**, processing of **change orders**, **progress meetings** with the Association, Property Manager, and Contractors, and **performing construction observations** during the construction phase for the exterior repairs and roof replacement projects.

Numerous water leaks at this development have been attributed to deficiencies in the **masonry wall design**, construction, and window installations. The scope of work for the repairs was intended to address continued uncontrolled water leakage through the exterior facade through incremental repairs that incrementally improved the performance of the existing walls. Services also included performing **water testing** in general accordance with **ASTM E1105**, Procedure A on selected windows using a calibrated spray rack before and after repairs and performing **ASTM C1601** testing to evaluate the water penetration rate of the brick masonry facade before and after each incremental repair.

Park 1500 Lofts – Chicago, Illinois

Responsible for assistance in the preparation of **design documents** and **contract administration** services for the replacement of the roofs. Services during contract administration project included **review of contractor's payment requests,** processing of **change orders, progress meetings** with the Association, Property Manager, and Contractor, and **performing construction observations** during the construction phase for the roof replacement project.

The Association is a residential community consisting of 326 residential units. The residential units are grouped in 3 buildings. The 1500 West Monroe Building consists of 2 buildings connected via a bridge structure. These buildings were constructed in early 1900's. Each of these buildings has several low-slope roofs and outdoor decks. The 6 South Laflin Building is a 10-story structure constructed in early 2000's. There are a series of private decks on the 9th floor of the building along the east side. In addition, an abandoned common area deck exists on the west side of the 9th floor roof. The scope of work for the roof replacement project consisted of tear-off of the existing rooftop decks and low-slope roofs and providing a vapor retarder, tapered insulation and a **thermoplastic roof membrane**. Numerous air conditioning units and various other penetrations on the roof posed challenges. Custom fabricated penetration enclosures were installed around the numerous HVAC penetrations. Alternates were provided for replacement of individual penthouse roofs and private area decks. This project was completed over 2 seasons.

Union Square Condominiums – Chicago, Illinois

Responsible for **evaluation** of **water leakage**, led and assisted in the preparation of **design documents,** and **contract administration** services for the exterior facade repairs, roof replacement, and courtyard renovations projects at this condominium development.

The development consists of a 5-story building completed in 1998 and a 10-story building converted from an existing factory at the same time. During the conversion, an additional 4 stories were added to the existing 6-story factory that was originally constructed in 1918 and expanded in 1938 and 1946. Numerous water leaks were attributed to deficiencies in the **masonry wall construction.** Work at this development included parapet wall re-construction, shelf angle replacement, miscellaneous masonry and sealant repairs, and traffic bearing membrane and exterior steel coating at the cantilevered balconies. An additional project was subsequently performed at this development that included replacement of the existing 20,000 square-foot **modified bitumen roofing** system at the 10-story building. Later, a courtyard renovation project was implemented to remove and replace the existing waterproofing system and topping slab. Repairs included providing new drainage, a bituminous setting bed and brick pavers, as well as masonry repairs and application of a fluid-applied coating at the stairs and breezeway.

Northwestern University Roof Replacements – Evanston, Illinois and Chicago, Illinois

Responsible for assistance in the preparation of **design documents** and **contract administration** services, including **construction observations** during the multiple building roof replacement project.

The University Library consisted of 17 low-slope roof sections totaling approximately 60,000 square feet in plan. Other buildings in this project included the Theater Interpretation Building, Technological Institute, Regenstein Hall of Music, Rebecca Crown Center, and the Gary Law Library. Several years later, the roof at the O. T. Hogan Biological Sciences Building was also replaced. Each building posed its own unique challenges that required specific and complicated repair details.

Arthur Rubloff Building, Northwestern University – Chicago, Illinois

Responsible for assistance in **evaluation** of **water leakage** and **analysis** of several **deficiencies** in this 12-story steel frame structure constructed of an aluminum and glass **curtain wall** system. Scope of work included assisting in performing a field investigation, including **water testing** of various curtain wall components, and assisting in the preparation of design documents for the complete rehabilitation of the waterproofing and drainage systems at the curtain wall assembly.

Convent of the Holy Spirit Missionary Sisters – Northfield, Illinois

Responsible for assistance in **evaluation** of **water leakage** and **analysis** of several **construction** and **design defects** in this newly constructed convent. Scope of work included performing **water testing** in general accordance with **ASTM E1105**, Procedure A on doors and windows using a **calibrated spray rack**, and evaluating adequacy of design documents with respect to **code requirements**. Other water testing included **masonry drainage cavity testing** in general accordance with **ASTM C1715** on the exterior masonry walls to evaluate the performance of the existing through-wall flashing. Responsible for **construction observations** during the repair of the construction defects observed during our evaluation.

2120 Lincoln Park West Building – Chicago, Illinois

Responsible for assistance in **evaluation** of **water leakage** and **analysis** of several **construction defects** at this newly constructed 20-story condominium building.

Discovery of construction defects occurred during the City of Chicago required **Critical Examination**. Water testing performed included, **masonry drainage cavity testing** in general accordance with **ASTM C1715,** and **ASTM E1105**, Procedure A spray rack testing. Responsible for **construction observations** during the repair of the construction defects observed during our evaluation.

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One East 15th Place – Chicago, Illinois

Responsible for assistance in **evaluation** and **analysis** of several **construction defects** in the **masonry facade** and **concrete balconies** of this newly constructed 24-story building. Extensive cracking in the masonry facade and at balcony corners caused major concern for the Owners. Responsible for **construction observations** during the repair of observed defects.

The 1st floor of the building combines parking, retail, and lobby areas. The 2nd and 3rd floors are for parking and storage only. Residential units begin on the 4th floor, where the main tower is separated from the north and south townhouse buildings by north and south plaza decks. The main tower rises 20 stories above the 4th floor plaza deck. The main tower is a concrete-framed structure supported on caissons. It is clad with brick, limestone, exterior insulation and finish system (EIFS), and aluminum-clad wood windows. Concrete shear walls are exposed on each elevation of the main tower. There are 8 balcony tiers on the main tower, with balconies at the 5th through 22nd floors. The balconies are cantilevered and include aluminum railings with embedded posts.

Repairs during construction included removal of the existing railings and the removal of existing concrete around the perimeter of the balcony slabs. New supplemental reinforcing steel was provided around the perimeter of the balconies, and new stainless steel sleeves were provided to reattach the existing aluminum railings. Miscellaneous EIFS and masonry repairs were also performed.