

MADLINE LANE, PE (MO), CDT

ENGINEER

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Maddie Lane is an Engineer at Building Technology Consultants, Inc.

REGISTRATIONS

- Licensed Professional Engineer (**PE**) in Missouri
- Construction Documents Technologist (**CDT**)



PROFESSIONAL EXPERIENCE

Prior to joining Building Technology Consultants, Inc. as a full-time employee in June 2020, Maddie was an Engineering Consultant Intern at Building Technology Consultants, Inc. from February 2019 to June 2020. Prior to working for Building Technology Consultants, Inc., Maddie worked as an intern at Lendlease in Chicago, Illinois, in the summer of 2018. She also worked as an intern for the Metropolitan Water Reclamation District of Greater Chicago in Stickney, Illinois, in the summer of 2017.

Her professional experience includes:

- Investigation of deterioration, **water leakage** issues, and construction deficiencies in **building envelopes**;
- Evaluation of **air leakage** and **moisture transport** mechanisms in building envelopes and building demising walls;
- Construction **contract administration**;
- Preparation of **design documents**;
- Construction **observation** and **documentation**;
- Performing **City of Chicago Ongoing Facade Examinations**;
- Assisting in **litigation support**; and
- Destructive and Nondestructive **testing**.

EDUCATION

Maddie earned her **Bachelor of Science** degree in Architectural Engineering and **Master of Engineering** degree in Structural Engineering concurrently from **Illinois Institute of Technology** at Chicago, Illinois, in 2020.

PROFESSIONAL ACTIVITIES

- Member of International Institute of Building Enclosure Consultants (**IIBEC**)
 - Member of the **Diversity and Inclusion Committee**
 - Member of **IIBEC-Chicago**

PUBLICATIONS

- Farahmandpour, K. and Lane, M. “**Rehabilitation of Michigan Plaza – Testimony to Team Work**” Applicator, Summer 2021

REPRESENTATIVE PROJECTS

Batavia Public Library – Batavia, Illinois

Responsible for construction phase services associated with **facade** and **window repairs** for a public library. The facade is composed of brick masonry, cast stone veneer, precast concrete cornice panels, and aluminum-framed windows with decorative aluminum panning. The work included removal of windows for **window flashing repairs** and **through-wall flashing repairs** at lintels, shelf angles, and along the base of masonry walls. Repairs also included **replacement of cracked or deteriorated mortar joints** and **expansion joint sealant**.

Groves of Palatine Condominium Buildings – Palatine, Illinois

Responsible for assisting in construction phase services associated with **balcony** and **parapet wall repairs** for four 7-story condominium buildings. Each building consists of 56 balconies and a rooftop terrace at each end. During previous facade evaluations, deficiencies in the balcony columns and parapet walls had been observed that presented significant structural integrity concerns. Repairs included **supplemental balcony support columns** at all balconies and brackets within the storage spaces, along with **rebuilding of the terrace parapet walls** and **waterproofing** and **through-wall flashing repairs** at the 2nd floor balconies.

Michigan Avenue Plaza – Chicago, Illinois

Responsible for assisting in design and construction phase services associated with the design of components related to the **waterproofing system** and **wearing surfaces** of a comprehensive plaza renovation. The plaza is an outdoor space that serves 205 and 225 North Michigan Avenue Buildings and is constructed over occupied spaces below. The work included **replacing the existing waterproofing system** and **designing a new waterproofing system** for new planters.

SoNo Condominiums – Chicago, Illinois

Responsible for assisting in the evaluation of reported **water leakage** through the window systems and ceilings of several units at this 28-story residential building constructed in

2008. Several investigative techniques were used to evaluate the source of the water leakage, including **hydrostatic water leakage testing** and **spray rack water leakage testing** in general accordance with ASTM E1105. Following water testing, repairs were made to the **extrusion splice joints** in the subsill of the window frame and the mitered corners of the **operable window sashes**. Water leakage testing at concrete balconies revealed that **cracks** through the concrete balconies allow moisture to infiltrate into the ceilings of the unit below. This was resolved by making repairs to the **traffic bearing membrane** of the balconies.

The Buckingham Residences – Chicago, Illinois

Responsible for assisting in the evaluation of an **indoor swimming pool**. The Buckingham Residences is a 44-story structure with a mechanical penthouse. The 44th floor consists of amenity spaces, including a fitness center and indoor lap pool. The pool is a 25-yard lap pool constructed of **steel plates**, and supported on **structural steel members**. BTC's services were requested to investigate the source of reported **water leakage** to the unit below and determine if the replacement of the pool is justified. Investigative techniques included a **visual review** of the pool surfaces from within the pool and from the unit below and measurement of the wall thickness of the pool using an **ultrasonic thickness gauge**. In addition to documenting deficiencies in the pool surfaces, it was also evaluated for general compliance with the current **Chicago Building Code** and **Illinois Department of Public Health** requirements.

Park Elm Condominiums – Elmhurst, Illinois

Responsible for assisting in **pre-design, design, bidding, and construction phase services** for balcony repairs at a 4-story condominium building constructed in 2001. The building consists of several balconies on the east and west elevations of the building, and a 2nd floor terrace on the east elevation. Pre-design services included **reviewing original design and repair documents** to become familiar with the construction of the balconies, and a **visual review** of the balconies to identify repairs. Repairs included **routing and sealing cracks** in concrete balcony slabs, repairs to the **traffic bearing membrane**, and other miscellaneous **concrete repairs** identified during construction phase services.

Loews Portofino Bay Hotel – Orlando, Florida

Responsible for assisting in **pre-design, design, bidding, pre-construction, and construction phase services** for facade recladding at a resort originally constructed in the late 1990s. The resort is composed of several interconnected wings that consist of 750 guest rooms, meeting and event spaces, commercial spaces, and other amenities. The wings were constructed with **concrete framing** and **light gauge steel framing**, and the original cladding consisted of a barrier-style **direct-applied exterior finish system (DEFS)**. The scope of work primarily included **removing the existing cladding and windows**, providing a **drainage plane**, and installing new DEFS cladding and windows.