Nicholas Bass, M.S., PE.
dux Forensics, LLC
Senior Consultant
nick@thinkdux.com

SUMMARY

Nicholas Bass is a licensed Professional Engineer with experience in forensic structural engineering. He specializes in investigating building failures, construction defects, and structural damage. Based in Denver, Colorado, he has served as the Engineer of Record for multiple residential reconstruction projects, providing expert analysis and repair designs for structures affected by fire, vehicle impacts, and environmental forces. His expertise includes evaluating the integrity of structural systems, performing forensic assessments, and developing rehabilitation plans for timber, masonry, steel, and concrete structures.

With a strong background in structural analysis and engineering design, Mr. Bass has worked on nearly every aspect of a building, from exterior cladding components to the structural supporting systems. His technical experience extends to connection analysis, wind and seismic load evaluations, and compliance with the International Building Code. In addition to forensic investigations, he has experience in commercial building operations, managing critical infrastructure, HVAC systems, and fire safety compliance. Dedicated to advancing the field of engineering, he actively contributes to professional organizations and continues to expand his expertise in structural engineering, structural assessment, and structural design.

EDUCATION

2023, University of Colorado at Denver, Master of Science in Civil Engineering with an emphasis in Structural Engineering

- The master report's research and text focused on how human errors can lead to a structural collapse.

2021, University of Colorado at Denver, Bachelor of Science in Civil Engineering

2018, Community College of Denver, Associates of Applied Science in Engineering

January 2012 to December 2012, Arapahoe Community College, Associates of Arts

August 2010 to May 2011, Colorado Mountain College, Associates of Arts

REGISTRATIONS

Registered Professional Engineer - State of Colorado, No.: 65260

PROFESSIONAL AFFILIATIONS

ASCE - American Society of Civil Engineers, Associate Member

SEAC - Structural Engineers Association of Colorado, Professional Member

Tau Beti Pi – The Engineering Honor Society (Initiated as a Member in 2021)

EMPLOYMENT HISTORY

Dux Forensics, LLC, Senior Consultant, March 2025 – Present

As a licensed Professional Engineer, I specialize in investigating and analyzing various structural issues, including building collapses, damage assessment, and engineering failures. With extensive experience as the Engineer of Record for multiple residential reconstruction projects, I focus on identifying root causes of structural deficiencies related to construction defects, design errors, material deterioration, and environmental impacts. I conduct in-depth forensic evaluations of incidents involving fire, flooding, wind, soil movement, and man-made factors such as vehicle impacts and vandalism.

I have a broad background in working with residential, commercial, industrial, and historic structures. My responsibilities include performing comprehensive inspections of various construction materials and systems, including timber framing, masonry, steel, concrete, and proprietary structural components. My assessments encompass structural integrity, moisture intrusion, building envelope performance, insulation, and cladding attachments. Additionally, I develop engineering solutions, provide repair recommendations, and design rehabilitation plans to restore damaged structures while ensuring compliance with building codes and industry standards.

Unified Building Sciences & Engineering, Inc., Project Engineer, May 2022 – March 2025

At Unified Building Sciences & Engineering, Inc., I investigated and analyzed structural failures, construction defects, and building damage across residential, commercial, and historic structures. My work involved assessing the root causes of structural deficiencies, whether due to design flaws, material deterioration, improper construction, or external forces such as fire, flooding, wind, and vehicle impacts.

As a licensed Professional Engineer, I conducted in-depth forensic evaluations, providing technical assessments on various structural systems, including timber framing, masonry, steel, and concrete. I performed field inspections to evaluate structural integrity, moisture intrusion, insulation performance, and cladding attachment issues. My role also included developing engineering solutions, repair recommendations, and rehabilitation plans to restore damaged buildings while ensuring compliance with applicable codes and industry standards.

During my time with the company, I served as the Engineer of Record for several residential reconstruction projects, overseeing the design and implementation of repairs to ensure safe and structurally sound restorations. My experience there strengthened my expertise in forensic investigations, structural analysis, and problem-solving in complex engineering challenges.

LTS Drafting & Engineering, Structural Project Coordinator, January 2021 – May 2022

In this role, I specialized in the structural analysis and design of interior and exterior building components, including glass and glazing systems, curtain walls, storefronts, and skylights. My primary focus was ensuring these systems' stability, strength, and rigidity while integrating them seamlessly with various substrates such as wood, steel, concrete, and masonry.

I conducted detailed connection analyses to verify load paths and material compatibility, ensuring each project met both structural and architectural requirements. My work involved interpreting construction documents, developing precise specifications, and delivering engineered solutions within defined time and scope constraints.

Compliance with industry standards was key to my role, as I adhered to the International Building Code, ASCE 7 standards, and project location requirements. Through my expertise in structural behavior, material performance, and code compliance, I contributed to the successful design and implementation of durable, high-performing building enclosure systems.

LTS Drafting & Engineering, Civil Engineer Intern, March 2019 – August 2021

During my internship, I provided hands-on support in preparing engineering designs, drawings, calculations, and technical specifications for various structural projects. I also assisted in creating accurate shop drawings that incorporated wind and seismic load analysis, structural beam assessments, and connection designs.

I collaborated with engineers and project teams to review contractor submittals, ensuring compliance with technical specifications and building codes. Additionally, I gained experience in interpreting and analyzing structural data, applying engineering principles to practical construction challenges, and working within industry standards such as the International Building Code.

Brookfield Office Properties, Engineer Level 1, January 2016 – March 2017

In this role, I monitored and maintained the Building Automation System to ensure optimal functionality and rapid response to any irregularities. I gained hands-on experience working with large-scale mechanical systems, including Carrier Chillers ranging from 800 to 1100 tons and diesel fire pumps, contributing to the efficient operation of critical building infrastructure.

I played a key role in the daily operations and maintenance of a high-rise building, which included testing emergency generators, fire suppression systems, and other essential safety systems to ensure regulatory compliance and occupant safety. Additionally, I managed tenant work orders, promptly addressing maintenance requests to enhance tenant satisfaction and maintain a high standard of service delivery.

Cushman and Wakefield, Operating Engineer, November 2013 – January 2016

I managed daily building operations to ensure all systems functioned efficiently and in compliance with safety regulations. I developed and implemented policies for both routine building operations and fire safety protocols. I maintained and monitored critical infrastructure, including closed-loop systems, heat exchangers, and air handlers, while ensuring emergency generators and fire systems were routinely tested and fully operational.

I also contributed to system upgrades by installing DDC cabling and controllers for new tenant spaces, enhancing system integration, and improving overall building performance. I maintained a proactive approach to troubleshooting and maintenance to support a safe and reliable building environment.

Westfield Property Services, Maintenance Technician, August 2012 – October 2013

I built strong working relationships with building tenants to ensure their work environments remained comfortable and conducive to productivity. By actively listening to tenant concerns, I addressed maintenance requests promptly and effectively.

My responsibilities included performing various building maintenance tasks to uphold operational efficiency. I changed electrical fixtures to maintain proper lighting levels, troubleshot and repaired HVAC systems to regulate indoor temperatures and ensured the proper functioning of access control systems to maintain building security. Through these efforts, I helped create a safe, functional, and comfortable environment tailored to the needs of tenants.

AWARDS

Civil Engineering Department Capstone Design Award for Best Project, 2021

PRESENTATIONS AS SPEAKER

“Human Errors and Progressive Collapse,” American Society of Civil Engineers, University of Colorado, Boulder, Student Chapter, Boulder, Colorado, March 7, 2024, 1.0 hours

SERVICE ACTIVITIES

NSPE (National Society of Professional Engineers) Order of the Engineer – Link Coordinator and Contact – Link No. 76 2020 - Current

SEAC (Structural Engineers Association of Colorado) Young Member Group Committee 2024 – Current, Treasurer

SEAC (Structural Engineers Association of Colorado) Structural Engineering Emergency Response Committee, 2024 – Current, Member