

Jake Carlyle, P.E. | Senior Structural Engineer

Baltimore/Annapolis, MD

Direct: 443-615-0774 | Cell: 443-838-5933

Jake.Carlyle@efiglobal.com

Professional Summary:

Mr. Carlyle is a licensed professional engineer with over a decade of experience in the civil, structural, marine, and forensic engineering fields. His project experience as a forensic engineer includes structural assessments and repair designs due to flood/storm surge, hurricanes, tornados, tree & vehicle impacts, fires, and construction & explosion vibration. Mr. Carlyle also has extensive experience performing construction failure investigations, foundation & retaining wall inspections, water intrusion investigations, roof assessments associated with wind & hail damage, wind vs. flood damage evaluations, building envelope failure investigations, and chimney evaluations.

As a marine structural engineer, Mr. Carlyle analyzed historic waterfront structures, designed vessel mooring and fendering systems, performed load ratings, designed pier & bulkhead repairs and retrofits, designed industrial/material handling infrastructure, and provided construction support for a variety of public & private port and harbor facilities. Mr. Carlyle has extensive experience performing underwater investigations of marine infrastructure via video/audio communication with divers from an inspection vessel. Underwater investigations consisted of post-event inspections, general condition assessments, structural repair or upgrade inspections, and baseline inspections to develop drawings. He is well versed working with insurers, marine surveyors, building owners, developers, attorneys, architects, contractors, commercial divers, federal/state/local authorities, and permitting officials throughout the east coast and gulf coast.

Mr. Carlyle has experience performing structural design and analysis utilizing concrete, steel, timber, and masonry. He has a working knowledge of the International Building Code (IBC) and the associated construction material design standards, including (but not limited to) the American Concrete Institute (ACI), American Institute of Steel Construction (AISC), National Concrete Masonry Association (NCMA), American Wood Council (AWC), and the Engineered Wood Association (APA). Mr. Carlyle also has a working knowledge of the coastal and maritime industry design and construction standards established by the U.S. Army Corps of Engineers (USACE), the Federal Emergency Management Agency (FEMA), Permanent International Association of Navigation Congresses (PIANC), the Oil Companies International Marine Forum (OCIMF), among others.

Professional Engineering Licenses:

Alabama, License # PE51398

Connecticut, License # PEN.0037581

Delaware, License # 25687

District of Columbia, License # 40000050

Florida, License # 92530

Georgia, License # 048361

Louisiana, License # PE.0046871

Maine, License # PE18582

Maryland, License # 50642

Massachusetts, License # 59292

Michigan, License # 6201313532

Mississippi, License # 33048

New Jersey, License # 24GE05886100

New York, License # 107315

North Carolina, License # 53518

Oregon, License # 108748PE

Pennsylvania, License # 092993

Rhode Island, License # PE.0015366

South Carolina, License # 39836

Texas, License # 144277

Virginia, License # 402064607

Washington, License # 26001307

West Virginia, License # 25110

Project Experience:

Catastrophic (CAT) Event Inspections, Gulf & East Coasts Multiple States

Hurricanes Ida, Ian, Helene, & Milton

Conducted inspections of residential, commercial, and waterfront structures as a result of wind, flood, & tree impact damage. Performed dozens of wind vs. flood damage evaluations, flood evaluations on behalf of FEMA (coastal and inland flooding), and building envelope evaluations for a variety of roof and cladding systems.

Maryland Port Administration (MPA), Baltimore, MD

Agency Wide Building Condition Assessments

Conducted a structural assessment of 31 buildings of various types of construction. Coordinated a team of subconsultants from other disciplines (mechanical, electrical, architectural, etc.) and produced a summary report with facility ratings to establish a repair and maintenance program for the MPA.

Chesapeake Energy Services, Lusby, MD

Pier Condition Assessment

Supervised a dive inspection and performed a load rating of a prestressed concrete tugboat pier. Provided a detailed report with prioritized repair recommendations and associated cost estimates.

CSX Transportation, Tampa Bay, FL

Phosphate Terminal Inspection and Retrofit

Directed a dive inspection of a loading pier constructed with sheet pile cells and prestressed concrete Tee beams. Designed a new vessel fendering system retrofitted onto the existing pier structure and developed a phased maintenance and repair plan with construction cost estimates for the ship loading facility.

TE Connectivity, Baltimore, MD

High Bay Storage Building

Performed a collapse investigation of a pre-engineered metal building (PEMB) and determined a construction deficiency as the underlying cause. Expedited the design and production of bid documents for repair to less than 2 weeks to protect the UV-sensitive telecommunication cables stored in the building.

Continental Building Products (CBP), Madison, In

Barge Loading Station

Designed a steel conveyor tower to support conveyor trusses for a flue gas desulfurization (FGD) barge loading operation on the Ohio River. Retrofitted existing steel conveyor trusses and deck barge frames with built-up steel sections to accommodate the unique loading conditions.

Lafarge Cement, Baltimore, MD

Barge Collision Investigation

Supervised a dive inspection of steel catwalks and concrete mooring/breasting dolphins to determine the extent of damage from a runaway barge impact. Designed structural repairs to restore the dock structures to the pre-loss condition.

Stoney's Solomons Pier Restaurant, Solomons, MD

Dive Inspection and Repair

Investigated a timber pier-supported restaurant and determined the cause of floor settlement was due to a failed pile cap. Developed a procedure to jack the building up several inches without causing collateral damage. Designed repairs and produced permit drawings to repair/replace damaged timber members.

Under Armor Global Headquarters (UA), Baltimore, MD

Waterfront Structures Dive Inspection & Condition Assessment

Directed an underwater inspection of a timber relieving platform supporting a public promenade and UA corporate offices. Designed emergency repairs for several sink holes found below the public waterfront promenade and supervised construction.

Project Experience (continued):

Trade Point Atlantic (TPA), Baltimore, MD*Offshore Wind Fabrication Facility*

Analyzed an historic concrete drydock facility to be retrofitted for an offshore wind turbine load-out terminal. Designed a heavy-lift concrete crane pad and roll-on/roll-off platform for loading wind turbine components onto ocean barges.

Lake Michigan Carferry, Ludington, MI*Apron Tower Collapse Investigation*

Investigated the cause of collapse of an historic Carferry apron tower on Lake Michigan on behalf of Markel International (insurer) and Price Forbes (broker). Provided a detailed report summarizing the investigation findings and provided an evaluation and recommendations regarding the replacement structure design and construction cost.

Mid-Atlantic Regional Spaceport (MARS), Wallops Island, VA*New Barge Pier Design*

Provided design alternatives for a new roll-on/roll-off 650-foot long pier on the Atlantic Ocean to send off and retrieve spacecraft components. Developed design wave forces on the proposed pier utilizing AASHTO, FEMA & USACE guidelines.

Continental Building Products (CBP), Buchanan, NY*Warehouse Roof Repair*

Performed a failure investigation of a pre-engineered metal building (PEMB) and determined the cause of roof settlement was due to a construction deficiency. Developed several roof jacking and repair design alternatives while maintaining operations of the facility and provided construction support.

Professional Experience:

EFI Global, Inc., Senior Structural Engineer, 2021 – Present

Whitney Bailey Cox & Magnani, Marine Structural Engineer, 2013, 2015 – 2021

Vannoy & Associates, Forensic Structural Engineer, 2014

Education:

Master of Science, Structural Engineering, Johns Hopkins University, Baltimore, MD, 2020

Bachelor of Science, Civil/Structural Engineering, University of Maryland, College Park, MD, 2015

Specialized Education:

Advanced Roofing Certification Program, Vale Training, 2022

Affiliations:

American Society of Civil Engineers (ASCE)