



GABRIEL A. SHELTON, P.E.
Senior Engineer
BAKER ENGINEERING AND RISK CONSULTANTS, INC.

Education: **B.S. Civil Engineering, University of Texas at San Antonio**
M.S. Civil Engineering, University of Texas at Austin - Environmental and Water Resources Engineering Department

Areas of Practice: Gabriel Shelton works in the BakerRisk San Antonio office as part of the Structures Group. His work focuses on the impact of toxic gases on buildings, testing buildings for air tightness, and indoor air quality. His work has primarily included modeling of air quality in buildings, as well as analysis of existing buildings and upgrade designs for petrochemical facilities, test cells, and blast-resistant modules.

Experience:

- Mr. Shelton has dedicated much of his career at BakerRisk to addressing toxic gas hazards to building occupants. He has worked on the development of methodologies to predict the infiltration of toxins into buildings and occupant vulnerability to toxic concentrations. Mr. Shelton has tested the air tightness of dozens of industrial shelter-in-place buildings, and has modeled many buildings to predict the ventilation and air change rates under various conditions.
- Has been involved in numerous projects concerned with modeling the transport of hazardous gasses through buildings.
- Completed his Master's thesis work at the University of Texas at Austin in 2007, focusing on environmental engineering with respect to Indoor Air Quality issues and human exposure to toxins. His thesis is titled "Investigation into parameters affecting ozone removal in HVAC filters."
- Has analyzed the response of various structures to blast loads from a variety of blast loadings including vapor cloud explosions, high explosives, and other explosive events. Other project work has included the analysis of window and door glazing in many federal government buildings to determine the blast capacity and proposed design upgrades to meet criteria. He has worked with reinforced and unreinforced masonry buildings, reinforced concrete structures, steel framed and clad buildings, and wood construction.
- Designed several buildings to resist blast loads, including electrical sub-stations, blast-resistant modules, and shielding structures to protect existing buildings that were designed using either reinforced concrete or steel frame structures.
- Performed siting studies for petrochemical companies to evaluate the effects of explosions on facilities and building occupants. These have included identification of conditions that could lead to an explosion, prediction of blast loads from such an event, and determination of building damage from associated blast loads. Several of these studies have resulted in detailed nonlinear single degree of freedom (SDOF) analyses of structures performed by Mr. Shelton, and he has been the lead structural engineer or project manager for many of these projects.
- Performed several accident investigations at petrochemical facilities, documenting explosion damage and collaborating with blast effects engineers to determine the magnitude of the explosion. He has participated in investigations involving explosions, fire, toxic exposures. He has also participated in the documenting and collecting evidence at numerous accident investigations.
- Extensive experience with AutoCAD, including structural drafting, 3D modeling for use in CFD and FEA simulations, GIS Mapping and various other visual displays for use in legal depositions.
- Prior to graduate school, Mr. Shelton performed work in civil site design, grading, plating processes, hydrology and roadway design for various commercial and residential land-development and public works projects. He also participated in due diligence and site investigation work with regard to environmental compliance for development projects as well as Quality Control/Quality Assurance for submittals to various state and local agencies.

Professional Chronology: University of Texas at Austin, Dept. of Environmental and Water Resources Engineering, (Graduate Research Assistant, fall-summer 2007); Pape-Dawson Engineers, Inc., (Engineer In Training, Dec 2006-April 2007), Baker Engineering and Risk Consultants, Inc. (Consultant, 2007-2010, Project Consultant/CAD Coordinator, 2010-2013, Senior Engineer 2013- present)

Professional Registrations/Certifications: Professional Engineer (TX# 116039)

Professional Memberships: Texas Society of Professional Engineering - Member, American Society of Civil Engineers – Member