Brandon Shue, JD, PE, GCQA

President & Managing Principal

Brandon serves as Triad Consulting Solutions' President where he is responsible for the executive management and leadership of TCS's Construction, Project Management and CQV teams. Brandon has nearly 20 years' experience predominantly specializing in delivering projects in the regulated life sciences industry. Prior to joining TCS, Brandon developed and managed intellectual property portfolios for early stage medical and software-based technologies. His education and diverse experience, combined with his dedication and attention to detail, provides him with a unique opportunity to deliver premium, cost-effective solutions to TCS's clients.

Education

Virginia Tech, B.S. Engineering Science & Mechanics

University of Maryland, Juris Doctorate

Professional Registrations

Professional Engineer – Maryland

General Contractor Qualifying Agent – Georgia

State Bar of Georgia

State Bar of Maryland

United States Patent & Trademark Office

Areas of Experience

Project & Construction Management

Owner's Representation

Contract Drafting & Negotiations

Claims Management

Engineering and Design Management

Commissioning & Qualification

OSHA 30Hr. Certification

Patent Prosecution

Global Innovation Center of Excellence Laboratory & Office Expansion

Brandon served as the Engineering Manager for the design and construction of a ±65,000 GSF laboratory and office expansion project. The Biosafety Level 2 laboratories were constructed to support a range of activities from both bio-development and research functions. Specialty lab spaces were included to support insect containment and powder process formulation work. The administrative space supported a flexible and dynamic workplace strategy. Select enhancements were added to two adjoining buildings to create one cohesive space. Brandon's services included representing the client during factory acceptance testing for two new pass-through autoclaves. Members of TCS also supported this project serving as the Construction Manager, Quality Assurance Project Manager and Project Engineer.

Single Use Bioreactor Train Production Suite Renovation

Brandon served as the lead Engineering Manager on behalf of our client of the design of a new production suite employing single use technology. The project consisted of purchasing a single use bioreactor train, along with renovations to an existing production suite to receive the (2) new 2000L and (1) new 500L SUBs. (4) 2400L Stainless Bioreactors were repurposed for the new process. Brandon managed feasibility through the completion of technical planning.

Filling & Freeze-Drying Production Facility

TCS served as the lead Owner's Representative / Engineering Manager for the design, implementation, and qualification of a ±47,000 GSF GMP CLA filling and freeze-drying production facility. The project provided sterile aseptic blending, 600vpm filling, automated freeze drying, refrigerated storage and ancillary support areas, including area for a future sister line. This brownfield site was completed in under 24 months from groundbreaking through facility qualification and start of production. Brandon augmented the TCS team's CM and Cx support.

ABSL3 Avian Isolator Facility

This 7,500 GSF project was delivered under a traditional design-bid-build FFP method. Brandon served as the lead Owner's representative and Engineering Project Manager starting from feasibility through qualification and handover to the client. The facility included 100% HEPA filtered supply and exhaust air, two isolation rooms, a laboratory, egg incubation room, vaccination/challenge room and a secure hardened select agent containment room. All critical MEP equipment included N+1 redundancy. The building also had full emergency generator backup and fogging and facility wash-down capabilities.

Parasitology Robotic Screening Station and Laboratory Build-Out

Brandon served as the lead Project Manager for the procurement, design, construction, and qualification for a custom Thermo CRS robotic screening station. The supporting lab build-out included a sample preparation room, general support lab, sample storage and insect diagnostic laboratory.

Email: brandon.shue@triadconsultingsolutions.com | Mobile: (540) 239-4194 | Office: (706) 998-2740
Website: www.TriadConsultingSolutions.com

Bio-Process Laboratory Reconfiguration

Delivered under a fast-track design-build scenario, this project consisted of the reconfiguration of two traditional laboratories into one contiguous space to support the client's requirements for dynamic viral process research and development activities. The optimized floor plan enabled the client to streamline laboratory processes and equipment, supporting their bioprocess platforms with integrated sophisticated equipment controls and novel disposable systems. Four equipment bays were installed with dedicated stainless utility panels and sanitary floor sinks. Benchtop casework with integrated utility services was added to house 7L cell culture bio-bundle bioreactors and other lab equipment. Brandon served as the lead Engineering Project Manager for this project.

Wastewater Treatment Plant Expansion

Brandon provided Engineering Project Management services to return a site-wide mission critical inoperable animal wastewater treatment plant back to full operational status with facility upgrades and an 80% expanded capacity. The project was executed as a fast-track Design/Build project in less than 12 months from the initial catastrophic plant failure to full operational status. The project consisted of the demolition of obsolete/corroded holding tanks, process equipment, controls and electrical. New welded stainless steel SBR, EQ and Digester tanks were installed along with a sludge sterilizer, belt filter press and ultraviolet disinfection system. During the plant renovation, a 2.2 million gallon holding lagoon was installed along with temporary waste heat pasteurization equipment for mitigation of off-site waste transport.

In a separate project, Brandon managed the installation of a new wastewater sampling and monitoring station that included controls for monitoring total volume and nutrients.

Freeze Dryer Upgrades and Relocation

Brandon provided Engineering Project Management services for this fast-tracked design, refurbishment, implementation project. A decommissioned freeze dryer was disassembled, transported to its OEM manufacturer for refurbishment and Steam-In-Place (SIP) and -50C tray loading upgrades. Existing warehouse space was converted into a Class-A production suite supported by N+1 MEP equipment, including a custom fan-wall AHU, HEPA recirculation modules and HEPA exhaust. Brandon supported the project from conception through handover to the end user. Factory witness testing was provided to ensure contractual compliance and schedule adherence.

Filling Machine & Process Equipment Procurement & Upgrades

Filling Machine: This project consisted of the purchase and installation of an automatic filling, plugging and capping machine to complete the client's R&D formulation and filling needs. Brandon managed the project and traveled to Bausch and Stroebel's Ilshofen, Germany manufacturing facility to witness the factory acceptance testing on behalf of the client. Brandon also witnessed the site acceptance testing and managed the installation, startup, training and IQ/OQ activities. Installation of MEP facility modifications and upgrades necessary to support the equipment were also included.

Brandon has provided Project Management services for the selection, procurement, installation, and qualification for several single use process equipment including Single Use Bioreactors (SUBs), Single Use Fermentors (SUFs) and Single Use Mixers (SUMs). The vessels have included both Delta-V and Applikon controllers. A global client's facility in France has engaged Brandon to support United States Factory Witness Testing on their behalf due to his knowledge and experience with the equipment.

Brandon is also experienced with the procurement, installation and startup of other laboratory equipment including, but not limited to the Sartorius Ambr 250 High Throughput Bioreactor system integrated with a Nova Automated Cell Culture Analyzer and the Sartorius kSep single use centrifuge.

Campus-Wide Energy Conservation Project

This project provided infrastructure upgrades to our client's clinical research campus for improved energy efficiency. Existing liquid propane fired boilers were converted to natural gas. Building systems were recalibrated and recommissioned. VFD drives were added and germicidal UV lighting disinfection systems were added to select AHUs. Central services plant and building-wide controls sequences were modified to optimize system performance. In all, the project provided a favorable net reduction in operating expenses of $208K and a net reduction of 520 metric tons of CO_2 emissions per year.

Facility Infrastructure Upgrades

Brandon has managed several facility infrastructure upgrade projects for our clients' critical areas. Upgrades included of refurbishment/replacement of several AHUs, process piping modifications, lab gas expansions and emergency generator installation. Many of these projects were performed during concise shutdown windows and required a high degree of coordination, communication and planning.

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