

HAO "TROY" YU

Address: Rego Park, NY **Website:** www.linkedin.com/in/troy-yu-5244b694
Mobile: 347.634.1025 **Email:** troy0527@gmail.com

Building Information Modeling (BIM) Engineer / Manager

AREAS OF EXPERTISE

*Project Planning and Implementation ~ Structural Drawings ~ Computer Graphics in Engineering
Time Management ~ Rapid Conflict Resolution ~ Site Planning and Logistics*

RELEVANT EXPERIENCE

Urbantech Consulting Engineering PC • New York, NY, USA (2014–2022)

Building Information Modeling/ Computer-Aided Design (BIM/CAD) Engineer / Manager 2014–2022

- Earned selection to develop and execute BIM functions, including construction of applications, creation of entire BIM work system, and establishment of high performance team
- Led a team of 5 engineers in the implementation of BIM strategies, overseeing the development of internal BIM extensions and plugins for efficient project integration
- Managed the conversion of the company's design system from traditional CAD platform to BIM (Revit) platform which led to time and cost savings
- Demonstrate expertise in performing multiple responsibilities, including:
 - *Overseeing the implementation of BIM processes and technologies across projects, collaborating with project teams, and ensuring compliance with BIM standards and protocols.*
 - *Coordinating and managing BIM workflows and project deliverables, including clash detection, model integration, and data management.*
 - *Conducting Quality Assurance/Control to ensure accuracy and completeness in project models.*
 - *Contributing to the development of BIM strategies, exploring innovative BIM solutions, and identifying opportunities to improve efficiency and productivity.*
 - *Evaluating and selecting appropriate BIM software tools, managing licenses, and contributed to BIM software development.*
 - *Construction Procedure Animation & Presentation Preparation.*
 - *General job site inspection.*

Notable Projects Handled:

Project Name: LaGuardia Airport Terminal Replacement 2016–2021

Client: Skanska-Walsh

Location: Queens, NY, USA

- Take full charge of designing pick plan and rigging for steel erection.
- Review minimum crane positions and flow as well as improve crane path which decreased time span in construction and saved extra cost through the use of 3D pick planning into Revit.
- Conduct site planning and clash detection monitoring.

Project Name: Unionport Bridge Replacement 2016–2021

Client: The Lane Construction

Location: Bronx, NY, USA

- Create bridge profile, superelevation, and toposurface through Civil 3D.
- Implement Revit collaborate systems in overseeing BIM Team worksets, while working closely with contractor and engineer in addressing real time condition from BIM model.
- Present potential risk and conflict between proposed and current bridge spans and recommend effective resolution for site planning and roadway traffic control.
- Offer provisional support structure scheme, as well as follow-up steel shop drawing.

Project Name: Myrtle Avenue Viaduct Rehabilitation 2016–2021

Client: Schiavone Construction

Location: Brooklyn/Queens, NY, USA

- Proactively communicate with site manager and surveyor to produce employee walkway and tie-in locations.
- Gather proposed train rail plan and existing site survey data, while regulating design rail in alignment with designate elevation point and slope.
- Generate miscellaneous steel shop drawings, including stair, ladder, railing, and bollard.

Project Name: Goethals Bridge: Travis Spur Rail Bridge Replacement 2014–2021

Client: Kiewit-Weeks-Massman

Location: Staten Island, NY/Elizabeth, NJ, USA

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- Design both proposed and existing bridge model and toposurface.
- Eliminate potential conflict that arise during bridge erection by streamlining SPMT traveling path and provide risk assessment.
- Utilize BIM technology to create site planning with ideal engineering solution and successfully attain super weekend bridge erection

Project Name: Kosciuszko Bridge Replacement – Phase One

2013–2017

Client: Skanska

Location: Brooklyn/Queens, NY, USA

- Collected all as-built drawings and contract drawings and survey data to develop existing and proposed bridge, Created BIM Revit model and maintained its life-cycle.
- Proficient in site planning, ensuring optimal construction layout, safe demolition area identification, and assessment of potential risks within the construction site.
- Collaborated with cross-functional team for integration of BIM system.
- Prepared real-time erection/demolition sequence simulation and animation using Navisworks, as well as CAD drawing for official review.

Project Name: Metropolitan Avenue Bascule Bridge Over English Kills Rehabilitation

2014–2016

Client: Kiewit Construction

Location: Brooklyn, NY

- Outlined bascule bridge model and fender system and 3D simulation for machinery room removal sequence
- Took charge of creating engineering drawing, load take-off calculation, and rigging detail.

Revit Extensions – software development

2014–2021

- Created custom Autodesk Revit extension using C#, leveraging the Revit API to automate complex workflows and streamline interactions with BIM designed objects. These advancements resulted in a 15% increase in engineers' productivity.
- Utilized Python to design and implement Dynamo scripts and workflows, enabling the manipulation of BIM data and streamlining complex tasks.

Autodesk Network License Seat Tracker – software development

2019–2020

- Designed and implemented a software license manager using C# and WPF on the .NET platform. This application allocated and tracked software licenses status, leading to a 20% improvement in license utilization and mitigating issues related to license depletion.

Reinforcing Steel Bar Bill of Materials Generator – software development

2018–2019

- Automated the processing of reinforcing steel bar Bill of Materials by developing an internal user-facing application using Python. This application extracted data from CAD models and generated accurate reports, saving approximately 20 hours per week for the engineering team.

OTHER EXPERIENCE

MSV (Mechanic Sound Vibration) Lab, National Taiwan Ocean University • Keelung, Taiwan

Research Assistant – Computational Analysis & Modeling

2009–2010

- Developed engineering models using MATLAB for numerical analysis, with Finite Element Analysis and elements result computation in engineering mechanics problems such as 3D cantilever beam deflection and bending moment

EDUCATION

Master of Science in Civil Engineering and Engineering Mechanics • 2014

Columbia University • New York, NY USA

PROFESSIONAL DEVELOPMENT

Licenses:

OSHA 10–Hour

OSHA Construction Scaffolding

TECHNICAL ACUMEN

AutoCAD | Autodesk Revit | Navisworks | Advance Steel | Autodesk Civil 3D | Autodesk Cloud/Platform Services
ReCap Pro | InfraWorks | BIM360 | C# | Python | Html | CSS | JavaScript | MongoDB | MySQL | Azure | AWS