Syllabus: Site Survey and Technology Integration for Construction Projects

Instructor: Brad Curtis
Course: Apprenticeship Program – Construction Technology Section
Date & Time: August 29, 2024, 6:00 p.m.
Duration: 1 Hour

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1. Introduction (5 minutes)
   - Brief introduction of yourself and your experience.
   - Overview of today's session topics and objectives.

2. Site Survey and Photogrammetry (15 minutes)
   - DroneDeploy and Photogrammetry:
     - Introduction to DroneDeploy software and its application in site surveys.
     - Explanation of photogrammetry and its use in generating geological surveys.
   - Topographic Contour and Elevation Reports:
     - Demonstration of how to pull topographic contour information and elevation reports.
     - Overview of HeatMap technology for color-coding elevation data.
   - Overlaying with Site Plan Survey:
     - Explanation of how to integrate these data with traditional site plan surveys, including measurements and layouts.

3. Site Layout and Control Points (15 minutes)
   - Site Plan Survey:
     - Discussion on the importance of site layout in construction.
     - Explanation of how the site plan survey was created, including key control points.
   - Utilizing Drone-Captured Data:
     - How drone imagery and data enhance site layout accuracy and efficiency.
   - Identifying Control Points:
     - Techniques for identifying and marking control points using the survey data.

4. LiDAR Scanning and 3D Modeling (15 minutes)
   - LiDAR Technology:
     - Introduction to LiDAR scanning and its role in site surveying.
     - Details on the scanning process: 40-50 points captured, 5 million laser points per scan.
   - 3D Model Creation:
     - Overview of how the 3D model is generated from LiDAR data.
     - Applications of the 3D model in architectural planning and construction.
   - Virtual Reality Walkthroughs:
     - Demonstration of the virtual reality walkthroughs created from the 3D model.
     - Discussion on how VR can be used in construction planning and client presentations.

5. Technology in Construction (5 minutes)
   - Integration of Technology in Construction:
     - Overview of how modern technology, like drones and LiDAR, is transforming construction practices.
   - Future Trends:
     - Brief discussion on emerging technologies and their potential impact on construction.

6. Q&A and Conclusion (5 minutes)
   - Open floor for questions and discussion.
   - Recap of key points covered in the session.
   - Provide the URL to the V6D website page for further exploration:
     - [Property Page](https://v6d.com/zur)