Building As-Built Report

Prepared by: Chibueze Akaleme

Expert Site/Setting Out Engineer

Client: Bucks Academy, Aylesbury

Date: August 19, 2025

Project Location: Bucks Academy Campus, Aylesbury, UK

Executive Summary

Defining a comprehensive record of the as-built conditions for the Bucks Academy building project, this report outlines detailed methodologies, extensive fieldwork notes, rigorous quality assurance protocols, and finalized survey outputs. Compiled with over a decade of expertise in site engineering, all survey data has been meticulously verified and cross-checked against Bucks Academy's site specifications and regulatory standards, ensuring precision and compliance. The attached data files contain detailed CAD drawings, point cloud datasets, and analytical reports, providing a robust foundation for future maintenance, upgrades, or legal documentation.

Introduction

Initiating this detailed as-built survey for the Bucks Academy building projecta modern educational facility located at the Bucks Academy Campus in Aylesbury, UKthis document serves as an authoritative record of the constructed state as of August 2025. Aiming to bridge the gap between initial design intents and actual construction outcomes, the survey captures critical elements including structural frameworks, utility placements, and external site features. Conducted under the supervision of an expert site engineer, the process adhered to ISO 9001 quality management principles, ensuring every measurement reflects real-world accuracy with deviations meticulously documented for transparency.

Methodologies

Employing advanced surveying techniques, the following methods were utilized ensuring comprehensive data collection:

- **Equipment Deployment:** Leveraging a Leica TS16 Total Station for millimeter precision, Trimble R12 GPS for RTK positioning, and a Faro Focus 3D laser scanner for detailed 3D modeling.
- **Data Acquisition:** Establishing control points via geodetic benchmarks, followed by systematic traverses and laser scans across the campus, capturing over 1,200 data points.
- **Quality Control:** Implementing real-time error checks and redundant measurements, achieving an accuracy threshold of ś5 mm.

Fieldwork Notes

Conducting fieldwork from August 10 to August 15, 2025, under optimal weather conditions, the team documented:

- **Day 1:** Setting up control points with a misclosure of 2 mm, clearing minor site obstructions.
- **Day 2-3:** Measuring structural elements, noting a 12 mm deviation in a classroom wall alignment, deemed non-critical.

- **Day 4:** Scanning utilities, identifying an undocumented water line, now integrated into records.
- **Day 5:** Final verifications and data consolidation, confirming 100% site coverage.

Quality Assurance Steps

Ensuring data integrity through:

- **Pre-Survey:** Instrument calibration against certified standards.
- **In-Field:** Real-time validation with 20% re-measurement for accuracy.
- **Post-Survey:** Data adjustment using least-squares methods, audited by an external surveyor.

Final Survey Outputs

Delivering comprehensive deliverables:

- CAD Drawings (AsBuilt$_{C}AD.dwg)PointCloudData(Building_{P}ointCloud.las$)

- Survey Reports (Survey$_{D}ata.xlsx)DeviationAnalysis(Deviation_{H}eatmap.pdf$) All outputs are georeferenced to WGS84/UTM Zone 30N, with an average accuracy of ś3 mm.

Conclusion and Recommendations

Concluding that the Bucks Academy building aligns closely with design plans, with minor deviations addressed, this report recommends biennial re-surveys and integration into a digital twin system for ongoing management. Contact Chibueze Akaleme at [contact details] for further inquiries.