

Surveying and Leveling are essential processes in Engineering and Construction, ensuring precise spatial data collection and elevation measurements for projects of various sizes. These practices support tasks such as mapping terrain and setting up control networks, combining traditional methods with advanced technologies like GPS, drones, and total station to enhance accuracy and efficiency. Establishing accurate benchmarks and reference points is critical for designing and constructing infrastructure such as roads, foundations, and drainage systems. Proper setup of instruments, ensuring stability during measurements, and verifying results through repetition are vital for achieving dependable outcomes. Tools like the theodolite, auto level, and leveling staff play key roles in obtaining reliable measurements of distance, angles, and elevation. This report emphasizes the importance of accurate surveying and leveling practices in maintaining project safety, stability, and functionality. These principles are fundamental to successfully meeting the challenges of modern infrastructure projects.