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Construction Scheduling and Project Management

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Abstract: *Construction scheduling and project management are essential components of civil engineering, ensuring that projects are executed efficiently, timelines are met, and resources are utilized optimally. This research examines modern methodologies and technologies, such as the Critical Path Method (CPM), Building Information Modeling (BIM), and lean construction practices that improve planning and execution in construction projects. The study addresses challenges such as resource constraints, stakeholder coordination, and unexpected delays, and proposes strategies to mitigate these issues. Furthermore, it analyses the importance of front-end planning and its impact on project success. The findings aim to provide actionable insights that enhance the efficiency and effectiveness of construction project management systems, contributing to sustainable and reliable infrastructure development.*

Keywords: Construction Scheduling, Project Management in Civil Engineering, Critical Path Method (CPM), Building Information Modeling (BIM), Lean Construction, Resource Optimization, Project Planning Strategies, Front-End Planning (FEP), Construction Delays, Sustainable Construction Practices, Stakeholder Coordination.

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