ABSTRACT

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"Implementation Method of Pile Foundation Work Using the Hydraulic Jack-in Method on the Mandiri Wijayakusuma Tower Construction Project"
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(xiii+60+ Attachment)

The construction project of the Menara Mandiri Wijayakusuma in West Jakarta is a major initiative aimed at strengthening infrastructure and improving residential quality in the area. The tower is planned as a multifunctional high-rise building. The objective of this study is to analyze the application of the pile foundation method using hydraulic jack-in in the field, understand project organization and management on-site, and familiarize with the various tools and materials used in the construction industry. The Menara Mandiri Wijayakusuma project, located at Jalan Daan Mogot No.3, West Jakarta, covers an area of 29,484.02 m², with 12 floors for the tower and 5 floors for the parking building. The project is a lump sum fix price contract worth IDR 227,650,000,000 including VAT, which started on October 3, 2019, and is scheduled to be completed by April 27, 2021. The Menara Mandiri Wijayakusuma will serve as an office and a branch of Bank Mandiri and is being built by PT. Adhi Karya (Persero) Tbk. The project's technical data includes a pile foundation with a diameter of 600 mm and a depth of 18 m, with concrete strength of Fc'30 MPa. The main focus of this project is the implementation method of pile foundation using hydraulic jack-in, which includes preparation stages, use of piling equipment, pile storage, piling process, PDA testing, and calendaring. The main challenge in pile driving was the soft soil condition and former swamp area, which caused significant soil displacement and horizontal movement, often resulting in tilted piles that required re-driving. Additionally, dewatering was necessary to stabilize the soil and prevent landslides during basement excavation, especially during heavy rainfall. This project is expected to boost local economic growth, create jobs, and provide modern and comfortable facilities for the surrounding community. The Menara Mandiri Wijayakusuma is anticipated to become a new icon in West Jakarta, reflecting advanced and sustainable urban development.

Keywords: Construction method, Pile foundation, Foundation, Hydraulic Jack-in