ConcreteAI

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CASE STUDY

TENSINOING - POST-TENSIONING SLAB

OBJECTIVES

The traditional post-tensioning cycle takes 3 days to complete. The goal of the projects is to find methods to reduce this cycle time, thereby decreasing the waiting period and allowing for earlier formwork removal and post-tensioning work.

SOLUTION BY CONCRETEAI

ConcreteAI uses real-time strength monitoring to track the in-place concrete strength at various points of the slab. Once the strength reaches 25 MPa, ConcreteAI cross-verifies with temperature-matched curing cubes. These cubes are cured under the same temperature conditions as the in-place concrete using ConcreteAI SmartTank.

This method is referenced by BS 1881:130 and is approved by BCA for evaluating in-place concrete strength for stressing and load application.

COST BENEFITS ANALYSIS

The post-tensioning cycle time is reduced by 30%, enabling PT work to commence after 2 days. This leads to potential time savings of over 50 days for a building with more than 50 PT slabs. **ConcreteAI's package delivers a 5x return on investment by achieving productivity gains on a multi-month scale.**

Target strength, MPa	Traditional Cycle Time	In-Place Concrete with Temperature Matched Curing Cube
25 MPa	3 days	**2 days**