

## **“Utilization of 4D Program for Efficient Project Control & Risk Mitigation”**

The advancement of 3D BIM Model Elements and with the availability of CPM Schedules, when integrated together to generate a 4D Programme, allows to develop digital twin.

Under simulation of various construction sequences and approach in 4D Program we are exposed to the scenarios, unknown constraints, and risks, which will help us in optimising construction strategies and resources deployment.

Identifying risks, constraints, and limitations at the earliest stages of project during pre-construction period will enable higher standards of project controls.

Cost loading to the 4D Program allows the project controls team to work with 5D program, where quantities of elements are obtained instantly, and Earned Value Analysis can be carried out in 4D Environment where we can visualise the extent of actual construction stages.

This combined capabilities in one integral tool, will allow higher efficiency in Project Control which in-turn enable higher standards of Project Management. Risk and Constraints are assessed during the pre-construction stage with the help of 4D Construction Sequence Simulation in the 4D Program.

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