

Monitoring and Control Progress of Task Times in Construction Projects with UAV and BIM Models: Case-Of-Study: Universidad de La Sabana, Bogotá Colombia

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SUMMARY

The monitoring of construction sites have been an important tool to control the time and process of each construction projects. The traditional way to control the construction time progress is the time lapse with stationary cameras, however the recent increases and advances in the Unmanned Aerial Vehicles (UAV) and their civil applications is giving a new options to develop new ways of monitoring construction projects. Also, the recent advances in the BIM technologies give the construction sector new ways to carry the project information through all the project process minimizing possible mistakes and delays. The combination of both technologies could allow more accurate results in the monitoring and control on construction projects. The aim of this investigation is to present the results and a discussion of a Case-of-Study in the Universidad de La Sabana in Bogotá, Colombia, where both technologies, BIM Models and UAV point-clouds were combined to find a practical application. The methodology used was obtaining every two weeks information with the UAV, with flights above the construction site, processing each flight day information with the software Pix4D to an Ortho-Mosaic and a 3D point cloud to compare with the BIM model and the project schedule. In that way it could be possible to determine if the activities are on time. The final conclusions may lead to new investigations and a possible UAV monitoring methodologies and applications in future construction sites.

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