NEW

PAC SPA

Integrating 4D and 5D in a BIM project

INTRODUCTION

As a virtuous example of a construction firm that strives constantly for technological innovation and the implementation of tools for the automation of operational processes, PAC S.p.A. has worked on infrastructure projects with a high level of engineering content since the 1960s, constructing roads, tunnels and civil-industrial buildings, mainly for public-sector principals. In recent years, the design and construction of hydroelectric power plant has played a particularly important role in the business. The execution of complex projects that require numerous processes for the management of a contract pushed PAC to implement the BIM methodology some years ago, as this tool is extremely effective for reaching maximum operating levels. This explains the interest in STR software solutions capable of optimising the operational performance of the Company, according to Stefano Malgarida, IT Manager, and David Battiato, Project Manager Assistant, at PAC.

What pushed you to implement the STR software?

During the technological development of the Company we realised the absolute need for tools that would help us to manage the various operational phases in the execution of a contract. Our commitment to the BIM methodology has of course involved making a number of major IT investments. Investments in products capable of achieving key objectives, such as speed and precision in the performance of architectural design work, and precision and reliability when preparing quotations and scheduling. Accordingly, after having implemented our 3D design programmes, we wanted to integrate them with interoperable quantity calculation software to facilitate a more linear approach to our work. We knew about STR software from our University days and admired its ease of use and excellent functionality so, when we had the chance to integrate it with our processes, we did not hesitate. By contrast with other quantity calculation software, STR is especially good at facilitating collaborative rather than individual work. Considering the steady growth of the Company, we believe this aspect to be absolutely fundamental.

Which STR functions do you use and how important is process information for a company like PAC?

It is increasingly important for the management of work sites to have access to the quantity calculation database, find the necessary data and group the information in an easy and intuitive manner. This is especially true when it comes to complex work sites subdivided into multiple phases, each with various activities and processes to follow and several subcontractors. Drawing on the new data transmission technologies and new connectivity, we can use the STR software remotely to see the quantities calculated at any time and prepare work site budgets and reports. Furthermore, the integration of this software with the design programmes prepares us - especially in BIM terms - for the management of tenders and contracts, which increasingly require construction companies to possess the technology and software needed for interoperability in the various phases of a project.

The new "BIM Decree" gradually introduces the requirement into tenders for public contracts; how are you organising yourselves in this regard?

In accordance with the new decree and the established time scales, the executive design will be delivered to firms using the BIM methodology. So we are working to recreate small parts of the contract and account for the works using the tools available to us. Looking ahead, we realise that it will become increasingly necessary to create a system that transforms the BIM models envisaged by the designer into information of more practical use to the Company. The two aspects rarely coincide: the person who builds a model for a project does not usually think about the construction phases. This means that the model has to be revised radically to make it useful in the execution stages.

Based on your experience, how can STR solutions help a firm preparing to tackle complex infrastructure projects?

We found considerable advantages when using the STR software on our latest projects. We worked in Val d'Ultimo, in the Municipality of San Pancrazio (Bolzano), on the construction of the "Kofl" tunnel (length 994.65 m) and on the construction of the Pizzighettone hydroelectric plant (Cremona) for Edison. This last project, in particular, had particularly complex shapes and it was therefore necessary to use BIM methodology to make the best possible estimate of the quantities involved and the work necessary, as well as to manage the quantity calculations effectively. The use of STR Vision CPM enabled us to integrate 4D (times) and 5D (costs) within the process due, in part, to implementation of the IFC engine within the software; this assures maximum interoperability from an OpenBIM standpoint. For us, at the moment, STR Vision CPM is the best software on the market for the integration of 4D and 5D within a BIM process.

So STR Vision CPM will be used on future projects...

Certainly, and we will be able to examine further the potential of STR software on two new contracts: one in Italy, being the final phase of the Bressanone ring road (central exit), which has just started; the other abroad, being a hydroelectric power station in Uganda, where we will be able to use the multilingual version - a characteristic of the STR Vision CPM software that is very useful in such cases.

Are you satisfied with your choice?

We are very satisfied indeed. The persons who use the software every day have all given exclusively positive feedback. This partly reflects the excellent support received from STR during the implementation phase. In addition to the quality of the software, which we have already highlighted, STR also adds value by making its personnel and technical support available at any time to resolve our problems as they arise.