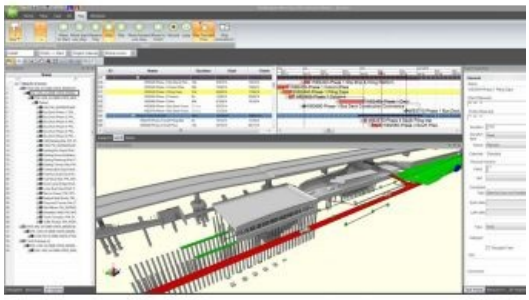
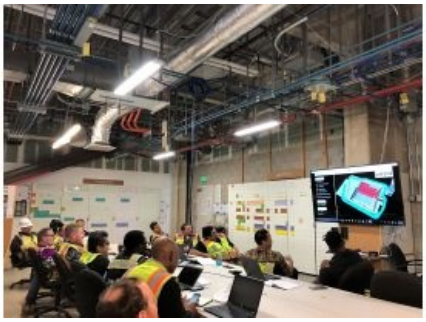
Bentley Systems Acquires Synchro Software





Bentley Systems has announced the acquisition of Synchro Software, specialised in 4D construction modelling software for scheduling and project management. Synchro, which can be described as a 'construction time machine', has been globally adopted, in particular, for building and civil infrastructure projects. The acquisition broadens Bentley's ProjectWise construction offerings, which already include ConstructSim, a solution for 4D construction modelling in project delivery of industrial plants. With construction project management in 4D, benefits of BIM can extend throughout infrastructure project delivery and asset life cycles, as traditionally disconnected workflows become digital workflows.

The strong growth of London-based Synchro, since the introduction of Synchro PRO in 2007, has coincided with the burgeoning adoption of BIM for design workflows – which, however, stop short of considering construction planning, scheduling, and project management strategies. For London's Crossrail, Synchro digital construction innovatively applied Bentley Systems' iModel work packaging to complete the reach of its BIM application portfolio and its CDE. Crossrail, the largest European construction project over this period, is now being completed on time and on budget. Synchro has increasingly become a widely used solution for major constructors leveraging BIM through project delivery. Synchro's 2018 4D Digital Construction Conference in Amsterdam brought together infrastructure construction thought leaders from 18 countries, including presentations by Royal BAM Group, Mortenson Construction, Robins & Morton, Shanghai Construction No. 4 Group, Skanska UK, and Larsen & Toubro, who shared their benefits achieved through innovatively applying 4D construction modelling with Synchro.

Industry project delivery

In industrial project delivery, characterised by EPC (engineer-procure-construct) contracting, integrated processes are already the norm – leading to ConstructSim's digital workflows for advanced work packaging. However, in vertical buildings and civil infrastructure projects, notwithstanding the advancement of BIM for design and engineering, prevalent design/bid/build contracting has institutionalised disconnected workflows isolating construction planning from BIM data and geometry.

- Constructors have been constrained by the limitations of stand-alone planning and scheduling programs, without digital visibility into the engineering information coalesced within the separate 3D BIM environment;
- construction planning typically lacks the workface-level granularity and depth of detail, and exploration of sequencing alternatives, to sufficiently minimise risk and schedule variance; and
- constructors characteristically need to create their own independent 3D models to serve construction only, in the process orphaning the BIM deliverables which can then never, despite their engineering intelligence, accurately represent the as-built asset for operations and maintenance.

Synchro 4D construction modelling of Crossrail Station.

Within Synchro, 3D BIM deliverables are linked with the 4D time dimension to intrinsically and immersively synchronise, through digital workflows, the construction strategy, work breakdown structure, schedule, costs, resources, supply chain logistics, and progress. Synchro's 4D construction modelling appropriately incorporates other construction variables (human, materials, equipment, falseworks, and space) for safe, reliable, and predictable project delivery performance. Synchro includes intrinsic CPM scheduling, or users can maintain external project schedules.

By synchronising changes from BIM, schedule and/or field conditions, Synchro provides clear visibility into both the project data and the design, making it quick and easy to communicate and analyse the impact of changes on the entire project delivery process. This also enables Synchro users to compare construction strategy alternatives – even in early stages of design and bid processes – and to evaluate the feasibility and efficiency of different scenarios, deriving insights toward the best possible construction outcomes.

Digital workflow advancements

By incorporating Synchro 4D construction modelling through the ProjectWise CDE, infrastructure project delivery can now greatly benefit from digital workflow advancements. Change synchronisation can assure that BIM deliverables are updated for changes which occur

during construction, aligning the as-designed, as-constructed, and as-operated digital engineering models to improve both project performance and asset performance. And, in particular for civil infrastructure projects, constructioneering digital workflows can automate direct relationships between the project's digital engineering models, the continuously-surveyed digital context of site conditions before and during construction, and positioning devices controlling construction equipment and feeding back as-built conditions.

Stephen Jolley, vice president of construction for Bentley, said he is very excited about what Synchro brings to Bentley's capabilities for comprehensive project delivery, not only in terms of technology, but also by virtue of the proven construction expertise of the Synchro team, led by the vision and advocacy of Tom Dengenis. In construction modelling for industrial projects, the market is already converging around ConstructSim's advanced work packaging and workface planning. In the advancement of going digital for civil and building construction, the needed impetus for these 'industrialized' advantages is precisely what Bentley is now announcing. For infrastructure projects, integrating Synchro's 4D construction modelling completes the reach of our ProjectWise CDE, Jolley added.

4D Pull Planning in Synchro PRO.

Tom Dengenis, CEO of Synchro Software, said this combination reflects his conviction about what's imperative for finally driving infrastructure construction substantially forward. Synchro has accomplished the breakthrough of 4D construction modelling software many years ago, but Dengenis stated they have wanted to advance the market faster than their own continuous growth. With his 40+ Synchro colleagues in the UK, Boston, San Francisco, Shanghai, and Moscow, the CEO looks forward to working more directly with their new Bentley colleagues, thanks to the now so much greater combined power and commitment, to accelerate the global industry in going digital.

Institutionalising 4D construction modelling

Malcolm Taylor, head of technical information, Crossrail, said using specialist software from Bentley Systems and Synchro, their project schedule could be linked to the 3D information to produce 4D models that could show the progress of design and installation at any particular point in time. Using 4D models to plan helped speed up the project teams' understanding of what is needed to do and when. They could also tease out conflicts that were not normally apparent from regular Gantt charts and drawings. Using the 4D model for construction progress also manages payment expectations as it allows teams to readily agree on what's completed and accepted – as well as producing an excellent as-built record for the future maintainer. For Taylor, the news of Bentley Systems' acquisition of Synchro Software is excellent, and will help reinforce how 4D can be used to improve construction management, he concluded.

Bentley Systems' CEO Greg Bentley said Synchro has already inflected upward the construction productivity curve, by leading the adoption of 4D construction modelling for significant projects worldwide. The opportunity to extend digital workflows from BIM to institutionalise 4D construction modelling across infrastructure project delivery, superseding disconnected planning and scheduling, is enormous and immediate; its magnitude is confirmed by the clamour of new start-ups. Tom Dengenis' informed enthusiasm and business foresight in anticipating and advancing the market's potential – reflected in Synchro's sustained and increasing growth from critical mass to escape velocity – assures that Bentley now, uniquely, has the right combined team and converged technologies. Every constructor and every infrastructure project can gain from going digital through 4D construction modelling, Greg Bentley added.

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