

Ryan Companies – Marina Heights, “*Synchro + Lean = Predictable Outcome*”

Utilizing Synchro and Lean Planning for a comprehensive overhaul of the way Ryan Companies plans and schedules projects.

The Project: Marina Heights is a 2million square foot multi-high rise office campus being developed and constructed for State Farm. The project features 5 main high rise towers, 2 above grade parking structures, 1 below grade parking structure, various retail, food, fitness, medical, and other campus amenities. The project kicked off during the summer of 2013 and will complete in late 2018.



The Problem: Ryan Companies has always approached scheduling with limited input from stakeholders, and relied on in-house veterans to put together a milestone type of schedule. The schedules usually evolve organically as the project team and contractor base grows, but it usually limited to the project superintendent’s sophistication with traditional CPM scheduling tools and the willingness of the team to deliver information. Even in the best examples the same flaws exist:

1. Work expands to fill the time allowed
2. Work flow is not reliable
3. Work production is not steady
4. Dates and durations are determined by few
5. Information and feedback exist in silos and non-collaborative

We are moving forward with a plan, but it is not necessarily the best plan.

Opportunity: Ryan Companies embarked on a long-term top tier new office campus development in Tempe, AZ. This project came along at a perfect time at Ryan where processes, technologies, and old ways of doing things were all being challenged through the spark of a Virtual Design and Construction initiative launched in the summer of 2012. The Marina Heights project continues to be the gold



standard for operational excellence at Ryan and pushes the limits in construction execution. With multiple buildings all being delivered in phases, a complex below grade parking structure, and a myriad of site development, utility, and amenity requirements the project team early on knew they needed sophisticated processes and tools leveraged in order to plan and execute the work safely and accurately for many years of project duration. The Ryan Companies team was going to need to schedule and plan this project out to a level that hadn't been done anywhere in the company.

Solution: The decision was made that the planning and scheduling process needed to take place collaboratively incorporating the input from a large stakeholder group with a tool that could communicate and foster optimization and refinement easily and comfortably. The Ryan team instituted an iterative planning process with Synchro Professional as the engine and repository to continually and visually deliver results and status.

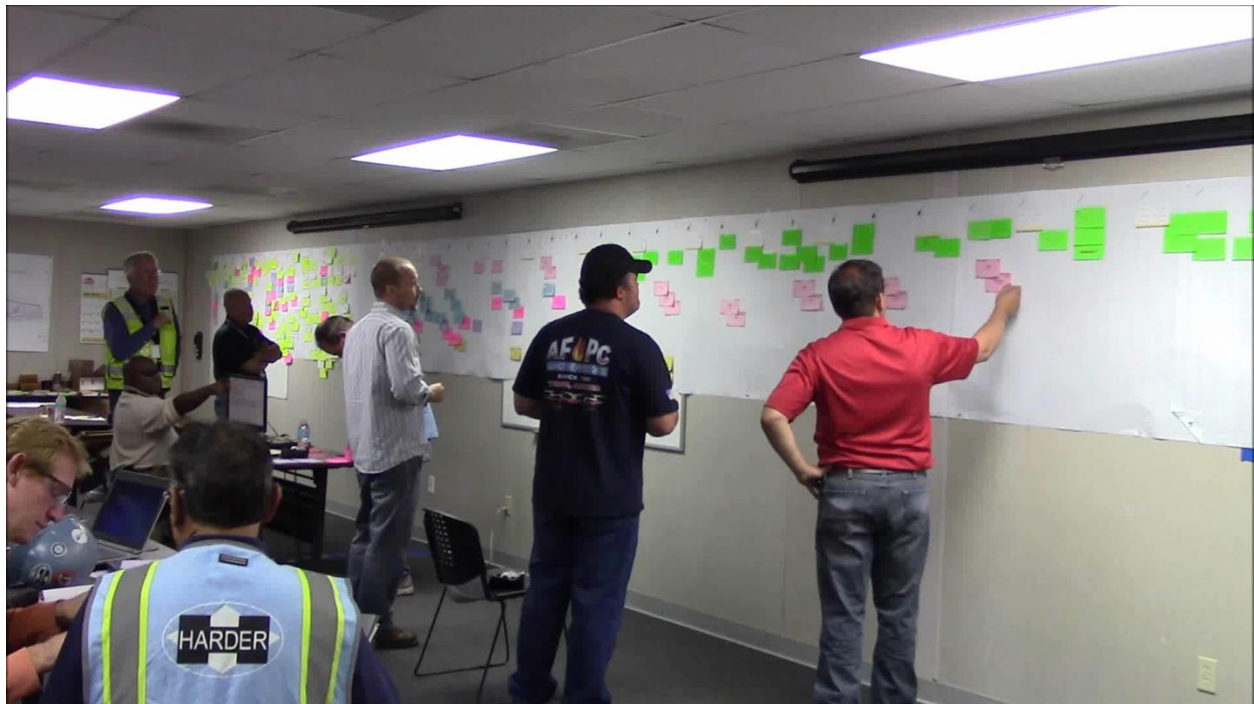
The Process:

Step 1: Milestone Schedule Development - Design phase management, preconstruction and procurement, and then execution of construction are mapped out in a traditional milestone-type of gant chart schedules. Each milestone schedule again is created in a traditional manner only incorporating input from a small group of individuals and often times in a single-person vacuum.

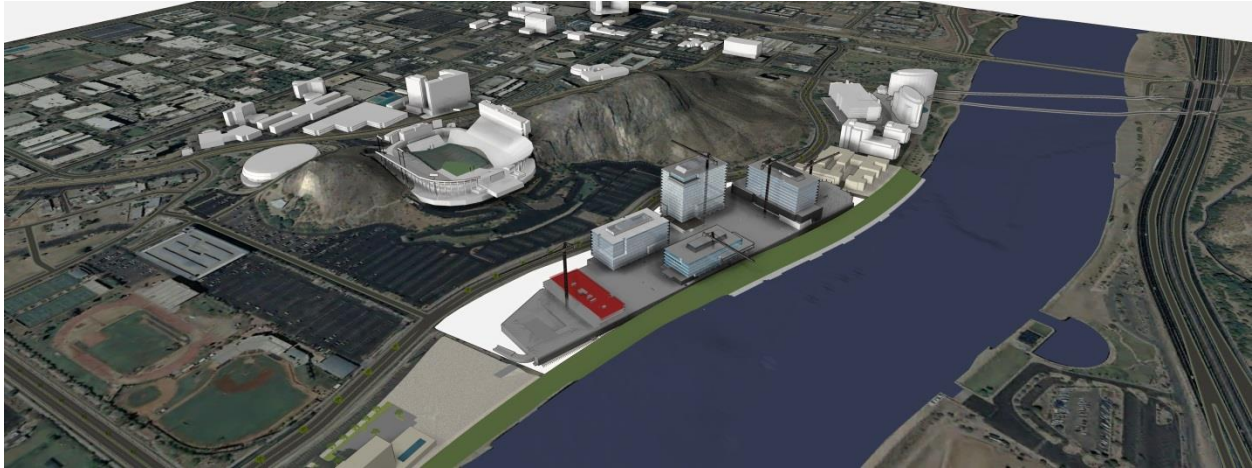
Step 2: Initial Synchro Conversion - These milestone schedules are then incorporated into a Synchro model. The Synchro model is reviewed and refined with a larger Ryan Companies-only team. For example: The Building B milestone schedule is converted to a Synchro model and reviewed internally with the Building B Team: Ryan PM, Ryan PE, Ryan Superintendent, etc. Revisions to either the Synchro model or the schedule tasks and logic are made iteratively until the Ryan team agrees it is accurate and correct.



Step 3: Lean Planning or “The Card Trick” – The Synchro Milestone schedule is transposed into a large meeting room and the project team invites all stakeholders of that particular schedule to a full day collaborative event. Utilizing Lean Last Planner methods the full schedule detail, sub-contractor buy-in, waste elimination, critical path, and accountability is all developed in this comprehensive crowd-source style collaborative planning charrette.



Step 4: Memorializing within Synchro: The information derived in the Lean Planning session is input, incorporated, and digested into the evolving Synchro model again and again until the Ryan project team agrees that all information has been re-incorporated into a now very detailed Synchro model. This now optimized individual building Synchro is incorporated into the Master Campus Synchro to continue to validate or refine that the scope is in line with the overall ecosystem and needs of the campus construction.



Step 5: Communicating the Plan: All stakeholders during this process were given hands on Synchro viewer training, as well as cheat sheets, guides, and instruction manuals all created by the Ryan Project team. Upon the completion of Steps 1 – 4 above, the Synchro model along with some PDF work plan and look aheads are shared out with the group. Zero-dollar change orders are issued to the contractor groups, adding to their contract requirements the optimized schedule which they had an active role in creating themselves.

The Results:

The Marina Heights project is about 70% complete with their Core and Shell build-out correlating to 1.75 million square feet of construction in place, in which they've hosted 22 different Synchro review/refine sessions and 8 different Lean Planning Events. For Core and Shell construction the team is tracking that the Synchro+Lean process is achieving 4 weeks of schedule compression for every 6 months of construction duration per building. The momentum continues to grow amongst the team and are eager to get started on the Tennant Improvement scopes to continue drive this rate of schedule compression higher and higher. ***Hardline metrics total \$270K for every 4 weeks of schedule compression achieved per building (reduction in loan carry GC's). The soft metrics of culture change and predictable outcomes are so powerful that the entire company is taking notice.*** There are Ryan project teams from all over the country visiting the Marina Heights project to learn the processes and implement in their regions. The Marina Heights project team is creating rising star leaders who are also flying out to other project sites facilitating Lean Planning sessions and/or setting up and support the Synchro model creation, refinement, viewer training, etc.