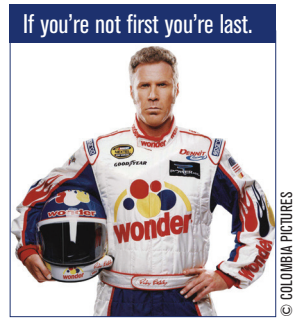
Andy Pearson

Life in the Fast Lane

BY ANDY PEARSON, PH.D., C.ENG., FELLOW ASHRAE

Over the years I have developed a real appreciation for the skill of the project manager, particularly when it comes to the management of "fast track" projects. Recently, it seems, every job is urgent and the days when a project wasn't "fast track" are a distant memory. So what makes a job "fast track" and what are the consequences?

I like to use the following yardstick. If the sequence of operations in a project can be left to be determined by the requirements of the person doing the work then it is not "fast track," but if anything needs to be addressed out of the natural sequence, thus distorting the normal routine, then the job requires special consideration.



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For example, in an ideal world if I were designing a project-specific refrigeration unit I'd start by drawing a schematic of the refrigeration circuit, then I'd check the sizes of all the major components, including any maintenance access clearances. I'd work out the best layout for the unit then draw the baseframe and finally the unit arrangement drawing. However, if the builder of the machinery room needs the package baseframe footprint so he can cast the support plinth in the floor and he can't wait for me to work logically through all the preparatory details, then I will have to do some juggling. I can hazard a guess at the size and weight of the unit and give him dimensions that will be sufficient so he can go and cast his concrete to suit his program. Then when I come to do the detailed design all I need to do is make sure that my unit is not too big for the pre-cast plinth. Hopefully, the worst case scenario is the unit sits on a slightly too large plinth and everyone's happy.

Another example is installation of low temperature pipes to a cold store. In the natural sequence of events the pipes would be set in place and welded up, then the system would be strength and leak tested. Once the pressure test was completed the insulators could get in, lag the pipes and then put on the cladding. With the cladding fixed the system could be evacuated, charged and started up. In a fast track job there may not be time to do these things serially. The insulation can be installed to the main runs of pipe during pipe installation, leaving the welds uncovered for inspection (and possibly for repair) during the pressure test. The main runs of cladding can also be done at this time. Once the pressure test is complete, the gaps in the lagging can be filled in while the system is being evacuated and charged, and commissioning can progress while the cladding is being finished off.

If this type of resequencing cuts so much time out a project why not do all jobs like this? There are several potential disadvantages. It is probably more expensive to work this way as it means that although the overall project is completed in less time, the welding subcontractor and the insulation subcontractor are constrained to work less efficiently and each one is on site longer (albeit at the same time, rather than one after the other). There is also greater risk that a minor delay derails the whole project plan and causes delay with less chance of recovery.

The key to fast track project programming is to understand how activities are dependent on each other and then vigorously challenge these dependencies to attack what's known as the critical path. Anything that is not on the critical path is unimportant; it doesn't matter a hoot if you can do it faster because that won't affect the overall program. In the initial stage of project planning there will probably be one clear sequence of dependencies that defines the critical path. However, as each of these dependencies are attacked and amended other activities will find themselves in the spotlight because they have become the limiting factor on speedy project delivery. Once the skilled project planner has had their way with the program, there will not be one well-defined critical path anymore; there will likely be at least two and probably six independent paths that all take the same length of time to complete. Then there's no point in shortening any single activity further because it can't affect the overall completion time. ■

Andy Pearson, Ph.D., C.Eng., is group managing director at Star Refrigeration in Glasgow, UK.