Constraints

There is a wide range of constraint types in P6. There are very few subjects in the pantheon of planner conversations that create as much heat as the use of constraints.

My tuppence worth follows.

Firstly I am excluding Maintenance projects. Every Activity in a maintenance project should have two constraints – a "Start on or After" and a "Finish on or Before" which express each Activity's compliance bandwidth. That is another conversation. The below just discusses Capital projects and Turnarounds, i.e. projects where the Activities scheduled dates are the result of relationship logic.

Secondly there IS NO CORRECT WAY to use P6 – there is a correct way to map an organisation's business processes to P6. That simple rule must always trump any general guidelines which is all I can write below.

Mandatory Start and Finish

Just say No. These constraint types only distinction is that they can break the logic of the network. So unless you want to replicate, for example, a Microsoft Project plan with remaining durations BEHIND the data date there is no need for these. Just say No – did I say that already?

Start on and Finish On

The Start on constraint sets the Late Start date to the Early Start date, and the Finish On constraint sets the Late Finish date to the Early Finish date. The effect of course is that when P6 subtracts the early date from the late date to calculate Total Float the answer is zero. I use these VERY sparingly:

- Why would I want to manually add activities to the critical path?
- How can I determine how likely an Activity is to start or finish on time if I can't use Total Float?

If you can answer these two questions satisfactorily – then you may have a reason to use these constraints.

Start on or Before and Finish on or After

Just because these constraints are mathematically possible does not mean they are useful. They seem harmless enough, I have just never needed them. Remember the mission is how little P6 functionality you use to describe the project, NOT how much. The big prizes are always for simple.

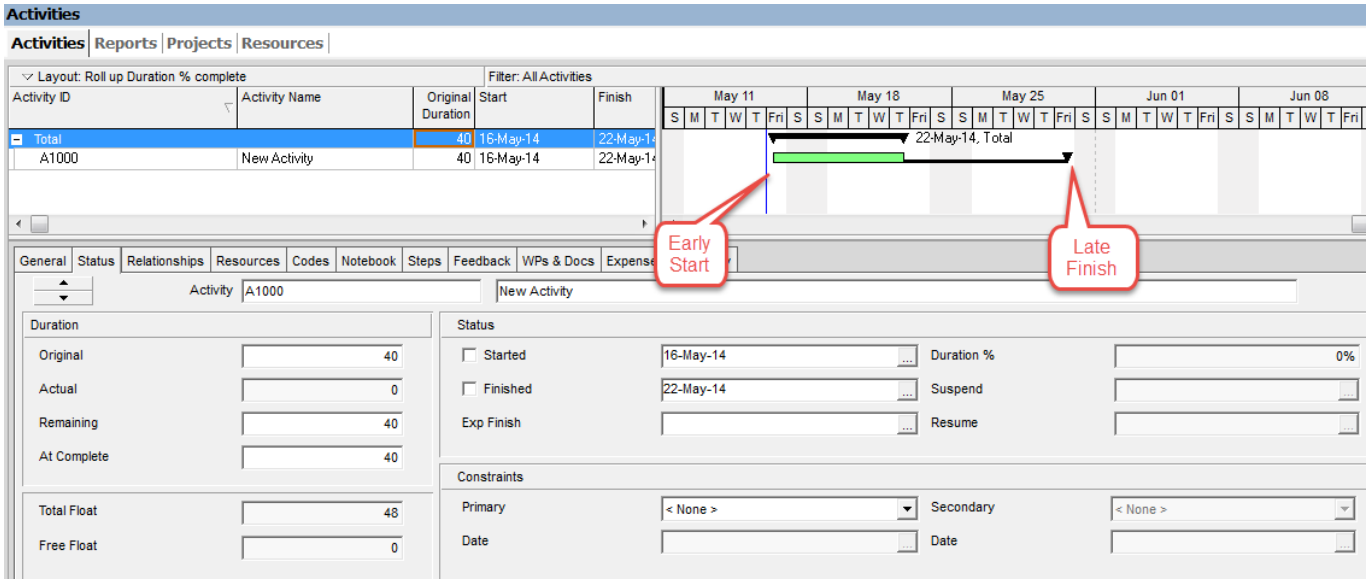
As Late as Possible

This removes Free Float from an activity. The cost engineers friend – they think Free Float indicates work being performed early that does not need to be done (and the money spent) this period. As we drag our cousins in Costing, however reluctantly, to an integrated Cost and Planning environment this is an advantage they cannot capitalise on in their all-Excel world.

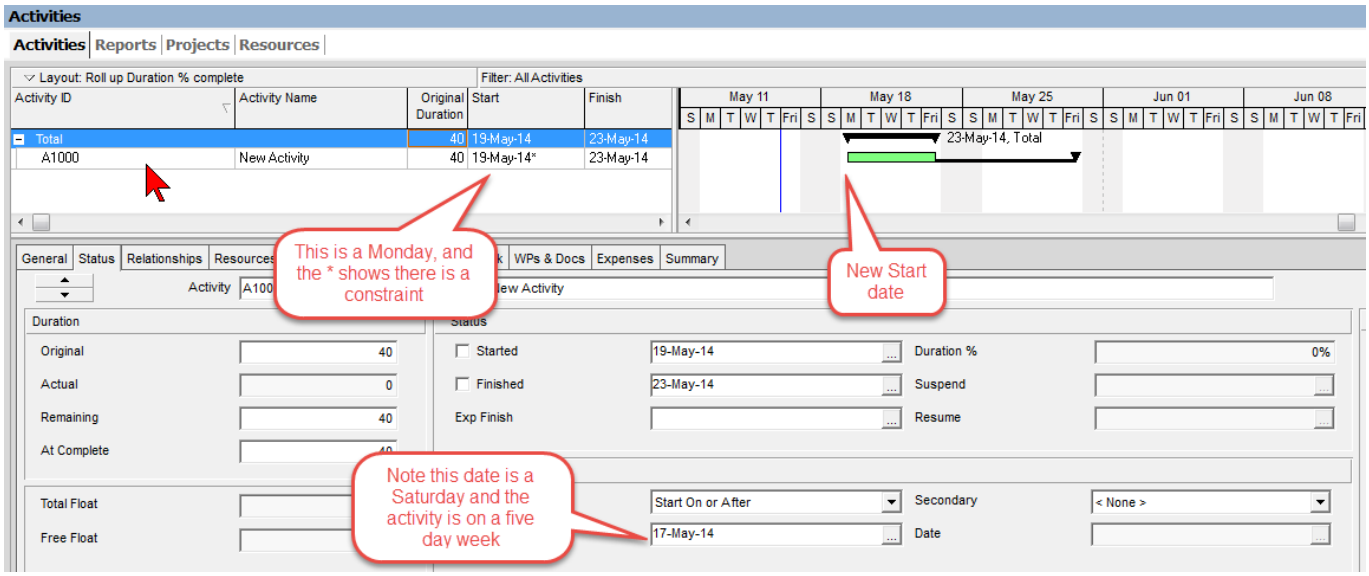
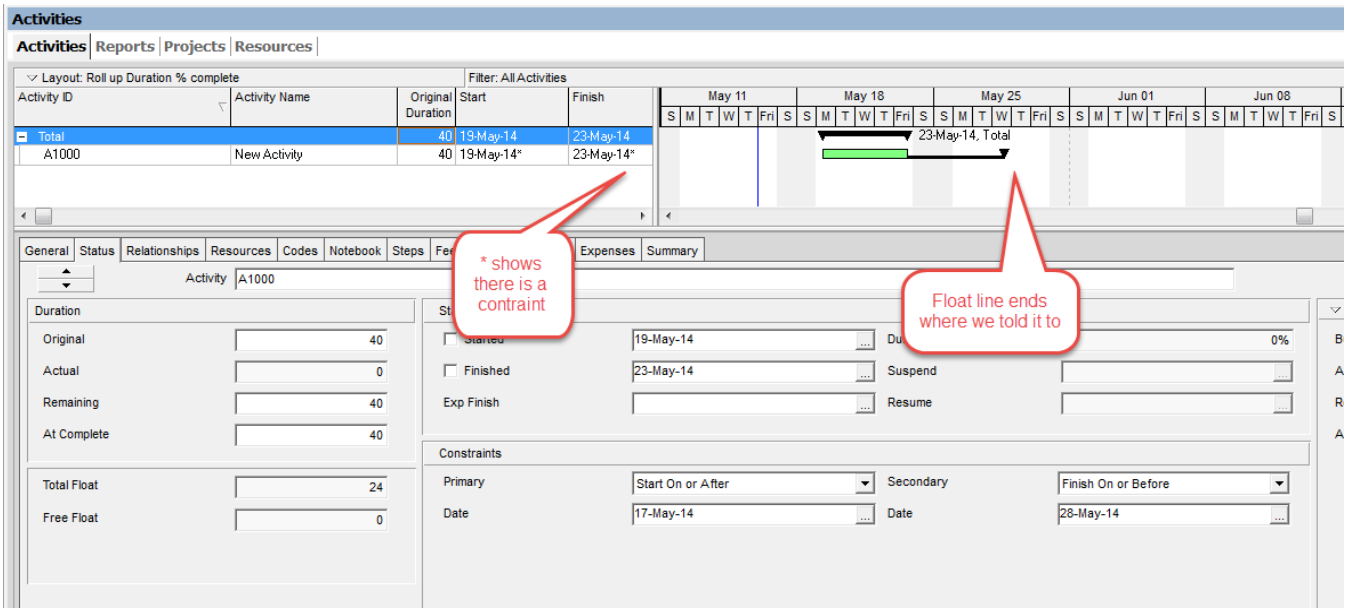
Start on or After and Finish on or Before

I consciously try and use only this pair of constraints. They define the "wiggle room" for an activity - "how soon can I start?" and "when must I finish?" are the questions this pair answers. Used together the create a window for execution for each Activity (hence their use in Maintenance projects) by controlling The Early Start (Start on or After) and Late Finish (Finish on or Before) in each Activity.

Simple one activity network, with a Project Must Finish by date of end of May.



Now we add a Start on or After constraint



Now we add a Finish on or before