# A Guide to Primavera P6 Global & Project Data

I've always had difficulty explaining the concept of global and project data to new users of Primavera P6 in my training courses. It's a bit too much for some, and why should you even care? You seem to be able to use Primavera P6 just fine without any knowledge of Global or Project Data.

You can, but you can also get into trouble once you start moving data around, especially back and forth between databases. If you've ever sent or received a Primavera P6 .xer file then this guide is for you. It will help you to make sure your Primavera P6 project data is making it to it's destination when you send a file. But it's also good knowledge to have for any user of Primavera P6 Professional or EPPM.

## Primavera P6 Global & Project Data

It's important to remember that Primavera P6 was initially designed as an Enterprise project management system. Even though many of us use Primavera P6 as a standalone tool, shunning all of the enterprise bells and whistles, at it's core is a database initially designed for the enterprise's needs. If Primavera P6 was truly a standalone tool, you'd find it to resemble a tool like Microsoft Project, where you deal with files only and projects don't share data between them.

Primavera P6, both the Professional version and EPPM, have a more complex data structure that enables them to be in the realm of Enterprise software tools. The goal was to design a system that could be used by an organization's many departments. So it would have to be flexible enough to be configurable for each department's needs. But also, the organization would want some over-arching corporate assets that could be set up and available to any department.



With Primavera P6, a primary enterprise distinction is that we have this concept of "Global" data objects and "Project" (or embedded) data objects.

If you consider that any company that sets up Primavera P6 will want to reuse and share data objects across their P6 projects, then you have just revealed the difference between global and project objects. Global objects can be shared and used on more than one project, while embedded objects cannot.

#### Primavera's Global Objects Are Linked And Not Embedded in Projects

Going a bit deeper, we encounter how global data objects are actually shared by multiple projects – it's a concept I call "linking". By the way, these concepts exist everywhere in databases, and are not unique to Primavera P6....just sayin'.

Global objects are P6 constructs that are used on or linked in to a project, but never wholly become part of the project. For example, a global Calendar exists in P6's database where it can be shared and used on multiple projects. Thus, a global Calendar gets linked to a project and used on Activities in that project, but the Calendar never becomes wholly owned by the project nor is it embedded inside the project.

The same concept always applies to Resources. A Resource can be assigned to a project's activities, but the Resource (and it's associated attributes, like Price/Unit hourly rate) are never embedded into a

project. That same resource can always be assigned to the activities of another project at the same time, applying the linking concept or the sharing of resources across projects.

When you start to thing about all of the many global objects that can be linked to a large project, the list starts to look like this:

- Global Calendars
- Cost Accounts
- Global Activity Codes
- Project Codes
- Resources
- Roles
- Shift Calendar
- User Defined Fields
- etc.



Qualities of global objects is summarized in this list :

- global objects can be used on the activities of multiple projects.
- global objects exist outside of all projects.
- global objects are not deleted when their associated project(s) are deleted.
- global objects can be left out during an import process.

It's import to understand Primavera P6's innate data linking concept because it comes into play in a major way when you export and import projects through .xer files. More on that soon.

#### What is An Embedded (Project) Object?

Some of the data objects in the list above can also be created as a "Project" object. Let's look at Calendars again. A Calendar in P6 can be created either as a Global Calendar (shareable on other projects) or a Project Calendar, which then becomes embedded inside the project you use it on. Project Calendars can't be shared or used on other projects. No embedded object can.

Other examples include Project Layouts or Activity Codes. Here again, you have the option to create either a Global Activity Code, or a Project Activity Code.



Embedded object are wholly owned by the project. Embedded objects in a project has these qualities:

- embedded objects cannot be used or linked to another project's activities.
- embedded objects exists only inside the project and can be edited only when the project is open.

- embedded objects are deleted along with the project.
- embedded objects are always imported with the project and cannot be left out.

#### Exporting and Importing Primavera P6 Global Objects

This where things can get messy.

If I want to export a project to an .xer or .xml file, and ensure you have a complete record of the project, then during the export, all the bits of linked Global objects have to come along for the ride. And that's why happens. Included inside the .xer/.xml file are all of the Global Resources, Calendars, Activity Codes, Cost Accounts, etc. that are used in the project. So we now have a combination of Global data objects and Project data objects in the same file. This isn't really a problem on its own, as during the export this all happens automatically and there is no way to alter what data goes into an export file from Primavera P6 Professional.

However, it's on the importing of data from a .xer or .xml file that many users usually run into trouble.

## 10 Primavera P6 Layouts You Must Implement

It can get difficult to analyze the mountain of schedules you're responsible for and our good friend Jerome Ijachi Odeh has recently pulled together a list of 10 Must-Have Primavera P6 Layouts....ones you probably should be using everyday.

So to help you take advantage of P6's powerful layout features (like these ones we've already told you about), here is a little sneak peek of 10 must-have Primavera P6 layouts you should be using in Primavera P6 with the simple Grouping, Sorting, Filter and Column tools...since, like yesterday. So let's get started!

Oh, and don't worry – we'll show you how to build each P6 layout stepby-step.

## **Layout 1: Developing Schedules**

For starters, when building a new schedule, make sure to use the layout below to have all the key fields clearly visible and easy to find. The Relationship tab in the Details pane is vital because it's used to add logic relationships between activities in the schedule.

This layout is grouped by WBS and sorted by Activity ID.

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V Layout: 01 PTuts - Schedule Build Filter: All Activities										
Activity ID Chivity Name	Rem Dur	Start	Finish	Calendar Respo	ponsibility 🔺	JFM	20 A M J	011 Jul A S	5 0 N	DJ
TUT-PRJ-1010 Prepare & Issue Key HSE Documents	30d	07Jun-10	16-Jul-10	) 5-DayWeek / Holiday John M	Marshall					
TUT-PRJ-1020 Prepare & Issue Key Project Controls Documents	35d	07Jun-10	23-Jul-10	) 5-Day Week / Holiday John M	Marshall					
- Engineering	265d	26-Jul-10	29-Jul-11	5-Day Week / Holiday						
Pipeline Design	90d	26-Jul-10	26-Nov-1	0 5-Day Week / Holiday						
TUT-ENG-1000 Prepare & Issue Pipeline Design Premise	20d	26-Jul-10	20-Aug-1	0 5-DayWeek / Holiday April S	Stephens					
TUT-ENG-1010 Prepare & Issue Pipeline Corrosion Design Report	60d	23-Aug-10	12-Nov-1	0 5-Day Week / Holiday April S	Stephens					
TUT-ENG-1020 Prepare & Issue Pipeline Pipeline Expansion Report	70d	23-Aug-10	26-Nov-1	0 5-Day Week / Holiday April S	Stephens					
TUT-ENG-1030 Prepare & Issue Pipeline Wall Thickness Report	60d	23-Aug-10	12-Nov-1	0 5-DayWeek / Holiday April S	Stephens					
Construction & Installation Procedures	175d	29-Nov-10	29-Jul-11	5-Day Week / Holiday						
TUT-ENG-1040 Prepare & Issue Pipeline Installation Analysis	80d	29-Nov-10	18-Mar-1	1 5-DayWeek / Holiday April S	Stephens					
TUT-ENG-1050 Prepare & Issue Pipeline Installation Procedure	50d	21-Mar-11	27-May-1	1 5-DayWeek / Holiday April S	Stephens					
TUT-ENG-1060 Prepare & Issue Pipeline Installation As-Built Report	30d	17Jun-11	29-Jul-11	5-Day Week / Holiday April S	Stephens					
Procurement & Onshore Construction	176d	29-Nov-10	23-May-1	1						
TUT-PRC-1000 Negotiate & Award Linepipes Procurement & Coating Subcontract	20d	29-Nov-10	24-Dec-1	0 5-DayWeek / Holiday John M	Marshall					
TUT-PRC-1010 Procure & Coat Linepipes	120d	25-Dec-10	23-Apr-1	1 7-Day Week John M	Marshall					
TUT-PRC-1020 Weld Linepipes into Pipeline Stalks	30d	24-Apr-11	23-May-1	1 7-Day Week John M	Marshall					
<ul> <li>Offshore Installation</li> </ul>	21d	28-May-11	17-Jun-1	1 7-Day Week						
TUT-INS-1000 Spool Pipeline Stalks onto Pipelay Vessel & Transit to Offshore Field	4d	28-May-11	31-May-1	1 7-Day Week June \	Walker		1			
TUT-INS-1010 Install 10km Pipeline from Location A to Location B	15d	01Jun-11	15Jun-1	1 7-Day Week, June \	Walker					
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Predecessors				Successors						
Activity ID 🗸 Activity Name Relations Lag Start		Finish		Activity ID 🗸 Activity Name		Relat	tions	Lag Start		
TUT-PRC-10 Weld Linepipes into Pipeline Stalks FS 0d 24-Apr-11		23-Ma	y-11	TUT-MST-1( Project Completi	tion	FS		0d		
			•	•						

### Here is how to build the Layout:

#### 1. Grouping

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WRS level 5					8 Arial	· ·	<u> </u>	
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Name / Description								
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#### 2. Sorting

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		×	Delete
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l			

#### 3. Filter

No filter is applied in this layout so that **all activities** are displayed.

#### 4. Columns

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Costs     Dates     Durations	*	Rem Dur (Remaining Duration) Start Finish	•		Арр
+ Earned Value + Feedback	•	Calendar Responsibility			Copy Fr
	•			▶	Defa
Multiple Float Paths     Number of Activities					Edit Colu
Percent Completes     Units				(?)	Help
User Defined					

## Layout 2: Analyzing Calendars

You need to make sure the right calendars are assigned to activities when working with schedules because of the effect of calendars on Total Float calculations and Activity Dates.

The layout used for analyzing calendars is **grouped by Calendar >WBS and sorted by Calendar** as you can see below.

Activities				
✓ Lavout: 02 PTuts - Project Calendars	Filter:	AllActivities		
Activity ID	Activity Name		Activity Count	Calendar
∎ Total			21	
= 📸 7-Day Week			7	7-Day Week
🗖 🗁 Pipeline Installation Sche	edule - B1		7	7-Day Week
🖃 🔚 Project Management &	Milestones		2	7-Day Week
🖬 🖶 Key Dates			2	7-Day Week
TUT-MST-1020	Procurement & Onshore Construction	on Completion		7-Day Week
🔲 🔲 TUT-MST-1030	Pipeline Installation Completion		1	7-Day Week
🗖 🔚 Procurement & Onsho	re Construction		2	7-Day Week
😑 TUT-PRC-1010	Procure & Coat Linepipes		1	7-Day Week
😑 TUT-PRC-1020	Weld Linepipes into Pipeline Stalks	3	1	7-Day Week
E Gffshore Installation			3	7-Day Week
😑 TUT-INS-1000	Spool Pipeline Stalks onto Pipelay	Vessel & Transit to Offshore Field	1	7-Day Week
TUT-INS-1010	Install 10km Pipeline from Location	A to Location B	1	7-Day Week
😑 TUT-INS-1020	Transit from Offshore Field to Port 8	k Demobilise Pipelay Vessel	1	7-Day Week
= 😁 5-Day Week / Holiday			14	5-Day Week / Holiday
🖃 🗁 Pipeline Installation Sche	edule - B1		14	5-Day Week / Holiday
🗏 🔚 Project Management &	Milestones		6	5-Day Week / Holiday
🖬 🚰 Key Dates			3	5-Day Week / Holiday
🔲 TUT-MST-1000	Effective Date		1	5-Day Week / Holiday
🔲 TUT-MST-1010	Engineering Design Completion		1	5-Day Week / Holiday
🔲 TUT-MST-1040	Project Completion		1	5-Day Week / Holiday
🖬 🖬 🚰 Kick-off Documentat	ion		3	5-Day Week / Holiday
😑 TUT-PRJ-1000	Prepare & Issue Key QA Document	ts	1	5-Day Week / Holiday
🔲 🔲 TUT-PRJ-1010	Prepare & Issue Key HSE Docume	nts	1	5-Day Week / Holiday
🚍 TUT-PRJ-1020	Prepare & Issue Key Project Contro	ols Documents	1	5-Day Week / Holiday
Engineering			7	5-Day Week / Holiday
🗧 🔚 Pipeline Design			4	5-Day Week / Holiday
🔲 TUT-ENG-1000	Prepare & Issue Pipeline Design Pr	emise	1	5-Day Week / Holiday
🔲 🔲 TUT-ENG-1010	Prepare & Issue Pipeline Corrosion	Design Report	1	5-Day Week / Holiday
🔲 🔲 TUT-ENG-1020	Prepare & Issue Pipeline Pipeline E	xpansion Report	1	5-Day Week / Holiday
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#### Here is how to build the Layout:

1. Grouping

Display Options							1	ок
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Group By Options								
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j Son bands alphabe	elically							
Snow :								
Title								
🔽 ID / Code								
Name / Description								

#### 2. Sorting

Sort			×
Field Name	Sort Order		ОК
Calendar	Hierarchical		
		0	Cancel
		÷	Add
		×	Delete
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#### 3. Filters

No filter is applied in this layout so that **all activities** are displayed.

#### 4. Columns



## **Layout 3: Analysing Constraints**

Constraints are mainly used for the Project Start milestones, contractual milestones and external milestones. When reviewing schedules from contractors make sure to check the constraints applied in the schedule to ensure that constraints are not been used in place of schedule logic to drive dates.

The layout used for analyzing constraints is **grouped by Primary Constraints >WBS and sorted by Activity ID** as you can see below.

Activities						
	Filter: All Activities					
Activity ID		Activity Count	Primary Constraint	Primary Constraint Date	Secondary Constraint	Secondary Constraint Date
<ul> <li>Total</li> </ul>		21				
- Start On or After		1				
Dipeline Installation Schedule - R1		1				
Project Management & Milestones		1				
E Key Dates		1				
TUT-MST-1000 Effective Date		1	Start On or After	07Jun-10		
No Primary Constraint		20				
E      Pipeline Installation Schedule - B1		20				
Project Management & Milestones		7				
🗖 🖶 Key Dates		4				
🔲 🔲 TUT-MST-1010 Engineering Design Comp	etion	1				
🔲 🔲 TUT-MST-1020 Procurement & Onshore C	onstruction Completion	1				
🔲 🔲 TUT-MST-1030 Pipeline Installation Compl	etion	1				
🔲 🔲 TUT-MST-1040 Project Completion		1				
Kick-off Documentation		3				
🔲 🔲 TUT-PRJ-1000 🛛 Prepare & Issue Key QA D	ocuments	1				
👘 TUT-PRJ-1010 🛛 Prepare & Issue Key HSE	Documents	1				
🗾 🔲 TUT-PRJ-1020 🛛 Prepare & Issue Key Proje	ct Controls Documents	1				
Engineering		7				
Pipeline Design		4				
IUI-ENG-1000 Prepare & Issue Pipeline D	esign Premise	1				
IUI-ENG-1010 Prepare & Issue Pipeline L	orrosion Design Report	1				
TUT-ENG-1020     Prepare & Issue Pipeline F	Ipeline Expansion Report	1				
🔲 IUI-ENG-1030 Prepare & Issue Pipeline V	/all Thickness Heport	1				
Construction & Installation Procedures		3				
TUT ENG-1040 Prepare & Issue Pipeline In	istallation Analysis	1				
TUT ENC 1000 Prepare & Issue Pipeline In	stallation Procedure	1				
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### Here is how to build the Layout:

#### 1. Grouping

Group and Sort			- 10					×
Display Options							1	ок
Show Group Totals							0	Cancel
Show Grand Tota	ils						-	
Show Summaries	s Only						<b>1</b>	Apply
Shrink vertical groupi	ng bands							
Group By							<u>×</u>	Delete
Group By	Indent	To Level	Group Interval	Page Break	Font & Color	*		Sort
Total					12 Arial			<u></u>
Primary Constraint					11 Arial			Default
WBS level 1		All			9 Arial			
WBS level 2					8 Arial		2	Help
WRS level 3					8 Arial	•		
Crown Ru Ontione								
Group By Options								
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D / Code								
Name / Description								

#### 2. Sorting

Sort			×
Field Name	Sort Order	1	ок
Activity ID	Ascending	0	Cancel
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		×	Delete
		?	Help

#### 3. Filter

No filter is applied in this layout so that **all activities** are displayed.

#### 4. Columns

O Columns		X
<ul> <li>Available Options</li> <li>Activity Codes - Global</li> <li>Activity Codes - Project</li> <li>Activity Steps</li> <li>Costs</li> <li>Dates</li> <li>Durations</li> <li>Earned Value</li> <li>Feedback</li> <li>General</li> <li>Lists</li> <li>Multiple Float Paths</li> <li>Number of Activities</li> <li>Percent Completes</li> <li>Units</li> <li>User Defined</li> </ul>	<ul> <li>Selected Options</li> <li>Activity ID</li> <li>Activity Name</li> <li>Activity Count</li> <li>Primary Constraint</li> <li>Primary Constraint Dat</li> <li>Secondary Constraint</li> <li>Secondary Constraint</li> </ul>	te t t Date ► ►

## 11 Ways to Build a Cringe-Worthy Primavera P6 Schedule

#### 1. Link Only Half of Your Activities Together

Imagine trying to send an email from a computer that is not connected to the network. Nowadays, if it's not connected, your PC isn't doing much good. Now imagine a project schedule with 450 activities that have no predecessor or successor relationships. Same idea.

Activity ID	Activity Name	Original		Ma	y 2014			June	2014			Ju	ly 20	14			Augus	t 2014	ļ.	1	Septer	nber 2	2014
· · · · · · · · · · · · · · · · · · ·		Duration	-	4 1	1 18	25	01	08	15	22	29	06	13	20	27	03	10	17	24	31	07	14	21
📟 B3260	16500 - Copy of Approva	10.00d					6500	· Cop	y of A	pprovals	from	local	Hydr	o anc	the	Intario	Elect	rical S	afety /	Author	ity - Pr	epare	& Sul
📟 B3270	16500 - Copy of Approva	1.00d			165	00 · Cop	y of A	pprov	als fro	im local	Hydro	o and	the C	Intari	o Ele	otrical	Safety	Autho	rity - F	Réviev	v & Ap	prove	
🖃 🖬 Healthy	& Safety	10.00d			-	- 2	8-May	-14, H	lealth	y & Safe	ety				2					1			
📟 B3280	01060 - All information as	10.00d				<b></b> (	1060	- All in	nforma	tion as r	equire	ed by	the N	/inistr	y of L	.abour	- Prep	are & S	Submi	t 👘			
📟 B3290	01060 - All information as	1.00d			010	60 - All ir	nforma	ation a	as requ	uired by	the M	linistr	y of L	abou	- Re	view &	Appro	ve		1			
📟 B3300	01062 - Project Safety Pl	10.00d			-	<b></b> (	1062	- Proje	ect Sa	ifety Pla	n - Pr	epare	e & Su	ıbmit						19			
📟 B3310	01062 - Project Safety Pl	1.00d			0 010	62 - Proj	ect Sa	afety F	Plan -	Review	& App	prove			1					12			
📟 B3320	01062 - Trench Safety - F	10.00d				<b></b> (	1062	- Tren	nch Sa	afety - P	epare	e & Si	ubmit		3					10			
📟 B3330	01062 - Trench Safety - F	1.00d			010	62 - Trei	nch Sa	afety -	Revi	ew & Ap	prove	•								8			
📟 B3340	01063 - Tunnel Safety Pl	10.00d		1000	_	- 0	1063	- Tuni	nel Sa	ifety Pla	n - Pr	epare	e & Su	ıbmit			1000		1.755	1			
📟 B3350	01063 - Tunnel Safety Pl	1.00d			010	63 - Tun	nel Sa	afety F	Plan -	Review	& App	prove			2					12			
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🚍 B3370	01063 - Resume of Safet	1.00d			010	63 - Res	ume o	of Safe	ety Of	ficer (Tu	nnel a	and S	hafts	) - Re	view	& App	ove			11			

A project schedule is really just a network of interconnected tasks put into a thoughtful order of execution. Without the relationships, you don't have a network. And you don't have an accurate Critical Path as there is no path *to* an activity with missing relationships (or perhaps no path *from* an activity if we're talking about open ends).

#### Here's how to fix it.

Leave no activity un-linked. That is, any activity that is a workable task should have a predecessor and a successor. The only exceptions are the project's first and last activities.

#### 2. Don't bother with Milestones

I don't know about you, but one of the very first things I look for when I'm shown a schedule are the milestones. It's the easiest way to get a sense for major deadlines and startups. So when I don't see any, I get confused and quick. Now think about the owner, client or project sponsor. Milestones are a necessity for tracking to major deliverables, the beginning or end of a project phase, or major events like materials showing up or approvals.

How to fix it.

Pick out the big dates in your schedule and use P6's "Start Milestone" or "Finish Milestone" activity type to highlight those events in your project.

#### 3. Being Vague Is Best

If you're really going for a project that's vague and ambiguous, then you should consider using lots of one-word activity names to add some mystery to what your crew is working on. Try some of these descriptions:

- EC2030 Fix
- M5860 ASCMAC 24
- C3100 Excavate

Maybe "Excavate" makes perfect sense in the context of that activity being under the WBS element "**Area 3, West end (10+320 to 10+430)**". But if you ever use P6's tools to regroup, filter or sort, you may not always see the WBS, leaving that activity to any number of interpretations you don't have time to consider.



Using too many abbreviations can have the same effect. Sometimes more is best. Maybe your client doesn't know that "ASCMAC" stands for Aluminized Corrugated Steel Metal Arch Culvert. (but maybe you don't want to type it out 90 times either....I know. Typing can suck. Tip below.)

#### Here's how to fix it.

Be clear in your activity descriptions. Include a well-defined action on ALL activities, and a location if you are repeating the same work elsewhere. We've already given you some tips on this. Spelling counts! TIP: Don't forget about P6's "Find & Replace" feature. You can use the CTRL+R key combo in the Activity Name column to replace an abbreviation with a longer description throughout your schedule in a few seconds.

## 4. Cost-Load Non-Resource Costs with Resources

Why would you create a resource called "Cash" or "Interest" and assign it to your activities? This is some sort of workaround that sounds painful and confusing. It's true -P6 does not always shine when it comes to managing costs, but some of the resources I've seen are just weird....like "Travel".

#### Here's how to fix it.

Stick to letting resources be resources. Use the Expenses area / tab to track any fixed costs that are not resource related. If you need more firepower, then I would recommend doing it right with a package like Ares Prism or just plain old Excel.

#### 5. Increment Activity IDs by 1's

For those of you who know even a little about Primavera P6, you'll probably remember the familiar ID numbering sequence "A1000, A1010, A1020, A1030...etc." It's pretty much accepted that a P6 schedule will increment by 10's to allow space to add extra activities with numbers that fit in-between – A1015 for example.

😑 A1000	Design & Engineering
😑 A1001	Procurement
😑 A1002	Construction
😑 A1003	Commission
😑 A1004	Closeout

#### No way to add activities in-between

When you increment by 1's, then you've created a numbering system that won't allow you to add activities in-between. So if you ever have to add an activity into the sequence, you're going to rely on renumbering ALL of your activities, which takes time and can be messy. Now some of you just want P6 to work like Microsoft Project which automatically renumbers when you add activities in-between. Sorry, we're all waiting for that one.

#### The Fix.

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Make sure to set your Activity ID numbering sequence on the Defaults tab of your project to increment by 5's, 10's or 20's. 10's is the most common setup. If your project is already built on a sequence incremented by 1's or 2's, then highlight your Activities, right-click and pick "Renumber Activity IDs" from the menu to renumber everything properly. NOTE: this feature is present in versions 7 of Primavera P6 or later.

#### 6. Go Activity Constraints Crazy

P6 is a scheduling engine, but some of us don't like to give the software the control to schedule our work. It's a trust issue. Those people usually go for the comfort of mass Activity Constraints to force Activities to start or end on the best dates.

Primary	Start On	-	Secondary	< None >	¥
Date	Finish On Finish On or After	^	Date	[	224
	Finish On or Before				
	Mandatory Finish Mandatory Start	E			
	Start On				
	Start On or After				
	Start On or Before	-			

So why

bother with relationships if you plan to simply force every Activity to a set of dates? Constraining %50 of your Activities seems to be an

effective way to get the dates you want....but it will cost you in the end. With too many constraints, you lose the fluidity of the logic dependencies (or maybe you didn't bother with logic in the first place).

How to fix it.

Let Primavera P6 do the scheduling for you. You set the following:

- Project Start Date
- Activities with duration estimates
- Order of execution (by adding relationships)

And once you hit F9 to schedule your project, P6 will calculate a start and finish date for each activity. It's why you bought P6 in the first place.

#### 7. Calendars – Make Sure To Use Many

They say the more, the merrier! To get really merry, make sure to use a lot of different Calendars throughout your project schedule. If you have enough trouble with the equation "TF = LS - ES" then ensuring to use multiple calendars will make your head spin when trying to figure out why your Total Float values are off the chart. For example, you'd think Activity A below, would be on the Critical Path.

✓ Layout: filt	ered layout			Filter: All Activ	vities			
Activity ID	Activ Name	Original Duration	Calendar	Start	Finish	Total Float	Free Float	ASON
= 🚔 Multi	ple Cal	270.00d		08-Sep-14	19-Sep-15	0.00d	b00.0	
😑 A1000	A	365.00d	7d x 24hr Workweek	08-Sep-14	08-Sep-15	0.33d	0.33d	
😑 A1010	В	6.00d	5 Day Week w/ Basic Holidays	08-Sep-15	15-Sep-15	0.00d	0.00d	
😑 A1020	С	2.00d	7d x 24hr Workweek	15-Sep-15	17-Sep-15	b00.0	0.00d	
😑 A1030	D	1.67d	7d x 24hr Workweek	17-Sep-15	19-Sep-15	b00.0	0.00d	

#### How to fix it.

Keep it simple and stick to 1 Project Calendar throughout your schedule. Not practical? Then prepare for strange Total Float values in your schedule. There are rumours that P6's Total Float calculations are wrong in some instances where multiple calendars are used. We're working on validating. Leave us a comment if you can help.

#### 8. Use Some Loco Logic

I know you can sometimes make dates line up perfectly if you use nothing but Start-to-Finish relationships and negative lags. But it doesn't mean you should. Although there are 4 relationship types, don't go loco trying to make sure you use them all in equal parts. Things will get messy and your Critical Path will be where it should. Keep it simple with good 'old Finish-to-Start as much as possible. The same applies to lags. We already know that lags and leads are not clearly visible in schedules (although we've showed you how to find lag in your schedule), and they are often poorly documented. Sometimes they are even misused to chew up float.

#### The fix.

Avoid all of those crazy logic options and stick to using Finish-to-Start relationships with 0 lag or lead time. If you do, you will have the cleanest Critical Path possible, assuming you're not guilty of #1 above and are linking everything together.

#### 9. Update Progress Here, There, and Everywhere

It's Tuesday at 1pm – progress update time! The same for next Friday but only at 10am.

Timeliness not your thing? Details and decimal....meh.

Maybe you project controls is not for you, or at the meticulous process of updating a schedule with progress. If your updates are *sporadic and spasmodic* your project is going to suffer from giving everyone a major headache and also from uncertainly of how much work has been done.

#### How to fix it.

Like the changing of the guard, you need to follow a consistent and disciplined process to properly update your project. Pick a time and update your project at that time every week (2-weeks / month). Scrutinize every activity that was to be done and don't leave any out. Primavera will push forward any work that wasn't done as planned. Be impeccable in your updating.

#### **10. Muck With The Bar Colors**

Why are Critical Activities *puce*? (whatever puce is)



man, can you make some ugly Gantt charts using the extensive options provided in Primavera P6. But please don't.

#### How To Put It Back

Those standard P6 colors are so ingrained that changing them might cause a riot. Find a layout that has the standard colors and use it. Stay safe kids.

## What are Level of Effort Activities for?

You might already know that Level of Effort activities are designed to represent support work on a project. This is work that does not contribute directly to the deliverables or outcome of the project, but supports their progress. These are still important tasks, even critical to the project, but are defined as supportive.

Examples of Level of Effort activities include:

- Customer Meetings
- Project Management tasks
- Maintenance of equipment
- Clerical work

These activities don't "earn" us much from an earned value perspective. In Earned Value Management, any supportive-type Level of Effort tasks are called "non-discrete" – which means that measurement of these tasks is harder than say measuring a task to install 12 lamp-posts.

How much project management did you do? **VS.** How many lamp posts did you install?

You can see what the Defence Contract Management Agency has to say about discrete tasks versus Level of Effort tasks and how they relate to earned value.

As one Linkedin member recently commented "...if I cannot see it, touch it, bump my hard hat on it or fall into it....it gives you NO progress." And Level of Effort activities, in describing supportive-type work, fall into that bucket.

## What does Level of Effort mean?

The term Level of Effort could be reworded as – "to level out effort" OR "to spread out the work".

Since a Level Effort activity in Primavera P6 "summarizes" other discrete activities, it spans the duration of multiple consecutive activities, the result is similar to spreading out work over the duration of those activities.

Level Of Effort - "to level out effort" OR "to spread out the work".

## Can Level of Effort Activities be on the Critical Path?

No. Level of Effort Activities should not appear on the Critical Path, nor should they add any duration to the project.

V Layout: Classic So	chedule Layout		Filter:	AllActivities												
Activity ID	_ Activity Name	Original	Critical	Activity Type	Critical Activity Type		Oct	ober 2	013		No	vemb	er 201	3	0	Decem
	7	Duration				06	13	20	27	03	10	17	24	01	08	
= 🖴 LOE Leve	el of Effort	Effort 15d							-	30-0 cl	-13, L	OE L	evel o	f Effor	rt	
😑 A1000	Excavate	5d	V	Task Dependent				Excav	ate							
🚍 A1010	Drill	5d	V	Task Dependent			-		Drill							
😑 A1020	Build	d 😽 😽 😽		Task Dependent				-	-	Build						
😑 P1000	Project Management	15d		Level of Effort		-			-	<sup>5</sup> rojec	t Man	ageme	ent			

## How do I use Level of Effort Activities in Primavera P6?

If you add a Level of Effort Activity in Primavera P6, it's most likely because you want to track a resource and their time on a support task.

Level of Effort activities get their dates and durations from their predecessors and successors. It's most common to assign a predecessor with an SS relationship and a successor with an FF relationship (however you aren't limited to those as in P3's hammocks"). Then you assign a resource to the activity and his/her effort is will be spread over the activity's duration.

✓ Layout: Classic	Schedule Layout			Filter: All Activities					
Activity ID	Activity Name	Original	Critical	Activity Type	Oct	ober 2013	8	Novem	
	1.000000000	Duration			06	13 20	27	03	10
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🚐 A1010	Drill	5d		Task Dependent		-	Drill		
📟 A1020	Build	5d		Task Dependent		G.	-	•Build	
🚔 P1000	Project Management	15d		Level of Effort	7		-	Projec	t Mar
•	-26				•		-1	1	
General Status I	Relationships Resources								
General Status	Activity P1000	)	/	Project Ma	anageme	nt	Ŧ		
General Status I	Activity P1000	)	/	Project Ma Successors	anageme	nt	ſ		
General Status I	Activity P1000	Relations	Lag	Project Ma Successors Activity ID 7 Activit	anageme y Name	nt Relat	Ins	Lag	

## How is a Level of Effort Activity's Duration calculated in Primavera P6?

The Level of Effort Activity gets it's start date from the Early Start date of it's predecessor. It gets it's finish date from the Early Finish of it's successor. Then it's own calendar is used to calculate the duration between the start and finish dates.

All of this happens when you reschedule your project. After you reschedule, the Level of Effort's duration will be calculated.

Of course, if any of the activities that a Level of Effort summarizes has a change of duration, then after rescheduling P6 will calculate a new duration for your Level of Effort.

## How do I show my Level of Effort Activities on the Gantt Chart? My Level of Effort bars are not showing on the Gantt Chart.

Simple, you'll just need to adjust the Gantt Bars settings in Primavera P6. Right-click on the Gantt Chart, select Bars. Check on any entry that is called "Remaining Level of Effort". If you don't have an entry like

that, then go ahead and add one using the Add button. Set the parameters a shown below. Make sure to set the Bar style as well.

Display	wame	rimescale	User Start Date	User Finish Date	riller	Preview		1	OK
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V	Actual Level of Effort	Actual Bar			Level of Effort	-	0	)	Cancel
F	Trimary Dascime	Frimary Buscline E			Normai				
V	Actual Work	Actual Bar			Normal		5	h	Apply
	Remaining Work	Remain Bar			Normal and Non-cri				
V	Critical Remaining Work	Remain Bar			Normal and Critical		4	þ	Add
	Start Constraint	Remain Bar			Has Start Constrain				Delete
	Finish Constraint	Remain Bar			Has Finish Constrai		- 🔼	•	Delete
•						E.		c	opy From.
	Bar Style		Bar Settings		Bar Labels			2	2008 1000 - 100 - 100

## Wrap-Up

Level of Effort activities are an essential component in building complete schedules, for displaying and representing supportive, nondiscrete work. Make sure you familiar with them but don't overuse them. Like most things in planning and scheduling, a little goes a long way.

## 5 Tips to Improve Your Primavera P6 Activity Names

Newer versions of Primavera P6 and beyond allow many more characters in the activity description field. Follow these 5 simple tips to improve the overall quality of your schedule network and respective activity descriptions.

#### 1. Use an action word.

When adding an activity description you always want to add an action word first. For construction related activities consider such words as install, construct, place, or fabricate. For Engineering use action words such as develop, issue, or incorporate. Make sure you follow the action by the activity to be performed.

For example: "Install Lower Base Slab".

## 2. Don't abbreviate unless you absolutely have to.

When developing your activity descriptions do your best to spell out what you are trying to say.

For example instead of

"FREP lwr fndn concrete"

try

"Form, Rebar, Embed & Place lower foundation concrete."

The more abbreviations your schedule contains, the greater potential for confusion, particularly for those unfamiliar with the schedule or your naming conventions.

#### 3. Be descriptive!

The activity description needs to be as descriptive and detailed as possible. For construction activities consider adding the location,

utilizing column references, direction, room numbers, and floor elevation.

**Example**: "Install North Lower Base Slab Col 1 – Col 5, Floor 1".

This type of description will give your reader vital information about where this activity is physically located. Always assume that your reader will not be using your code grouping & sorting when reading yours schedule. Make sure each activity can stand on its own without any coding headers.

### 4. Uniformity

Developing standard activity descriptions, similar to activity IDs, will help standardize your schedule. Try to come up with a standard structure that can be conveyed to the entire planning team. This is especially good practice when working with multiple users in the same program.

An **example** for an engineering schedule could be "\*Action Word\* – \*Deliverable\* – \*System\*". Below are some other examples to help keep uniformity in the schedule.

Use the <*Action Word*> – <*Deliverable*> – <*System*> template.

- 1). Develop Mechanical Data Sheet Horizontal Pump
- 2). Issue Piping Isometrics (Dwg #) Cooling Water System
- 3). Issue RFQ (PO #) Horizontal Pump
- 4). Award Purchase Order (PO #) Horizontal Pump

#### 5. Don't scream!

THERE IS NO NEED FOR ALL OF YOUR ACTIVITIES DESCRIPTIONS TO BE CAPTILIZED! For some reason there are several planners that prefer to work in all-caps. Do us all a favor and please turn the caps lock off. There is no need to scream and it adds no value to the final product.

# Schedule % Complete in Oracle Primavera

Schedule % Complete is one of the many percent completes you have in Primavera P6 and we're going to have a complete look at what it is and how it is calculated. Two important products of maintaining schedules are planned progress and actual progress of a given time; you want to know how much you've done so far and compare it with how much you were supposed to do so far, in order to reach project targets.

The first thing to mention is that Schedule % Complete deals with planned progress. As a result, it is calculated based on the Project Baseline and the Data Date; it has nothing to do with the current schedule.

The second thing is that this field is calculated differently for Activities than for WBS Elements. This is the source of the most common problems people have with this field.

## **Schedule % Complete for Activities**

And now, let's start the story with how Schedule % Complete is calculated for Activities. It's simple; just take a look at the following figure.



Schedule % Complete for this activity = a / b When the Data Date is earlier than the Baseline Start date, Schedule % Complete is zero, when it's after the Baseline Finish data, Schedule % Complete is 100%. Otherwise, Schedule % Complete would show what percentage of the Baseline duration is passed by the Data Date. Here's a formula to calculate Activity Schedule % Complete:

```
Schedule % Complete(Act) = ( [Data Date] - [Baseline
Start] ) / ( [Baseline Finish] - [Baseline Start] )
```

The following diagram shows the Schedule % Complete of a single Activity for different Data Dates:



Schedule % Complete for this activity = 0%

And that's all for the activities; it has nothing to do with the current schedule, the resource curves, the costs, etc. For Activities, Schedule % Complete is strictly calculated based on:

- 1. Data Date
- 2. Activity's Baseline Start
- 3. Activity's Baseline Finish

## Schedule % Complete for WBS Elements

And now, the story of how Schedule % Complete is calculated for WBS Elements. Let's start by reviewing 2 possible scenarios:

#### Scenario 1

Name	Schedule % Complete
Sample WBS Element	0%
Sample Activity 1	100%
Sample Activity 2	70%
Sample Activity 3	30%

How are these calculations possible? The Sample WBS Element has three Activities, they all have Schedule % Completes greater than zero, but the value for Sample WBS Element is 0! Before I reveal the answer, here's a contrasting scenario.

#### Scenario 2

Name	Schedule % Complete
Sample WBS Element	75%
Sample Activity 1	50%
Sample Activity 2	40%
Sample Activity 3	20%

In this scenario, the Sample WBS Element has three Activities with Schedule % Completes less than 50%, but the Schedule % Complete of the WBS Element is 75%.

What is going on here? How is Schedule % Complete calculated in each scenario?

A WBS Element's Schedule % Complete is calculated in a completely different way. You might expect it to be the rollup value of the underlying Activities (a weighted average for example). But, as in scenario 2, the three Activity values which are all less than 50% could never have a weighted average more than 50%.

As you saw before, the Schedule % Complete of the Activities is timebased. However Schedule % Complete for WBS Elements is:

- 1. Depended project costs and...
- 2. Does not factor in any Activities' Schedule % Complete values

## How Schedule % Complete is Calculated for WBS Elements

When you assign resources and expenses to activities, each activity will receive a calculated Total Cost. Resource assignment hours and costs are, by default, spread uniformly over the duration of the activity (but you may apply a Resource Curve to alter this). Oracle Primavera will show you how costs are then planned for each day of the Activity. These costs are aggregated to the WBS level, and the time-phased cost of the WBS Element will be calculated automatically.



The Schedule %

Complete of the WBS Element will be the ratio of the Baseline Costs before the Data Date to the Total Baseline Cost.



Schedule % Complete = PV / BAC = 56%

In the world of Earned Value, the costs before the Data Date are called the Planned Value, or PV for short (Also called BCWS – Budgeted Cost of Work Scheduled). The total baseline cost is called Budget At Completion or BAC for short. We can now formulate the calculation of Schedule % Complete for WBS Elements as:

Schedule % Completed (WBS) = PV / BAC

Please have this in mind that all the mentioned parameters are derived from baseline and not from current schedule; the WBS bar shown in these figures is the baseline schedule of the WBS Element and the costs are the baseline costs of the WBS Element.

The following diagram shows Schedule % Complete of a sample WBS Element for different Data Dates:



The above descriptions show that the Schedule % Complete of the WBS Elements depend on the following:

- 1. Data Date
- 2. Baseline Costs before the Data Date (PV)
- 3. Total Baseline Costs (BAC)

To summarize, Schedule % Complete for Activities is based on **time**, while its value for WBS Elements is based on **costs**.

## Pulling Schedule % Complete together for WBS and Activities

The following diagram shows Schedule % Complete of a sample WBS Element with two Activities in different Data Dates.



### The Proper Setup : Baselined and Costloaded

Now let's see how Schedule % Complete works in action on a sample Primavera P6 plan.

Since Schedule % Complete is based on both Project Baseline fields and Earned Value Cost fields, to calculate it properly, your schedule should:

- be cost-loaded at the Activity-level
- have a project baseline set

Examine the sample plan below. This plan has four WBS Elements in two levels and seven Activities. Activities have sample durations and relationships and you can see the current schedule in the Gantt chart. Each Activity has a resource assignment and that's why we have costs in the plan. Some Activities have uniform resource curves, while others use At-Start, At-Finish or Bell-Shaped resource curves.

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8	$\bigtriangledown$	Layo	ut: test				Filter: All	Activities				D
	Activ	vity ID	)	Activity Name	BL Project Total Cost	Planned Value Cost	Schedule % Complete	FSSM 1	Apr 29 T W T F	SSM	May 06 T W T	×
	=	S%	6C Sample		\$1,360	\$0	0%				07-May	*
		1	NBS-E-1		\$960	\$0	0%				07-May	
			WBS-E-1-1		\$480	\$0	0%		<b>7</b> 02-M	ay-12, WI	3S-E-1-1	Le
			A1000	A1	\$160	\$0	0%		A1			
			A1010	A2	\$240	\$0	0%		A2			-
			A1020	A3	\$80	\$0	0%		A3			- 96
		Ξ	WBS-E-1-2		\$480	\$0	0%		100.0		07-May	8
			A1030	A4	\$320	\$0	0%		A.	4		-
			A1040	A5	\$160	\$0	0%		_		A5	-
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			A1050	A6	\$160	\$0	0%				A6	-13
			A1060	A7	\$240	\$0	0%		A7			6
					Portfolio: A	Il Projects	Jser: admin	Data Date: 3	30-Apr-12	1	Access I	Iode: !

The project baseline is maintained and assigned. The baseline schedule is shown by the yellow bars in Gantt chart. The current schedule and the baseline are the same now.

## Examining Schedule % Complete for Activities

I will reschedule the plan for the second day, moving the Data Date forward 1 day.

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There are no actuals entered, but as we saw in Part 1, Schedule % Complete has nothing to do with the current schedule or actual data. The Schedule % Complete column shows the current values; for example, take a look at A4:

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-20		Å1000	A1	\$160	\$160	100%		A1	
		A1010	A2	\$240	\$240	66.67%		A2	
1		A1020	A3	\$80	\$0	0%		A3	
11	E	WBS-E-1-2		\$480	\$160	33,33%			09-M
		Å1030	A4	\$320	\$160	50%		A4	
101		A1040	A5	\$160	\$0				A5
⇒1	Ξ	WBS-E-2		\$400	\$240	60%	1		M-60
		A1050	A6	\$160	\$0				A6
		A1060	A7	\$240	\$240	66.67%		A7	
				Portfolio: A			Data Date: 02-Ma	iy-12 A	

The Data Date has passed half of the baseline schedule of A4, which would be the Schedule % Complete of 50%.

Planned	Schedule %				A	pr 2	29		Ma			
Value Cost	Complete	5	S	Μ	Т	W	Т	F	S	S	Μ	Т
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\$160	33.33%			2 d	ays							
\$160	10V5 = 50%				~		_					А
2 days	0%			4 d	ays	_	_	_				
\$240	60%											

Sometimes you have nonworking days in the schedule; in this cases, those days would not be counted in passed and total baseline days (as usual).

## Schedule % Complete for WBS

Let's examine WBS E-2.

						1
A1030	A4	\$320	\$160	50%	A4 🗖	ψ.
A1040	A5	\$160	\$0	0%	A5	
WBS-E-2		\$400	\$240	60%	<b>09-M</b>	7
A1050	A6	\$160	\$0	0%	A6	-
A1060	A7	\$240	\$240	66.67%	A7 6	15

WBS E-2 has the following values:

- PV (Planned Value Cost column) = \$240
- BAC (BL Project Total Cost column) = \$400

The WBS Schedule % Complete is calculated as PV / BAC = 240 / 400, or 60%.

## How BAC and PV are calculated for WBS?

### 1. BAC – Budget at Completion

BAC for the WBS Element E2 is the sum of the A6 and A7 BACs. Think of this as the sum of the Total Cost for each Activity (see diagram above) but taken from the project baseline.

#### 2. PV – Planned Value

Planned Value (PV) is bit trickier as it related to how your schedule is cost-loaded in a time-phased manner.

The Activity Usage Spreadsheet, shown in bottom half of the screen below, is handy for analysing planned value for Activities.



The bottom layout is set to show timephased values of the Cumulative Planned Value Costs using the Activity Usage Spreadsheet. Why use the Cumulative Planned Value Cost field? Because it's essentially a running total. With that in mind, in this view we can quickly see a running total PV for the WBS at any day in the project.

## Planned Value....elaborated

Planned Value taked into account Resource Curves. Let's explore Activity A6.

A6 has a uniform curve and it has only two working days, \$80 planned for each one. \$80 for the first day, and the cumulative value remains

80\$ for the next two nonworking days, then increases to \$160 in the last day.

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	A1030 A1040 WBS-E-2 A1050 A1050			Base	lie Scl	hedu	ıle >	•	47			
	WB3-E-1-2 A1030 A1040 WBS-E-2 A1050 A1050			Base	lie Scl	hedu	ıle >		47			4
	A1030 A1040 WBS-E-2 A1050 A1060			Base	lie Scl	hedu	ıle >		47			4
	MB3-E-1-2 A1030 A1040 WBS-E-2 A1050 A1050	A4 A5 A6 A7 ,		Base	lie Scl	hedu Apr 29	ıle >	•	47			4
	MB3-E-1-2 A1030 A1040 WBS-E-2 A1050 A1050	A4 A5 A6 A7 Activity Name	4 Cum Planne	Base	lie Scl	hedu Apr 29 Wed	ile >	Fri	√7 Sat	Sun	Mon	
	A1030 A1040 WBS-E-2 A1050 A1060 D A1030	A4 A5 A5 A7 Activity Name A4	Cum Planne	Base	lie Scl	hedu Apr 29 Wed \$294	Ile >	Fri 1320	\$7 Sat \$320	Sun \$320	Mon \$320	
	A1030 A1040 WBS-E-2 A1050 A1050 D A1030 A1030 A1040	A4 A5 A5 A7 A7 Activity Name A4 A5	Cum Planne	Base	lie Scl	Apr 29 Ved \$294	ile >	Fri \$320 \$80	\$320 \$320	Sun \$320 \$80	Mon \$320 \$160	
Activity	A1030 A1040 WBS-E-2 A1050 A1050 A1060 D A1030 A1040 WBS-E-2	A4 A5 A6 A7 Activity Name A4 A5	Cum Planne	Base	lie Scl n Tue 26 \$160	Apr 29 VVed \$294	1le >	Fri \$320 \$320	\$320 \$320 \$320 \$320	Sun \$320 \$320	Mon \$120 \$160 \$400	
Activity	A1030 A1040 WBS-E-2 A1050 A1050 A1050 A1030 A1030 A1040 WBS-E-2 umulative	A4 A5 A6 A7 , Activity Name A4 A5	Cum Planne plan	Base	lie Scl 1 Tue 26 \$160 40 \$240	Apr 29 Wed \$294 \$240 h day	Ile >	Fri \$320 \$320 \$320 \$320	\$320 \$320 \$320 \$320 \$320 \$320	Sun \$320 \$320 \$320 \$320	Mon \$920 \$160 \$400 \$160	

ActivityA7 has an "At Start" resource curve assigned. All of A7's planned cost will be loaded to the first day and the cumulative value of the next days would be the same.

🧕 Pri															
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				Sat	Son N	lon	Tue	Wed	The	Eri	Sat		Mon		×
	8	WBS-E-1						V.							
		WBS-E-1-1						-		- ( )			S-E-1-1		
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					N N	lon	Tue	Wed	The	Ēri	Sat		Mon	Ti	
			A4			\$26	\$160	\$294			\$320		\$320		
		WBS-E-2					\$240	\$240	\$240	\$320	\$320	\$320	\$400	54	
													\$160		
		Cum	ulative	e cost	s >   4	\$240	\$240	\$240							

No matter how the Activity planned values are distributed over time, the WBS's planned values are the total of the Activities' planned values.

			40	0¢ -	16	04 1	240	D¢.		
	Activity	Cum	40	υ <b>φ</b> –	10	τ φu	240	<b>→ → →</b>		
	Name	Planned un	Mon	Tue	Wed	Thr				
		320\$	5 = 80	0\$ +	240	∖ \$0	\$320	\$320	\$321	\$320
							180	\$80	\$80	100
WBS-E-2			\$240	\$240	\$240	\$240	\$320	\$320	\$320	\$400
Cumulative c	osts >						\$80	\$80	\$80	\$160
A1050	A7		\$240	\$240	\$240	\$240	\$240	\$240	\$240	\$240

The Data Date in the previous sample was the second day of the project and PV of the last WBS Element is 240\$ in that day. If we change the Data Date to the sixth day, its PV would be \$320. The following figure shows the values with the Data Date set to day six of the project.



## When Things Don't Add Up – A Scenario using Resource Curves

Before wrapping up, let's look at a tricky scenario; I made some changes and re-baselined the schedule. Check the values for WBS E.1.1.

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101			Name	Complete	Total Cost	un Mon	Tue	Wed	Thr	Fri Sa	-X
100	E S%	C Sample	11	29.41%	\$1,360			× 1		dite.	
	<b>H</b> . 7							N-			
		WBS-E-1-1		0%	\$480		8				
		A1000	A1	66.67%	\$160		-	E.s.		A1	1.0
		A1010	A2	50%	\$240			1		20472	=
1001		A1020	A3	0%	\$80						
1	-	WBS-E-1-2	4	33.33%	1460		2	No	-	_	- 24
		A1030	A4	50%	\$320						
190		A1040	A5		\$160					-	_
⇒I	= V	VBS-E-2		60%	\$400			-			-
		A1050	AG		\$160					-	
				66.67%	\$240	_				A7	
		[		Portfolio	All Projects Use	er: admin	Data D	ate: 02-M	ay-12	Acc	ass Mode: :

As you see, WBS E.1.1 and all of her underlying Activities have costs. Two Activities have Schedule % Complete values that are greater than zero and the WBS Element's value is still **zero**. Why?

I believe you can say; when Schedule % Complete of the WBS Element is zero, you should expect that the PV is also zero. How is it possible for the PV to be zero when Data Date has passed half of the baseline duration? The answer is simple: the Activity costs are not uniform.... because of **Resource Curves**.

🌛 Pri	maver	a : SPC-S (S%C	Sample)								0	•	8
Eile	Edit	<u>V</u> iew <u>P</u> roje	ect E <u>n</u> te	prise <u>T</u> ools	s <u>A</u> dmir	<u>H</u> el	P						
2	6		→ <sup>87</sup> [		<b>i 🖪</b> 👌	2	<b>F </b> 🕅 (	۲ 🖻	7 🗖	R	80- K	. 🧕	20
8	- V L	ayout: test				F	ilter: All Ac	tivities					
	Activ	ity ID	Activity Name	Schedule %	Fri S	at Su	in Mon	Tue	Apr 29 Wed	Thr	Fri	Sa	X
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		WBS-E-1		16.67\$					-		-	-	
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		A1010	A2	50%									
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	Activ	ity ID	Activity	Schedule %	Cum Plann	ed			Apr 29			1	_
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	Ξ_	S%C Samp	le	29.415			\$266	\$400	\$694	\$1,040	\$1,200	\$1,2	
	=	WBS-E-1		16.67%			\$26	\$160	\$454	\$800	\$880	\$8	2
		UBS-E-1-	1	05					\$160	\$480	\$480	\$4	
		A1000	A1	66.67%					\$160	\$160	\$160	\$1	
		A1010	A2	50%				<u></u>		\$240	\$240	\$2	
		A1020	A3	05						\$80	\$80	\$	
		B WBS-E-1-2	2	33.332			\$26	\$160	\$294	\$320	\$400	\$4	
	10	Δ1030	64	505C			\$26	\$160	\$294	\$320	\$320	\$3	
				Portfolio: /	All Projects	User:	admin [	Data Date	e: 02-M	ay-12	A	ccess	Mode: (

All of these three activities' costs have "At Finish" curve. The following figure is focused on the A2:



Many planners use Resource Curves in their schedules to properly distribute labor hours and costs across an activity's duration. But keep in mind that Resource Curves can cause scenarios like this one to confuse and puzzle you, if you are calculating and finding strange values for Schedule % Complete. Here's another reason to know your schedule intimately.

# The Essential Guide to Printing Layouts in Primavera P6

Primavera P6 provides the ability to display project schedule information using "Layouts". Layouts are customizable views of project information and are the primary method for printing Gantt Charts, Profiles, Spreadsheets, and Trace Logic views. Schedules are tough to read and all members of the project team can benefit from an easier way to interpret their schedules. Did you know that you can customize the display of schedule information by using the Layout Options Bar?

The Layout Options Bar is used to create customized layouts that fulfill your project reporting requirements. The Layout Options Bar is located in the Activities Window.

## The Layout Options Bar enables you to customize/incorporate the following (in addition to other options):

- Bars
- Columns
- Table Font & Row
- Group & Sort
- Filters

This Primavera P6 training tutorial addresses the procedures for printing the Layouts once you have customized them to your needs.

**Step 1**: Open the layout that you want to print using the Layout Options Bar. The layout displayed below is: **X – Current vs. Baseline Bars**. This layout includes the Activity Table on the left and the Gantt chart on the right. The Gantt chart includes both current and baseline bars. Click the Print Preview icon on the toolbar (see yellow arrow).

Prir ile	maver Edit	a P6 Professio View Proje	nal R8.2 : Bldg-21 (Office Building Addition ct Enterprise Tools Admin Help	n - Project	Web Site)	-	-		X
2	8.		• 👠 🚠 . 🗄 🖾 📠 🛤 🔯 📐		]• 🚍 5	7 - 13 - #	- I 🖬 🙆 🦷	2 🗞 🐇 😨 👋	
	Activ	ities		• ; • •			• ; = • •	×	~
	V L	ayout: X - Curre	ent vs. Baseline Bars	Fiter: All	Activities	Church	hoo	anuan: 2010	1
	Activi	φ <b>D</b> 7	Activity Name	Duration	Duration	Start	20 27 03	10 17 24 3	l
	_	BA-ADMIN	Project Administration	207d	198d	11Jan-10A			1
	8	Design a	nd Engineering	30d	b0	11-Jan-10 A			
l		BA1000	Building Addition Kickoff	b0	0d	11-Jan-10 A		Suilding Addition	
I		BA1010	Design Building Addition	12d	0d	11Jan-10A		Des	
		BA1020	Review and Approve Designs	9d	0d	11-Jan-10 A		Review	
		BA1030	Assemble Technical Data for Heat Pump	3d	0d	28Jan-10A		=	
		BA1040	Review Technical Data on Heat Pumps	10d	0d	08-Feb-10 A			
	=	Foundati	ion	1085d	40d	22-Jan-10 A			
		A1000	TEST	10d	9d	22-Feb-10 A			
		BA2000	Begin Building Construction	b0	0d	22Jan-10A		🗙 Begin B	
		BA2010	Site Preparation	15d	0d	22Jan-10A			
		BA2020	Excavation	10d	0d	27-Jan-10 A			
		BA2030	Install Underground Water Lines	5d	4d	19-Feb-10 A			
		BA2040	Install Underground Electric Conduit	5d	4d	19-Feb-10 A			
		BA2050	Form/Pour Concrete Footings	10d	10d	12-Mar-10			
		BA2060	Concrete Foundation Walls	10d	10d	26-Mar-10			
		BA2070	Form and Pour Slab	5d	5d	09-Apr-10			
		BA2080	Backfill and Compact Walls	1d	1d	16-Apr-10			
		BA2090	Foundation Phase Complete	0d	0d		-		
	1	C		644	644	10 Anv 10			
L									

**Step 2**: In the Print Preview Dialog Box, you can use the toolbar at the top left to access various print/view options.

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Off	ce Building Additi	ion - Project Web Site		X - Curr	ent vs. Baseli	ne Bars			
Acti	vity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Activity % Complete	Performance % Complet e	Total Fibat
	Office Bu	ilding Addition - Project W	e 1252d	198d	11-Jan-10 A	30-No v-10		19.63%	-195
	BA-ADMIN	Project Administration	207d	198d	11-Jan-10 A	30-No v-10	4.35%	4.35%	-195
	Design a	and Engineering	30d	0d	11-Jan-10 A	19-Feb-10 A		100%	
	BA1000	Building Addition Kickoff	0d	06	11-Jan-10 A		100%	100%	
	BA1010	Design Building Addition	12d	00	11-Jan-10 A	28-Jan-10 A	100%	100%	
	BA1020	Review and Approve Designs	96	0d	11-Jan-10 A	22-Jan-10 A	100%	100%	
	BA1030	Assemble Technical Data for Heat Pump	3d	0d	28-Jan-10 A	01-Feb-10 A	100%	100%	
	BA1040	Review Technical Data on Heat Pumps	10d	Od	08-Feb-10 A	19-Feb-10 A	100%	100%	
	Foundati	ion	1085d	40d	22-Jan-10 A	18-Apr-10		18, 49%	-196
	A1000	TEST	10d	96	22-Feb-10 A	04-Mar-10	10%	10%	-195
	BA2000	Begin Building Construction	Od	Od	22-Jan-10 A		100%	100%	
	BA2010	Site Preparation	15d	00	22-Jan-10 A	12-Feb-10 A	100%	100%	
	BA2020	Excavation	10d	0d	27-Jan-10 A	18-Feb-10 A	100%	100%	
	BA2030	In stall Underground Water Lines	5d	4d	19-Feb-10 A	11-Mar-10	20%	20%	-198
	BA2040	In stall Underground Electric Conduit	5d	4d	19-Feb-10 A	11-Mar-10	20%	20%	-196
	BA2050	Form/ Pour Concrete Footings	10d	10d	12-Mar-10	25-Mar-10	0%	0%	-198
	BA2080	Concrete Foundation Walls	10d	106	28-Mar-10	08-Apr-10	0%	0%	-196
	BA2070	Form and Pour Slab	5d	5d	09-Apr-10	15-Apr-10	0%	0%	-196
	BA2080	Backfill and Compacit Walls	1d	1d	16-Apr-10	18-Apr-10	0%	0%	-195
	BA2090	Foundation Phase Complete	Od	Od		18-Apr-10	0%	0%	-196
	Structure	e	64d	64d	19-Apr-1 0	19-Jul-10		0%	-196
	BA3000	Begin Structural Phase	04	04	19-Acc-10		0%	0%	-191

**Step 3**: We will access the "Page Setup" option, which is the first icon from the left. "Page Setup" consists of 5 tabs, and we will review each of those tabs. The first tab is the Page tab, which can be used to select page orientation, scaling and paper size.

e setup				
age Margins	Header	Footer	Options	🖌 ок
Orientation				O Cancel
A C Portrait	$\mathbf{A}$ $\widehat{}$ <u>L</u> andscape			P Apply
Scaling				Default
C Adjust to:	100 🔷 % normal size			😨 Help
	0 age(s) wide by	0 🚖 tall		
C Fit timescale to:	1 🚖 page(s) wide			
Paper Size				
Paper size: Letter 8.	5x11in.	•		
Width: 11	Height: 8.5			

**Step 4**: The Margins tab allows you to establish the top, bottom, left and right margins.



**Step 5**: The Header tab enables you to select the appearance of the Header. You can divide the header (see yellow arrow) into up to 5 sections and can control the contents of each section. You can also identify on which pages you would like to include the Header, as well as the height of the Header. In our example, we will divide the Header into 3 sections. We will put a logo in the first section, insert the Project Name & Layout Name in the second section, and the Date/Time in the third section.

To insert the logo into section 1, click the drop-down list for section 1 and select Picture (see red arrow below),

je Setup	Maraina	Harder	Easter	Ortions		
age	maigins	rieduei	Poolei	Options		V UK
le Into: 3	Sections	Include on: All Pages	•	Height: 0.25		O Cancel
Define header						
Show Sectio	n Divider Lines					E -999
		Π	п		- 1	Default
Sect	ion 1 (33%)	Section 2 (33%)		Section 3 (34%)		·
Text/Loop	vii i (0076)	Text/Logo	Text/Lo	30000113 (34.76)		Help
(None)						
Gantt Chart Leg	end					
Picture Revision Box		🗄 📲  🔛 🖼				
Text/Logo					A	
[project_name	1	-				

**Step 6**: Use the browse button to select the filename of the logo (see yellow arrow). Click the Apply button on the right to preview the layout with the new modifications. Notice that the logo is barely visible (see green arrow below) because the Header height is only .25.

Page Setup	MSS-		X - Current vs. Base	ine Bars	13	
Page	Margins	Header	Footer	Options		ок
Divide Into:	3 🚔 Sections	Include on: All Pages	s 💌	Height: 0.25	•	Cance
Define header	ction Divider Lines					h Apply
		Ū.	0			Defau
Picture	ection 1 (33%)	Section 2 (3 Text/Logo	33%) Text/L	Section 3 (34%)		) Help
Picture						

**Step 7**: Increase the Header height to 1 and click Apply to view the result. Notice that the logo is now more prominent.

			X - Current vs. Bas	eline Bars			
PROJ	ECTS ANAL	YTICS		-			
age Setup		100	and the second second				
Page	Margins	Header	Footer	Options		1	OK
Divide Into:	3 🚖 Sections	Include on: All Pages	•	Height: 1	١	0	Cancel
Define header						1	Apply
Show Sec	tion Divider Lines					-	
		0	0			P	Default
Se	ction 1 (33%)	Section 2 (3	3%)	Section 3 (34%)		0	Help
Picture		rexulugu	Texor			-	
Picture							

**Step 8**: Let's work on the 2<sup>nd</sup> Section of the Header. Currently, the 2<sup>nd</sup> section is set to display the Layout Name (see Red arrow). We would like to display the Project Name in addition to the Layout Name and would also like the Project Name to be displayed as red text.

	le c		X - Current vs. Basel	ne Bars			
Page Setup					-	_	
Page	Margins	Header	Footer	Options		1	ок
Divide Into:	3 🚖 Sections	Include on: All Pages	•	Height: 1	-	0	Cancel
Define heade	r					1	Apply
I∕ <u>S</u> how Se	ction Divider Lines					Þ	Default
Sectors.	ection 1 (33%)	Section 2 (33	%)	Section 3 (34%)		•	Help
Add Text		TexoLogo	TexoLt	yyu -		Ŭ	
AE		• 🗉 🖬 🔗 📟					

**Step 9**: In section 2, select Text/Logo (see yellow arrow) to identify the desired contents. Click the drop-down list at the bottom left to pick Project Name (see red arrow).

		la c		la s			
Page	Margins	Header	Footer	Options		<ul> <li>Image: A start of the start of</li></ul>	OK
Divide Into: 3	Sections	Include on: All Pages	•	Height: 1		0	Cance
Define header		,		,		-	
	<b>2</b> 1.11.11.1					1	Apply
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	l		U			-	Detaul
Secti	on 1 (33%)	Section 2 (33%)		Section 3 (34%)			
Picture		Text/Logo	Text/L	ogo			нер
Add Text							
	a to to la						
ALI							
Lawout Name		[lavout name]			^		
Lavout Name							

**Step 10**: Use the text formatting tools to format the text for the contents of section 2 (see red arrow). Click the Apply button to view the results. You can see that the text for Project Name has been set to red using the text formatting tools.

	455	Office	Building Addit Web Si	ion - Project te			
PRO	JECTS ANAL	YTICS	X - Current vs. Bas	eine Bars			
ge Setup	Second dates	1.28	Conception of the local division of the loca	-	-		×
age	Margins	Header	Footer	Options		✓	ок
Divide Into:	3 🛓 Sections	Include on: All Pages	•	Height: 1		0	Cancel
Define heade	· ·	,	_	,			
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	Section 1 (33%)	Section 2 (339	6)	Section 3 (34%)			
Picture		Text/Logo	Text/Lo	ogo		<b>?</b>	Help
Add Text							
Add Text		Texocogo	TEXUL	<b>.</b>		Ŭ	

**Step 11**: We will let Section 3 of the Header reflect Date/Time (see red arrow).

age	Margins	Header	Footer	Options		1	ок
Divide Into: 3	Sections	Include on: All Pages	-	Height: 1		0	Cancel
Define header	Divider Lines					₽	Apply
	Divider Lilles	0	0			•	Default
Section	on 1 (33%)	Section 2 (33%)	Texta	Section 3 (34%)		(?)	Help
Add Text	∃ ∷ №	• E • E • • • • • • • • • • • • • • • •		[date] [t	ime]	-	

Step 12: The Footer Tab works exactly as the Header tab.

age Margins	Header	Footer	Options		🖌 ОК
Divide Into: 3 🚔 Sections	Include on: All Pages	•	Height: 0.5	-	O Cancel
Define footer					Apply
Show Section Divider Lines	0			- 1	Default
Section 1 (33%)	Section 2 (33%)		Section 3 (34%)		-
Gantt Chart Legend	Text/Logo	Text/Lo	go		Help
Add Text					
	• • • • • •				
[filter_list]				^	
(					
			Primavera Systems, In	ic.	
				-	

**Step 13**: The Options tab will be available if your Layout includes a Gantt chart, Profile, Spreadsheet, or Trace Logic. You can identify the Timescale Start and Timescale Finish. These can be predefined dates or you can specify a custom date. We have selected DD (Earliest Data Date) for the Timescale Start and PF (Latest Project Finish) for the Timescale Finish. Of course, you'll want to ensure you descrunch the Gantt chart if you're printing it with this trick.

Notice the other print options that can be selected. We will explore those options with the subsequent images.

age Margin Timescale Start: Timescale Finish:  Print  Activity Table  All Columns  Grid Lines  Grid Lines  Grid Lines  Frofile  Spreadsheet  Trace Logic  Page Settings  Break Page Every Gro	IS PF	Header		Footer PS - Earliest Project Start PF - Latest Project Finish DD - Earliest Data Date CD - Current Date CW - Current Week CM - Current Month Custom Date	Options		OK Cancel Apply Default Help
---	----------	--------	--	---	---------	--	--

**Step 14**: The preview displayed below depicts printing the Gantt chart, only without the Activity Table.

		Project		
	Page Setup	Project		-
PROJECTS ANALYTICS	Page	Margins	Header	Foot
21 28 07 14 21 28 04 11 1 sign and Engineering	Timescale Start: Timescale Finish:	q q	D	] ]
	Print	3		]
for Heat Pump view Technical Data on Heat Pumps Fou	All Columns			
ition avation	Gantt Chart			
Install Underground Water Lines Install Underground Electric Conduit Form/Pour Concrete Footings	Spreadsheet     Trace Logic			
Concrete Pour	11			41

**Step 15**: The preview below selects to print the Activity Table, displays all columns on the Activity Table, as well as the Gantt chart.

\$\$ \$ <b>\$</b>		9, 6						
		Office E	Building Addition Web Site X - Current vs. Basel	o <b>n - Projec</b> ne Bars	t			
Activity ID	Activity Name	Original Duration	Remaining Start Duration	Finish	Activity % Complete	Performance % Complet e	Total Fibat	F 21
Office Bu	ilding Addition - Project W	e 1252d	198d 11-Jan-10 A	30-No v-10		19.63%	-195	-
BA-ADMIN	Project Administration	207d	198d 11-Jan-10 A	30-No v-10	4.35%	4.35%	-196	
Design	and Engineering	305	0d 11-Jan-10 A	19-Feb-10 A		100%		sign ar
BA1000	Build be Addition Kickoff	04	0d 11-Jan-10 A		100%	100%		
BA1010	Design Building Addition	124	0d 11-Jan-10 A	28-Jan-10 A	100%	100%		
BA1020	Review and Approve Designs	94	0d 11-Jan-10 A	22-Jan-10 A	100%	100%	-	
BA1030	Assemble Technical Data for Heat Pump	3				1000	_	
BA1040	Review Technical Data on Heat Pumps	10	Page Setup					
Foundat	ion	1085	-	Les a		100 0		1-
A1000	TEST	10	Page	Margins		Header		Foo
BA2000	Begin Building Construction				lon.			
BA2010	Site Preparation	15	Timescale Start:		po			
BA2020	Excavation	10			Inc			
BA2030	Install Underground Water Lines		Timescale Finish	C	Pr			
BA2040	Install Underground Electric Conduit							
BA2050	Form/ Pour Concrete Footings	10	Print					
	Concrete Foundation Walls	10						
BA2060								

**Step 16**: The preview below displays only those Activity Table columns visible on the layout versus all columns.

& ₩ ₩		୍ର୍					
Proje		Office B	uilding V X - Cum	<b>7 Addition</b> - Veb Site ent vs. Baseline Ba	Project		
Activity ID	Activity Name	Original	Remaining	Start F		March 2010	April 201 0
		Duration	Duration		21 28 0	07 14 21 28	04 11 18 25
Office Bu	uilding Addition - Project	We 1252d	1984	11-Jan-10 A 30			
BA-ADMIN	Project Administration	207d	1985	11-Jan-10 A 3(	-		
Design	and Engineering	305	0d	11-Jan-10 A 15	isign and Eng	ineering	
BA1000	Building Addition Kickoff	Dd	0d	11-Jan-10 A	1	•	
BA1010	Design Building Addition	124	04	11-Jap-10 A 20	1		
BA1020	Review and Approve Designs	Page Setup					
BA1030	Assemble Technical Data for Heat Pum	- age array					
BA1040	Review Technical Data on Heat Pumps	Page		Margins	Header		Footer
Foundat	ion	. age		in a gene		110000	1
A1000	TEST	Timesc	ale Start		DD		
BA2000	Begin Building Construction		and allors.		1.00		
BA2010	Site Preparation	Timeso	ale Finish		PF		
BA2020	Excavation	111/030	and i middin		1.		
BA2030	Install Underground Water Lines						
BA2040	Install Underground Electric Conduit	Print					
BA2050	Form/ Pour Concilete Footings	-					
BA2060	Concrete Foundation Walls		Activity Tab	ble			
	Form and Pour Slah		I Columo				
BA2070	Form all Four dev	- P	ALCOIDHING	9			

**Step 17**: This preview displays only the Activity Table (ie. No Gantt chart).

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PROJE	CTS ANALYTICS		X - Curr	ent vs. Basel	ine Bars				
Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Activity % Complete	Performance % Complet e	Total Fibat	_
Office Bu	uilding Addition - Project	We 1252d	1988	11-Jan-10 A	30-No v-10		19.63%	-196	
BA-ADMIN	Project Administration	207d	1985	11-Jan-10 A	30-Nov-10	4.35%	4.35%	-196	
Design	and Engineering	306	Od	11-Jan-10 A	19-Feb-10 A		100%		
BA1000	Building Addition Kickoff	Od	0d	11-Jan-10 A		100%	100%		
BA1010	Design Building Addition								_
BA1020	Review and Approve Designs	Page Setup			Seamers .				
BA1030	Assemble Technical Data for Heat Pur					1			_
BA1040	Review Technical Data on Heat Pumps	Page		Margin	5	Header	Fo	oter	
Foundat	ion								
A1000	TEST	Timesc	ale Start		DD				
BA2000	Begin Building Construction	1000							
BA2010	Site Preparation	Timeso	cale Finish:	÷.	PF				
BA2020	Excavation								
BA2030	Install Underground Water Lines								
BA2040	In stall Underground Elec tric Conduit	Print							
BA2050	Form/ Pour Concrete Footings		Activity Tab	ale					
BA2060	Concrete Foundation Walls	1	tourny nut						
BA2070	Form and Pour Slab		All Columns	5					
		100000							

**Step 18**: View the finished product. Use arrows on the toolbar to navigate through the preview. Use the print setup & print icons to establish printer options. You can also publish the layout to an HTML file (red arrow identifies the print preview dialog box options).

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8	<b>\$</b> 2		२, (				
			Office B	uilding	g Additio	on	n - Project
	M				Neb Site	£),	
				X - Curr	rent vs. Baseli	ne	e Bars
	RUJE	CIS ANALTICS	1.0	-			5 Unit 2018 1 4 - 2 201 A
Activity	D	Activity Name	Duration	Duration	Start	-	21 28 07 14 21 28 04 11 18 25
0	ffi ce Bi	uiding Addition - Project W	e 1252d	1984	11-Jan-10 A	3	21 20 07 14 21 20 04 11 10 20
Ĭ	BA-ADMIN	Project Administration	2074	1994	11. Jan-10 A	2/	1
	Design	and Engineering	304	04	11-Jan-10 A	15	sign and Engineering
	BA1000	Build as Addition Vickoff	04	04	11. Jan.10. A		
	BA1010	Design Building Addition	124	04	the land 0 A	2	
	BA1020	Review and Annous Designs	94	04	11. Jan.10 A	2	2
	BA1030	Assemble Technical Data for Heat Pump	34	04	28-Jan-10 A	0	al Date for Heat Pump
	BA1040	Review Technical Data on Heat Pumps	104	04	08-Feb-10 A	15	Deview Technical Data on Heat Pumbs
	Foundat	lon	1085d	40d	22-Jan-10 A	16	Foundation
	A1000	TEST	104	94	22-Eab-10 A	0	TEST
	BA2000	Basin Bultino Construction	04	04	22-1se-10 A	-	1691
	BA2010	Site Penaration	154	04	22-Jan-10 A	11	Constant
	BA2020	Excavation	104	04	27-Jan-10 A	11	Vicevation
	BA2030	Install Underground Water Lines	5d	4d	19-Feb-10 A	11	Instal Undergrund Water Lines
	BA2040	Install Underground Electric Conduit	54	4d	19-F eb-10 A	11	Instal Underground Electric Conduit
	BA2050	Form/ Pour Concrete Footings	10d	104	12-Mar-10	2	2 Form/ Pour Concrete Footings
	BA2060	Concrete Foundation Walls	10d	10d	28-Mar-10	00	Concrete Foundation
	BA2070	Form and Pour Slab	5d	5d	09-Apr-10	15	11 Form and Pol
-					transfer and here		
1						-	lane.