

LEARN

# CCS CANDY

**PLANNING AND SCHEDULING**

**Course notes for the online  
planning and scheduling  
course**



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# A STEP-BY-STEP GUIDE FOR SCHEDULING A CONSTRUCTION PROJECT IN CCS CANDY.

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## WELCOME - How to approach the course and get the best results

### Introduction

Hi, I'm Kobus and I'm glad you're joining me on this journey to expand your skills as a built-environment practitioner. Thank you for trusting us with this responsibility and I'm sure our training will give you an edge and provide you with high-value skills that will further your career.

Having the ability to schedule a project accurately is one of the most important and critical skills that a project manager or built-environment professional must have. If you are managing projects in the 21st century without this skill, you are going to be left behind.

In this course I'm taking the complexity out of CCS Candy and I will show you step-by-step how to use the software to schedule a real project like a professional would. You can watch and learn as many times as you want and will quickly realize it's not that difficult. I also share most of my personal, pro-scheduling tips with you. This is detailed, insider information that you will not find anywhere else.

I'm a PMI Authorised Training Instructor having lectured part-time for the past 10 years in departments of Construction Economics and for students at the Business Schools of Tertiary Institutions and PMI Accredited Training Providers. It means I'm a modern lecturer and a modern learner, as are you.

A modern learner has no age limit or age requirement. It is someone living in the 21<sup>st</sup> century looking to increase their skills through a training regime or training course. Living in the 21<sup>st</sup> century means you are, like everyone else, continuously overloaded with information. This adds to your credential of being a modern learner. We have only recently made the transition from the formal classroom into the online space. This transition comes with its own advantages and shortcomings. In my experience with modern learners over the past years, it's important that we prime ourselves, our actions and our expectations to align with this new way of learning, to ensure we get the true benefits of online learning.

## The modern learner's guide to completing courses.

On-demand online courses are a wonderful way of gaining skills, but it can become a frustrating journey for some. To avoid this, here are some guidelines that will help you get the most out of this course:

1. The normal approach of a busy 21<sup>st</sup> century professional is to rush into the course, cram in as much info as possible and get it done and dusted. This is great way of getting a certificate, a piece of paper to put on the wall, but you may miss out on the core skills and deep knowledge imparted by the course.
2. As a result, try to take it easy. Approach the course in a structured way by booking your calendar in 1-2 hours sessions. Make sure there are no disturbances during this time. Approach it like you would a live training session. Switch your phone off, make some tea, get your spouse or friend to look after the kids or your pets and dig into the training. You can schedule a few of these sessions in one day if you like, with breaks in between, or you could schedule it over the course of a week.
3. Many instructional software training courses try to skim all the required knowledge on a topic from the beginning to the end by going into painful details, nuances, fluff and peripherals of the software early on in the course. This course is different. Our course is designed in a way that gives you valuable and core skills within the first 3 modules. After module 3, you will be able to use the software to schedule a project. From those core skills and early victory, students usually become hungry for more knowledge and that's when we expand into the peripheral and advance skills of using the software. So, get excited already!
4. As a result, it helps to take your time with the first modules and then you can speed up as your confidence builds and your knowledge and skills progress.
5. Also note, because of this approach, we skip some of the fluff early on. But don't worry, we will get to it. The course is comprehensive and as we progress, we touch on the all the functionalities. Don't become anxious early on if you still wonder: "what does this button do", or "how do I do that", we will get to each of those items in due course.
6. When you've completed the course, feel free to ask. One of the disadvantages of online courses is the fact that you cannot ask a question in the moment. However, you can always note it, finish the course to ensure it's not dealt with somewhere else and if not, feel free to contact the course leader and ask the question. That is part of what you pay for and I personally respond to your question @ [training@lerouxconsulting.com](mailto:training@lerouxconsulting.com).

I hope you enjoy the course!

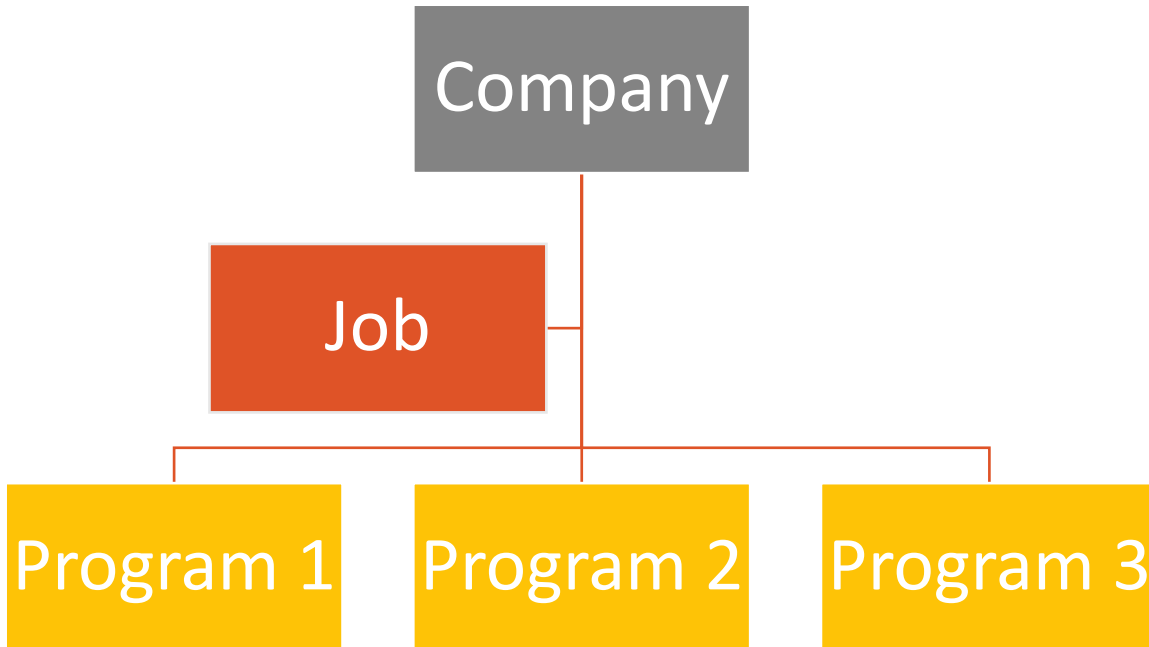
Regards

Kobus le Roux

## MODULE 1 - Explore and understand the CCS Candy interface

### Lesson 1 - Creating a new company / job / program

Candy has got the following levels in terms of managing a program:

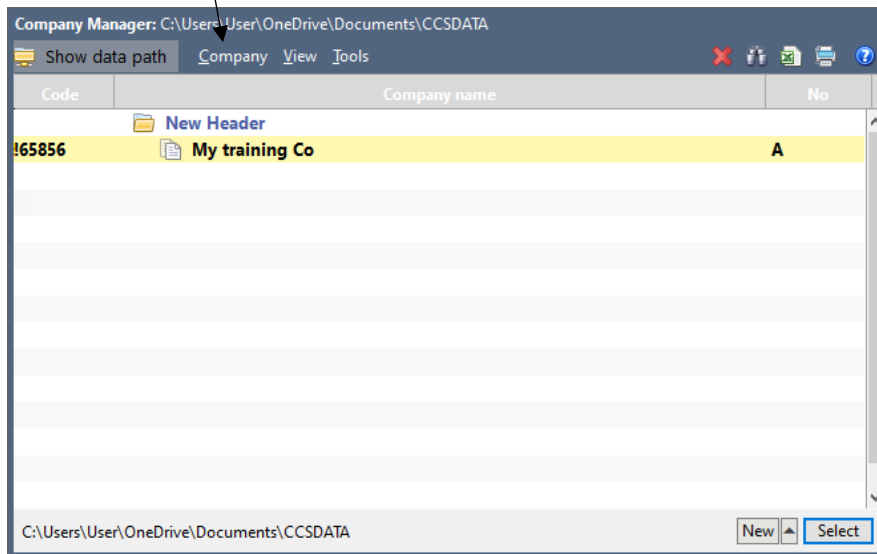


You can set up multiple **Companies**. Under each **Company** you can create multiple **Jobs** or projects. Usually, the **Job** level is where your pricing document or Bill of Quantities reside. For each **Job**, you can create a number of **Programs**.

When you start Candy, you will be presented with the Company Manager Screen:

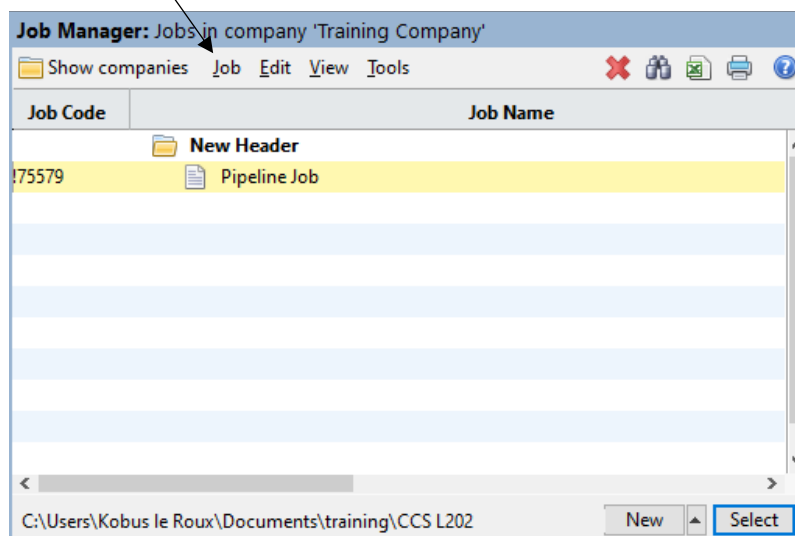
To create a new **Company**:

- Click on the **Company tab** and select **Add a new company**:
- Type in the particulars of the company and click OK.
- Double click on the company name to enter into a company.
- Once you've entered into a company you will be presented with the **Job Manager** Screen.



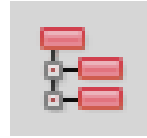
To create a new **Job**:

- Click on the **Job tab** and select **Add a new Job** or
- Right click on the existing job and select **Rename**:
- Type in the particulars of the Job and click OK.
- Double click on the Job name to enter into a Job.



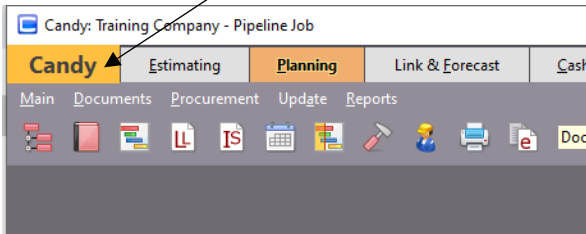
To create a new **Program**:

- When you've entered into a Job
- Go to the Planning Tab:
- Click on the **Program Manager** Icon
- The same process repeats itself. You can create new programs or rename the existing program.
- Double click on a programme to open it.



To navigate back to the Job or Company Manager:

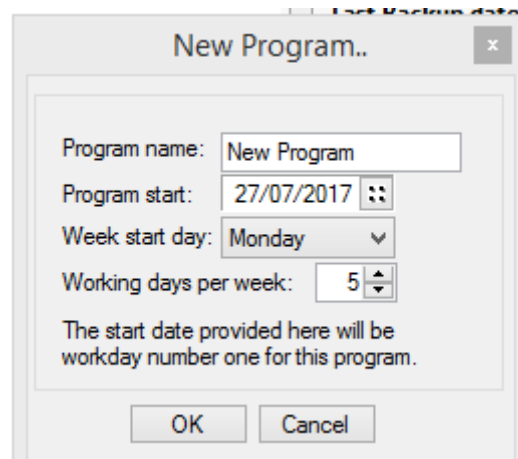
- Click on the Candy Button.
- It will take you back to the Job Manager screen.
- Click on it again and it will take you back to the Company Manager screen.



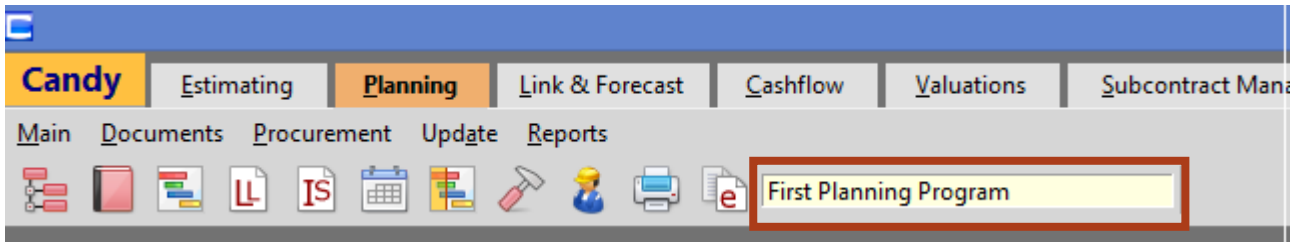
Open a new **Program**:

- Navigate to your program manager.
- Double click on the First Programme to open it.

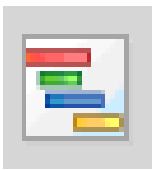
When you open the program manager, Candy provides you with a first planning program. Double-click to open this program, the following customisation-screen is presented. Here you can indicate the program name, the start date, the start day of the week and how many working days your project will have per week. Click on OK.



Once set up, you can double-click on the program to open it. Please note, nothing on your screen will show until you select a view in the **document manager**. To know which program is currently open, you can always refer to the yellow bar next to the menu icons:



For now, open up the default view by clicking on the **Activity List/Barchart button**



This will open up the default, standard Barchart view. Have a look below where we define the various components of the interface.

## Lesson 2 - Getting familiar with the interface

The screenshot shows the main interface of Candy software. Several components are labeled with callouts:

- Ribbon / Tabs:** Points to the top navigation bar containing tabs like 'Candy', 'Estimating', 'Planning', etc.
- Tab Tools / Icons:** Points to the row of icons below the ribbon, including a 'New Program' button.
- Records:** Points to the first column of the data table.
- Columns:** Points to the header row of the data table.
- Table / Barchart divider:** Points to the vertical line separating the table from the barchart area.
- Table / Document View side:** Points to the left side of the interface.
- Barchart Window side:** Points to the right side of the interface.

The data table shows columns for 'Act N°', 'Activity description', 'Dum', 'Start', 'Finish', 'Float', and months from 'Sep' to 'Jul' for the years 2020 and 2021.



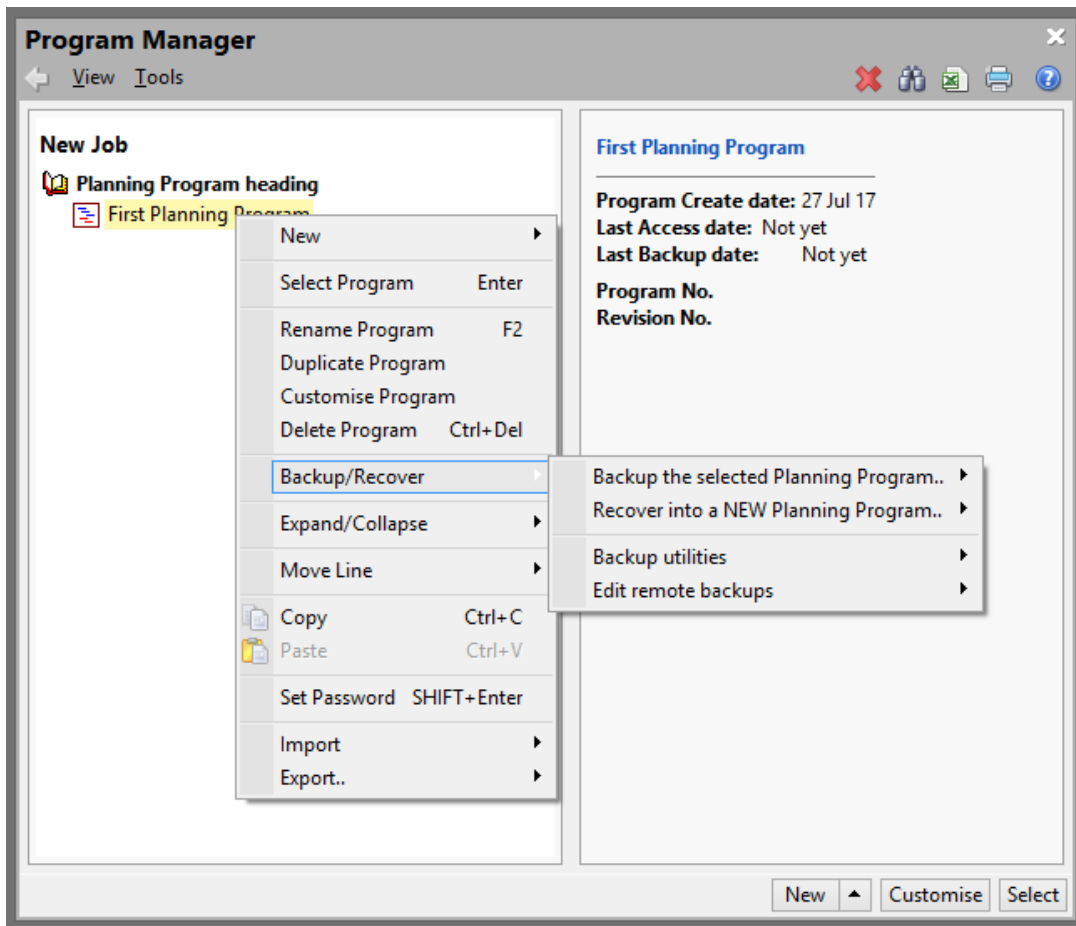
### Lesson 3 - Saving / Backup, duplicating your programmes in Candy

Candy is a real-time database system and hence, as you work it writes and saves your data in real time. As a result, you cannot save your work as it's always accessible. With a lot of advantages, the disadvantage is that you have no undo button as with other Microsoft software.

Therefore, you need to create regular duplicates of a program in the program manager or you need to backup your programs as ccs files which can be imported into the existing or other Jobs.

To access this feature, open your **Program Manager**:

- Right click on the Program you want to Backup.
- This brings up a right-click menu. In this menu, you can rename, duplicate, customise, delete, backup or recover programs.

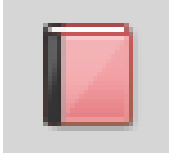


### Lesson 4 - How to navigate and set your views

When working with any planning software, it is helpful to understand that there is a lot of data fields available which, for practical reasons, cannot all be displayed at once. As you plan and work on your

schedule, many of these fields are populated automatically in the background. Having the ability to set up and navigate specific views of your data is usually the first priority in learning any new planning software.

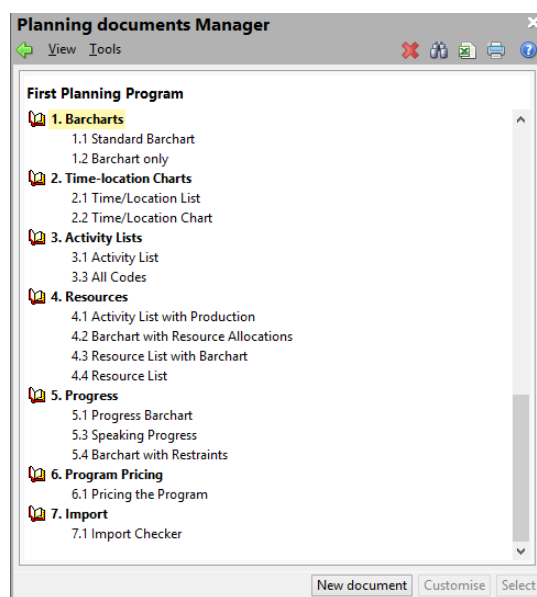
In Candy, these views are managed by the **Document Manager**.



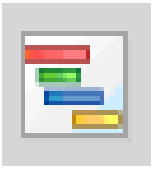
The Document Manager can also be called the View Manager. The following screenshot is an example where we inserted only a few of the possible columns available to you when working on the program. It becomes a significant list and therefore, we need to have access to the Document Manager to limit and hide some of the available columns. In the example below all the data entry columns are shown in white and the non-entry columns are shown in grey.

Act	Act	Activity Description	Durn	Imposed	Current	Late	Impos	Current	Late	Free	Interfer	Successor	Durn	Float	Lead	Lag	LDur	Act#	
T	NP			Date	Start	Finish	Day	Start	Finish	Float	Float	Activity Description							

The Document Manager in Candy helps us to set up and choose the specific set of columns we want to open up and work on. These views can be customised and saved. When you click on the Document Manager, the following default options/views are provided:

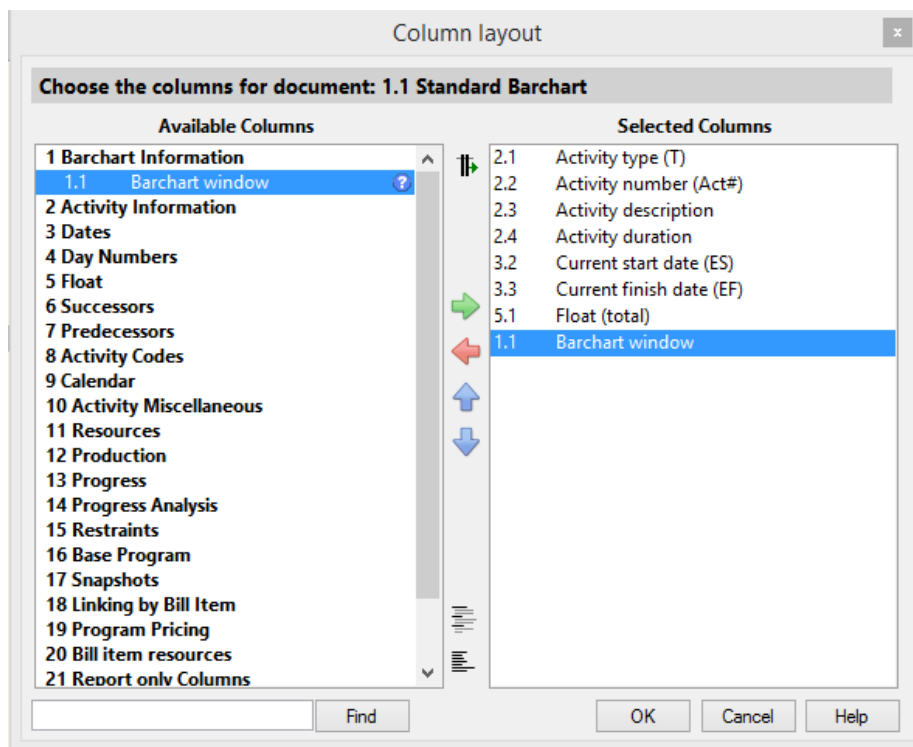


Once we select a view by double-clicking on it, Candy will open up the view and show the columns selected. The default view is 1.1 and can also be selected using the **Activity List/Barchart button**



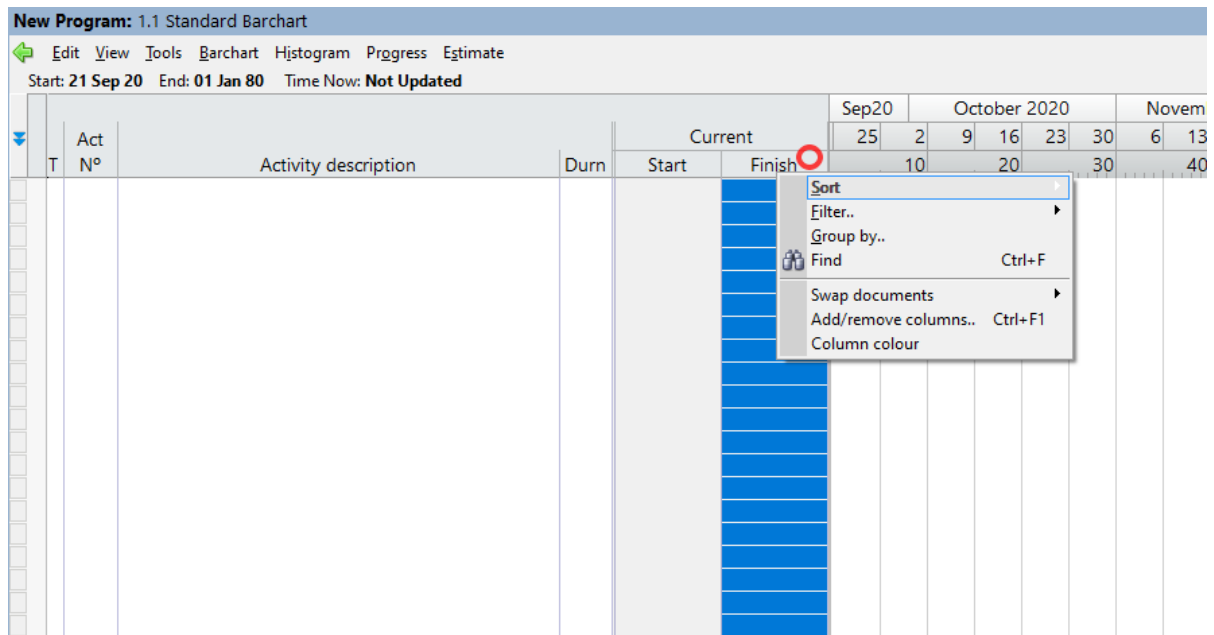
To Customise views,

- select a document in the document manager
- and click on the Customise button on the bottom right.
- The following screen is presented where you can choose which columns to show and which columns to hide.
- Once set up, by clicking on OK, this view is automatically saved and available in all your programs in Candy.



You can also customise a view by using the right click menu on any field.

- After opening up any view, right click on a field.



- Go to the Add/remove columns line and click on it.
- The same Column layout shown above will be opened and you can edit your view.
- Once you click on OK, it will automatically adjust and save your view in the Document Manager.

## MODULE 2 – CPM Scheduling principles

CPM is one of several related techniques for doing **project planning**. It is a method of mathematical analysis and is generally applied to any approach used to analyse a project network logic diagram.

The basic technique is as follows:

1. List all the tasks required to complete a project
2. Allocate the time each activity will take to complete
3. Add dependencies or logic between the tasks, i.e. task 2 can only start after task 1 is completed etc...
4. Add logical end points such as milestones, i.e. the project must be completed by X date or day X.

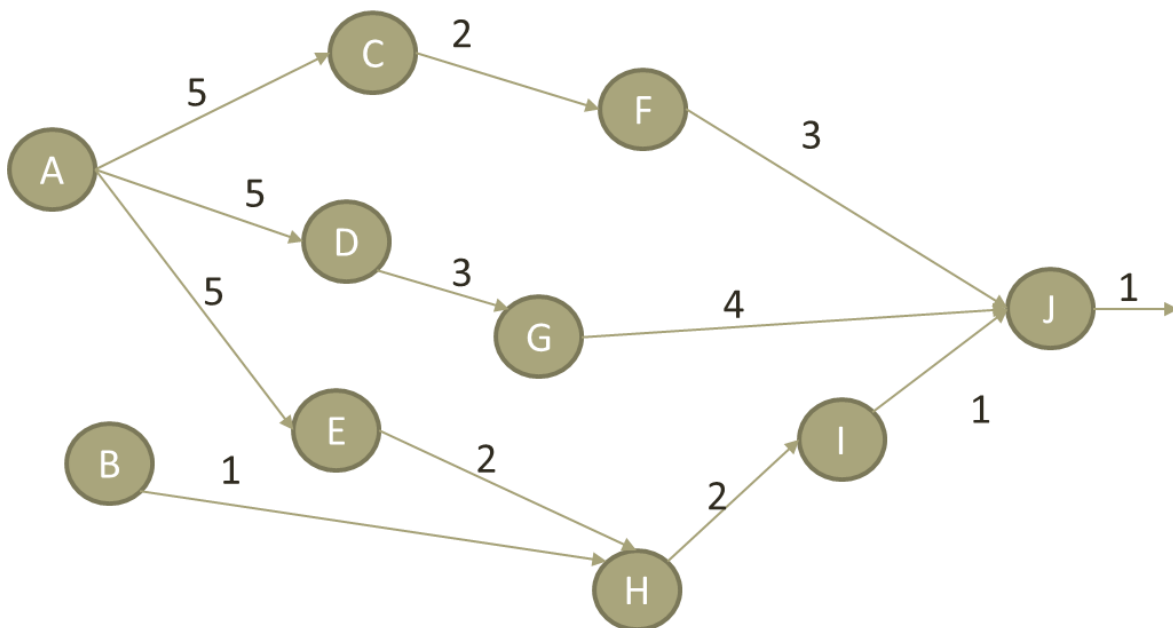
Using all these values CPM calculates the **longest path** of planned activities to the milestones or end date of the project.

Consider the following example project with tasks, interrelationships and durations:

<i>Activity</i>	<i>Required Predecessor</i>	<i>Duration (in months)</i>
A	(None)	5 months
B	(None)	1
C	A	2
D	A	3
E	A	2
F	C	3
G	D	4
H	B, E	2
I	H	1
J	F, G, I	1

Let's provide a PERT diagram using CPM and calculate the critical path.

Follow the course video and see the steps to create the following diagram.



We can now calculate the various paths or chains through the project. The longest path is through tasks ADGJ and it equals 13 months.

**Why is this important to understand?**

1. Candy uses the exact same CPM calculations when you schedule. Using a software program, we don't have to do the calculations and adjustments manually. It's automated by the

software, but many users don't grasp these fundamentals and hence, struggle with scheduling concepts when they use the software.

2. CPM helps us to determine a project's total duration. It is important however to remember that the duration is based on our assumptions on task durations and interdependencies.
3. CPM determines the critical path. This helps us to focus our effort on the most important chain of tasks that is driving the end date of our project. Remember that this also enables us to see how the critical path changes during our project, once we start updating our progress.
4. CPM helps us to determine by when resources or information are required in order to stay on track.
5. CPM determines the variance between planned and actual progress. This helps us to make early decisions and proactively manage our project for better outcomes.
6. CPM helps us to determine the individual and reciprocal impact of circumstances that cause delay to our end date.
7. CPM provides us with accurate forward-looking capability and allows us to do forecasts and test what-if scenarios.

## MODULE 3 - Basic Scheduling technique in Candy

Apart from understanding CPM scheduling fundamentals and other construction related operational skills, you basically need 4 main skills to compile a schedule in any planning software. These are listed below:

- (a) You must be able to add your WBS summaries, tasks and milestones.
- (b) You need to enter links or interdependencies between tasks;
- (c) you must be able to create and assign resources to a task and;
- (d) you must be able to set up and adjust the project's working calendar.

In this course, I focus on these core skills early on, it allows you to obtain solid knowledge about the most important aspects of the software so you can start planning. From there we can expand into wider, practical applications and knowledge areas. In this next section then, I cover a step-by-step introduction so you can master the four cornerstone skills you need to create a functional Gantt chart in Candy.

### SKILL 1 - Adding new tasks - The 3 main task/data types:

Three task / planning activity types

T	Act N°	Activity description	Durn	Current		Sep20	Oct
				Start	Finish	25	2
- 1	A000	SUMMARY	1	21 Sep 20	21 Sep 20		
B	A010	TASK	5	21 Sep 20	25 Sep 20		
B	A020	MILESTONE	0	21 Sep 20			

Summary tasks are your Works Breakdown Structure (WBS) headings or levels. We will explain this WBS concept in more detail in our case study example. To create a **Summary task**:

- Click in any available line in the Activity description column
- Type in your summary name.
- Go the "T" of Type column and type in a level number from 0 - 9

To create a **Task**:

- Click in any available line in the Activity description column
- Type in your task name.
- Go the Durn / Duration field and type in a duration that is more than 0 working days.

To create a **Milestone**:

- Click in any available line in the Activity description column
- Type in your milestone name.
- Go the Durn / Duration field and type a 0-duration next to your milestone name.

Creating **Space** between your lines

- Remember the CTRL+INSERT shortcut is a quick way to create space between your tasks, milestones and summaries.

**DO THIS:**

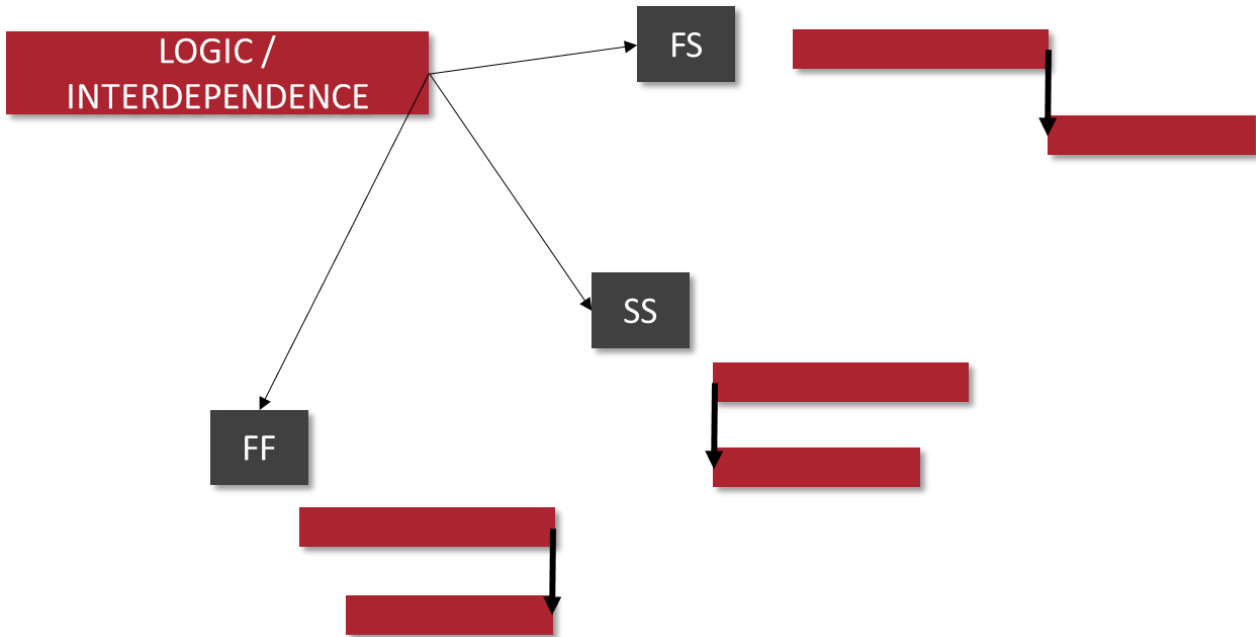


1. **By clicking on various lines add a few summary tasks, milestones and normal tasks to get a feel for adding tasks in Candy and creating hierarchies.**

## SKILL 2 – Linking tasks, creating interdependence:

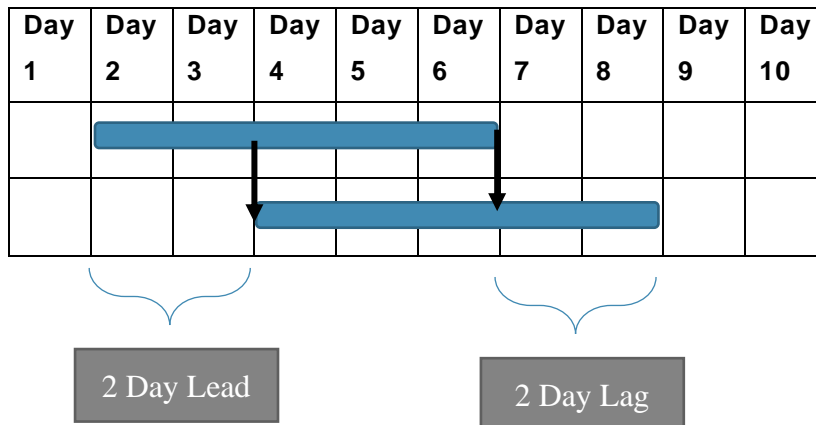
Without a logical interdependence between tasks any Gantt Chart becomes a To-do list rather than a dynamic schedule.

Typical logic in MSP for instance only allows 1 link and the 3 main types are as follows:



Candy is a bit different from other scheduling packages in that it employs a double link system. You can use both a Finish-to-Finish (FF) and Start-to-Start (SS) link.

### LEADS AND LAGS





Follow the video for a detailed explanation of the types.

**HOW TO:**

Link tasks and create interrelationships

1. Create the following **tasks** “Excavate trench” and “Cast Concrete”
2. Open up the **Successor Activity # and Predecessor Activity # fields.**

T	Act N°	Activity description	Durn	Current		Succ Act#	Pred Act#	Sep20		October 2020		
				Start	Finish			25	2	9	16	23
B	A040	Excavate trench	10	25 Sep 20	08 Oct 20			10				
B	A050	Cast Concrete	10	25 Sep 20	08 Oct 20					20		30

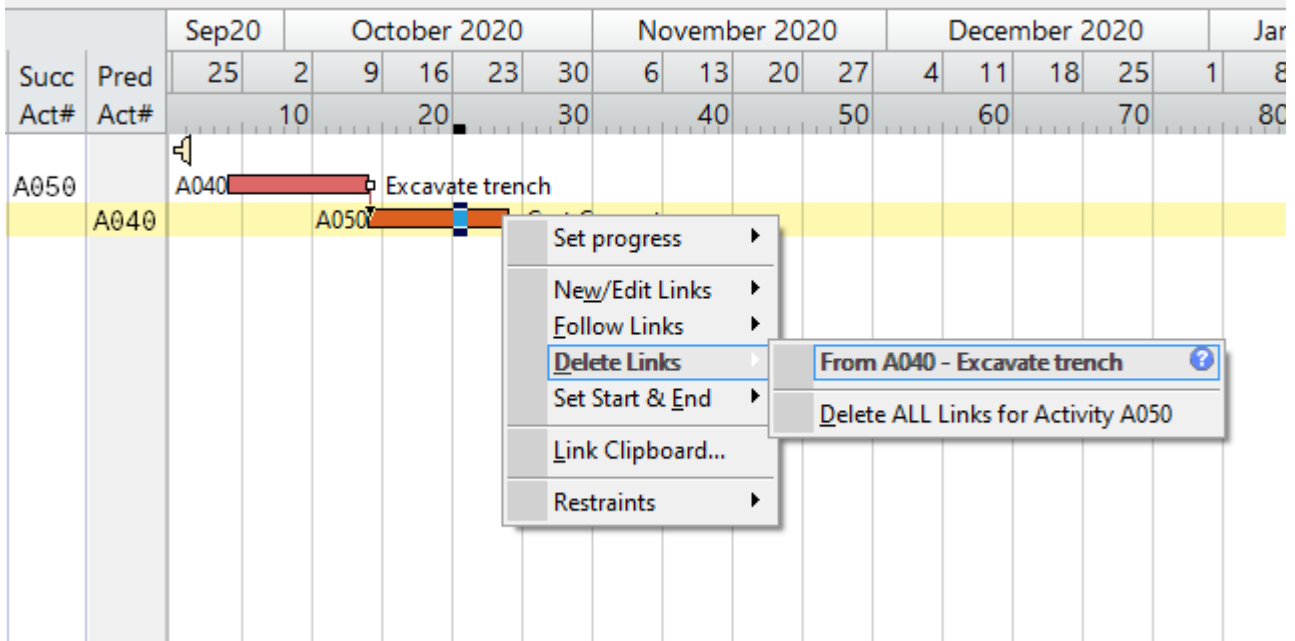
3. Select both tasks by clicking on the **record selector line of the first**, holding down **SHIFT** and clicking on the **record selector of the second task.**
4. With both tasks highlighted, right click on the record selector
5. Go to **Link**
6. Go to **Link end to start** and click on it

T	Act N°	Activity description	Durn	Current		Succ Act#	Pred Act#	Sep20		October 2020		
				Start	Finish			25	2	9	16	23
B	A040	Excavate trench	10	25 Sep 20	08 Oct 20			10				
B	A050	Cast Concrete	10	25 Sep 20	08 Oct 20					20		30

You will see that both Succ Act # and Pred Act # are automatically populated and the two tasks are linked Finish-to-Start (FS).

To delete a link:

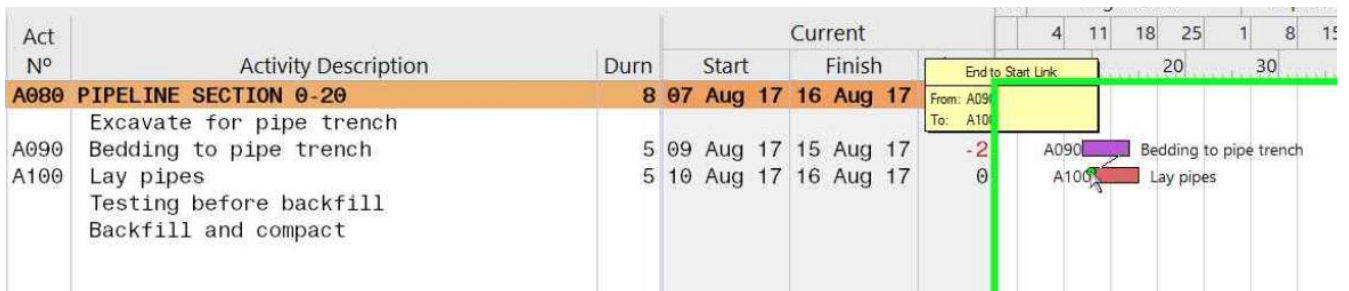
1. Right click on the concrete task's graphic in the Barchart window side.
2. Go to Delete Links
3. Select the task you want to de-link.



Have a look at the video where we explain a few additional methods of linking tasks as summarised below:

### Option 1

- Link using your mouse on the Barchart Screen.



### Option 2

- Link using the successor/predecessor columns

Act N°	Activity Description	Durn	Float	Successor						
				Act#	Act Description	Lead	Lag	LDur	Float	
A080	PIPELINE SECTION 0-20	10	0							
A090	Excavate for pipe trench Bedding to pipe trench	5	0	A100	Lay pipes	2	2			0
A100	Lay pipes Testing before backfill Backfill and compact	5	0							

**Option 3**

- Link Using the Activity Properties dialog.

To open up the dialog, double click on the activity's bar in the barchart window.

**Activity properties..**

Type: B - Activity: A100 Description: Lay pipes Duration: 5 Early Start: 11 Aug 17 Early Finish: 17 Aug 17 Float: 0

**Predecessors & Successors**

Predecessors						Successors					
Act#	Description	Lead	Lag	L-dur	Float	Act#	Description	Lead	Lag	L-dur	Float
A090	Bedding to pipe trench	2	2		0						

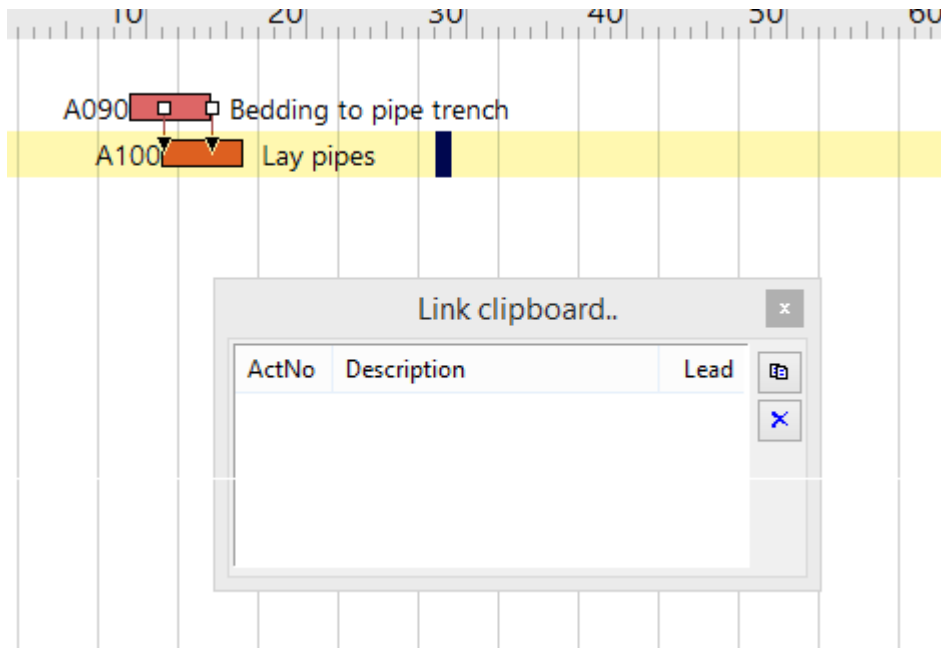
**Option 4**

- Link Using the Right Click Menu options.

Act N°	Activity Description	Durn	Start	Finish	Float
A090	Excavate for pipe trench Bedding to pipe trench	5	09 Aug 17	15 Aug 17	0
A100	Lay pipes Testing before backfill Backfill and compact	5	11 Aug 17	17 Aug 17	0

## Option 5

- Link Using the Right Click Menu options – Link Clipboard



### Creating different types of links.

Although FS links are the most preferable in a construction schedule, they aren't always the most logical. For instance, in our example, once we have excavated 2 days' worth of work on our trench, we could already start casting concrete in those sections. We don't necessarily have to wait for the complete trench to be excavated before we start with the concrete.

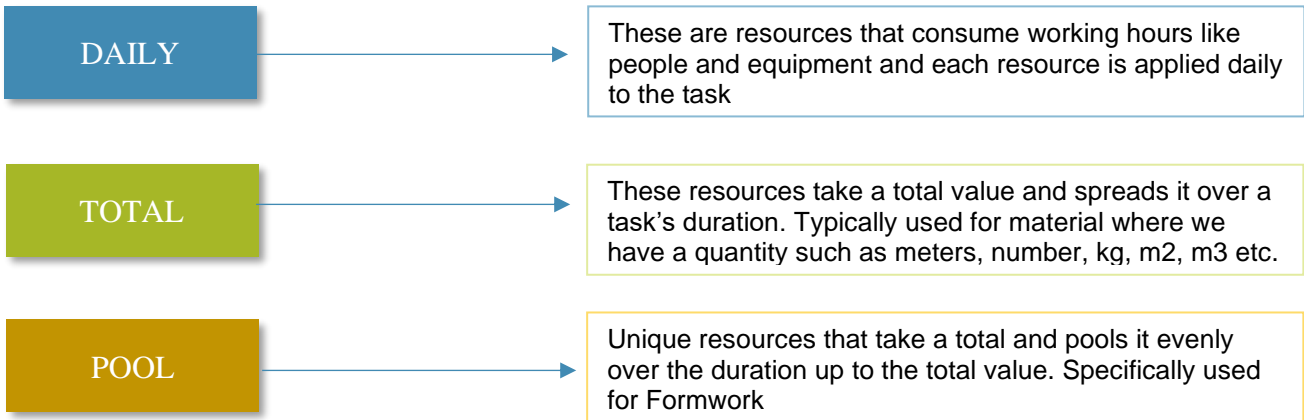
In such a case, we may want to use a Start-to-Start link, meaning Casting of concrete can start, after excavation to the trench has started. Or we can also use a Finish-to-Finish (FF).

To create SS and FF links in Candy

1. **Double click** on Activity 2 in the Barchart window to bring up the **Activity properties** panel.
2. Click on the **Predecessor and Successors tab**.
3. There you will find the Cast Concrete's predecessor which is Excavate trench.
4. If you add a 0 to the Lead field, you create a SS task.
5. If you add a 0 to the Lag field, you create a FF task.
6. If you add X number to these fields it simply depicts an SS or FF task + X days.

### SKILL 3 – Adding Resources:

There are 3 types of resources you can use in Candy:



The following shows a typical example of how the different resource types are allocated and spread over a task's duration:

ACTIVITY DESCRIPTION	ACTIVITY DURATION	RESOURCE TYPE	RESOURCE NAME	RESOURCE QTY	RESOURCE SPREAD OVER ACTIVITY														
Pour Concrete in foundations	5 DAYS	<b>DAILY</b>	CONCRETE LABOURER	1 Labourer	1	1	1	1	1										
Pour Concrete in foundatoinis	5 DAYS	<b>TOTAL</b>	25MPA CONCRETE	25 m3	5m3	5m3	5m3	5m3	5m3										
Install formwork to concrete slab	5 DAYS	<b>POOL</b>	FORMWORK TO DECK	100m2	20m2	40m2	60m2	80m2	100m2	100m2	100m2	100m2	100m2	100m2					
Strip formwork	1 DAY	<b>POOL</b>	FORMWORK TO DECK	100m2															0m2

#### HOW TO:

#### Create and Assign Resources

#### DO THIS:



1. Create the following mini schedule of a Fibre cable installation.

T	Act N°	Activity description	Durn	Current		Succ Act#	Pred Act#	September 2020	
				Start	Finish			25	2
-1	A060	Install Fibre	2	21 Sep 20	22 Sep 20				10
B	A070	Excavate for trench	1	21 Sep 20	21 Sep 20	A080			
	A080	Install fibre duct and cable	1	22 Sep 20	22 Sep 20	A090	A070		
B	A090	Complete	0	23 Sep 20			A080	A090	

Resources can be **created** by clicking on the Resource Icon.



This icon opens up the Resources Creation sheet

Planning Resources: First Planning Program

Code	Type	Description	Unit	Cost/unit	Limit	Colour

Code	Type	Description	Number

Rate Calc Sheet

- We have 2 labourers Koos and Reggie who can work on this project. They are able to excavate 5 meters/hour each. Their standard rate is R35/h
- The Fibre duct and cable material cost R150/meter and we need to install 100 meters. Only Koos can install this cable and he can install 25m/hour.
- Enter the following resources and values in the **Resource Creation Sheet**:

**Planning Resource Definitions** Resources for : New Program

**Resource List**

Code	Type	Description	Unit	Cost/unit	Limit	Colour
KOOS	Daily	Koos Labour	Day	280		
REG	Daily	Reggie Labour	Day	280		
FIBRE	Total	Fibre Duct and Cable	meter	150		

**Resource gang sheet**

Code	Type	Description	Number

Rate Calc Sheet

### Assign Resources

1. Once you have created resources, close the Resource definitions window.
2. Go to the Documents Manager
3. Select Document number 4.2 Barchart with Resource Allocations
4. Double click in the Resource Code field.
5. This will bring up a resource dialog with all the created resources.
6. You can now choose one resource from this list and select the green check mark to allocate it to the task.

Start: 21 Sep 20 End: 22 Sep 20 Time Now: Not Updated

Act N°	Activity description	Durn	Resource		Start %Ofs	End %Ofs	September 2020		
			Code	No/Qty			25	2	10
-A060	Install Fibre	2							
A070	Excavate for trench	1							
A080	Install fibre duct and cable	1							
A090	Complete	0							

Choose Resource code..

Code	Description	Unit	Cost
FIBRE	Fibre Duct and Cable	meter	150
KOOS	Koos Labour	Day	280
REG	Reggie Labour	Day	280

New Edit

7. Select Koos and Reggie for the first task and click on the green check to allocate.
8. Remember to stipulate the No/Qty as Candy doesn't allocate any value as a default. In this instance, we will use 1 of each resource.
9. Allocate Koos and the Fibre material to the "Install fibre duct and cable" task. Adjust the quantities.
10. The result will look like this:

Act N°	Activity description	Durn	Resource		Start %Ofs	End %Ofs	September 2020		
			Code	No/Qty			25	2	10
-A060	Install Fibre	2							
A070	Excavate for trench	1	KOOS	1	0	100			
			REG	1	0	100			
A080	Install fibre duct and cable	1	KOOS	1	0	100			
			FIBRE	100	0	100			
A090	Complete	0							

### SKILL 4 – Setting up the project calendar.

To access the Calendar Setup, click on the Calendar icon:



This will open as follows:



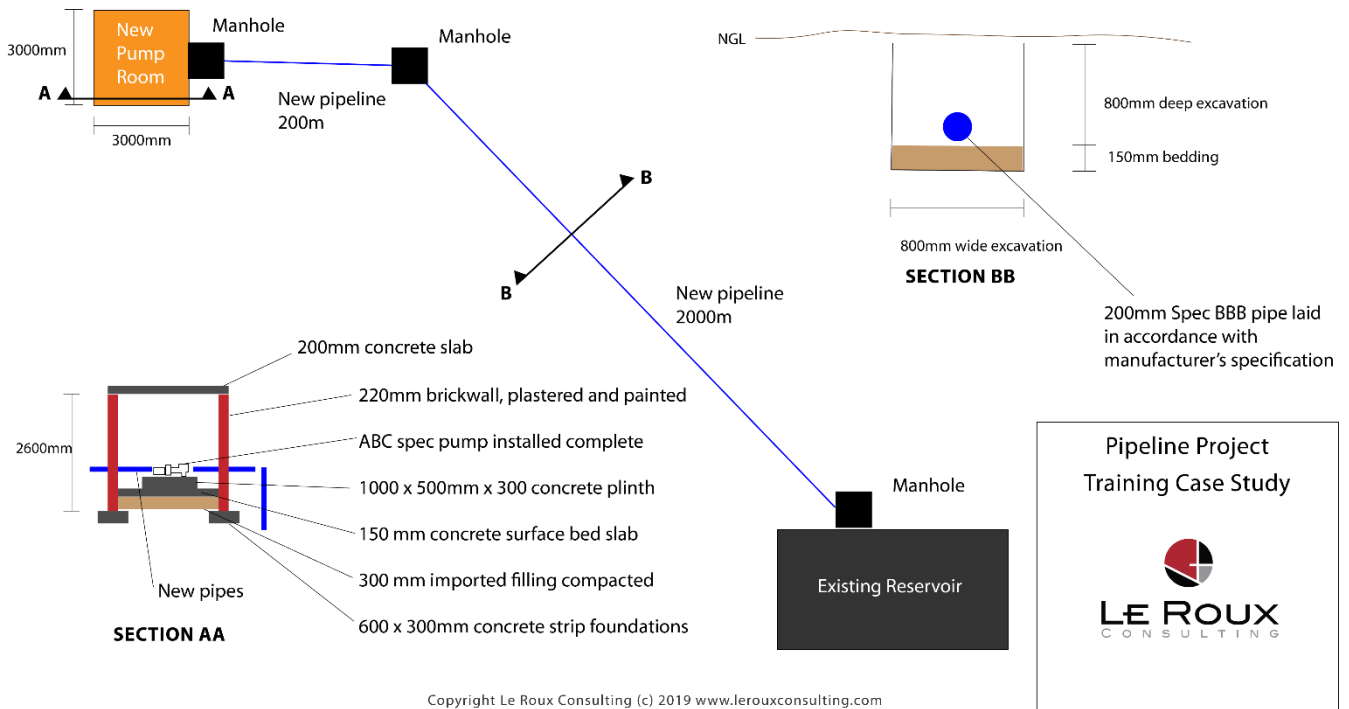


Click on Tools. This will open the menu from where you can select the year planner, add calendars, set the workday pattern or extend the calendar.

## MODULE 4 – Scheduling the Case Study Project Step-by-Step in Candy

Now that you have a basic understanding of the four main skills you need to compile a Gantt Chart in Candy, let's put it to the test and add more skills by doing this practical case study project.

### Case Study Information



- The project is set to start on **01 January 2019**
- The completion date is **29 March 2019**
- Your teams will work 5 days/week and 15 March 2019 is a public holiday.
- There is subcontractor who will do the manhole installations, but they can only work on weekends.

### STEP 1 - Starting a new schedule / program and setting the start date



#### DO THIS:

- Create a new Job called **Training Pipeline Project**.
- Create a new Program called **Pipeline Draft**
- Set the start date to **01 Jan 2019**.

#### HOW:

- In the Programme Manager, click on the **New** button.
- In the Project Information dialog box, in the Start Date box, enter the start date as 01/01/2019.
- Click OK to accept the start date.
- Double click on the new program to open it up.

## STEP 2 - Adjust the Project Calendar



### DO THIS:

- Add the 15 March 2019 holiday exception.
- Add a new Manhole calendar for the manhole team who can only work Saturdays and Sundays.

### HOW:

#### To select the project calendar

1. Click on the **Calendar Setup** button.
2. In the Calendar setup, click on the Tools tab and select **Year Planner**.

#### To set a specific date as nonworking

1. Once in the Year Planner, you can select the specific date and set it as a workday, weekend, non-workday or holiday.
2. In our case, the 15<sup>th</sup> of March is a holiday and hence, you can select this date and click on the **Set holiday** button on the bottom right of the screen.

Calendar Name	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Jan 2019																														
Feb 2019																														
Mar 2019																														
Apr 2019																														
May 2019																														
Jun 2019																														
Jul 2019																														
Aug 2019																														
Sep 2019																														
Oct 2019																														
Nov 2019																														
Dec 2019																														
Jan 2020																														
Feb 2020																														
Mar 2020																														
Apr 2020																														
May 2020																														
Jun 2020																														
Jul 2020																														
Aug 2020																														
Sep 2020																														
Oct 2020																														
Nov 2020																														
Dec 2020																														
Jan 2021																														
Feb 2021																														
Mar 2021																														

## To create a unique calendar

We know the manhole team can only work on weekends. Thus, we need to create a unique calendar for them. This is done in the Calendar Setup.

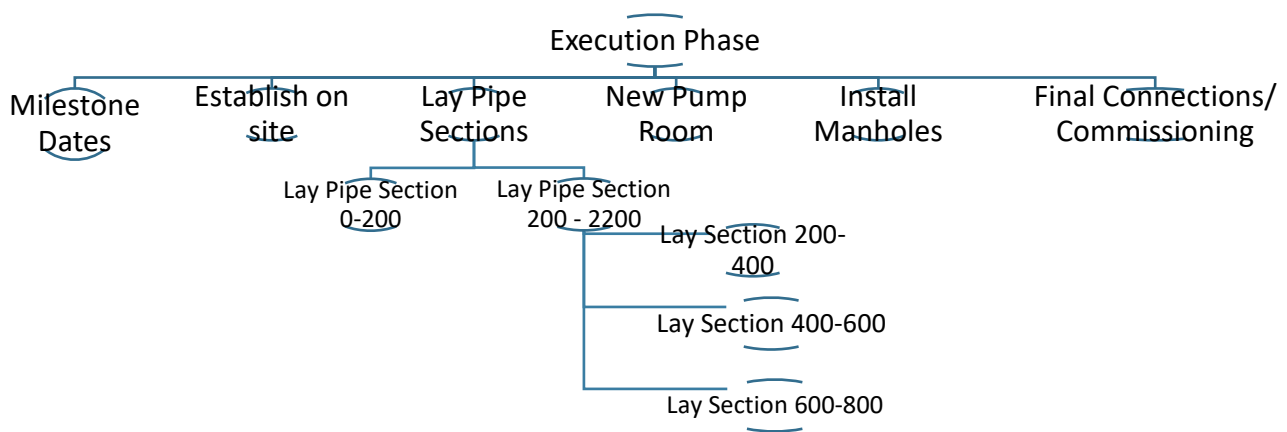
- Once in the Calendar Setup, click on Tools.
- Select **Add Calendar**.
- Type in a Calendar code. In this case you can use MH for the Manhole Team.
- Type in the Calendar name. In this case, you can call it Manhole Team.
- Click on OK.
- Move your cursor to the newly created MH Calendar and click on any line within the MH column.
- You will now be editing this new Calendar.
- With your cursor in the MH column, click on Tools and select Workday pattern.
- Untick all the weekdays and tick the Saturday and Sunday box.
- Click on the green Checkmark to save the selection and click Yes thereafter.

You will now see the MH calendar changed to show weekdays as non-working and weekends as working days.

**Tip.** Set up a blank project file with your countries holidays and keep this as a Calendar template. For each new project, recover the file into a new program and start your scheduling on this already populated Calendar.

## STEP 3 – Setting up your WBS

A well-thought-out works breakdown structure (WBS) is what separates good planners and project managers from great ones. A WBS essentially distributes a project's total work into smaller batches or work packages. Your schedule's level of detail is mainly determined by the WBS. Take your time to develop a WBS before you start scheduling. There is no rule-of-thumb on how to develop a WBS as it will differ from project to project based on the numerous unique variables and factors of each project. It takes a bit of time and experience to develop an understanding of the different ways in which you can structure various projects. Let me share with you my thought-process in developing a WBS on our case study project.



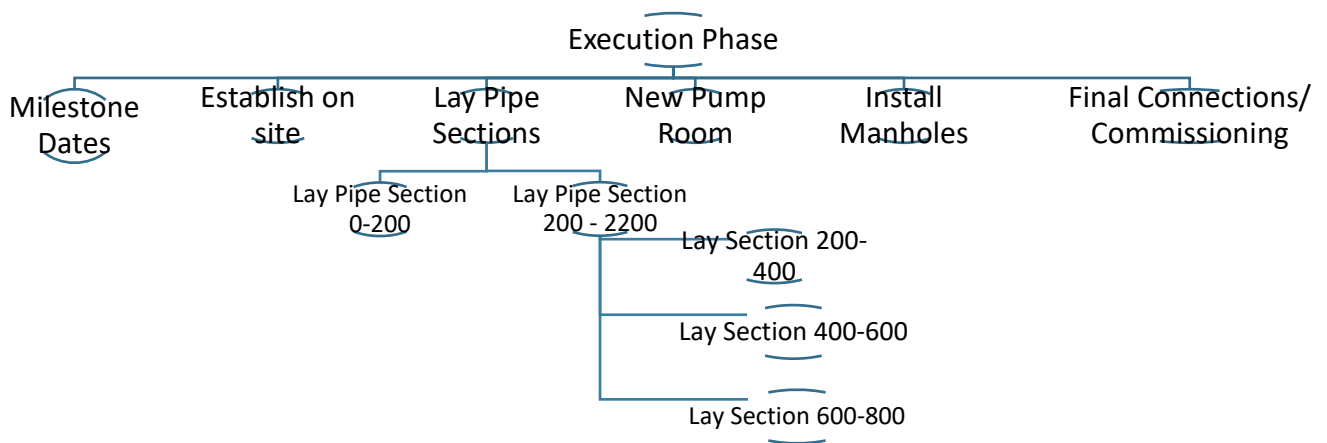
My project's first level is the execution phase. I chose to divide my project into 6 main work packages on level 2. Each one is a portion of work that is separable in trade and can be managed by a separate team on site in a specific area. I could have included the manholes as part of the laying of pipes work package, but chose to create a separate heading/package as it will be done by a subcontractor and hence, by having a work package separately we can plan and track it in isolation of the pipe laying work. If you prefer to rather include it in your pipe laying work package, that would've been quite acceptable. I then decided to divide my Lay Pipe work package into 2 separate work packages. Section 0 – 200 and 200 – 2200. The reason for this is that these sections can be tested as a whole between two manholes. Lastly, I decided to divide the large section (200-2200) into 200m sections. The reason for this is to have more control in my schedule. More detail means more control, less detail is less work, but then we have less control. Can you see how my WBS development is guided by my personal management preference, my technical know-how, practical considerations, and my desired level of detail?

Tip: If you are a young scheduler, spend a lot of time with an experienced practitioner and see if you can understand their thinking in terms of how they plan to execute the work. Once you start tracking, you will quickly learn where you could have made better WBS choices. Make notes and learn so that your next WBS is better prepared.



**DO THIS:**

Use the following WBS and set it up in Candy using summary tasks.



Once completed it should look like this:

Pipeline Project: 1.1 Standard Barchart

Edit View Tools Barchart Histogram Progress Estimate

Start: 01 Jan 19 End: CALCULATE Time Now: Not Updated

T	Act N°	Activity description	Durn	Current		January 2019				February 2019				
				Start	Finish	4	11	18	25	1	8	15	22	
1	A010	EXECUTION PHASE	0	01 Jan 19										
2	A020	MILESTONE DATES	0	01 Jan 19										
2	A030	ESTABLISH ON SITE	0	01 Jan 19										
2	A040	LAY PIPE SECTIONS	0	01 Jan 19										
3	A080	LAY PIPE SECTION 0 - 200	0	01 Jan 19										
3	A090	LAY PIPE SECTION 200 - 2200	0	01 Jan 19										
4	A100	LAY PIPE SECTION 200 - 400	0	01 Jan 19										
4	A110	LAY PIPE SECTION 400 - 600	0	01 Jan 19										
2	A050	NEW PUMP ROOM	0	01 Jan 19										
2	A060	INSTALL MANHOLES	0	01 Jan 19										
2	A070	FINAL CONNECTIONS / COMMISSIONING	0	01 Jan 19										

### STEP 4 - Add the project's key milestones.

It helps to create a milestone list early on. This list should contain all contractually significant dates and at the minimum must contain a contractual start date and a contractual end date. It helps to delineate your schedule's allowed duration from the onset.



#### DO THIS:

Add the following milestones under the Milestones summary:

Pipeline Project: 1.1 Standard Barchart

Edit View Tools Barchart Histogram Progress Estimate

Start: 01 Jan 19 End: 28 Mar 19 Time Now: Not Updated

T	Act N°	Activity description	Durn	Current		January 2019				February 2019				March 2019			April	
				Start	Finish	4	11	18	25	1	8	15	22	1	8	14	22	29
1	A010	EXECUTION PHASE	62	01 Jan 19	28 Mar 19													
2	A020	MILESTONE DATES	62	01 Jan 19	28 Mar 19													
B	A120	Start date	0	01 Jan 19														
B	A130	Completion date	0	29 Mar 19														

## STEP 5 - Add tasks under each WBS work package



### DO THIS:

Add the following tasks to each WBS summary:

To add activities to your schedule:

- open up the Activity/Barhart view from you Document Manager.
- insert lines below the heading level of your choice by using the **CTRL + INS** shortcut.
- Click in the Description Column and start typing the activity names as follows:

1. Excavate for pipe trench
2. Bedding to pipe trench
3. Lay pipes
4. Testing before backfill
5. Backfill and compact

## STEP 6 - Add task durations.



### DO THIS:

Add the following durations to tasks:

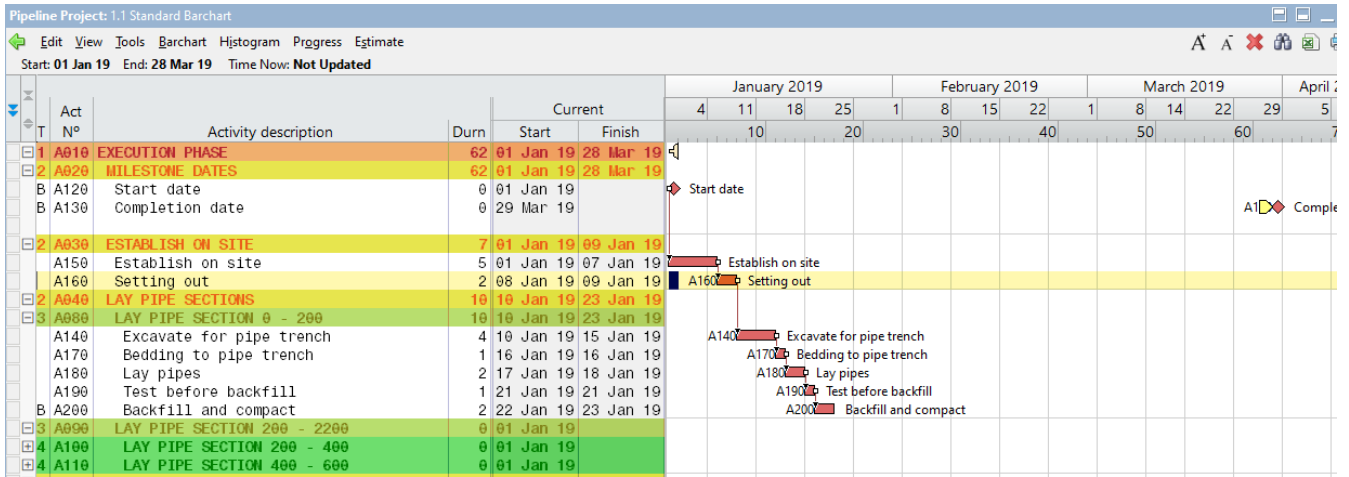
- ESTABLISH = 5 days
- SETTING OUT = 2 days
- EXCAVATE = **128m<sup>3</sup>** at a rate of about **32m<sup>3</sup>/day= 4 days**
- BEDDING = **24m<sup>3</sup>** at a rate of about **24m<sup>3</sup>/day= 1 day**
- LAY PIPES = **200m** of pipe at a rate of **100m/day = 2 days**
- TEST BEFORE BACKFILL = 200m/day = **1 day**
- BACKFILL AND COMPACT = **104m<sup>3</sup>** at a rate of about **52m<sup>3</sup>/day= 2 days**

## STEP 7 - Add logic / interdependencies



### DO THIS:

Use any of the methods you prefer and link the activities in a logical sequence Finish to Start.



## STEP 8 - Add Resources



### DO THIS:

The following resources will be used to lay the pipe sections on site. Create these resources in your Resource Definitions sheet Candy as follows and then assign them as shown:

Planning Resource Definitions						
Resources for : Pipeline Project						
Resource List						
Code	Type	Description	Unit	Cost/unit	Limit	Colour
BED	Total	BEDDING MATERIAL	m3	225.00		
COMPACTO	Daily	COMPACTOR	DAY	480.00		
GENERAL	Daily	GENERAL LABOUR	DAY	200.00		
OPERATOR	Daily	OPERATOR	DAY	360.00		
PIPE	Total	PIPE MATERIAL	m	850.00		
TIP	Daily	TIPPER TRUCK	DAY	2,000.00		
TLB	Daily	TLB	DAY	2,720.00		

Resource gang sheet for BED			
Code	Type	Description	Number
BED			
COMPACTO			
GENERAL			
OPERATOR			
PIPE			
TIP			
TLB			



→	▾ LAY PIPE	1 x TLB; 1 x Tipper; 2 x Operators; 2 x General Labour
→	▾ LAY PIPE SECTION 0-200	1 x TLB; 1 x Operators; 24m3 of Bedding material; 2 x General Labour
→	Excavate for pipe trench	
→	Bedding to pipe trench	
→	Lay pipes	1 x TLB; 1 x Operators; 4 x General Labours; 200m Pipe
→	Testing before backfill	1 x General Labour
→	Backfill and compact	1 x TLB; 1 x Operators; 1 x General Labour; 1 x Compactor

## Assignment 1

If you want to earn the certificate of completion, ensure that you complete the steps up to Step 8. Thereafter, make a backup of your program file and send it to me at [training@lerouxconsulting.com](mailto:training@lerouxconsulting.com).

## Review the final schedule

Follow the video lesson to see how the final schedule is compiled. We will be using this schedule going forward.

## MODULE 5 – Advanced Techniques and Skills to manage your Schedule

### Module 5 Lesson 1 – Most important task/summary interactions and shortcuts.

This lesson will focus on the most important shortcuts and introduce you to a range of task interactions you may want to perform such as shifting tasks or WBS summaries around, copying and pasting task, renumbering activities, and the like.

We have Recovered the attached file “**01 Pipeline Project Example Before Baseline.CCS**” into a new program in Module 4. If you haven’t done so, do it now as we will be working on this program going forward.

Follow the video Module 5 Lesson 1 showing you the detailed steps of interacting with your tasks.

#### Summary of the most important shortcut keys:

Copy an activity or summary line:



Paste an activity or summary line:



Inserting a blank line.. (remember it inserts a line above where your cursor are):



Deleting a task or closed summary:



Closing a summary:



Opening a summary:

Ctrl + ArrowDown

Shifting a task or summary downwards:

Ctrl + ArrowRight

Shifting a task or summary upwards:

Ctrl + ArrowLeft

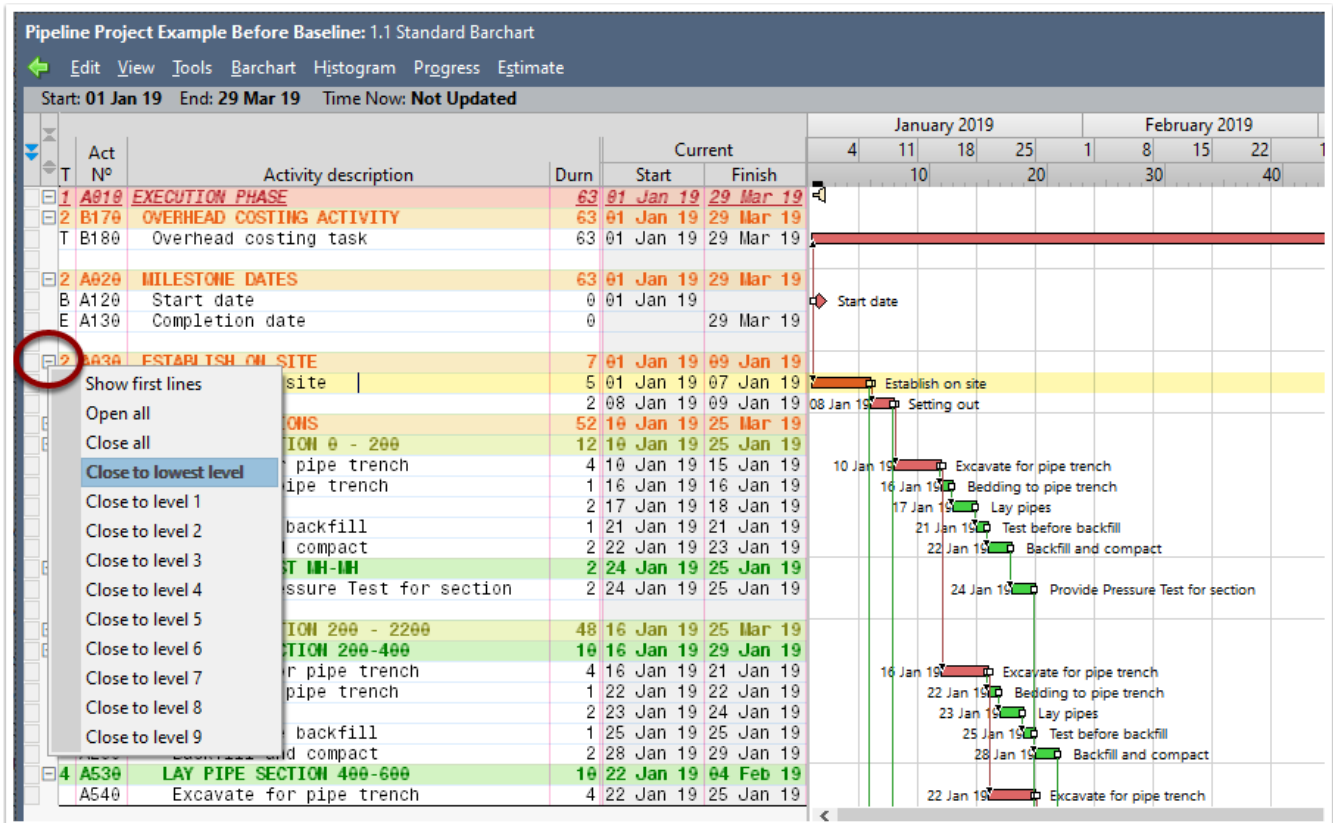
Duplicating the information/data in a cell right above your cursor:

Ctrl + J

## Module 5 Lesson 2 – Constraints, task types and project outline level navigation.

To view the different outline levels:

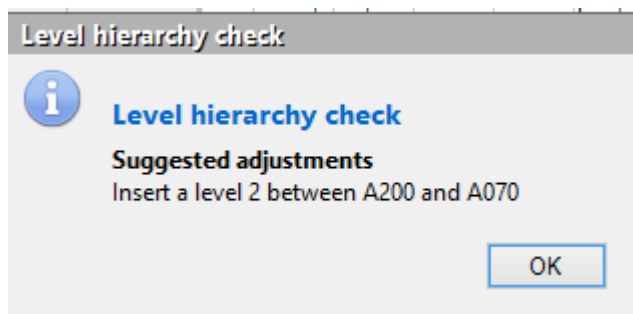
1. Right click on any WBS summary's minus or plus sign on the left-hand side of the programme.
2. Or go to View and View level to show the same.



3. Select the various options of either opening all levels or closing levels up to a specific level.

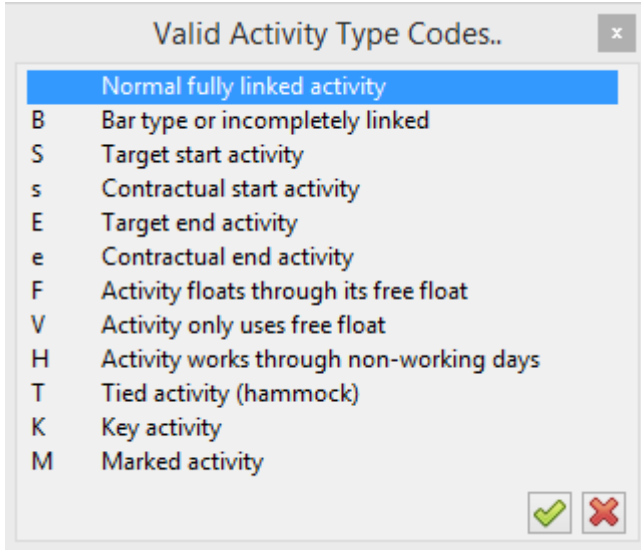
To check the level hierarchy:

4. Click on View.
5. Select the Check level hierarchy button.



## The activity types:

1. Click in any record in the “T” column to bring up the following options for task types in Candy:



## Module 5 Lesson 3 - Using Filters

- Let's say we have a concrete supplier who needs to co-ordinate each concrete pour on this project. We need to show them our initial plan for concrete pours and then keep them updated on a weekly basis on how progress develops and how these dates are influenced by our progress or;
- We may want to review which tasks fall within a certain date range or;
- We may want to review only the critical tasks, or only tasks using a certain resource.

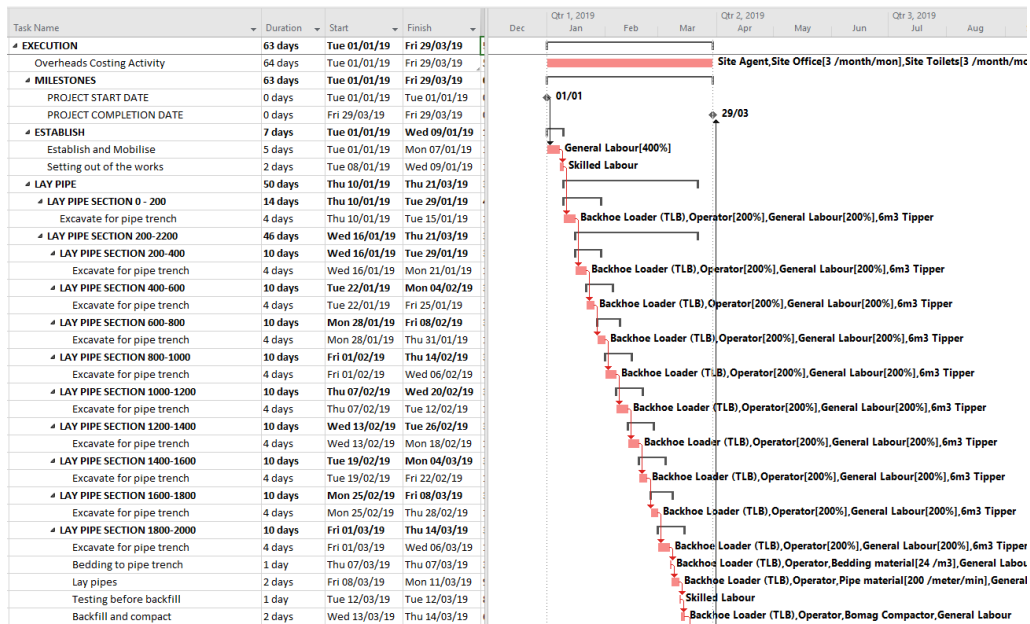
The truth is that it is very difficult to manage or control any schedule without having the ability to filter and make sense of the massive amount of data that sometimes comprise the programme. Be reminded that our example is quite small, we often work with schedules containing no less than 16,000 tasks. We cannot make sense of it without the filter function.

### Using the filter function

1. Go to your Gantt Chart View and make sure you show all subtasks.
2. On the View Tab, click on the Filter dropdown.
3. There are a number of built-in filters.
4. Let's do a filter for all critical tasks.

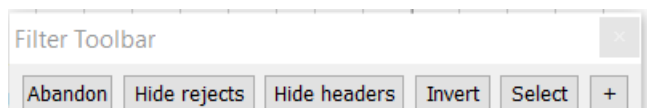
5. Click on the filter drop-down and select the Critical filter in the dropdown.

The result is that all critical tasks are filtered as below:



To clear a filter, do the following


1. In the Filter Toolbar
2. Click on the **Abandon** button.

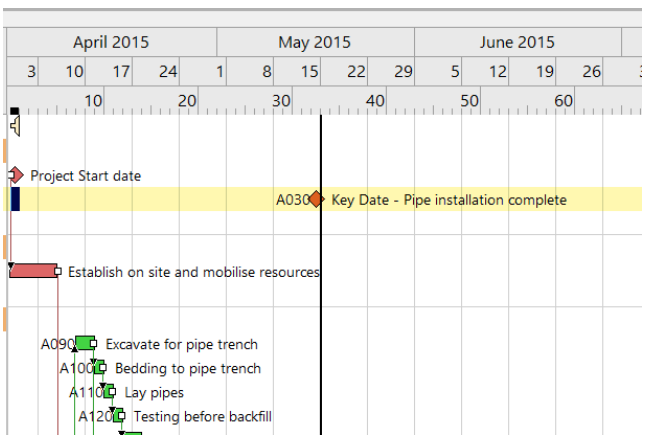
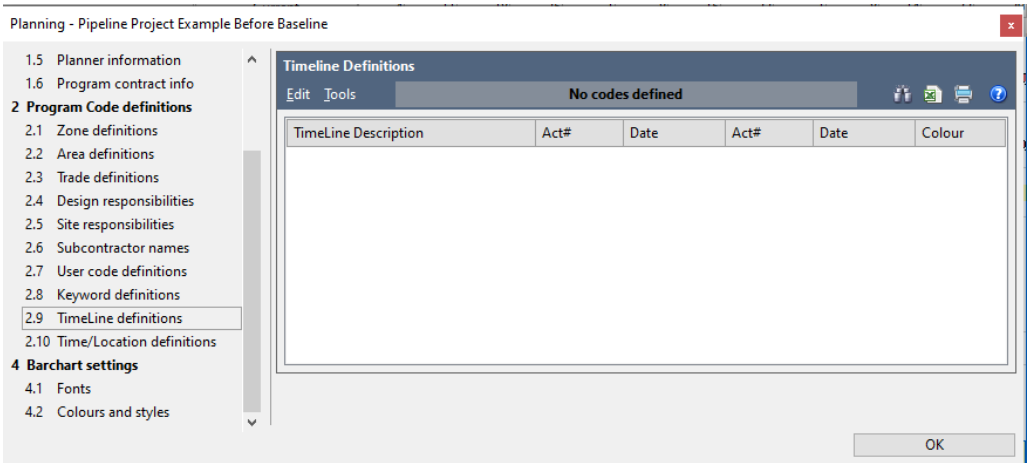


## Module 5 Lesson 4 – Adding Timelines and changing Barchart display options.

A great function of Candy is the ability to add visual lines on the Barchart window and in your reports. These lines can depict major stages, milestones or phases in the project. Remember they are purely visual aids and they don't form part of the measurable tasks or logical sequence of your schedule in any way.

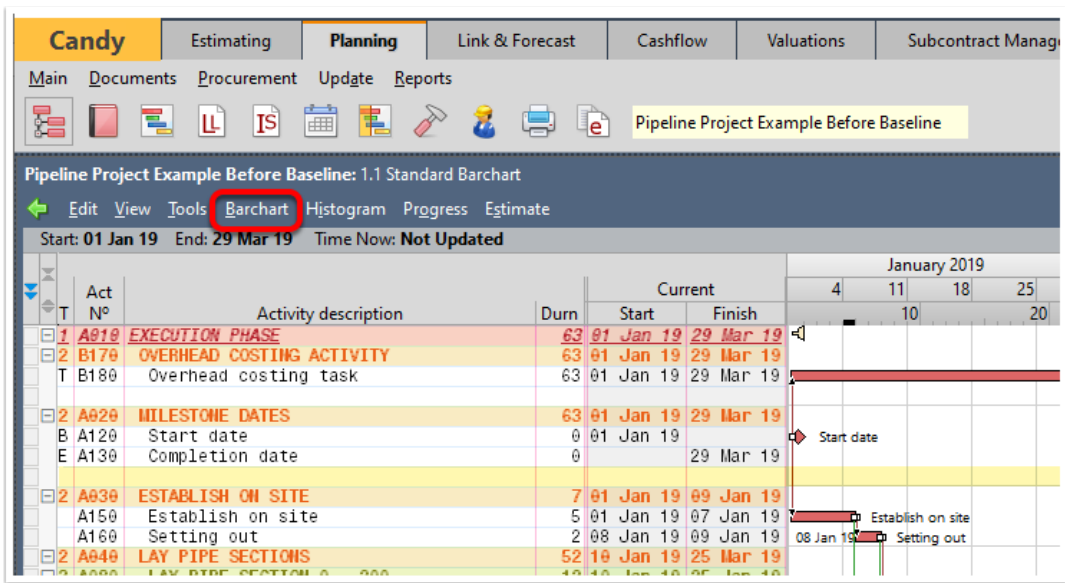
To add timelines

1. Click on the planning and definitions button 
2. Go to the Timeline/definitions tab
3. On the right-hand side, add your timeline description and date in the any of the record lines.
4. Click on OK



**To change barchart display options**

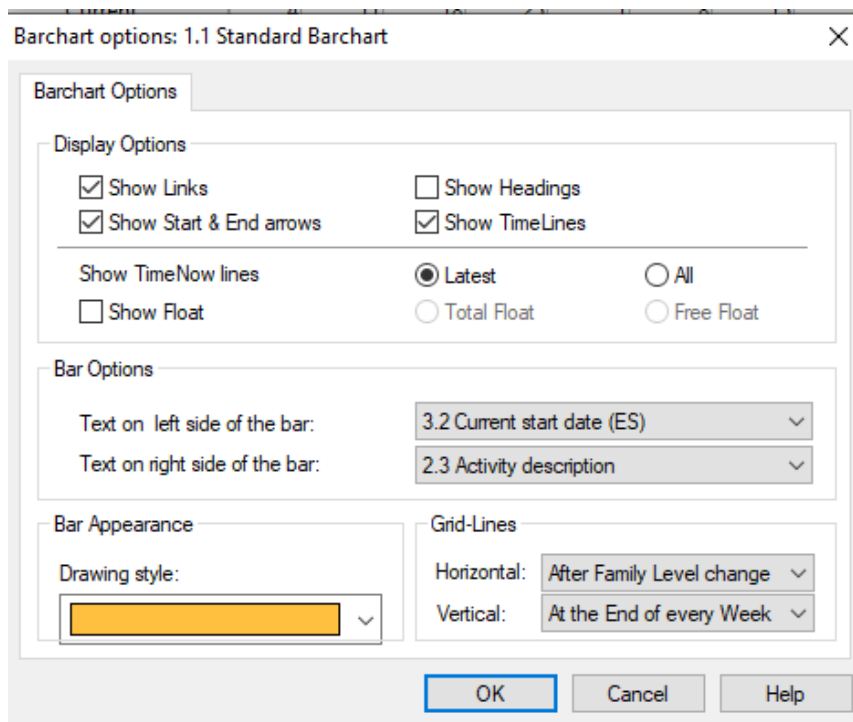
1. Click on the Barchart menu item above your table



2. Go to options

In the options dialog, you can decide to show or hide headings, links, end and start arrows as well as Timelines. You can decide to show float and decide what fields you would like to display next to your tasks. You can also tweak your Bar appearance and decide how you want to display gridlines.

Have a look below:



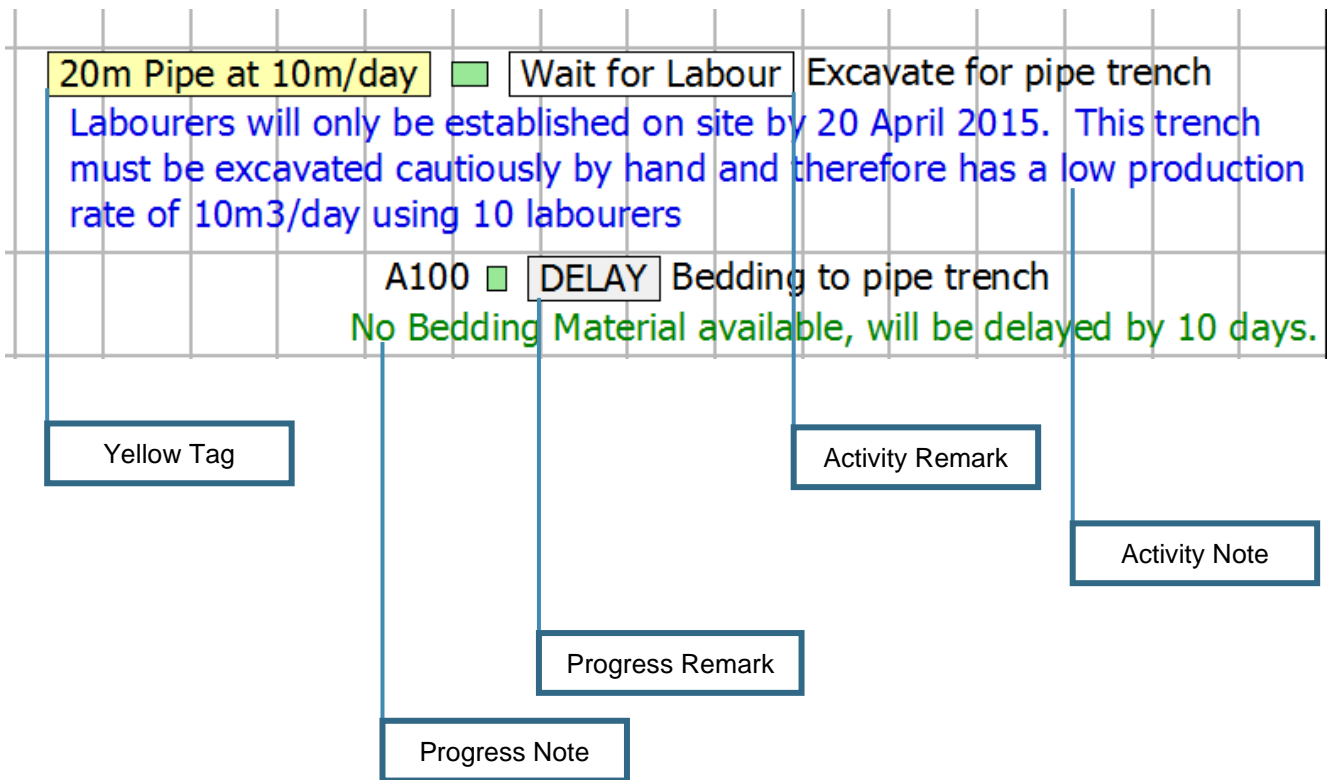
## Module 5 Lesson 5 – Implementing notes, remarks, or yellow tags

Candy provides us with a few options for adding notes to our schedule. These options are:

- **Activity Remark and Activity Notes**
- **Progress Remark and Progress Notes**
- **Yellow Tags**

The following diagram explains how the different options is displayed when we print a report. We can choose to switch these notes on or off in our reporting.



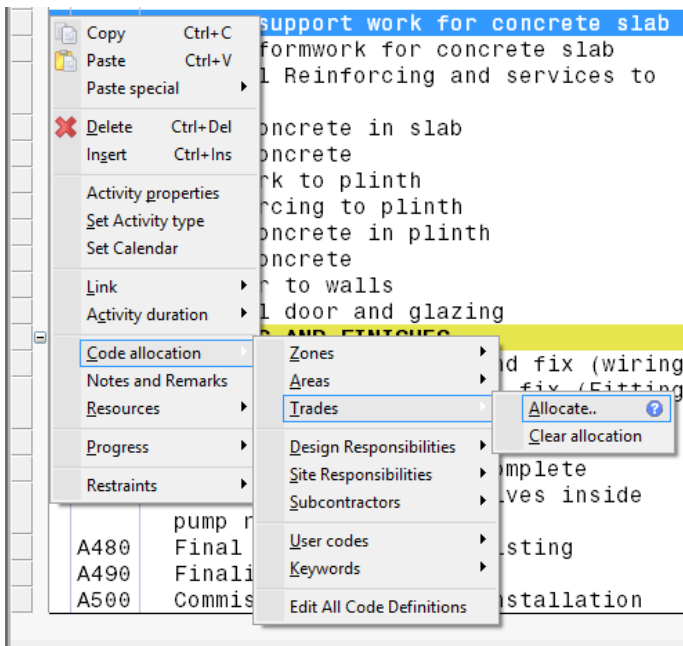


### Adding notes and remarks:

- Go to the **Record Selector Menu** by right-clicking in the record block next to the activity you want to add notes to.
- Select **Notes and Remarks**
- Alternatively, you can add Columns for these notes into you view and edit them from there.

T	Act N°	Activity Description	Durn	Current			Cal	Activity Note
				Start	Finish	Float		
1	A010	MILESTONE LIST	71	01 Apr 15	08 Jul 15	0		
B	A020	Project Start date	0	01 Apr 15		0		
B	A030	Key Date - Pipe installation complete	0	15 May 15		0		
B	A040	Project Completion date	0	09 Jul 15		0		
1	A050	ESTABLISH	5	01 Apr 15	07 Apr 15	0		
	A060	Establish on site and mobilise resources	5	01 Apr 15	07 Apr 15	0		
1	A090	PIPE LAYING SECTION 0 - 20	7	20 Apr 15	28 Apr 15	20		
	A090	Excavate for pipe trench	2	20 Apr 15	21 Apr 15	20	Labourers will only be established on site by 20 April 2015. This trench must be excavated cautiously by hand and therefore has a low production rate of 10m <sup>3</sup> /day using 10 labourers	
	A100	Activity Notes	1	22 Apr 15	22 Apr 15	35		
	A110	Activity remarks and notes are for recording general information about an activity, for viewing on screen and on printed reports.	1	23 Apr 15	23 Apr 15	35		
	A120	Activity: A090 - Excavate for pipe trench	1	24 Apr 15	24 Apr 15	35		
	A130	Remark: Wait for Labour	2	27 Apr 15	28 Apr 15	35		
1	A140	Note: Labourers will only be established on site by 20 April 2015. This trench must be excavated cautiously by hand and therefore has a low production rate of 10m <sup>3</sup> /day using 10 labourers	17	22 Apr 15	14 May 15	20		
	A150	Note: Labourers will only be established on site by 20 April 2015. This trench must be excavated cautiously by hand and therefore has a low production rate of 10m <sup>3</sup> /day using 10 labourers	6	22 Apr 15	29 Apr 15	20	Labourers will only be established on site by 20 April 2015. This trench must be excavated cautiously by hand and therefore has a low production rate of 10m <sup>3</sup> /day using 10 labourers	
	A160		1	30 Apr 15	30 Apr 15	20		
	A170		4	01 May 15	06 May 15	20		
	A180		1	07 May 15	07 May 15	20		
	A190	Backfill and compact	5	08 May 15	14 May 15	20		
1	A200	NEW PUMP ROOM	55	08 Apr 15	23 Jun 15	0		
	A070	Setting out the works	2	08 Apr 15	09 Apr 15	0		





## MODULE 6 – Reporting

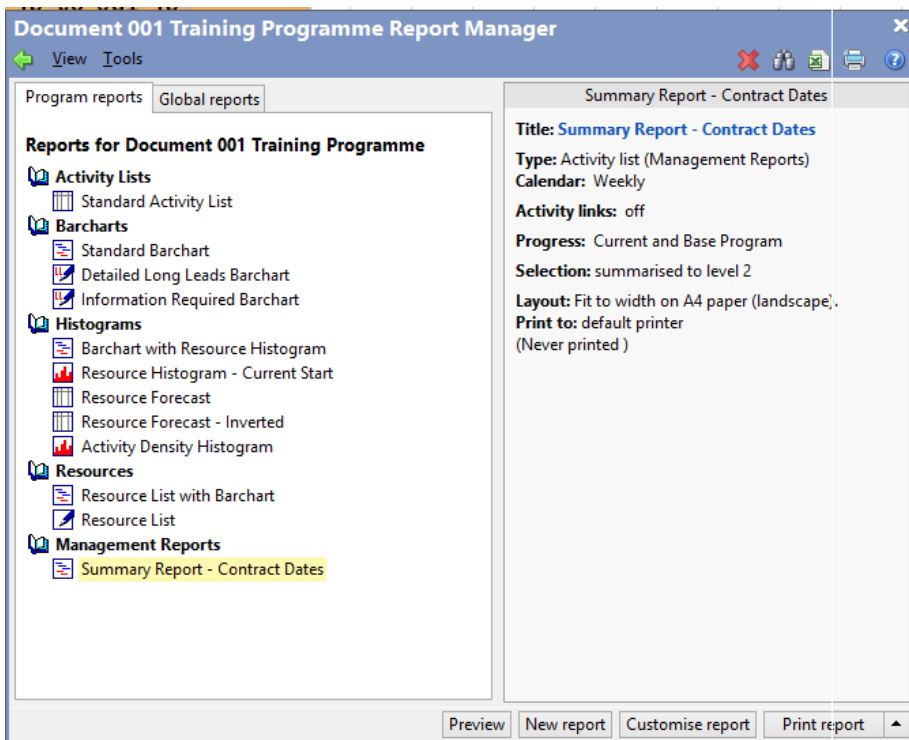
### Module 6 Lesson 1 – Reporting basics

Reports are created in the **Report Manager**.



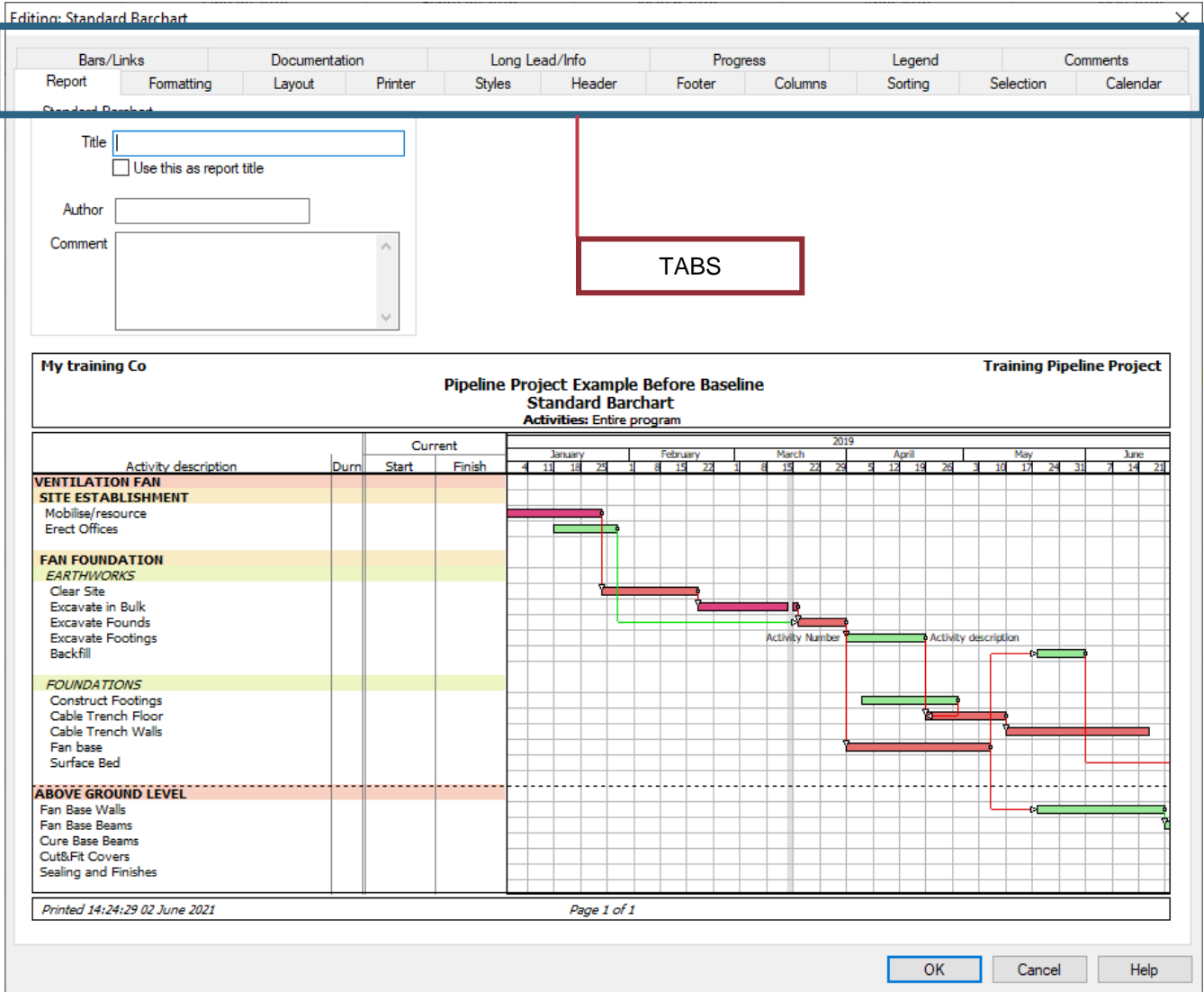
Similar to the Document Manager, the Report Manager allows us to choose and customise different views, layouts and settings for printing our Barcharts.

Once opened, we are presented with a screen similar to the Document Manager where we can customise, create new or duplicate reports.



### Create a new report.

- Once you are in the Report Manager, click on the **New Report** button.
- Select Standard Barchart.
- Rename the report Initial Baseline Report
- Click on the **Customise Report** button.

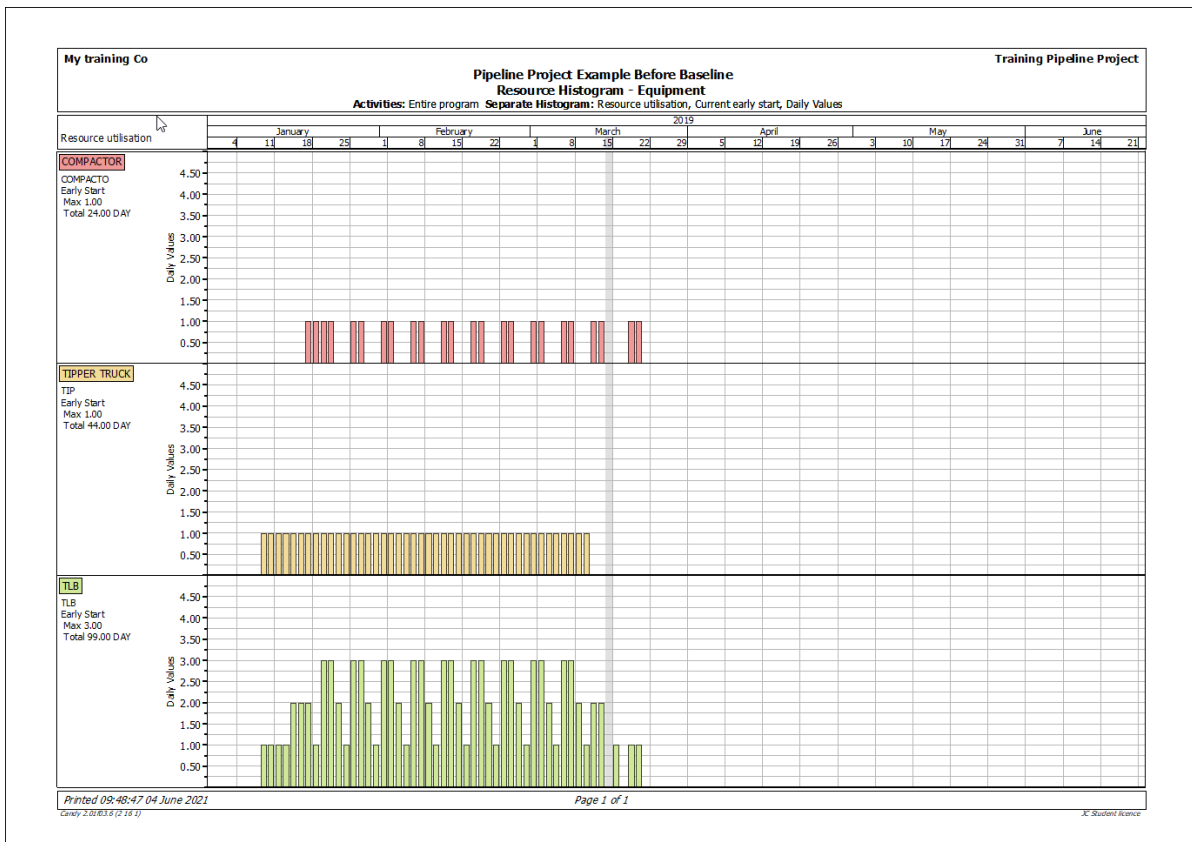
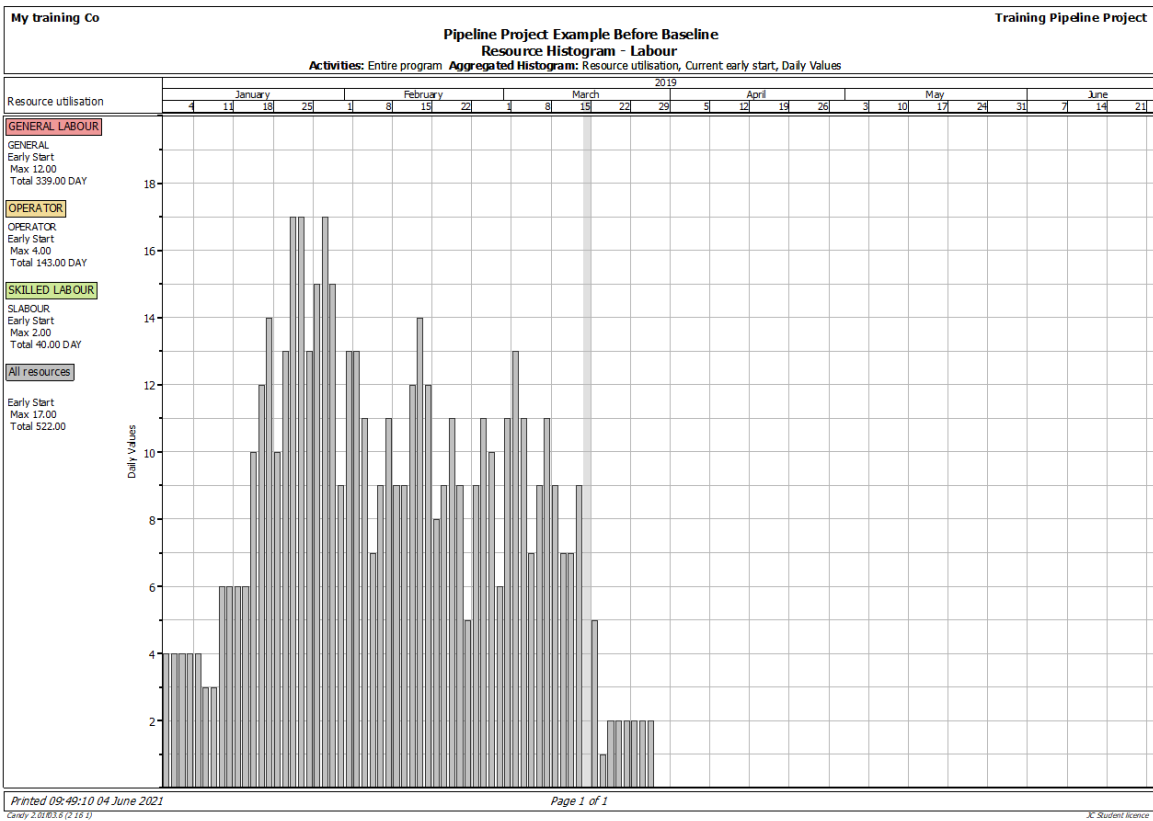


Follow in the video as we cycle through the different tabs to adjust and set up a basic report.

1. Go to your Gantt Chart View and make sure you show all subtasks.
2. On the View Tab, click on the Filter dropdown.
3. Select New Filter
4. The following information box opens up:

## Module 6 Lesson 2 – Histograms

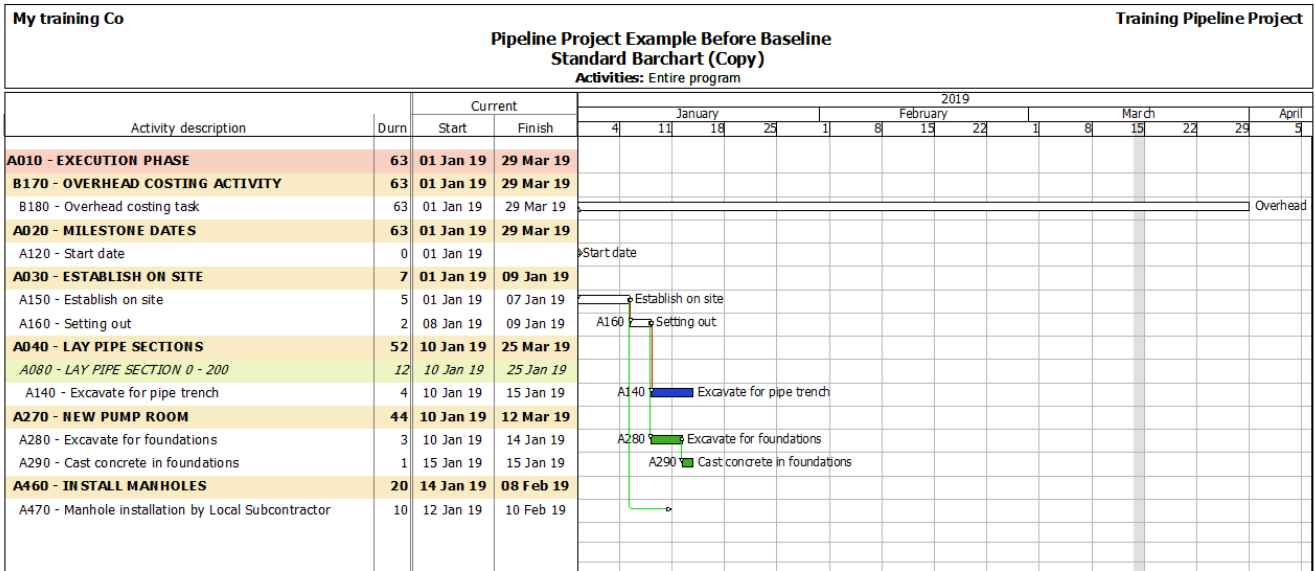
In this lesson we are going to create resource histograms. We will be using the exact same principles as per the previous lesson in the Report Manager. Follow in the video and see how we can produce the following reports:



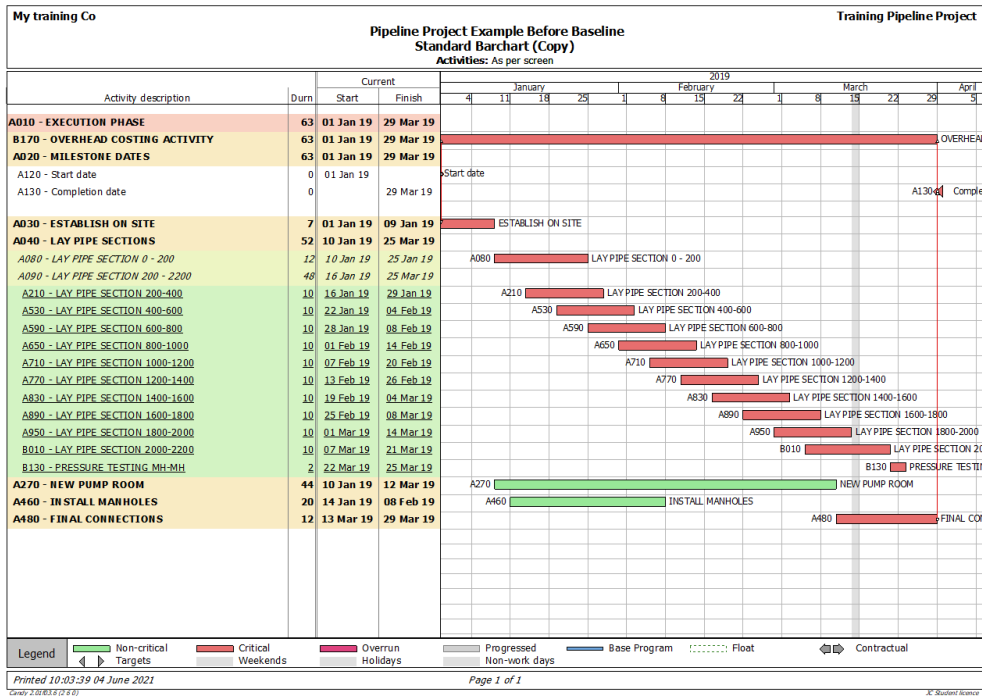
## Module 6 Lesson 3 – Advanced Reporting Techniques

In this lesson we are going to create some advanced reports by using a combination of techniques that we've learned up to now. Follow in the video and see how we can produce the following reports:

### Two-week lookahead report:

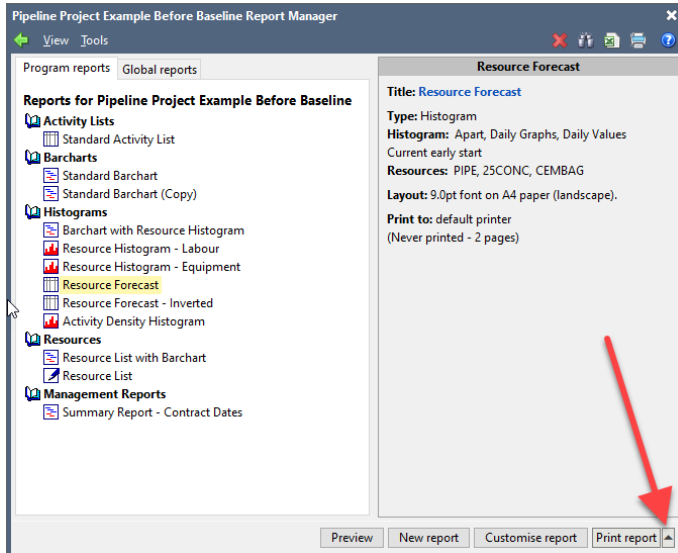


### High-level Summary Report

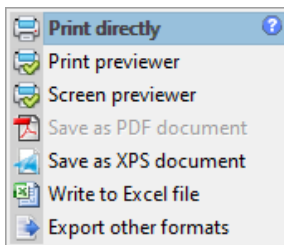


## Exporting a report into Excel

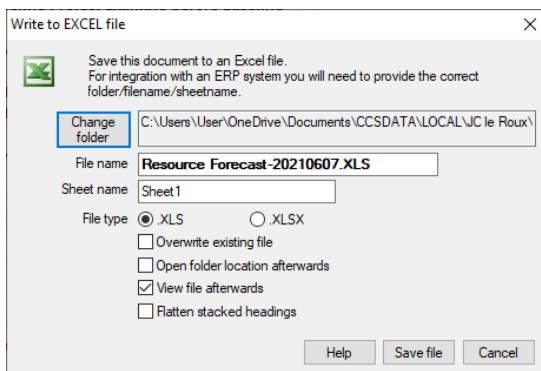
1. Go to your Report Manager
2. Select any of the reports in the list
3. Click on the arrow button next to the Print report button as shown below



4. This will open a dialog with some alternative printing options:



5. Select Write to Excel File.
6. Select the folder you want to save to and click on Save File.





- Once saved, you can view the file by navigating to the selected folder. Or if you selected the View file afterwards option, the file will automatically open in Excel showing your data export.

## MODULE 7 – Adding Long Lead and Info Required

### Module 7 Lesson 1 and 2 – Creating a Long Lead Schedule in Candy.

A common error many contractors make is to forget about the lead times for major sections of work or the process to enable an installation to commence. Major items of equipment can take months to be delivered to site. Steel structures for instance, require a process of shop drawing design, approvals, order placement, manufacturing, and a lead time for delivery before installation can start. A properly conceived programme should clearly indicate all these stages and “behind the scenes” work required to commence a task on the programme.

This is where the Long Lead schedule function of Candy becomes helpful. It’s a separate module where you can add these behind the scenes tasks and link them to drive the start date of tasks in your schedule.

To create a long lead schedule, use the following steps:

- Identify the Long Lead activities in your schedule
- Open the LL schedule and create a new schedule



- Type in the Activity nr of all long lead Activities.
- In this instance, let’s use the first task where our pipe material will be required as well as the pump installation tasks as our two long lead activities.
- This is task A180 and A450.
- In the Long Lead schedule window, Enter the task nr A180 in the Act# column as below.
- This will automatically import the task’s information from the programme, into the LL schedule.

T	Act#	Activity Description	Lead Durn	Resp	Activity Start	Long Lead Item Start	Finish	Actual Finish	Effect	Sym	Remarks
	A180	Lay pipes			17/01/19						

- This will automatically import the task’s information from the programme, into the LL schedule.
- Below the task in your LL schedule, you can start typing each step required and its respective duration, before this task A180 and A450 can start on site. See below an example:

Long Lead (First Long Lead Schedule) - Pipeline Project Example Before Baseline											
← Edit Tools											
T	Act#	Activity Description	Lead		Activity	Long Lead Item		Actual	Effect	Sym	Rem
			Durn	Resp	Start	Start	Finish	Finish			
	A180	Lay pipes			17/01/19						
		Final pipe specification	0			02/01/19	02/01/19			S	
		Procurement	5			03/01/19	09/01/19			P	
		Delivery allowance	5			10/01/19	16/01/19			D	
2	A270	NEW PUMP ROOM			10/01/19						
	A450	Install pump			12/03/19						
		Final pump specification	0			28/01/19	28/01/19			S	
		Procurement	5			29/01/19	04/02/19			P	
		Delivery allowance	25			05/02/19	11/03/19			D	

- Candy will automatically calculate the dates of each step to complete one day before the activity's start date on site.

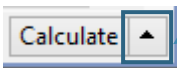
Long Lead (First Long Lead Schedule) - Pipeline Project Example Before Baseline											
← Edit Tools											
T	Act#	Activity Description	Lead		Activity	Long Lead Item		Actual	Effect	Sym	Remarks
			Durn	Resp	Start	Start	Finish	Finish			
	A180	Lay pipes			17/01/19						
		Final pipe specification	0			02/01/19	02/01/19			S	
		Procurement	5			03/01/19	09/01/19			P	
		Delivery allowance	5			10/01/19	16/01/19			D	
2	A270	NEW PUMP ROOM			10/01/19						
	A450	Install pump			12/03/19						
		Final pump specification	0			28/01/19	28/01/19			S	
		Procurement	5			29/01/19	04/02/19			P	
		Delivery allowance	25			05/02/19	11/03/19			D	

Once Long Leads are added, we can use the print function in the LL schedule to do a quick print-out as below:

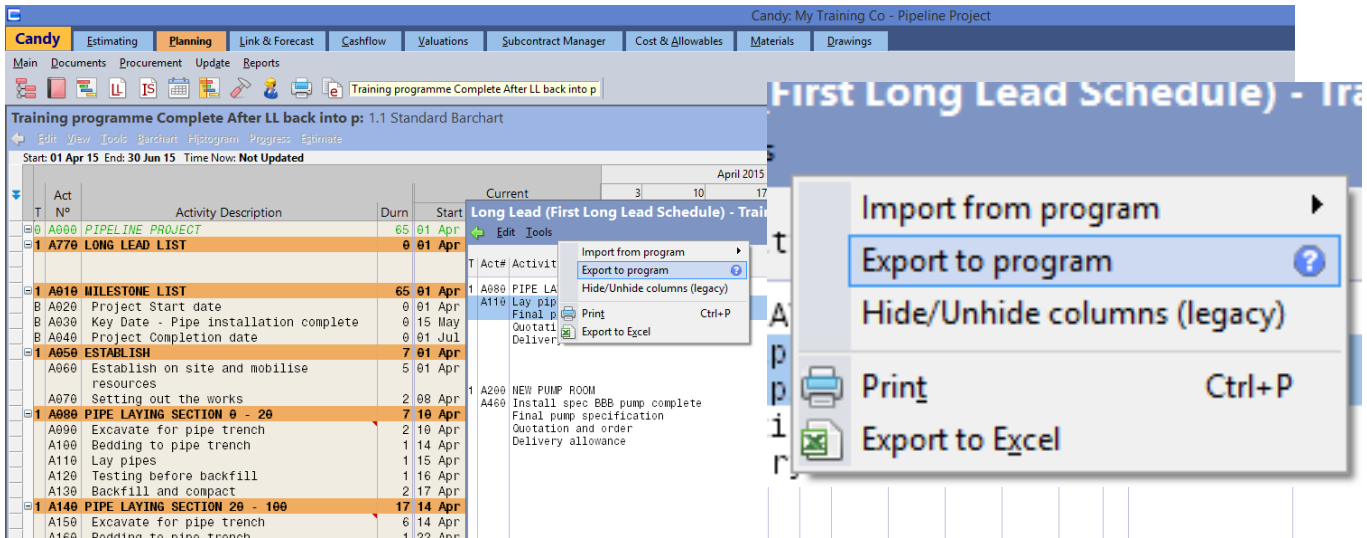
My training Co											
Training Pipeline Project Pipeline Project Example Before Baseline											
Long Lead Schedule											
T	Act#	Activity Description	Lead		Activity	Long Lead Item		Actual	Effect	Sym	Remarks
			Durn	Resp	Start	Start	Finish	Finish			
	<b>A180</b>	<b>Lay pipes</b>			<b>17/01/19</b>						
		Final pipe specification	0			02/01/19	02/01/19			S	
		Procurement	5			03/01/19	09/01/19			P	
		Delivery allowance	5			10/01/19	16/01/19			D	
2	<b>A270</b>	<b>NEW PUMP ROOM</b>			<b>10/01/19</b>						
	<b>A450</b>	<b>Install pump</b>			<b>12/03/19</b>						
		Final pump specification	0			28/01/19	28/01/19			S	
		Procurement	5			29/01/19	04/02/19			P	
		Delivery allowance	25			05/02/19	11/03/19			D	

The next step is to export these long leads back into our programme, so that they interact with our program activities and to enable us to print reports where the long leads are shown on the Barchart.

- Firstly, ensure that you calculate using the Baseline dates. To do this, click on the arrow next to your calculate button to select this option.



- Thereafter, click on the Tools item in the menu bar.
- Select Export to program and follow the prompts.



Once exported, the following report can be generated in the Reporting manager:

My training Co			Pipeline Project Example Before Baseline												Training Pipeline Project					
Detailed Long Leads Barchart																				
Activities: Entire program Long leads: 'First Long Lead Schedule'																				
Activity description	Current		2018				2019													
	Start	Float	December	January	February	March	April	May	June											
<b>A010 - EXECUTION PHASE</b>	01 Jan 19	0																		
<b>A040 - LAY PIPE SECTION S</b>	10 Jan 19	0																		
A080 - LAY PIPE SECTION 0 - 200	10 Jan 19	0																		
A180 - Lay pipes	17 Jan 19	40																		
<b>A270 - NEW PUMP ROOM</b>	10 Jan 19	6																		
A450 - Install pump	12 Mar 19	6																		

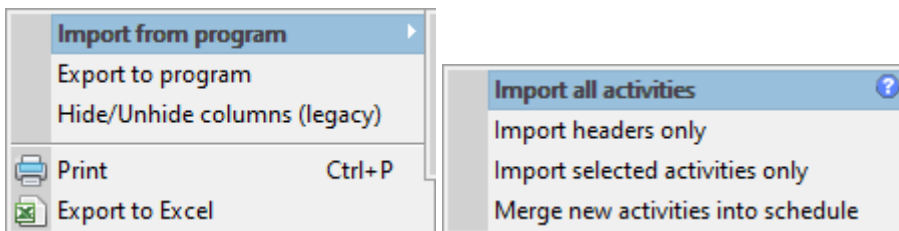
## Module 7 Lesson 3 – Creating an Information Required Schedule in Candy.

In this example, we are going to use another technique to import activities into our IS schedule. Instead of typing the codes, we can import selected or all activities in our program. Let's create an information required schedule for reinforcing:

- Identify the Reinforcing activities in your program by doing a filter.
- Open the IS schedule and create a new schedule



- Click on the Tools menu.
- Go to Import from program
- Select Import all activities



- Once imported, find the reinforcing to slab and paint tasks.
- Insert blank rows below each task
- Insert the Information required information below each tasks and add the duration of lead time in the Durn column.
- The Required date will automatically be calculated.

Info Sched (First Information Schedule) - Pipeline Project Example Update 31 Jan 2019										
Edit Tools										
T	Act#	Activity Description	Item Durn	Resp	Activity Start	Information Required	Received	Effect	Sym	Remarks
	B030	Bedding to pipe trench			13/03/19					
	B040	Lay pipes			14/03/19					
	B050	Test before backfill			19/03/19					
	B060	Backfill and compact			20/03/19					
4	B130	PRESSURE TESTING MH-MH			22/03/19					
	B140	Provide Pressure Test for section			22/03/19					
2	A270	NEW PUMP ROOM			10/01/19					
	A280	Excavate for foundations			10/01/19					
	A290	Cast concrete in foundations			15/01/19					
	A300	Foundation brickwork			16/01/19					
	A310	Fill and compact imported filling layer			18/01/19					
	A320	Cast concrete in surface bed			22/01/19					
	A330	Superstructure brickwork			23/01/19					
	A340	Electrical Services first fix in brickwo			31/01/19					
	A350	Cast concrete in plinth			31/01/19					
	A360	Erect staging and formwork for slab			04/02/19					
	A370	Reinforcing to slab			07/02/19					
		Bending schedule from SENG	10			24/01/19				
	A380	Electrical Services first fix in slab			11/02/19					
	A390	Cast concrete in slab			12/02/19					
	A400	Cure concrete and remove props			13/02/19					
	A410	Plaster to walls			13/02/19					
	A420	Install doors and framed vents			27/02/19					
	A430	Paint			01/03/19					
		Paint colours finalised	10			15/02/19				
	A440	Electrical Services wiring and final fix			07/03/19					
	A450	Install pump			12/03/19					
2	A460	INSTALL MANHOLES			14/01/19					
	A470	Manhole installation by Local Subcontrac			14/01/19					
2	A480	FINAL CONNECTIONS			13/03/19					
	A490	Install final connections and fittings			13/03/19					
	A500	Commissioning of installation			26/03/19					
	A510	Time Risk allowance			28/03/19					
	A520	Project Complete			01/04/19					

## MODULE 8 – Updating and tracking progress

### Module 8 Lesson 1 Update setup and introduction

CCS Candy is a powerful scheduling tool that helps us to track, control and adjust our schedule as work progress. Without updates and tracking, we cannot harness Candy’s scheduling power.

An update should be done systematically, and the following steps should apply for each update.

1. Ensure that you make a duplicate of your programme to ensure that a separate record or candy file exists for each and every update.
2. Ensure the baseline is set. In Candy, you cannot do an update without having a set baseline.

3. Set the Timenow line. Also known as the Status Date or Data Date.
4. Perform the actual information input.
5. Review the actual vs planned and report on variances.

## Module 8 Lesson 2 Set the Baseline and update preparation

The baseline is essentially a snapshot of your initial planned dates, duration and sequence. When we enter progress information, it measures our actual performance against this planned snapshot, so that we can establish and review any variances between planned and actual. The baseline provides an effective visual on this variance and helps us keep track of our agreed/original plan.

### To set the baseline:

- Click on the Progress and Timenow icon:



- Click on the Base Program button and follow the prompts.

Progress for: Pipeline Project Example Baseline

TimeNow

Enter the Date: 01/01/2019 OR Work Day Number: 1

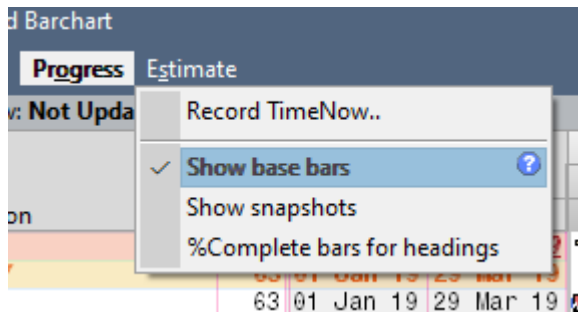
Snapshots

Time Now	Description	Recorded	Seq.No.

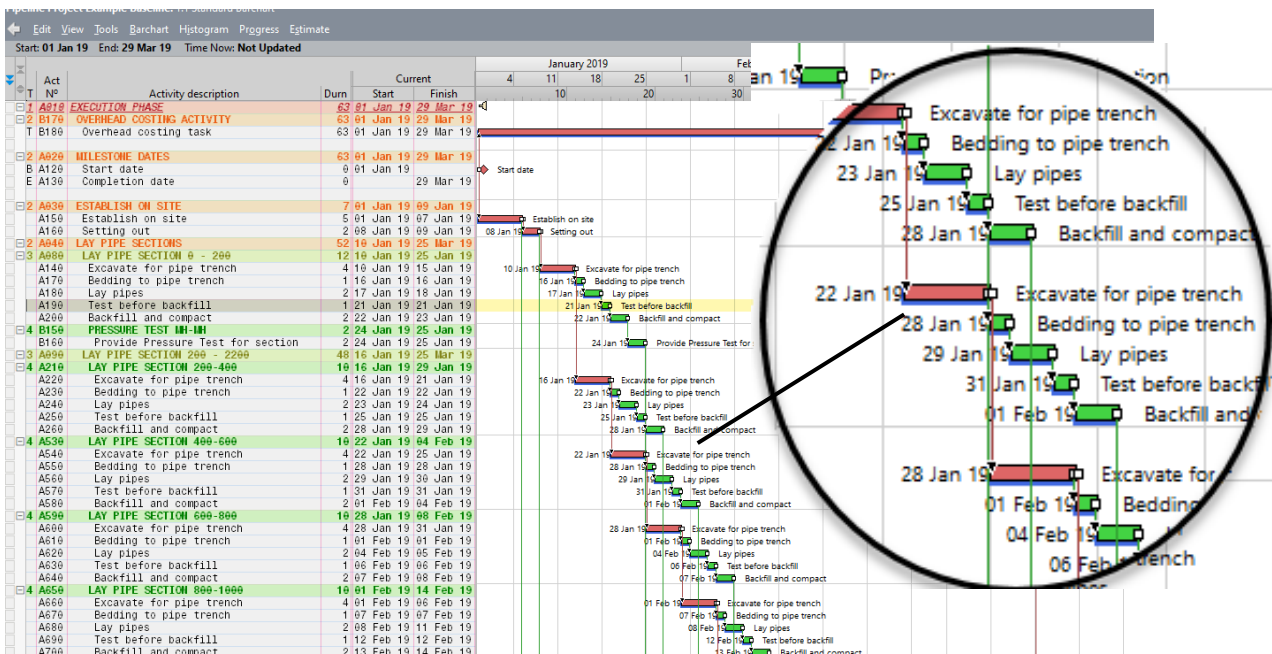
Roll Back Base Program

OK Cancel Help

- Once set, you can click on the Progress menu in the program window menu bar and select Show base bars.

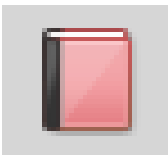


- When the Show base bars option is selected, the baseline will be displayed on your Barchart window by the blue bars as shown below:

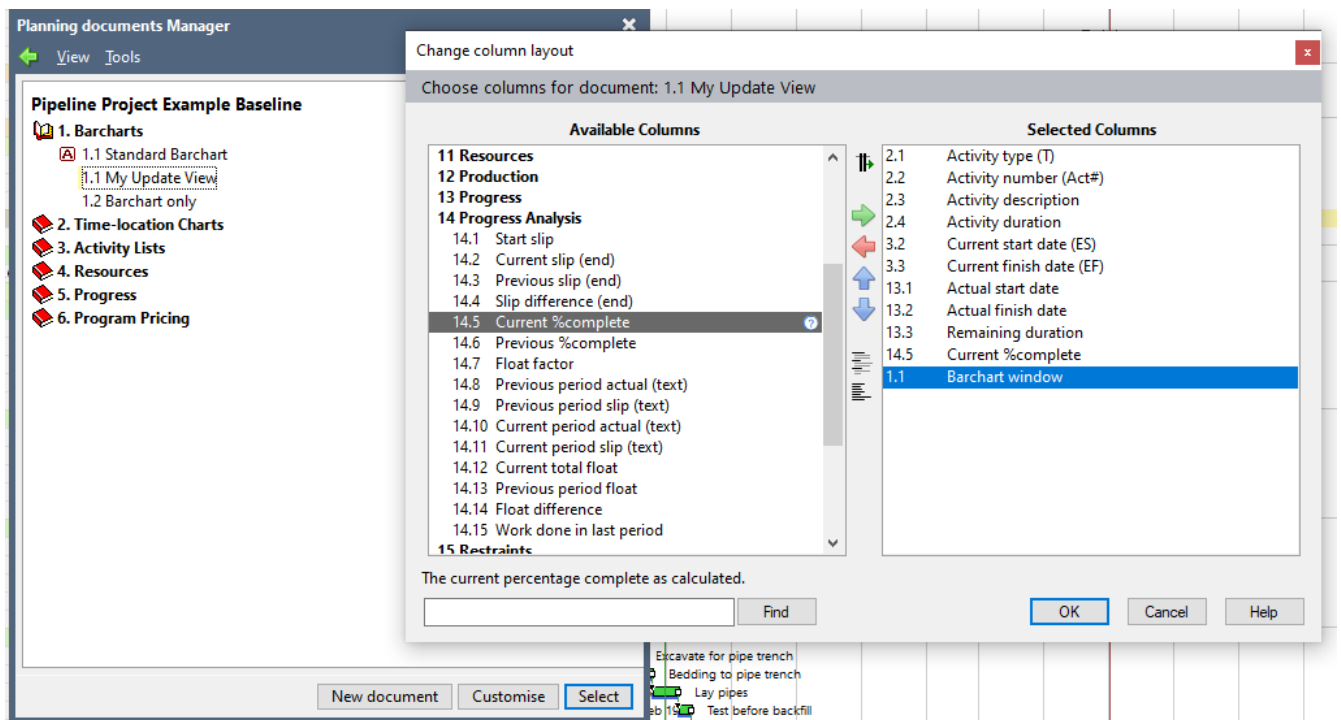


## To set your own unique view for the updates:

- Click on the Document Manager Icon:



- Right click on the Standard Barchart document and select duplicate.
- Right click on the duplicated document you just created and rename it to My Update View
- While selected, click on the customise document button
- Add the Actual Start, Actual Finish, Remaining duration and % complete fields to your view as shown below:



- Click on OK.
- Double click on the My Update View document to open up the view.

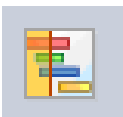
You can now switch to this view in future when doing updates.

## Module 8 Lesson 3 Performing the update

**Remember to make a duplicate of your baseline and rename it to Update 31 Jan 2019.**

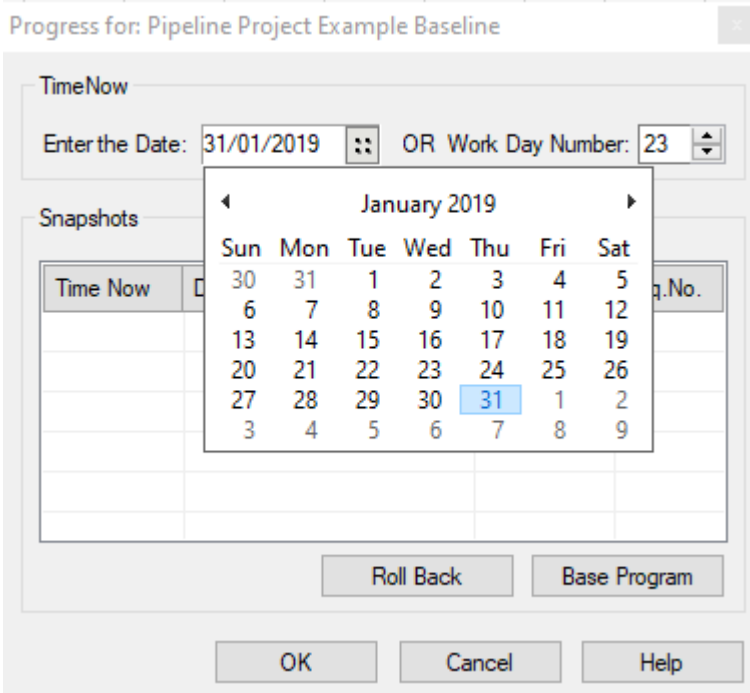
**To set the status date:**

- Click on the Progress and Timenow icon:



This will open the following screen:

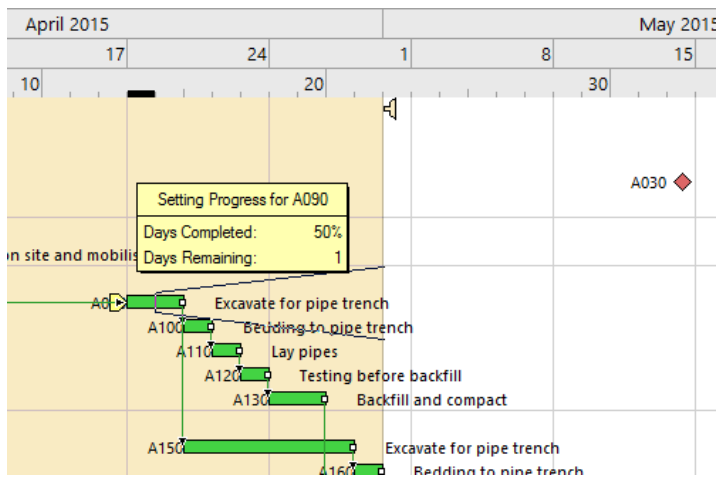




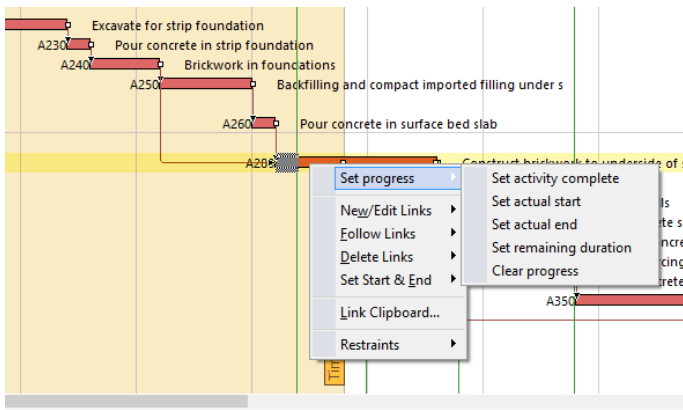
- Select the 31<sup>st</sup> of Jan 2019 as our first update status date or TimeNow date.

## Different ways to add progress information to your schedule:

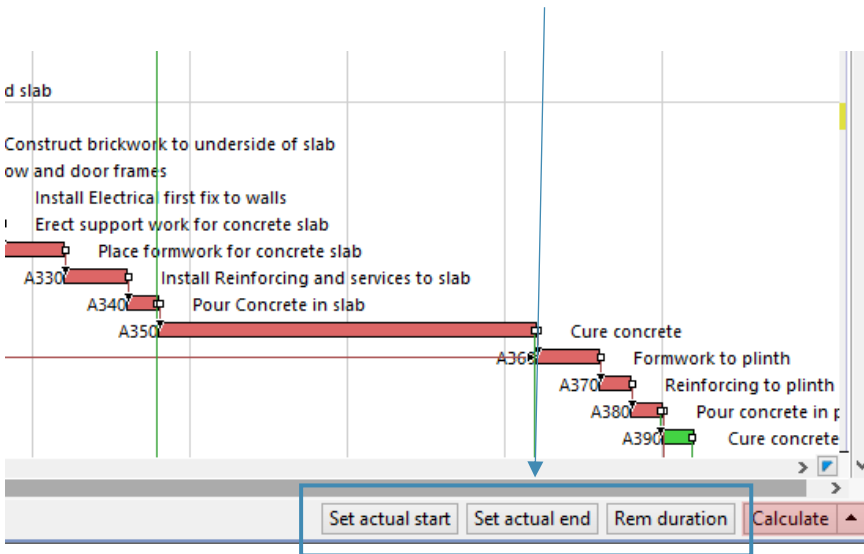
### Option 1 – Using the mouse.



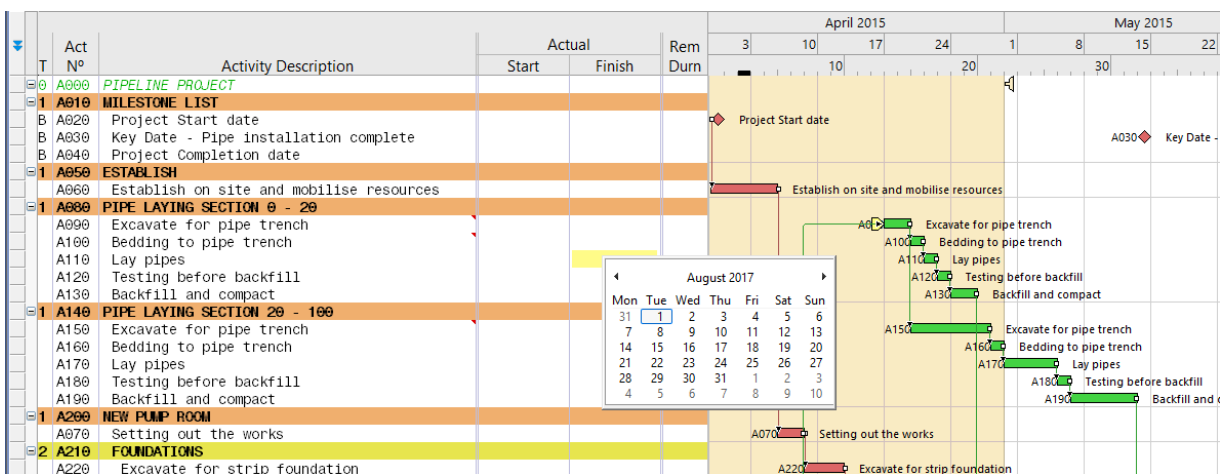
### Option 2 – Using the Barchart menu



**Option 3 – Using the Barchart Update buttons**

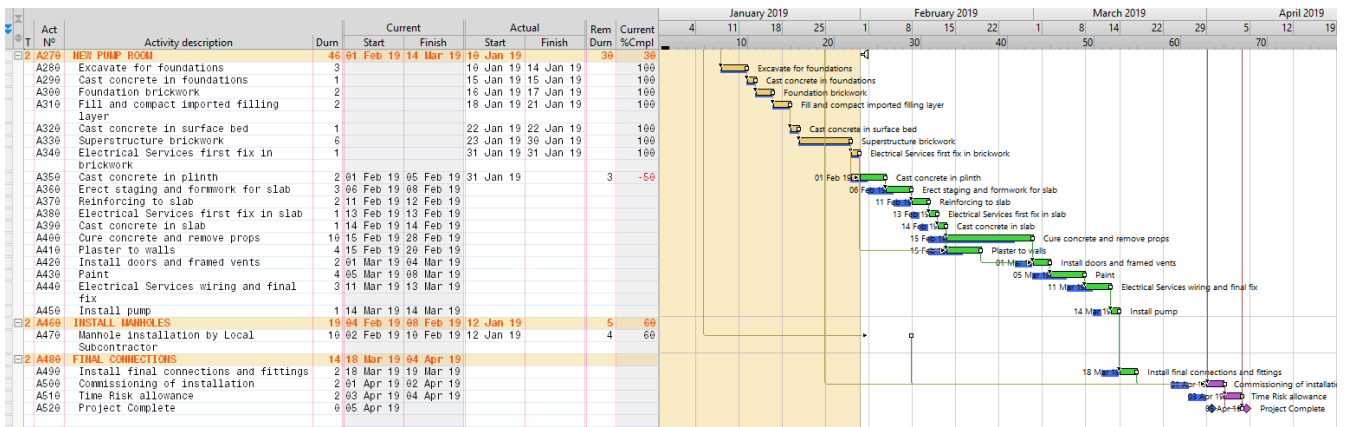
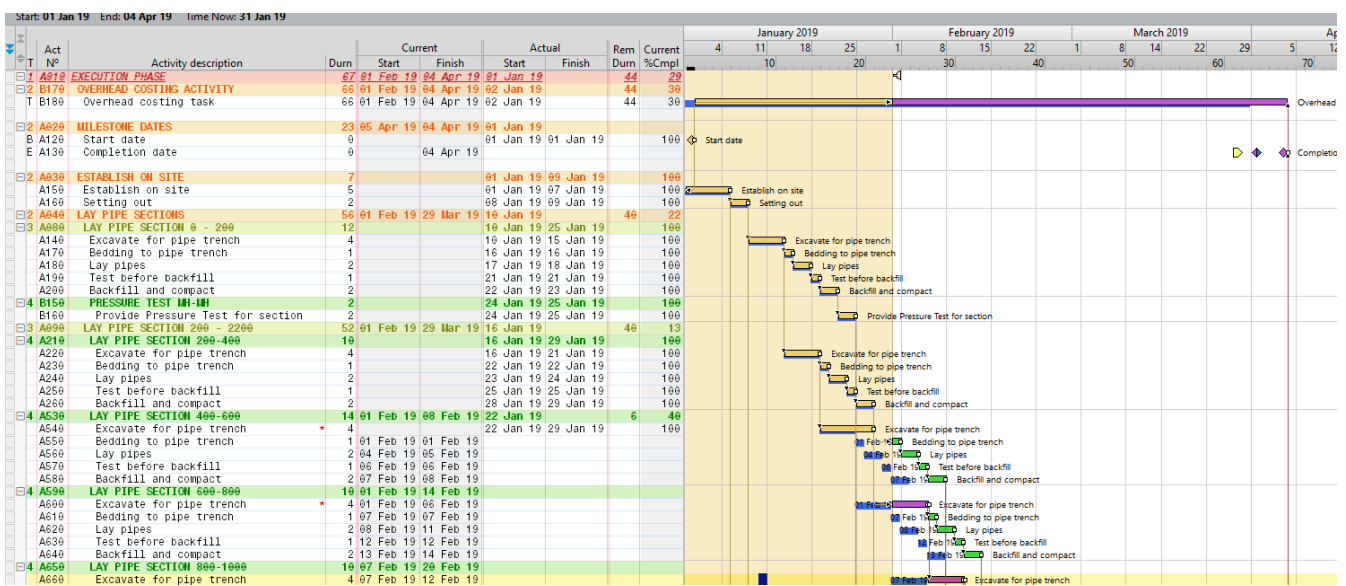


**Option 4 – Entering information manually by using an update view**



➤ Use any of the techniques and enter the following progress information into the barchart.

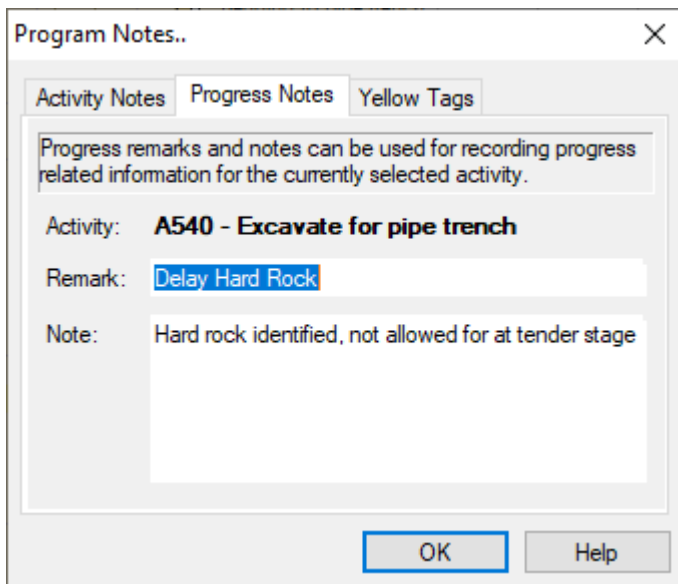
- All the work up section 400 has been completed as planned.
- The excavation on the pipe trench in section 400-600 took 2 days longer and only finished on 29 Jan 2019.
- No other tasks on the pipeline section commenced.
- On the pumproom building, all work progressed as planned.
- Task A350, cast concrete in plinth, has started but it is estimated that the task will not complete for another 3 days. Hence, the remaining duration should be adjusted to 3 days.
- All work on the manholes progressed as planned.
- Once completed, your update should look like this:



## Module 8 Lesson 4 Review the update and isolate variances and delays.

### To review your schedule after an update:

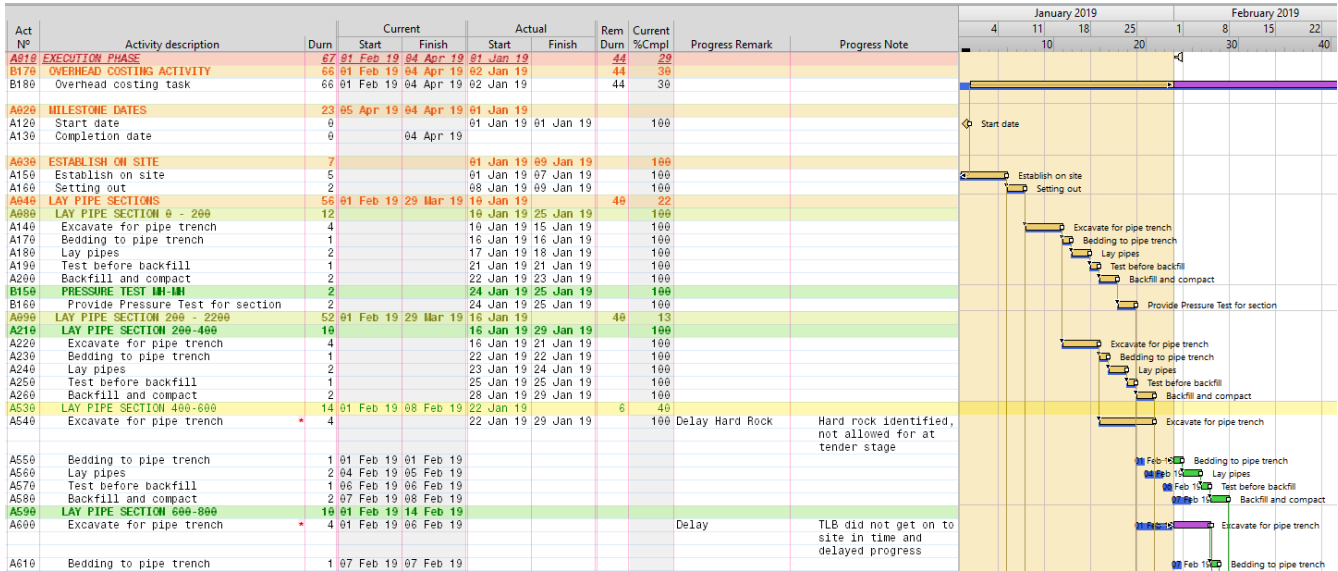
- Add the total float and current slip columns to your view
- Remember that where total float is negative, it denotes a delay to our completion date. Where current slip is negative it simply indicates a delay to the baseline. The distinction between the definitions is extremely important. We have to keep an eye on slip because it may lead to production problems later on, however, negative float is an indication of critical delays. As a result, we would like to isolate and report on critical delays.
- Have a look at your completion milestone and its float. If it is -4, it means that your schedule is delayed by 4 days. We want to investigate and see where this 4-day delay comes from.
- On the progressed activities, follow the critical path tasks and notice where current slip is negative. Try and find the first instance and thereafter find the task where the current slip changes. This would denote tasks that were delayed, and which delay impacted the completion date.
- In our example, task A540 is the first critical task with a negative slip of -2. It means this task was delayed for 2 days, and that delay contributed 2 days to our current 4-day delay.
- Go to the record selector menu of that task, select it, right-click and go to Notes and Remarks
- Add progress notes to the task to explain the delay



- Scroll down the list of tasks and find the next **critical task** where the slip increases. Remember there may be tasks with float that is also delayed, and they will also show a slip increase. But because they have float, they will not impact the completion date yet. Hence, we are only looking to find critical impacted delays for now. The next such task is A600. Slip increased from -2 to

-4. This task also slipped by 2 days. It is therefore the combined 2-day slip of task A540 and the 2-day slip of task A600 that contributes to the total float of -4.

- Make a progress note on task A600 as well.
- We have now isolated the reasons for our 4-day delay.



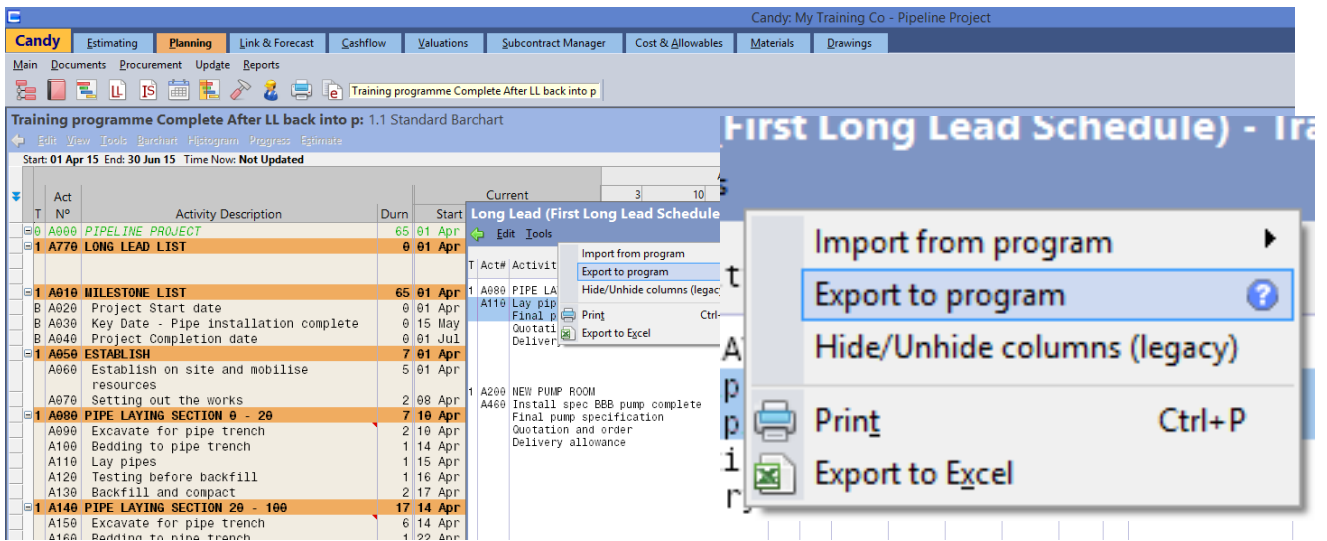
## Module 8 Lesson 5 Update LL and information required schedules.

### Update the LL schedule:

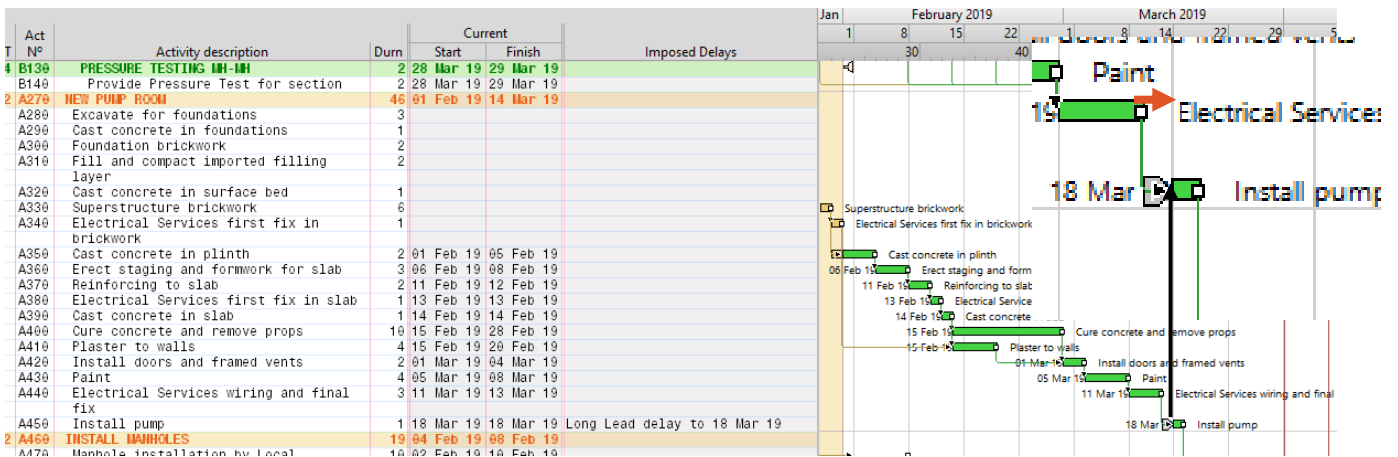
- Ensure you make a duplicate of your updated programme, before updating LL or IR schedules.
- Open the First Long Lead schedule.
- Add the actual date on which you received the pump specification – in this case 31/01/2019.
- The effect will automatically show as -3, meaning this information is 3 days late.

T	Act#	Activity Description	Lead Durn	Activity Resp	Activity Start	Long Lead Item Start	Long Lead Item Finish	Actual Finish	Effect	Sym	Remarks
	A180	Lay pipes			17/01/19						
		Final pipe specification	0			02/01/19	02/01/19			S	
		Procurement	5			03/01/19	09/01/19			P	
		Delivery allowance	5			10/01/19	16/01/19			D	
2	A270	NEW PUMP ROOM			10/01/19						
	A450	Install pump			12/03/19						
		Final pump specification	0			28/01/19	28/01/19	31/01/19	-3	S	
		Procurement	5			29/01/19	04/02/19			P	
		Delivery allowance	25			05/02/19	11/03/19			D	

- Calculate the LL Schedule.
- Export the data back into the program.



- This will create an Imposed Delay on the task, based on the actual delivery of the pump specification



- The following report can now be produced (follow in the video), showing the impact of LL delays:

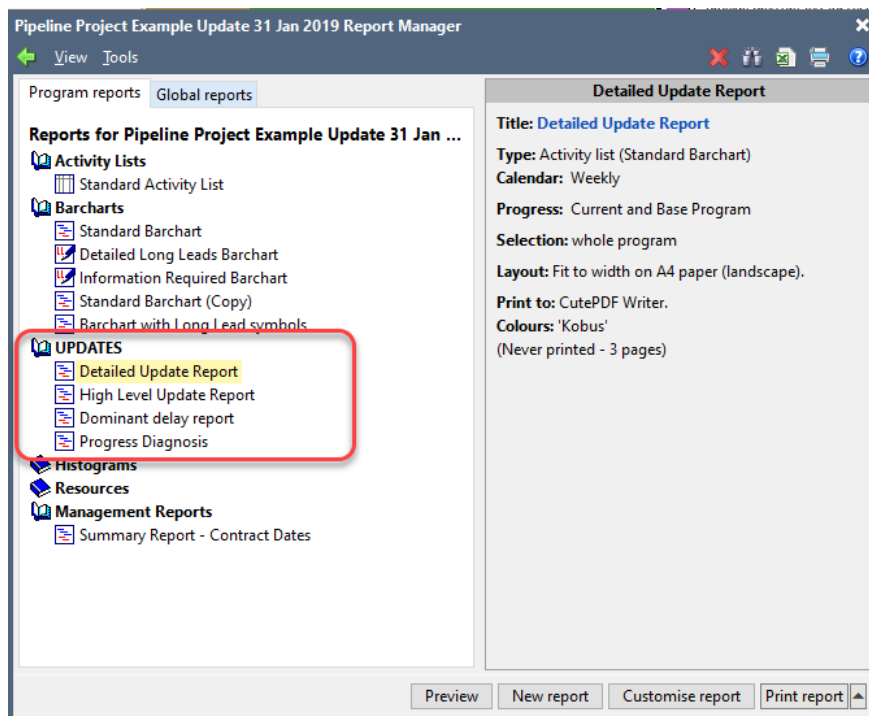
My training Co		Pipeline Project Example Update 31 Jan 2019				Training Pipeline Project			
		Detailed Long Leads Barchart							
		Activities: Entire program Long leads: First Long Lead Schedule							
Activity description	Current		Base Finish	Imposed Delays	Delay Effects	2018		2019	
	Start	Float				December	January	February	March
A010 - EXECUTION PHASE	01 Feb 19	-4	29 Mar 19						
A040 - LAY PIPE SECTIONS	01 Feb 19	-4	25 Mar 19						
A080 - LAY PIPE SECTION 0 - 200			25 Jan 19						
A180 - Lay pipes			18 Jan 19						
A270 - NEW PUMP ROOM	01 Feb 19	4	12 Mar 19						
A450 - Install pump	18 Mar 19	3	12 Mar 19	Long Lead delay to 18 Mar 19	Long Lead delay of 3				

## Module 8 Lesson 6 Reporting on the update.

Once you understand the various methods and techniques of structuring your columns, filtering, coding and highlighting information in your schedule, you can create an unimaginable amount of different reports. I will show you some examples of the most informative reports I prefer to use after an update.

### To report on the schedule after an update:

- Create standardised and personalised reports for your update in the report manager.
- We will create a separate “Updates” heading and create the following reports:



- In the Report Manager > Create a new heading called Updates > Duplicate the Standard Barchart and move it down to the new heading.
- Rename the report > Detailed Update Report.
- Select the Customise report button.
- Adjust your settings and styles to your liking
- Add the following columns to your report -

Editing: Detailed Update Report

Report    Formatting    Documentation    Layout    Printer    Styles    Long Lead/Info    Header    Footer    Progress    Columns    Legend    Sorting    Selection    Calendar    Comments

Add/remove columns    Selected columns in this report    Top heading line    Middle heading line    Bottom heading line

13.1 Actual start date  
13.2 Actual finish date  
3.2 Current start date (ES)  
3.3 Current finish date (EF)  
14.5 Current %complete  
5.1 Float (total)  
1.1 Barchart window

My training Co    Pipeline Project Example Update 31 Jan 2019    Training Pipeline Project

Activities: Entire program

Activity description	Durn	Base Program		Actual		Current		Curr %Cmpl	Float
		Start	Finish	Start	Finish	Start	Finish		
<b>SITE ESTABLISHMENT</b>									
Mobile/resource									
Erect Offices									
<b>FAN FOUNDATION</b>									
<b>EARTHWORKS</b>									
Clear Site									
Excavate in Bulk									
Excavate Footings									
Backfill									
<b>FOUNDATIONS</b>									
Construct Footings									
Cable Trench Floor									
Cable Trench Walls									
Fan base									
Surface Bed									
<b>ABOVE GROUND LEVEL</b>									
Fan Base Walls									
Fan Base Beams									
Cure Base Beams									
Out&Fit Covers									
Sealing and Finishes									
<b>CONTRACTUAL HANDOVER</b>									

Legend: Non-critical, Critical, Overrun, Progressed, Non-work days, Base Program, Float, Contractual

Printed 10:52:53 01 July 2021    Page 1 of 1

OK    Cancel    Help

➤ The preview should look something like this:

My training Co    Pipeline Project Example Update 31 Jan 2019    Training Pipeline Project

Activities: Entire program

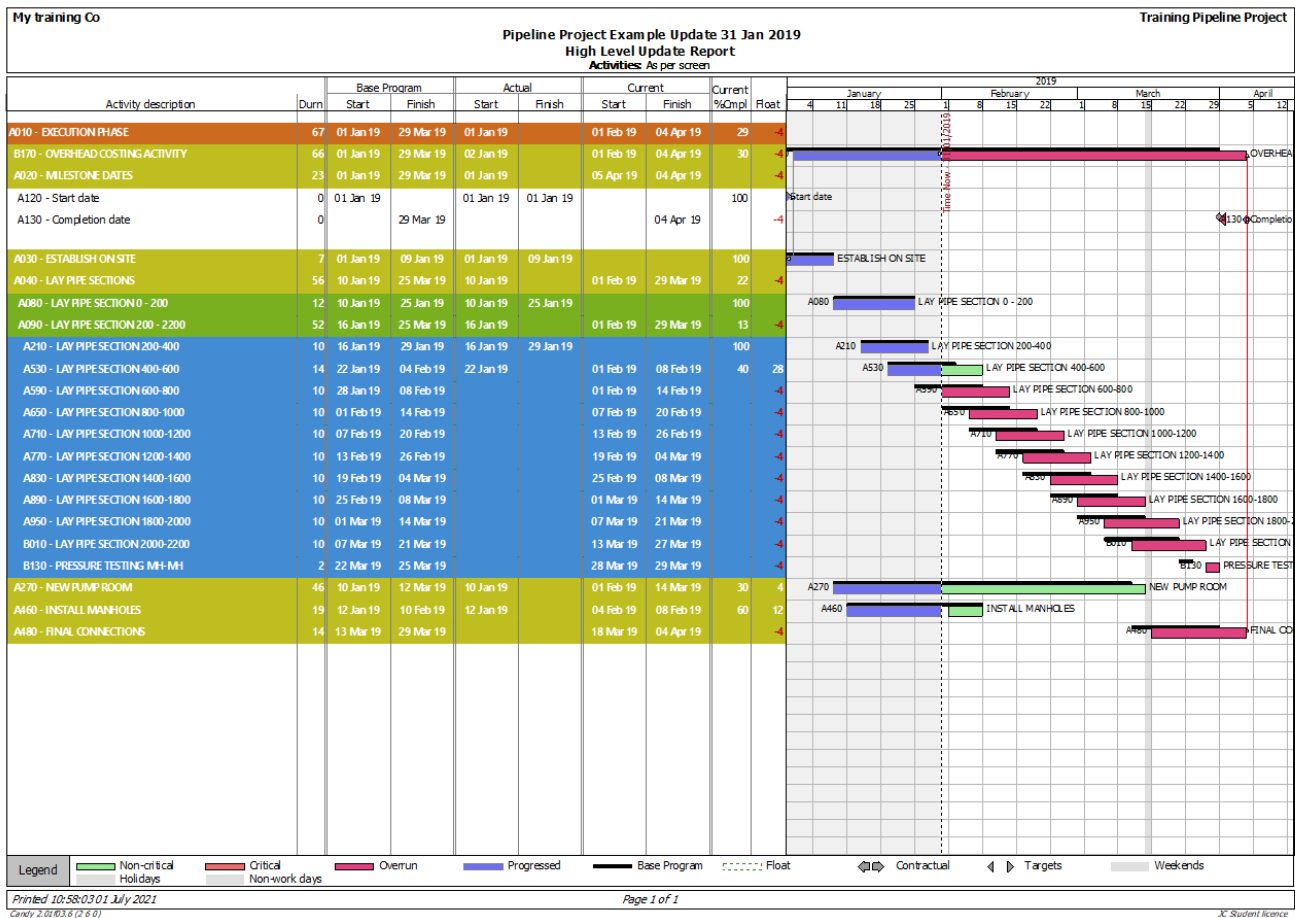
Activity description	Durn	Base Program		Actual		Current		Current %Cmpl	Float
		Start	Finish	Start	Finish	Start	Finish		
<b>A010 - EXECUTION PHASE</b>									
B179 - OVERHEAD COSTING ACTIVITY	67	01 Jan 19	29 Mar 19	01 Jan 19		01 Feb 19	04 Apr 19	29	-4
B180 - Overhead costing task	66	01 Jan 19	29 Mar 19	02 Jan 19		01 Feb 19	04 Apr 19	30	-4
A100 - MILESTONES/ACTIVITIES	23	01 Jan 19	29 Mar 19	01 Jan 19		05 Apr 19	04 Apr 19	100	-4
A120 - Start date	0	01 Jan 19	29 Mar 19	01 Jan 19					
A130 - Completion date	0	01 Jan 19	29 Mar 19			04 Apr 19			-4
<b>A030 - ESTABLISH ON SITE</b>									
A150 - Establish on site	5	01 Jan 19	07 Jan 19	01 Jan 19		01 Jan 19	07 Jan 19	100	
A160 - Setting out	2	08 Jan 19	09 Jan 19	08 Jan 19		08 Jan 19	09 Jan 19	100	
<b>A040 - LAY PIPE SECTIONS</b>									
A040 - LAY PIPE SECTIONS 0 - 200	56	10 Jan 19	25 Mar 19	10 Jan 19		01 Feb 19	29 Mar 19	22	-4
A140 - Excavate for pipe trench	4	10 Jan 19	15 Jan 19	10 Jan 19		10 Jan 19	15 Jan 19	100	
A170 - Bedding to pipe trench	1	16 Jan 19	16 Jan 19	16 Jan 19		16 Jan 19	16 Jan 19	100	
A180 - Lay pipes	2	17 Jan 19	18 Jan 19	17 Jan 19		18 Jan 19	18 Jan 19	100	
A190 - Test before backfill	1	21 Jan 19	21 Jan 19	21 Jan 19		21 Jan 19	21 Jan 19	100	
A200 - Backfill and compact	2	22 Jan 19	23 Jan 19	22 Jan 19		22 Jan 19	23 Jan 19	100	
<b>A150 - PRESSURE TEST PERMIT</b>									
B160 - Provide Pressure Test for section	2	24 Jan 19	25 Jan 19	24 Jan 19		24 Jan 19	25 Jan 19	100	
<b>A090 - LAY PIPE SECTION 200 - 2200</b>									
A210 - LAY PIPE SECTION 200-400	10	16 Jan 19	29 Jan 19	16 Jan 19		16 Jan 19	29 Jan 19	100	
A220 - Excavate for pipe trench	4	16 Jan 19	21 Jan 19	16 Jan 19		16 Jan 19	21 Jan 19	100	
A230 - Bedding to pipe trench	1	22 Jan 19	22 Jan 19	22 Jan 19		22 Jan 19	22 Jan 19	100	
A240 - Lay pipes	2	23 Jan 19	24 Jan 19	23 Jan 19		23 Jan 19	24 Jan 19	100	
A250 - Test before backfill	1	25 Jan 19	25 Jan 19	25 Jan 19		25 Jan 19	25 Jan 19	100	
A260 - Backfill and compact	2	28 Jan 19	29 Jan 19	28 Jan 19		28 Jan 19	29 Jan 19	100	
<b>A530 - LAY PIPE SECTION 400-600</b>									
A540 - Excavate for pipe trench	4	22 Jan 19	25 Jan 19	22 Jan 19		29 Jan 19			
A550 - Bedding to pipe trench	1	28 Jan 19	28 Jan 19			01 Feb 19	01 Feb 19	28	
A560 - Lay pipes	2	29 Jan 19	30 Jan 19			04 Feb 19	05 Feb 19	28	
A570 - Test before backfill	1	31 Jan 19	31 Jan 19			06 Feb 19	06 Feb 19	28	
A580 - Backfill and compact	2	01 Feb 19	04 Feb 19			07 Feb 19	08 Feb 19	28	
<b>A550 - LAY PIPE SECTION 600-800</b>									
A600 - Excavate for pipe trench	4	28 Jan 19	04 Feb 19			01 Feb 19	07 Feb 19	28	
A610 - Bedding to pipe trench	1	01 Feb 19	01 Feb 19			07 Feb 19	07 Feb 19	24	
A620 - Lay pipes	2	04 Feb 19	05 Feb 19			08 Feb 19	11 Feb 19	24	
A630 - Test before backfill	1	06 Feb 19	06 Feb 19			12 Feb 19	12 Feb 19	24	
A640 - Backfill and compact	2	07 Feb 19	08 Feb 19			13 Feb 19	14 Feb 19	24	
<b>A550 - LAY PIPE SECTION 800-1000</b>									
A660 - Excavate for pipe trench	4	01 Feb 19	06 Feb 19			07 Feb 19	12 Feb 19	20	
A670 - Bedding to pipe trench	1	07 Feb 19	07 Feb 19			13 Feb 19	13 Feb 19	20	
A680 - Lay pipes	2	08 Feb 19	11 Feb 19			14 Feb 19	15 Feb 19	20	
A690 - Test before backfill	1	12 Feb 19	12 Feb 19			18 Feb 19	18 Feb 19	20	
A700 - Backfill and compact	2	13 Feb 19	14 Feb 19			19 Feb 19	20 Feb 19	20	
<b>A700 - LAY PIPE SECTION 1000-1200</b>									
A720 - Excavate for pipe trench	4	07 Feb 19	12 Feb 19			13 Feb 19	18 Feb 19	16	
A730 - Bedding to pipe trench	1	13 Feb 19	13 Feb 19			19 Feb 19	19 Feb 19	16	
A740 - Lay pipes	2	14 Feb 19	15 Feb 19			20 Feb 19	21 Feb 19	16	
A750 - Test before backfill	1	16 Feb 19	16 Feb 19			22 Feb 19	22 Feb 19	16	
A760 - Backfill and compact	2	19 Feb 19	20 Feb 19			25 Feb 19	26 Feb 19	16	
<b>A770 - LAY PIPE SECTION 1200-1400</b>									
A780 - Excavate for pipe trench	4	13 Feb 19	25 Feb 19			19 Feb 19	04 Mar 19	12	
A790 - Bedding to pipe trench	1	19 Feb 19	18 Feb 19			19 Feb 19	22 Feb 19	12	
A800 - Lay pipes	2	20 Feb 19	21 Feb 19			26 Feb 19	27 Feb 19	12	
A810 - Test before backfill	1	22 Feb 19	22 Feb 19			28 Feb 19	28 Feb 19	12	
A820 - Backfill and compact	2	25 Feb 19	26 Feb 19			01 Mar 19	04 Mar 19	12	
<b>A830 - LAY PIPE SECTION 1400-1600</b>									
A840 - Excavate for pipe trench	4	19 Feb 19	29 Mar 19			25 Feb 19	08 Mar 19	16	

Legend: Non-critical, Critical, Overrun, Progressed, Non-work days, Base Program, Float, Contractual, Targets, Weekends

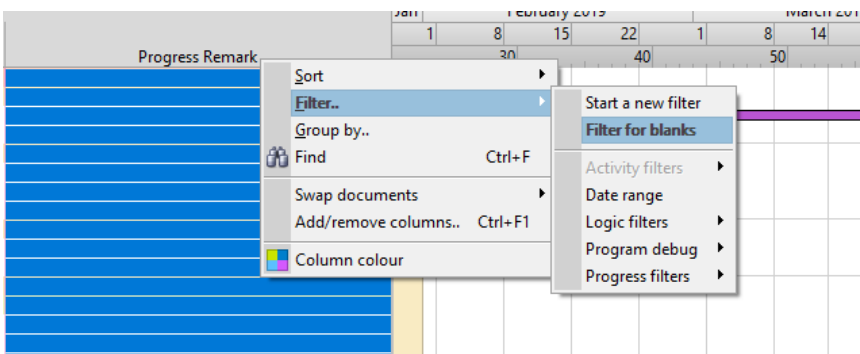
Printed 10:54:45 01 July 2021    Page 1 of 2



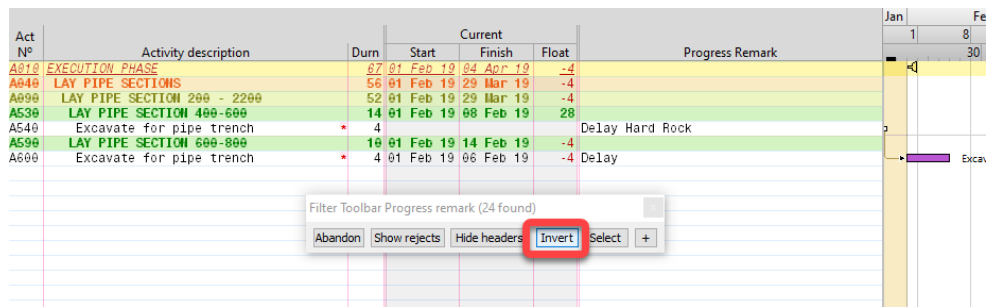
- Once printed, duplicate this report and rename it to the High Level Update Report.
- Customise this report to show a high-level of detail as follows (follow in the video for the exact steps):



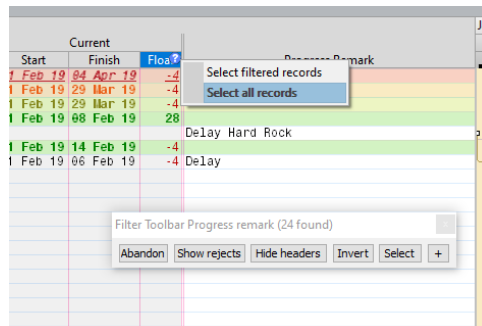
- Once printed, duplicate this report and rename it to the Dominant Delay Report.
- To do this report, we will first need to perform a complex filter.
- Exit the Report Manager for now.
- Open the float and progress remark columns in your current document view.
- Select the progress remark column and, right click and go to filter > select Filter for blanks.



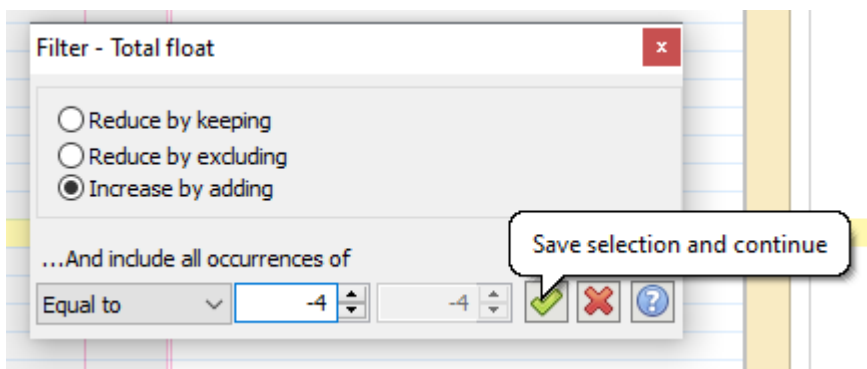
- Thereafter, we need to invert the filter as we actually want to show only those tasks where the progress remark column is not blank.



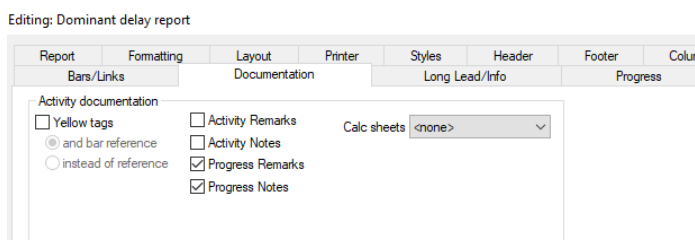
- Click on the Float column and > Select all records.



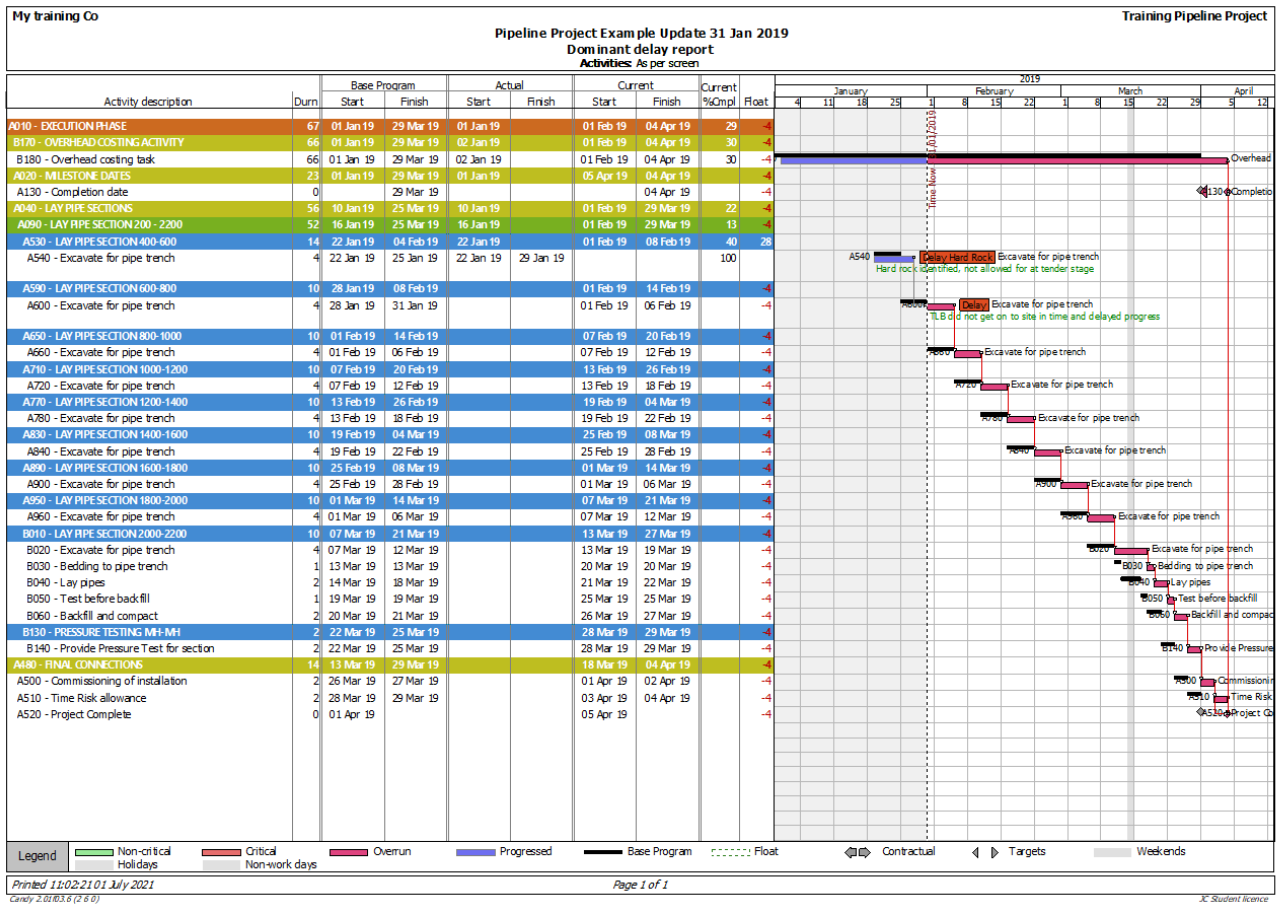
- Click on the + sign in the Filter Toolbar and select the option > Increase by adding... > at the bottom include all occurrences of **Equal to -4**. Save the selection.



- If done correctly, you should now have a filter showing all critical delays on completed tasks and a forward looking filter only showing the chain of impacted tasks up to the completion date.
- With this filter employed, go back to the Report manager and customise the Dominant Delay Report.
- Go to the Documentation tab and select to show the following:



➤ The report should look like this when previewed or printed:



## Assignment 2

If you want to earn the certificate of completion, ensure that you complete the update as outlined above. Thereafter, make a backup of your program file and send it to me at [training@lerouxconsulting.com](mailto:training@lerouxconsulting.com).

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