

PPMP20010 - Assessment 1

Part A

Project Status Report (time based)

1 PROJECT INFORMATION

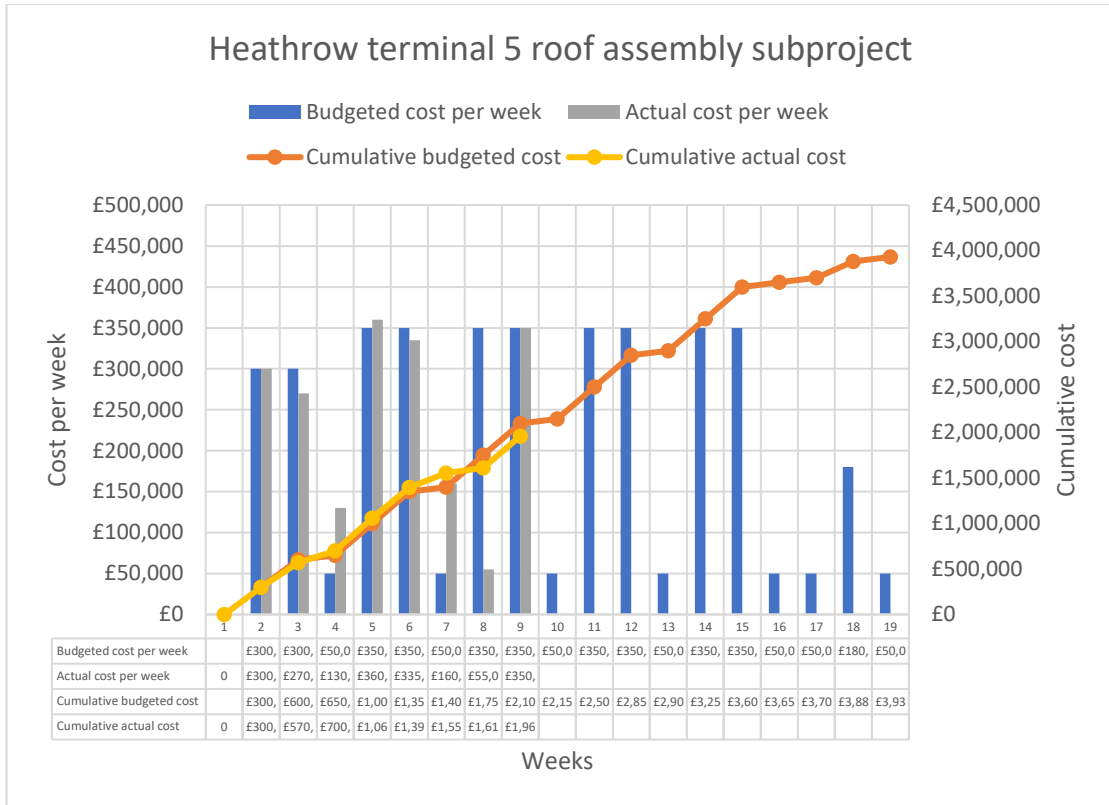
Project name:	Heathrow terminal 5 roof assembly subproject
Date:	16 th January 2005
Project ownership:	Dorman Long Technology
Prepared by:	Project Manager – Dorman Long Technology
Distribution list:	Andrew Wolstenholme – Director of capital project BAA. Richard Rogers – Architect Steve Martin – Project Lead - Rogers Stirk Harbour +Partners Mike Davis, Amol Kalsi – Project Partners - Rogers Stirk Harbour +Partners

2 GANTT CHART WITH BUDGETED COST

PPMP2010 Assessment 1																			
Heathrow terminal 5 roof assembly subproject																			
Labour and equipment cost only																			
		Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14	Week 15	Week 16	Week 17	Week 18
Lift 1	Ground assembly	£100,000	£100,000																
	Temporary support steelwork	£200,000	£200,000																
	Bay 1			£50,000															
	Bay 2				£50,000														
	Bay 3					£50,000													
Lift 2	Ground assembly				£100,000	£100,000													
	Temporary support steelwork				£200,000	£200,000													
	Bay 4						£50,000												
	Bay 5							£50,000											
	Bay 6								£50,000										
Lift 3	Ground assembly								£100,000	£100,000									
	Temporary support steelwork								£200,000	£200,000									
	Bay 7										£50,000								
	Bay 8											£50,000							
	Bay 9												£50,000						
Lift 4	Ground assembly									£100,000	£100,000								
	Temporary support steelwork									£200,000	£200,000								
	Bay 10												£50,000						
	Bay 11													£50,000					
	Bay 12														£50,000				
Lift 5	Ground assembly															£100,000	£100,000		
	Temporary support steelwork															£200,000	£200,000		
	Bay 13																£50,000		
	Bay 14																	£50,000	
	Bay 15																		£50,000
Lift 6	Ground assembly																		£30,000
	Temporary support steelwork																		£100,000
	Bay 16																		£50,000
	Budgeted cost per week	£300,000	£300,000	£50,000	£350,000	£350,000	£50,000	£350,000	£350,000	£50,000	£350,000	£350,000	£50,000	£350,000	£350,000	£50,000	£50,000	£180,000	£50,000
	Cumulative budgeted cost	£300,000	£600,000	£650,000	£1,000,000	£1,350,000	£1,400,000	£1,750,000	£2,100,000	£2,150,000	£2,500,000	£2,850,000	£2,900,000	£3,250,000	£3,600,000	£3,650,000	£3,700,000	£3,880,000	£3,930,000

3 ACTUAL PERFORMANCE

PPMP2010 Assessment 1																			
Heathrow terminal 5 roof assembly subproject																			
Status at end of week 8																			
		Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14	Week 15	Week 16	Week 17	Week 18
Lift 1	Ground assembly	£100,000	£120,000																
	Temporary support steelwork	£200,000	£150,000	£130,000															
	Bay 1				£60,000														
	Bay 2					£65,000													
	Bay 3						£60,000												
Lift 2	Ground assembly				£100,000	£120,000													
	Temporary support steelwork				£200,000	£150,000	£100,000												
	Bay 4							£55,000											
	Bay 5								£50,000										
	Bay 6																		
Lift 3	Ground assembly									£100,000									
	Temporary support steelwork									£200,000									
	Bay 7																		
	Bay 8																		
	Bay 9																		
Lift 4	Ground assembly																		
	Temporary support steelwork																		
	Bay 10																		
	Bay 11																		
	Bay 12																		
Lift 5	Ground assembly																		
	Temporary support steelwork																		
	Bay 13																		
	Bay 14																		
	Bay 15																		
Lift 6	Ground assembly																		
	Temporary support steelwork																		
	Bay 16																		
	Actual cost per week	£300,000	£270,000	£130,000	£360,000	£335,000	£160,000	£55,000	£350,000	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0
	Cumulative actual cost	£300,000	£570,000	£700,000	£1,060,000	£1,395,000	£1,555,000	£1,610,000	£1,960,000	£1,960,000	£1,960,000	£1,960,000	£1,960,000	£1,960,000	£1,960,000	£1,960,000	£1,960,000	£1,960,000	£1,960,000



4 VARIANCE ANALYSIS

Acronym	Term	Formula	Value
PV (BCWS)	Planned Value		£ 2,100,000
EV (BCWP)	Earned Value	sum of the planned value of completed work	£ 1,750,000
AC (ACWP)	Actual Cost		£ 1,960,000
SV	Schedule Variance	$SV = EV - PV$	£ -350,000
CV	Cost variance	$CV = EV - AC$	£ -210,000
SPI	Schedule Performance Index	$SPI = EV / PV$	0.833
CPI	Cost Performance Index	$CPI = EV / AC$	0.892

Time Performance

According to above variance analysis, there is negative schedule variance. At the end of week 8, project is behind the schedule. According to plan, lift 1 and lift 2 should be fully completed and ground assembly and temporary support steelwork of lift 3 need to be completed. However, Bay 6 of lift 2 and 50% ground assembly and temporary support steelwork of lift 3 is not completed as scheduled. Delay of finishing bay 6 will affect the construction of lift 3 since each bay attach to the next with secondary steal work. Schedule Performance Index (SPI) shows schedule efficiency. SPI is 0.833. It would lead to delay the project completion data by certain extend. Therefore, it is necessary to take actions to increase the work load to cover up the schedule on time.

Cost performance

Cost variance is recorded as £ - 210,000 at the end of week 8. Budgeted cost for the each task have been exceeded except bay 5. Cumulative actual cost is lesser than cumulative budgeted cost since above mentioned some task are not completed. Cost performance Index (CPI) of 0.892 indicates a cost overrun for work completed. This is not a significant deviation; however, it will lead to budget shortage. This cost variance is difficult to recover since project is behind the schedule and workload need to be increased in upcoming weeks. Thus, additional funds should be allocated to project.

5 FORECASTS- VALUES AT COMPLETION

Acronym	Term	Formula	Value
EAC	Estimate At Completion	$EAC = AC + [(BAC - EV) / (CPI \times SPI)]$	= £ 1,960,000 +[(3,930,000 – 1750,000)/ (0.892*0.833)] = £ 4,893,909
ETC	Estimate to Complete	$ETC = EAC - AC$	= £ 4,893,909 - £ 1,960,000 = £ 2,933,909
VAC	Variance At Completion	$VAC = BAC - EAC$	= £ 3,930,000 - £ 4,893,909 = £ - 963,909
TCPI	To Complete Performance Index	$TCPI = (BAC - EV)/(EAC - AC)$	= (£ 3,930,000 - £ 1,750,000 / £ 4,893,909 - £ 1,960,000) = 0.74
<p>Motivation for use of EAC formula:</p> <p>According to cost variance, most of the tasks cost have been exceeded. Further, project is behind the schedule. Therefore, it will difficult to continue future work at the planned rate. However, initial plan is not invalid since CPI is 0.892. Cost and schedule both affect the future progress of the project since currently project did not meet both targets. Therefore, both CPI and SPI will influence the EAC.</p> <p>TCPI calculation is considered the efficiency that need to be maintain to complete the current EAC.</p>			

6 FORECAST COMPLETION DATE

Forecast duration formula	Forecast duration in weeks
Time At Completion/ SPI	= 18 / 0.833 = 21.6

	21 Weeks and 4 days
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7 MILESTONE REPORT

Milestone Task	Scheduled Completion	Projected Completion	Actual Completion	Issues/reasons
Lift 1	Week 5		Week 6	Addition one week was taken to complete temporary support steelwork
Lift 2	Week 8	Week 9 day 4		Addition one week was taken to complete temporary support steelwork
Lift 3	Week 11	Week 13 day 1		Assuming same SPI will continue
Lift 4	Week 14	Week 16 day 6		Assuming same SPI will continue
Lift 5	Week 17	Week 20 day 3		Assuming same SPI will continue
Lift 6	Week 18	Week 21 day 4		Assuming same SPI will continue
				Assuming same SPI will continue

8 ISSUES, RISKS AND OTHER MATTERS

Issues	Risks	Other matters
According current situation , there will be £ 963,909 budget shortage to complete the project.	Risk of increase budget shortage further if need to spend additional cost to pay overtime.	Decrease of workers' motivation due to additional weeks of work.
According to current situation, It will take extra three weeks more than scheduled time to complete the project.	Risk of delay the project further due to adverse weather.	
It took extra week to complete temporary support steelwork in both lift 1 and 2 compared to budgeted schedule. Further, there was considerable different between budgeted cost and actual cost. Therefore, it is better to get additional technical support to conduct this task.	Risk of possible damage to the construction and materials due to adverse weather.	
	Risk of interfere airport radar system due to construction of roof.	
	Health and safety risk for workers	

9 LEARNING FROM THIS EXERCISE

Lesson 1	Comparing the budget with actual cost alone would not have given an accurate picture of the project because there can be difference between actual cost and Earned value. Thus, comparing the cumulative budget cost and cumulative actual cost also would not have given an accurate picture of the project.
Lesson 2	Comparing task wise budget and actual cost during project period would give idea of financial picture of where we currently stand.
Lesson 3	SPI and CPI provide better idea about schedule and cost efficiency.
Lesson 4	EAC can be calculated based on budgeted rate, present CPI. Further, EAC can be influenced by both CPI and SPI.

PPMP20010 - Assessment 1

Part B

Exception Report (event based)

1. PROJECT INFORMATION

Project name:	Heathrow terminal 5 roof assembly subproject
Stage:	Midway of implementation stage
Date:	16 th January 2005
Project ownership:	Dorman Long Technology
Prepared by:	Project Manager - Dorman Long Technology
Distribution list:	Project Board Andrew Wolstenholme – Director of capital project BAA. Richard Rogers – Architect Steve Martin – Project Lead - Rogers Stirk Harbour +Partners Mike Davis, Amol Kalsi – Project Partners - Rogers Stirk Harbour +Partners

2. ESTABLISH THE NEED FOR AN EXCEPTION REPORT

Currently, Heathrow terminal 5 roof assembly subproject is reached to end of the week 8 as per the planned schedule. The objective of producing this exception report is to highlight two key issues. According to variance analysis, at the end of week 8, project is behind the schedule and budgeted cost is also exceeded. Estimate At Completion (EAC) and completion date are forecasted respectively considering present CPI and SPI. According to calculation, forecasted project cost and duration will be exceeded allowed tolerance level. The objective of this report to get the attention of stakeholders about these issues and provide our recommendations regarding this issues. It is expected that stakeholders' opinion and solutions for this.

Table – Variance of budget and forecast

	Budget / scheduled	Current Forecast	Tolerance	Variance
Time	18 weeks	21 weeks	+ 1 week	3 weeks
Cost	£ 3,930,000	£ 4,893,909	+10 % / -15%	-25%

Table – Variance analysis at the end of week 8

Planned Value	£ 2,100,000
Earned Value	£ 1,750,000
Actual Cost	£ 1,960,000
Schedule Variance	£-350,000
Cost variance	£ - 210,000
Schedule Performance Index	0.833
Cost Performance Index	0.892

Table – Forecasts

EAC	£ 4,893,909
ETC	£ 2,933,909
VAC	£ - 963,909
TCPI	0. 74
Forecast duration	21 weeks 4 days

3. EXCEPTION REPORT

Exception title	Exception for time and cost for Heathrow terminal 5 roof assembly subproject
Cause of the exception	According to forecast, there will be 3 week difference to estimated time schedule. Current SPI is 0.833 and it is assumed that present SPI will continue remaining work too. As at end of week 8, it can be identified that specific delays have been occurred in constructing temporary support steelwork. Same period have been estimated to this task in lift 3,4,5 and 6 and there would be similar kind of variation in future task too. Current SPI apply for remaining work considering these factors and forecasted duration is 21 weeks and 4 days, which exceeds tolerate level.

	<p>According to cost aspects, it is indicated that a cost overrun for a completed work. Current CPI is 0.892. Considering completed work, budget has been exceeded relatively high level in constructing temporary support steelwork. Further, budgets have been slightly exceeded in other tasks. EAC is calculated considering both current CPI and SPI. EAC is estimated as £ 4,893,909 and estimated cost is exceeded by 25%.</p>
<p>Consequences of the deviation</p>	<p>What the implications are if the deviation is not addressed for:</p>
	<ul style="list-style-type: none"> • The project <p>Delay of the project completion will lead to delay upcoming construction of the project.</p> <p>Shortage of allocated funds to complete the project.</p> <p>Risk of temporarily halt the project due to lack of funds.</p> • Corporate, programme manager or the customer <p>Project team need to reschedule upcoming construction and review the project plan.</p> <p>Media pressure due to construction delay.</p> <p>Additional disturbance to airport routine activities.</p>
<p>Options</p>	<p>Cost aspects When it comes to cost aspects, there are two options.</p> <ul style="list-style-type: none"> - Achieve the initial budget plan with remaining resources. This option will lead to high risk of shortage of the budget and also possible reduction of quality. - Get the additional funds to achieve the current EAC. Tolerance level could be exceeded however required quality can be achieved. It is also achievable based on the cost efficiency. <p>Time aspects When it comes to time aspects, there are two options.</p> <ul style="list-style-type: none"> - Achieve the initial planned completion date by completely reschedule the plan. There will be risk of possible reduction of quality and incurring higher additional cost. - Get the additional time to complete the project by maintaining current SPI. Tolerance level could be exceeded however required quality can be achieved.

<p>Recommendation</p>	<p>It is recommended to provide the additional funds to achieve the current EAC since considering TCPI it is achievable. The efficiency that must be maintained to complete on initial plan is hardly achieved. Further quality of the project need to be compromised. Therefore, quality is highly significant aspect of this project therefore, it is not the good option.</p> <p>The efficiency that must be maintained to complete on initial plan.</p> $\text{TCPI} = (\text{BAC} - \text{EV}) / (\text{BAC} - \text{AC})$ $= (£ 3,930,000 - £ 1,750,000 / £ 3,930,000 - £ 1,960,000)$ $= 1.1$ <p>On the other hand it is recommended to provide additional time to complete the project according to current SPI due to viability.</p> <p>These recommendations are highly focused on viability and quality aspects. Further, with the time, it can be expected to find efficient and effective ways to conduct the project to minimize the gap.</p>
<p>Lessons</p>	<p>In future projects, third party consultation and technical support also need to be taken to develop more realistic budget.</p> <p>There should have proper contingency plan and additional resources to use if required.</p>

4 LEARNING FROM THIS EXERCISE

<p>Question 1</p>	<p>What are the differences between a time-based report and an events-based report?</p> <p>Time based report is the report produce at predefined interval throughout the project to inform relevant stakeholders on how the project is processing and progressing.</p> <p>Events based report is the report produce at special occasion during the project period to inform relevant stakeholders by expecting their approval, suggestion or guidance regarding particular issue or situation. In this case, it is a exceeding given tolerance.</p>
<p>Question 2</p>	<p>What are the advantages and disadvantages of an events-based report for the project?</p> <p>Advantages</p> <p>Stakeholders are informed about the special situation of the project.</p> <p>Stakeholder's support and guidance can be taken to future progress of the project.</p> <p>Help to meet stakeholders' expectations.</p> <p>Disadvantages</p>

	<p>Confidential information can be revealed to other parties.</p> <p>Reduce the speed of decision making.</p>
Question 3	<p>What are the advantages and disadvantages of an events-based report for the project manager and the project management team?</p> <p>Advantages</p> <p>Reduce the possible conflicts and miscommunication among stakeholders and project manager.</p> <p>Develop proper communication process within stakeholders and project team.</p> <p>Burden of project manager and project management team can be shared with other stakeholders.</p> <p>Project manager can take guidance from higher authority.</p> <p>Disadvantages</p> <p>Project manager and project management team can be unnecessarily pressurized.</p> <p>Reduce the autonomy of decision-making.</p> <p>Reporting can be time consuming.</p>