

Metro Plaza Foundation Construction Scope of Work and Programme Brief

*Load the cost. Load the resources. Update it twice. Then explain why the
schedule index fell in a week when the finish date improved.*



01

CONTENTS

What is in this brief

Ten sections. Read the brief once from start to finish, then work with the dashboard open beside P6.

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START	BASELINE FINISH	WORKING DAYS	BUDGET
01/07/2025	01/08/2025	24	£371,621
ACTIVITIES	RESOURCES	UPDATES	TIME TO ALLOW
22	12	2	8 to 10 h

02

SECTION 02

The project

A four-pad commercial foundation package. Four sectors, the same five trades on each, and one concrete crew that moves from pad to pad.

Metro Plaza is a commercial development whose building sits on four large pad foundations arranged around a central plaza. The foundation package covers the North, South, East and West pads. Each pad is cleared and graded, excavated to formation, shuttered with timber formwork, reinforced with fixed steel, then poured with ready-mix concrete and cured.

Activities within a pad run in sequence. The four concrete pours are chained so that one concrete crew, one truck and the pump move from North to South to East to West. That chain is the critical path of the job: the whole North sector, then each pour in turn.

PLATE 1 · THE SITE AT GOLDEN HOUR



Four pads around the plaza. Formwork and steel in the near pads, excavation still open on the far side. The sequence you will plan runs clockwise from the top.

YOUR TASK

Build the baseline programme in Primavera P6 Professional, load every activity with its resources and cost, save the baseline, then apply two weekly site reports. Report the schedule and earned value position at each data date and explain it in plain English. Every figure you should land on is published on the class dashboard, so you can check your work as you go.

TRAINING EXERCISE

The project, the client and every figure are fictional and simplified for teaching. Concrete is measured in cubic yards so that the material rates read as whole numbers.

03

SECTION 03

Calendar and settings

Set these before you add a single activity. Most reconciliation problems trace back to a calendar or a default that was left alone.

SETTING	VALUE
Project ID and name	CFCP-2025-001, Metro Plaza Foundation Construction
Planned start	Tuesday 01/07/2025
Calendar	CFCP-2025-001 - Standard Business Hours: Monday to Friday, 09:00 to 17:00, 8 hours a day, no holidays. Project calendar, also the default for resources
Duration type	Fixed Duration and Units
Percent complete type	Physical
Activity type	Task Dependent; A1200 Start Milestone; A1210 Finish Milestone
Relationships	All Finish to Start, zero lag, no constraints
Critical activities	Total float less than or equal to 0 h
Resource settings	Auto compute actuals off; calculate costs from units on; rate type Price / Unit
Currency	Pounds sterling. The XER files carry the base currency at a rate of 1, so read every figure as £
Earned value	Activity % Complete (Physical) for earned value; ETC = remaining cost

DATA DATES

Site reports progress to close of play on Wednesday. The new data date is Thursday 09:00: Week 1 is 10/07/2025 09:00, Week 2 is 17/07/2025 09:00. Enter the date with its time shown.

04

SECTION 04

Work breakdown and activities

Five WBS nodes, twenty activities and two milestones. The durations are given; the dates are yours to schedule.

Work breakdown structure

TABLE 4.1

CODE	NODE	CONTENTS
MS	Key Milestones	A1200 Notice to Proceed (start), A1210 Foundations Complete (finish)
N	North Sector	CFCP-North-100 to 140
S	South Sector	CFCP-South-100 to 140
E	East Sector	CFCP-East-100 to 140
W	West Sector	CFCP-West-100 to 140

Activities, logic and resource assignments

TABLE 4.2

ID	ACTIVITY	DUR (D)	PREDECESSORS	RESOURCES AND BUDGETED UNITS	BUDGET
A1200	Notice to Proceed (NTP)	0		Start milestone	£0
North					
CFCP-North-100	Site Preparation - North	3	A1200	R001 288 h	£8,064
CFCP-North-110	Excavation - North Foundation	4	CFCP-North-100	R002 64 h; R003 960 h; R008 32 h	£30,240
CFCP-North-120	Formwork Setup - North	5	CFCP-North-110	R004 320 h; R012 160 m2	£16,320
CFCP-North-130	Rebar Installation - North	3	CFCP-North-120	R011 8.5 t; R005 432 h	£20,185
CFCP-North-140	Concrete Pour - North Foundation	2	CFCP-North-130	R010 85 CY; R006 512 h; R007 16 h	£26,936
South					
CFCP-South-100	Site Preparation - South	2	A1200	R001 192 h	£5,376
CFCP-South-110	Excavation - South Foundation	3	CFCP-South-100	R002 48 h; R003 720 h; R008 24 h	£22,680
CFCP-South-120	Formwork Setup - South	4	CFCP-South-110	R004 256 h; R012 130 m2	£13,132
CFCP-South-130	Rebar Installation - South	2	CFCP-South-120	R011 6.5 t; R005 288 h	£14,165
CFCP-South-140	Concrete Pour - South Foundation	2	CFCP-North-140, CFCP-South-130	R010 70 CY; R006 512 h; R007 16 h	£25,136

Table 4.2 continues on the next page.

Activities, logic and resource assignments, continued

TABLE 4.2

ID	ACTIVITY	DUR (D)	PREDECESSORS	RESOURCES AND BUDGETED UNITS	BUDGET
East					
CFCP-East-100	Site Preparation - East	3	A1200	R001 288 h	£8,064
CFCP-East-110	Excavation - East Foundation	4	CFCP-East-100	R002 64 h; R003 960 h; R008 32 h	£30,240
CFCP-East-120	Formwork Setup - East	5	CFCP-East-110	R004 320 h; R012 110 m2	£14,420
CFCP-East-130	Rebar Installation - East	3	CFCP-East-120	R011 5 t; R005 432 h	£17,210
CFCP-East-140	Concrete Pour - East Foundation	2	CFCP-South-140, CFCP-East-130	R010 55 CY; R006 512 h; R007 16 h	£23,336
West					
CFCP-West-100	Site Preparation - West	2	A1200	R001 192 h	£5,376
CFCP-West-110	Excavation - West Foundation	3	CFCP-West-100	R002 48 h; R003 720 h; R008 24 h	£22,680
CFCP-West-120	Formwork Setup - West	4	CFCP-West-110	R004 256 h; R012 175 m2	£14,842
CFCP-West-130	Rebar Installation - West	3	CFCP-West-120	R011 9.5 t; R005 288 h	£16,715
CFCP-West-140	Concrete Pour - West Foundation	3	CFCP-East-140, CFCP-West-130	R010 95 CY; R006 768 h; R007 24 h	£36,504
A1210	Foundations Complete	0	CFCP-West-140	Finish milestone	£0
Budget at completion					£371,621

CHECK AS YOU GO

Budgeted cost by sector: North £101,745, South £80,489, East £93,270, West £96,117. Baseline finish Friday 01/08/2025. Float on early work: South 6 days, East 4, West 9. If any of these differ, go back before you save the baseline.

05

SECTION 05

Resource dictionary

Twelve resources in three types. The type decides how P6 turns units into money.

ID	RESOURCE	TYPE	DEFAULT UNITS/DAY	LIMIT/DAY	PRICE	UNIT
R001	Site Crew	Labour	48	96	£28.00/h	Hour
R002	Excavator Operator	Labour	16	32	£35.00/h	Hour
R003	Labourers	Labour	80	240	£25.00/h	Hour
R004	Carpenters	Labour	64	128	£32.00/h	Hour
R005	Rebar Workers	Labour	48	144	£30.00/h	Hour
R006	Concrete Crew	Labour	64	256	£28.00/h	Hour
R007	Concrete Truck	Nonlabour	8	16	£150.00/h	Hour
R008	Excavator	Nonlabour	8	16	£125.00/h	Hour
R009	Concrete Pump	Nonlabour	8	8	£0.00/h	Hour
R010	Ready-Mix Concrete	Material	8		£120.00/CY	Cubic yard
R011	Reinforcement Steel	Material	8		£850.00/t	Tonne
R012	Formwork Ply and Props	Material	8		£38.00/m2	Square metre

How each type is costed

- **Labour and nonlabour** (hours): budgeted units = units per day × number in the gang × duration. Cost = units × price per hour. Site Preparation, North: $2 \times 48 \text{ h/d} \times 3 \text{ d} \times £28 = £8,064$.
- **Material** (quantity): enter the budgeted units straight from Section 06 and let P6 spread them over the activity. Rebar Installation, North: $8.5 \text{ t} \times £850 = £7,225$, plus the fixing gang.
- **Limits**: enter the limit per day on the Units and Prices tab. R004 Carpenters is limited to 128 h a day (two gangs of eight). The baseline asks for 256 h on 10/07 and 11/07. Find that in the Resource Usage Profile before you save the baseline, and say in your report what you would do about it.

06

SECTION 06

Material quantities

The budgeted units for the three material resources. They drive the formwork, rebar and concrete pour costs.

SECTOR	READY-MIX CONCRETE (CY)	REINFORCEMENT STEEL (T)	FORMWORK PLY AND PROPS (M ²)	STEEL PER CY
North	85	8.5	160	0.10 t
South	70	6.5	130	0.09 t
East	55	5.0	110	0.09 t
West	95	9.5	175	0.10 t
Total	305	29.5	575	

SENSE CHECK

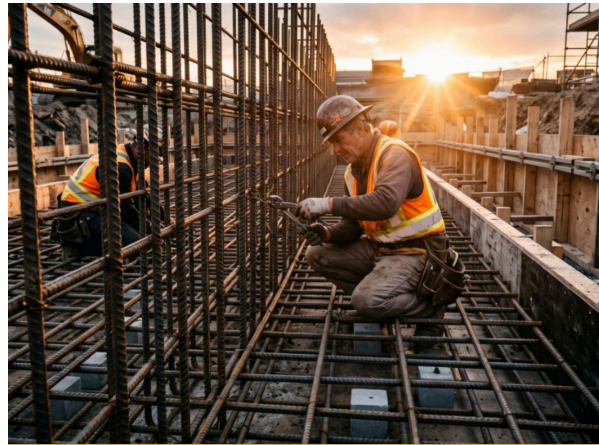
Steel divided by concrete should sit near 0.10 t per cubic yard on every pad. A pad three times higher is a typing error, not a design. Always sense-check material quantities before you load them; the planner who catches it saves the job the cost of ordering it.

PLATE 2 • FORMWORK



Carpenters and formwork ply. Four pads that all want the gang in the same week.

PLATE 3 • REINFORCEMENT



Steel fixers on the North pad. West fixes the most steel on the job with the smaller gang.

07

SECTION 07

Week 1 site report

Progress to close of play on Wednesday 09/07/2025. New data date Thursday 10/07/2025 09:00.

ACTIVITY	STATUS AND DATES	PHYS %	UNITS: ACTUAL / REMAINING	WHAT SITE SAID
A1200 Notice to Proceed	Complete 01/07/2025	100%		Issued on the planned date.
CFCP-North-100 Site Preparation - North	Complete Started 01/07/2025, finished 07/07/2025	100%	R001 480 / 0 h	Finished Monday 07/07, two days late: buried obstructions. Site crew booked 480 h against 288 h.
CFCP-South-100 Site Preparation - South	Complete Started 01/07/2025, finished 02/07/2025	100%	R001 192 / 0 h	Completed as planned.
CFCP-East-100 Site Preparation - East	Complete Started 01/07/2025, finished 03/07/2025	100%	R001 288 / 0 h	Completed as planned.
CFCP-West-100 Site Preparation - West	Complete Started 01/07/2025, finished 02/07/2025	100%	R001 192 / 0 h	Completed as planned.
CFCP-West-110 Excavation - West Foundation	Complete Started 03/07/2025, finished 07/07/2025	100%	R002 48 / 0 h R003 720 / 0 h R008 24 / 0 h	Completed as planned.
CFCP-South-110 Excavation - South Foundation	Complete Started 03/07/2025, finished 08/07/2025	100%	R002 64 / 0 h R003 720 / 0 h R008 32 / 0 h	Finished Tuesday 08/07, one day late on a soft spot. Labourers stood down for the extra day.
CFCP-East-110 Excavation - East Foundation	In progress Started 04/07/2025, remaining 1 d	90%	R002 64 / 16 h R003 960 / 120 h R008 32 / 8 h	90% dug. One more day needed, with half the labour gang.
CFCP-North-110 Excavation - North Foundation	In progress Started 08/07/2025, remaining 3 d	25%	R002 32 / 48 h R003 480 / 720 h R008 16 / 24 h	Started Tuesday 08/07. Wet clay: 25% dug in two days, about half the planned output. Three more days needed at full gang.

GENERAL

No formwork has started: the formwork gang mobilises on Monday 14/07. Enter nothing for any activity not listed. Then set the data date to 10/07/2025 09:00 and schedule.

YOU SHOULD FIND

Forecast finish 06/08/2025, three working days late. SPI 0.73, CPI 0.86, estimate at completion £390,677.

08

SECTION 08

Week 2 site report

Progress to close of play on Wednesday 16/07/2025. New data date Thursday 17/07/2025 09:00.

ACTIVITY	STATUS AND DATES	PHYS %	UNITS: ACTUAL / REMAINING	WHAT SITE SAID
CFCP-North-110 Excavation - North Foundation	Complete Started 08/07/2025, finished 11/07/2025	100%	R002 96 / 0 h R003 960 / 0 h R008 48 / 0 h	Finished Friday 11/07, a day earlier than last week's forecast, after a second excavator and operator were brought in.
CFCP-East-110 Excavation - East Foundation	Complete Started 04/07/2025, finished 11/07/2025	100%	R002 80 / 0 h R003 1080 / 0 h R008 40 / 0 h	Hit a rock band. Finished Friday 11/07, a day later than last week's forecast.
CFCP-North-120 Formwork Setup - North	In progress Started 14/07/2025, remaining 2 d	60%	R004 192 / 128 h R012 96 / 64 m2	Started Monday 14/07. 60% fixed. Two more days.
CFCP-South-120 Formwork Setup - South	In progress Started 14/07/2025, remaining 2 d	50%	R004 192 / 128 h R012 65 / 65 m2	Started Monday 14/07. Half done. Two more days.
CFCP-West-120 Formwork Setup - West	In progress Started 16/07/2025, remaining 4 d	10%	R004 64 / 256 h R012 18 / 157 m2	Started Wednesday 16/07 with a second gang. 10% fixed. Four more days.

GENERAL

East formwork has not started: no carpentry gang free until the North or South gang moves across. Then set the data date to 17/07/2025 09:00 and schedule.

YOU SHOULD FIND

Forecast finish 05/08/2025, two working days late. SPI 0.68, CPI 0.89, estimate at completion £390,333. The finish date improved by a day and the SPI fell. Your report must explain why.

09

SECTION 09

Deliverables and submission

One workbook, one XER and one page of narrative. Submit through the class dashboard.

D1	The answer workbook (Excel): the three P6 pastes, your VLOOKUP sheet, the carpenter profile and the reflection answers.
D2	Your Week 2 XER, exported from P6 with the baseline assigned.
D3	A one-page narrative: what happened, where the critical path is now, why SPI fell while the finish improved, and what you would do about the carpenters.
D4	Two screenshots: the Resource Usage Profile for R004 at baseline, and the earned value columns at Week 2.

How to work

- Build the baseline from Sections 03 to 06. Reconcile the budget to £371,621 before you save BL1.
- Assign BL1 as the project baseline and the primary baseline.
- In P6, build the 18-column layout listed on sheet 07 of the answer workbook, copy the Activity Table and paste it into that sheet. The baseline sheet fills itself; sheet 11 is yours to fill with VLOOKUPs.
- Apply Week 1 from Section 07, schedule, and read the position. Then Week 2 from Section 08.
- Check every proof number against the dashboard. Where yours differs, find the reason before you move on: that is the learning.

SUBMISSION

Upload D1 to D4 through the dashboard before the date your tutor gives in the cohort group. Name files with your surname first: Okafor_TT-CR-01_Answers.xlsx.

10

SECTION 10

Marking

Four equally weighted parts. The narrative carries as much weight as the numbers.

PART	WHAT IS ASSESSED	WEIGHT
Set-up and baseline	Calendar, WBS, logic, critical path, resource dictionary, budget reconciled to the pound, baseline saved and assigned	25%
Progress updates	Dates, remaining duration, Physical %, actual and remaining units entered as reported; data dates correct; forecast finishes match	25%
Analysis	PV, EV, AC, SPI, CPI, EAC and VAC at both data dates; the carpenter clash found and quantified	25%
Narrative and presentation	Plain English explanation of the position, the SPI paradox and a recovery proposal; files named and complete	25%

LEARNING OUTCOMES

Create labour, nonlabour and material resources; assign and reconcile budgeted cost; read a resource profile against a limit; apply weekly progress with units; read earned value and explain it to someone who does not use P6.

READY FOR THE FULL MASTERCLASS?

P6 Vanguard, the final 2026 cohort from The True Troop Consulting, £699. Bring two people and attend the next class free, or pass the word on: they will thank you for it.
<https://vanguard.thetrue troop.com/>