AI-ENABLED PROJECT CONTROLS

From First-Principles Estimating to Earned Value Management

A working case study: 10kV ESB cable installation, civil works; a single, fully linked Excel suite carrying one contract from priced Bill of Quantities through to live application tracking.

10kV ESB · €244,141 Contract · Project Controls Proposal to Management

THE STARTING POINT

Estimating and Project Controls Don't Talk to Each Other

1 Separate spreadsheets

Estimate, programme, cashflow, budget and EVM typically live in different files, built and re-keyed by hand at each stage.

2 Version drift

A rate change or a re-measured quantity has to be manually carried through every downstream sheet; or it quietly falls out of sync.

3 EVM is hard to keep current

On re-measurable civil/electrical contracts, a proper Planned vs Earned vs Actual read needs the schedule re-based every time quantities move; rarely done by hand.

4 Reconciliation is the exception, not the rule

Without a live link back to the priced BoQ, category totals (labour, plant, materials, subcontract) are trusted rather than checked.

THE APPROACH

One Linked Workbook Family, Seven Stages

Every stage reads live from the one priced Bill of Quantities. Change a rate or a programme date once, and it ripples through the whole suite; cashflow, budget, hours, and EVM all update together.

1. **Pricing & Estimating** →
2. **Programme & Gantt** →
3. **Resourced Programme & Cashflow** →
4. **Resourced Budget Histogram** →
5. **Hours & Subcontract Timing** →
6. **Resourced Budget Baseline** →
7. **EVM & Application Tracking**

Invoked as needed, on top of this backbone: Split-Quantity-Rate-Source (multi-section BoQ splits) and the Materials Procurement Schedule (weekly, named-item ordering).

Single source of truth

Every figure traces back to one priced BoQ line.

Built-in reconciliation

Per-category CHECK rows, not just a grand total.

Native Excel throughout

Real formulas and charts; nothing locked in a black box.

THE METHOD

Where AI Does the Work - and Where It Doesn't

Stays with the estimator

- Pricing judgement: crew rates, productions, material costs.
- Programme logic: sequencing, predecessors, lags and constraints, authored in ProjectLibre.
- Commercial decisions: what to claim, when, and against which basis.
- Final review of every figure before it goes to the client.

Built and maintained by AI

- The full linked formula suite across 70+ tabs; cashflow, budgets, hours, EVM.
- Native Excel charts, styled to a consistent house standard, every time.
- Reconciliation; per-category CHECK rows against the priced BoQ, not just a grand total.
- Safe edits to complex files; pivot tables, macros and embedded drawings are never put at risk.

STAGE 1 OF 7

1 Pricing & Estimating

- Base priced Bill of Quantities, with full crew and material rate build-ups behind every line.
- Every BoQ line tagged with a Programme Code and Task Code; the link that the whole downstream suite depends on.
- The RECONCILED SUMMARY ties every cost category; Labour, Plant, Fuel, Material, Disposal, Subcontract; back to the one contract total, to the cent.

				SUMMARY
62.4%	Labour	€ 64,417.98	€ 5,961.01	€ 70,378.99
37.6%	Plant	€ 28,226.36	€ 2,611.97	€ 30,838.32
100.0%	Fuel	€ 10,523.11	€ 973.77	€ 11,496.88
	Material	€ 71,465.69	€ 6,638.50	€ 78,104.19
	Disposal Off Site	€ 14,815.50		€ 14,815.50
	Sub_Others	€ 3,038.00		€ 3,038.00
	Prelims	€ -		€ -
		€ 192,486.64		**€ 208,671.88**
	TOTAL			**€ 244,140.56**
	Margin			€ 35,468.68
	Risk / Other			€ -

P&L Adjustment	€ 9,546.74		
Labour	€ 64,417.98		62.4%
Plant	€ 28,226.36		27.4%
Fuel	€ 10,523.11		10.2%
	€ 103,167.45		
Material Adjustment		€ 6,638.50	

RECONCILED SUMMARY		
Labour	€ 70,378.99	33.7%
Plant	€ 30,838.32	14.8%
Fuel	€ 11,496.88	5.5%
Material	€ 78,104.19	37.4%
Disposal Off Site	€ 14,815.50	7.1%
Sub_Others	€ 3,038.00	1.5%
Prelims	€ -	0.0%
	€ 208,671.88	100.0%
TOTAL	**€ 244,140.56**	
Margin (On selling)	€ 35,468.68	14.5%
Risk / Other		

€244,141
Contract sell value

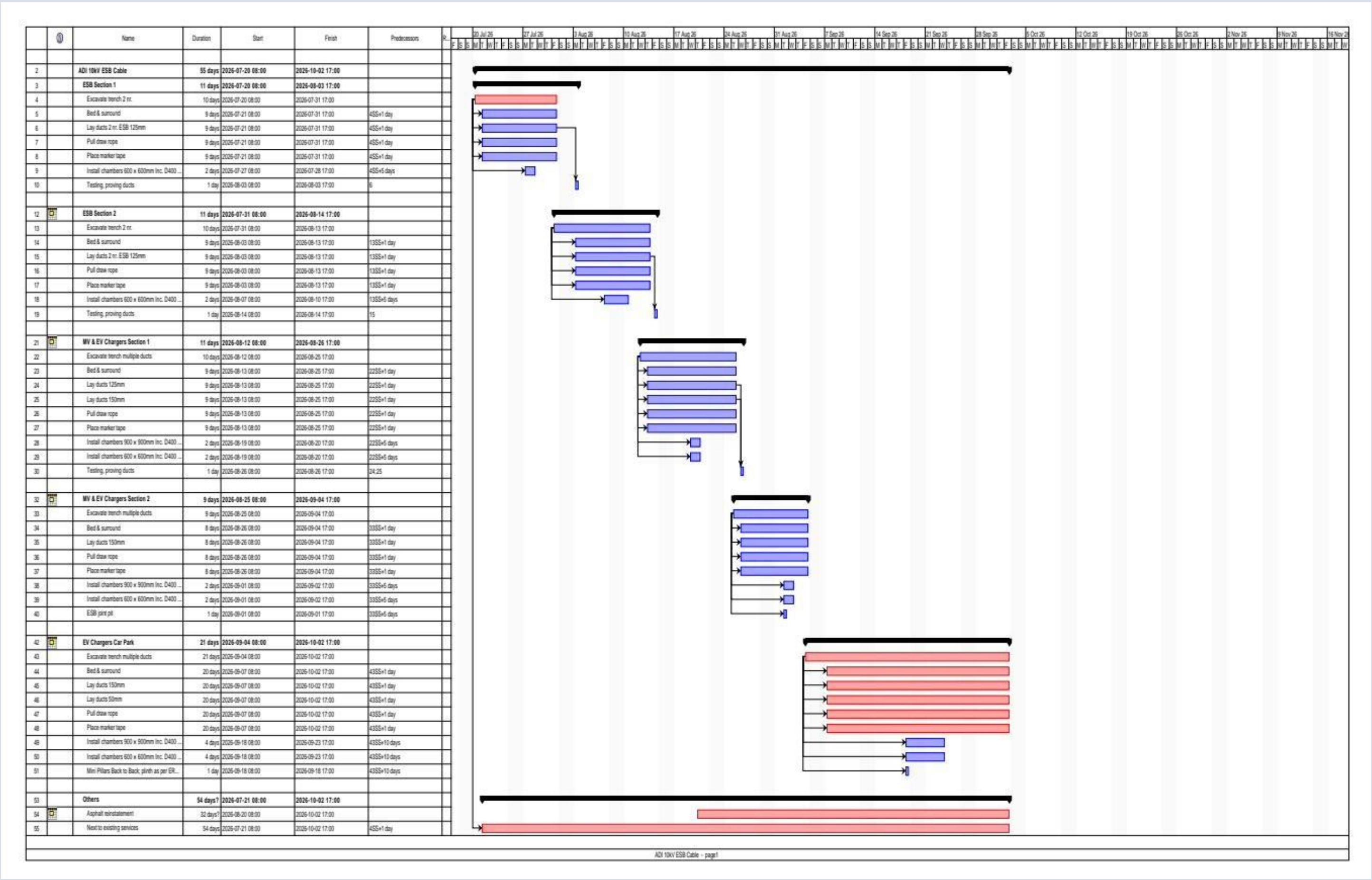
14.5%
Margin

7
Cost categories reconciled

STAGE 2 OF 7

2 Programme & Gantt

- Sequencing logic: predecessors, lags, critical path; authored in ProjectLibre, where it belongs.
- Dates copied into the Excel Programme sheet via hidden text-to-date helper columns, then linked to every downstream sheet by Programme Code.
- Code Check tab validates every BoQ line has a matching Programme Code and vice versa; live, on every change.



Programme logic, authored and sequenced in ProjectLibre

STAGE 3 OF 7

3 Resourced Programme & Cashflow

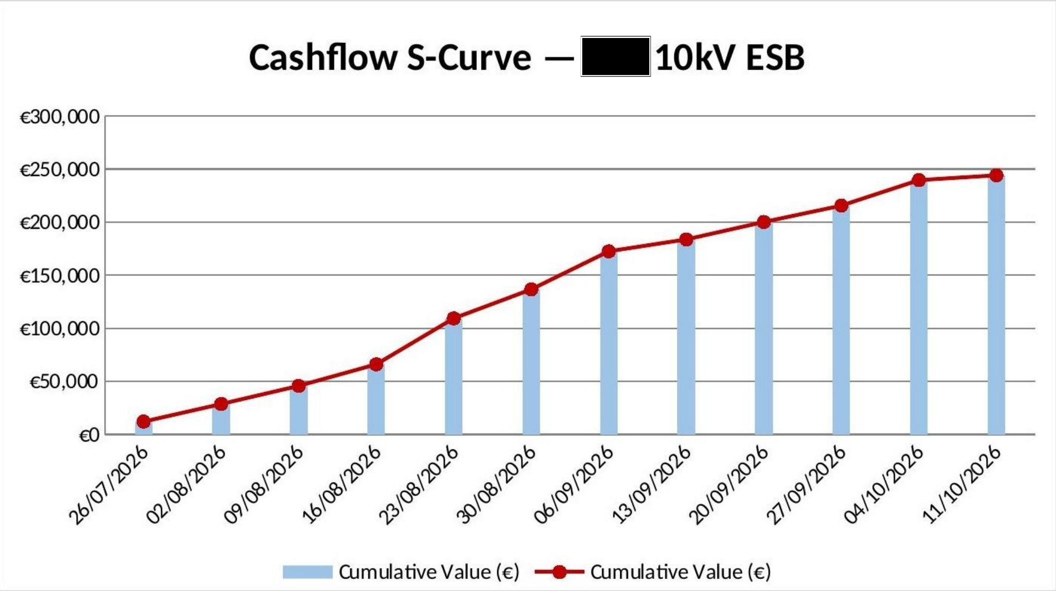
- Each BoQ code's value is spread across its own programme dates using a smoothstep S-curve, on a working-day basis.
- Weekly Cashflow ties out exactly to the €244,141 contract sell value; a live CHECK row confirms it every time.
- Bars for weekly value, line for cumulative; a native Excel chart, built via safe XML splice so pivot tables and macros are never disturbed.

Cashflow — [redacted] 10kV ESB (weekly S-curve, Mon-Sun buckets)

Value Earned per week = SUM of the matching week column in SCurve Calc. All formula-driven.

Week No.	Week Start	Week End	Planned Value (€)	Cumulative Value (€)	Cumulative %
1	20/07/2026	26/07/2026	€ 12,123.15	€ 12,123.15	5.0%
2	27/07/2026	02/08/2026	€ 16,531.06	€ 28,654.21	11.7%
3	03/08/2026	09/08/2026	€ 17,087.84	€ 45,742.06	18.7%
4	10/08/2026	16/08/2026	€ 20,294.31	€ 66,036.37	27.0%
5	17/08/2026	23/08/2026	€ 43,313.11	€ 109,349.47	44.8%
6	24/08/2026	30/08/2026	€ 27,325.26	€ 136,674.73	56.0%
7	31/08/2026	06/09/2026	€ 35,882.57	€ 172,557.30	70.7%
8	07/09/2026	13/09/2026	€ 11,186.65	€ 183,743.95	75.3%
9	14/09/2026	20/09/2026	€ 16,397.74	€ 200,141.69	82.0%
10	21/09/2026	27/09/2026	€ 15,457.89	€ 215,599.58	88.3%
11	28/09/2026	04/10/2026	€ 24,066.55	€ 239,666.13	98.2%
12	05/10/2026	11/10/2026	€ 4,474.43	€ 244,140.56	100.0%

Final cumulative value (check)	**€ 244,140.56**
BoQ Pricing grand total (check)	**€ 244,140.56**
Difference (should be €0.00)	**€ -**



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STAGE 4 OF 7

Resourced Budget Histogram

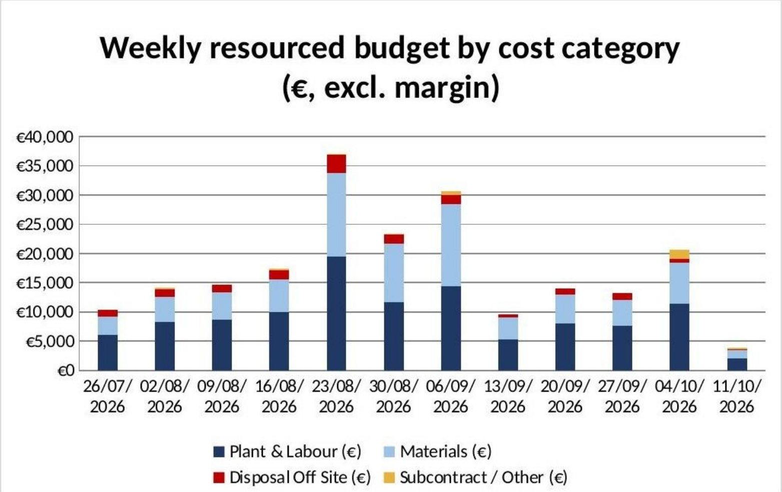
- The same weekly time-phasing, now split by cost category; Plant & Labour, Materials, Disposal Off Site, Subcontract/Other.
- Reconciles to the RECONCILED SUMMARY cost total (€208,672), not the sell price used on the Cashflow; the CVR/budget view site teams actually plan against.

Resourced Budget Histogram — [redacted] 10kV ESB

Weekly resourced cost budget (Plant & Labour / Materials / Disposal Off Site / Subcontract-Other), excluding the 17% margin — reconciles to the RECONCILED SUMMARY total on the SUMMARY sheet, not the €244,140.56 contract sell value used in the Cashflow tab. All cells are live formulas. Disposal Off Site is shown separately from Materials so the Materials figure reflects true material cost only.

Week No.	Week Start	Week End	Plant & Labour (€)	Materials (€)	Disposal Off Site (€)	Subcontract / Other (€)	Total (€)	Cumulative Total (€)	Cumulative %
1	20/07/2026	26/07/2026	€ 6,074.23	€ 3,089.39	€ 1,198.38	€ -	€ 10,361.99	€ 10,361.99	5.0%
2	27/07/2026	02/08/2026	€ 8,212.06	€ 4,400.55	€ 1,260.84	€ 254.50	€ 14,127.95	€ 24,489.94	11.7%
3	03/08/2026	09/08/2026	€ 8,718.85	€ 4,599.22	€ 1,286.73	€ -	€ 14,604.79	€ 39,094.74	18.7%
4	10/08/2026	16/08/2026	€ 9,911.92	€ 5,687.15	€ 1,488.83	€ 256.77	€ 17,344.68	€ 56,439.41	27.0%
5	17/08/2026	23/08/2026	€ 19,506.13	€ 14,241.51	€ 3,200.45	€ 73.09	€ 37,021.18	€ 93,460.60	44.8%
6	24/08/2026	30/08/2026	€ 11,626.02	€ 10,079.01	€ 1,577.74	€ 73.09	€ 23,355.86	€ 116,816.46	56.0%
7	31/08/2026	06/09/2026	€ 14,438.05	€ 14,061.63	€ 1,521.42	€ 649.24	€ 30,670.33	€ 147,486.79	70.7%
8	07/09/2026	13/09/2026	€ 5,220.17	€ 3,872.16	€ 469.44	€ -	€ 9,561.77	€ 157,048.56	75.3%
9	14/09/2026	20/09/2026	€ 7,946.14	€ 5,015.90	€ 1,054.02	€ -	€ 14,016.06	€ 171,064.62	82.0%
10	21/09/2026	27/09/2026	€ 7,582.01	€ 4,523.56	€ 1,107.17	€ -	€ 13,212.75	€ 184,277.36	88.3%
11	28/09/2026	04/10/2026	€ 11,403.30	€ 7,077.25	€ 628.87	€ 1,460.79	€ 20,570.20	€ 204,847.57	98.2%
12	05/10/2026	11/10/2026	€ 2,075.33	€ 1,456.86	€ 21.61	€ 270.52	€ 3,824.32	€ 208,671.88	100.0%
		TOTAL	**€ 112,714.19**	**€ 78,104.19**	**€ 14,815.50**	**€ 3,038.00**	**€ 208,671.88**		

Reconciled Summary total (check) — SUMMARY!$D$39	**€**	**208,671.88**
Difference (should be €0.00)	**€**	**-**
For reference — contract sell value used in Cashflow tab	*€*	*244,140.56*



Hours & Subcontract Timing

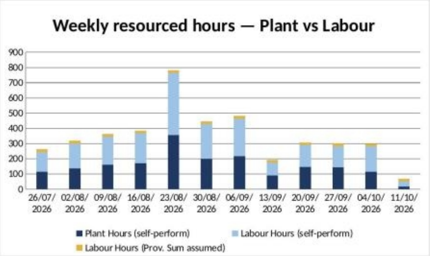
- Crew build-ups converted into weekly Plant Hours vs Labour Hours, for genuine resource loading on site.
- Subcontract and provisional-sum packages timed separately, by value; so site knows when subbies are due without conflating it with self-perform hours.

Resourced Hours Histogram — [redacted] 10kV ESB

Weekly self-perform Plant Hours and Labour Hours, split from crew build-ups (Crews sheet), plus the Provisional Sum's crude assumed self-perform labour hours (Sub_Others!$D$53, ~220 hrs, spread evenly across the whole 12-week programme since it isn't tied to a Programme code or dates). Genuine subcontractor cost with no assumed labour (currently Proving Ducts, €3,038) carries no hours and is excluded here — it already sits in the €-cost Budget Histogram's Subcontract/Other column. All cells are live formulas.

Week No.	Week Start	Week End	Plant Hours (self-perform)	Labour Hours (self-perform)	Labour Hours (Prov. Sum assumed)	Total Labour Hours	Total Hours	Cumulative Hours	Cumulative %
1	20/07/2026	26/07/2026	113.3	130.3	18.3	148.7	262.0	262.0	6.2%
2	27/07/2026	02/08/2026	136.8	162.8	18.3	181.1	317.9	579.9	13.8%
3	03/08/2026	09/08/2026	159.3	186.1	18.3	204.4	363.7	943.6	22.4%
4	10/08/2026	16/08/2026	169.3	197.9	18.3	216.2	385.5	1,329.1	31.6%
5	17/08/2026	23/08/2026	354.4	410.2	18.3	428.6	783.0	2,112.1	50.2%
6	24/08/2026	30/08/2026	198.6	229.2	18.3	247.5	446.1	2,558.2	60.8%
7	31/08/2026	06/09/2026	216.3	246.8	18.3	265.1	481.4	3,039.5	72.2%
8	07/09/2026	13/09/2026	90.8	83.6	18.3	102.0	192.7	3,232.3	76.8%
9	14/09/2026	20/09/2026	146.5	142.5	18.3	160.8	307.3	3,539.6	84.1%
10	21/09/2026	27/09/2026	142.3	140.5	18.3	158.9	301.1	3,840.7	91.3%
11	28/09/2026	04/10/2026	115.1	166.6	18.3	184.9	300.0	4,140.7	98.4%
12	05/10/2026	11/10/2026	15.6	33.7	18.3	52.1	67.7	4,208.4	100.0%
		TOTAL	1,858.2	2,130.2	220.0	2,350.2	4,208.4		
							4,208.4		

Self-perform Plant Hours check — 'Hours Calc'!$H$73	1,858.16
Difference (should be 0.00 hrs)	0.00
Self-perform Labour Hours check — 'Hours Ca	2,130.25



Weekly resourced Plant & Labour hours

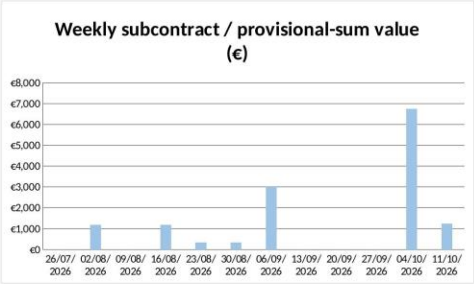
Subcontract & Provisional Sum Works — Timing (€)

Shows WHEN each subcontract / provisional-sum package falls in the programme and its priced value, so the site team can form their own view on the P&L / margin required — value only, no hours, since this is subcontracted or provisional-sum work rather than self-perform crew time

Weekly Subcontract / Provisional Sum Value (€)

Week No.	Week Start	Week End	Subcontract / Other (€)	Cumulative (€)	Cumulative %
1	20/07/2026	26/07/2026	€ -	€ -	0.0%
2	27/07/2026	02/08/2026	€ 1,176.00	€ 1,176.00	8.4%
3	03/08/2026	09/08/2026	€ -	€ 1,176.00	8.4%
4	10/08/2026	16/08/2026	€ 1,186.50	€ 2,362.50	16.8%
5	17/08/2026	23/08/2026	€ 337.75	€ 2,700.25	19.2%
6	24/08/2026	30/08/2026	€ 337.75	€ 3,038.00	21.6%
7	31/08/2026	06/09/2026	€ 3,000.00	€ 6,038.00	43.0%
8	07/09/2026	13/09/2026	€ -	€ 6,038.00	43.0%
9	14/09/2026	20/09/2026	€ -	€ 6,038.00	43.0%
10	21/09/2026	27/09/2026	€ -	€ 6,038.00	43.0%
11	28/09/2026	04/10/2026	€ 6,750.00	€ 12,788.00	91.1%
12	05/10/2026	11/10/2026	€ 1,250.00	€ 14,038.00	100.0%
		TOTAL	€ 14,038.00	€ 14,038.00	
		'Budget Histogram'! $F$17	€ 14,038.00		
		Difference (shou	€ -		

Subcontract / Provisional Sum Line Items — by Programme Task



Weekly subcontract / provisional-sum value — gross package (€14,038)

STAGE 6 OF 7

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Resourced Budget Baseline

What the baseline is

- One flat row per Programme task; duration, start, finish, and cost split by Plant & Labour / Materials / Disposal / Sub-Others.
- A blank Actual Cost column beside every row, ready to take job-costing data.
- Locked once agreed; the fixed reference every later valuation is measured against.
- Same reconciliation discipline as Stage 4; per-category CHECK rows against the RECONCILED SUMMARY.

Why it earns its place

- Earned Value is only meaningful against a frozen baseline; without one, SPI and CPI drift every time the estimate is touched.
- Separates a genuine performance variance from a simple change of scope or rate.
- Gives the cost report a like-for-like target at task level, not just a job-level number.
- Not yet built on; the one stage still outstanding, and the first item on the next contract.

Materials Procurement Schedule

- Explodes the lumped weekly Materials figure into named items; ducting, aggregate, chambers, concrete, tape; by week.
- Tells procurement exactly what to order and when, instead of a single opaque cost line; reconciles exactly to the Budget Histogram's Materials total.

Materials Procurement Schedule — [redacted] 10kV ESB

Weekly value of materials required to be procured/delivered to site, by material item, time-phased to the Resourced Programme's S-curve (matches the timing already used on the Budget Histogram). Excludes Disposal Off Site (not a procured material) — reconciles to the Budget Histogram's Materials column total. Figures include the 8% Material adjustment. All cells are live formulas drawing from the Procurement Calc helper tab.

Category	Material Item	Description	w/e 26/07	w/e 02/08	w/e 09/08	w/e 16/08	w/e 23/08	w/e 30/08	w/e 06/09	w/e 13/09	w/e 20/09	w/e 27/09	w/e 04/10	w/e 11/10	Total (€)
AGGREGATE															
AGGREGATE	CL. 804 Backfill	Clause 804 Aggregate Trench Backfill	€ 1,050.69	€ 1,099.74	€ 1,010.34	€ 1,274.04	€ 2,843.58	€ 1,913.34	€ 2,066.90	€ 352.50	€ 791.46	€ 831.37	€ 472.22	€ 16.23	€ 13,722.43
AGGREGATE	ESB Sand	ESB Spec Sand	€ 499.56	€ 746.86	€ 998.43	€ 1,685.55	€ 4,152.85	€ 1,568.81	€ 1,305.30	€ 245.64	€ 551.53	€ 579.34	€ 329.06	€ 11.31	€ 12,674.24
CONCRETE															
CONCRETE	C12/15	C12/15 Concrete	€ 32.57	€ 48.22	€ 55.18	€ 20.25	€ 117.16	€ 117.16	€ 234.33	€ -	€ -	€ -	€ 144.65	€ 50.63	€ 820.15
DUCTING															
DUCTING	125mm ESB	125mm Red ESB uPVC Ducting	€ 1,079.20	€ 1,598.29	€ 1,844.57	€ 998.03	€ 1,010.84	€ 154.60	€ -	€ -	€ -	€ -	€ -	€ -	€ 6,685.51
DUCTING	160mm ESB	160mm Red ESB uPVC Ducting	€ -	€ -	€ -	€ 1,117.44	€ 3,517.87	€ 2,505.46	€ 2,750.52	€ 250.20	€ 561.76	€ 590.09	€ 335.17	€ 11.52	€ 11,640.02
DUCTING	50mm Duct	ESB Red Ducting 100m x 50mm Coil	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ 71.39	€ 160.29	€ 168.37	€ 95.63	€ 3.29	€ 498.96
CHAMBERS															
CHAMBERS	Acc. Chamber 600mm	610 x 610 x 150mm Chamber Section D400	€ 216.18	€ 320.00	€ 366.22	€ 134.40	€ 259.20	€ 259.20	€ 518.40	€ -	€ -	€ -	€ 192.00	€ 67.20	€ 2,332.80
CHAMBERS	Acc. Chamber 900mm	900 x 900 x 150mm D400 Chamber Section	€ -	€ -	€ -	€ -	€ 936.00	€ 936.00	€ 1,872.00	€ -	€ -	€ -	€ 1,386.67	€ 485.33	€ 5,616.00
COVERS & FRAMES															
COVERS & FRAMES	Cham. Cov. 600mm D400	600 x 600mm Heavy Duty Square Manhole Cover & Frame D400	€ 121.60	€ 180.00	€ 206.00	€ 75.60	€ 145.80	€ 145.80	€ 291.60	€ -	€ -	€ -	€ 108.00	€ 37.80	€ 1,312.20
COVERS & FRAMES	Cham. Cov. 900mm D400	900 x 900mm Double Tri Heavy Duty Lift-Out C&F D400 EN124	€ -	€ -	€ -	€ -	€ 853.20	€ 853.20	€ 1,706.40	€ -	€ -	€ -	€ 1,264.00	€ 442.40	€ 5,119.20
MISCELLANEOUS															
MISCELLANEOUS	Rope 10mm	220m x 10mm Blue Polypropylene Rope	€ 28.77	€ 42.60	€ 49.17	€ 51.79	€ 106.24	€ 60.60	€ 62.00	€ 10.57	€ 23.74	€ 24.94	€ 14.17	€ 0.49	€ 475.08
MISCELLANEOUS	Tape	Underground Warning Tape Electrical Cable Below 150mm x 365m	€ 6.73	€ 9.78	€ 7.66	€ 5.65	€ 8.94	€ 11.74	€ 14.50	€ 3.54	€ 7.96	€ 8.36	€ 4.75	€ 0.16	€ 89.78
MISCELLANEOUS	Tape Det.	Detect Tape Caution Electric Cable Below 100m 200mm	€ 54.10	€ 78.62	€ 61.64	€ 45.47	€ 71.94	€ 94.40	€ 116.60	€ 28.50	€ 64.00	€ 67.23	€ 38.18	€ 1.31	€ 722.01
PAVEMENTS															
PAVEMENTS	Asp.	Asphalt	€ -	€ -	€ -	€ -	€ 138.48	€ 1,379.29	€ 2,417.86	€ 2,909.82	€ 2,855.15	€ 2,253.88	€ 1,105.99	€ 35.35	€ 13,095.81
PROVISIONAL SUM															
PROVISIONAL SUM	Provisional Sum — Material Allocation	Non-itemised: 30% of Sub_Others Provisional Sum + Proving Ducts real	€ -	€ 276.45	€ -	€ 278.92	€ 79.40	€ 79.40	€ 705.23	€ -	€ -	€ -	€ 1,586.76	€ 293.85	€ 3,300.00
	TOTAL — ALL MATERIALS		**€ 3,089.39**	**€ 4,400.55**	**€ 4,599.22**	**€ 5,687.15**	**€ 14,241.51**	**€ 10,079.01**	**€ 14,061.63**	**€ 3,872.16**	**€ 5,015.90**	**€ 4,523.56**	**€ 7,077.25**	**€ 1,456.86**	**€ 78,104.19**
	Cumulative Total (€)		€ 3,089.39	€ 7,489.94	€ 12,089.16	€ 17,776.31	€ 32,017.82	€ 42,096.83	€ 56,158.46	€ 60,030.62	€ 65,046.52	€ 69,570.08	€ 76,647.33	€ 78,104.19	
	Cumulative %		4.0%	9.6%	15.5%	22.8%	41.0%	53.9%	71.9%	76.9%	83.3%	89.1%	98.1%	100.0%	
	CHECK — vs Budget Histogram Materials total (SUM(E5:E16)); should read €0.00														€ -

STAGE 7 OF 7

EVM & Application Tracking

Planned Value, Earned Value, Actual Cost and a remeasured-quantity Revised Planned baseline; all live, tied to headline SPI/CPI/EAC metrics below.

EVM Chart — Planned Value, Earned Value & Actual Cost (Application No. 1)

Planned Value is a cumulative weekly S curve across the full programme (linked to 'Cashflow'), based on the ORIGINAL BoQ scope (col M) — this is the original baseline and can look skewed once re-measurable quantities have moved. Revised Planned Value (dotted, cols K:L, linked to 'Revised Planned SCurve Calc') runs the SAME original Start/Finish dates (cols F & G on 'Resourced Prog. & EVM') and the same weekly cumulative build as the original Planned curve, start to finish, but spreads each task's REVISED quantity instead (finished tasks: as claimed; ongoing tasks: col R × rate) — a fairer baseline for re-measurable items. Its final total ties exactly to the 'Forecast Value at Completion' figure below, since both use the same revised quantity basis. Earned Value is capped at the Application Date (18/09/2026, linked to 'EV SCurve Calc') — it holds flat afterward rather than continuing to climb toward project completion. Actual Cost is a straight line between the actual cost window start and the application/valuation date. The dashed 'Forecast EV to Completion' line projects the remaining work using each open task's remeasured quantity. All figures link live to 'Resourced Prog. & EVM'.

PLANNED VALUE & EARNED VALUE (cumulative S-curve)

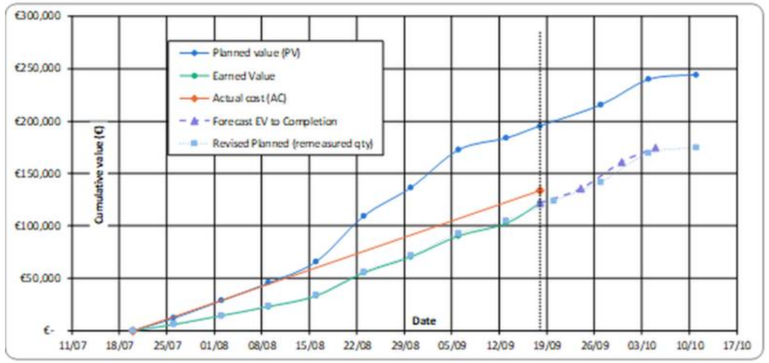
Week No.	Date	Cumulative Planned	Cumulative Earned Value (€)
0	20/07/2026	€ -	€ -
1	26/07/2026	€ 12,123	€ 6,101
2	02/08/2026	€ 28,654	€ 14,468
3	09/08/2026	€ 45,742	€ 23,149
4	16/08/2026	€ 66,036	€ 33,441
5	23/08/2026	€ 109,349	€ 55,396
6	30/08/2026	€ 136,675	€ 70,636
7	06/09/2026	€ 172,557	€ 90,533
8	13/09/2026	€ 183,744	€ 102,568
App. Date	18/09/2026	€ 195,401	€ 122,070
10	27/09/2026	€ 215,600	€ 122,070
11	04/10/2026	€ 239,666	€ 122,070
12	11/10/2026	€ 244,141	€ 122,070

ACTUAL COST (straight line, tied to task codes)

Date	Actual Cost (€)
20/07/2026	€ -
18/09/2026	€ 133,500

FORECAST TO COMPLETION (quantity-driven)

Metric	Value
Completion Date (latest task Finish)	05/10/2026
Forecast Value at Completion (qty-driven)	€ 174,524
Remaining EV to Earn	€ 52,454
Realistic EAC (AC + Remaining, no further overrun assumed)	€ 185,954
Realistic VAC (Forecast - Realistic EAC)	-€ 11,430
Revised Planned Value (as of App. Date, remeasured qty)	€ 118,398
Revised SV (EV - Revised PV)	€ 3,673
Revised SPI (EV / Revised PV)	1.03



HEADLINE EVM METRICS (as of 18/09/2026 — Application No. 1, test basis)

Metric	Value	
Planned value (PV) — revised (remeasured c	€ 118,398	
Earned value (EV)	€ 122,070	
Actual cost (AC)	€ 133,500	
Budget at completion (BAC) — revised (rem	€ 174,524	
Schedule variance (SV = EV-PV)	€ 3,673	
Cost variance (CV = EV-AC)	-€ 11,430	
SPI (EV/PV) Schedule Performance Index	1.03	An SPI of 1 means a project is on schedule, above 1 means it is ahead, and below 1 means it is behind.
CPI (EV/AC) Cost Performane Index	0.91	For every 1 spent the return is 0.91
EAC (BAC/CPI) Estimate at Completion	€ 190,865	
VAC (BAC-EAC) Variance at Completion	-€ 16,341	
TCPI ((BAC-EV)/(BAC-AC))	1.28	To Complete Performance Index. Need to achieve a CPI of 1.28 to finish the project under budget.

Actual cost runs to the application date (18/09/26); the dashed grey line

WHAT IT TELLS MANAGEMENT

One Glance: Schedule and Cost Health, Together

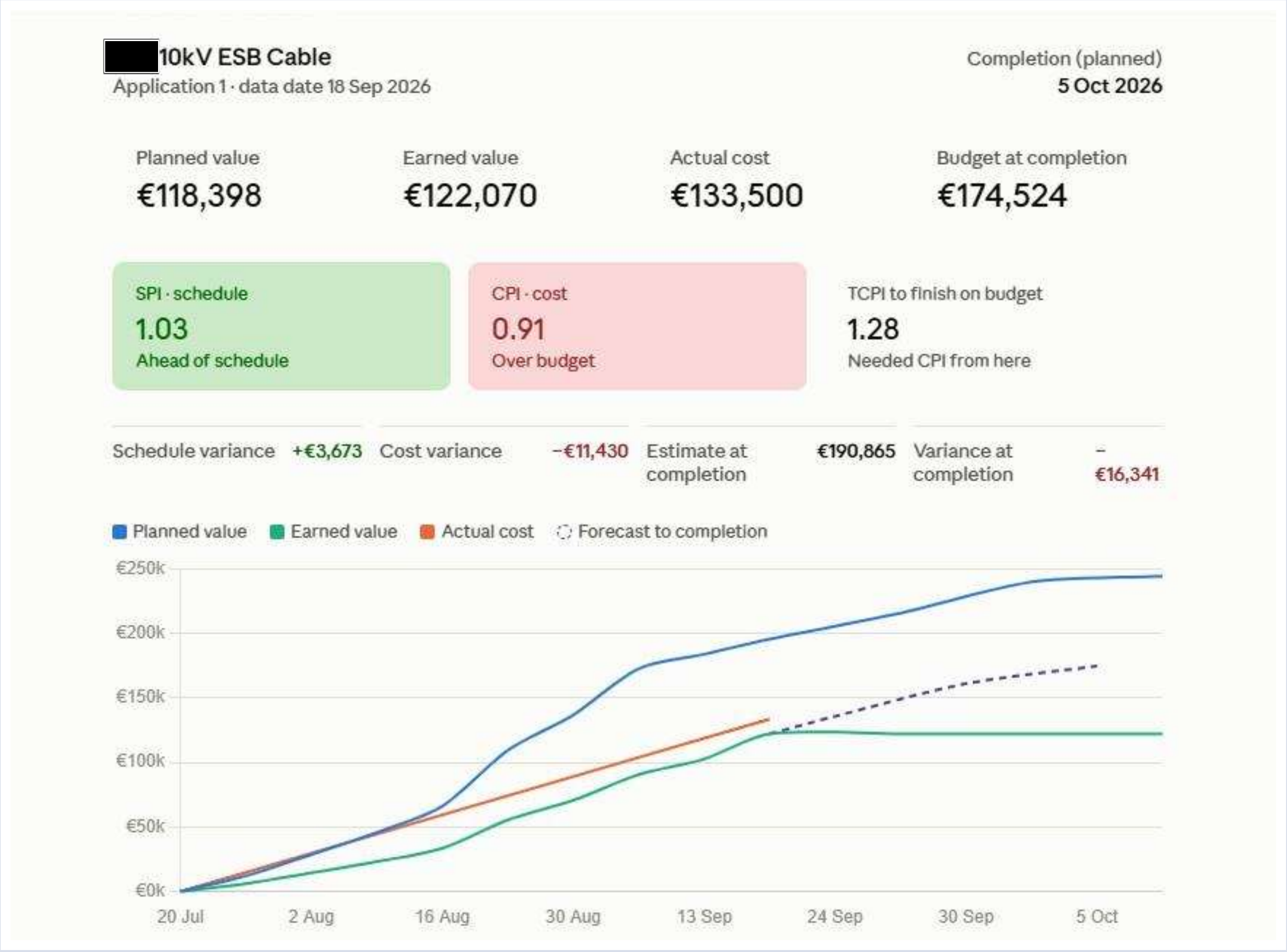
1.03	**0.91**	**€190,865**	**1.28**
SPI — schedule performance (>1 = ahead)	CPI — cost performance (<1 = overrun)	EAC — estimate at completion	TCPI — efficiency needed to recover

- SPI 1.03, CPI 0.91: on this test application the job reads slightly ahead of a fair, remeasure-adjusted schedule, but spending €1.09 for every €1.00 of value earned; a moderate cost overrun worth a conversation, not a crisis.
- Revised Planned Value and BAC are re-based onto remeasured quantities; so a scope that has genuinely shrunk or grown doesn't produce a misleading SPI reading, the way a straight original-scope comparison would.
- Every number on this slide is a live formula traced back to the priced BoQ and the Programme; not a manually reconciled month-end exercise.

Figures shown are from Application No. 1, run as a test/exercise on a reduced-quantity basis (revised BAC €174,524 against the €244,141 contract) to prove the mechanism — not a live progress claim.

A Live Dashboard for Up-to-Date Reporting

- A Dashboard tab is now a standard part of every EVM build: a live KPI table, green/amber/red conditional formatting, and a copy of the EVM chart; all reading directly off the workbook's own EVM Chart sheet.
- A dynamic Key Insight formula compares TCPI against current CPI and states, in plain language, whether the budget target looks achievable at today's cost efficiency or needs a step-change.
- A polished HTML snapshot like this one can be generated on request for a management screen-share; a point-in-time export, not a live view, since it doesn't read the workbook at render time.



Quality Control at Every Stage

- Every new sheet carries a live CHECK row per category, not just a grand total, wherever it reconciles against a finer summary.
- The Code Check tab flags any BoQ line whose Programme Code has no match on the Programme sheet, and vice versa; automatically, every time either sheet changes.
- Every workbook edit is validated with a trimmed recalculation pass (zero formula errors) and a zip-diff against the original, confirming every untouched part is byte-identical before it's handed back.

Code Check — live validation of BoQ ↔ Programme code linking

Flags any Programme Code on one sheet with no matching code on the other (e.g. a typo, extra space, or a code that was renamed on only one side). Recalculates automaticall

Summary

Unmatched codes —	0
Unmatched codes —	2

Note: 2 flags expected today — EV1.03 and MV2.03 ('Lay ducts 125mm') are known zero-quantity placeholder rows on the Programme sheet with no BoQ line, not errors. Any o

Section 1 — BoQ Pricing rows: does each tagged Programme Code exist on the Programme sheet?

BoQ Row	Item Description	Programme Code	Status
11	Saw cut asphalt	ESB1.01	OK
12	Breakup asphalt & dispose	ESB1.01	OK
13	Excavate trench & stockpile material	ESB1.01	OK
14	Dispose of material off site	ESB1.01	OK
18	Saw cut asphalt	ESB2.01	OK
19	Breakup asphalt & dispose	ESB2.01	OK
20	Excavate trench & stockpile material	ESB2.01	OK
21	Dispose of material off site	ESB2.01	OK
25	Saw cut asphalt	MV1.01	OK
26	Breakup asphalt & dispose	MV1.01	OK
27	Excavate trench & stockpile material	MV1.01	OK
28	Dispose of material off site	MV1.01	OK
32	Saw cut asphalt	MV1.01	OK
33	Breakup asphalt & dispose	MV1.01	OK
34	Excavate trench & stockpile material	MV1.01	OK
35	Dispose of material off site	MV1.01	OK
39	Saw cut asphalt	MV1.01	OK
40	Breakup asphalt & dispose	MV1.01	OK
41	Excavate trench & stockpile material	MV1.01	OK
42	Dispose of material off site	MV1.01	OK
46	Saw cut asphalt	MV1.01	OK
47	Breakup asphalt & dispose	MV1.01	OK

Why This Matters to Management

1 One source of truth

Tender to final account, without re-keying figures between separate estimate, programme and EVM spreadsheets.

2 Every claim is defensible

PV, EV, AC and the remeasured baseline are all live formulas, traceable back to the priced BoQ — not a spreadsheet someone trusts.

3 No new software

The complex Excel mechanics; pivot tables, macros, native charts; stay fully intact. This works inside tools the business already uses.

4 A repeatable template

Template is now the benchmark. The same seven-stage suite can be stood up on the next contract in a fraction of the time the first one took.

NEXT STEPS

Rolling This Out

1

Stress-test on live jobs

Run the full seven-stage setup on the next 1–2 contracts to harden the process as job scale and complexity increase.

2

Keep template current to completion

Extend the EVM S-curve and cashflow tables forward as the job runs toward practical completion in October 2026.

3

Standardise as the default

Code Check and per-category reconciliation become the starting point for every new estimate, not an optional extra.

From a priced Bill of Quantities to a defensible EVM application - one linked workbook, start to finish.