CMCS INSIGHTS · PMC FIRMS

PMWEB for PMC Firms: Digitalising the CMAA Standards of Practice

Fourteen articles on how GCC PMC firms can turn the CMAA Construction Management Standards of Practice into a system of record in PMWEB, function by function, from delivery methods to cost, time, quality, contract administration, risk, programme management and AI.

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From the CMAA Standard to a System of Record — How GCC PMC Firms Can Use PMWEB to Digitalise Their Project Management Practice

Digitalising the CMAA Construction Management Standards of Practice, one function at a time

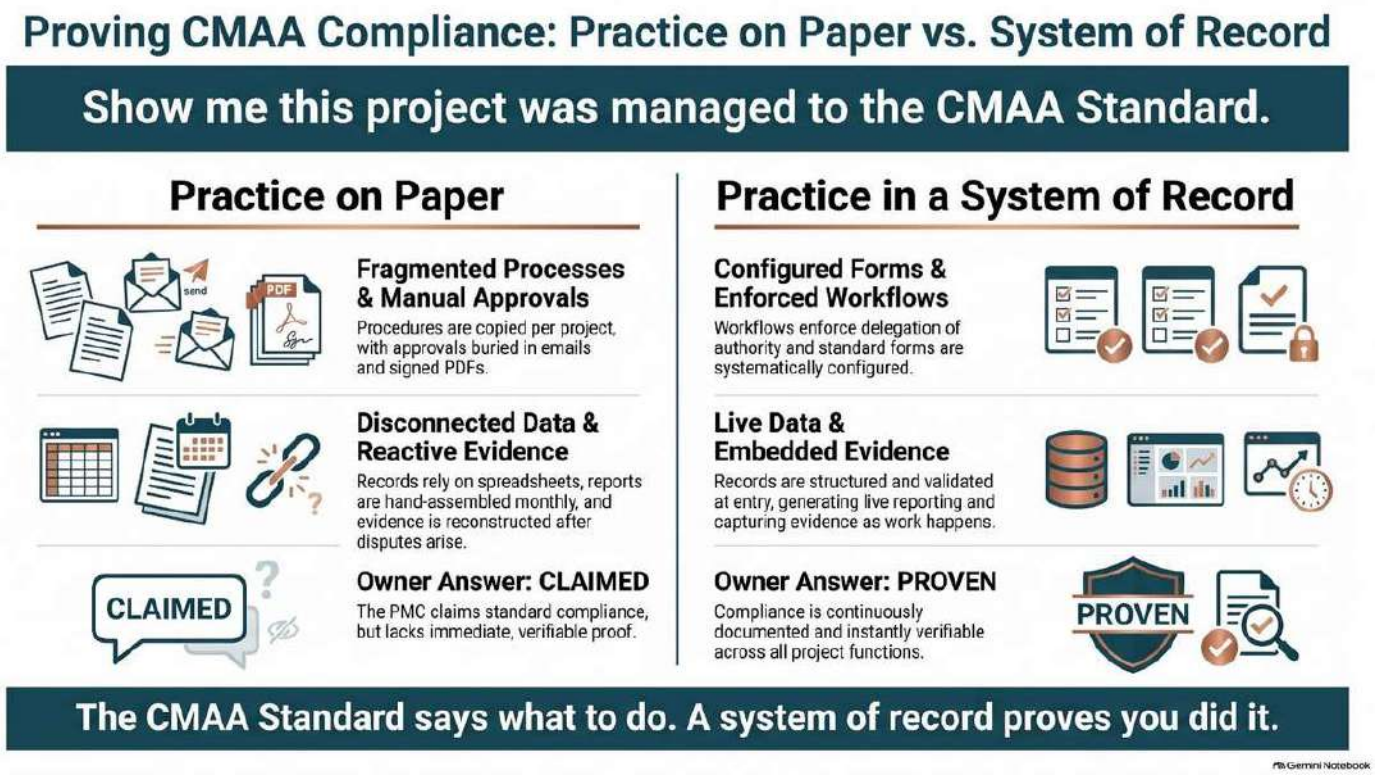
The CMAA Standards of Practice tells a PMC firm what professional construction management looks like. A system of record proves that it happened, on every project, for every client. That is exactly what a PMIS like PMWEB is built to deliver.

Every Project Management Consultancy (PMC) firm in the GCC sells the same thing: **professional practice**. Owners, whether a government entity, a PIF-backed developer or a private master developer, hire a PMC because they want capital projects delivered the way a professional construction manager would deliver them.

Yet ask most PMC firms to *prove* that practice was followed on a given project, and the answer sits in a scattered trail of spreadsheets, email threads, shared drives and the memory of a few senior people. **The practice exists. The evidence does not.**

That gap matters more in the GCC than almost anywhere else. Programmes are larger, owners are more sophisticated and reporting expectations keep rising. A PMC firm that cannot demonstrate its practice in data is competing on CVs and fee rates alone.

This series makes a simple argument: **a PMC firm can use PMWEB to digitalise its project management processes, and prove that its practice meets a recognised professional benchmark.** The benchmark used throughout is the Construction Management Association of America (CMAA) *Construction Management Standards of Practice*, one of the professional bodies that provides guidance to construction managers and PMC firms on the project management of capital construction projects.



What the CMAA Standards of Practice Defines

CMAA publishes the *Construction Management Standards of Practice* as its flagship reference. The current 2021 edition describes the range of services that make up professional construction management and sets the standard a construction manager (CM) is expected to meet or exceed. It is written for both sides of the table: owners procuring CM services and the firms providing them.

The Standard is organised along two axes:

- **Functions** — project management, cost management, time management, quality management, contract administration, safety management, programme management, sustainability, risk management and, new in 2021, technology management.
- **Phases** — pre-design, design, procurement, construction and post-construction.

The result is effectively **a matrix: for every function, in every phase, what a professional CM should be doing.** CMAA supplements it with detailed guidelines for most functions, from cost and time management to claims and project closeout.

For a GCC PMC firm, this matrix is valuable for three reasons:

1. **It is a neutral benchmark.** It is not a firm's own marketing language. Owners and their auditors can hold a PMC to it.
2. **It is delivery-method aware.** It covers CM agency, CM at-risk, design-build and other methods, mirroring the mix of contracting models used across the region.
3. **It describes outcomes, not tools.** It tells the CM *what* must be managed and reported, leaving *how* to the firm. That is exactly the space a PMIS fills.



The Gap Between Documented Practice and Executed Practice

Most established PMC firms already have a Project Management Plan template, a procedures manual and a set of standard forms. On paper, their practice aligns well with the CMAA Standard. The problem is what happens on the ground:

- **Each project reinvents the procedures.** Forms are copied, renamed and modified. After a few years the firm has as many versions of "the change order process" as it has projects.
- **Practice lives in people.** When a senior cost manager or document controller leaves, the way that project was run leaves with them.
- **Approvals happen in email.** The delegation of authority exists as a PDF, but nothing enforces it. Who approved a variation, and when, has to be reconstructed after the fact.
- **Reporting is assembled, not generated.** Monthly reports take days of copying figures from spreadsheets, and they are out of date the moment they are issued.
- **Evidence is weakest when it is needed most.** When a claim, audit or dispute arises, the PMC must defend its own performance with incomplete records.

None of this means the firm is not practising professionally. It means the firm cannot *show* that it is, consistently, across every project and every client.

Standard, Procedure, System

The way to close the gap is to separate three layers that are usually blurred together:

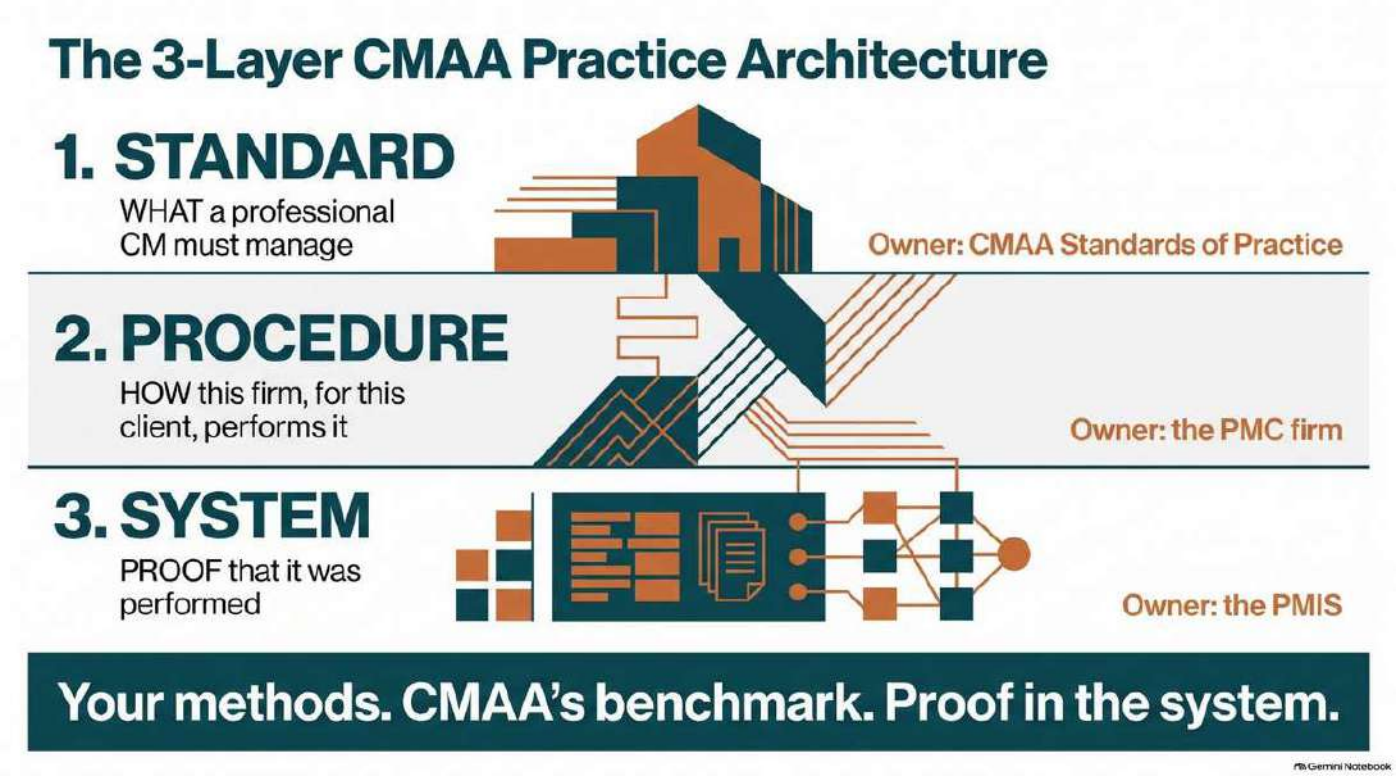
Layer	Answers	Owned by
Standard	*What* a professional CM must manage, in each function and phase	The CMAA Construction Management Standards of Practice
Procedure	*How* this firm, or this client, performs it: forms, steps, approval levels, reporting formats	The PMC firm, adapted per client
System	*Proof* that it was performed: who did what, when, with which data	PMWEB

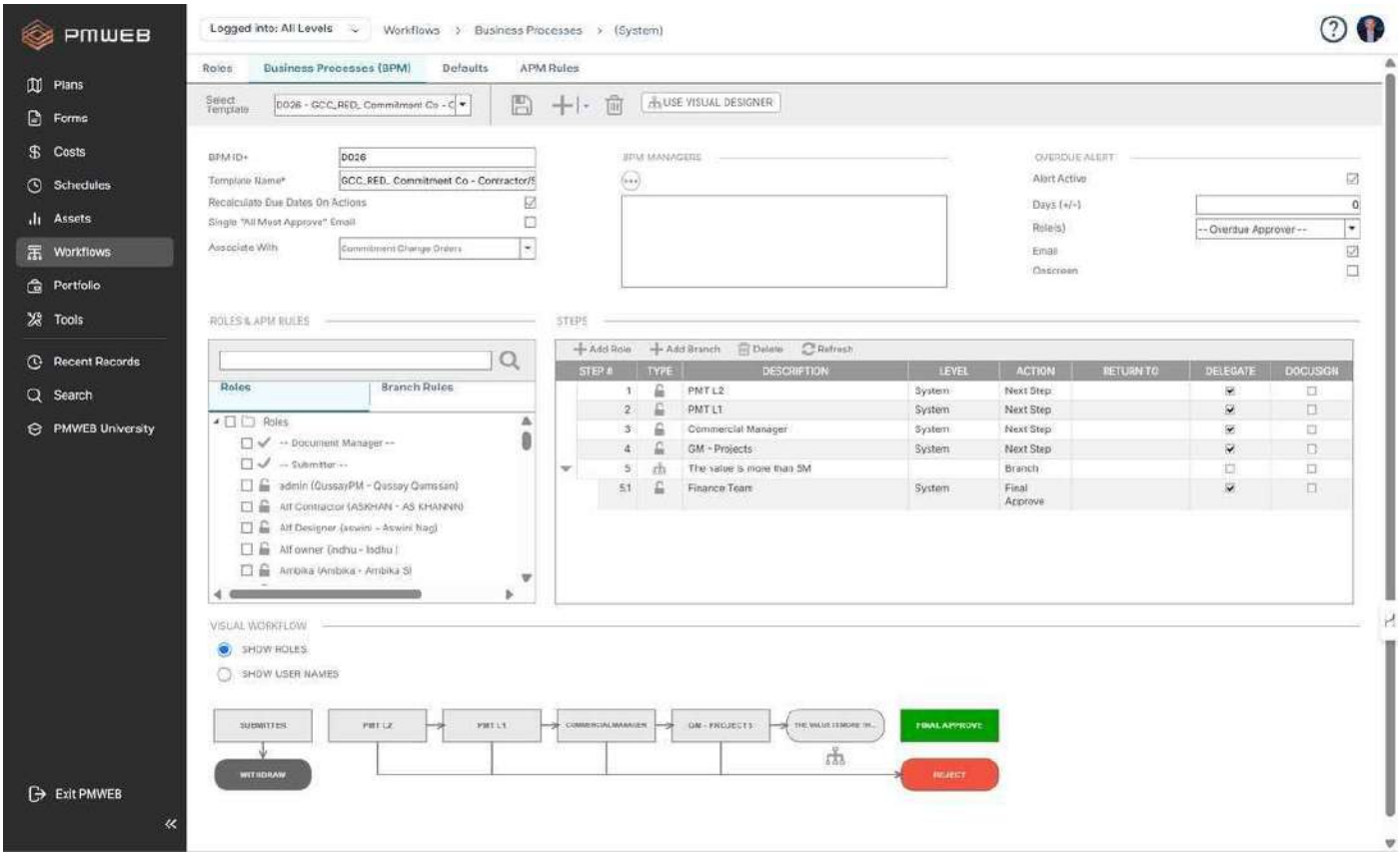
This separation matters because **no two PMC firms execute the same way**, and the same firm often works differently for different owners. A PMC delivering a hospital for a Qatari health authority, a mixed-use development for a Dubai master developer and a giga-project package in Saudi Arabia will face three sets of owner procedures, approval matrices and report formats.

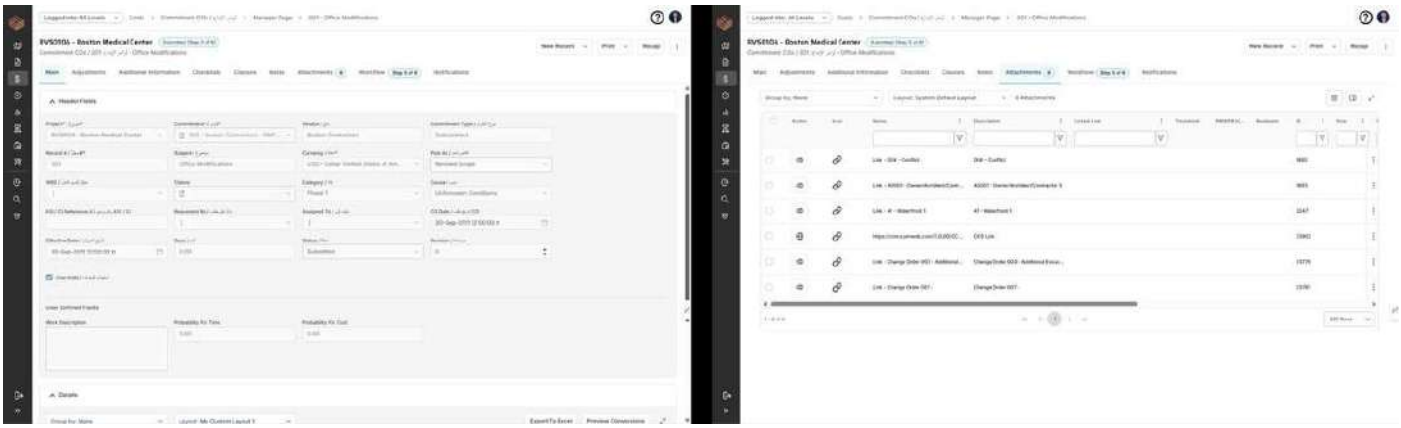
The CMAA Standard does not change between those engagements. The procedures do. A useful PMIS must therefore be **configurable at the procedure layer while staying consistent at the standard layer.**

This is where PMWEB fits. Its business processes are delivered as configurable forms, workflows and reports rather than fixed screens:

- **Forms** can be adjusted to each firm's or client's fields and terminology.
- **Workflows** enforce the approval route and delegation of authority set out in the procedures, instead of relying on email.
- **Cost, schedule and document records are linked**, so a change order, its RFI, its schedule impact and its payment all sit in one audit trail.
- **Reports and dashboards are generated from the data**, not assembled by hand.







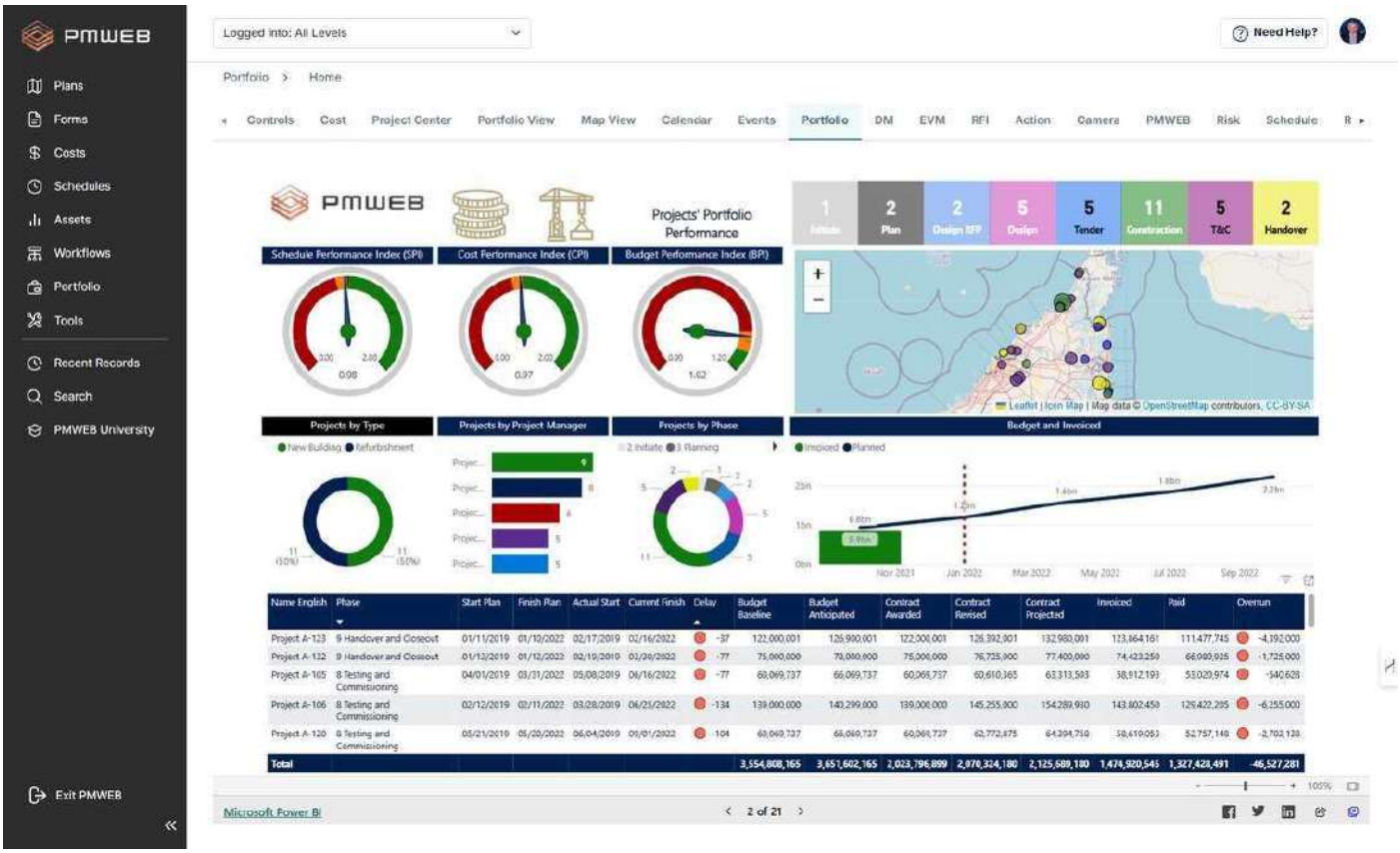
The outcome is **alignment, not certification**. CMAA does not certify software, and this series does not claim it does. The claim is narrower and more useful: every responsibility the CMAA Standard assigns to the CM can be executed, controlled and evidenced in PMWEB, in the way each PMC firm chooses to execute it.

The CMAA Standard Mapped to PMWEB, at a Glance

Each function of the Standard maps to PMWEB modules that capture, route and report the CM's work. Each will get its own article in this series.

CMAA function	What the CM is responsible for	Where it lives in PMWEB
Project Management	CM plan, procedures, organisation, coordination, reporting	Project set-up, workflows, meeting minutes, correspondence, dashboards
Cost Management	Budgets, estimates, commitments, changes, payments, forecasts	Budget, estimates, contracts, change orders, progress invoices, cash flow
Time Management	Master and contract schedules, updates, delay analysis	Scheduling with Primavera P6 and MS Project integration, schedule reviews
Quality Management	Design reviews, submittals, inspections, non-conformance	Submittals, inspections, non-conformance reports, punch lists
Contract Administration	RFIs, changes, notices, claims, closeout	RFIs, potential and approved changes, notices, claims log, closeout records

CMAA function	What the CM is responsible for	Where it lives in PMWEB
Safety Management	Safety programme review, monitoring, incidents	Safety inspections, incident reports, HSE dashboards
Programme Management	Multi-project governance and reporting	Portfolio structure, capital planning, portfolio dashboards
Sustainability	Owner targets, documentation, commissioning	Configured sustainability trackers, submittals, commissioning checklists
Risk Management	Risk identification, allocation, response, contingency	Risk register, contingency tracking in cost
Technology Management	Selecting, configuring and governing project technology	PMWEB itself as the governed platform, integrated with ERP and scheduling



Why This Matters Now for GCC PMC Firms

1. Technology is now part of the CM's professional duty

The 2021 edition of the CMAA Standard added **technology management** as a CM function. Choosing, configuring and governing the project's systems is no longer an IT side-topic. It is part of what an owner should expect from its CM, and **the PMIS decision belongs with the people accountable for the practice.**

2. GCC owners are raising the bar

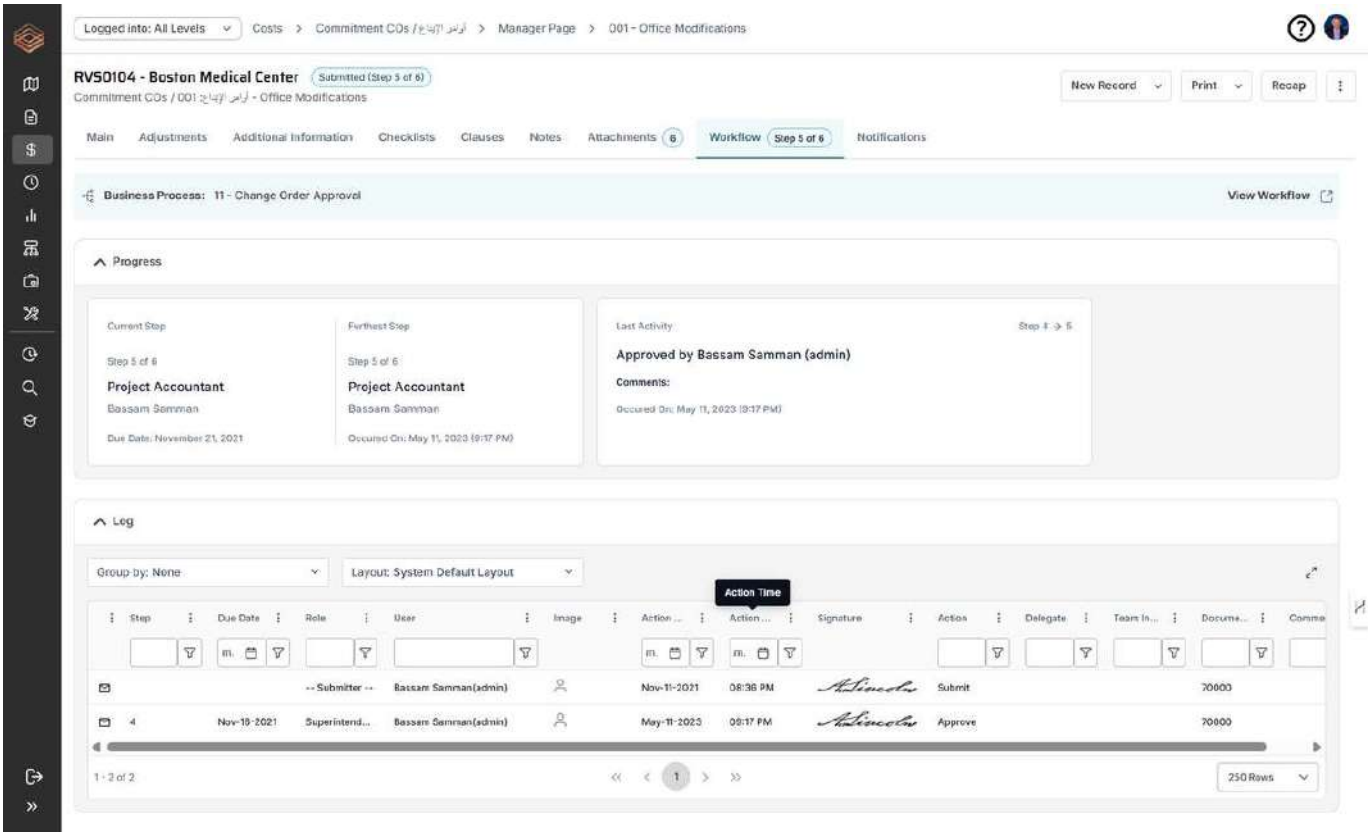
Across the region, owners increasingly expect:

- real-time visibility of cost, schedule and risk across their whole portfolio, not monthly PDFs;
- enforced delegation of authority and a full audit trail on every commitment and change;
- data hosted in-country where owner policy requires it;
- consistent reporting from every PMC working across their programmes.

3. PMC firms work in two modes

Sometimes the PMC runs its own platform as a firm-wide practice system; sometimes it operates inside the owner's platform. PMWEB supports both. A PMC can standardise its practice on its own PMWEB instance, and

it can work within an owner's PMWEB environment where the owner mandates it. **Either way, the practice stays consistent with the CMAA Standard.**



What This Series Will Cover

Each article takes one function of the CMAA Standard. It summarises what the Standard expects of the CM, shows how GCC PMC firms typically handle the function today, demonstrates how PMWEB digitalises it with screenshots of the relevant records, and explains how each firm configures PMWEB to its own procedures. The final article explains how PMWEB 2026 and the releases that follow put this structured practice to work with AI, at project and programme level.

1. From the CMAA Standard to a System of Record *(this article)*
2. Delivery Methods: Configuring PMWEB for CM Agency, CM at-Risk, Design-Build and PPP
3. Project Management: Turning the CM Plan and Procedures Manual into Workflows
4. Cost Management: From Budget to Final Cost Reconciliation
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The question for PMC leaders

If an owner asked you tomorrow to demonstrate, project by project, that your firm manages cost, time, quality, contracts and risk the way the CMAA Standards of Practice describes, how long would it take you to assemble the evidence?

If the answer is days or weeks, your practice is not yet digital. Follow this series to see what it looks like when the answer is minutes.

Next in the series: *Article 2 — Delivery Methods: Configuring PMWEB for CM Agency, CM at-Risk, Design-Build and PPP*

About the Author

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Bassam has over four decades of experience providing project management, project controls services and project management information systems to more than two hundred capital projects with a combined value exceeding one hundred billion US dollars. He is the author of four published books on project management digitalisation and has lectured at more than three hundred and fifty international events. He holds a Master's degree in Engineering Administration (Construction Management), with Faculty Commendation, from George Washington University and a Bachelor's degree in Civil Engineering from Kuwait University, with executive education at Harvard Business School and London Business School.

About PMWEB

PMWEB is an enterprise-class, web-based capital construction project management platform trusted by organisations worldwide including Harvard University, the United Nations, and Atlanta Airport. Built on Microsoft .NET technology, PMWEB manages the entire project lifecycle within a single integrated platform — from portfolio planning and cost management through document control, procurement, scheduling, asset management, and business intelligence. With 150+ pre-configured SSRS reports, drag-and-drop dashboard design, multi-currency support, and open REST/SOAP API integration, PMWEB delivers enterprise capability with implementation timelines measured in months, not years.

About CMCS

CMCS (Collaboration, Management and Control Solutions) is the regional PMWEB implementation partner for the GCC and MENA regions, awarded PMWEB Partner of the Year 2025. CMCS specialises in digital project management solutions for real estate developers, infrastructure owners, and construction companies across the Middle East and North Africa.

Delivery Methods — How GCC PMC Firms Digitalise the CMAA Delivery-Method Role with PMWEB for CM Agency, CM at-Risk, Design-Build and PPP

One standard of practice, four contractual realities, one configurable system of record

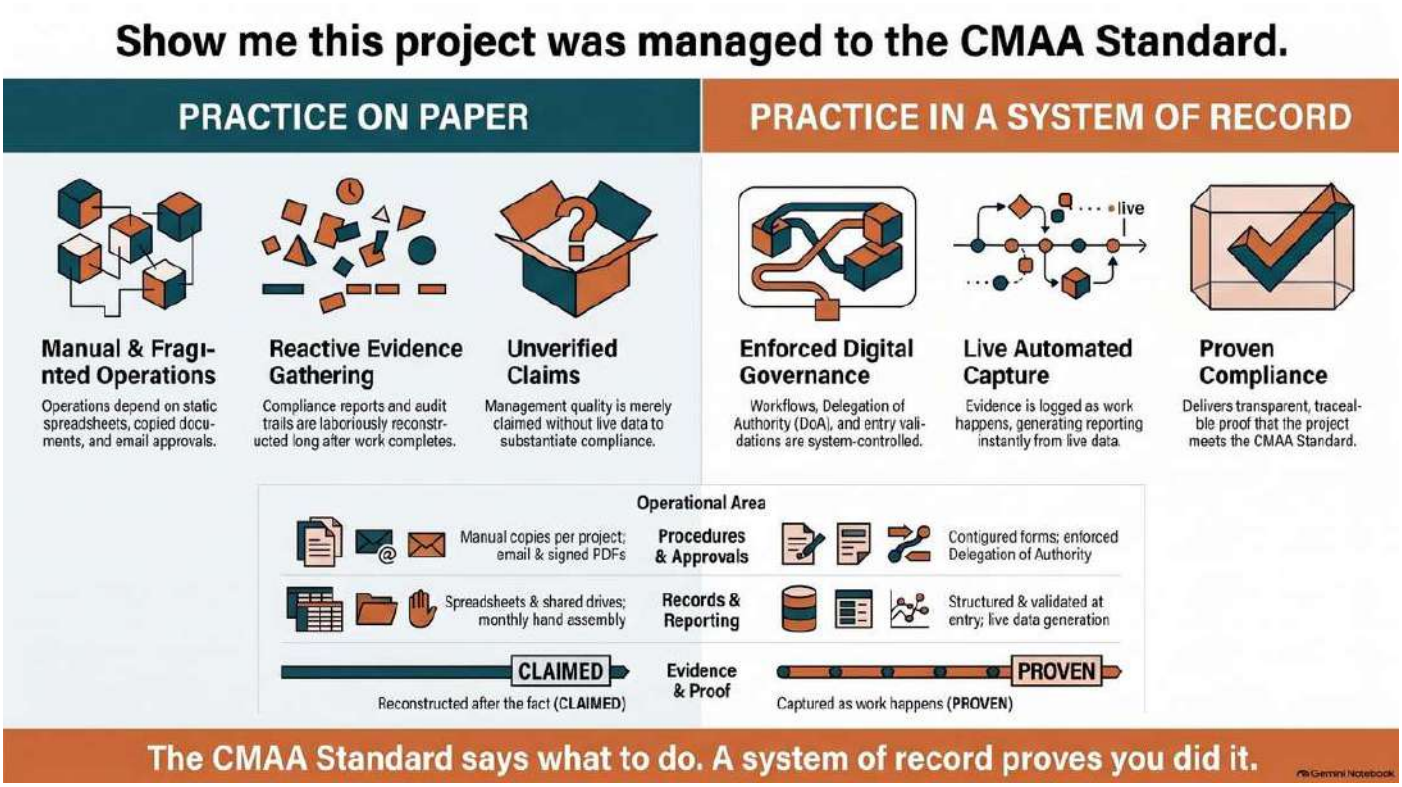
The delivery method decides who holds the risk, who holds the contracts and who the construction manager answers to. If the PMIS is set up the same way for every method, the data will quietly tell the wrong story about all of them.

In the first article of this series I argued that a PMC firm's standard of practice only becomes real when it is executed and evidenced in a system of record. The first place that argument is tested is the delivery method. A PMC firm in the Gulf may, in the same month, be acting as the owner's agent on a Kuwaiti ministry building delivered under a traditional employer-designed contract, advising a Dubai master developer on a construction manager at-risk style two-stage tender, supervising a design-build hospital for a Qatari health authority, and reporting to lenders on a social infrastructure PPP.

Each of those engagements changes the construction manager's role. It changes who signs the trade contracts, how the price is formed, where contingency sits, what the owner's representative is allowed to approve, and which external parties need to see which data. Yet many PMC firms run all four on the same generic project template, with the differences living in the heads of the project director and a handful of spreadsheets.

The result is predictable: a GMP tracked as if it were a lump sum, contractor design reviewed like a shop drawing, CM contingency reported as owner contingency. None of this is a failure of the CMAA Standard. It is a failure to configure the system to the contract.

This article shows how PMWEB is configured so that contract types, cost structures, workflows and external-party access follow the method rather than fight it. Each PMC firm and each client will execute these methods in its own way. PMWEB is configured to the firm's procedures; the CMAA Standard stays the reference.



What the CMAA Standard Expects

The CMAA Standard treats delivery method as a foundational decision, not an administrative detail. It expects the CM to help the owner understand the available methods and their implications for risk, cost certainty, schedule and control; to define clearly, at the start, the roles and responsibilities of each party under the chosen

method; and to tailor the CM's own services to that method. Under an agency arrangement the CM acts as the owner's adviser and representative without taking construction risk. Where the CM takes on constructor risk, the Standard expects the preconstruction services, the transition to a guaranteed price and the management of trade contracts to be transparent to the owner. Under design-build, the owner still needs independent eyes on design compliance, quality and payment. In every case the CM's duty to protect the owner's interest does not change; only the contractual route to it does.

Those expectations play out differently across the phases of a project, and a well-configured PMIS has to carry each of them.

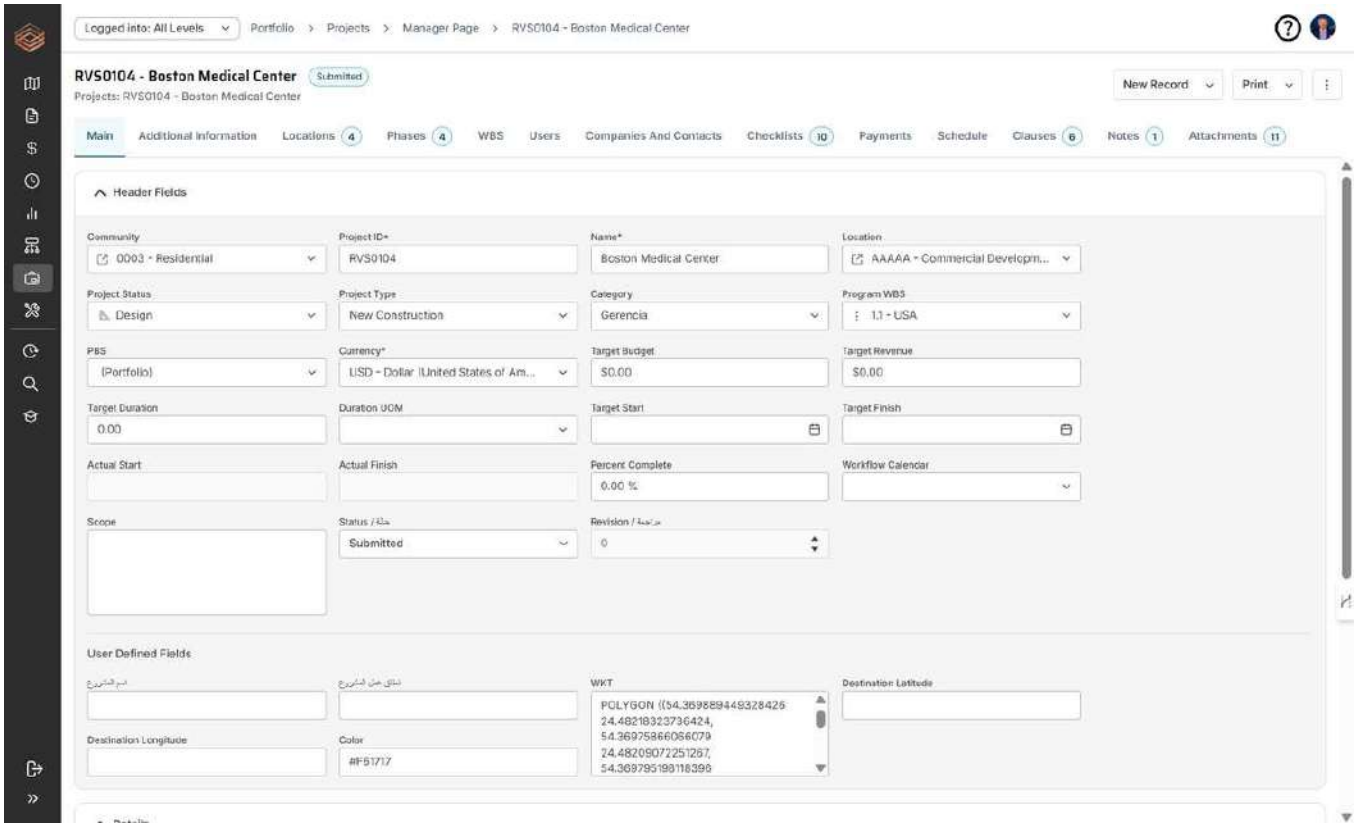
CMAA phase	What the CM is expected to do
Pre-design	Advise the owner on the delivery methods available, their risk allocation and their fit with the owner's capability; record the method chosen and define each party's role under it.
Design	Tailor design-phase services to the method: review the owner's design under agency, support preconstruction services and early pricing under CM at-risk, prepare or review the owner's requirements under design-build.
Procurement	Structure the procurement to the method, whether separate prime contracts, trade packages leading to a guaranteed price, or a single design-build or project company award.
Construction	Administer each contract according to its method, keep guaranteed-price arrangements transparent, verify contractor design independently and coordinate multiple primes.
Post-construction	Close out each contract on its own basis and report the outcome to the owner and, where relevant, to lenders and other external parties.

How GCC PMC Firms Typically Do It Today

- **One template for every method.** The same project setup, cost codes and workflows are used whether the PMC is an agent or reporting on a PPP, so method-specific controls live outside the system.
- **GMPs tracked as lump sums.** Under two-stage or CM at-risk style arrangements, the cost of work, fee, general conditions and CM contingency are collapsed into one number, and the owner loses the open-book view the arrangement was meant to give.
- **Design-build design reviews mixed with shop drawings.** Contractor design packages are reviewed through the submittal log with no reference to the owner's requirements they must satisfy.
- **Multiple primes managed contract by contract.** When an owner holds several prime contracts, interfaces and shared site obligations are tracked in meeting notes rather than as linked records.
- **PPP reporting assembled by hand.** The lenders' technical adviser and the grantor's technical adviser each receive a monthly pack built from exports, with no controlled access to the underlying data.
- **External parties given too much or too little.** Either nothing is shared and everything is emailed, or a shared login exposes data the party should never see.

How PMWEB Digitalises It

The principle is simple: the delivery method is captured once, at project setup, and it drives everything downstream. In PMWEB that means a delivery method value list on the project record, a project template per method in the firm's practice library, and contract types, cost structures, workflows and security roles that follow from the choice.



CM Agency and multiple-prime

Under agency, the owner holds the contracts and the PMC acts as its adviser and representative. PMWEB reflects that by recording each prime contract as an owner commitment, with the PMC appearing in workflows as reviewer and recommender while approval sits with the owner's authorised signatories under the DoA. The PMC's own professional services agreement is held as a separate commitment, so the owner can see the cost of management alongside the cost of construction. Where the owner uses multiple primes, each prime is its own commitment under one project, with a shared schedule, interface RFIs linked to more than one contract, and an interface register built with Form Builder so that site logistics, access and handover dependencies are visible rather than remembered.

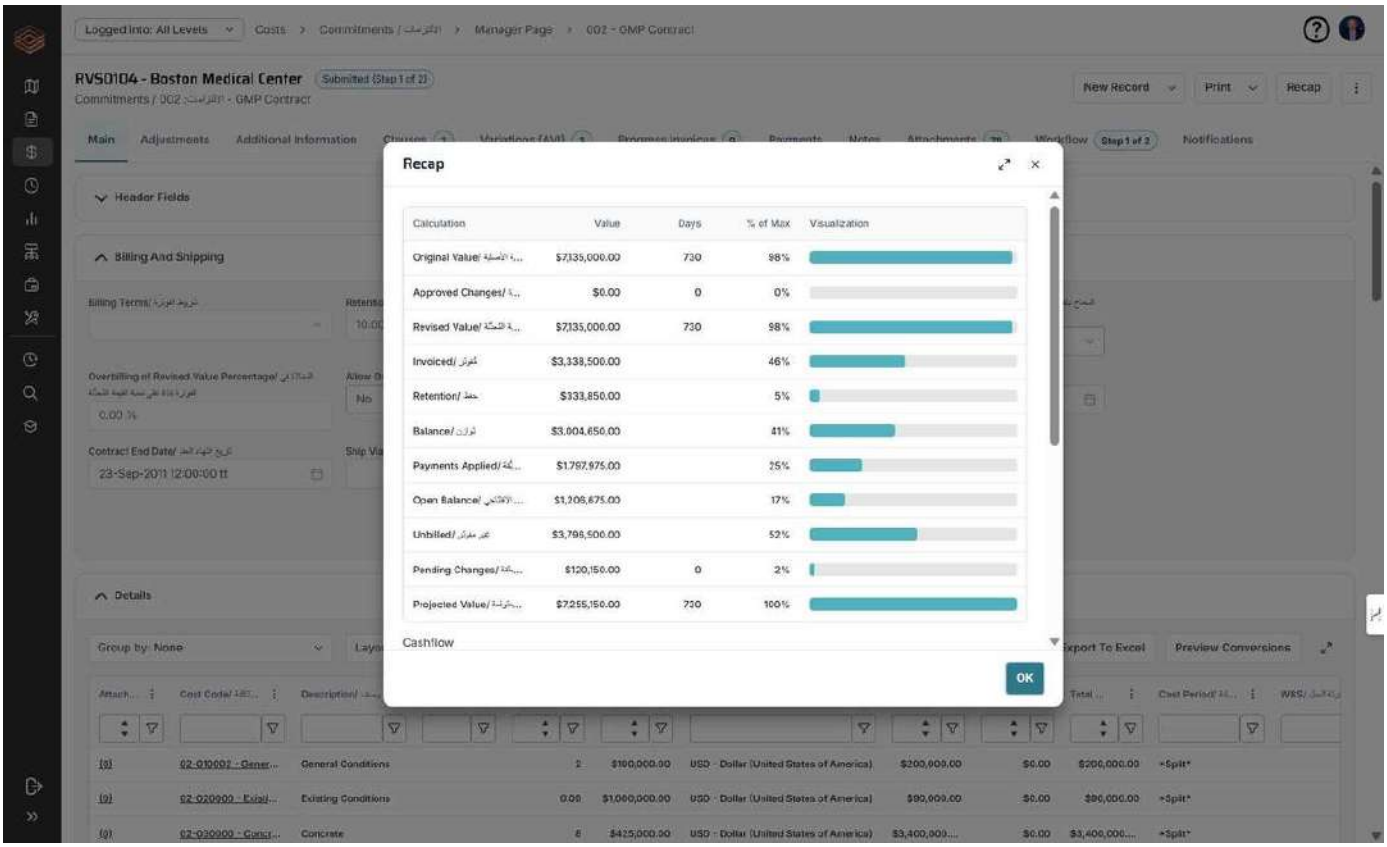
PMWEB | Commitment Log by Project

ROCARC - Rockwell Architects

Project	Record #	Description	Date	Original	Approved CO	Pending CO	Revised	Invoiced	Balance	Retained
Original Commitment										
Boston Medical Center	001	Design Services	23-Sep-2011 10:00:57 PM	$493,000.00	$23,345.00	$500.00	$516,345.00	$503,350.00	$12,995.00	$1,700.00
Change Orders										
	001	Design Changes	27-Sep-2011 12:00:00 AM		$12,500.00					
	004		02-Jun-2024 12:00:00 AM		$845.00					
Total Changes					$13,345.00					
Invoices										
1	Invoice 1				$147,900.00					$0.00
2	Invoice 2		05-Mar-2018 12:00:00 AM		$54,514.20					$0.00
3	Invoice 3		05-Mar-2018 12:00:00 AM		$65,598.00					$0.00
4	Invoice 4		05-Mar-2018 12:00:00 AM		$64,090.00					$0.00
5	Invoice 5		05-Mar-2018 12:00:00 AM		$69,518.80					$0.00
6	Invoice 6		05-Mar-2018 12:00:00 AM		$66,729.00					$0.00
7	Invoice 7		13-Aug-2019 12:00:00 AM		$34,000.00					$2,700.00
8	Invoice 8		16-Mar-2025 12:00:00 AM		$1,000.00					$1,700.00
Total Invoices					$503,350.00					

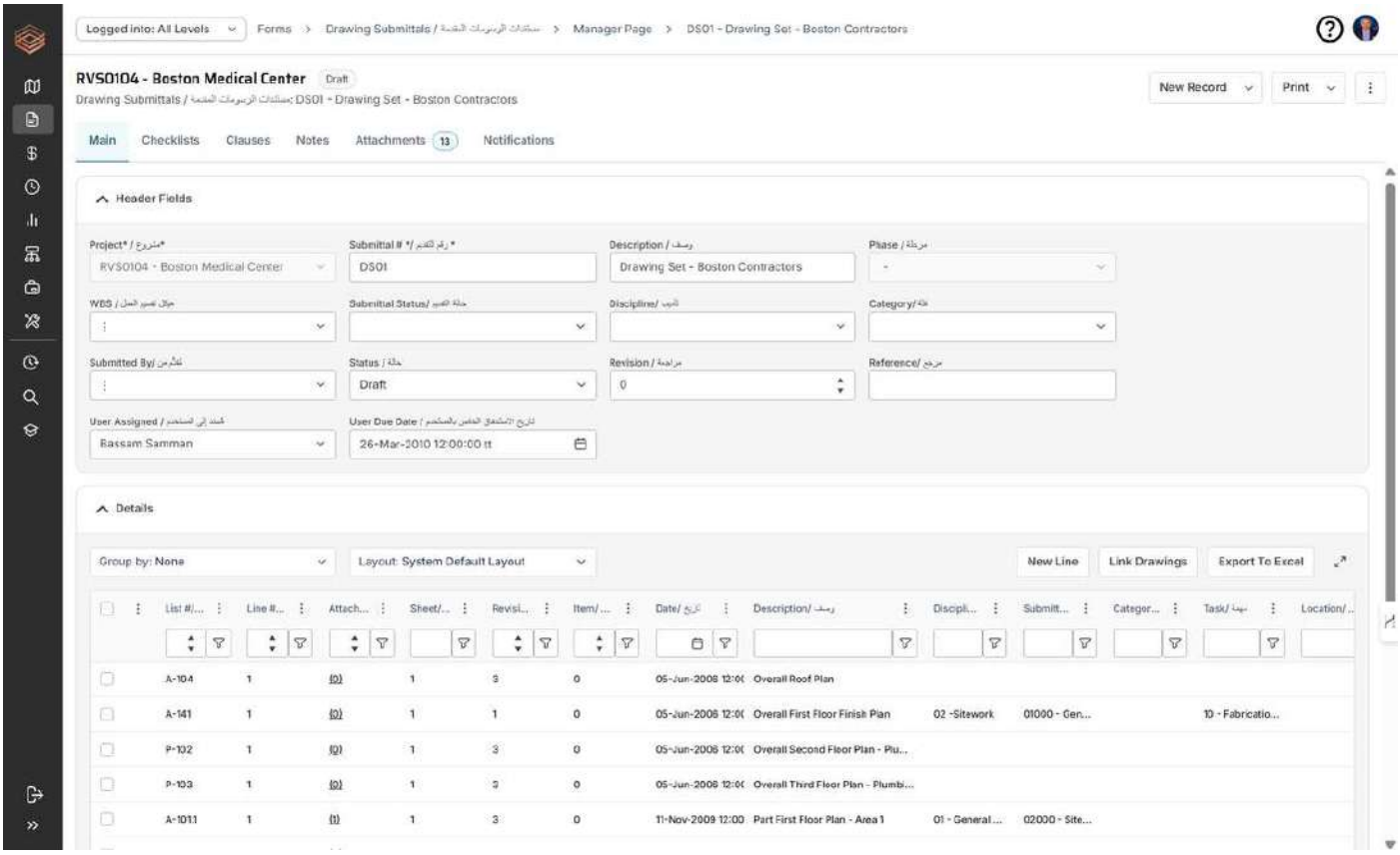
CM at-Risk and two-stage arrangements

When the construction manager takes on constructor risk, the commitment has two lives. PMWEB holds the preconstruction services phase as the original commitment and the GMP as a commitment amendment once agreed. The schedule of values is structured to keep the open-book categories separate: cost of work by trade package, general conditions, fee and CM contingency. Trade package buyout is tracked against the cost of work lines, so savings are visible as they occur. Every use of CM contingency is recorded as a contingency drawdown with its justification and approval, and owner contingency sits separately in the budget. In the GCC these arrangements often appear as two-stage tenders or management contracting under owner-drafted conditions; the configuration is the same because the control need is the same.



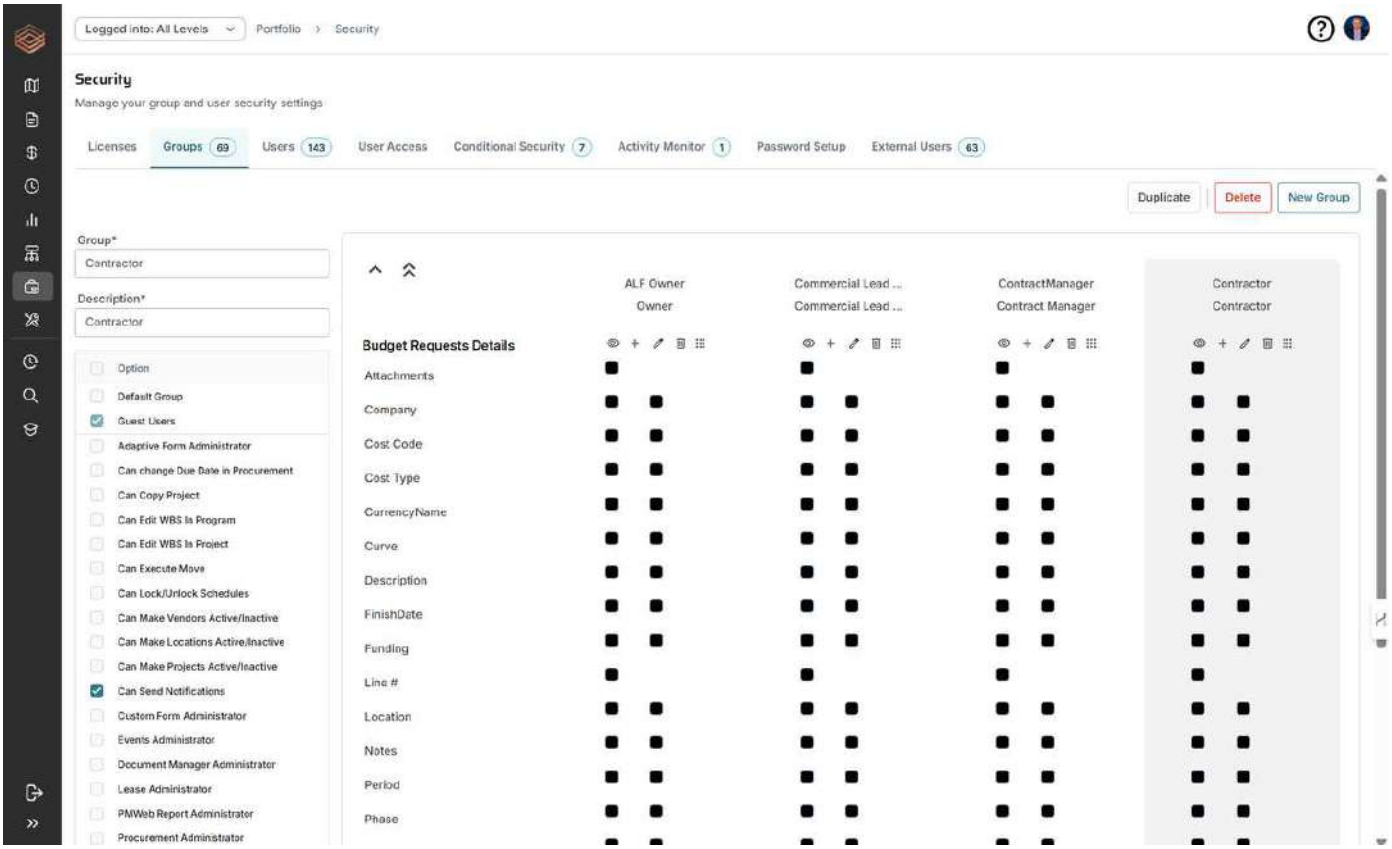
Design-build and progressive design-build

Under design-build, the owner's requirements (often prepared as bridging documents by the PMC or a separate consultant) become the yardstick. PMWEB holds the owner's requirements as controlled documents, and a dedicated design review workflow, distinct from the shop drawing submittal workflow, routes each contractor design package to the reviewing disciplines with a compliance checklist that references the relevant requirement. Payment is configured as milestone-based or schedule-of-values-based depending on the contract, and variations are linked to the requirement they alter. For progressive design-build, the first phase is set up as an open-book commitment for design development and pricing, with the second-phase lump sum or target price recorded as an amendment when the owner decides to proceed.

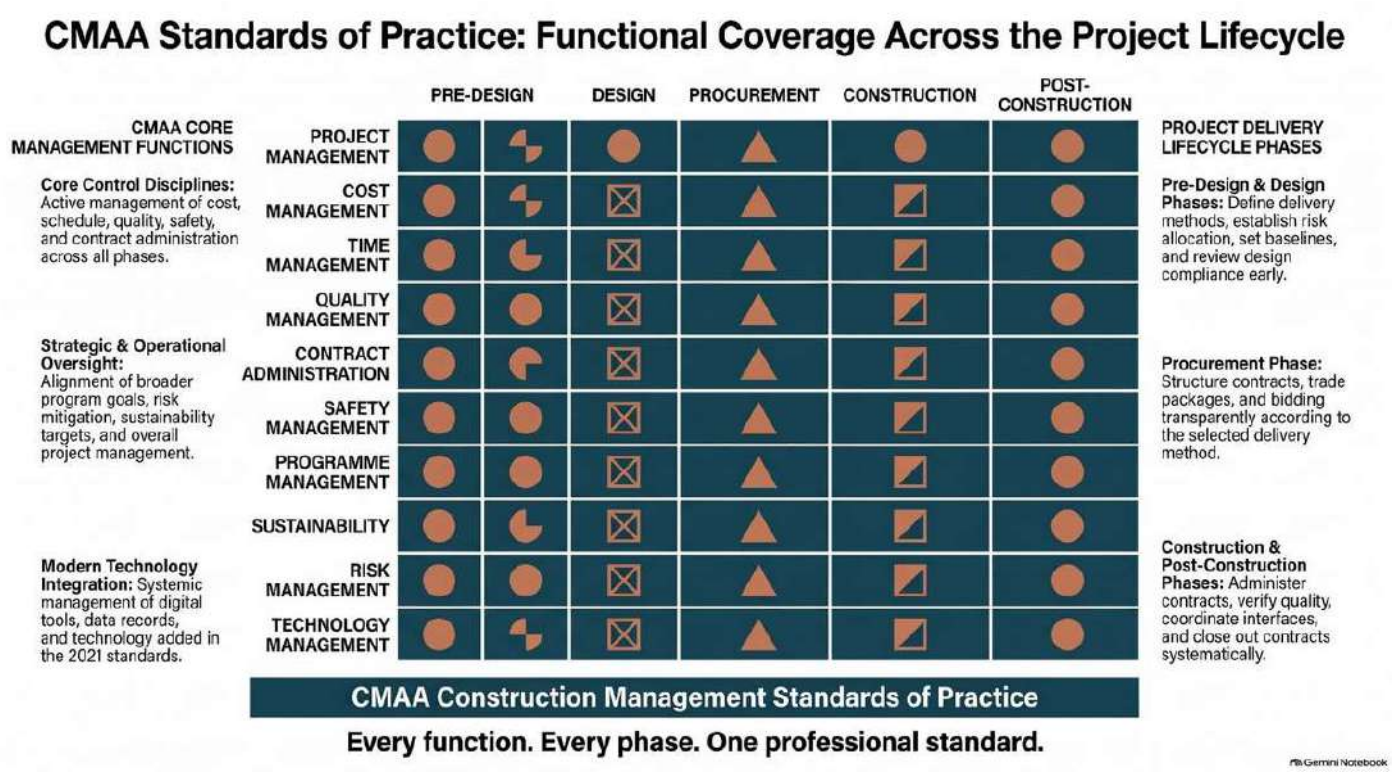


PPP

In a PPP the PMC may act for the grantor, for the lenders or as an independent engineer, and each role sees the project differently. PMWEB configures the project company's EPC contract, construction milestones and output specification compliance as structured records, and grants external-party access through role-based security so that the lenders' technical adviser sees progress, milestone evidence and risk data without seeing the grantor's internal correspondence. Monthly reports to lenders and grantor are generated from the same data, in the format each party requires.



CM responsibility	PMWEB capability	Evidence produced
Advise on and record the delivery method	Delivery method value list and method-specific project templates	Project record showing method, contract form and template applied
Define roles per method	Role-based security and workflow routing per template	Workflow history showing who reviewed, recommended and approved
Structure contracts to the method	Commitment types, amendments and schedule of values structures	Commitment register by contract type, with GMP or milestone basis visible
Keep GMP arrangements open-book	Separate SOV categories and contingency drawdown records	Buyout savings and CM contingency usage with approvals
Verify contractor design under design-build	Dedicated design review workflow against the owner's requirements	Review comments and compliance checklist per design package
Coordinate multiple primes	Interface register, linked RFIs and shared schedule	Interface issues closed with linked contracts and dates
Report to PPP lenders and advisers	External-party roles, scheduled reports and dashboards	Timed report issue history and controlled access log

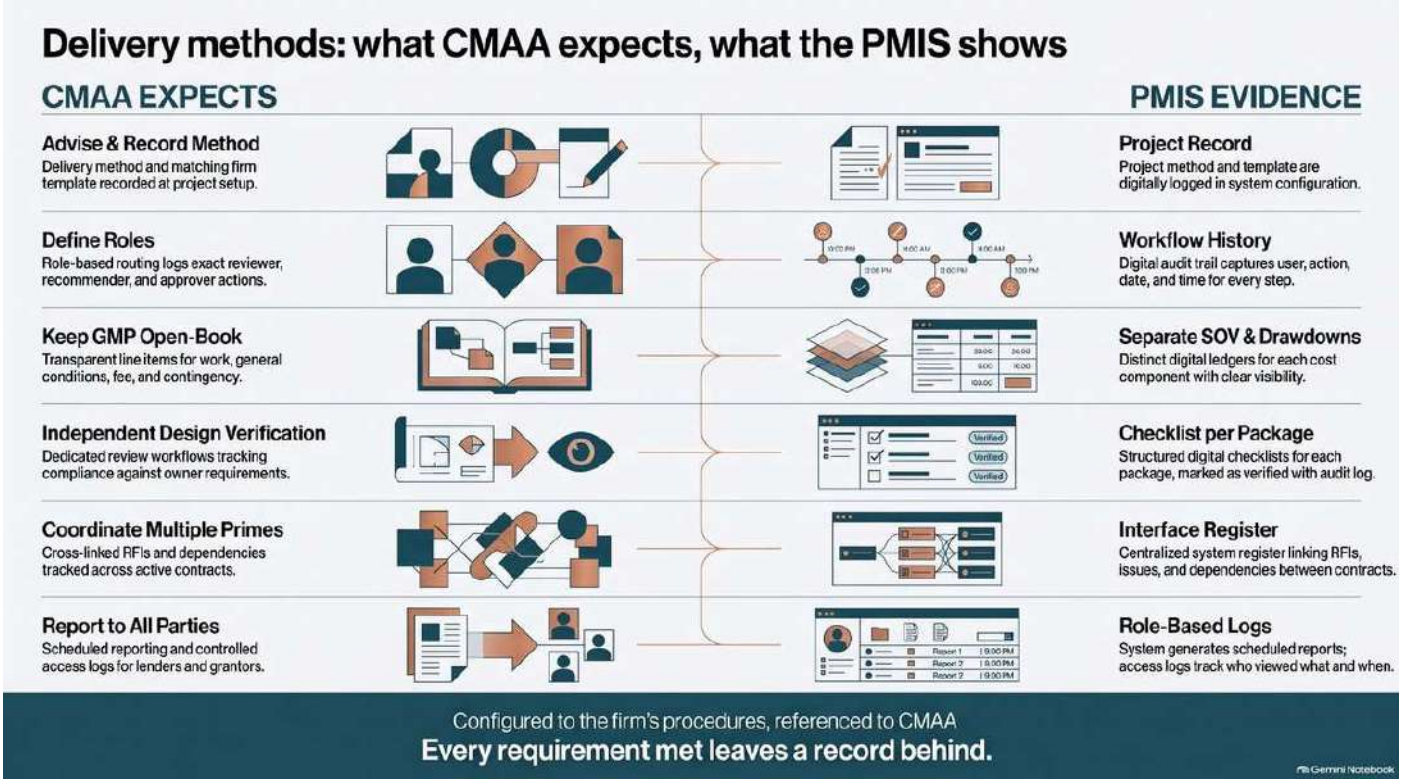


Configuring PMWEB to Your Firm's Procedures

The CMAA Standard describes the CM's role under each method; the firm and its client decide how that role is exercised on a given mandate. Those decisions are configuration choices in PMWEB, made once in the firm's method templates and tailored per client.

What the firm or client decides	How it is configured in PMWEB
Which delivery methods and contract forms the firm supports	Delivery method and contract form value lists, each linked to a project template in the practice library
Forms and fields per method	Commitment, design review and interface forms built with Form Builder, with method-specific fields shown only where they apply

What the firm or client decides	How it is configured in PMWEB
Terminology	Field labels and value lists using the client's terms, such as owner's representative, employer or grantor, and the Engineer named in the contract where one is appointed
Approval routes and DoA thresholds	Value- and type-based workflow routing to the owner's delegation-of-authority (DoA) matrix, including board or ministry thresholds
Numbering	Contract, amendment and design package numbering by project, method and party
Report formats	Owner, lender and grantor report templates generated from the same data, each in the format that party requires
Bilingual outputs	English and Arabic report and form outputs where the owner requires them
Hosting and data access	In-country hosting where the owner requires it, with external-party roles for lenders' advisers and prime contractors
Integration	Commitments and payments synchronised with the owner's ERP



Evidence That the Practice Is Working

Indicators such as these show whether the configuration is working; targets are for each firm and client to set.

- **Template adoption.** The proportion of new projects set up from the delivery-method template that matches the recorded method.
- **Contract type integrity.** Commitments whose contract type and payment basis are consistent with the project's delivery method.
- **Open-book transparency.** CM contingency drawdowns and buyout savings recorded with justification and approval under guaranteed price arrangements.
- **Design verification turnaround.** Time from receipt of a contractor design package to a completed compliance review against the owner's requirements.
- **Interface closure.** Interface issues between multiple primes closed on or before their required date.
- **External reporting timeliness.** Lender and adviser reports issued from PMWEB on their scheduled dates without manual assembly.

- **Access hygiene.** External-party roles reviewed and confirmed at a defined interval.

> **Key takeaway**
>
> The delivery method is the first configuration decision a PMC firm makes on any project, and every later control depends on it. When PMWEB records the method at setup and applies the firm's template for that method, contract types, cost structures, workflows and external access follow automatically, and the CM's role under the CMAA Standard is executed and evidenced rather than described.
>
> This is alignment, not certification. The CMAA Standard stays the reference, each client's contract and approval chain shapes the execution, and each firm configures PMWEB to its own procedures. The payoff is data that tells the true story of each method.

Next in the series: *Article 3 — Project Management: Turning the CM Plan and Procedures Manual into Workflows*

About the Author

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Bassam has over four decades of experience providing project management, project controls services and project management information systems to more than two hundred capital projects with a combined value exceeding one hundred billion US dollars. He is the author of four published books on project management digitalisation and has lectured at more than three hundred and fifty international events. He holds a Master's degree in Engineering Administration (Construction Management), with Faculty Commendation, from George Washington University and a Bachelor's degree in Civil Engineering from Kuwait University, with executive education at Harvard Business School and London Business School.

About PMWEB

PMWEB is an enterprise-class, web-based capital construction project management platform trusted by organisations worldwide including Harvard University, the United Nations, and Atlanta Airport. Built on Microsoft .NET technology, PMWEB manages the entire project lifecycle within a single integrated platform — from portfolio planning and cost management through document control, procurement, scheduling, asset management, and business intelligence. With 150+ pre-configured SSRS reports, drag-and-drop dashboard design, multi-currency support, and open REST/SOAP API integration, PMWEB delivers enterprise capability with implementation timelines measured in months, not years.

About CMCS

CMCS (Collaboration, Management and Control Solutions) is the regional PMWEB implementation partner for the GCC and MENA regions, awarded PMWEB Partner of the Year 2025. CMCS specialises in digital project management solutions for real estate developers, infrastructure owners, and construction companies across the Middle East and North Africa.

Project Management — How GCC PMC Firms Digitalise the CMAA CM Plan and Procedures Manual as PMWEB Workflows

From documents that describe the practice to a system that performs it

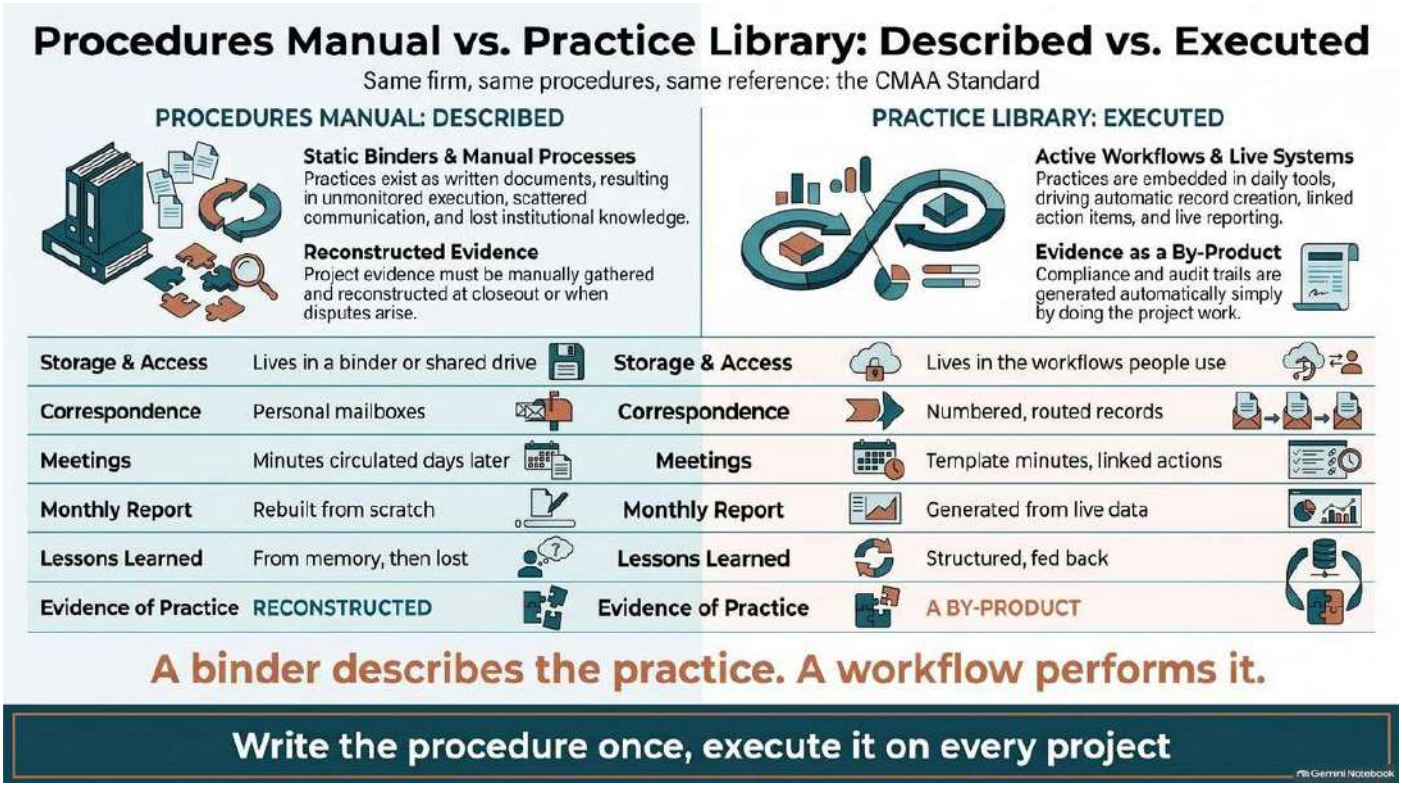
Every PMC firm has a procedures manual. Very few can show, on any given day, that their teams actually followed it. The difference is whether the manual lives in a binder or in the workflows people use to do the work.

When a PMC firm wins a mandate in the Gulf, one of the first deliverables is a CM plan or project management plan. It sets out the organisation, the roles and responsibilities, the communication protocol, the meeting cycle, the document control rules, the reporting calendar and the closeout approach. It is usually well written, reviewed by the client and signed off. Then it is filed.

From that point the plan competes with habit. Correspondence is sent from personal mailboxes. Meeting minutes are drafted in word processors and circulated days later. Action items are tracked in a spreadsheet that one person maintains. The reporting calendar slips because each month's report is assembled from scratch. By the time the project reaches closeout, the lessons learned workshop relies on memory, and nothing it produces reaches the next project.

The CMAA Standard is clear on this point: planning and procedures are only valuable if they are applied, monitored and kept current. For a PMC firm the practical question is how to make the procedures manual executable, so that following the procedure is the easiest way to do the work, and so that the evidence of following it is created as a by-product.

This article explains how the elements of the CM plan and the firm's procedures manual become PMWEB workflows, forms, templates and reports. As always, each PMC firm and each client executes these processes in its own way. PMWEB is configured to the firm's procedures; the CMAA Standard stays the reference. And because those configurations are reusable, they become something more valuable than a project setup: the firm's practice library.



What the CMAA Standard Expects

The CMAA Standard places project management at the centre of the CM's services. It expects the CM to prepare a CM plan early, defining the project organisation, the responsibilities of each party and the procedures that will govern the work, and to keep that plan current as the project moves from pre-design through design, procurement, construction and post-construction. It expects a defined communication protocol, a regular cycle of meetings with documented outcomes, controlled correspondence and document management, periodic reporting to the owner and, at the end, an orderly closeout with lessons captured for the future. The CM is expected to manage information on the owner's behalf so that decisions are traceable and the project record is complete.

CMAA phase	What the CM is expected to do
Pre-design	Prepare the CM plan: project organisation, responsibilities of each party, communication protocol, meeting cycle, document control, reporting and the procedures that will govern the work.
Design	Keep the plan current, run design-phase meetings with documented outcomes, control design documents and their distribution, and report progress to the owner.
Procurement	Apply the plan's communication and document control procedures to tendering, keep a controlled record of tender correspondence and report procurement status.
Construction	Operate the communication protocol, run the meeting cycle with tracked actions, control correspondence and documents, and issue periodic reports to the owner.
Post-construction	Close out the project in an orderly way, hand over a complete project record and capture lessons learned for future work.

How GCC PMC Firms Typically Do It Today

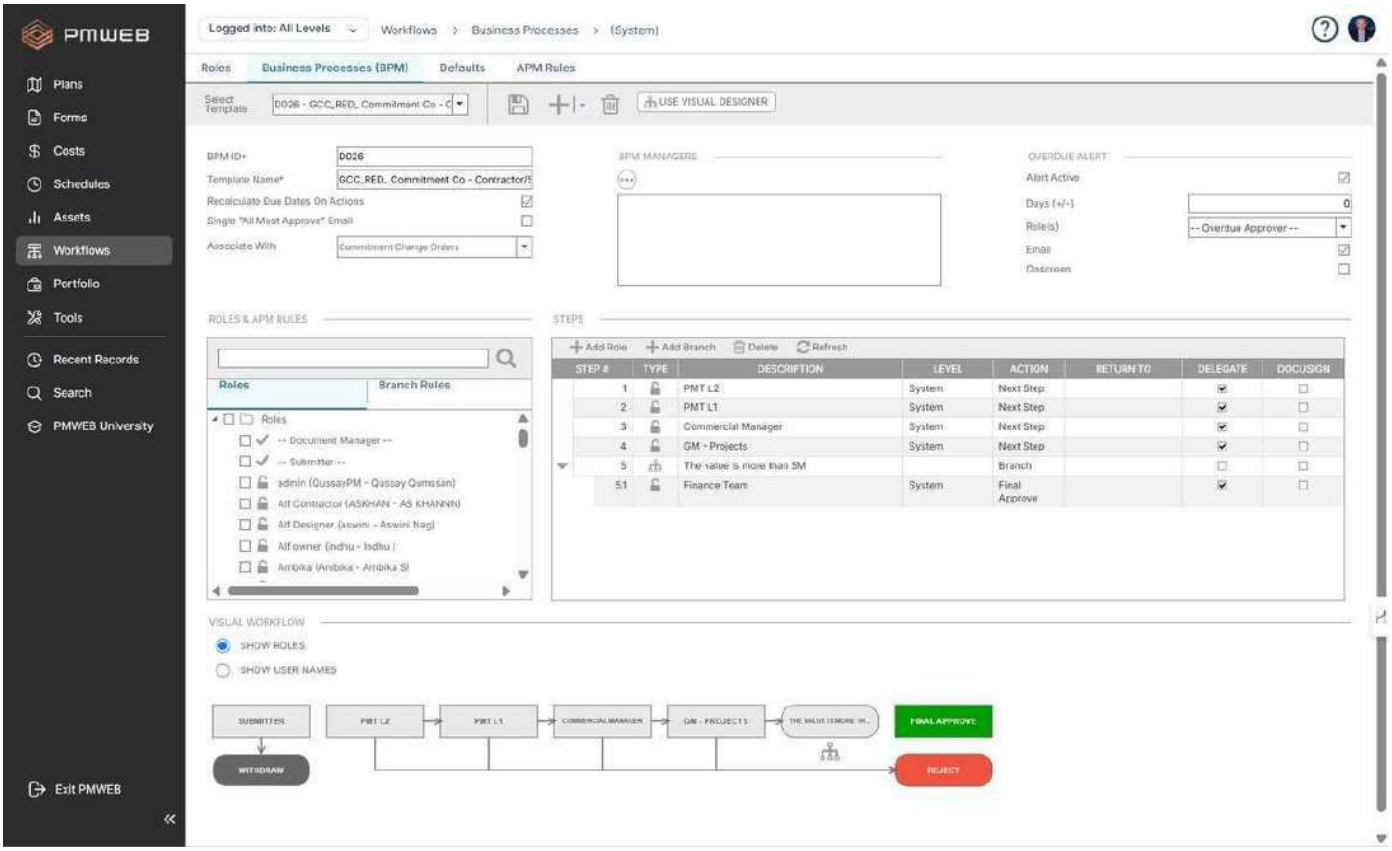
- **The CM plan is a document, not a configuration.** It is approved at mobilisation and rarely consulted afterwards, so the organisation chart and RACI drift from reality.
- **Correspondence lives in mailboxes.** Letters are numbered manually, logged inconsistently and difficult to retrieve when a notice period or an instruction is disputed.
- **Meetings produce minutes but not actions.** Action items sit in documents or spreadsheets with no owner, due date or follow-up, and the same items reappear month after month.
- **Monthly reports are rebuilt each month.** Project engineers spend days assembling data from several sources, and each project's report looks slightly different.
- **Every project starts from scratch.** Forms, numbering conventions and approval routes are recreated for each new mandate, so the firm's practice varies by project director.
- **Lessons learned are captured too late and used never.** A closeout workshop produces a document that no one on the next project will read.

How PMWEB Digitalises It

The approach is to translate each section of the procedures manual into a PMWEB configuration element: a record type, a form, a workflow, a numbering rule, a report, or a dashboard. Once built, these elements are saved as templates and applied to new projects, so the firm's procedures travel with it.

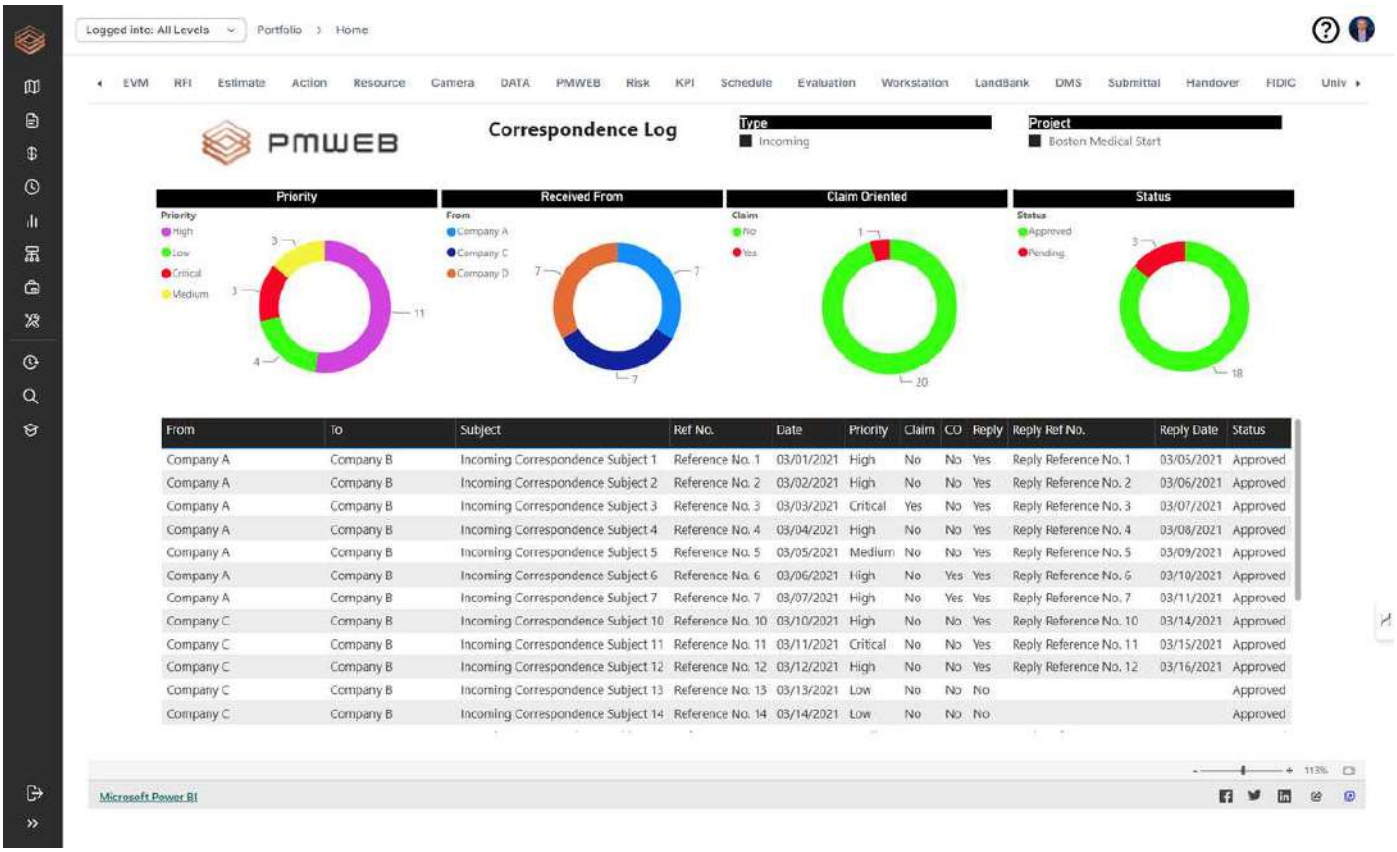
The CM plan, organisation and RACI

PMWEB's portfolio and programme structure mirrors the client's organisation, and the project directory records every party, company and contact. The RACI from the CM plan becomes the set of security roles and workflow roles: who can create, who reviews, who recommends, who approves and who is informed. Because routing is role-based rather than name-based, a change of personnel is a change to one assignment, not a rewrite of the procedure. The CM plan itself is stored as a controlled document, and its key parameters, such as reporting dates and meeting frequencies, are held as structured data that drives the system.



Communication protocol and correspondence

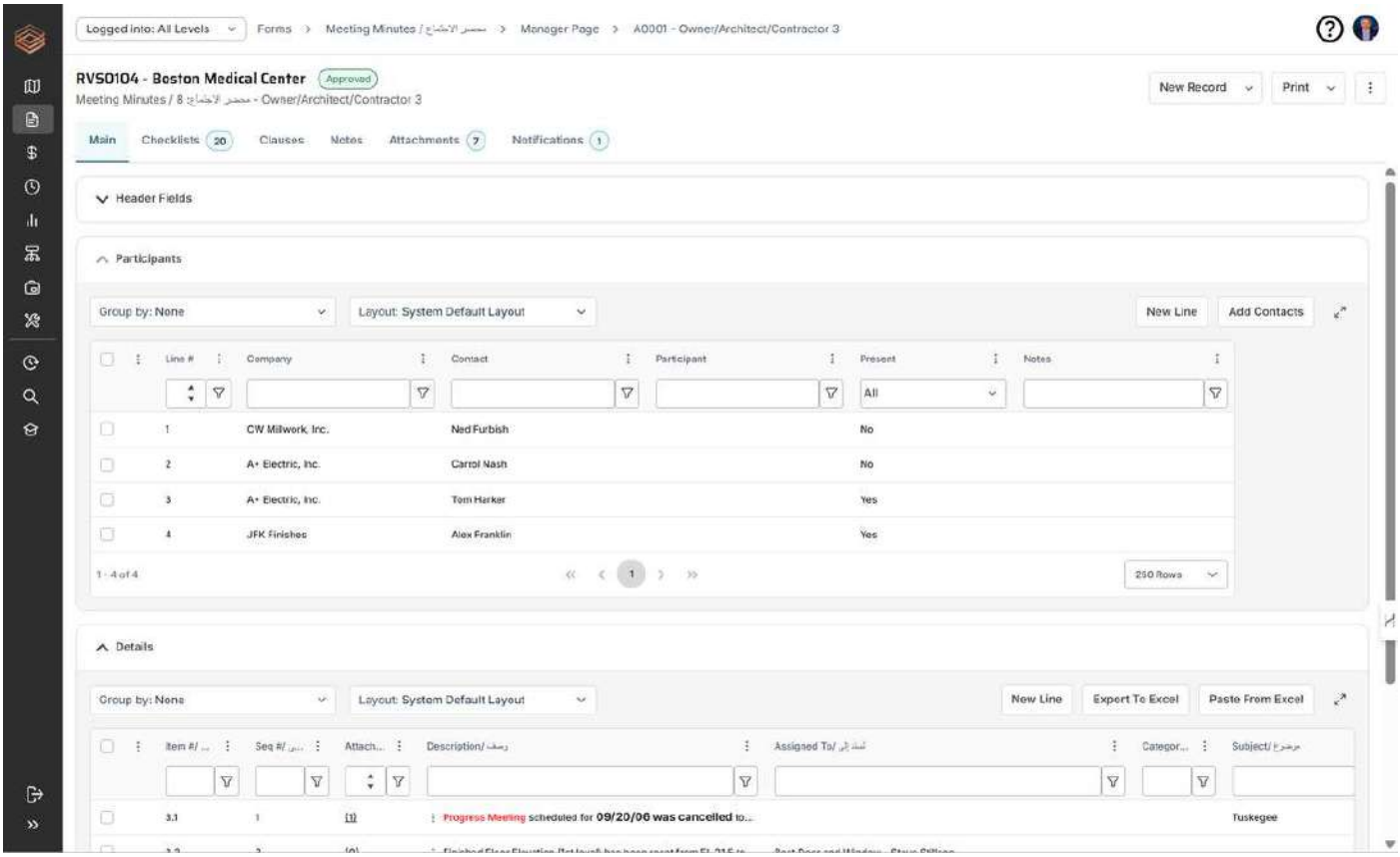
The communication protocol states who writes to whom, on what subjects, with which numbering and with what approval. In PMWEB, correspondence is created within the system with automatic numbering by project, party and type, routed for internal review and sign-off according to value- and type-based rules, and issued with a complete record of who approved it and when. Incoming letters are logged, assigned and tracked for response. Where a letter is a notice under the contract's notice provisions, the correspondence type flags the record so that response periods are tracked from the day of receipt.



From	To	Subject	Ref No.	Date	Priority	Claim	CO	Reply	Reply Ref No.	Reply Date	Status
Company A	Company B	Incoming Correspondence Subject 1	Reference No. 1	03/01/2021	High	No	No	Yes	Reply Reference No. 1	03/05/2021	Approved
Company A	Company B	Incoming Correspondence Subject 2	Reference No. 2	03/02/2021	High	No	No	Yes	Reply Reference No. 2	03/06/2021	Approved
Company A	Company B	Incoming Correspondence Subject 3	Reference No. 3	03/03/2021	Critical	Yes	No	Yes	Reply Reference No. 3	03/07/2021	Approved
Company A	Company B	Incoming Correspondence Subject 4	Reference No. 4	03/04/2021	High	No	No	Yes	Reply Reference No. 4	03/08/2021	Approved
Company A	Company B	Incoming Correspondence Subject 5	Reference No. 5	03/05/2021	Medium	No	No	Yes	Reply Reference No. 5	03/09/2021	Approved
Company A	Company B	Incoming Correspondence Subject 6	Reference No. 6	03/06/2021	High	No	Yes	Yes	Reply Reference No. 6	03/10/2021	Approved
Company A	Company B	Incoming Correspondence Subject 7	Reference No. 7	03/07/2021	High	No	Yes	Yes	Reply Reference No. 7	03/11/2021	Approved
Company C	Company B	Incoming Correspondence Subject 10	Reference No. 10	03/10/2021	High	No	No	Yes	Reply Reference No. 10	03/14/2021	Approved
Company C	Company B	Incoming Correspondence Subject 11	Reference No. 11	03/11/2021	Critical	No	No	Yes	Reply Reference No. 11	03/15/2021	Approved
Company C	Company B	Incoming Correspondence Subject 12	Reference No. 12	03/12/2021	High	No	No	Yes	Reply Reference No. 12	03/16/2021	Approved
Company C	Company B	Incoming Correspondence Subject 13	Reference No. 13	03/13/2021	Low	No	No	No			Approved
Company C	Company B	Incoming Correspondence Subject 14	Reference No. 14	03/14/2021	Low	No	No	No			Approved

Meetings and action items

Meeting minutes are created from a meeting template that carries the standing agenda, attendee list and prior open actions. Each decision or action is a structured action item with an owner, a due date and a status, linked to the relevant RFI, change, risk or issue where one exists. When the next meeting is created, open actions carry forward automatically, and the minutes are distributed from the system with a record of issue.

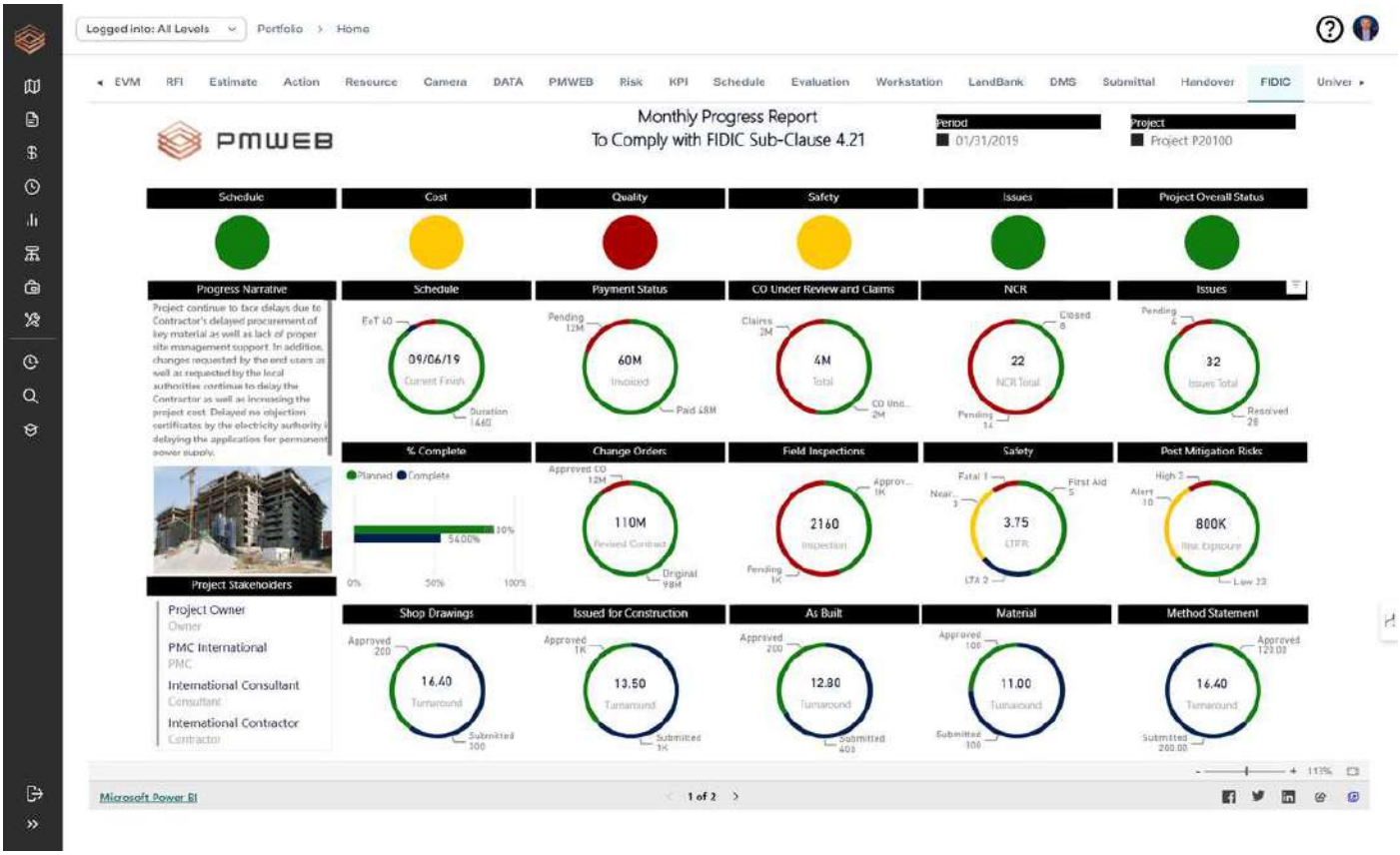


Document control and transmittals

Document control in PMWEB covers the project's controlled documents, drawings register and transmittals, with revision control, distribution matrices and acknowledgement tracking. Where the design team manages drawings and models in its own platform, PMWEB transmittals and correspondence reference the exact revision issued, so the decision record and the document record stay connected.

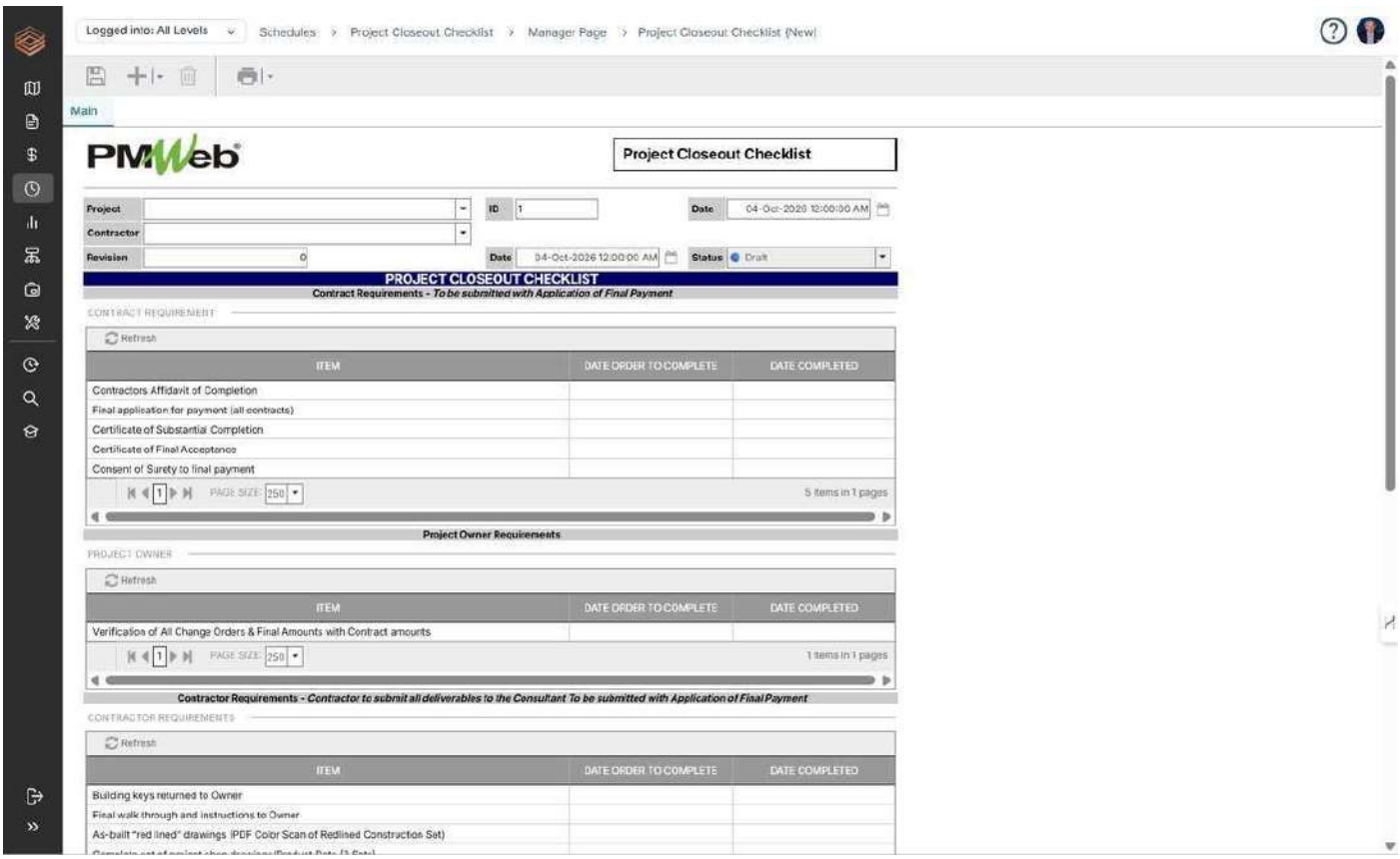
Reporting

The reporting calendar in the CM plan becomes a set of SSRS reports and dashboards drawing on live data, with Power BI integration where the client has standardised on it. Monthly progress reports are generated from the same records the team works in every day, so each report is consistent with the one before it and with every other project in the portfolio. Narrative sections are written by the project team; the numbers are never re-keyed.

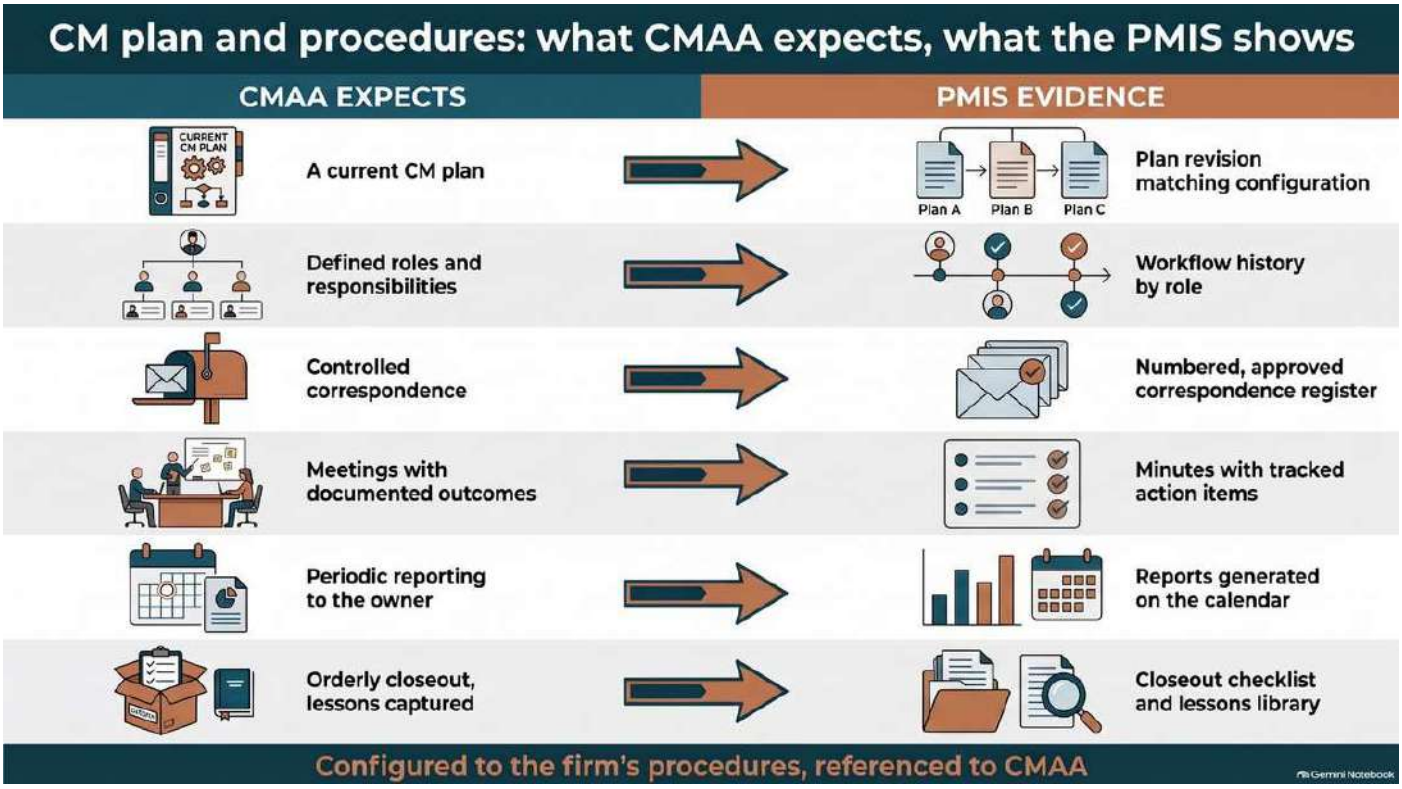


Closeout and lessons learned

Closeout checklists translate the procedures manual's closeout section into tracked steps with owners and evidence. Lessons learned are captured throughout the project, not only at the end, as structured records categorised by process, phase and delivery method. Because they are structured, they can be searched when the next project's CM plan is drafted, and the firm can update its templates in response.



CM responsibility	PMWEB capability	Evidence produced
Prepare and maintain the CM plan	Controlled document plus structured project parameters	Current plan revision and configuration that matches it
Define organisation and responsibilities	Project directory, security roles and workflow roles from the RACI	Role assignments and workflow history by role
Operate the communication protocol	Correspondence records with numbering, routing and issue tracking	Complete, searchable correspondence register with approvals
Run meetings with documented outcomes	Meeting minutes templates and linked action items	Minutes issued on time, actions closed with dates
Control project documents	Document management, drawings register and transmittals	Revision history, distribution and acknowledgement records
Report to the owner	SSRS reports, dashboards and Power BI integration	Consistent periodic reports generated from live data
Close out and capture lessons	Closeout checklists and lessons learned records	Completed checklists and a searchable lessons library



Templates as the firm's practice library

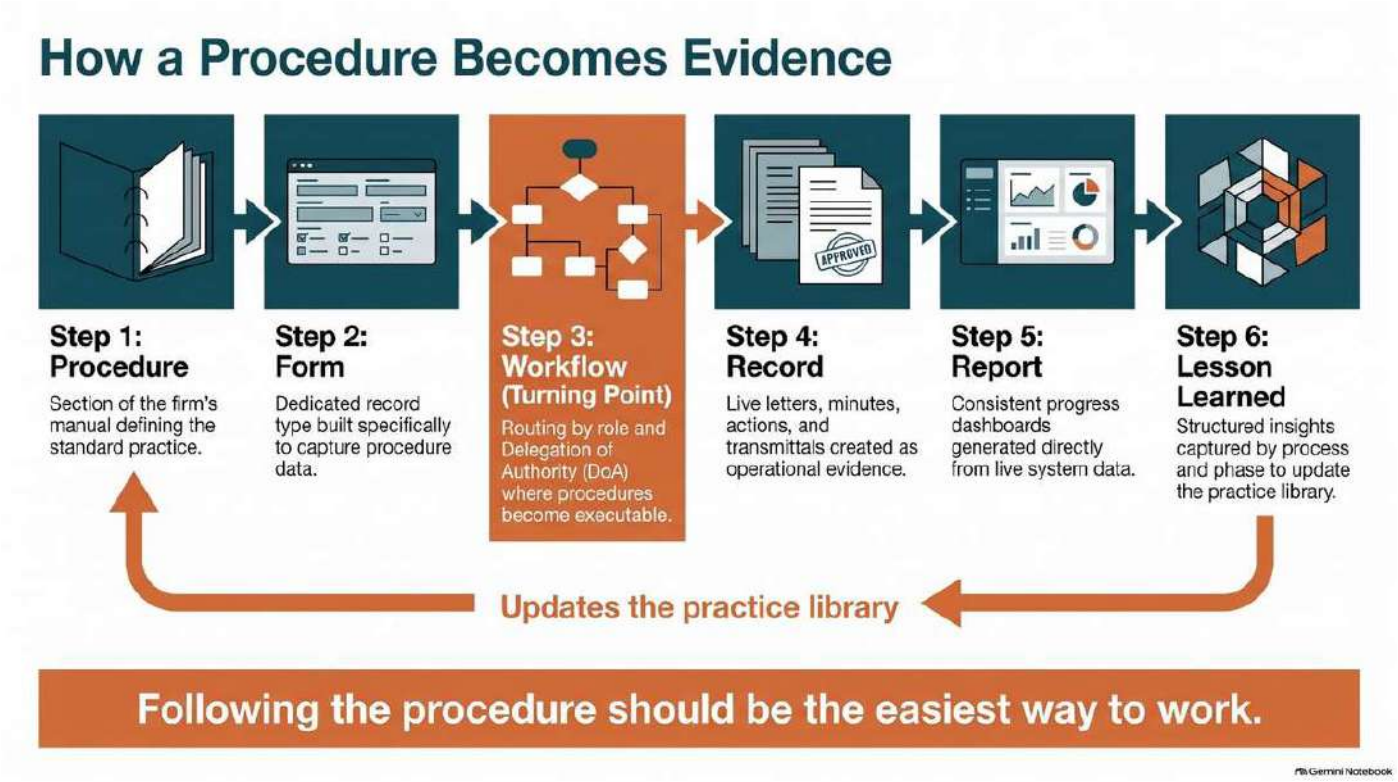
The most valuable outcome of this work is not any one project's configuration. It is the library of templates the firm builds and refines: project templates by delivery method and sector, form and workflow templates, meeting templates, report templates, numbering conventions and closeout checklists. A new mandate starts from the library and is tailored to the client's requirements, rather than being built from nothing. Over time the library becomes the firm's codified way of working, which is precisely what a standard of practice is meant to produce.

Configuring PMWEB to Your Firm's Procedures

The CMAA Standard says what a CM plan and its procedures must achieve; each firm, and each client, decides how. Those decisions become configuration in PMWEB, held in the practice library and tailored per mandate.

What the firm or client decides	How it is configured in PMWEB
Forms and fields	Correspondence, meeting, transmittal and closeout forms built with Form Builder to the firm's procedures manual

What the firm or client decides	How it is configured in PMWEB
Terminology	Record types, field labels and value lists in the client's terms, such as owner's representative, or the Engineer named in the contract where one is appointed
Approval routes and DoA thresholds	Role-based workflows mapped to the owner's delegation-of-authority (DoA) matrix, including board and ministry thresholds
Numbering	Correspondence, minutes and transmittal numbering by project, party and type, as the client specifies
Notice handling	Correspondence types flagged against the contract's notice provisions, with response periods tracked
Report formats	Monthly and periodic report templates in the owner's format, generated from live data
Bilingual outputs	English and Arabic correspondence and report templates where the owner requires them
Hosting and security	In-country hosting where the owner requires it, with role-based security for owner, PMC, designers and contractors
Integration	Project, vendor and cost data exchanged with the owner's ERP



Evidence That the Practice Is Working

- **Plan-to-configuration match.** The degree to which roles, meeting cycles and reporting dates in the CM plan are reflected in the project's PMWEB configuration.
- **Correspondence discipline.** The proportion of outgoing correspondence created, approved and issued through PMWEB rather than outside it.
- **Response timeliness.** Incoming letters and notices answered within their required periods.
- **Action closure.** Meeting action items closed by their due dates, and the number carried forward more than once.
- **Report consistency.** Periodic reports issued on the reporting calendar and generated from live data rather than assembled by hand.
- **Template reuse.** New projects set up from the firm's practice library, and library templates updated from lessons learned.
- **Lessons captured in-flight.** Lessons learned recorded during the project rather than only at closeout.

Key takeaway

A CM plan and procedures manual describe how the firm intends to work. PMWEB turns them into roles, forms, workflows, templates and reports, so that following the procedure is the natural way to work and the evidence is created as the work is done. That is how the project management expectations of the CMAA Standard are executed and evidenced, not merely documented.

This is alignment, not certification. Each firm's procedures differ and should, and PMWEB is configured to them. Over time the templates become the firm's practice library: a codified, reusable standard of practice that improves with every project.

Next in the series: *Article 4 — Cost Management: From Budget to Final Cost Reconciliation*

About the Author

Bassam Samman, PMP, PSP, EVP, GPM is the Chairman and Chief Executive Officer of CMCS FZ-LLC, the PMWEB Authorised Implementation Partner for the Gulf Cooperation Council and broader Middle East and North Africa region. CMCS holds the PMWEB Partner of the Year 2025 designation and serves capital project owners, contractors and consultants across the UAE, Saudi Arabia, Qatar, Kuwait and India.

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Cost Management — How GCC PMC Firms Digitalise CMAA Cost Control with PMWEB, from Budget to Final Cost Reconciliation

One linked cost record, from the first estimate to the final account

Owners do not hire a PMC to report what was spent. They hire it to know, at any moment, what the project will cost at completion and why. That answer only exists if every cost event, from budget to final account, is linked in one record.

Cost management is where a PMC firm's credibility with its client is won or lost. A Kuwaiti ministry wants to know whether the approved budget will hold. A Dubai master developer wants to know how much contingency remains across a phase before releasing the next. A PIF-backed giga-project wants a forecast it can take to its board with confidence. In each case the question is the same: what is the estimate at completion, and how do we know?

In most PMC practices the answer is assembled rather than retrieved. The budget sits in one workbook, the commitments in another, the change log in a third, and the payment position in the contractor's application. Forecasts are built by the cost manager each month by reconciling these sources, and the reconciliation itself becomes the work. When a variation is disputed or an auditor asks how contingency was used, the trail has to be reconstructed.

The CMAA Standard describes cost management as a continuous discipline running from the first budget to the final cost reconciliation, with each stage building on the last. The challenge for a PMC firm is not understanding that discipline; it is executing it across dozens of projects, with different contract forms and different client approval chains, without losing the thread.

This article follows the cost life cycle from budget to final account and shows how PMWEB executes and evidences each step. Each PMC firm and each client manages cost in its own way, with its own cost breakdown structure, approval thresholds and reporting formats. PMWEB is configured to the firm's procedures; the CMAA Standard stays the reference.



What the CMAA Standard Expects

The CMAA Standard expects the CM to manage cost across every phase of the project and to be the owner's independent source of cost truth throughout. The expectations build on each other: the budget set in pre-design is the yardstick for every estimate in design, the estimates inform the evaluation of bids, the awarded contracts become the committed baseline, and every change, payment and forecast during construction is measured against it until the final cost is reconciled.

CMAA phase	What the CM is expected to do
Pre-design	Help the owner establish a realistic budget and cost breakdown structure, aligned to how the project is funded.
Design	Prepare or review estimates at each design milestone, reconcile them with the budget, lead or support value engineering and consider life-cycle cost.
Procurement	Analyse bids against the pre-tender estimate and advise the owner on award.
Construction	Control commitments, evaluate and negotiate changes, manage contingency, review contractor payment applications and recommend payment, forecast cash flow and final cost, and report variances to the owner.
Post-construction	Reconcile the final cost against the budget and support the final account for each contract.

How GCC PMC Firms Typically Do It Today

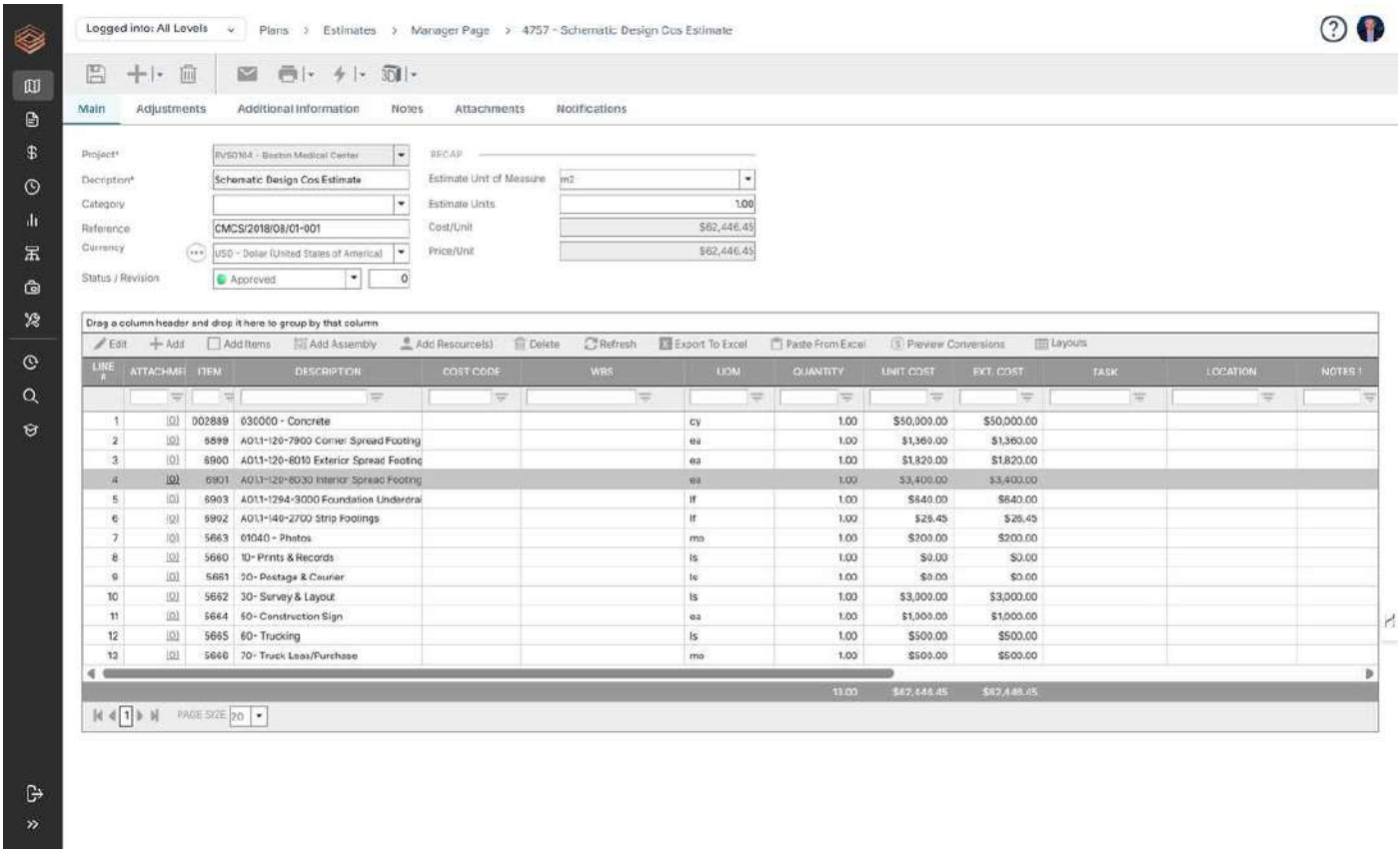
- **Budget, commitments and changes live in separate files.** The cost report is a monthly reconciliation exercise rather than a live view.
- **Estimates are disconnected from the budget.** Design-stage estimates are produced in estimating tools or workbooks and compared to the budget by hand, so the estimate history is hard to trace.
- **Pending changes are invisible until approved.** Potential exposure is held in the cost manager's head or a private log, so forecasts understate risk.
- **Contingency drawdown is not traceable.** It is difficult to show which approved change consumed which part of the contingency, and under whose authority.
- **Payment reviews are paper-based.** Contractor applications are checked against spreadsheets, and the payment certificate is issued as a document with no structured link to the schedule of values or retention balance.
- **The finance system and the cost report disagree.** Commitments and payments in the client's ERP do not match the PMC's report, and month-end is spent explaining the difference.

How PMWEB Digitalises It

PMWEB treats cost as one linked data model rather than a set of documents. The budget, estimates, commitments, changes, payment certificates and forecasts all use the same cost breakdown structure, so each record updates the same cost worksheet.

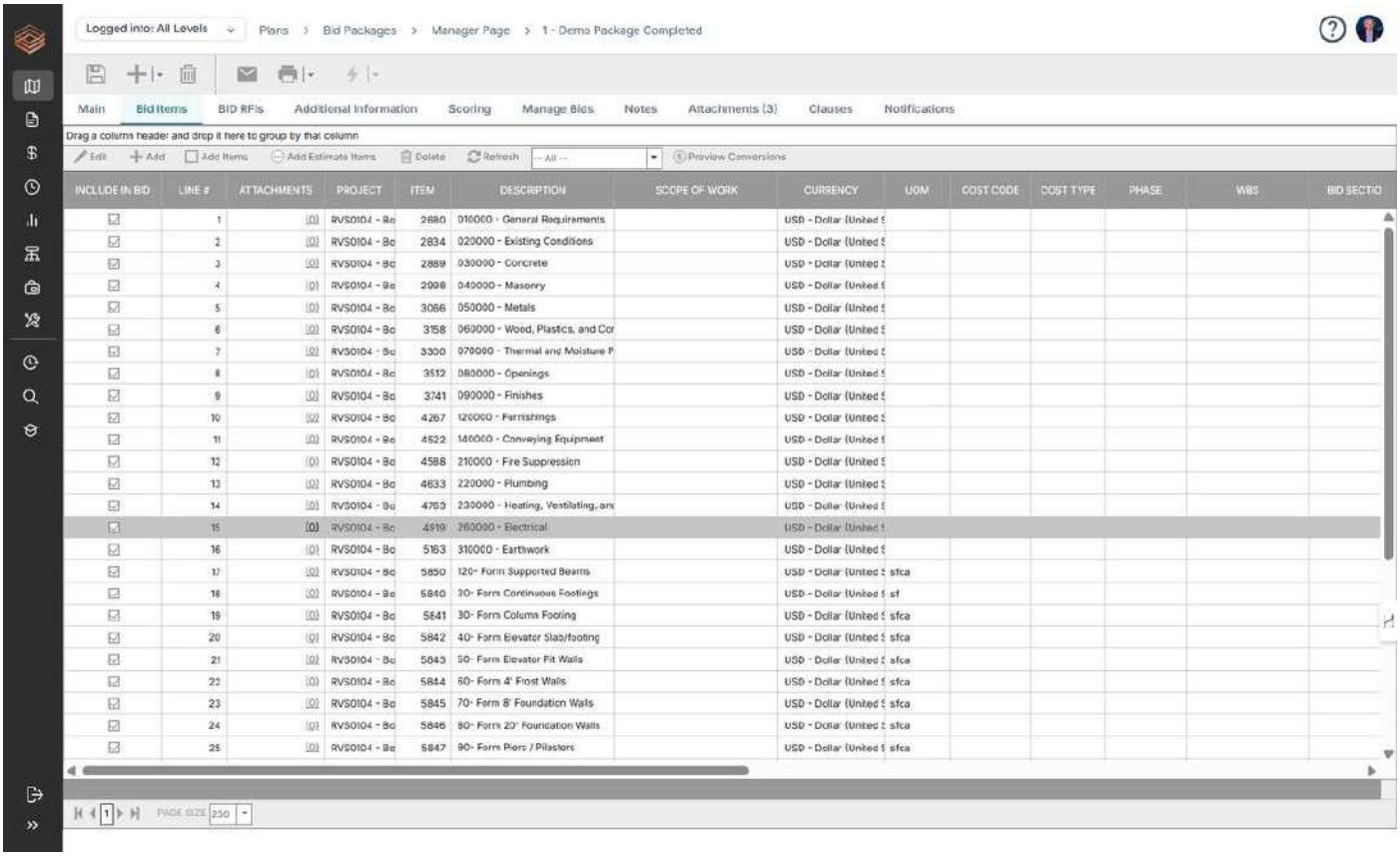
Budget, funding and estimates

The approved budget is loaded against the project's cost breakdown structure, with funding sources recorded against it where the client requires. Budget transfers are handled as workflow-approved records rather than cell edits, so the original budget, approved transfers and revised budget are always visible. Estimates are held in PMWEB at each design milestone, classified using the firm's own estimate classification, and compared line by line with the budget and with the previous estimate. Value engineering proposals are captured as structured records with the option, the estimated saving, any life-cycle cost effect and the decision, so the reasoning survives beyond the workshop.



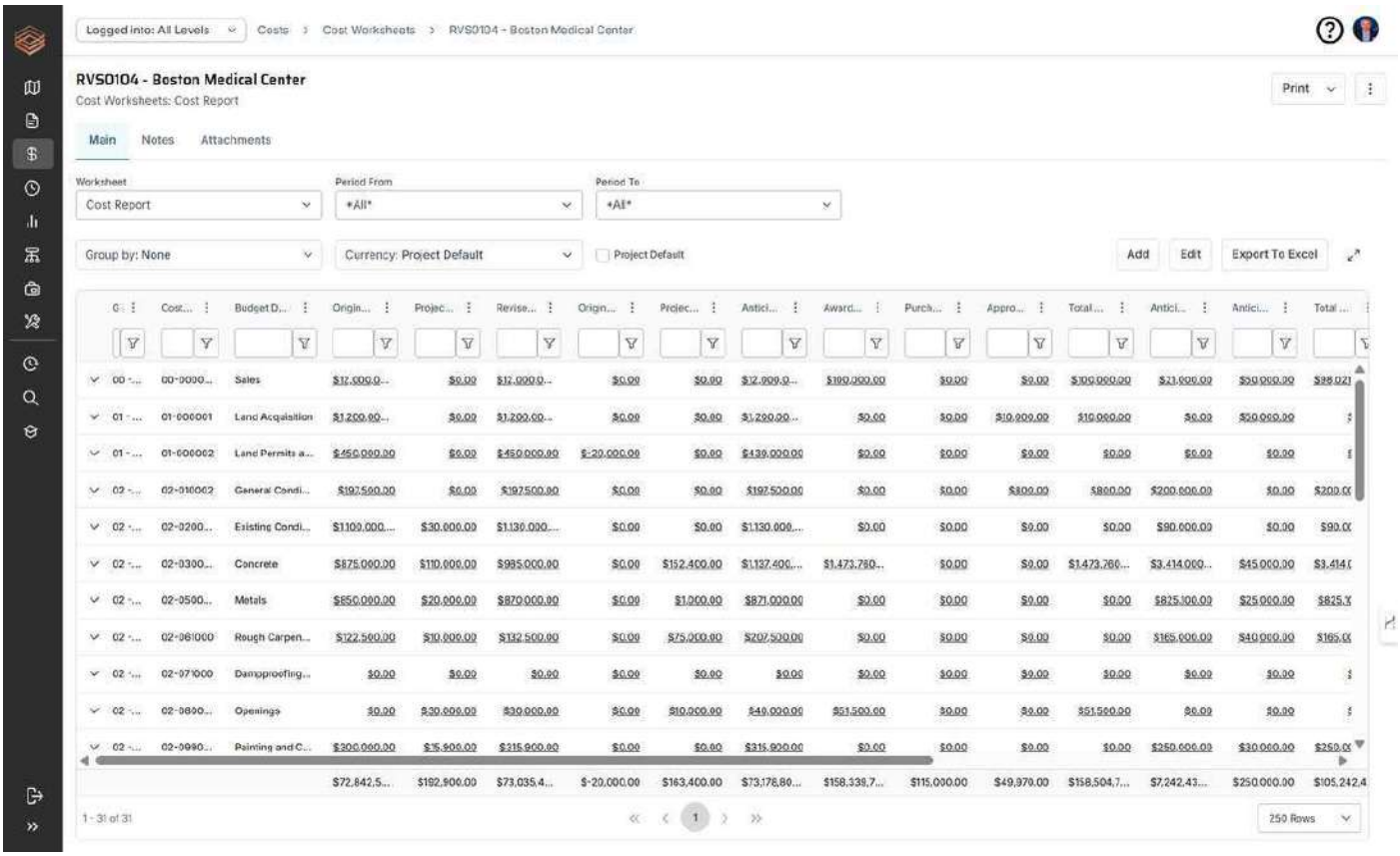
Bid analysis and commitments

Tender returns are levelled and compared with the pre-tender estimate in a bid analysis record, and the award recommendation follows the owner's approval route. On award, the commitment is created with its schedule of values, retention terms, advance payment and any bonds, and it becomes part of the committed cost on the cost worksheet. Where the client's ERP is the system of record for purchase orders, the commitment is synchronised through PMWEB's open APIs or its established integrations with SAP, Oracle or Microsoft Dynamics, so both systems show the same committed value.



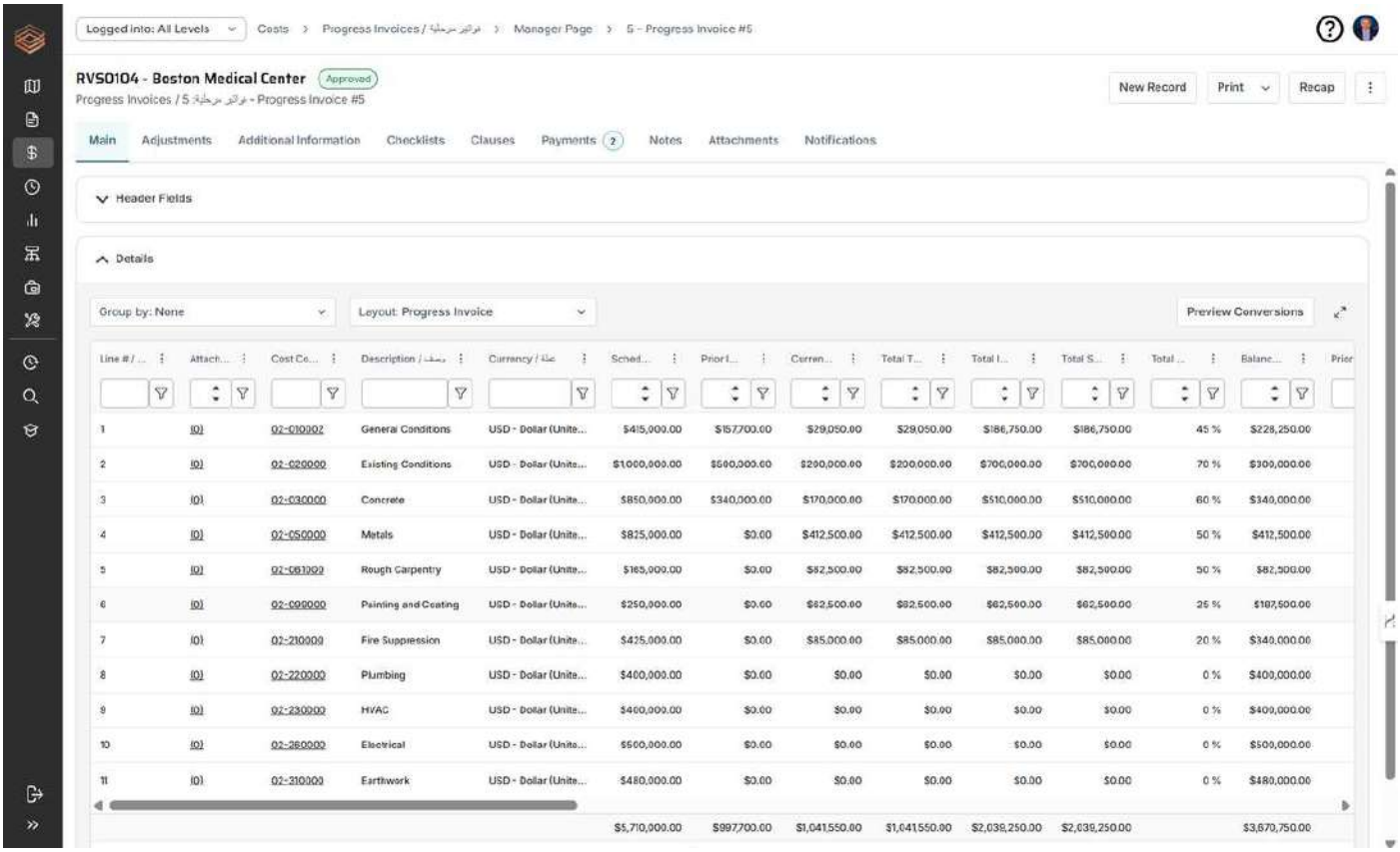
Change pricing and contingency drawdown

Change follows a three-stage path. A potential change order records the event and an early estimate of exposure, which appears immediately as pending cost. A change order request carries the contractor's quotation and the PMC's evaluation. The change order, once approved under the DoA, updates the commitment and draws down contingency through a linked budget transfer. At any point the cost worksheet shows approved, pending and potential changes separately, and the contingency log shows every drawdown, its reason and its approver.



Payment certification and cash flow

Contractor progress invoices are submitted against the schedule of values, reviewed line by line by the PMC, and routed for approval. The payment certificate calculates work done to date, previous payments, retention, advance payment recovery and VAT, and is issued with its full review trail. Approved payments update the actual cost column and the cash flow, which compares planned, forecast and actual expenditure over time so that the client's treasury and funding cycle can be planned.



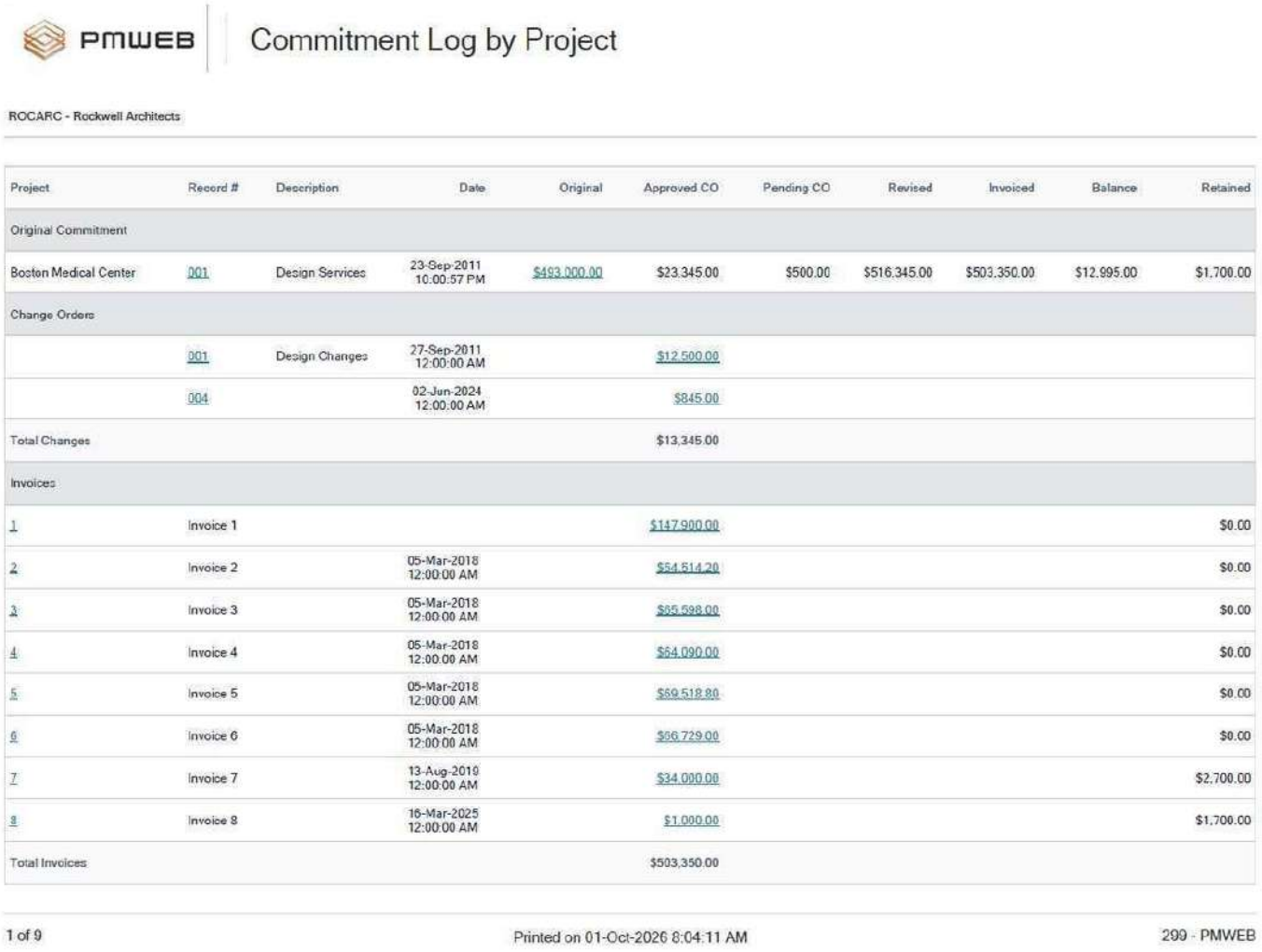
Line # / ...	Attach...	Cost Co...	Description / وصف	Currency / عملة	Sched...	Prior I...	Curren...	Total T...	Total I...	Total S...	Total ...	Balanc...	Prior
1	(0)	02-010002	General Conditions	USD - Dollar (Unite...	$415,000.00	$157,700.00	$29,050.00	$29,050.00	$186,750.00	$186,750.00	45 %	$228,250.00	
2	(0)	02-020000	Existing Conditions	USD - Dollar (Unite...	$1,000,000.00	$560,000.00	$280,000.00	$280,000.00	$700,000.00	$700,000.00	70 %	$300,000.00	
3	(0)	02-030000	Concrete	USD - Dollar (Unite...	$850,000.00	$340,000.00	$170,000.00	$170,000.00	$510,000.00	$510,000.00	60 %	$340,000.00	
4	(0)	02-050000	Metals	USD - Dollar (Unite...	$825,000.00	$0.00	$412,500.00	$412,500.00	$412,500.00	$412,500.00	50 %	$412,500.00	
5	(0)	02-061000	Rough Carpentry	USD - Dollar (Unite...	$165,000.00	$0.00	$82,500.00	$82,500.00	$82,500.00	$82,500.00	50 %	$82,500.00	
6	(0)	02-090000	Painting and Coating	USD - Dollar (Unite...	$250,000.00	$0.00	$62,500.00	$62,500.00	$62,500.00	$62,500.00	25 %	$187,500.00	
7	(0)	02-210000	Fire Suppression	USD - Dollar (Unite...	$425,000.00	$0.00	$85,000.00	$85,000.00	$85,000.00	$85,000.00	20 %	$340,000.00	
8	(0)	02-220000	Plumbing	USD - Dollar (Unite...	$400,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	0 %	$400,000.00	
9	(0)	02-230000	HVAC	USD - Dollar (Unite...	$400,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	0 %	$400,000.00	
10	(0)	02-260000	Electrical	USD - Dollar (Unite...	$500,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	0 %	$500,000.00	
11	(0)	02-310000	Earthwork	USD - Dollar (Unite...	$480,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	0 %	$480,000.00	
					$5,710,000.00	$997,700.00	$1,041,550.00	$1,041,550.00	$2,039,250.00	$2,039,250.00		$3,670,750.00	

Forecasting and earned value

Forecasting is where the linked model pays off. The estimate to complete can be set per cost line using the method the firm prefers, whether by remaining commitment plus exposure, by performance factor or by bottom-up reassessment, and the estimate at completion follows. Where the client requires earned value, PMWEB combines the cost baseline with progress from the schedule, integrated with Primavera P6 or MS Project, to calculate planned value, earned value, cost and schedule variances and performance indices. The forecast is therefore explainable: every number traces back to a budget line, a commitment, a change or a progress measurement.

Final cost reconciliation

At closeout, the final account for each commitment is reconciled against its schedule of values, approved changes, payments and retention release. The project's final cost is reconciled with the budget, with every variance explained by the change and contingency records behind it. What would otherwise be a months-long exercise becomes a review of records that already agree with each other.



PMWEB | Commitment Log by Project

ROCARC - Rockwell Architects

Project	Record #	Description	Date	Original	Approved CO	Pending CO	Revised	Invoiced	Balance	Retained
Original Commitment										
Boston Medical Center	001	Design Services	23-Sep-2011 10:00:57 PM	$493,000.00	$23,345.00	$500.00	$516,345.00	$503,350.00	$12,995.00	$1,700.00
Change Orders										
	001	Design Changes	27-Sep-2011 12:00:00 AM		$12,500.00					
	004		02-Jun-2024 12:00:00 AM		$845.00					
Total Changes					$13,345.00					
Invoices										
1	Invoice 1				$147,900.00					$0.00
2	Invoice 2		05-Mar-2018 12:00:00 AM		$54,514.20					$0.00
3	Invoice 3		05-Mar-2018 12:00:00 AM		$65,598.00					$0.00
4	Invoice 4		05-Mar-2018 12:00:00 AM		$64,090.00					$0.00
5	Invoice 5		05-Mar-2018 12:00:00 AM		$69,518.80					$0.00
6	Invoice 6		05-Mar-2018 12:00:00 AM		$66,729.00					$0.00
7	Invoice 7		13-Aug-2019 12:00:00 AM		$34,000.00					$2,700.00
8	Invoice 8		16-Mar-2025 12:00:00 AM		$1,000.00					$1,700.00
Total Invoices					$503,350.00					

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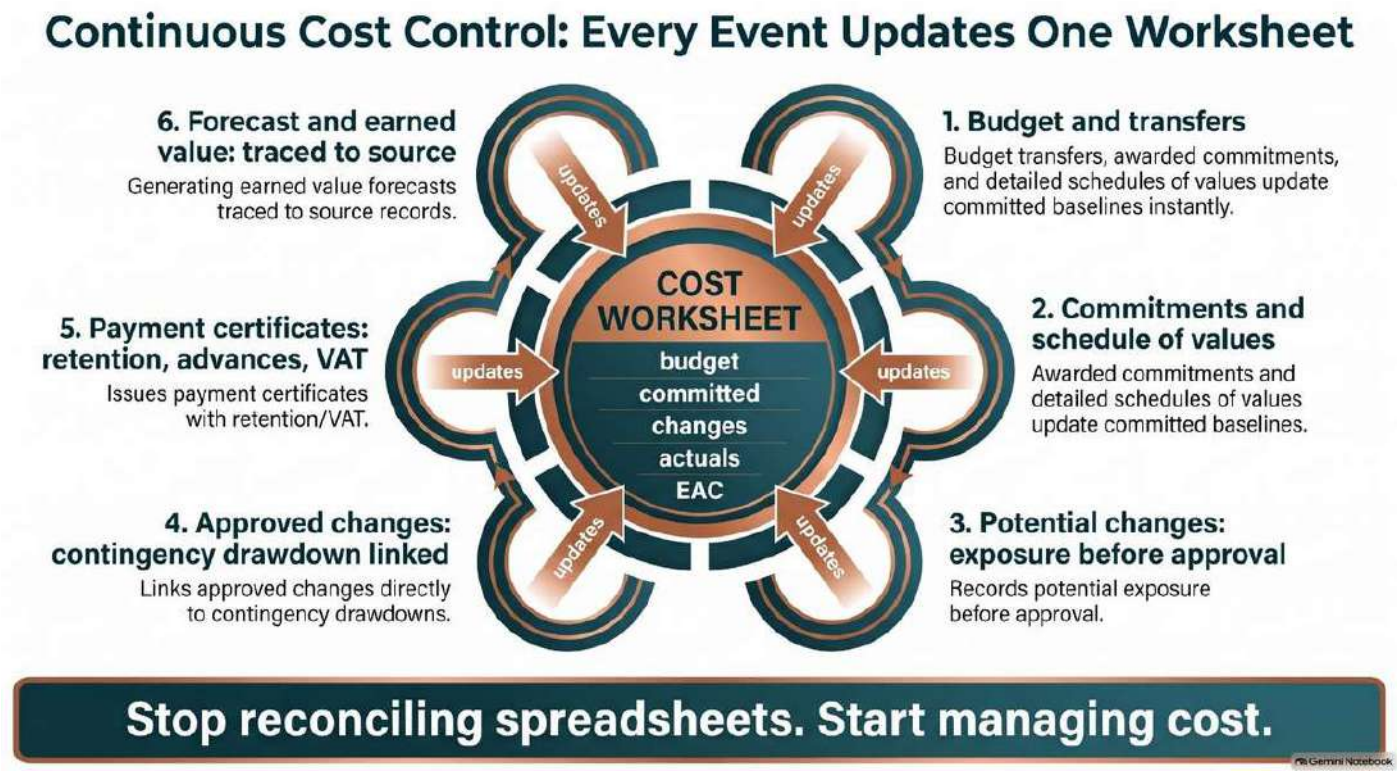
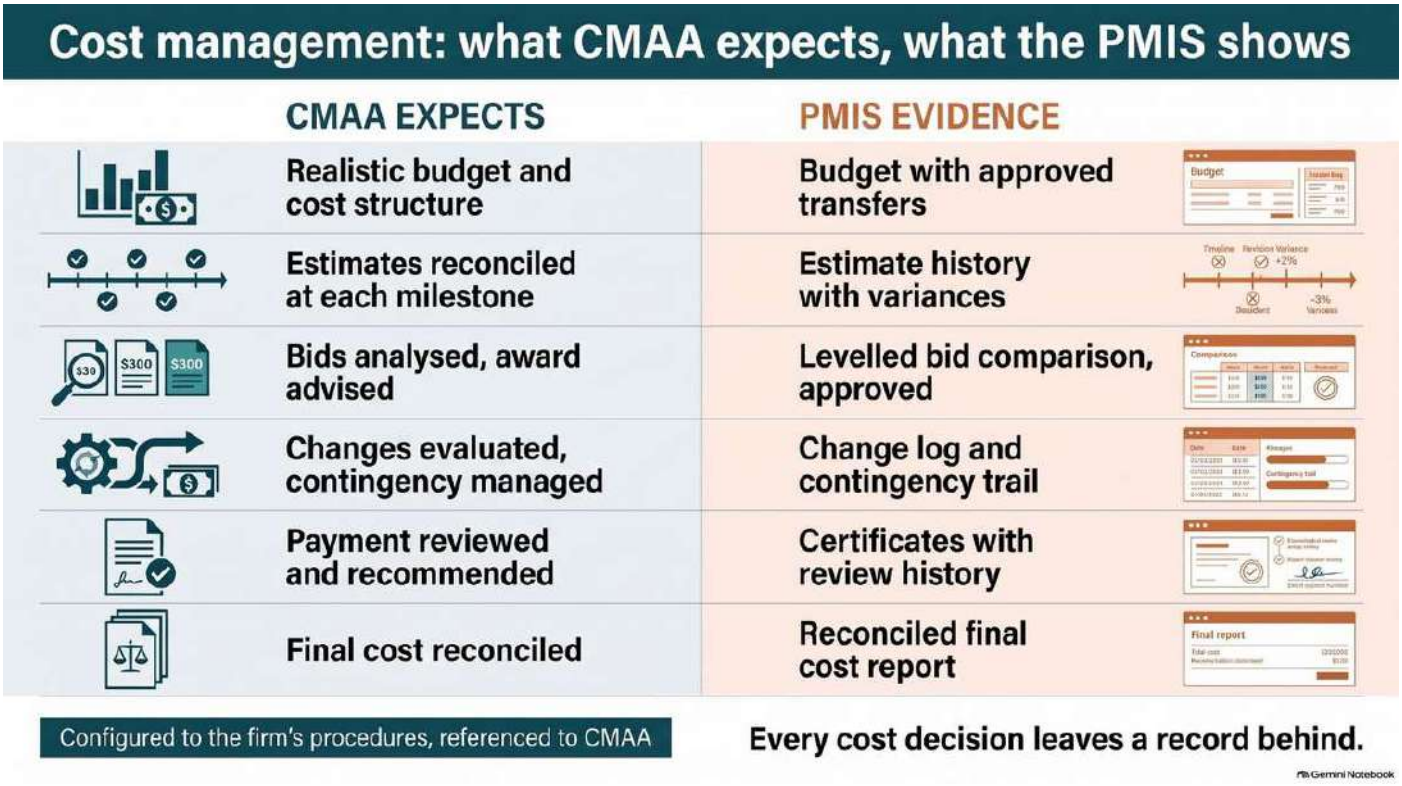
CM responsibility	PMWEB capability	Evidence produced
Establish budget and cost breakdown structure	Budget and funding records with budget transfers under workflow	Original, transferred and revised budget with approvals
Prepare and reconcile estimates	Estimates per design milestone, classified and compared	Estimate history with variance to budget by line
Lead value engineering and life-cycle costing	Custom VE and life-cycle cost records via Form Builder	VE decisions with rationale and cost effect
Analyse bids and recommend award	Bid analysis records and award workflow	Levelled comparison and approved recommendation
Control commitments	Commitments with schedule of values, retention and ERP synchronisation	Committed cost aligned to the finance system
Evaluate changes and manage contingency	Potential change orders, change order requests, change orders, contingency drawdown	Change log and contingency trail with approvers
Review payment and recommend payment	Progress invoices and payment certificates with retention and VAT	Payment certificates with line-level review history
Forecast cash flow and final cost	Cash flow, EAC and ETC, earned value	Explainable forecast traced to source records
Reconcile final cost	Final account per commitment and project cost reconciliation	Reconciled final cost report



Configuring PMWEB to Your Firm's Procedures

The CMAA Standard sets out what cost management must achieve; how a given firm and client structure, approve and report cost is theirs to decide. Each of those decisions is a configuration choice in PMWEB, held in the firm's cost templates and tailored per client.

What the firm or client decides	How it is configured in PMWEB
Cost breakdown structure and funding	Budget structured to the owner's cost breakdown structure and funding cycle, with funding sources recorded per line
Forms and fields	Estimate, bid analysis, value engineering and change forms built with Form Builder to the firm's procedures
Terminology	Field labels and record names in the client's terms, such as variation, change order or site instruction
Approval routes and DoA thresholds	Budget transfers, awards and change orders routed by value and type to the owner's delegation-of-authority (DoA) matrix
Payment basis	Payment certificates configured to the conditions of contract and owner amendments, with retention, advance payment recovery and VAT per contract
Forecasting method	Estimate-to-complete method set per cost line, with earned value enabled where the client requires it
Numbering	Commitment, change and payment certificate numbering by project, contract and type
Report formats and bilingual outputs	Cost reports in the owner's format, in English and Arabic where the owner requires them
Hosting and integration	In-country hosting where the owner requires it; commitments and payments synchronised with the owner's SAP, Oracle or Microsoft Dynamics ERP



Evidence That the Practice Is Working

- **Forecast traceability.** The proportion of the estimate at completion that traces directly to budget, commitment, change and payment records.
- **Estimate reconciliation.** Design-stage estimates reconciled to budget at each milestone, with variances explained.
- **Change cycle time.** Time from potential change order to approved change order or rejection.
- **Pending exposure visibility.** Potential and requested changes recorded with an estimated value before approval.
- **Contingency transparency.** Contingency drawdowns linked to an approved change order and approver.
- **Payment review timeliness.** Payment certificates issued within the contractual period after receipt of the contractor's application.
- **ERP agreement.** Commitments and payments in PMWEB matching the client's finance system at period end.

Key takeaway

Cost management under the CMAA Standard is a continuous discipline from budget to final cost reconciliation. When budget, estimates, commitments, changes, payment certificates and forecasts share one cost breakdown structure in PMWEB, the estimate at completion becomes something the PMC can retrieve and explain at any moment, rather than rebuild each month.

This is alignment, not certification. Each firm and client will structure cost in its own way, with its own thresholds and reports, and PMWEB is configured to them. The result is an auditable financial trail that the owner, its finance function and its auditors can trust.

Next in the series: *Article 5 — Time Management: Schedules as Governance Instruments*

About the Author

Bassam Samman, PMP, PSP, EVP, GPM is the Chairman and Chief Executive Officer of CMCS FZ-LLC, the PMWEB Authorised Implementation Partner for the Gulf Cooperation Council and broader Middle East

and North Africa region. CMCS holds the PMWEB Partner of the Year 2025 designation and serves capital project owners, contractors and consultants across the UAE, Saudi Arabia, Qatar, Kuwait and India.

Bassam has over four decades of experience providing project management, project controls services and project management information systems to more than two hundred capital projects with a combined value exceeding one hundred billion US dollars. He is the author of four published books on project management digitalisation and has lectured at more than three hundred and fifty international events. He holds a Master's degree in Engineering Administration (Construction Management), with Faculty Commendation, from George Washington University and a Bachelor's degree in Civil Engineering from Kuwait University, with executive education at Harvard Business School and London Business School.

About PMWEB

PMWEB is an enterprise-class, web-based capital construction project management platform trusted by organisations worldwide including Harvard University, the United Nations, and Atlanta Airport. Built on Microsoft .NET technology, PMWEB manages the entire project lifecycle within a single integrated platform — from portfolio planning and cost management through document control, procurement, scheduling, asset management, and business intelligence. With 150+ pre-configured SSRS reports, drag-and-drop dashboard design, multi-currency support, and open REST/SOAP API integration, PMWEB delivers enterprise capability with implementation timelines measured in months, not years.

About CMCS

CMCS (Collaboration, Management and Control Solutions) is the regional PMWEB implementation partner for the GCC and MENA regions, awarded PMWEB Partner of the Year 2025. CMCS specialises in digital project management solutions for real estate developers, infrastructure owners, and construction companies across the Middle East and North Africa.

Time Management: Schedules as Governance Instruments — How GCC PMC Firms Digitalise CMAA Time Management with PMWEB

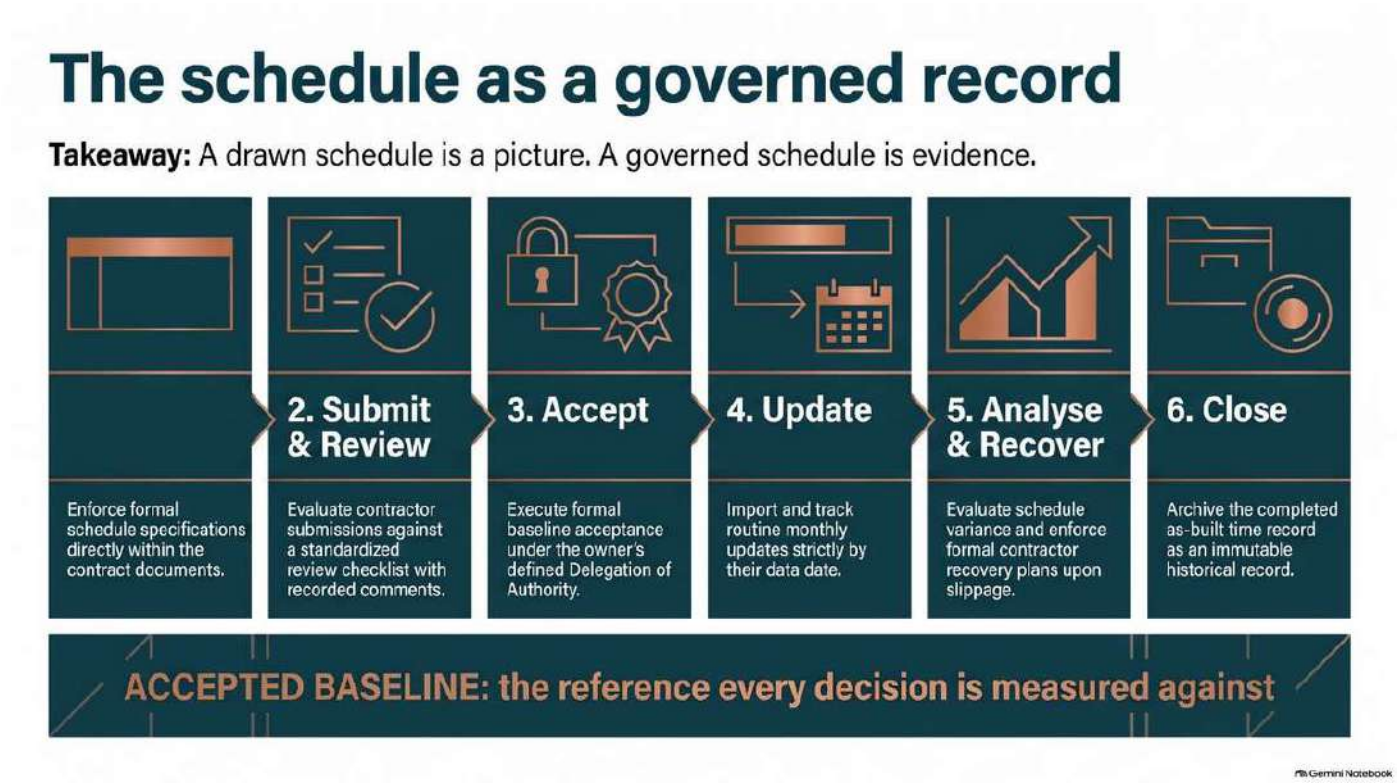
From master schedule to as-built record: submittal, review, acceptance, update, delay analysis and extension of time in one system

A schedule is not a picture of the project; it is a contractual instrument that the owner relies on to make decisions. PMC firms that treat it as a governed record, reviewed, accepted, updated and analysed under a defined process, are the ones whose time advice holds up when it matters most.

Across the GCC, every major project has a schedule. Very few have a schedule that the owner can defend. The master developer has a milestone chart for the board, the design consultant has a design programme in a spreadsheet, procurement runs long-lead items from a tracker, and the contractor submits a Primavera P6 file that the PMC reviews by email and comments on in a PDF. When a delay event arrives, and on a PIF-backed giga-project or a Kuwaiti ministry hospital it always does, the team discovers that nobody can say with confidence which baseline was accepted, which update was the last reliable one, or when the owner was first told about the slippage.

The CMAA Standards of Practice do not ask the PMC to produce a better Gantt chart. They ask it to establish the schedule as a governance instrument: specified, reviewed, accepted, updated, analysed, recovered and used to assess time entitlement fairly. Each step is a process, and each process produces a record.

As in every article in this series, the point is not that every PMC firm should run time management the same way. Each firm, and each client, has its own schedule specification, review checklist, update cycle and approval route. PMWEB is configured to those procedures. What stays constant is the CMAA Standard as the reference, and the evidence the system produces that the procedures were followed.



What the CMAA Standard Expects

The CMAA Standard treats time management as a responsibility that runs through the whole project, not a construction-phase activity. In pre-design, the CM is expected to develop a master schedule that sets out the major phases, decision points and milestones, and to advise the owner on whether the overall duration is realistic. During design, the CM is expected to monitor the design schedule, coordinate it with procurement lead

times and owner decisions, and make sure the contract documents contain a clear schedule specification. During procurement, the CM ensures bidders understand the schedule requirements and that milestones and completion dates are consistent across packages.

In construction, the CMAA Standard expects the CM to review the contractor's baseline schedule for completeness and reasonableness, recommend acceptance or rejection, monitor progress through regular updates, identify slippage early, require recovery where needed, and evaluate requests for time extension objectively. In post-construction, the CM is expected to ensure that the as-built schedule is documented and retained as part of the project record. Throughout, the Standard expects the CM to keep the owner informed so that decisions are taken with an accurate understanding of time.

CMAA phase	What the CM is expected to do
Pre-design	Develop a master schedule with major phases, decision points and milestones, and advise the owner on whether the overall duration is realistic
Design	Monitor the design schedule, coordinate it with procurement lead times and owner decisions, and see that the contract documents carry a clear schedule specification
Procurement	Make sure bidders understand the schedule requirements and that milestones and completion dates are consistent across packages
Construction	Review and recommend acceptance of the contractor's baseline, monitor regular updates, identify slippage early, require recovery and evaluate time extension requests objectively
Post-construction	Document and retain the as-built schedule as part of the project record

How GCC PMC Firms Typically Do It Today

The practice in the region is capable and experienced. The weakness is almost never scheduling skill; it is the absence of a governed process around the schedule.

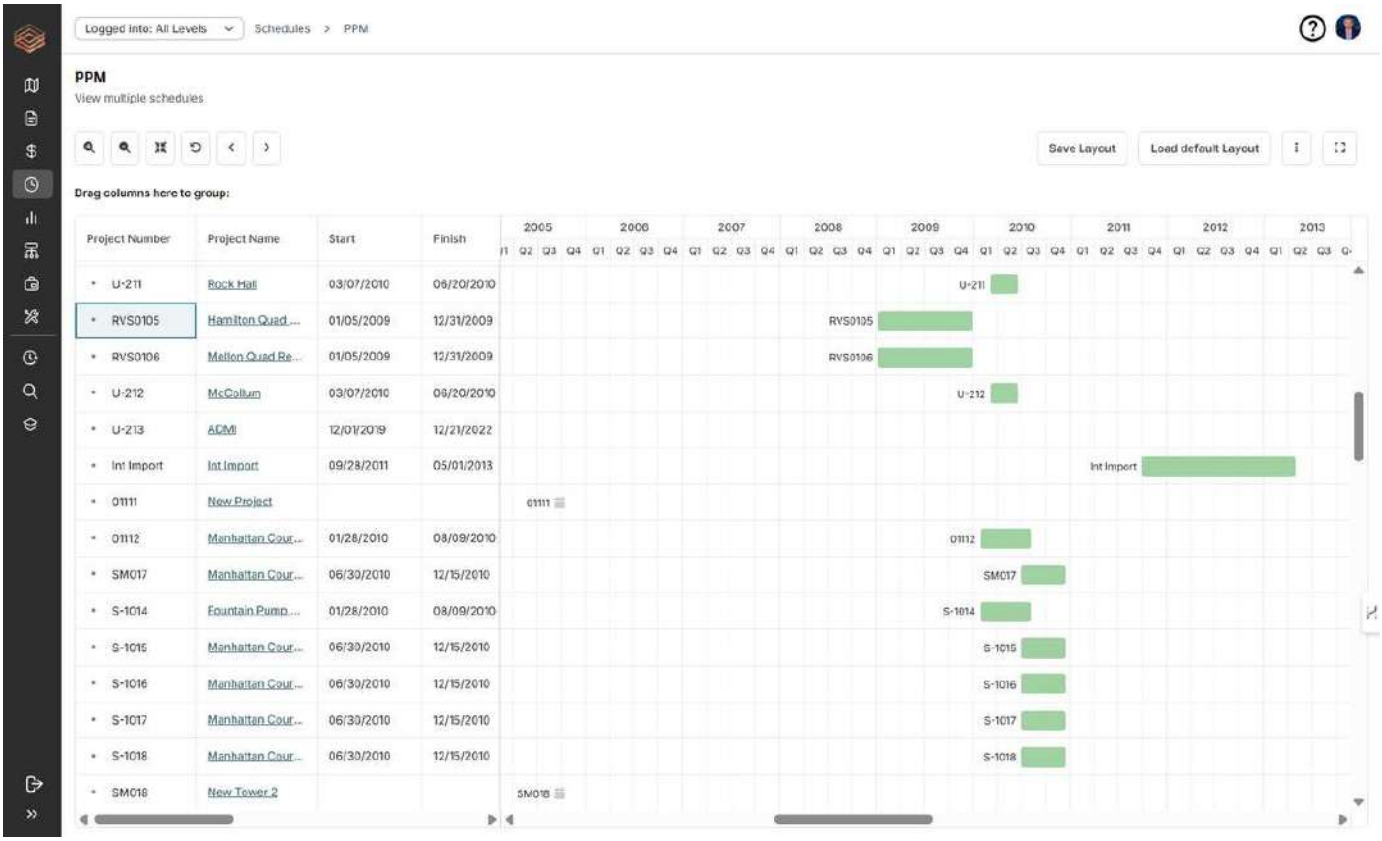
- **Baselines accepted by email.** The contractor's programme is reviewed, commented on and "accepted" in a chain of emails and marked-up PDFs, so there is no single record of which version became the contractual baseline and who approved it.
- **Updates as files, not data.** Monthly updates arrive as XER or MPP files stored in folders. Comparing this month's critical path with last month's, or with the baseline, is a manual exercise done under pressure.
- **Design and procurement schedules live apart.** The design programme, the long-lead procurement tracker and the construction schedule are maintained by different parties in different tools, so a late approval in design never visibly moves the construction dates until it is too late.
- **Float treated as the contractor's property.** Without a record of float consumption over time, disputes about who used the float, and when, become a matter of opinion.
- **Time impact analysis prepared after the fact.** Delay events are notified late and analysed months afterwards, when the contemporaneous records needed to support or reject the claim have scattered across inboxes.
- **Schedule and cost reported separately.** Progress is reported in percent complete and cost in commitments and invoices, with no earned value link to show whether the project is actually performing.

How PMWEB Digitalises It

PMWEB does not replace Primavera P6 or MS Project. Planners continue to build and analyse schedules in the tool they know. PMWEB wraps those schedules in the governance process: it holds the schedule data in the project record, links it to cost, documents and decisions, and routes every submission, review and acceptance through the workflow engine with a full audit trail.

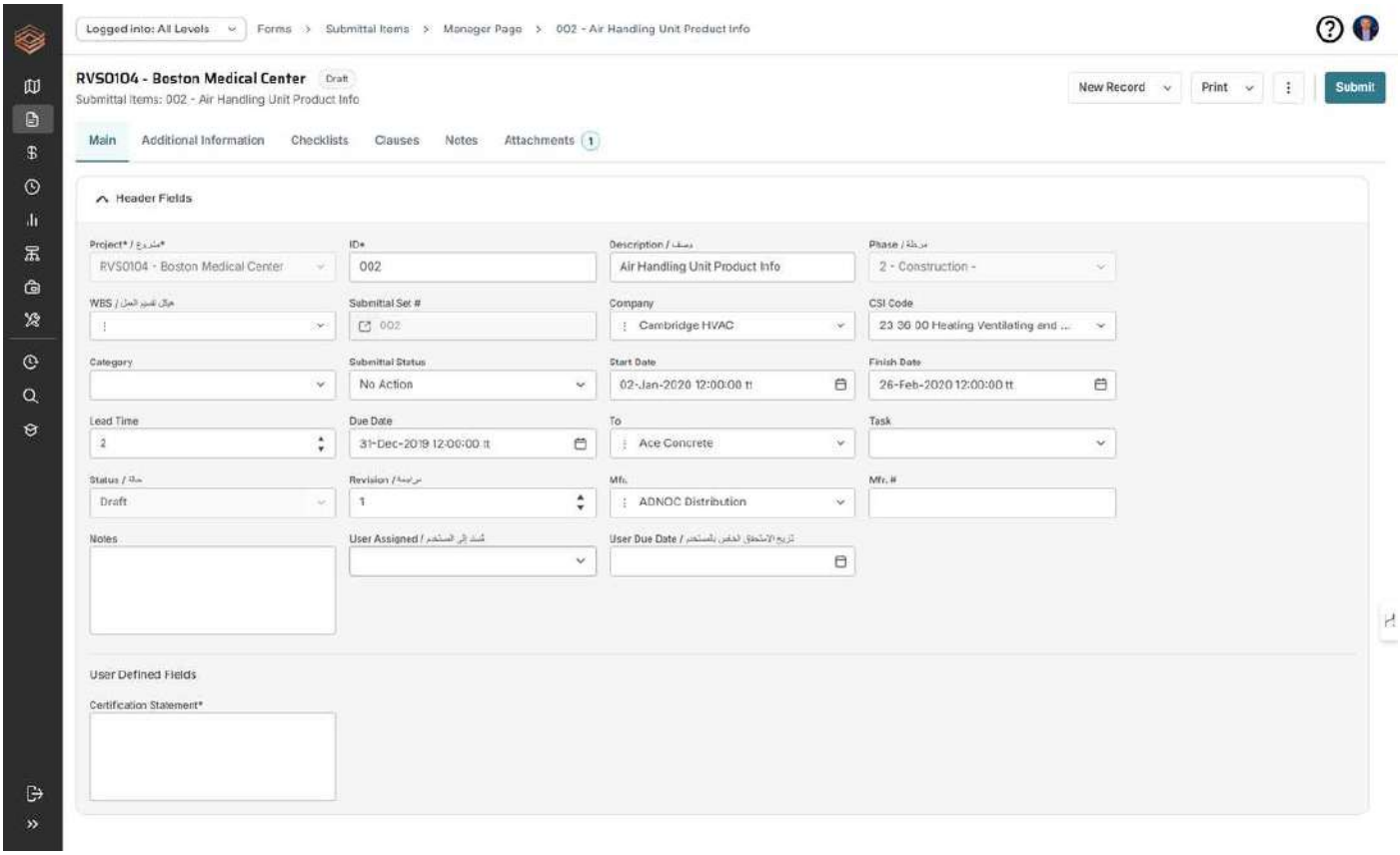
Master, design and procurement schedules

At the programme level, the PMC can hold a master schedule in PMWEB that sets the phases, gateways and key milestones for each project in the portfolio. Design and procurement schedules sit beneath it. Design deliverables can be tracked against submittal and transmittal dates, and long-lead items can be tracked against the commitments that procure them. When a design approval slips, the related procurement and construction milestones are visible in the same record, so the consequence is seen early rather than discovered on site.



Schedule specification, submission and review

The schedule specification, whether the firm's standard or the owner's, becomes a review checklist in PMWEB built with the Form Builder. It can capture the checks the PMC expects: calendars, logic density, open ends, constraints, lags, durations, resource and cost loading, the level of detail agreed, and the basis narrative. The contractor's baseline is submitted as a schedule submittal, the native file is imported through the Primavera P6 or MS Project integration, and the review is routed to the planner, the discipline leads and the project manager. Comments are recorded against the submittal, and the response code, whether accepted, accepted with comments, or revise and resubmit, is a value list, not a phrase in an email.

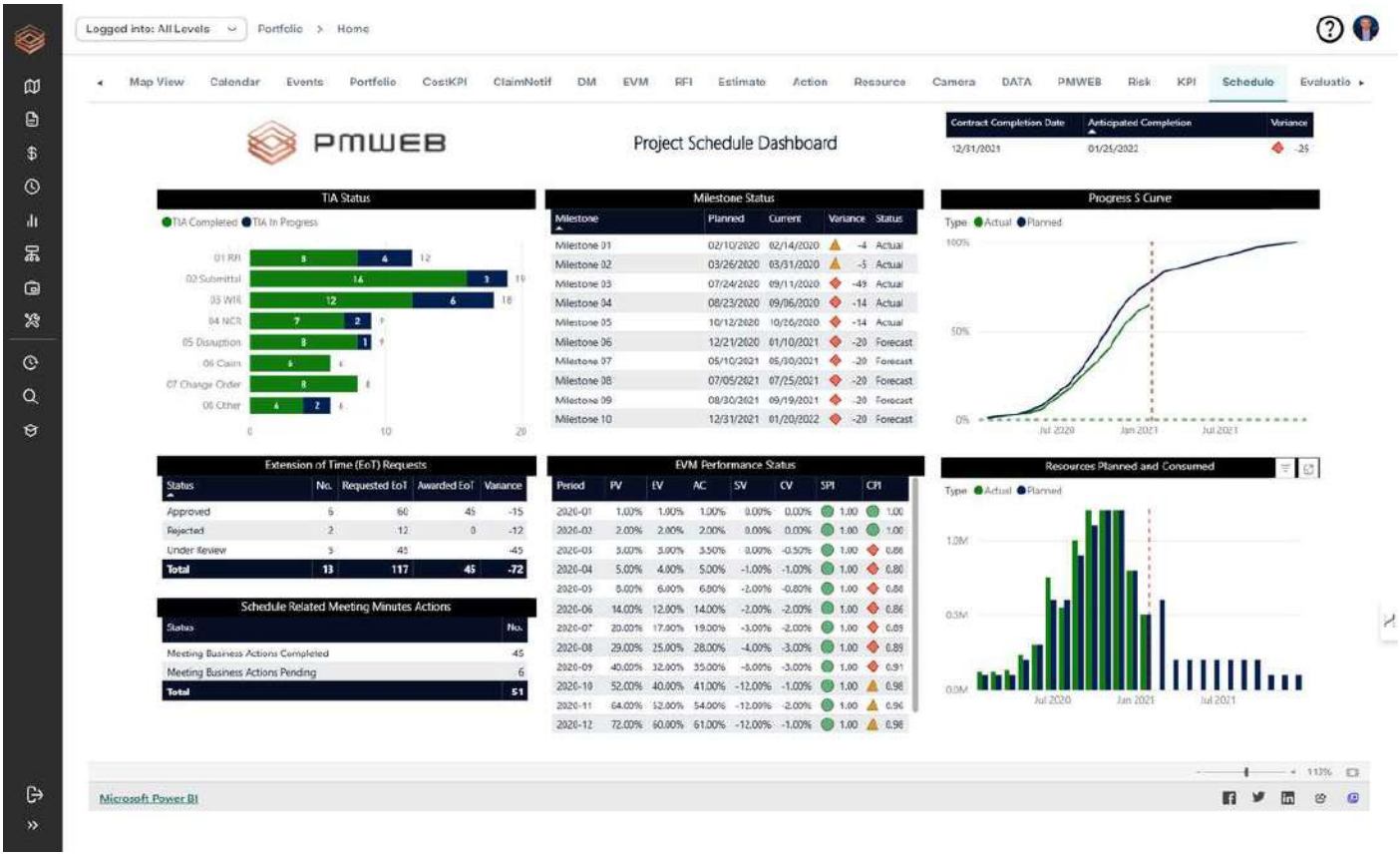


Baseline acceptance under the delegation of authority

Acceptance of the baseline is a decision with contractual weight, so PMWEB routes it according to the owner's delegation-of-authority matrix. Once accepted, the baseline is locked as the reference for all later comparison. Any re-baselining follows the same controlled route, with the reason and approver recorded, so the baseline stays under change control throughout the project.

Monthly updates, critical path and float

Each monthly update is imported against its data date and stored alongside the previous updates and the baseline. Dashboards then show what a planner would otherwise assemble by hand: milestone variance, newly critical activities, float trends on near-critical paths, and forecast against contract completion. Each update follows the same review workflow as the baseline, so the PMC can show it was reviewed, not merely received.



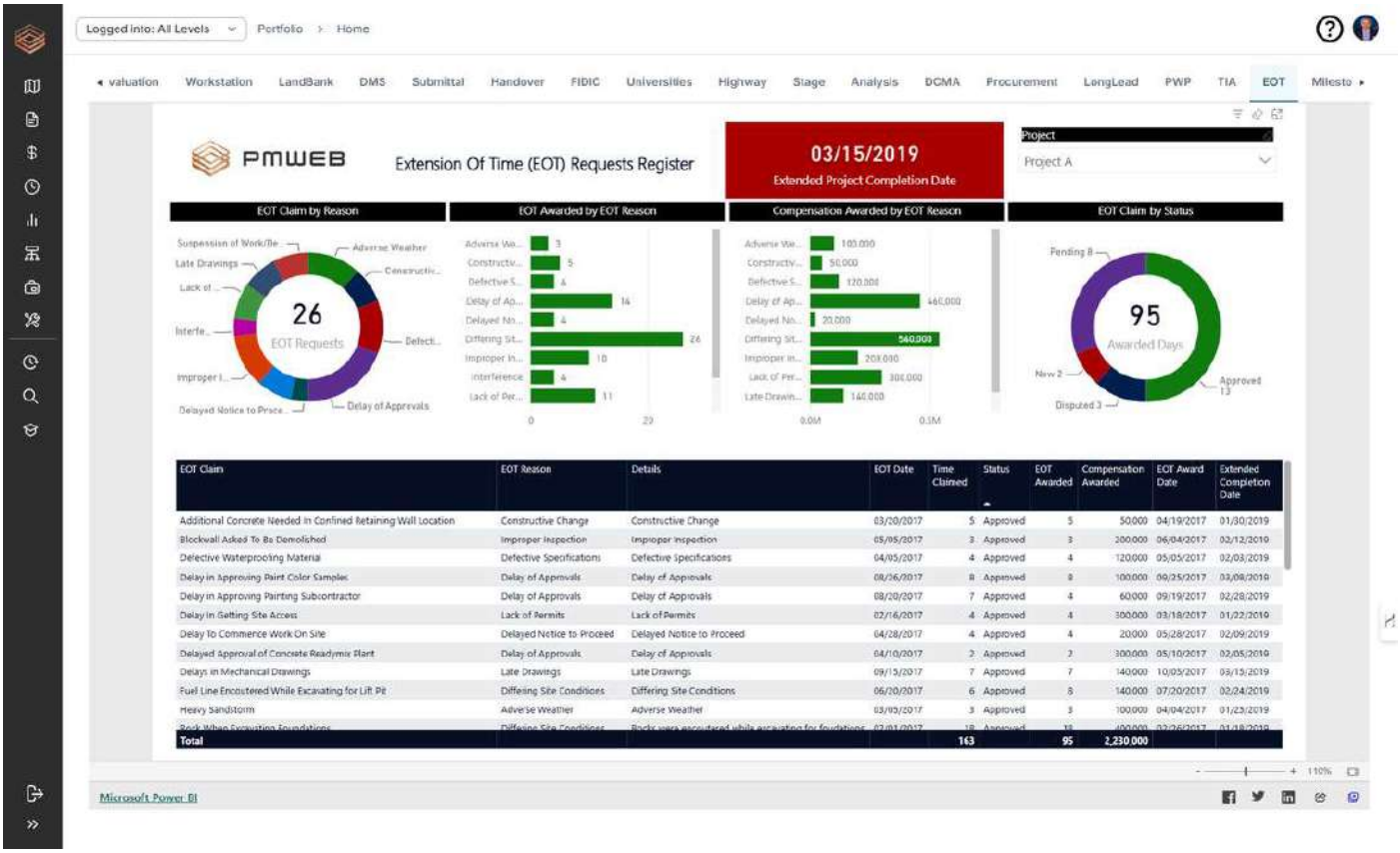
Look-aheads and recovery

Short-interval look-ahead schedules can be tied to daily reports and meeting minutes, so the commitments made in the weekly progress meeting are recorded as action items with owners and dates. When slippage crosses a threshold the PMC has defined, a recovery plan request can be issued as a formal notice, and the contractor's recovery schedule returns through the same review route. The owner sees not just that the project is late but what has been required and what has been committed in response.

Time impact analysis and extension of time

Under most conditions of contract, entitlement to an extension of time is assessed through a claims procedure, with notice obligations and time bars that the owner's particular conditions frequently tighten. PMWEB supports this discipline. A delay event is logged in the claims log or notices register with its date of occurrence and date of notice, and linked to the RFIs, site instructions, correspondence and daily reports that describe it. The contractor's time impact analysis, typically a fragnet inserted into the current accepted update for prospective analysis, is submitted and reviewed as a record. The PMC's assessment, the determination of the owner's representative or the Engineer named in the contract, and any agreed extension are recorded against the contract, and the revised completion date flows into the schedule and cost forecasts.

Where analysis happens after the event, recognised forensic schedule analysis methods rely on exactly what PMWEB retains: the accepted baseline, every contemporaneous update, and the dated records around each event. The PMC does not have to reconstruct the history; it is already there.



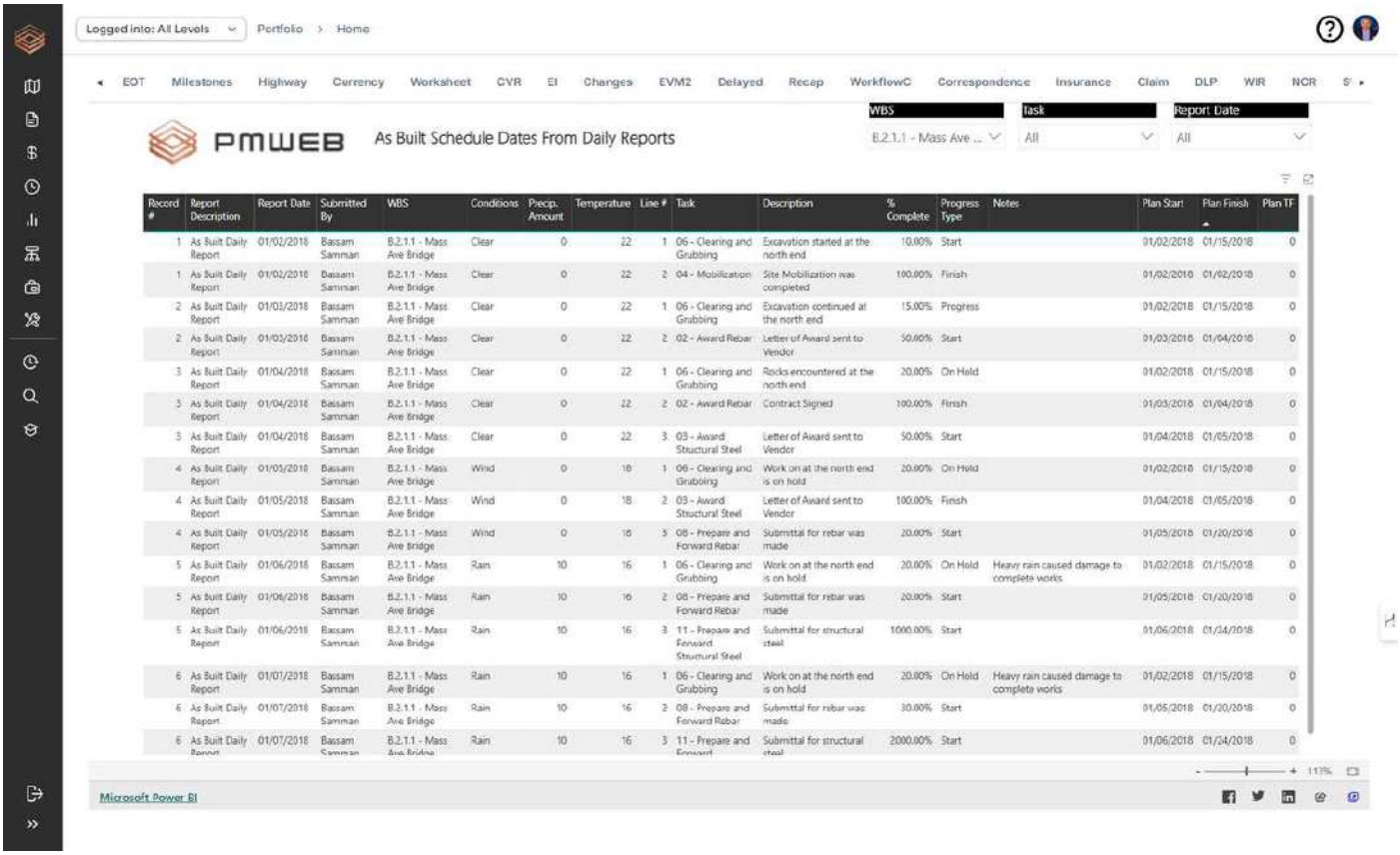


Linking schedule to cost for earned value

Because PMWEB holds both the cost structure and the schedule, the PMC can map schedule activities to cost codes and schedule of values lines, bring in cost-loaded schedules from P6, and calculate earned value measures such as schedule variance and schedule performance index alongside cost performance. Progress stops being a percent-complete opinion and becomes a measurement the owner can compare across projects.

As-built schedule

At completion, the final update with actual dates becomes the as-built schedule, accepted through the same workflow and archived with the baselines, updates, time impact analyses and extension decisions. That set is the project's time record, and it is ready for closeout, lessons learned and any dispute that follows.



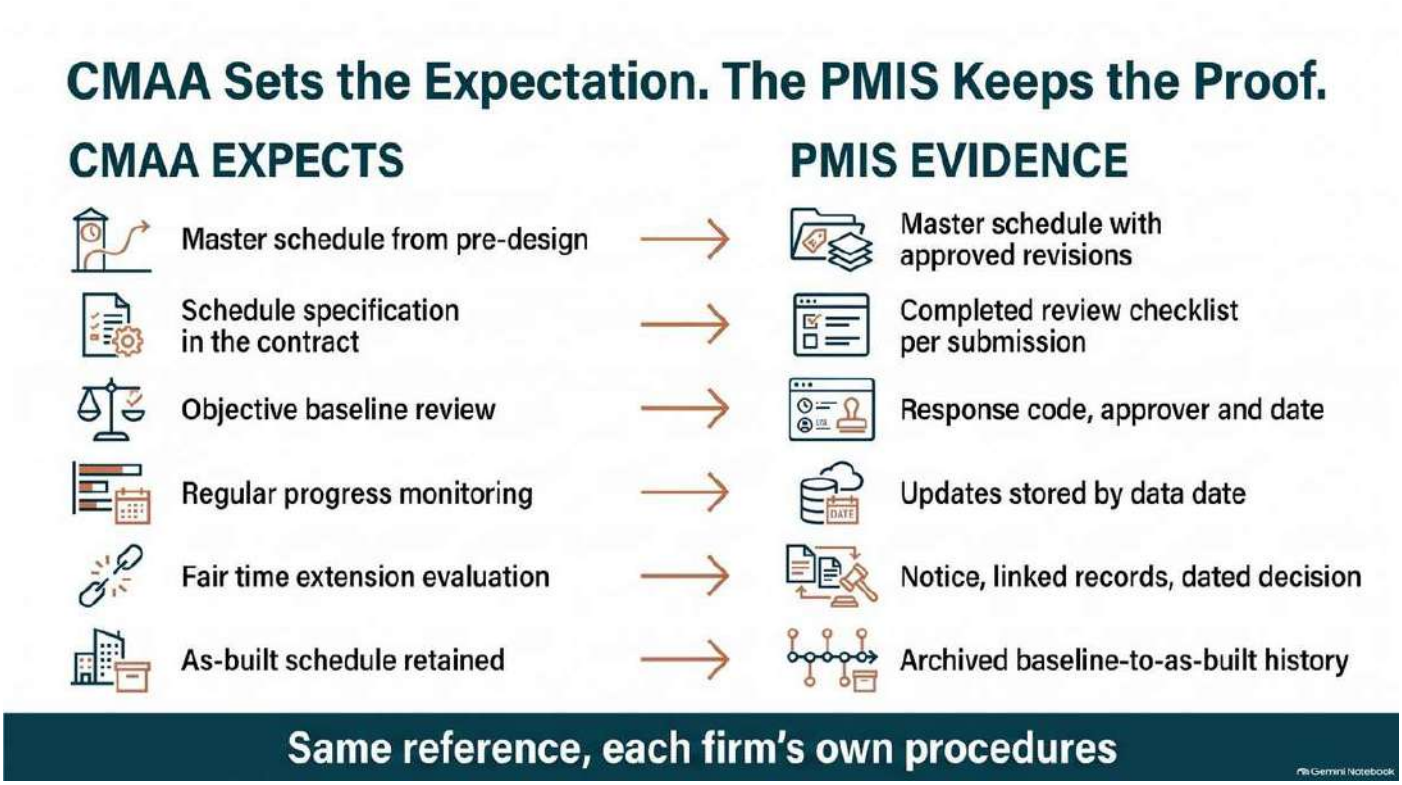
CM responsibility	PMWEB capability	Evidence produced
Develop and maintain the master schedule	Programme-level scheduling with milestones linked to projects, design and procurement	Master schedule with dated revisions and approvals
Specify schedule requirements	Schedule review checklist built in Form Builder from the contract specification	Completed checklist for every submission
Review and accept the baseline	Schedule submittal workflow with P6 and MS Project import, routed under the DoA	Response codes, comments, approver and date of acceptance
Monitor progress	Monthly updates stored by data date, compared with baseline and prior updates	Variance, critical path and float history
Require recovery	Notices, action items and recovery schedule review workflow	Dated instructions and the contractor's response
Evaluate time extension requests	Notices register, claims log and linked TIA submittals	Contemporaneous file for each delay event and its determination
Report time and cost together	Cost-loaded schedules, earned value, dashboards and Power BI	Earned value reports the owner can compare across projects
Retain the as-built record	Final update accepted and archived with the audit trail	As-built schedule and complete time history

Configuring PMWEB to Your Firm's Procedures

The CMAA Standard stays the reference. How each PMC firm, and each client, runs time management differs: the specification, the review checklist, the approval route and the report the owner wants to read. PMWEB is configured to those choices rather than imposing its own.

What the firm or client decides	How it is configured in PMWEB
Schedule specification and review checklist	Form Builder checklist reflecting the firm's standard or the owner's schedule specification, including level of detail and submission periods
Terminology and response codes	Value lists using the firm's terms, for example programme or schedule, and its own response code convention

What the firm or client decides	How it is configured in PMWEB
Approval routes and DoA thresholds	Baseline acceptance, re-baselining and extension of time decisions routed through the owner's delegation-of-authority matrix
Notice periods and time bars	Notices register calculating time-bar dates from the notice provisions in the conditions of contract, with escalation before expiry
Working calendars	Calendars agreed with the contractor at baseline, including Ramadan working hours and public holidays
Numbering and report formats	Submittal and notice numbering to the firm's convention, and monthly progress reports in the owner's format
Bilingual outputs	English and Arabic reports and forms where the owner requires them
Hosting and integration	In-country hosting where the owner requires it, and integration with the owner's ERP so schedule progress and cost share one record



Evidence That the Practice Is Working

A PMC that has digitalised its time management practice in line with the CMAA Standard should be able to show it through indicators drawn directly from the system. Each firm will set its own thresholds; the definitions below are what to measure.

- **Baseline acceptance time.** The elapsed time from the contractor's first baseline submission to formal acceptance, by package.
- **Review cycle count.** The number of submission cycles each baseline and update required before acceptance, showing whether the specification is understood.
- **Update discipline.** The proportion of monthly updates received, reviewed and accepted within the period the contract requires.
- **Float trend on the critical and near-critical paths.** The movement of total float across successive updates, reported for each major milestone.
- **Notice timeliness.** The time between the date a delay event occurred and the date its notice was registered, and the number of notices reviewed before their time bar.
- **Time impact analysis turnaround.** The elapsed time from TIA submission to the PMC's recommendation and the owner's decision.

- **Schedule performance index.** The earned value measure of schedule efficiency, trended by project and compared across the portfolio.

Key takeaway

The CMAA Standard does not ask PMC firms to become better at drawing schedules; it asks them to govern schedules. Specification, review, acceptance, update, analysis, recovery and time entitlement are processes, and each process must leave a record that an owner, an auditor or a tribunal can follow.

PMWEB keeps Primavera P6 and MS Project where planners want them and wraps the schedule in the workflow, linkage and audit trail that turn it into a governance instrument. Configured to each firm's procedures, each owner's conditions of contract and DoA, it lets the PMC show, in data, that its time management executes and evidences what the CMAA Standard expects.

Next in the series: *Article 6 — Quality Management: Submittals, Inspections, Non-Conformance and Commissioning*

About the Author

Bassam Samman, PMP, PSP, EVP, GPM is the Chairman and Chief Executive Officer of CMCS FZ-LLC, the PMWEB Authorised Implementation Partner for the Gulf Cooperation Council and broader Middle East and North Africa region. CMCS holds the PMWEB Partner of the Year 2025 designation and serves capital project owners, contractors and consultants across the UAE, Saudi Arabia, Qatar, Kuwait and India.

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Quality Management: Submittals, Inspections, Non-Conformance and Commissioning — How GCC PMC Firms Digitalise CMAA Quality Management with PMWEB

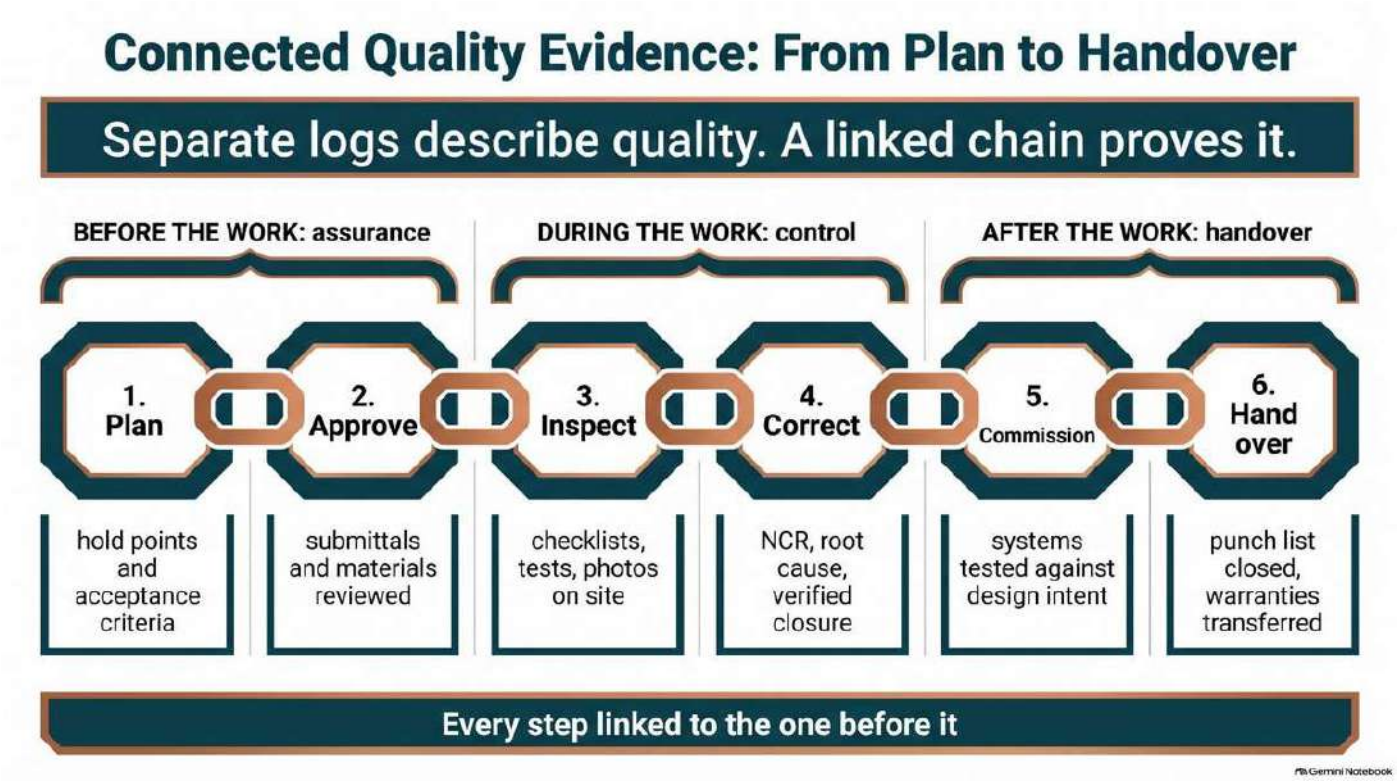
From the quality management plan to handover: one controlled chain of reviews, approvals, inspections, corrective actions and commissioning records

Quality on a construction project is not what the PMC believes was built; it is what the PMC can prove was reviewed, approved, inspected, tested and corrected. Firms that run quality as a connected chain of records give owners something far more valuable than assurance: they give them evidence.

Walk onto almost any large site in the GCC and you will find capable quality engineers, detailed inspection and test plans, and a document controller processing hundreds of submittals a month. What you will often not find is a single place where the owner can see, for one element of the works, the approved shop drawing, the approved material, the inspection request, the test results, the non-conformance raised and the corrective action that closed it. Each of those lives in its own log, in its own spreadsheet, maintained by its own team.

On a Qatari health authority hospital or an Abu Dhabi infrastructure programme, that fragmentation matters at two moments. The first is when something goes wrong and the owner asks how a non-compliant material reached the works. The second is at handover, when the operator asks for the commissioning records, the punch list status and the warranties, and the PMC spends weeks assembling what should already have been assembled.

The CMAA Standards of Practice are clear that quality is a management system, not an inspection activity. They also leave room for each PMC firm, and each owner, to run that system its own way. Some firms review every submittal; others sample by risk. Some owners require third-party testing; others rely on the contractor's accredited laboratory. PMWEB is configured to those choices. The CMAA Standard stays the reference; the evidence that its expectations were met is what PMWEB produces.



What the CMAA Standard Expects

The CMAA Standard frames quality management as a responsibility the CM carries from the earliest phase. In pre-design and design, the CM is expected to help the owner define quality requirements, establish a quality

management plan for the project, and carry out design and constructability reviews so that problems are removed on paper rather than on site. The CM is also expected to see that the contract documents set out clear submittal requirements, testing obligations, inspection hold points and commissioning responsibilities.

During procurement and construction, the CMAA Standard expects the CM to manage the submittal process, verify that the contractor's quality control programme is operating, carry out or coordinate quality assurance inspections and testing, document deficiencies and require their correction, and keep the owner informed. In the post-construction phase, the CM is expected to coordinate commissioning, manage punch lists, confirm that deficiencies are closed, and assemble the documentation the owner needs to operate the facility.

A distinction runs through the Standard: the contractor owns quality control, the inspection and testing of its own work, while the PMC, on behalf of the owner, provides quality assurance, verifying that the contractor's system works and that the results meet the requirements. A PMC that performs the contractor's quality control for it has blurred responsibility; a PMC that does no verification has left the owner exposed.

CMAA phase	What the CM is expected to do
Pre-design	Help the owner define quality requirements and establish the project quality management plan
Design	Carry out design and constructability reviews, and see that the contract documents set out submittal requirements, testing, hold points and commissioning responsibilities
Procurement	Make sure bidders understand the quality, submittal and testing obligations in each package
Construction	Manage submittals, verify the contractor's quality control, carry out or coordinate quality assurance inspections and tests, and document and require correction of deficiencies
Post-construction	Coordinate commissioning, manage punch lists, confirm deficiencies are closed and assemble the documentation the owner needs to operate the facility

How GCC PMC Firms Typically Do It Today

The regional practice is strong on people and weak on connection. The typical pain points are familiar to any quality manager.

- **Separate logs for every process.** Submittals, material approvals, inspection requests, test results and NCRs are tracked in separate spreadsheets, so no one can trace a single element of the works from approval to acceptance.
- **Submittal reviews without a clock.** Review periods set in the contract are tracked manually, and overdue reviews surface only when the contractor raises a delay notice citing late approvals.
- **Inspections recorded on paper.** Inspection request forms are signed on site and scanned days later, often without photos or a link to the approved drawing the inspector used.
- **NCRs that never quite close.** Non-conformances are raised but the corrective action, the root cause and the verification of closure are not recorded consistently, so the same defect recurs across floors and packages.
- **Commissioning handled as a separate project.** Commissioning records are held by a specialist and delivered as a binder at the end, disconnected from the installation inspections that preceded them.
- **Handover assembled at the last minute.** Punch lists, as-built drawings, O&M manuals and warranties are gathered under pressure, delaying taking over and frustrating the operator.

How PMWEB Digitalises It

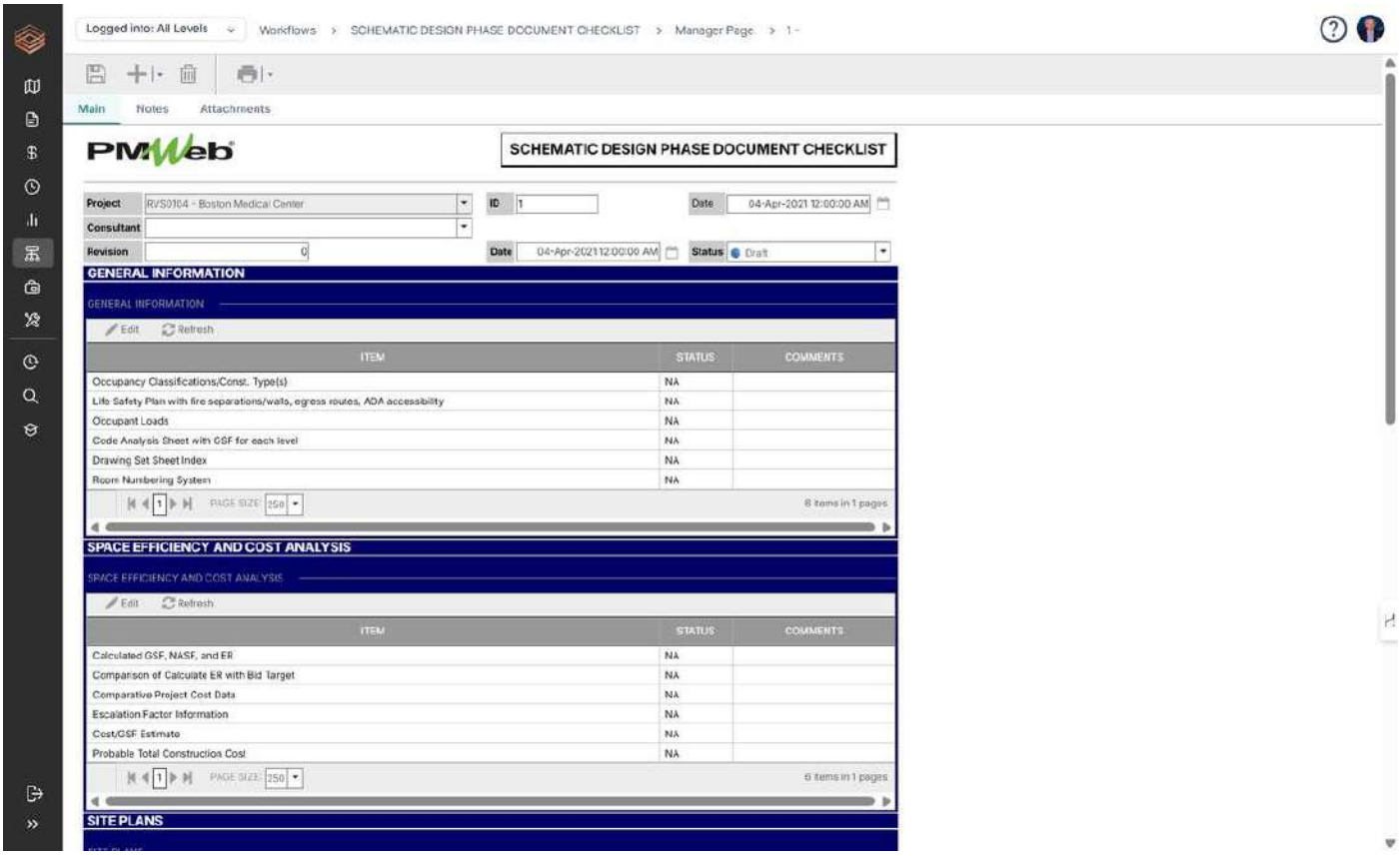
PMWEB treats each quality process as a structured record with its own workflow, and links those records together so that the chain of evidence exists as the work proceeds rather than being reconstructed afterwards.

Quality management plan and audits

The project quality management plan, the procedures it references and the responsibility matrix are held in PMWEB document management with controlled revisions. The hold points and witness points from the plan become the templates for inspection checklists. Quality audits, whether of the contractor's quality system or the PMC's own, are scheduled and recorded as checklists, with findings raised as action items or NCRs so that audit results do not remain in a report nobody reopens.

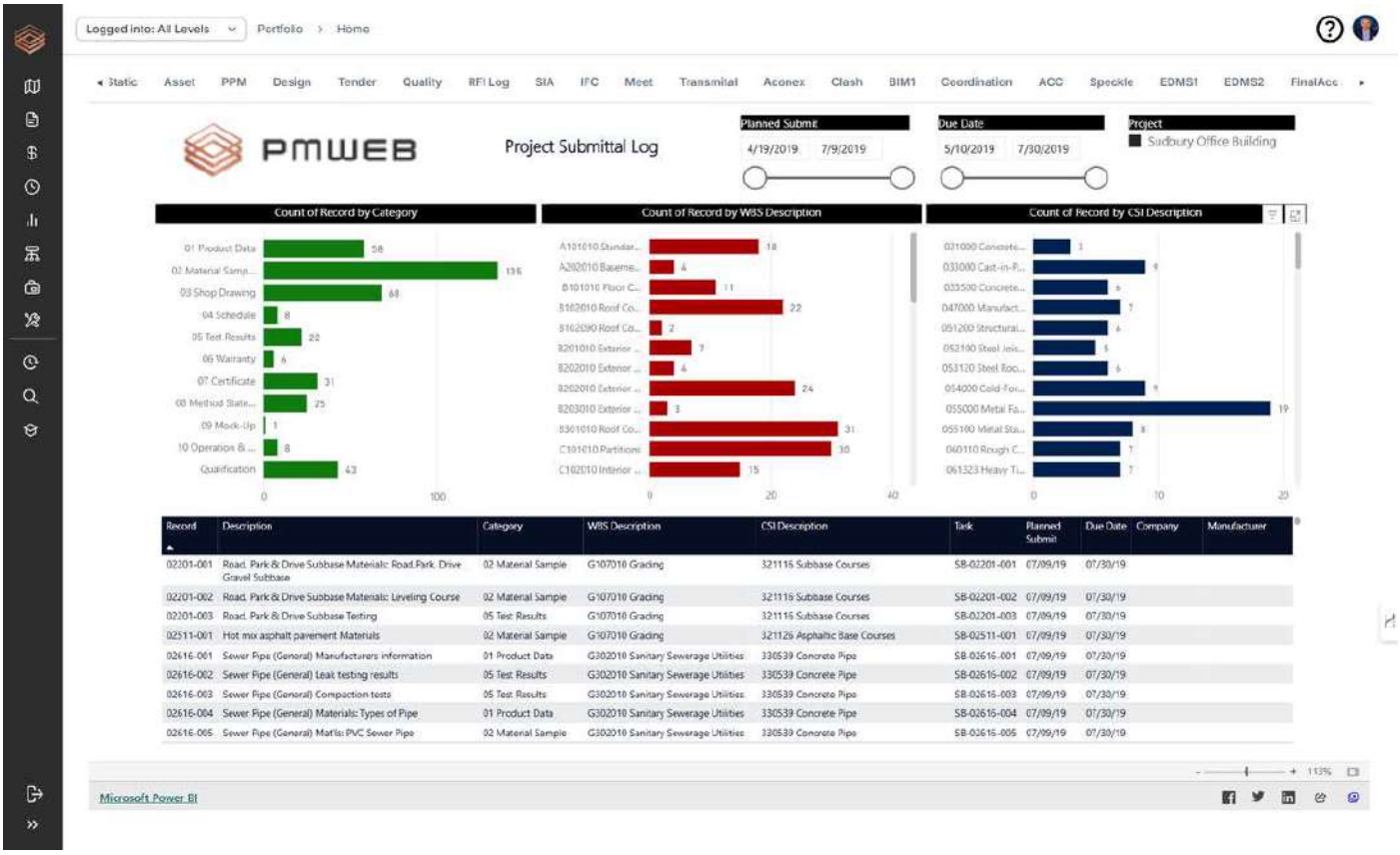
Design and constructability reviews

Design review comments are captured as structured records against each design package and discipline, with a category, a severity, a responsible designer and a required response. The PMC can report which comments remain open before a package is issued for construction, and the owner can see that constructability issues were closed on paper rather than left for the site.



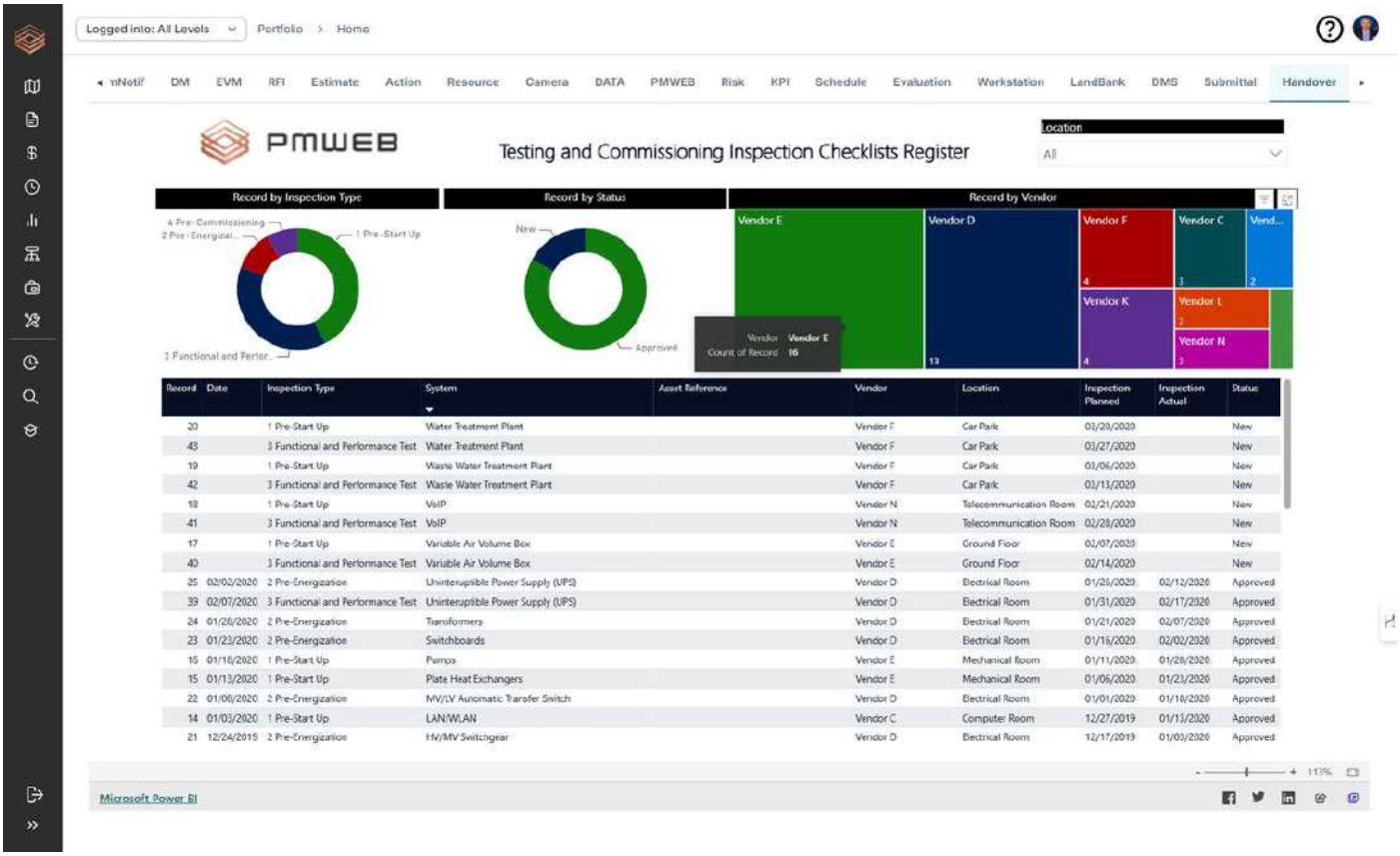
Submittals, shop drawings and material approvals

Submittals are logged against the specification section and the contract package, with the contractual review period driving due dates. The workflow engine routes each submittal to the reviewers the PMC defines by discipline, type or value, with delegation and escalation when a reviewer is unavailable. Response codes are a value list configured to the firm's convention, for example approved, approved as noted, revise and resubmit, or rejected. Resubmissions are linked to the original so the full history is one click away. Material approval requests work the same way, with manufacturer data, test certificates and samples recorded, so that an approved material can later be linked to every inspection that checked it on site.



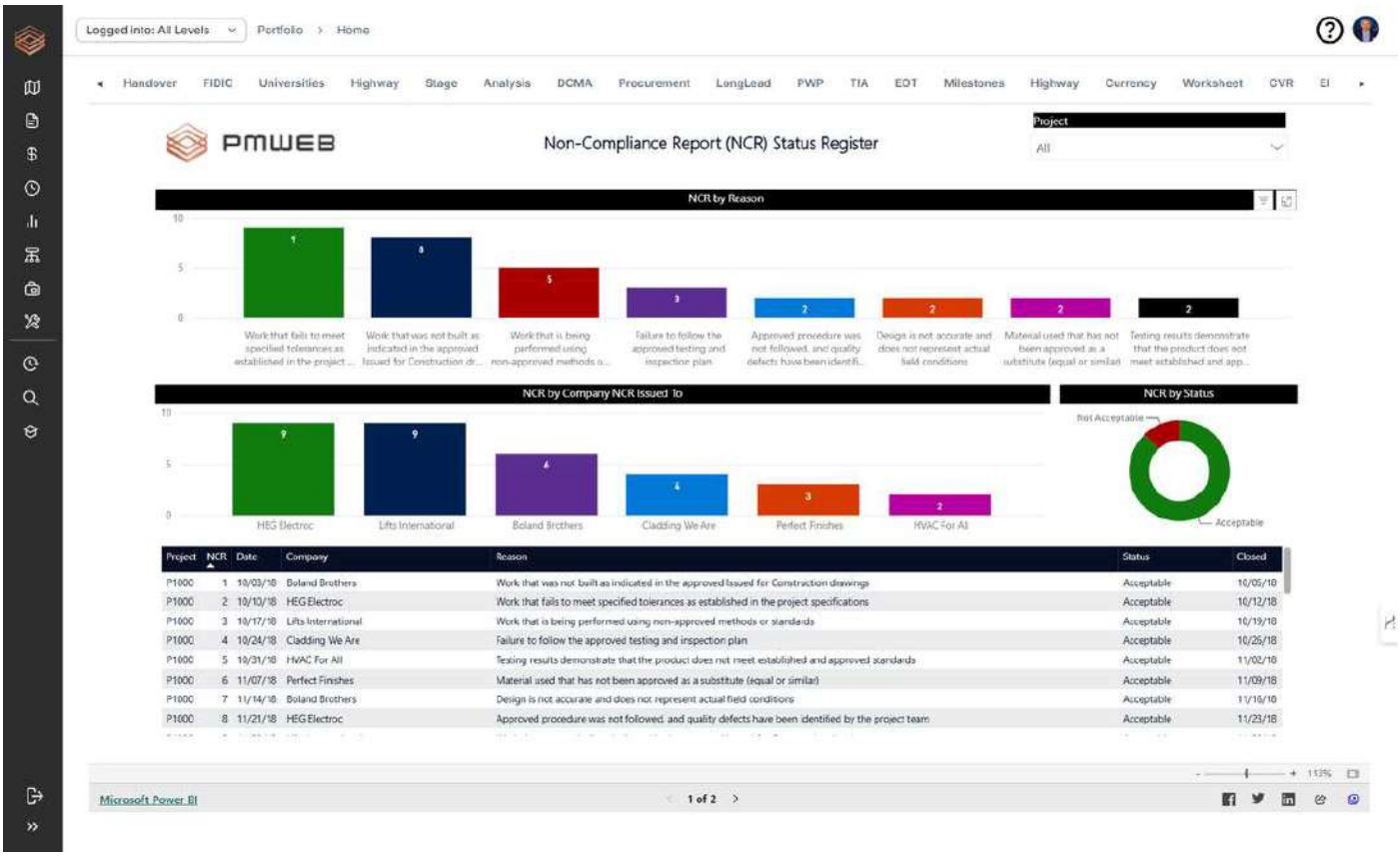
Inspection and test plans, inspection requests and testing

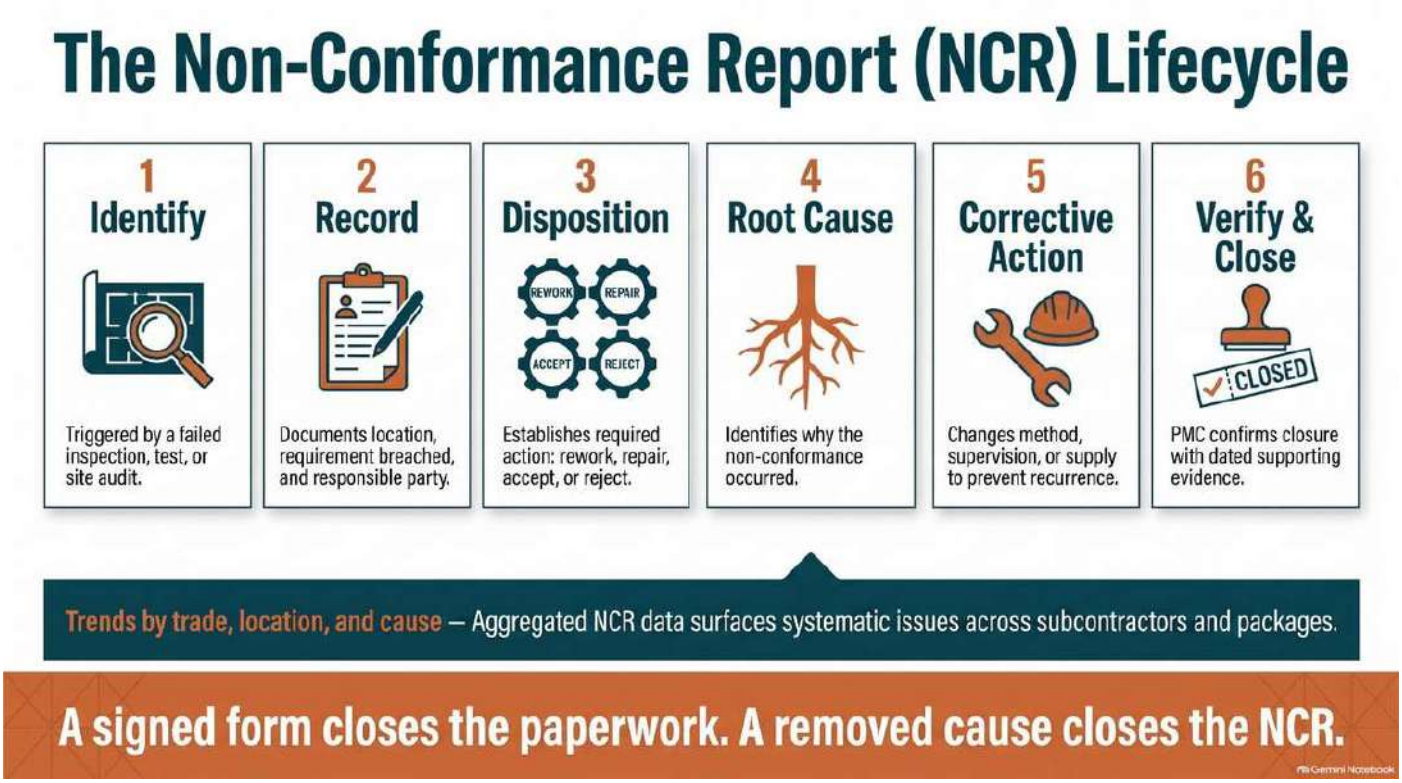
The approved inspection and test plan for each activity becomes a set of checklists in PMWEB. The contractor raises an inspection request against the relevant activity and location, which notifies the PMC inspector. On site, through the PMWEB mobile app, the inspector completes the checklist, attaches photos, records the result and references the approved drawing and material. Test results, whether from the contractor's laboratory or a third-party lab, are recorded against the same location and element. A failed inspection does not end in a signature; it can raise an NCR directly, carrying the context with it.



Non-conformance and corrective action

Each NCR records what was found, where, against which requirement, and who is responsible. The workflow then requires a proposed disposition, whether rework, repair, accept as is with the designer's concurrence, or reject, followed by the root cause and the corrective action to prevent recurrence. Closure requires verification by the PMC, recorded with date and evidence. Because NCRs are data, the PMC can report them by trade, subcontractor, location and root cause, and see where the same failure is repeating.

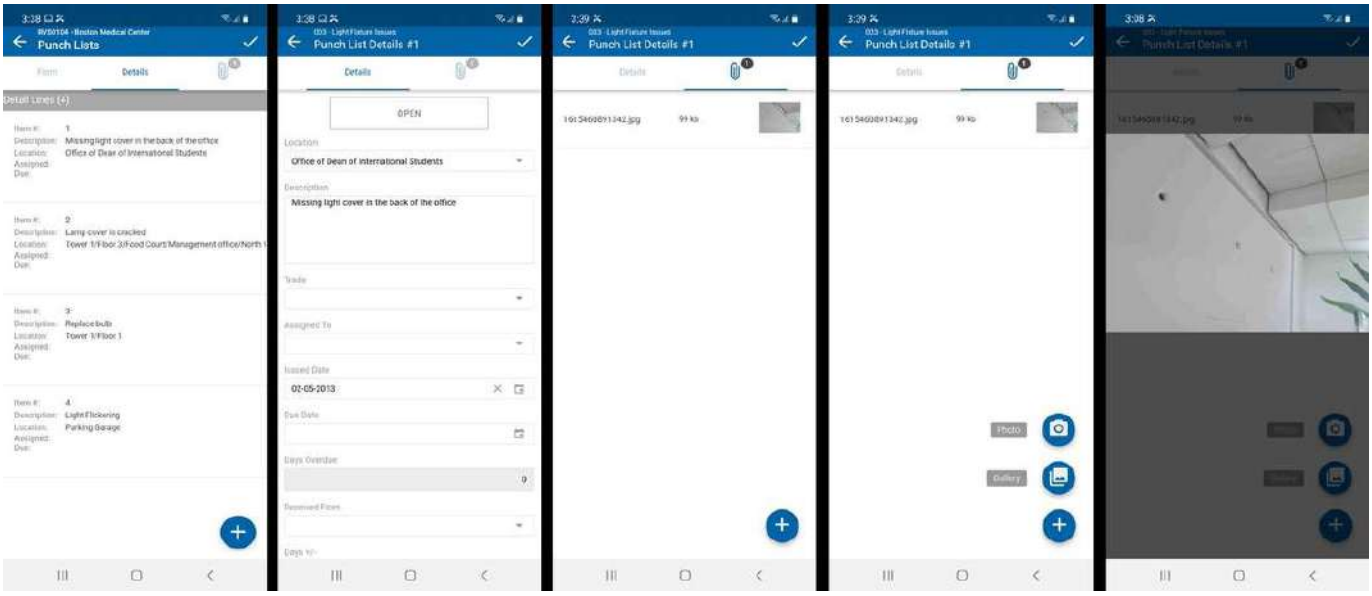




Commissioning, punch lists and handover

Commissioning checklists in PMWEB follow systems from pre-functional checks through functional performance testing, and each can be linked to the installation inspections and material approvals behind it. Punch lists are raised by location, trade and priority, often from the mobile app with photos, and closed by the

contractor and verified by the PMC. Closeout checklists track as-built drawings, O&M manuals, training, spare parts and warranties, and the warranty and asset registers carry that information into operations. When the owner is ready for taking over, the evidence is already assembled.



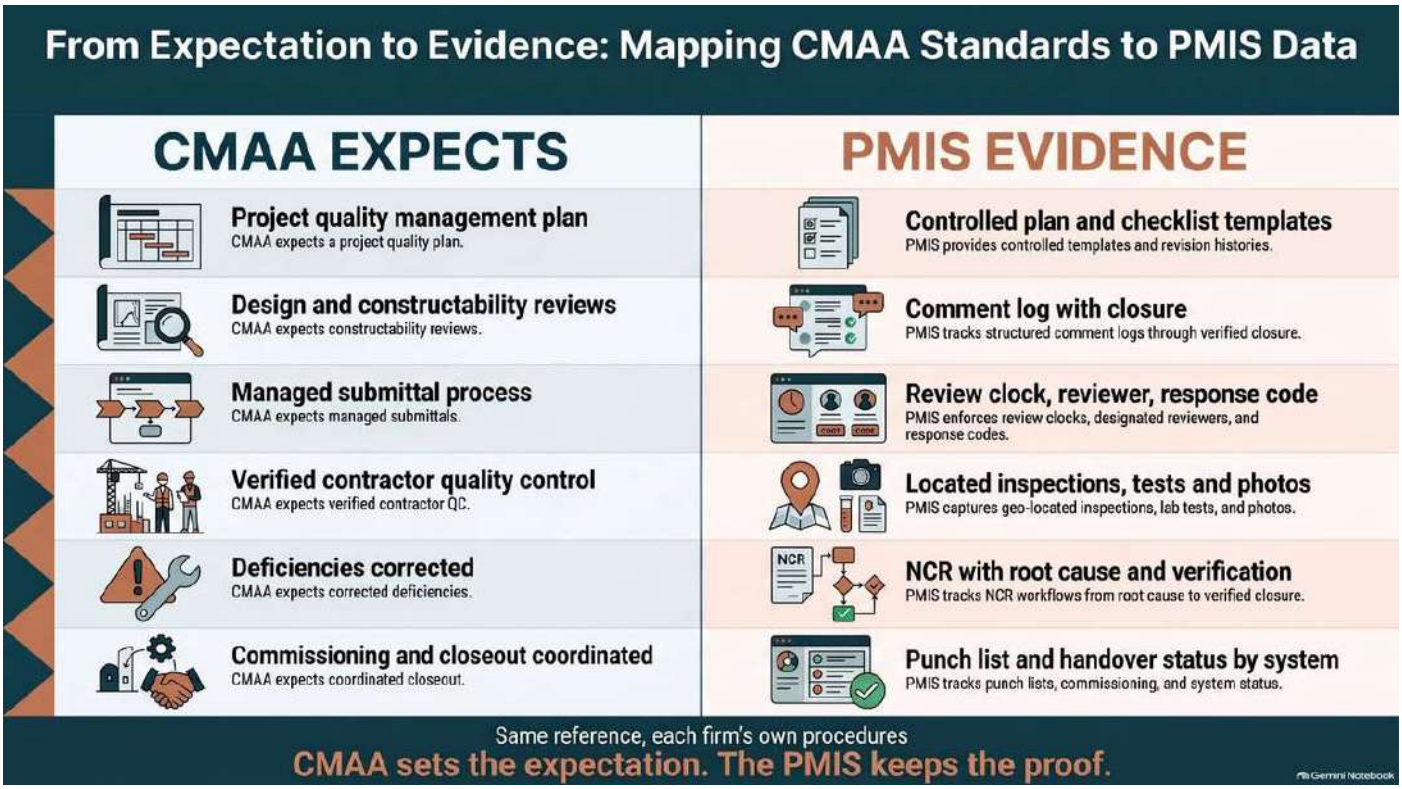
CM responsibility	PMWEB capability	Evidence produced
Establish the quality management plan	Controlled documents, checklist templates from hold and witness points	Approved plan with revision history
Review design for quality and constructability	Structured design review comments by package and discipline	Comment log with responses and closure
Manage submittals and material approvals	Submittal workflow with review clocks, response codes and resubmission links	Complete submittal history and review performance
Verify contractor quality control	Inspection requests, ITP checklists, test results and mobile inspections	Dated, located inspection and test records with photos
Document and correct deficiencies	NCR workflow with disposition, root cause, corrective action and verified closure	NCR register and trend analysis
Audit the quality system	Audit checklists with findings raised as actions or NCRs	Audit trail from finding to closure
Coordinate commissioning and closeout	Commissioning and closeout checklists, punch lists, warranties and asset register	Handover package assembled as work proceeds

Configuring PMWEB to Your Firm's Procedures

The CMAA Standard is the same whether the project is in Riyadh, Doha or Dubai. What differs is how each PMC firm runs its quality system and what each owner expects to see. PMWEB is configured to those choices.

What the firm or client decides	How it is configured in PMWEB
Inspection and test plans, checklists and fields	Form Builder checklists built from the firm's or the contractor's approved ITPs, with the hold and witness points the firm uses
Submittal review periods and response codes	Review clocks set from the conditions of contract, and response codes using the firm's own convention and terminology
Review depth	Routes that review every submittal or sample by risk, discipline or value, as the firm's procedure requires
Approval routes and DoA thresholds	Deviations and "accept as is" dispositions routed under the owner's delegation-of-authority matrix

What the firm or client decides	How it is configured in PMWEB
Owner-specific requirements	Material approvals and checklists carrying the evidence required by the owner's HSE standards and by the green building rating system the owner specifies
Numbering and report formats	Submittal, inspection and NCR numbering to the firm's convention, and quality reports in the owner's format
Handover documentation	Closeout checklists matched to the owner's handover requirements, bilingual English and Arabic where the owner requires them
Hosting and integration	In-country hosting where the owner requires it, and integration with the owner's ERP and asset management systems for warranties and assets



Evidence That the Practice Is Working

A PMC that has digitalised its quality practice in line with the CMAA Standard should be able to show it with indicators drawn directly from PMWEB. Each firm sets its own targets; these are the definitions.

- **Submittal review timeliness.** The share of submittals reviewed within the contractual review period, by discipline and reviewer.
- **First-time approval rate.** The proportion of submittals approved or approved as noted at first submission, indicating the quality of the contractor's documents.
- **Inspection pass rate.** The proportion of inspection requests passed at first inspection, by trade and activity.
- **NCR closure time.** The elapsed time from NCR issue to verified closure, by subcontractor and severity.
- **Repeat NCRs.** The number of NCRs sharing the same root cause across locations or packages, showing whether corrective action is working.
- **Commissioning readiness.** The number of open deficiencies against systems scheduled for commissioning.
- **Punch list closure at taking over.** Open punch items and outstanding closeout documents at the date of taking over.

Key takeaway

The CMAA Standard asks PMC firms to manage quality as a system: plan it, assure it, control it, correct it and hand it over. That system is only as strong as the links between its records, from the approved shop drawing to the inspection, from the failed test to the NCR, from the commissioning checklist to the warranty.

PMWEB turns each quality process into a structured, linked record, configured to each firm's procedures and each owner's requirements. The result is a PMC that can show, in data, that its quality practice executes and evidences what the CMAA Standard expects.

Next in the series: *Article 7 — Contract Administration I: RFIs, Change Management and Payment Certification*

About the Author

Bassam Samman, PMP, PSP, EVP, GPM is the Chairman and Chief Executive Officer of CMCS FZ-LLC, the PMWEB Authorised Implementation Partner for the Gulf Cooperation Council and broader Middle East and North Africa region. CMCS holds the PMWEB Partner of the Year 2025 designation and serves capital project owners, contractors and consultants across the UAE, Saudi Arabia, Qatar, Kuwait and India.

Bassam has over four decades of experience providing project management, project controls services and project management information systems to more than two hundred capital projects with a combined value exceeding one hundred billion US dollars. He is the author of four published books on project management digitalisation and has lectured at more than three hundred and fifty international events. He holds a Master's degree in Engineering Administration (Construction Management), with Faculty Commendation, from George Washington University and a Bachelor's degree in Civil Engineering from Kuwait University, with executive education at Harvard Business School and London Business School.

About PMWEB

PMWEB is an enterprise-class, web-based capital construction project management platform trusted by organisations worldwide including Harvard University, the United Nations, and Atlanta Airport. Built on Microsoft .NET technology, PMWEB manages the entire project lifecycle within a single integrated platform — from portfolio planning and cost management through document control, procurement, scheduling, asset management, and business intelligence. With 150+ pre-configured SSRS reports, drag-and-drop dashboard design, multi-currency support, and open REST/SOAP API integration, PMWEB delivers enterprise capability with implementation timelines measured in months, not years.

About CMCS

CMCS (Collaboration, Management and Control Solutions) is the regional PMWEB implementation partner for the GCC and MENA regions, awarded PMWEB Partner of the Year 2025. CMCS specialises in digital project management solutions for real estate developers, infrastructure owners, and construction companies across the Middle East and North Africa.

Contract Administration I: RFIs, Change Management and Payment Certification — How GCC PMC Firms Digitalise CMAA Contract Administration with PMWEB

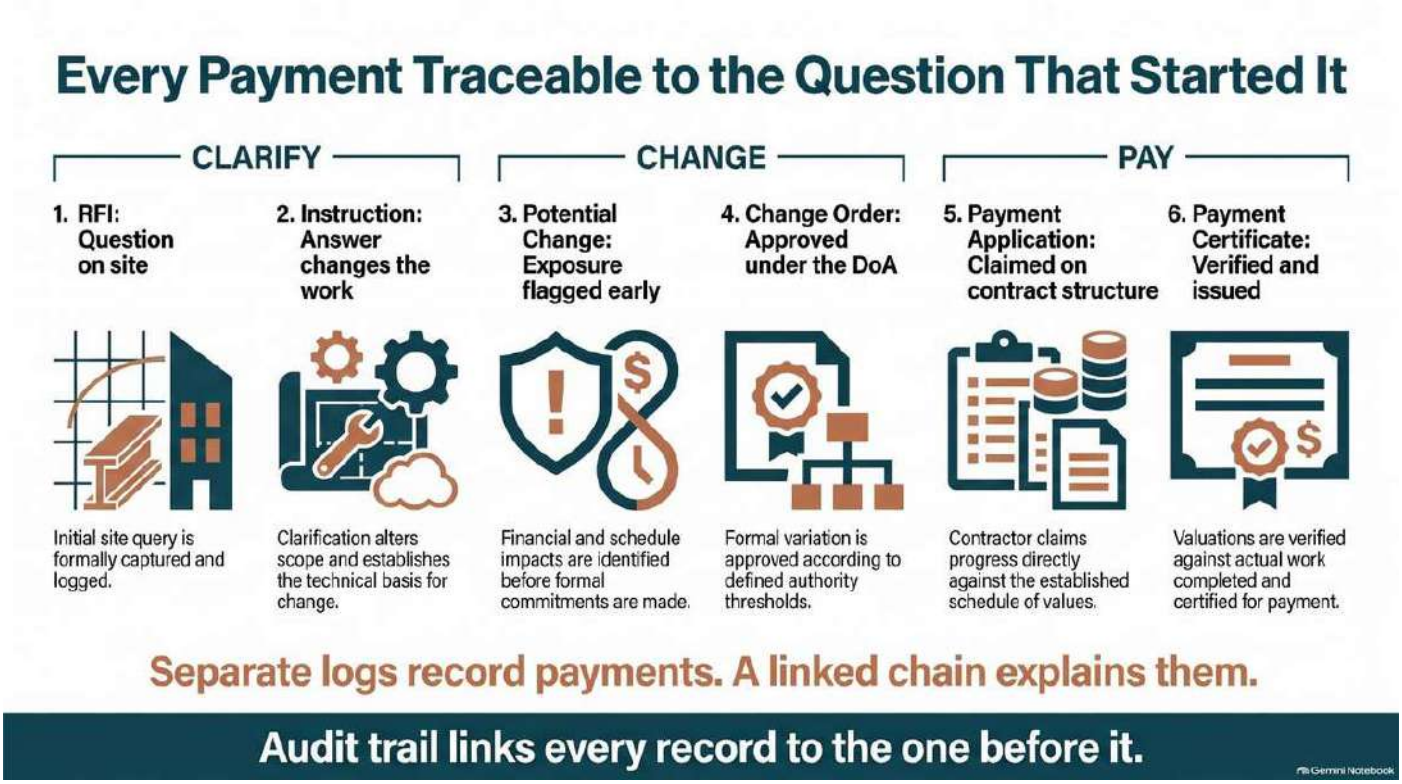
From the first question on site to the last payment certificate: RFIs, instructions, variations and payments in one controlled chain

Contract administration is where a PMC's judgement meets the owner's money. Every RFI answer, every instruction, every variation and every payment certificate either protects the owner's position or quietly erodes it, and the difference is almost always in how well the process is recorded and connected.

In the GCC, the PMC typically acts as the owner's representative or the Engineer named in the contract, or as that party's team, under conditions of contract that the owner has amended. That role carries weight. The PMC answers the contractor's questions, issues instructions, evaluates variations, recommends or determines their value, and prepares the payment certificates the owner pays against. On a Dubai master developer's mixed-use scheme or a Kuwaiti ministry's infrastructure programme, those decisions run into thousands of records over the life of a contract.

The problem is rarely competence; it is connection. The RFI log sits in one spreadsheet, site instructions in another, the variation register in a third, and the payment certificate in a workbook that the quantity surveyor rebuilds every month. When the owner asks a simple question, how did this RFI turn into a variation, how much of our contingency have we used, how much advance payment is still to be recovered, the answer takes days and depends on who is asked.

The CMAA Standards of Practice expect the CM to administer the contract fairly, promptly and transparently, with a record that allows every decision to be traced. Each PMC firm, and each owner, will run these processes in its own way: different thresholds, different approval routes, different forms. PMWEB is configured to those procedures, and the CMAA Standard stays the reference. This article covers the first half of contract administration; Article 8 continues with notices, claims avoidance and closeout.



What the CMAA Standard Expects

The CMAA Standard places contract administration at the centre of the CM's construction-phase role, with preparation starting much earlier. During design and procurement, the CM is expected to make sure the contract

documents define clear procedures for requests for information, changes and payments, and that the owner's authority levels are understood. During construction, the CM is expected to manage requests for information so they are answered promptly and consistently, issue or coordinate instructions, evaluate proposed changes on their merits, negotiate or recommend fair values, track the cumulative effect of changes on cost and time, and review the contractor's payment applications against the work actually completed.

Throughout, the CMAA Standard expects the CM to maintain complete records, to act fairly between owner and contractor, and to keep the owner informed of the financial position of the contract, including pending and potential changes, not only those already approved.

CMAA phase	What the CM is expected to do
Design	See that the contract documents define clear procedures for RFIs, changes and payments, and that the owner's authority levels are understood
Procurement	Make sure bidders understand the change and payment provisions, and that the schedule of values structure is agreed at award
Construction	Manage RFIs promptly and consistently, issue or coordinate instructions, evaluate changes on their merits, recommend fair values, track cumulative change, verify payment applications and keep the owner informed of the full financial position
Post-construction	Resolve outstanding changes, reconcile payments, release retention as the contract provides and retain complete contract records

How GCC PMC Firms Typically Do It Today

The processes exist on every project. The pain points come from running them in isolation.

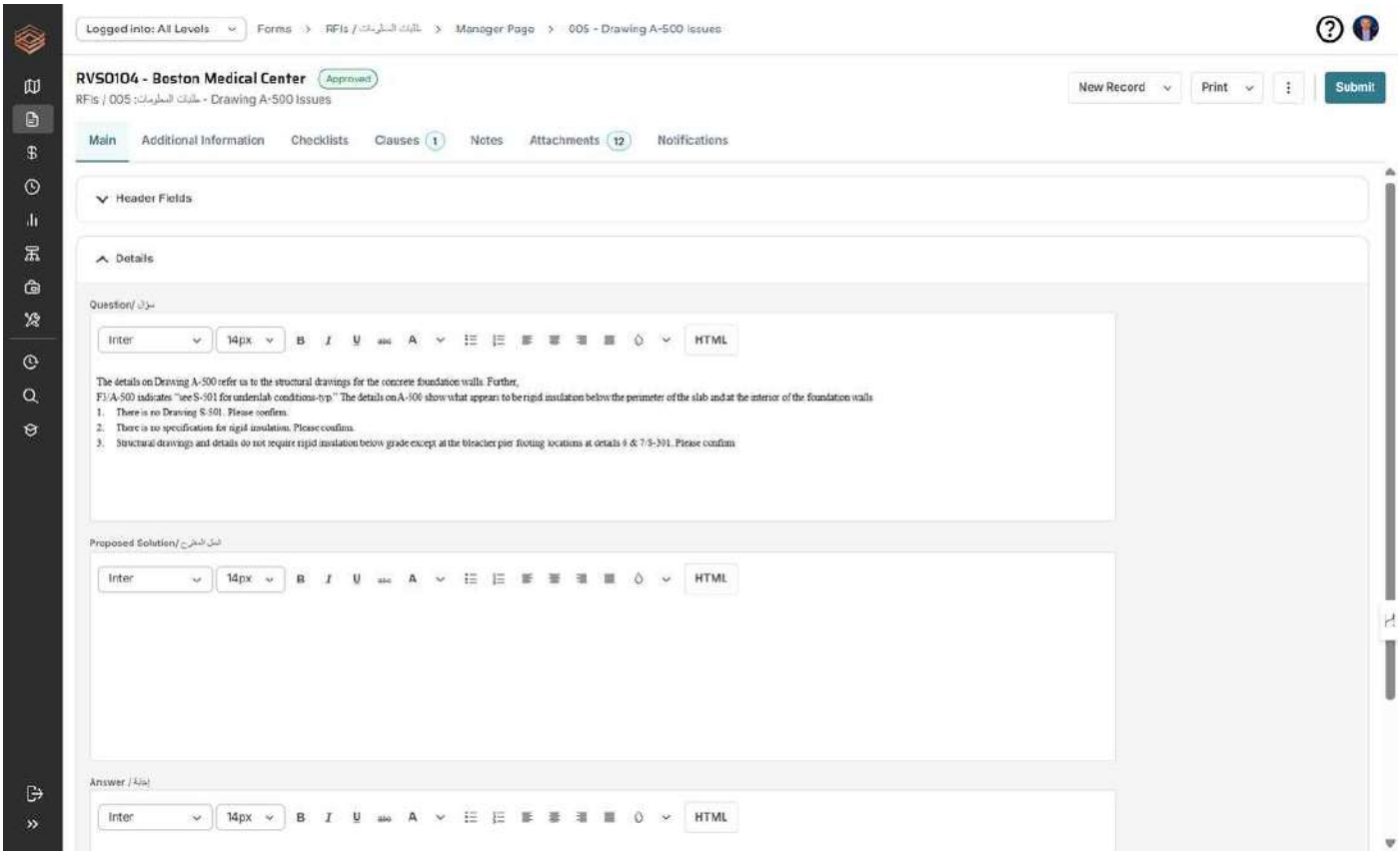
- **RFIs used as informal variations.** RFI responses change the scope without anyone flagging it, and the cost surfaces months later as a claim the owner did not see coming.
- **Instructions without a cost trail.** Site instructions and field directives are issued by letter or email, and their link to the variation that eventually values them is held in someone's memory.
- **Only approved changes are visible.** The variation register shows approved change orders, but pending and potential changes, the exposure the owner most needs to see, sit in the quantity surveyor's personal workbook.
- **Approval levels checked by hand.** Whether a variation needs the project director, the owner's committee or a ministry approval is checked against a PDF of the DoA, and cumulative limits are easy to miss.
- **Payment certificates rebuilt monthly.** Each interim payment is a new spreadsheet: previous totals are retyped, retention and advance recovery recalculated, VAT added, and errors carried forward.
- **No single view of the contract.** Original value, approved variations, pending variations, paid to date, retention held and advance outstanding are never shown together in one place.

How PMWEB Digitalises It

PMWEB administers each of these processes as structured records linked to the contract, the budget and the schedule. The chain from question to payment exists as data, not as a story someone has to reconstruct.

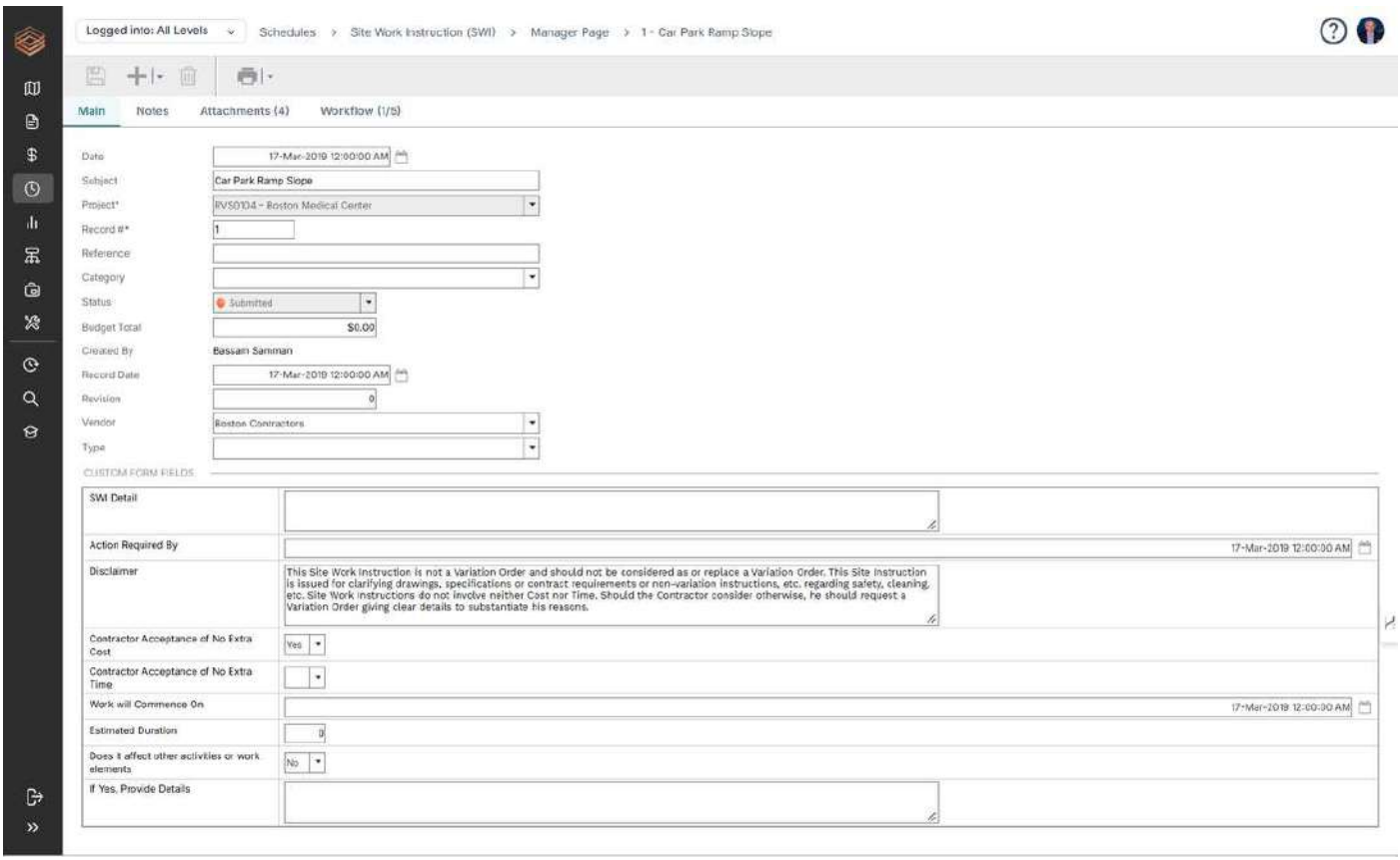
RFIs

Each RFI is raised against the contract, discipline, location and the drawing or specification it concerns. The workflow routes it to the PMC reviewer and, where needed, to the designer, with the response period set by the contract and escalation before it lapses. The response is recorded, and a simple but decisive field asks whether the response has a potential cost or time impact. If it does, a potential change order can be created directly from the RFI, carrying its context with it. The owner can then see which clarifications have become changes, and the contractor cannot later argue that a scope change was hidden inside a routine answer.



Site instructions and field directives

Instructions issued by the owner's representative or the Engineer named in the contract, or by the PMC, are recorded as their own records with a number, date, issuer, the clause under which they are issued and the affected work. Where an instruction may change the scope, it is linked to a potential change order, so that it is valued through the variation process rather than resurfacing later as a claim.



From potential change order to change order

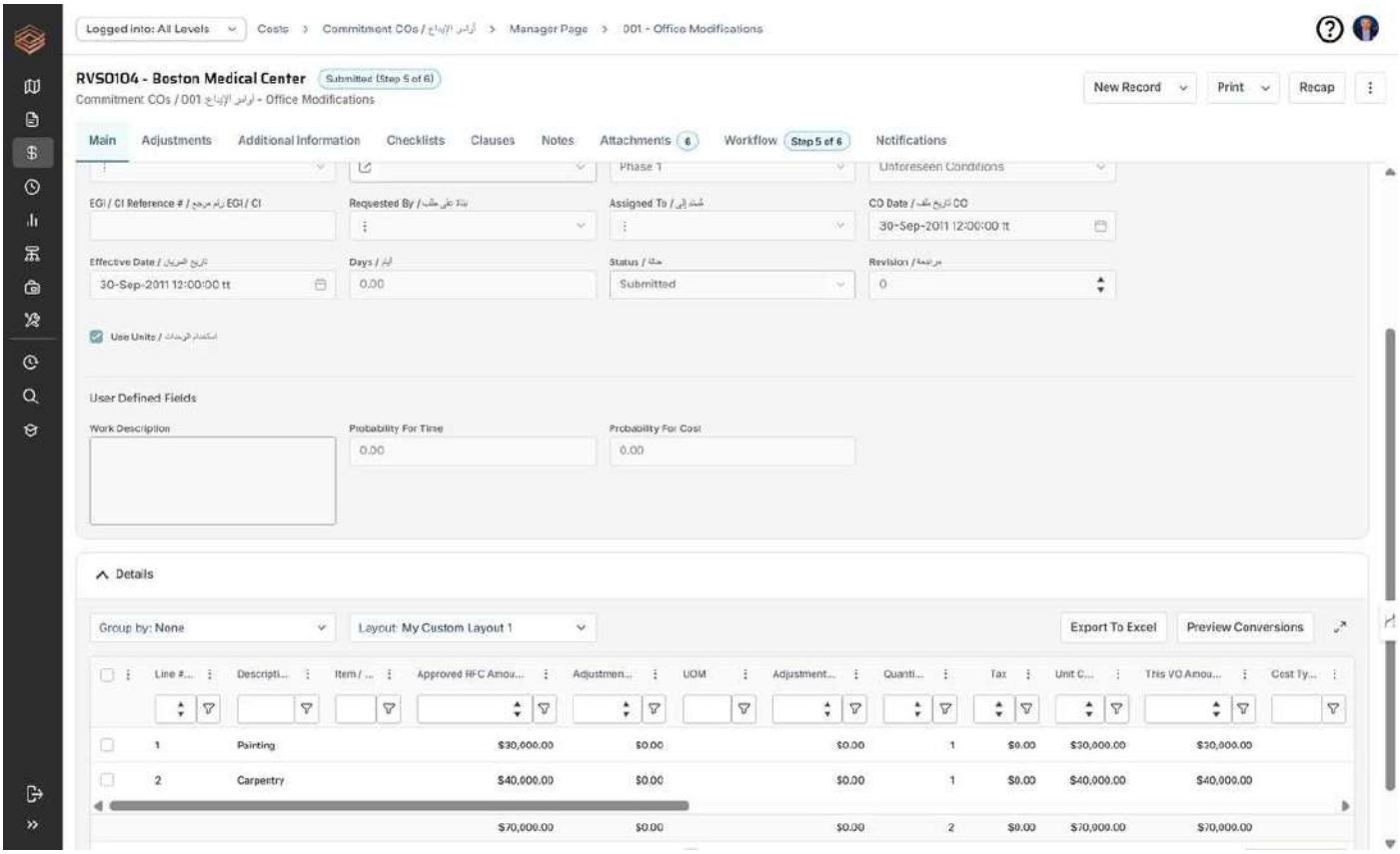
PMWEB follows the change management path that experienced PMC firms already use, and gives each stage its own record and approvals.

1. **Potential change order.** The possible change is identified from an RFI, instruction, design revision or owner request, and a rough order of magnitude is estimated. It immediately appears in the contract's exposure reporting.
2. **Change order request.** Under most conditions of contract this follows either an instruction or a request for proposal. The contractor's proposal, with its valuation, time impact and supporting detail, is submitted and evaluated by the PMC against contract rates, agreed rates or a fair valuation.
3. **Change order.** Once agreed, or determined, the change order is approved through the workflow engine and added to the commitment. The budget, the schedule of values and the forecast update accordingly, and any time impact is linked to the schedule record described in Article 5.

Budget transfers from contingency are recorded alongside, so the owner always knows how much contingency remains and what it has been used for.

Approval under the delegation of authority

The workflow engine routes each change order according to the owner's delegation-of-authority matrix, by value, type and contract. Crucially, it can consider cumulative value as well as the single change, so when the running total of variations on a contract crosses a threshold that requires higher approval, the routing reflects that. Delegation and escalation are handled in the workflow, and every approval is recorded with approver, date and comment.



Cumulative variation tracking

Because potential change orders, change order requests and change orders are all data against the contract, PMWEB reports what the owner needs to know in one view: original contract value, approved variations, pending requests, potential changes, and the resulting forecast final contract value. For owners whose procurement rules limit cumulative variations, this is the view that shows how close a contract is to needing a higher approval or a new procurement route.

PMWEB | Commitment Log by Project

ROCARC - Rockwell Architects

Project	Record #	Description	Date	Original	Approved CO	Pending CO	Revised	Invoiced	Balance	Retained
Original Commitment										
Boston Medical Center	001	Design Services	23-Sep-2011 10:00:57 PM	$493,000.00	$23,345.00	$500.00	$516,345.00	$503,350.00	$12,995.00	$1,700.00
Change Orders										
	001	Design Changes	27-Sep-2011 12:00:00 AM		$12,500.00					
	004		02-Jun-2024 12:00:00 AM		$845.00					
Total Changes					$13,345.00					
Invoices										
1	Invoice 1				$147,900.00					$0.00
2	Invoice 2		05-Mar-2018 12:00:00 AM		$54,514.20					$0.00
3	Invoice 3		05-Mar-2018 12:00:00 AM		$65,598.00					$0.00
4	Invoice 4		05-Mar-2018 12:00:00 AM		$64,090.00					$0.00
5	Invoice 5		05-Mar-2018 12:00:00 AM		$69,518.80					$0.00
6	Invoice 6		05-Mar-2018 12:00:00 AM		$66,729.00					$0.00
7	Invoice 7		13-Aug-2019 12:00:00 AM		$34,000.00					$2,700.00
8	Invoice 8		16-Mar-2025 12:00:00 AM		$1,000.00					$1,700.00
Total Invoices					$503,350.00					

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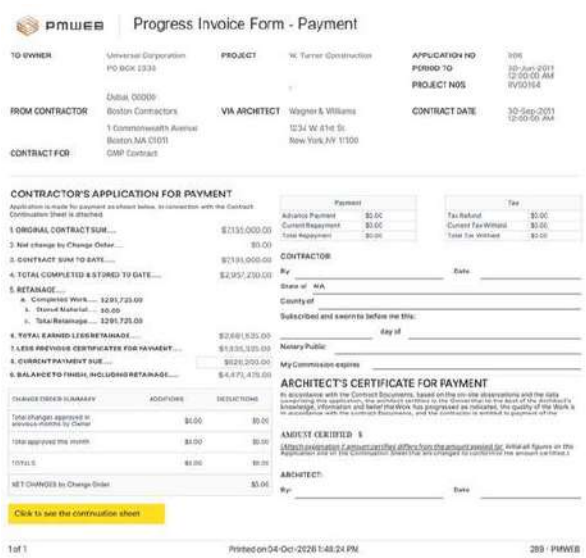
Payment applications and payment certification

The contractor's payment application is submitted in PMWEB against the schedule of values, including approved change orders as their own lines, so the contractor claims progress on the same structure the contract is controlled on. The PMC's quantity surveyor assesses each line, adjusts where the claimed progress is not supported by site records, and the workflow routes the assessed application for review and approval.

PMWEB then calculates what would otherwise be rebuilt every month. Previous values carry forward automatically. Retention is deducted at the rate set for the contract up to its limit, and retainage held is tracked for release at taking over and at the end of the defects notification period. Advance payment recovery is applied according to the contract's repayment terms, with the outstanding balance visible at all times. VAT is calculated at the applicable rate on the certificate and shown separately. The resulting payment certificate is issued from the system and, through integration with SAP, Oracle or Microsoft Dynamics ERP, passed to the owner's finance function for payment without re-keying.


PMWEB Progress Invoice Form - Payment

TO OWNER
FROM CONTRACTOR
CONTRACT FOR
PROJECT
VIA ARCHITECT
APPLICATION NO
PERIOD TO
PROJECT NOS
CONTRACT DATE

CONTRACTOR'S APPLICATION FOR PAYMENT

ARCHITECT'S CERTIFICATE FOR PAYMENT

Click to see the continuation sheet

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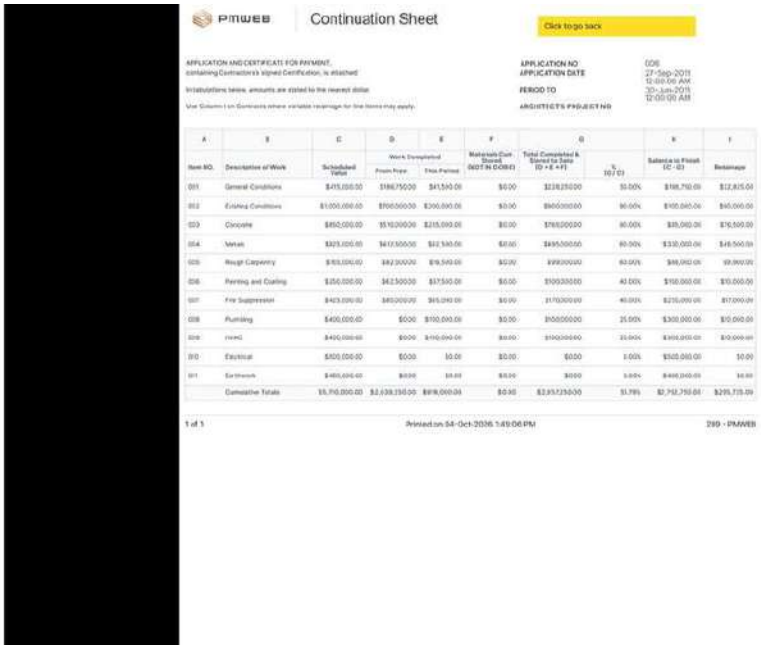
PMWEB Continuation Sheet

Click to go back

APPLICATION NO
APPLICATION DATE
PERIOD TO
ARCHITECT'S PROJECT NO

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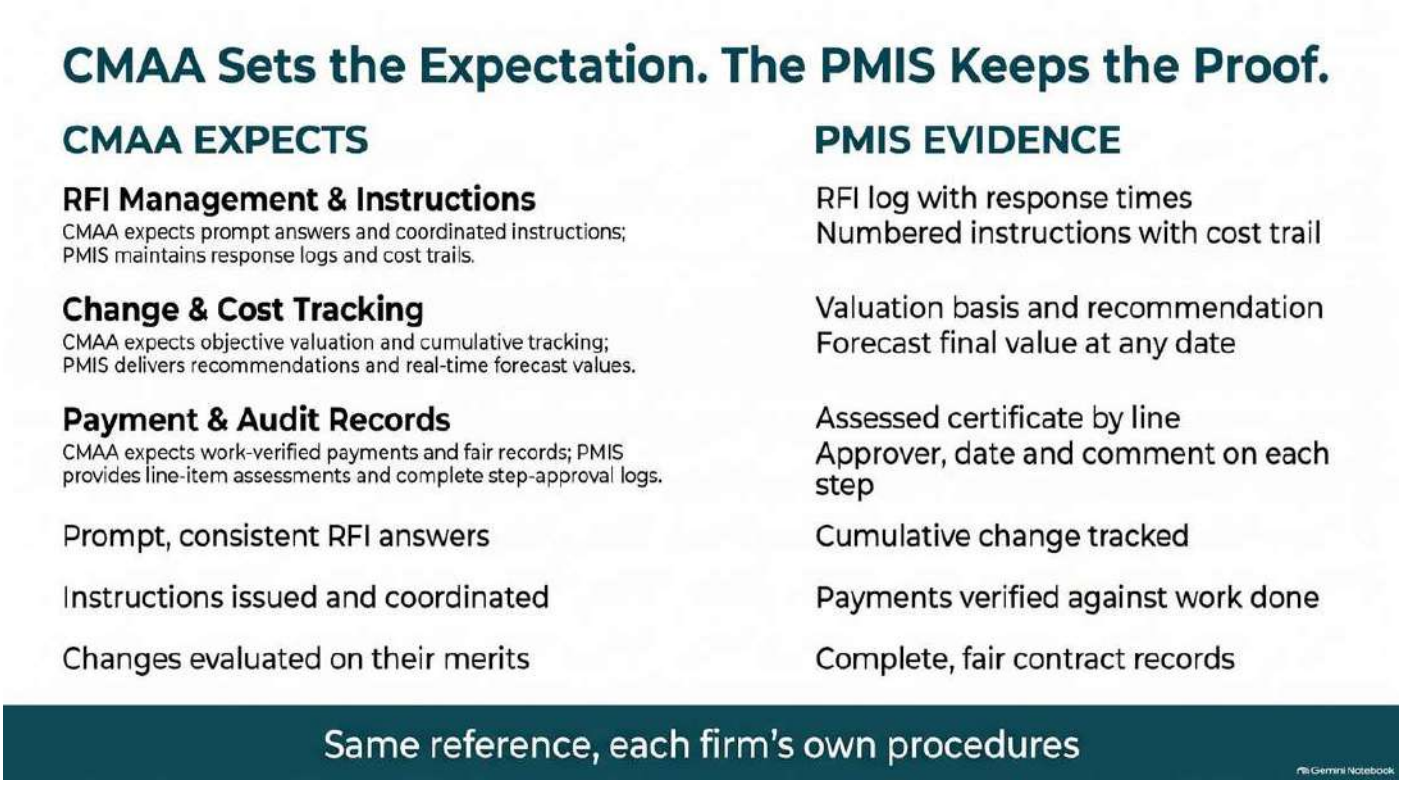
CM responsibility	PMWEB capability	Evidence produced
Manage requests for information	RFI workflow with response periods, escalation and impact flags	RFI log with response times and linked changes
Issue and track instructions	Site instruction records linked to potential change orders	Numbered instructions with clause reference and cost trail
Evaluate proposed changes	Potential change order, change order request and change order records	Valuation basis, time impact and PMC recommendation
Obtain approval at the right level	Workflow routing by value, type and cumulative total under the DoA	Approver, date and comment for every change
Track cumulative change	Contract exposure reporting across approved, pending and potential	Forecast final contract value at any date
Review payment applications	Payment applications against the schedule of values	Assessed values by line with adjustments recorded
Issue payment certificates	Automated retention, advance recovery and VAT, ERP integration	Payment certificates with complete calculation history

Configuring PMWEB to Your Firm's Procedures

The CMAA Standard expects fair, prompt and traceable administration on every contract. How that is done, with which forms, thresholds and routes, is decided by each PMC firm and each owner, and PMWEB is configured to those decisions.

What the firm or client decides	How it is configured in PMWEB
RFI, instruction and change order forms and fields	Form Builder layouts matching the firm's own forms, including the impact flags and valuation fields its procedure requires
Terminology	Labels using the firm's and the owner's terms, for example variation or change order, and site instruction or field directive

What the firm or client decides	How it is configured in PMWEB
Approval routes and DoA thresholds	The owner's delegation-of-authority matrix in the workflow engine, including cumulative variation thresholds set by the owner's procurement rules
Contract terms	Response periods, retention rates and limits, advance payment repayment and payment periods set per contract from the conditions of contract and the owner's particular conditions
Numbering and report formats	RFI, instruction, change and certificate numbering to the firm's convention, and payment certificates in the owner's format with tax registration details
Bilingual outputs	English and Arabic certificates and letters where the owner requires them
Hosting and integration	In-country hosting where the owner requires it, and payment certificates passed to the owner's SAP, Oracle or Microsoft Dynamics ERP through open APIs



Evidence That the Practice Is Working

A PMC that has digitalised its contract administration in line with the CMAA Standard should be able to show it from PMWEB data. Each firm will set its own targets; the indicators are defined below.

- **RFI response time.** The elapsed time from RFI submission to response, by discipline, compared with the contractual period.
- **RFI-to-change conversion.** The proportion of RFIs flagged with cost or time impact that became potential change orders, showing whether design clarity is improving.
- **Change cycle time.** The elapsed time from potential change order to approved change order, by stage.
- **Unpriced exposure.** The value and count of potential changes and pending requests not yet resolved on each contract.
- **Cumulative variation position.** Approved and forecast variations as a proportion of original contract value, tracked against the owner's approval thresholds.
- **Payment certificate timeliness.** The elapsed time from payment application to issue of the payment certificate, against the contractual period.

- **Financial reconciliation.** Advance payment outstanding and retention held on each contract, reconciled with the owner's ERP.

Key takeaway

The CMAA Standard asks the CM to administer the contract fairly, promptly and with complete records, and to keep the owner informed of the full financial position, including the changes still coming. That is only possible when RFIs, instructions, variations and payments are connected, not kept in separate logs.

PMWEB turns the chain from question to payment into linked, structured records, routed under the owner's DoA and configured to each firm's procedures, each owner's conditions of contract and each owner's procurement rules. The PMC can then show, in data, that its contract administration executes and evidences what the CMAA Standard expects.

Next in the series: *Article 8 — Contract Administration II: Notices, Claims Avoidance and Closeout*

About the Author

Bassam Samman, PMP, PSP, EVP, GPM is the Chairman and Chief Executive Officer of CMCS FZ-LLC, the PMWEB Authorised Implementation Partner for the Gulf Cooperation Council and broader Middle East and North Africa region. CMCS holds the PMWEB Partner of the Year 2025 designation and serves capital project owners, contractors and consultants across the UAE, Saudi Arabia, Qatar, Kuwait and India.

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About PMWEB

PMWEB is an enterprise-class, web-based capital construction project management platform trusted by organisations worldwide including Harvard University, the United Nations, and Atlanta Airport. Built on Microsoft .NET technology, PMWEB manages the entire project lifecycle within a single integrated platform — from portfolio planning and cost management through document control, procurement, scheduling, asset management, and business intelligence. With 150+ pre-configured SSRS reports, drag-and-drop dashboard design, multi-currency support, and open REST/SOAP API integration, PMWEB delivers enterprise capability with implementation timelines measured in months, not years.

About CMCS

CMCS (Collaboration, Management and Control Solutions) is the regional PMWEB implementation partner for the GCC and MENA regions, awarded PMWEB Partner of the Year 2025. CMCS specialises in digital project management solutions for real estate developers, infrastructure owners, and construction companies across the Middle East and North Africa.

Contract Administration II: Notices, Claims Avoidance and Closeout — How GCC PMC Firms Digitalise the CMAA Contract Administration Function with PMWEB

Why the outcome of a claim is usually decided long before anyone writes it

Most construction disputes are not lost in the arbitration room. They are lost on site, months earlier, in a notice that was never sent, a daily report that was never signed, or a letter that nobody can find. The PMC that controls its records controls the outcome.

Article 7 covered RFIs, change management and payment certification. This article covers the part of contract administration that carries the most commercial weight: contractual notices, the claims regime, dispute avoidance and the often neglected road from substantial completion to final account.

On major GCC projects, the conditions of contract, usually with the owner's own amendments, set a strict claims regime. Notices must be given within defined periods, fully detailed claims must follow within further defined periods, and the owner's representative or the Engineer named in the contract is expected to consult and then make a determination within its own time limits. Miss a period and entitlement can be lost. For a PMC in that role, this is the difference between an agreed final account and a formal dispute or arbitration.

Closeout carries its own risk. Completion certificates are issued with long snag lists, O&M manuals and as-built drawings arrive late and incomplete, warranties sit in email attachments, retention is released without a clear check that defects have been made good, and the lessons that could protect the next project are never written down. Each PMC firm handles these steps in its own way, and each owner has its own closeout requirements. What should not vary is the discipline: every notice tracked, every claim analysed against contemporaneous records, every closeout obligation verified before money is released.



What the CMAA Standard Expects

The CMAA Standard treats contract administration as a continuous responsibility of the construction manager, not a series of isolated transactions. During construction, the CMAA Standard expects the CM to maintain complete and accurate project records, to administer the contract requirements for notices and correspondence, to identify potential claims early, to analyse claims fairly against the contract and the record, and to support the owner in resolving disputes at the lowest possible level. The emphasis is on prevention.

At completion and post-construction, the CMAA Standard expects the CM to manage the closeout process in an orderly way: coordinating substantial completion inspections and punch lists, confirming that the contractor has delivered warranties, operation and maintenance information, spare parts, training and record documents, reconciling the final contract amount, supporting the release of retention and final payment, and capturing lessons learned for the owner's future projects.

The groundwork is laid earlier. When the CM helps the owner prepare the contract documents, clear requirements for notices, project records and closeout deliverables make the later administration far easier to perform and to evidence.

CMAA phase	What the CM is expected to do
Design	Help ensure the contract documents set clear requirements for notices, project records and closeout deliverables
Procurement	Make those requirements visible to bidders so that they are priced and understood before award
Construction	Maintain complete project records, administer notices and correspondence, identify potential claims early, analyse claims fairly against the contract and the record, and support resolution at the lowest possible level
Post-construction	Coordinate substantial completion inspections and punch lists, confirm warranties, O&M information, spare parts, training and record documents, reconcile the final contract amount, support retention release and final payment, and capture lessons learned

How GCC PMC Firms Typically Do It Today

- **Notices live in the correspondence system, not in a register.** Letters are logged by reference number, but nobody tracks which letters are contractual notices, which time bar they trigger and when the response period ends.
- **Daily reports are completed but not used.** Site teams fill in daily reports on paper or spreadsheets, often late, and they are rarely linked to the events they would later need to prove.
- **Claims arrive as thick documents with thin evidence.** When a contractor submits a detailed claim, the PMC team spends weeks reconstructing what happened from email and PDFs because the records were never structured.
- **Determinations are drafted from scratch.** The PMC's assessment and determination are prepared in Word, with no link back to the claim log, the programme or the cost records, and no view of the cumulative effect of claims on the contract.
- **Closeout is a chase.** Snag lists, O&M manuals, as-builts, warranties and spare parts are tracked on separate spreadsheets by different people, so retention release and the final account are delayed or, worse, made without full verification.
- **Lessons learned are a meeting, not a record.** Slides are circulated and nothing is captured in a form the next project can search.

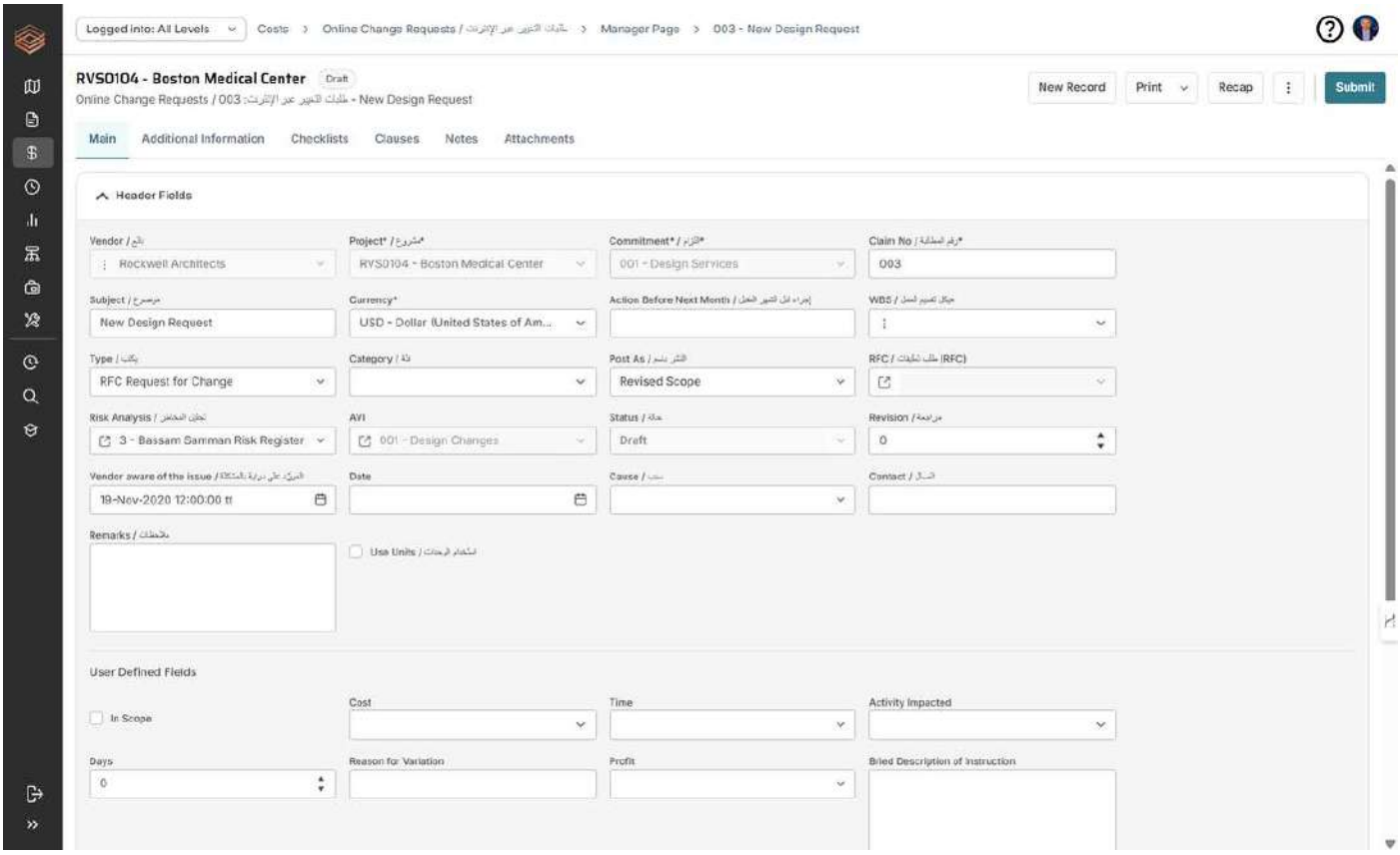
How PMWEB Digitalises It

PMWEB does not replace the PMC's professional judgement. It gives the PMC a structured place to execute each step of the contract regime, links each record to its evidence and keeps an audit trail. Each firm configures forms, value lists and workflows to its own procedures and to the particular conditions of contract.

Notices and time bars

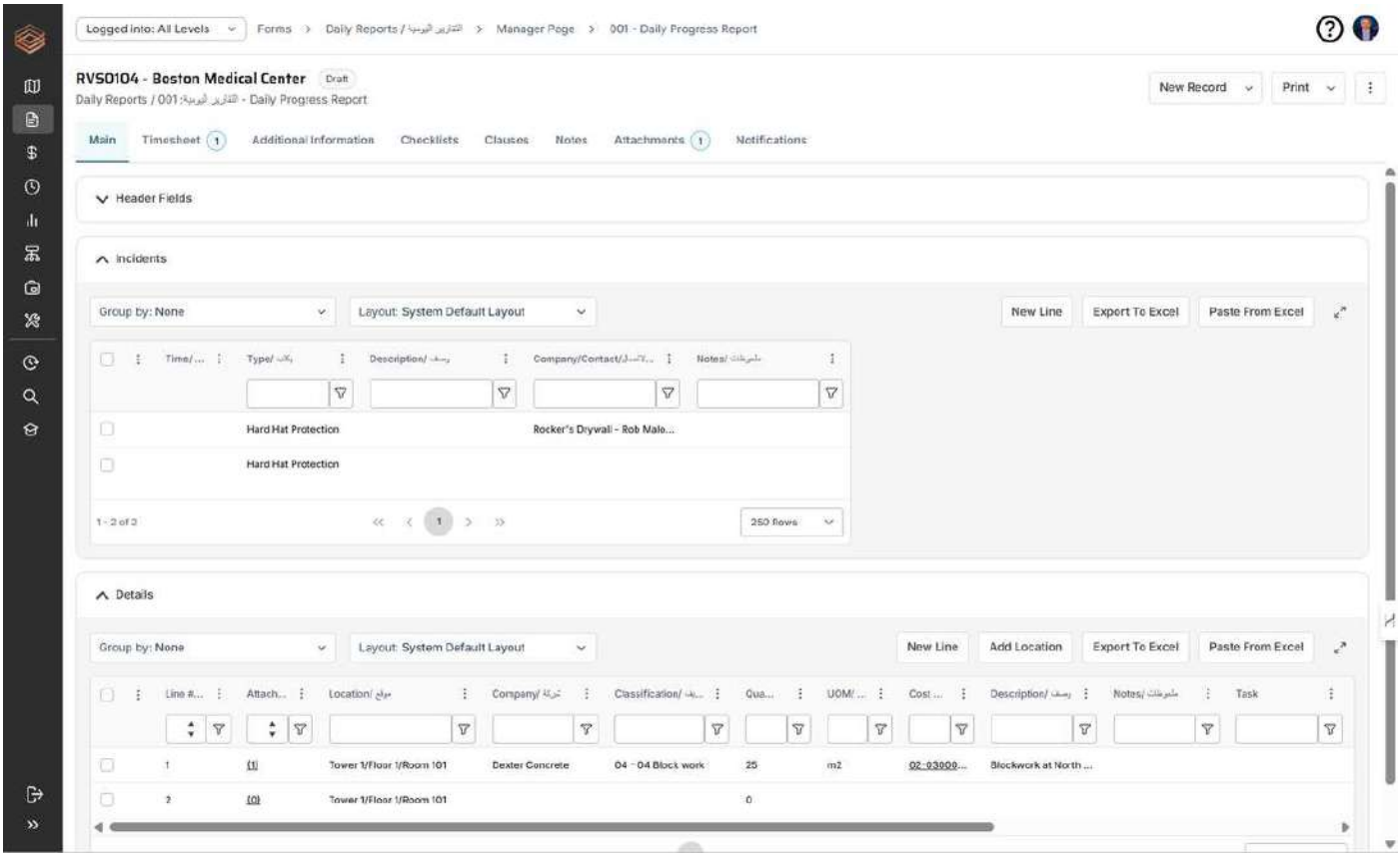
PMWEB's notices module records each contractual notice as a structured record rather than a letter in a folder. The record captures the contract, the party giving notice, the notice type from a value list, the event date, the date the notice was received, the governing contract clause as configured by the firm, and the response period that applies. The workflow engine calculates due dates and escalates approaching deadlines to the responsible PMC team member and the project manager. Incoming and outgoing correspondence is logged in the correspondence module and linked to the notice, so the chain of letters for any event can be seen in one place.

This works in both directions: it records whether a contractor's notice arrived within the period, and it makes the PMC's own obligations to respond, consult and determine within time limits visible and tracked.



Contemporaneous records

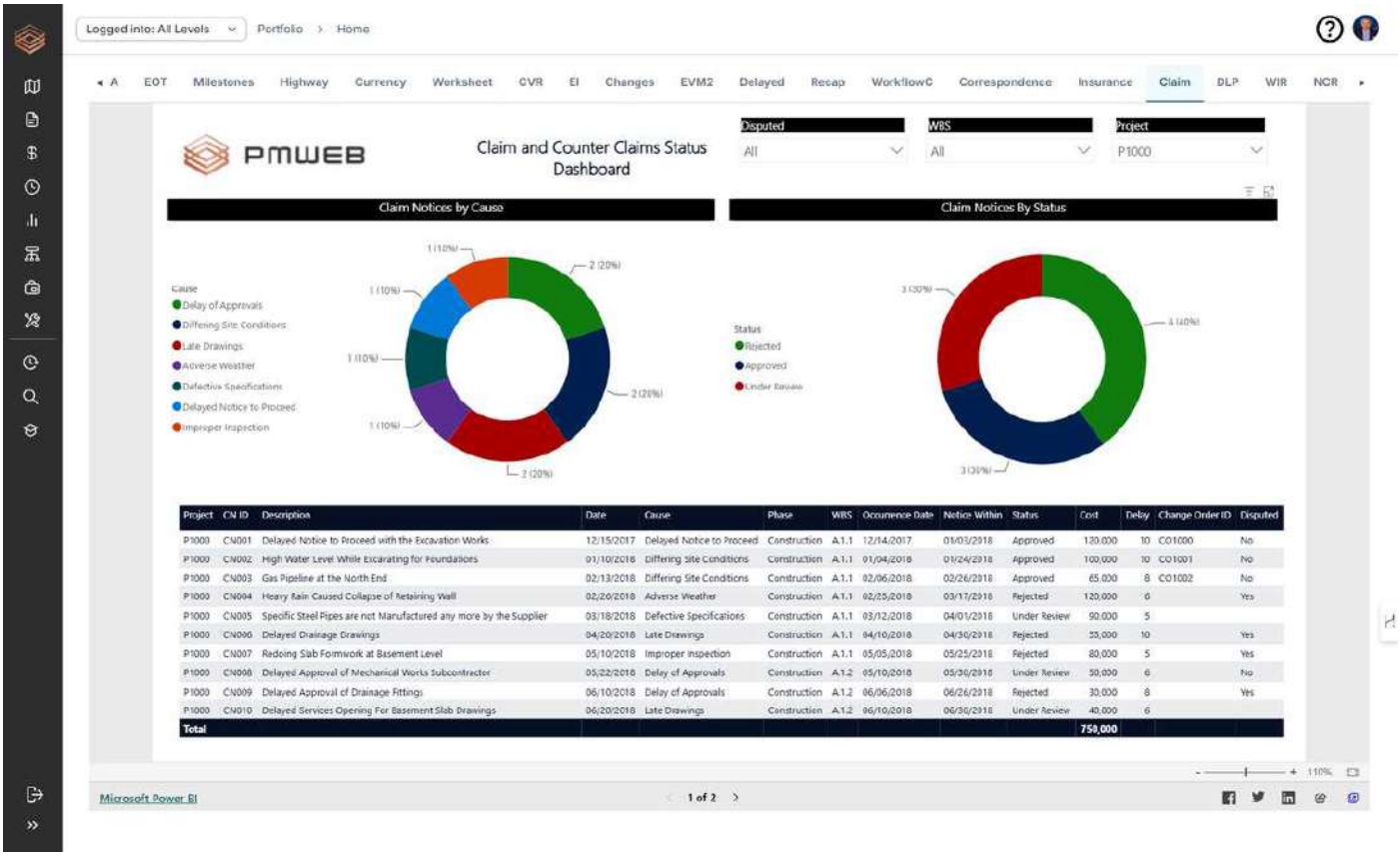
Claims avoidance starts with records made at the time. PMWEB daily reports capture manpower, equipment, weather, activities and events, with photos from the mobile app. Meeting minutes record decisions and actions. Schedule updates, integrated with Primavera P6 or MS Project, are stored period by period. Because each is a structured record, a notice or claim links directly to the records that relate to it.



Claims log, analysis and determination

When a notice develops into a claim, the PMWEB claims log records it with its status, the amounts and time claimed, the PMC's assessment, and the agreed or determined outcome. The claim links to its originating notice,

to any potential change orders or change orders it gives rise to, and to the supporting records. The PMC can attach its analysis, such as a time impact analysis prepared in the scheduling tool or a quantum assessment built from commitment and cost data, and route the draft determination through a workflow that reflects the owner's DoA before it is issued. Dashboards show open claims and the cumulative position against the contract sum.

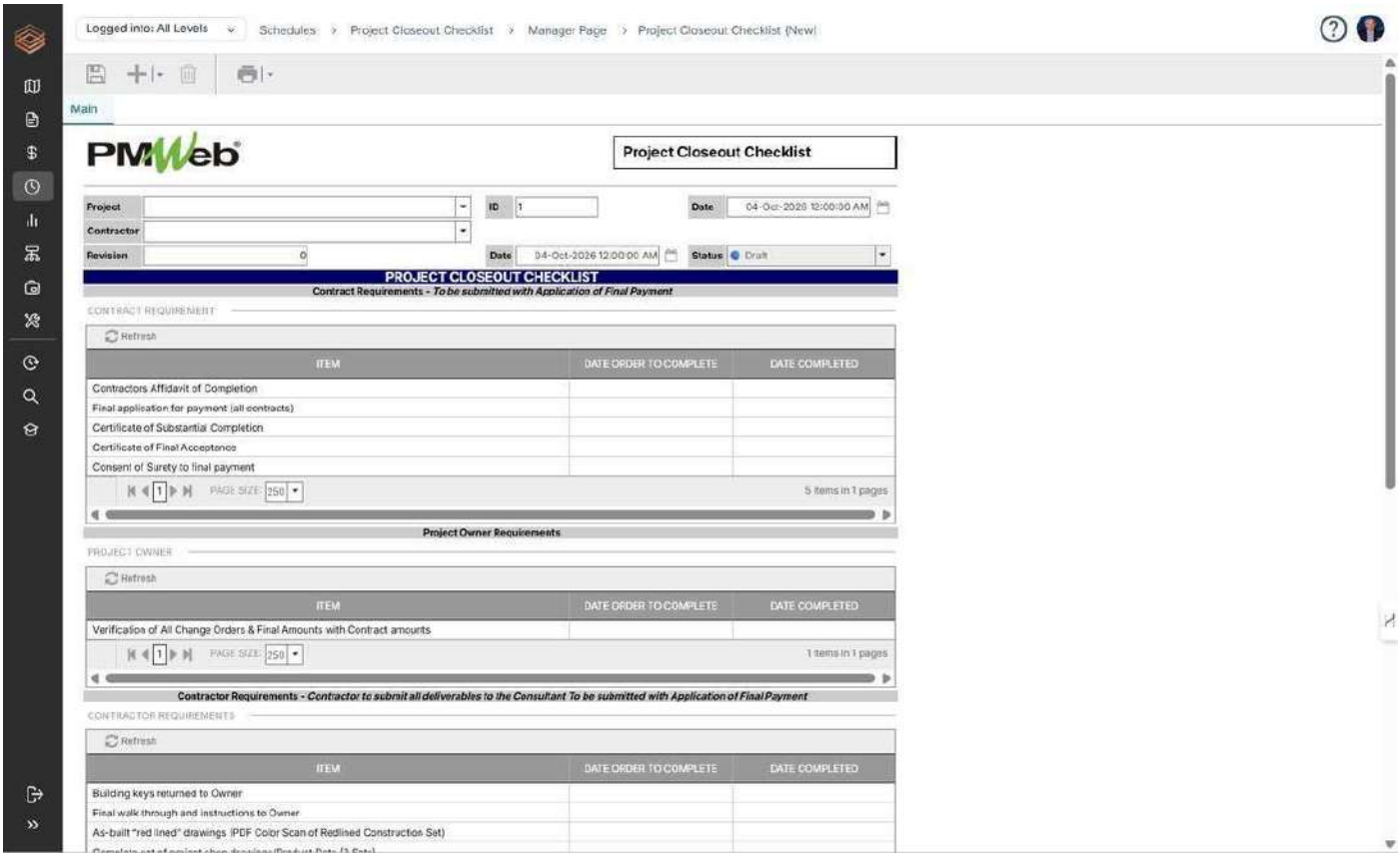


Dispute avoidance

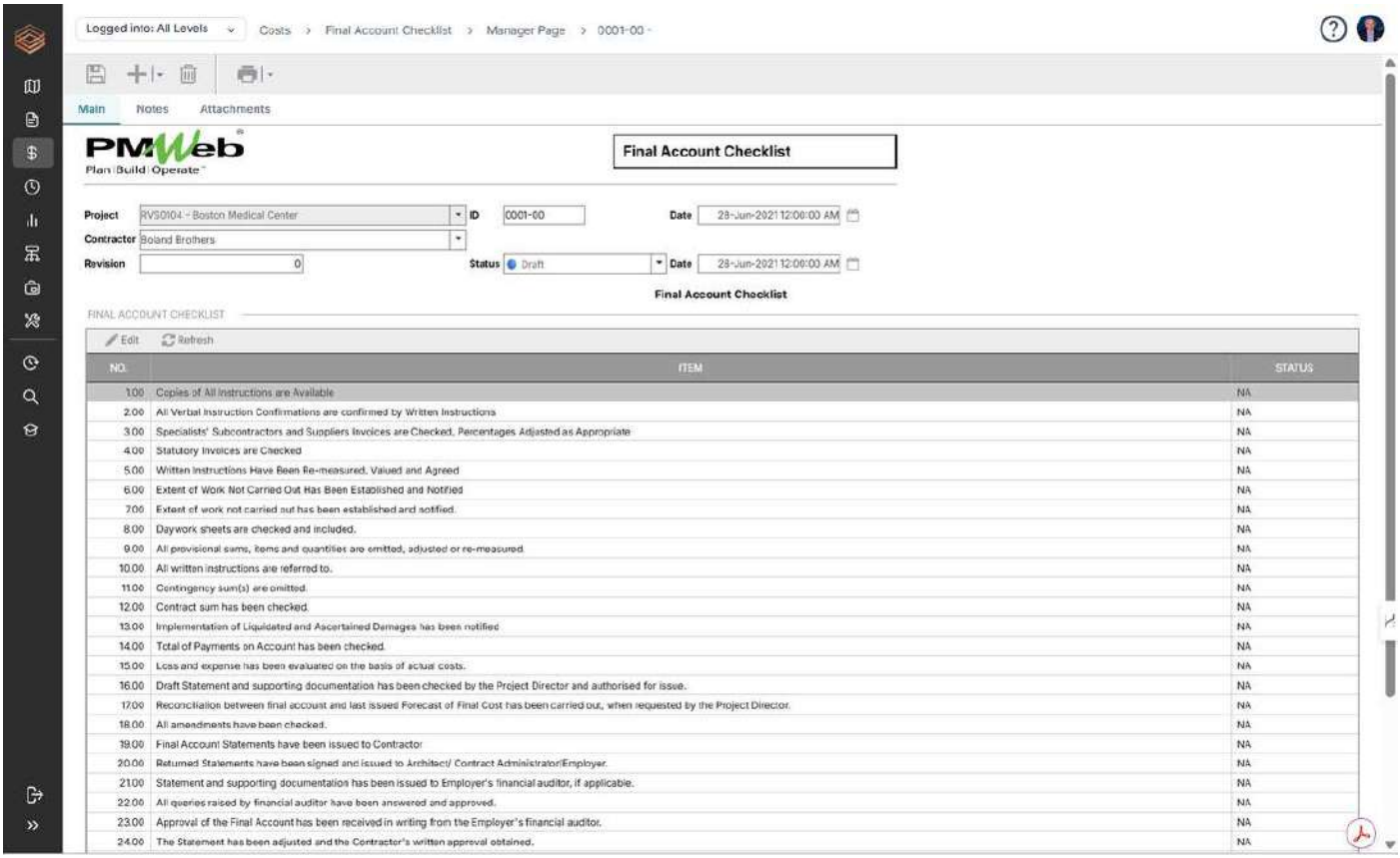
The CMAA Standard puts the weight on resolving disagreements at the lowest possible level. The PMC's contribution is to surface issues early and keep the record complete. In PMWEB, issues and action items track emerging disagreements before they become claims, and a custom form in Form Builder can log dispute-avoidance meetings, escalations and any referral to the dispute resolution mechanism the contract provides.

Completion, defects and final account

Closeout in PMWEB is managed through closeout checklists configured to the owner's requirements. The checklist brings together the items that must be complete for substantial completion and for final completion: punch list items closed, commissioning checklists signed off, O&M manuals and as-built drawings received and accepted through transmittals, training delivered, spare parts handed over and warranties recorded in the warranties module with their start and expiry dates. After substantial completion, defects notified during the defects liability period are tracked as punch list or non-conformance records with their close-out evidence. Assets and warranties can be passed to the asset register for the owner's operations team.



The final account is prepared from the data already in the system: original contract value, approved change orders, agreed or determined claims, payment certificates issued, retention held and any deductions. Retention release is routed through a workflow that checks the closeout checklist and defects status before it can be approved. Finally, lessons learned are captured as structured records, classified by discipline and topic, so they can be searched by the next project team.



CM responsibility	PMWEB capability	Evidence produced
Control contractual notices and time bars	Notices module with value lists, calculated due dates and escalation	Notice register with receipt dates, periods and response history
Maintain contemporaneous records	Daily reports, meeting minutes, correspondence, mobile photos, schedule updates	Linked, time-stamped records for every day and event
Analyse claims fairly	Claims log linked to notices, schedule analysis, cost and change records	Claim file with assessment, supporting records and audit trail
Prepare the PMC's determination	Workflow routed under the owner DoA with attachments and linked evidence	Approved determination with sign-off history
Support dispute avoidance	Issues, action items and a custom dispute-avoidance log in Form Builder	Early-warning history and a complete referral file
Manage substantial completion and closeout	Closeout checklists, punch lists, commissioning checklists, transmittals	Verified closeout status per contract
Manage the defects liability period and warranties	Punch list and NCR tracking, warranties module, asset register	Defects close-out evidence and a warranty register for operations
Agree the final account and release retention	Contract, change order, payment certificate and retainage data with gated workflow	Reconciled final account and approved retention release
Capture lessons learned	Lessons learned records with classification	Searchable knowledge base for future projects



Configuring PMWEB to Your Firm's Procedures

The CMAA Standard stays the reference; the way each PMC firm and each owner administer notices, claims and closeout does not. PMWEB is configured to the firm's and the client's procedures rather than imposing one method.

What the firm or client decides	How it is configured in PMWEB
Notice types, response periods and calendar rules	Value lists and due-date rules set per contract from the conditions of contract and the owner's particular conditions

What the firm or client decides	How it is configured in PMWEB
Forms, fields and terminology	Notice, claim, determination and closeout forms built in Form Builder with the firm's or owner's field names and terms
Approval routes and DoA thresholds	Determination, settlement and retention release workflows routed under the owner's delegation-of-authority (DoA) matrix
Numbering	Notice, claim, letter and determination numbering set to the firm's or owner's correspondence convention
Report formats	Notice registers, claims status reports, closeout status and final account statements in the owner's templates
Closeout requirements	Closeout checklist items matched to the owner's handover procedures and operations team needs
Bilingual outputs	English and Arabic letters, determinations and certificates where the owner requires them
Hosting and integration	In-country hosting where the owner requires it, with final payment and retention passed to the owner's ERP through open APIs



Evidence That the Practice Is Working

Useful indicators, all measurable from PMWEB records, include:

- **Notice response timeliness:** the share of contractual notices acknowledged and responded to within the configured period.
- **Record completeness:** daily reports submitted and approved on the day they cover, per contract.
- **Claim linkage:** the proportion of claims in the claims log linked to their originating notice and supporting contemporaneous records.
- **Determination cycle time:** elapsed time from receipt of a fully detailed claim to issue of the determination.
- **Dispute escalation rate:** the number of claims referred to the contract's dispute resolution mechanism compared with those agreed or determined without referral.
- **Closeout readiness:** open items on closeout checklists at substantial completion and their ageing through the defects liability period.

- **Final account timeliness:** elapsed time from final completion to agreed final account and retention release.

Key takeaway

Claims avoidance is a records discipline. The PMC that registers every notice, tracks every time bar and links every claim to the daily record gives the owner a fair and defensible position, and gives the contractor a clear and timely answer. That is what the CMAA Standard's emphasis on prevention looks like in practice.

Closeout is where the value of the whole project is either secured or lost. When closeout checklists, warranties, as-builts and the final account are managed as linked records in PMWEB, configured to the firm's procedures and the owner's conditions of contract, retention is released on evidence, the owner inherits usable asset information and the next project inherits real lessons. The CMAA Standard as the reference, the firm's procedures as the method, the record as the proof.

Next in the series: *Article 9 — Safety Management*

About the Author

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Safety Management — How GCC PMC Firms Digitalise the CM's Safety Role Under the CMAA Standard and Prove It in Data with PMWEB

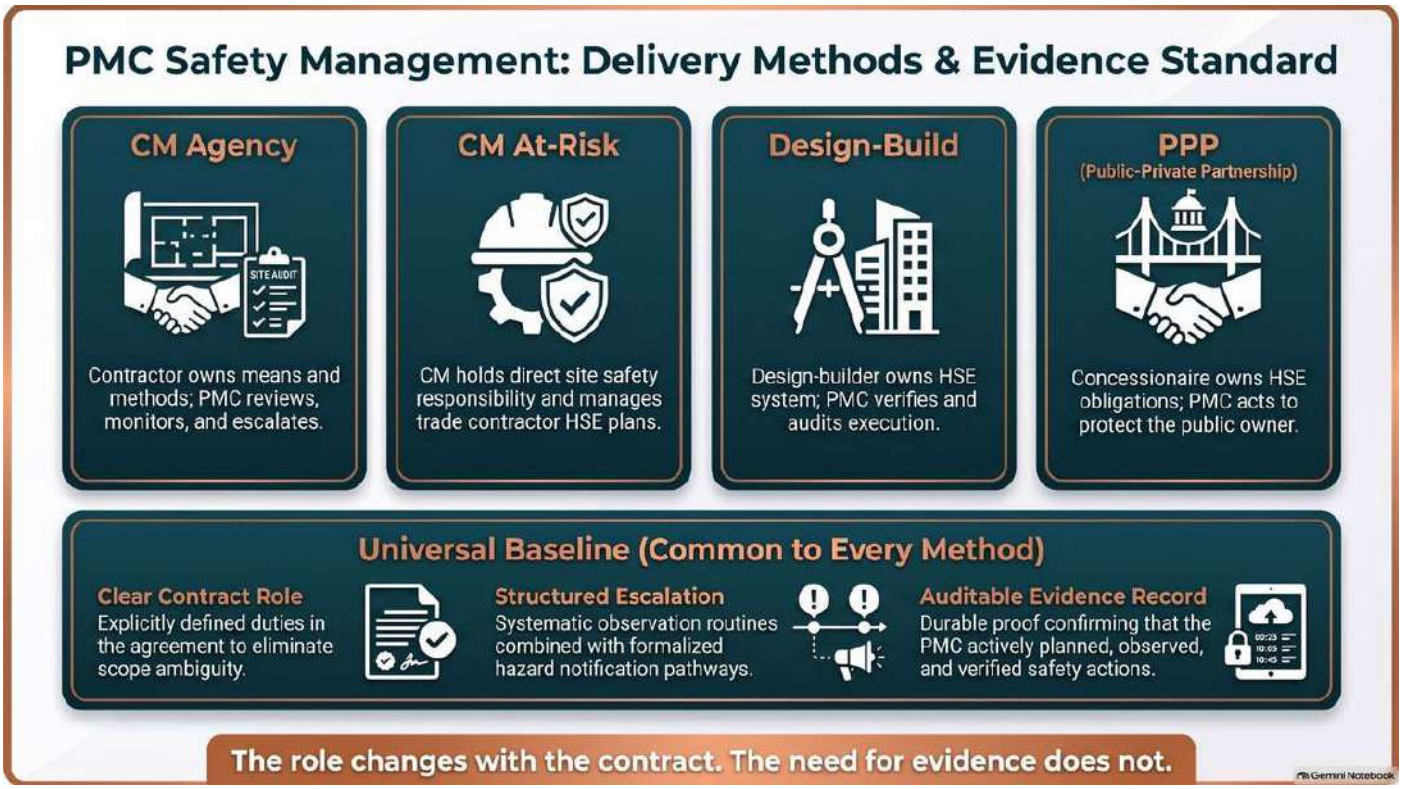
The PMC does not run the contractor's safety programme, but it must be able to show it watched it closely

On every construction site, safety belongs first to the contractor who controls the work. But the owner's PMC is never a bystander. Its role is to plan, observe, verify, escalate and record, and on the day something goes wrong, the quality of that record is what everyone will examine.

Safety management is the function where the PMC's role is most often misunderstood, sometimes by the PMC itself. Owners expect their consultant to keep the site safe. Contractors hold primary responsibility for the means and methods of their work and for the safety of their workforce. Regulators hold both to account. Between those expectations sits a PMC team that must be clear about what it does, what it does not do, and how it proves it did what it said.

In the GCC, the stakes are high and the conditions are demanding. Projects combine large, multinational workforces, compressed programmes, high-rise and deep excavation work, and extreme summer heat. Regulators and the HSE standards of major owners and giga-project developers set clear expectations, and those expectations increasingly include evidence: inspections completed, observations closed, incidents investigated, corrective actions verified.

Each PMC firm defines its safety role in its own way, shaped by its contract with the owner and by the delivery method. A PMC acting as CM agent on a traditional design-bid-build contract has a different role from a PMC overseeing a design-build contractor or a PPP concessionaire. What should not vary is the discipline: a clear role, a structured plan, consistent observation, and a record that shows the PMC acted on what it saw.



What the CMAA Standard Expects

The CMAA Standard is careful about the CM's safety role. During pre-design and design, it expects the CM to help the owner establish safety expectations for the project, to encourage the design team to consider construction safety in the design, and to ensure that contract documents set clear safety requirements for

contractors. During procurement, it expects the CM to make safety performance and safety planning part of the contractor selection process where the owner's procedures allow.

During construction, the CMAA Standard expects the CM to review contractor safety plans for conformance with contract requirements, to monitor the contractor's safety performance, to report observed hazards and non-compliance to the contractor and the owner, and to document its actions, while making clear that the contractor remains responsible for the safety of its own work unless the CM has taken on that responsibility under its contract, as it may under CM at-risk. Throughout, the Standard recognises that the CM's exact safety responsibility depends on its contract with the owner, and that the CM must understand and respect those limits.

CMAA phase	What the CM is expected to do
Pre-design	Help the owner establish safety expectations for the project and define the CM's own safety role in its contract
Design	Encourage the design team to consider construction safety in the design, and ensure the contract documents set clear safety requirements for contractors
Procurement	Make safety performance and safety planning part of contractor selection where the owner's procedures allow
Construction	Review contractor safety plans for conformance with the contract, monitor safety performance, report observed hazards and non-compliance to the contractor and the owner, and document the CM's actions

How GCC PMC Firms Typically Do It Today

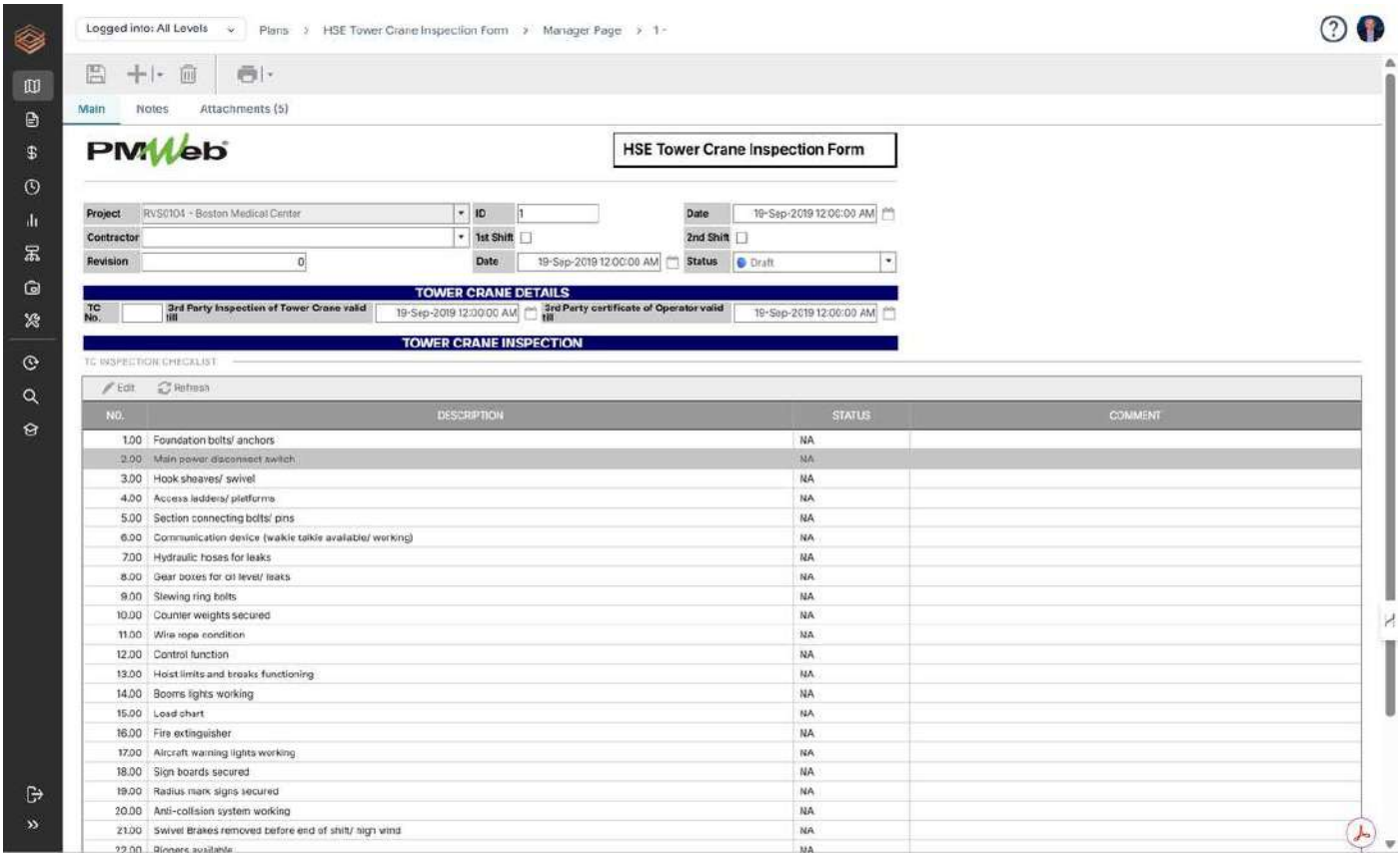
- **The role is unclear on paper.** The PMC's safety duties are not spelled out in its appointment, so the team either overreaches into the contractor's responsibilities or does too little to protect the owner.
- **Inspections are done on paper and typed up later.** Safety walks produce handwritten notes and photos on personal phones, which are compiled into weekly reports days afterwards, if at all.
- **Observations are raised but not closed.** Unsafe conditions are reported to the contractor, but there is no reliable tracking of whether and when they were corrected.
- **Incident information is scattered.** Incident reports, investigation findings and corrective actions sit in different files, making trend analysis and reporting to the owner and regulators slow.
- **Indicators are lagging only.** Monthly reports focus on man-hours and lost-time incidents, with little visibility of leading indicators such as inspection completion, observation close-out or toolbox talk coverage.
- **Heat-stress controls are managed informally.** Summer working-hour restrictions, hydration and rest arrangements are announced on site but not systematically checked and recorded.

How PMWEB Digitalises It

PMWEB does not take the contractor's safety responsibility away from the contractor, and it does not replace the contractor's own HSE management system. It gives the PMC a structured way to execute its own defined role: to plan, observe, escalate, verify and report. Each firm configures the forms, checklists and workflows to its own procedures and to the owner's HSE standards.

Planning: HSE plans and prevention through design

The owner's HSE requirements and the contractor's HSE plan are submitted and reviewed through PMWEB's submittals workflow, with review comments, revisions and approval status recorded. During design, the PMC can use a custom form built in Form Builder to log prevention-through-design reviews, capturing hazards identified in design, the design response and the residual risk handed over to the construction phase. These entries link to the risk register so that construction safety risks are visible alongside other project risks.

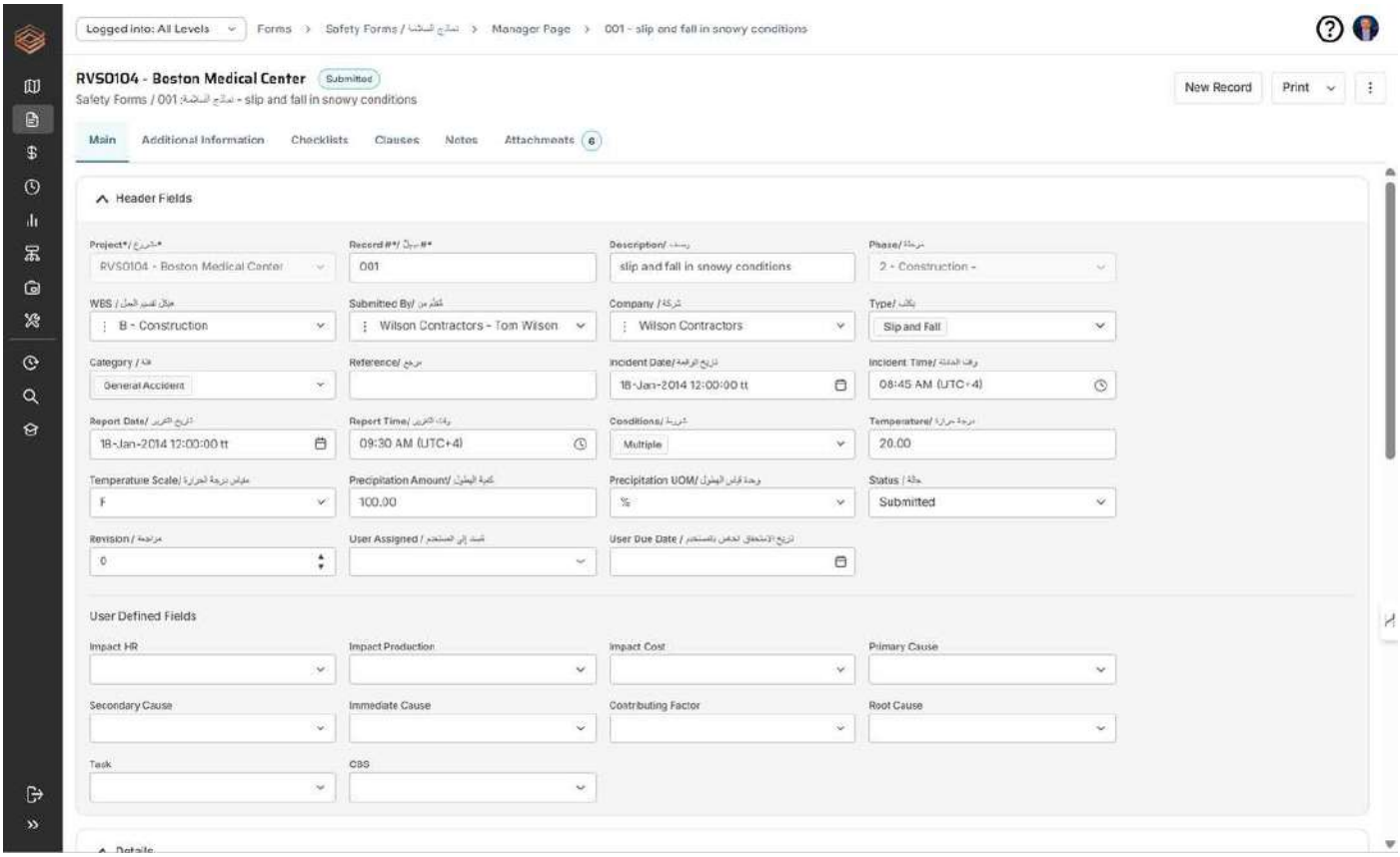


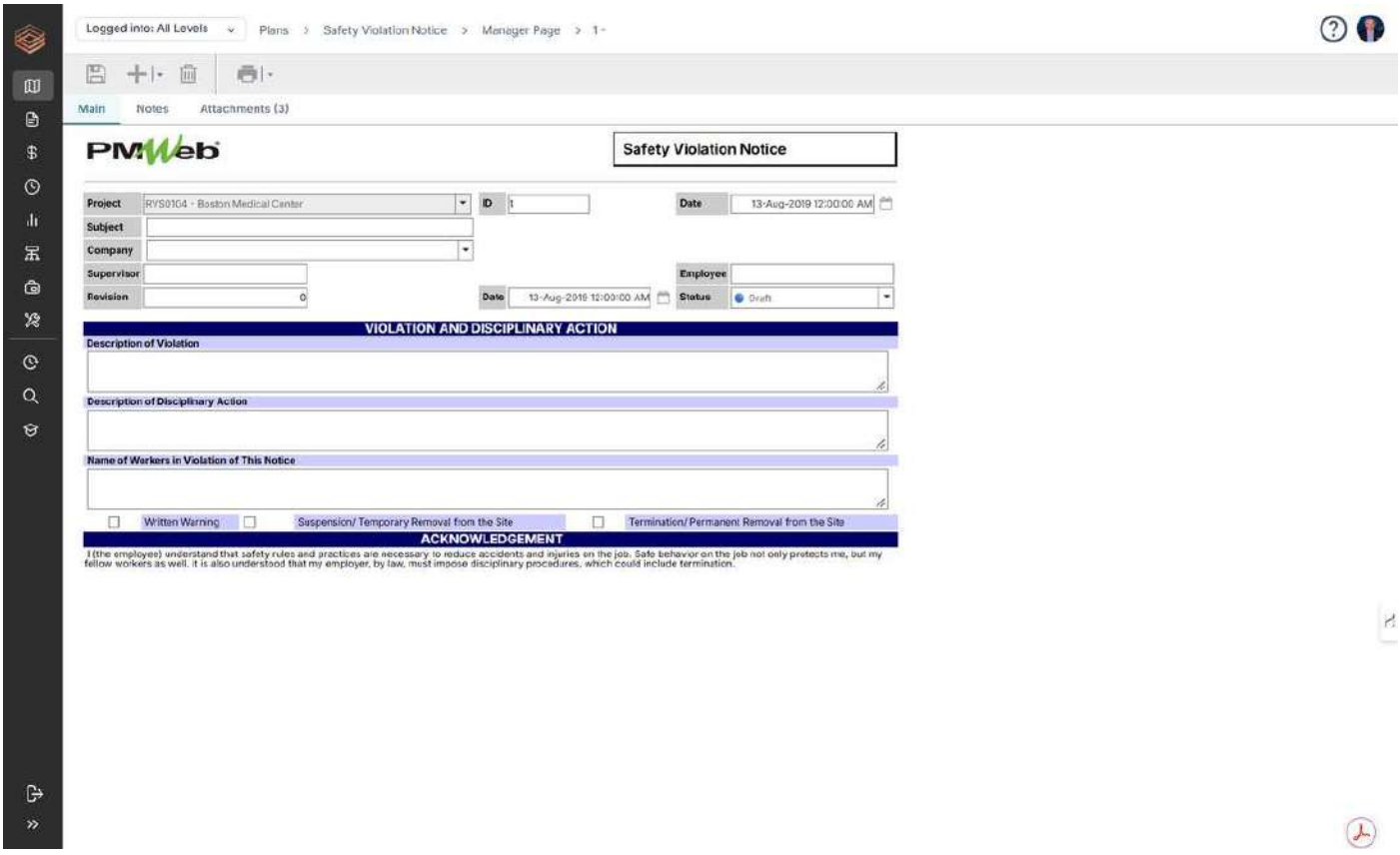
Permits to work

High-risk activities such as hot work, work at height, confined space entry, lifting operations and excavation are controlled by the contractor's permit-to-work system. The PMC's role is typically to verify that permits are in place and that their conditions are being followed. A permit verification checklist in PMWEB, completed from the mobile app, records which permits were checked, by whom and with what findings.

Site inspections, observations and toolbox talks

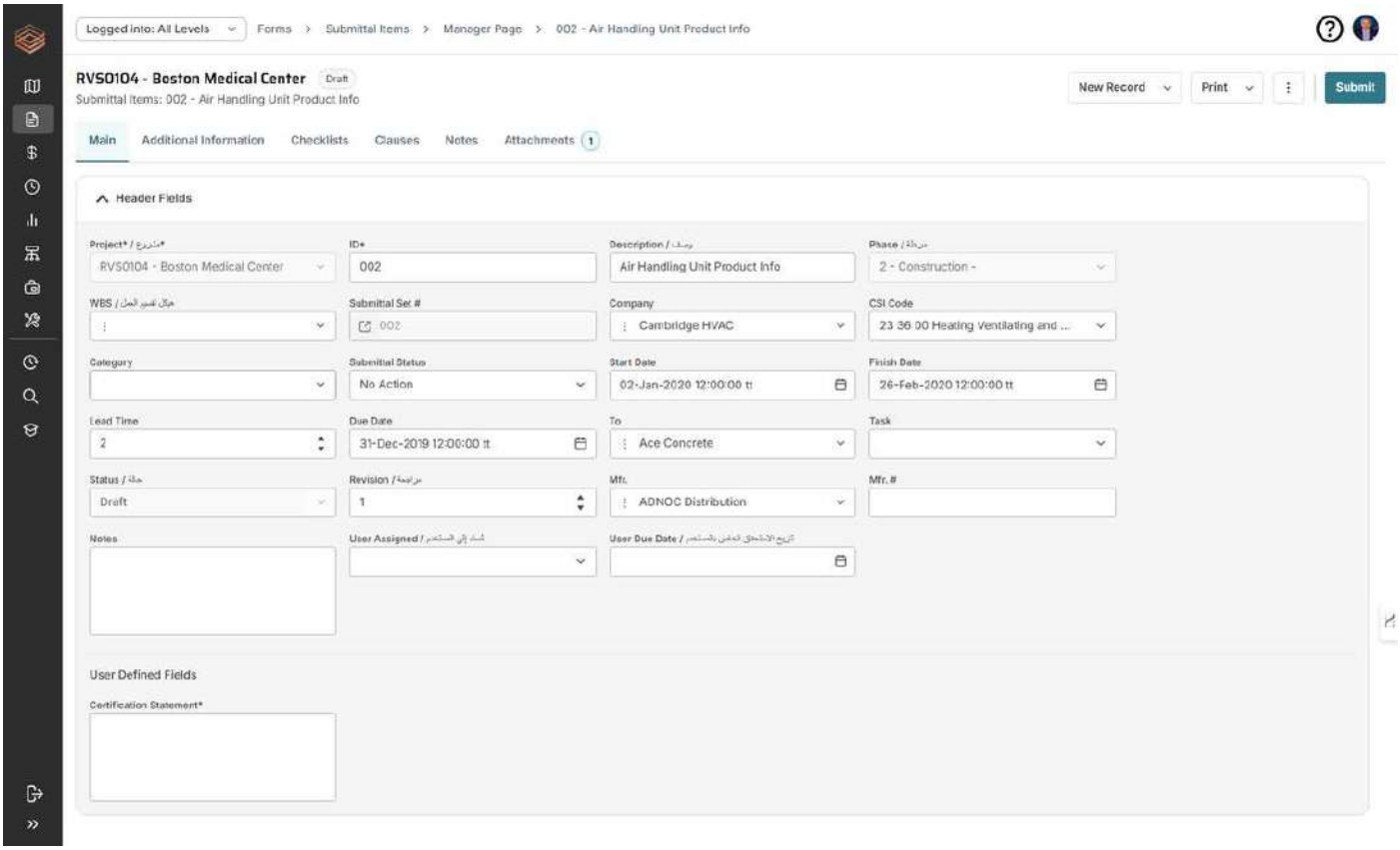
PMWEB safety inspections and observations are completed on site through the mobile app, using checklists configured to the owner's HSE standards and the firm's inspection procedure. Each observation records the location, the hazard category from a value list, the severity, the responsible contractor, photos and a required close-out date. The workflow notifies the contractor, tracks the response and escalates overdue items. Close-out requires evidence, typically a photo and a description of the corrective action, verified by the PMC inspector. Toolbox talks and safety meetings are recorded through meeting minutes or a custom form, capturing topic, attendance and actions.





Incidents, near misses and investigations

Incident reports in PMWEB capture incidents and near misses with date, time, location, type, severity, persons involved as permitted by the owner's privacy rules, immediate actions and photos. The workflow routes the report to the right people based on severity, so a serious incident reaches the owner's senior representatives immediately while a minor near miss follows a standard route. Investigations are recorded with root cause, contributing factors and corrective and preventive actions, each assigned as an action item with an owner and due date, and verified as complete before the incident is closed.

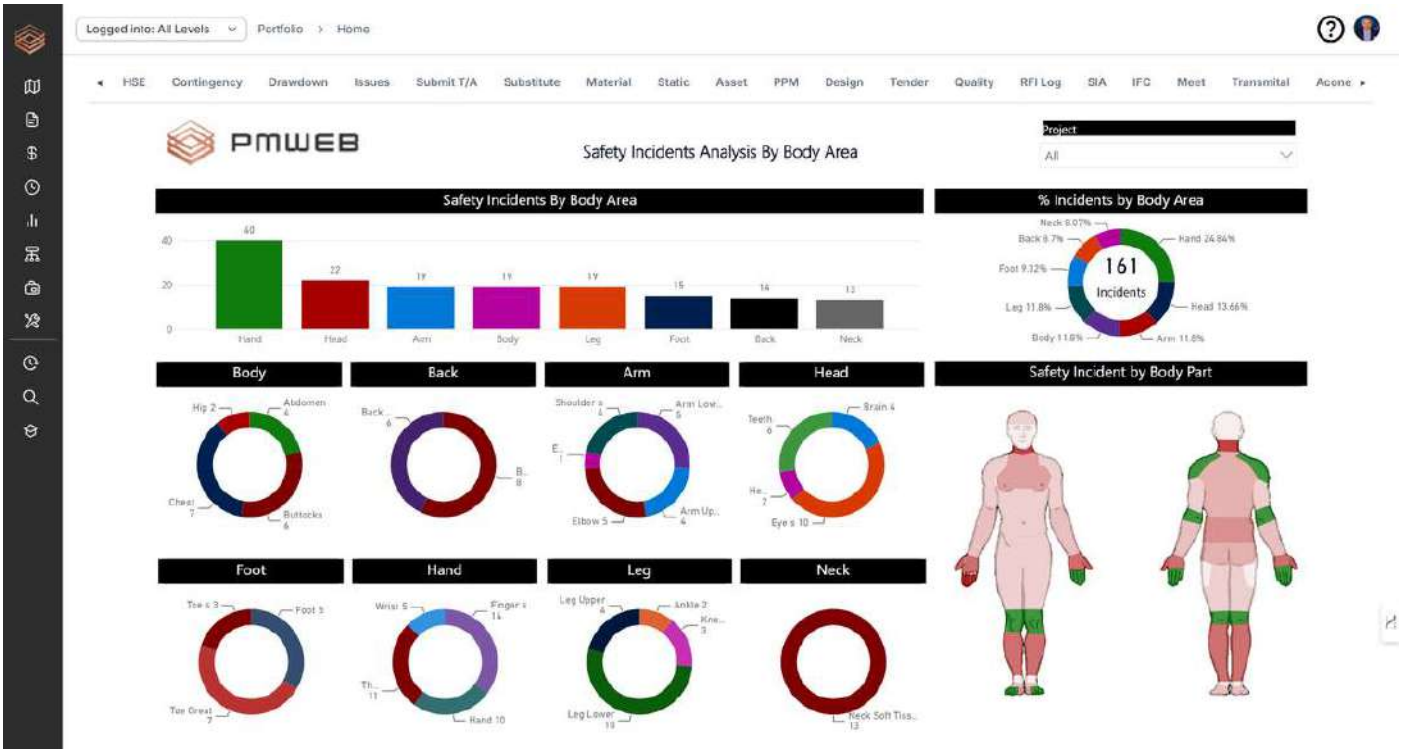


Heat-stress management: a GCC example

GCC summers bring a specific and serious hazard. Outdoor work during the hottest part of the day is restricted in the summer months, and owner HSE standards typically add requirements for shaded rest areas, drinking water, acclimatisation and monitoring of heat conditions. In PMWEB, the PMC can add a heat-stress section to its daily safety inspection checklist, record observations against it and report compliance across all contractors on a programme. The result is a record showing that the controls the owner required were verified, day by day.

Leading and lagging indicators

Because every inspection, observation, toolbox talk and incident is a structured record, PMWEB dashboards, SSRS reports and Power BI integration can report both leading and lagging indicators by project, contractor and period. Leading indicators include inspections completed against plan, observations raised and closed, and average close-out time. Lagging indicators include recordable incidents and lost-time incidents, calculated from incident records and the man-hours captured in daily reports.



CM responsibility	PMWEB capability	Evidence produced
Establish owner safety requirements	Document management and submittals for the owner's HSE standards	Controlled, current HSE requirements issued to contractors
Review contractor HSE plans	Submittals workflow with review comments and approval status	Review history and approved plan revision
Promote prevention through design	Form Builder design safety review log linked to the risk register	Design hazards, responses and residual risks recorded
Verify permits to work	Mobile permit verification checklists	Dated verification records with findings
Monitor site safety	Mobile safety inspections and observations with photos	Inspection history and observation register
Ensure corrective action	Workflow with notification, escalation and evidence-based close-out	Close-out evidence and ageing reports
Investigate incidents	Incident reports, investigation records, action items	Root causes, actions and verification of completion
Report safety performance	Dashboards, SSRS reports and Power BI integration	Leading and lagging indicators by project and contractor

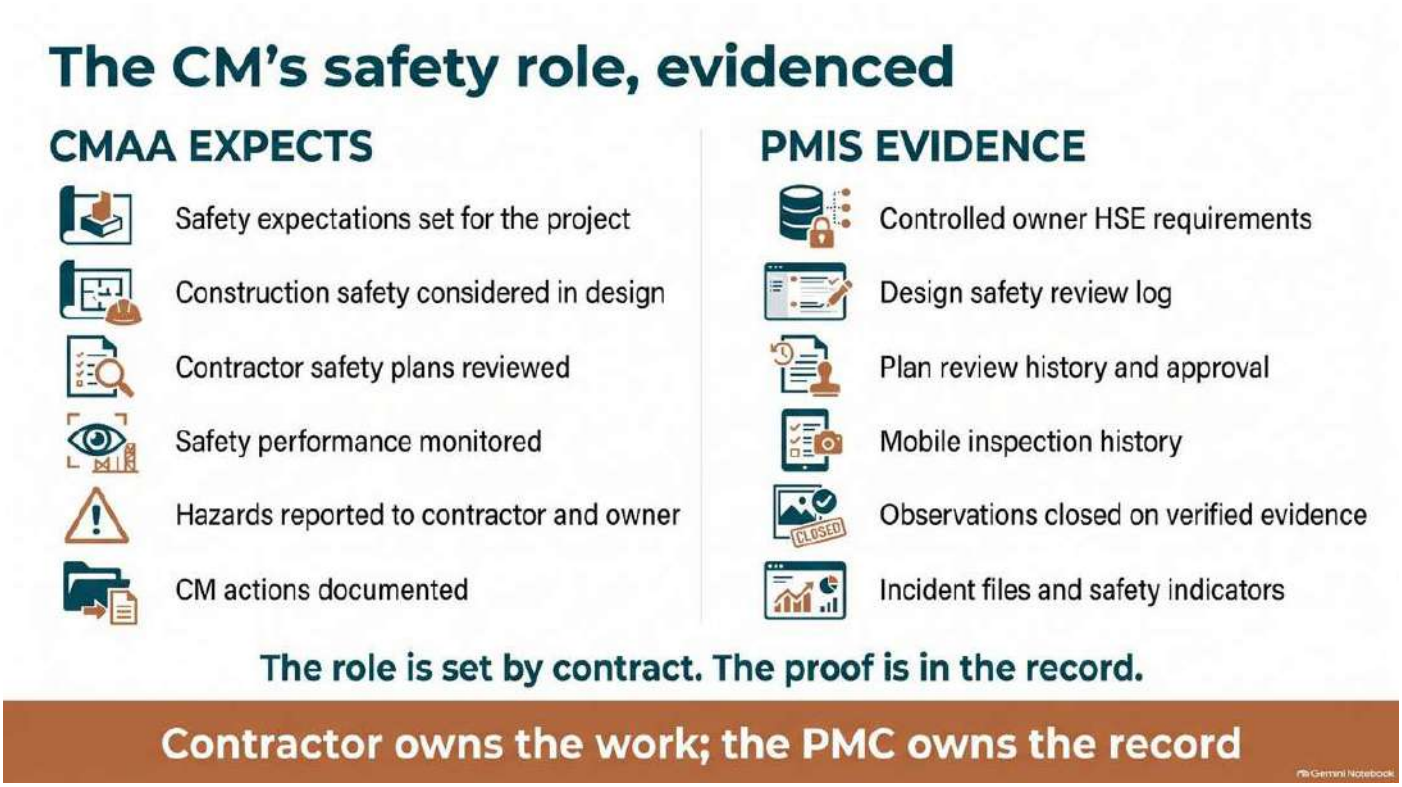


Configuring PMWEB to Your Firm's Procedures

The CMAA Standard stays the reference for the CM's safety role. How each PMC firm performs that role, and what each owner requires, differs from project to project, and PMWEB is configured to those procedures.

What the firm or client decides	How it is configured in PMWEB
Inspection checklists and hazard categories	Checklists and value lists built to the owner's HSE standards and the firm's inspection procedure
Forms, fields and terminology	Inspection, observation, permit verification, incident and toolbox talk forms built in Form Builder with the owner's terms
Inspection frequency	Planned inspection frequencies by activity type and contractor, feeding the completion indicators

What the firm or client decides	How it is configured in PMWEB
Approval and escalation routes	Severity-based routing of incidents and overdue observations to the owner's HSE function and DoA levels
Numbering	Observation, incident and permit verification numbering to the firm's or owner's convention
Report formats	Weekly and monthly safety reports and programme dashboards in the owner's templates
Bilingual outputs	English and Arabic forms and reports where the workforce or the owner requires them
Hosting and integration	In-country hosting where the owner requires it, with man-hours and workforce data exchanged with the owner's ERP where needed



Evidence That the Practice Is Working

The PMC should be able to show, from its own records, that its safety role is being performed as defined. Useful indicators include:

- **Inspection completion:** safety inspections completed against the planned frequency, by project and contractor.
- **Observation close-out time:** average time from an observation being raised to verified close-out.
- **Overdue observations:** the number of open observations beyond their close-out date, by contractor.
- **Near-miss reporting:** the volume and trend of near misses reported, as a sign of a healthy reporting culture.
- **Investigation completion:** incidents with a completed investigation and all corrective actions verified.
- **Heat-stress compliance:** heat-stress checks completed and findings recorded during the summer period.
- **Toolbox talk coverage:** toolbox talks recorded against the planned programme of topics.

Key takeaway

The PMC's safety role is defined by its contract, and it is never the same as the contractor's. But whatever the role, the PMC must be able to show that it planned, observed, escalated and verified, as the CMAA Standard expects. A clear role, executed through structured inspections and evidence-based close-out, protects the workforce, the owner and the PMC itself.

PMWEB turns that role into a daily practice and a durable record, configured to the firm's procedures and the owner's HSE standards. The CMAA Standard as the reference, the firm's procedures as the method, the record as the proof.

Next in the series: *Article 10 — Risk Management*

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About PMWEB

PMWEB is an enterprise-class, web-based capital construction project management platform trusted by organisations worldwide including Harvard University, the United Nations, and Atlanta Airport. Built on Microsoft .NET technology, PMWEB manages the entire project lifecycle within a single integrated platform — from portfolio planning and cost management through document control, procurement, scheduling, asset management, and business intelligence. With 150+ pre-configured SSRS reports, drag-and-drop dashboard design, multi-currency support, and open REST/SOAP API integration, PMWEB delivers enterprise capability with implementation timelines measured in months, not years.

About CMCS

CMCS (Collaboration, Management and Control Solutions) is the regional PMWEB implementation partner for the GCC and MENA regions, awarded PMWEB Partner of the Year 2025. CMCS specialises in digital project management solutions for real estate developers, infrastructure owners, and construction companies across the Middle East and North Africa.

Risk Management — How GCC PMC Firms Digitalise CMAA Risk Management with PMWEB, Turning the Register into a Living Control from Project to Programme

A risk register that is updated once a quarter is a record of what the team used to worry about

Every GCC project has a risk register. Far fewer have risk management. The difference is whether risks are owned, analysed, linked to contingency and schedule, reviewed on a rhythm and acted on, and whether the PMC can prove all of that from the data.

Risk management is the function that ties all the others together. Cost overruns, schedule slippage, quality failures, safety incidents, claims and disputes are almost always risks that were either not identified, not analysed, not allocated clearly or not acted on in time. A PMC that manages risk well protects the owner's budget and programme before the problem becomes an event, a claim or a headline.

In the GCC, risk is shaped by scale and pace. Giga-projects and master-planned developments run many contracts in parallel, often with interfaces between packages that no single contractor owns. Supply chains reach across continents. Owners carry concentrated exposure across a programme of projects, and public-sector owners must show that contingency is controlled under their delegation of authority. In this environment a spreadsheet register reviewed at a quarterly workshop is not enough.

Each PMC firm manages risk in its own way. Some run formal quantitative analysis on every major project; others apply a lighter qualitative approach and escalate only the largest risks. Owners differ too, in their risk appetite, their scoring matrices and their reporting expectations. The CMAA Standard stays the reference: a plan, a process, owners, responses, a link to contingency, and a record that shows risk is being managed rather than merely listed.



What the CMAA Standard Expects

The CMAA Standard expects the construction manager to help the owner manage risk throughout the project life cycle. During pre-design and design, it expects the CM to help establish a risk management approach, to identify and assess risks affecting cost, schedule, quality and safety, and to advise on how risks should be allocated

through the delivery method and contract terms. During procurement, it expects the CM to consider how contract provisions distribute risk between owner and contractor. During construction, it expects the CM to monitor identified risks, identify new ones, recommend responses, and relate risk to the management of contingency, keeping the owner informed so that decisions are made in time.

CMAA phase	What the CM is expected to do
Pre-design	Help the owner establish the risk management approach and identify the early risks to cost, schedule, quality and safety
Design	Continue identifying and assessing risks as the design develops, and advise on how risks should be allocated through the delivery method and contract terms
Procurement	Consider how the contract provisions distribute risk between owner and contractor before award
Construction	Monitor identified risks, identify new ones, recommend responses, relate risk to contingency and keep the owner informed so decisions are made in time

How GCC PMC Firms Typically Do It Today

- **The register is a spreadsheet.** Risks are listed in Excel, copied between versions, and reviewed at workshops, with no reliable history of how scores and responses changed.
- **Risks have no real owners.** Responsibility is assigned to a department or to "the contractor", so actions drift and nobody is accountable.
- **Contingency is not linked to risk.** Contingency is held as a percentage and drawn down through change orders, with no traceable link back to the risks it was meant to cover.
- **Quantitative analysis is a one-off.** A Monte Carlo analysis is run for the business case and never repeated, so the confidence level quoted to the owner is out of date.
- **Programme exposure is invisible.** Each project has its own register in its own format, so the owner cannot see common risks, interface risks or total exposure across the programme.
- **Risks and issues are confused.** Events that have already happened remain in the risk register, while emerging risks are raised only in meetings.

How PMWEB Digitalises It

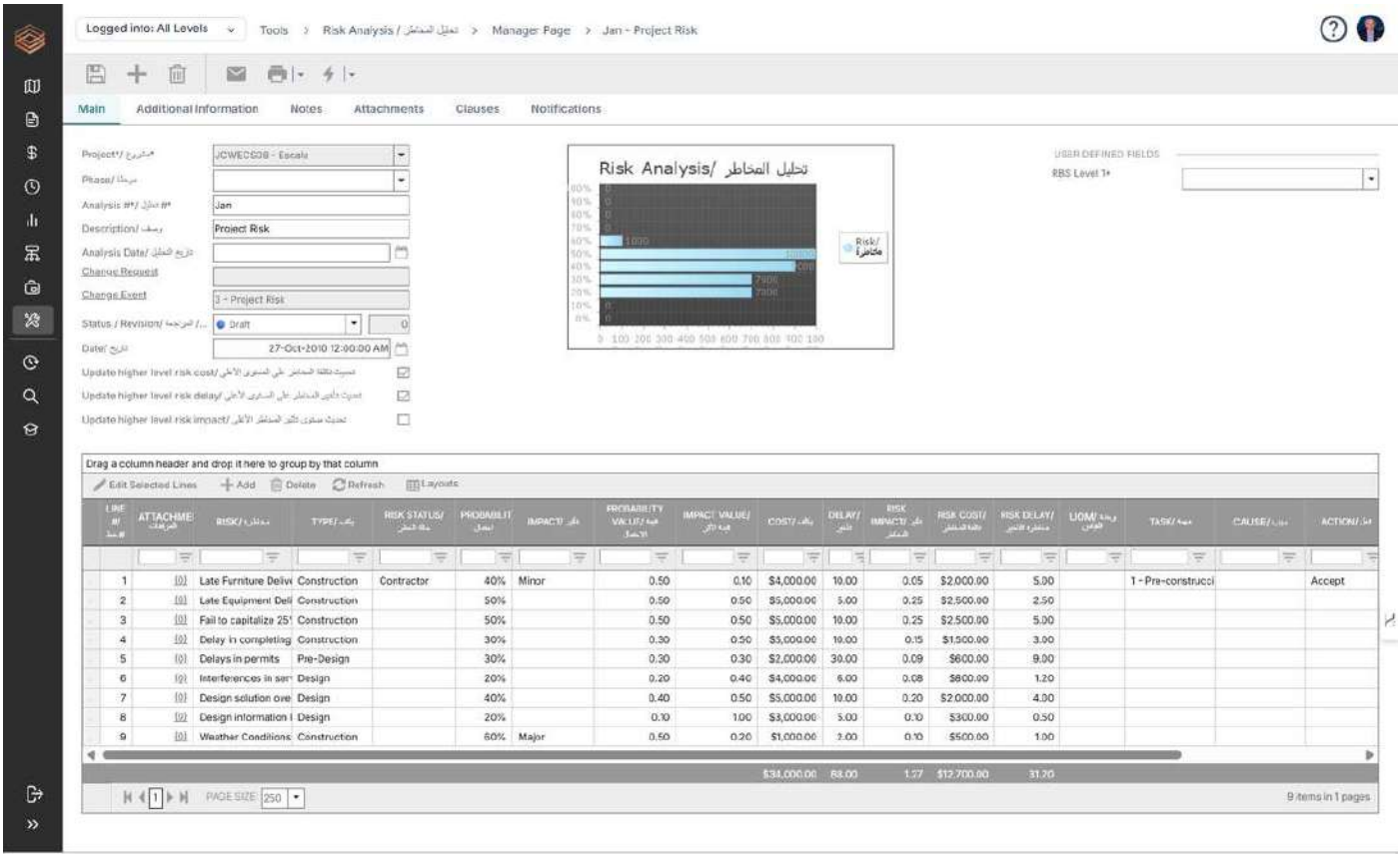
PMWEB does not replace the professional judgement of the risk manager or the specialist tools used for quantitative analysis. It gives the PMC a structured, auditable home for the whole risk process, linked to budget, contingency, schedule, contracts and issues. Each firm configures the register fields, scoring matrices, value lists and workflows to its own procedures and to the owner's risk policy.

Planning and identification

The risk management plan, including the scoring scales, risk categories, roles and review rhythm, is issued as a controlled document in PMWEB document management. The same scales and categories are set up as value lists, so every risk is scored on the same basis. Risks are identified from workshops, design reviews, constructability reviews, site observations and lessons learned from previous projects, and each is recorded in the PMWEB risk register with its cause, event and effect, category, the work breakdown or cost code it affects, the contract it relates to and the risk owner.

Qualitative and quantitative analysis

Each risk is scored for probability and impact on cost, schedule and other dimensions defined by the owner, with the score calculated automatically and plotted on the owner's heat map. Where the plan calls for quantitative analysis, the register holds the ranges needed: minimum, most likely and maximum cost and time impacts. That data can be exported to the firm's quantitative risk tool, and the results, such as confidence levels for cost and completion, are recorded against the project so the owner can see how they change between analyses.

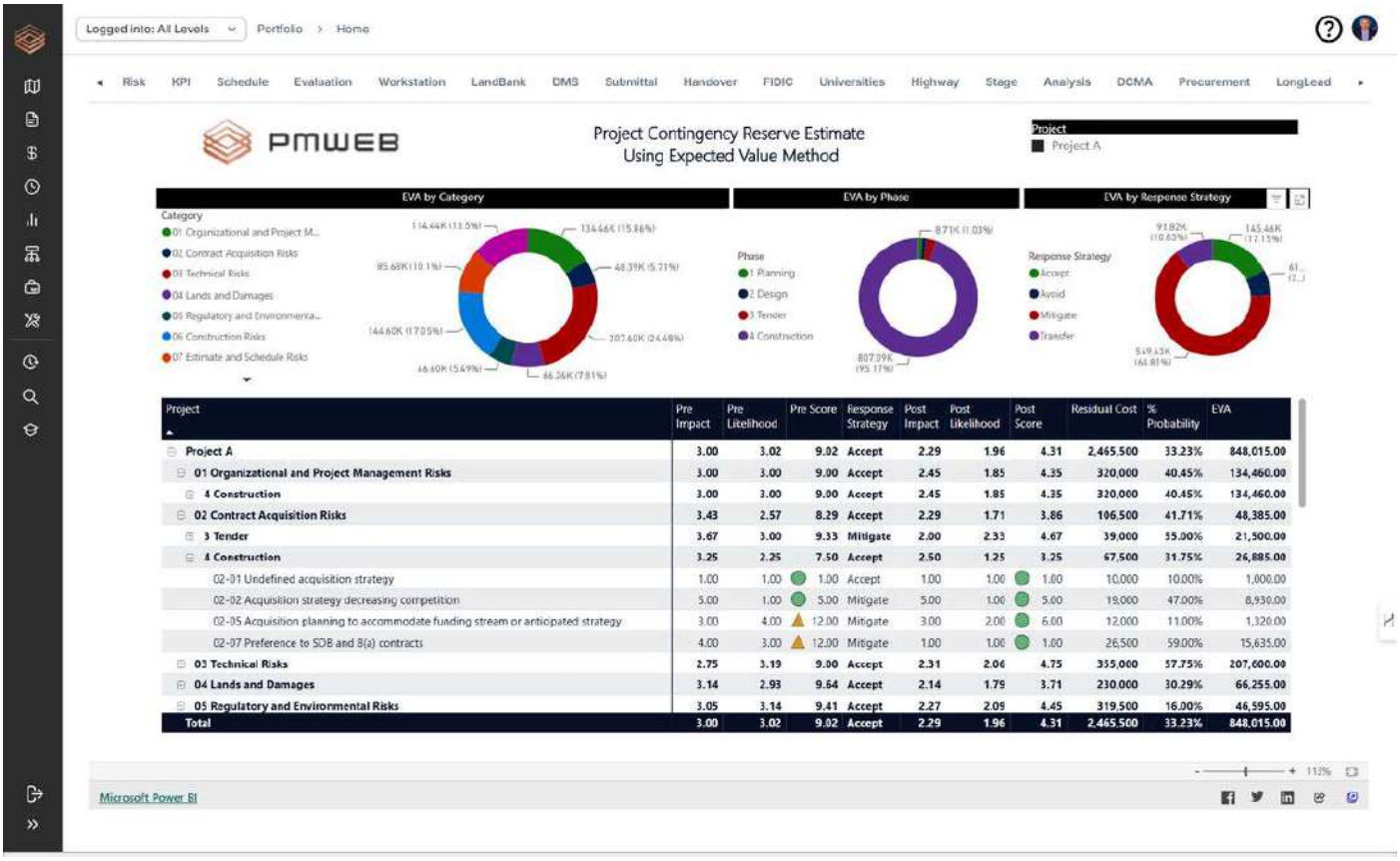


Allocation through delivery method and contract

Risk allocation starts with the choice of delivery method and continues through the conditions of contract. Under a traditional design-bid-build contract the owner usually retains design risk; under design-build and turnkey arrangements more of that risk moves to the contractor, and the owner's amendments to the conditions of contract move the balance further. In PMWEB each risk records the party that carries it under the contract, so the owner can see which risks it retains and which it has transferred, and the PMC can check that contract drafting reflects the intended allocation.

Response planning and contingency

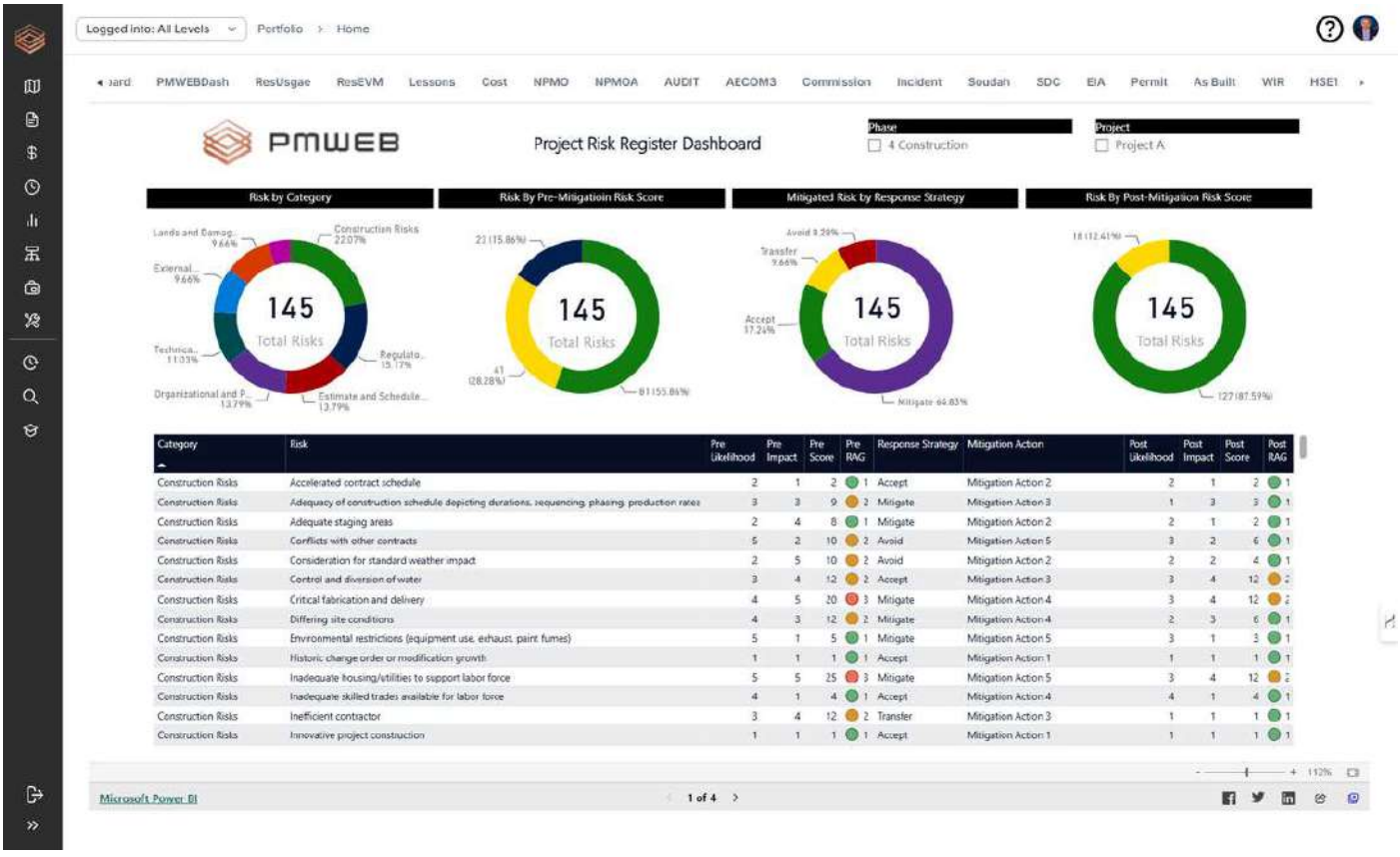
Each risk carries a response strategy, avoid, reduce, transfer or accept, with specific actions recorded as action items with owners and due dates. Residual risk after response is scored separately. The link to cost is where PMWEB adds most value. Contingency is held in the budget module as a defined line, informed by the risk exposure in the register. When contingency is drawn down through a budget transfer or change order, the transaction references the risk it relates to and is routed under the owner's DoA. The PMC can show at any time the remaining contingency, the risks it is intended to cover and the drawdowns made against each.



Project	Pre Impact	Pre Likelihood	Pre Score	Response Strategy	Post Impact	Post Likelihood	Post Score	Residual Cost	% Probability	EVA
Project A	3.00	3.02	9.02	Accept	2.29	1.96	4.31	2,465,500	33.23%	848,015.00
01 Organizational and Project Management Risks	3.00	3.00	9.00	Accept	2.45	1.85	4.35	320,000	40.45%	134,460.00
4 Construction	3.00	3.00	9.00	Accept	2.45	1.85	4.35	320,000	40.45%	134,460.00
02 Contract Acquisition Risks	3.43	2.57	8.29	Accept	2.29	1.71	3.86	106,500	41.71%	48,385.00
3 Tender	3.67	3.00	9.33	Mitigate	2.00	2.33	4.67	39,000	55.00%	21,500.00
4 Construction	3.25	2.25	7.50	Accept	2.50	1.25	3.25	67,500	31.75%	26,885.00
02-01 Undefined acquisition strategy	1.00	1.00	1.00	Accept	1.00	1.00	1.00	10,000	10.00%	1,000.00
02-02 Acquisition strategy decreasing competition	5.00	1.00	5.00	Mitigate	5.00	1.00	5.00	19,000	47.00%	8,930.00
02-05 Acquisition planning to accommodate funding stream or anticipated strategy	3.00	4.00	12.00	Mitigate	3.00	2.00	6.00	12,000	11.00%	1,320.00
02-07 Preference to SDB and 8(a) contracts	4.00	3.00	12.00	Mitigate	1.00	1.00	1.00	26,500	59.00%	15,635.00
03 Technical Risks	2.75	3.19	9.00	Accept	2.31	2.06	4.75	355,000	57.75%	207,600.00
04 Lands and Damages	3.14	2.93	9.64	Accept	2.14	1.79	3.71	230,000	30.29%	66,255.00
05 Regulatory and Environmental Risks	3.05	3.14	9.41	Accept	2.27	2.09	4.45	319,500	16.00%	46,595.00
Total	3.00	3.02	9.02	Accept	2.29	1.96	4.31	2,465,500	33.23%	848,015.00

Monitoring, review and escalation

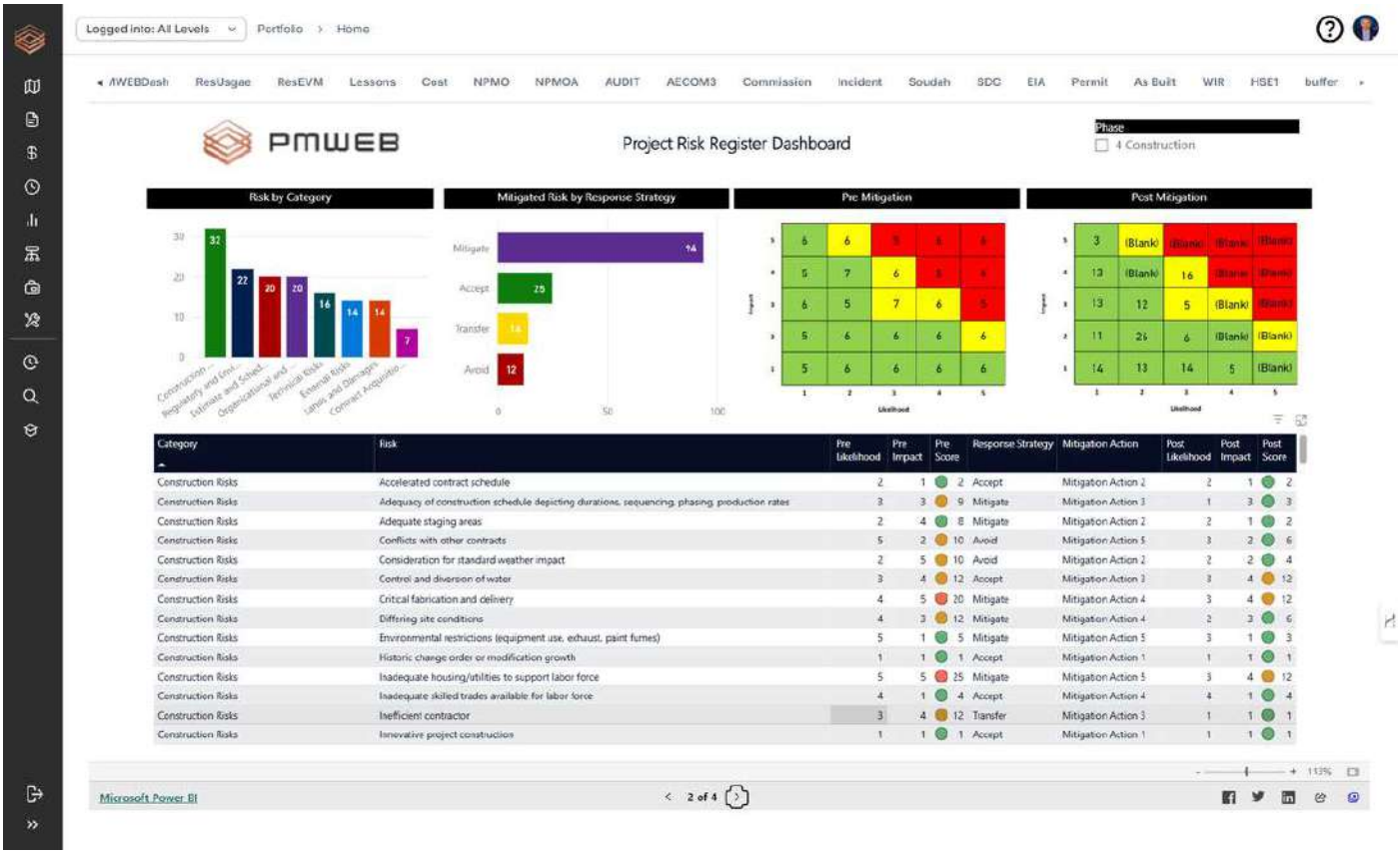
Review dates are set per risk, and the workflow engine reminds owners and escalates overdue reviews. Each change to scores or responses is kept in the audit trail, so the history of a risk can be seen. When a risk materialises, it is converted into an issue, with the link preserved, and any cost or time consequence flows into potential change orders, claims or schedule updates. Dashboards show top risks, trends in exposure, overdue actions and contingency against remaining risk.



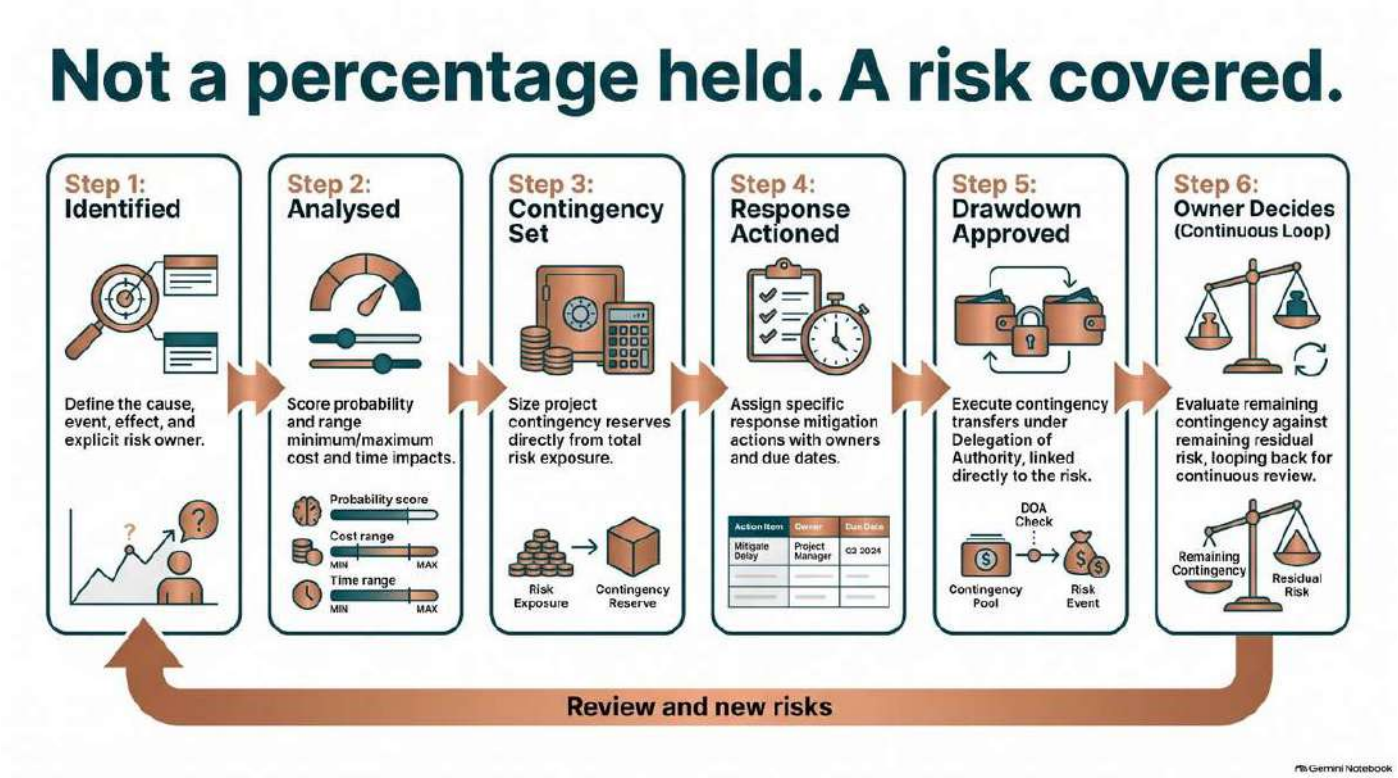
Category	Risk	Pre Likelihood	Pre Impact	Pre Score	Pre RAG	Response Strategy	Mitigation Action	Post Likelihood	Post Impact	Post Score	Post RAG
Construction Risks	Accelerated contract schedule	2	1	2	1	Accept	Mitigation Action 2	2	1	2	1
Construction Risks	Adequacy of construction schedule depicting durations, sequencing, phasing, production rates	3	3	9	2	Mitigate	Mitigation Action 3	1	3	3	1
Construction Risks	Adequate staging areas	2	4	8	1	Mitigate	Mitigation Action 2	2	1	2	1
Construction Risks	Conflicts with other contracts	5	2	10	2	Avoid	Mitigation Action 5	3	2	6	1
Construction Risks	Consideration for standard weather impact	2	5	10	2	Avoid	Mitigation Action 2	2	2	4	1
Construction Risks	Control and diversion of water	3	4	12	2	Accept	Mitigation Action 3	3	4	12	2
Construction Risks	Critical fabrication and delivery	4	5	20	3	Mitigate	Mitigation Action 4	3	4	12	2
Construction Risks	Differing site conditions	4	3	12	2	Mitigate	Mitigation Action 4	2	3	6	1
Construction Risks	Environmental restrictions (equipment use, exhaust, paint fumes)	5	1	5	1	Mitigate	Mitigation Action 5	3	1	3	1
Construction Risks	Historic change order or modification growth	1	1	1	1	Accept	Mitigation Action 1	1	1	1	1
Construction Risks	Inadequate housing/utilities to support labor force	5	5	25	3	Mitigate	Mitigation Action 5	3	4	12	2
Construction Risks	Inadequate skilled trades available for labor force	4	1	4	1	Accept	Mitigation Action 4	4	1	4	1
Construction Risks	Inefficient contractor	3	4	12	2	Transfer	Mitigation Action 3	1	1	1	1
Construction Risks	Innovative project construction	1	1	1	1	Accept	Mitigation Action 1	1	1	1	1

Project and programme registers

Because every project uses the same register structure, the owner's portfolio and programme structure in PMWEB allows risks to be rolled up. Programme-level risks, such as interface risks between packages, shared supply-chain exposure or common regulatory risk, are held at programme level and linked to the project risks that contribute to them. The owner sees one consistent picture across the programme.



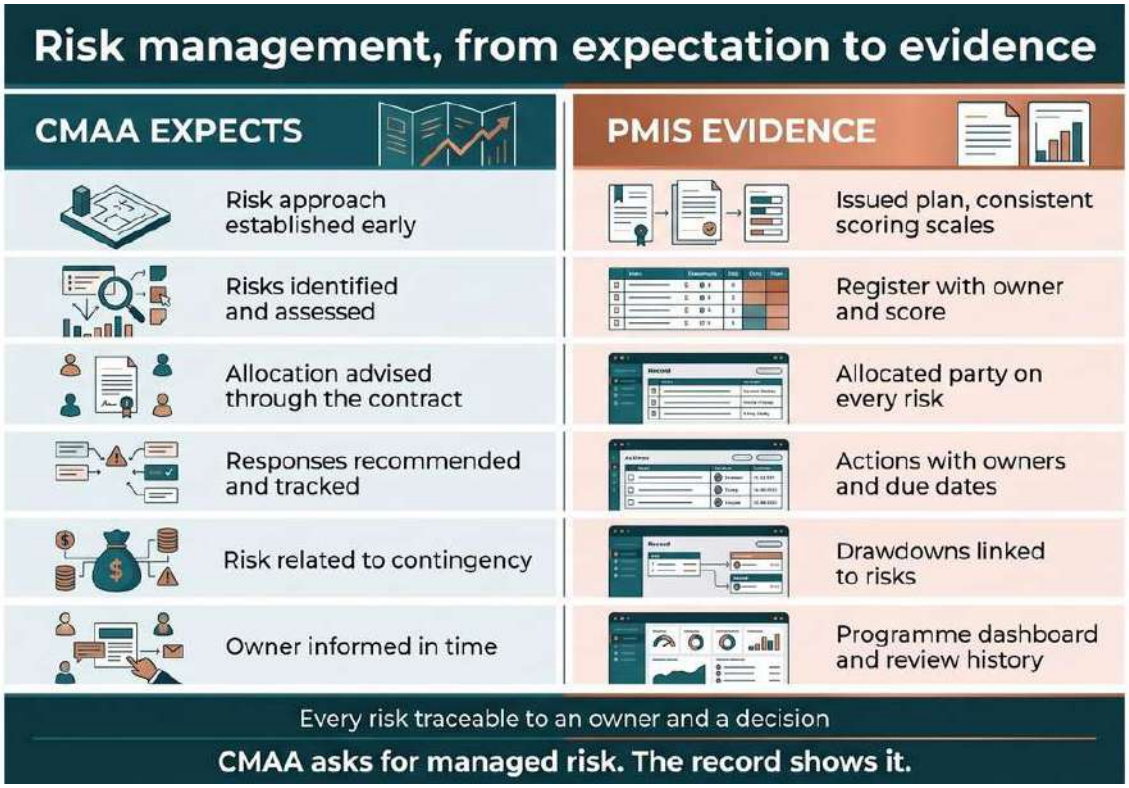
CM responsibility	PMWEB capability	Evidence produced
Establish the risk management approach	Controlled risk management plan and configured value lists	Issued plan and consistent scoring across projects
Identify risks	Risk register linked to cost codes, contracts, lessons learned and design reviews	Complete register with cause, event, effect and owner
Analyse risks	Automated qualitative scoring and quantitative ranges	Heat maps and recorded analysis results over time
Advise on allocation	Allocated party recorded per risk against the contract	Clear view of retained and transferred risk
Plan and track responses	Response strategies and action items with owners and dates	Action history and residual risk scores
Manage contingency	Budget contingency lines, budget transfers and change orders linked to risks under the DoA	Traceable drawdowns and remaining contingency
Monitor and report	Review workflows, escalation, audit trail, dashboards and Power BI integration	Risk trends and review compliance by project and programme



Configuring PMWEB to Your Firm's Procedures

The CMAA Standard sets out what the CM should do about risk; the owner's policy, appetite and approval hierarchy, and the firm's own method, decide how. PMWEB is configured to apply them.

What the firm or client decides	How it is configured in PMWEB
Scoring matrices, categories and appetite	Value lists, scoring formulas and heat-map thresholds set to the owner's risk policy
Forms, fields and terminology	Risk register fields and forms built in Form Builder with the owner's or firm's terms for cause, event, effect and response
Allocation values	Allocated-party values reflecting the delivery method and the owner's conditions of contract
Approval routes and DoA thresholds	Contingency drawdown and risk acceptance routed under the owner's delegation-of-authority (DoA) matrix
Numbering and structure	Risk numbering and project, programme and portfolio levels set to the owner's structure for giga-projects, master developers and ministries
Review rhythm and report formats	Review dates, escalation rules and dashboards matched to the owner's steering committees and report templates
Bilingual outputs	English and Arabic risk reports where the owner requires them
Hosting, access and integration	Role-based access to commercially sensitive risks, in-country hosting where the owner requires it, and contingency data aligned with the owner's ERP



Evidence That the Practice Is Working

The PMC should be able to show that risk is being managed, not merely listed. Useful indicators include:

- **Ownership coverage:** the proportion of active risks with a named individual owner and a current response.
- **Review compliance:** risks reviewed within their scheduled review period, by project and programme.
- **Action completion:** risk response actions completed on time, and the ageing of overdue actions.
- **Exposure trend:** total residual risk exposure over time, by project and at programme level.
- **Contingency traceability:** the share of contingency drawdowns linked to an identified risk.
- **Risk-to-issue conversion:** issues that arose from a previously identified risk compared with those that were not foreseen.
- **Analysis currency:** the date of the latest quantitative analysis compared with the review rhythm set in the risk management plan.

Key takeaway

A risk register is only as useful as the decisions it drives. When risks are owned, scored consistently, allocated clearly through the contract, linked to contingency and reviewed on a rhythm, the PMC gives the owner early warning rather than late explanation, at project and programme level alike, as the CMAA Standard expects.

PMWEB turns the register into a living control, configured to the owner's risk policy, conditions of contract and DoA, and to the firm's own method. The CMAA Standard as the reference, the firm's procedures as the method, the record as the proof.

Next in the series: *Article 11 — Sustainability and Resiliency*

About the Author

Bassam Samman, PMP, PSP, EVP, GPM is the Chairman and Chief Executive Officer of CMCS FZ-LLC, the PMWEB Authorised Implementation Partner for the Gulf Cooperation Council and broader Middle East

and North Africa region. CMCS holds the PMWEB Partner of the Year 2025 designation and serves capital project owners, contractors and consultants across the UAE, Saudi Arabia, Qatar, Kuwait and India.

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Sustainability and Resiliency — How GCC PMC Firms Use PMWEB to Digitalise the CM's Sustainability Practice, from Owner Goals to Measured Performance

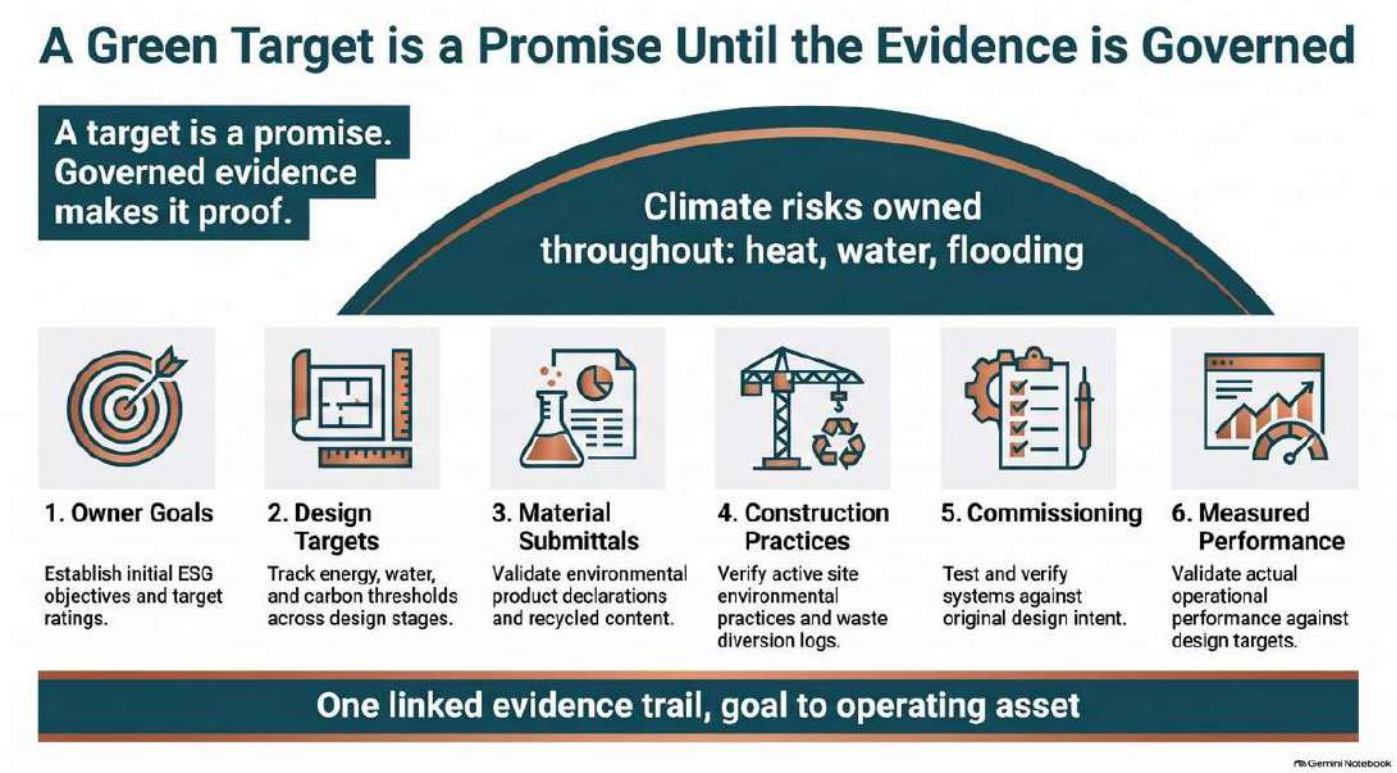
From owner goals and rating targets to commissioning, measured performance and climate-ready handover

Sustainability is no longer a design aspiration the PMC inherits and forgets. It is a set of commitments the owner will report on for decades, and the PMC is the party best placed to prove, credit by credit and record by record, that those commitments were actually delivered.

Across the GCC, owners now carry sustainability commitments well beyond the building. A Dubai master developer reports ESG performance to investors. An Abu Dhabi infrastructure owner must achieve the green building rating it specifies before the asset can be accepted. National net-zero agendas have turned a design team concern into a board-level reporting obligation.

The PMC sits in the middle. The designer sets targets, the contractor builds, the commissioning authority tests and the facility manager inherits. Somebody has to hold the thread from the owner's first goal to the measured performance of the operating asset, and in most GCC projects that is the PMC.

The difficulty is that sustainability evidence is scattered by nature: energy models with the designer, product declarations inside submittals, waste tickets on site, commissioning results in spreadsheets. Resiliency is often treated as a design question rather than a risk to manage. This article looks at what the CMAA Standard expects and how PMC firms use PMWEB to digitalise, govern and evidence it.



What the CMAA Standard Expects

The CMAA Standard treats sustainability as a responsibility the CM carries across the life cycle, not a single design review. In broad terms, it expects the CM to understand the owner's sustainability goals, translate them into measurable requirements, and keep them visible through design, procurement, construction and handover. Resiliency, the asset's ability to withstand and recover from climate and operational stress, stays on the CM's agenda throughout.

Pre-design and design

The CM is expected to help the owner define objectives and the target rating under the green building rating system the owner specifies, build sustainability requirements into the brief, and track energy, water and material targets as the design develops.

Procurement and construction

The CM is expected to make sure sustainability requirements are written into procurement documents and contracts, verify that submittals and installed work reflect them, confirm that waste and site practices are managed as specified, and collect credit documentation as work proceeds rather than reconstructing it at the end.

Post-construction

The CM is expected to coordinate commissioning, support measurement and verification, and hand over complete operating information so the facility manager knows what each system is meant to achieve.

CMAA phase	What the CM is expected to do
Pre-design	Help the owner define sustainability and resiliency goals, the target rating and the commissioning approach.
Design	Track energy, water and carbon targets at each design stage and raise deviations for resolution.
Procurement	Embed sustainability requirements in tender documents and contracts so they are enforceable.
Construction	Verify materials and installed work, manage waste and site practice, and collect credit evidence as work proceeds.
Post-construction	Coordinate commissioning, support measurement and verification, and hand over targets with the asset information.

Each PMC firm executes these expectations in its own way. Some run a dedicated sustainability team; others embed a lead within design management and quality. Some clients want the PMC to manage the rating submission; others want verification only. The CMAA Standard stays the reference; the PMWEB configuration follows the firm's procedures and the client's scope.

How GCC PMC Firms Typically Do It Today

The same pain points appear on project after project:

- **Credit tracking in a spreadsheet.** A consultant's credit tracker that nobody else updates, with evidence chased at submission time from people who have left.
- **Sustainability data buried in attachments.** Product declarations and recycled content letters arrive as PDFs that nobody can report on without opening each one.
- **Waste figures reconstructed at the end.** Diversion tickets kept in a site cabinet and assembled months later, with gaps that cannot be closed.
- **Commissioning treated as a test day.** Enhanced commissioning compressed into a pre-handover rush, with issues tracked in a spreadsheet and closed by email.
- **No link from targets to measured performance.** The energy model says one thing, the building does another, and no record explains the difference.
- **Resiliency left to the design.** Heat, water scarcity and flash-flood exposure discussed in workshops but never entered in the risk register.

How PMWEB Digitalises It

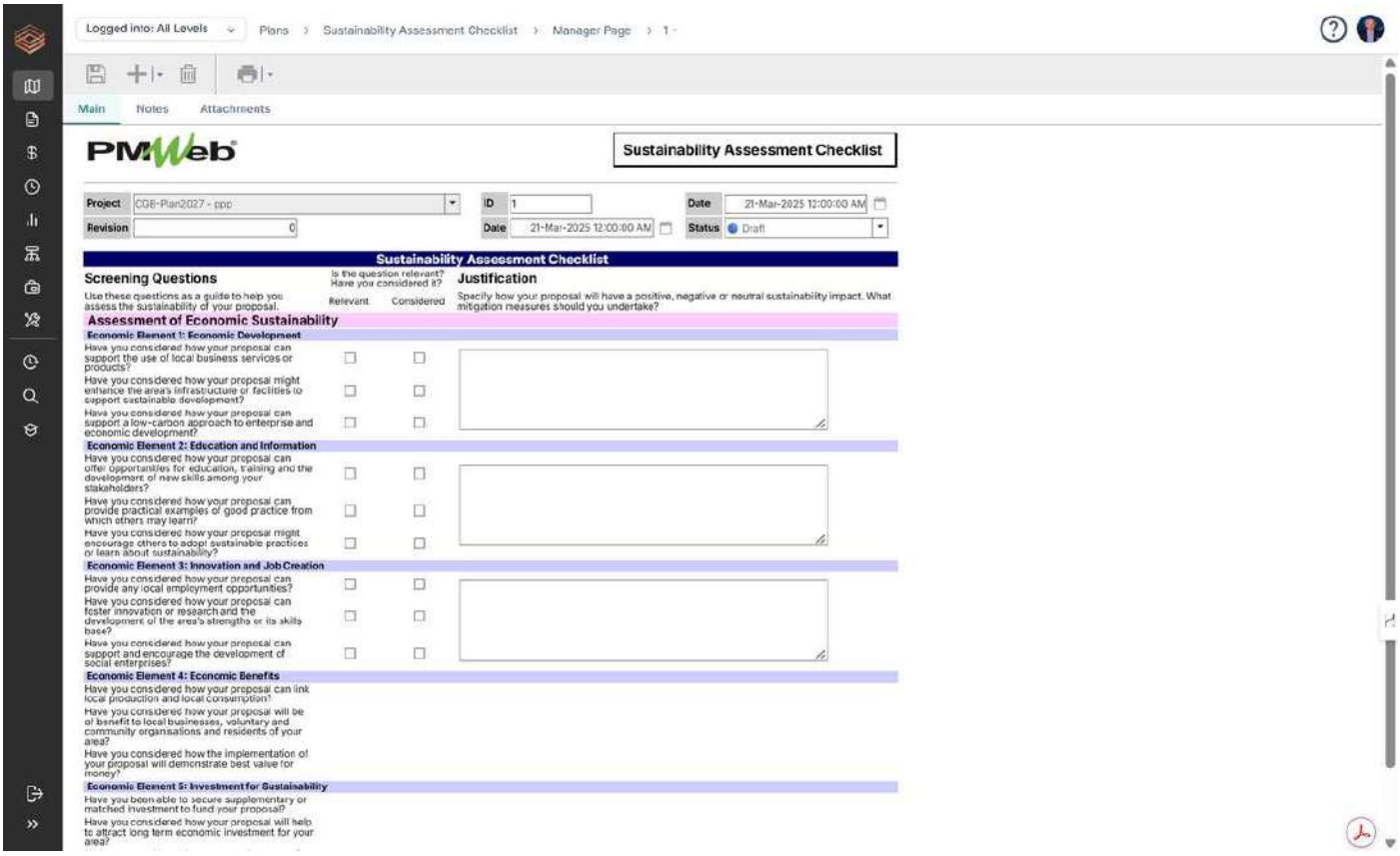
PMWEB does not replace the energy modeller, the sustainability consultant or the commissioning authority. It turns their outputs into structured records with owners, workflows, approvals and links, so sustainability becomes a process the PMC can manage and prove.

Owner goals, rating targets and design-phase tracking

At project set-up, the PMC records the owner's goals and target rating in a sustainability requirements register built in Form Builder. Each target, whether an energy threshold, a water reduction, an embodied carbon

aspiration or a specific credit, has a responsible party, an evidence due phase and a status. Value lists keep categories consistent, so a portfolio owner can compare projects.

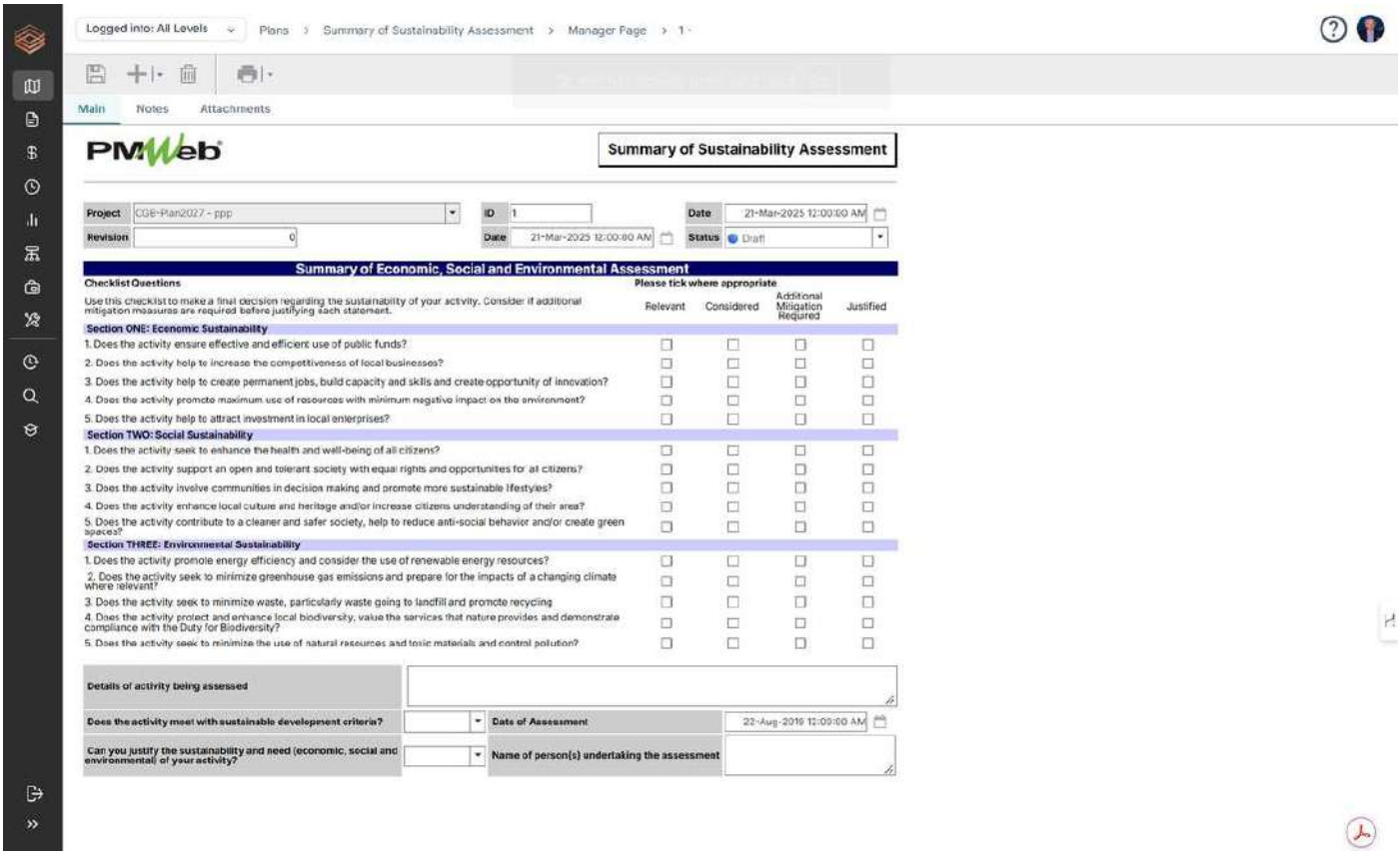
Design stage reviews include sustainability checklist items. Where the design drifts from a target, the reviewer raises a linked action item, and the workflow engine routes it to the designer with a due date and escalation.



Material selection and submittals with sustainability data

The biggest structural change is to capture sustainability data as fields on the submittal, not only as attachments: recycled content, regional origin, environmental product declaration reference, low-emitting compliance, water efficiency. The reviewer confirms the values, and the submittal cannot be approved until the sustainability section is complete where it applies.

The PMC can then report across all approved submittals for a given credit without opening a single PDF. Substitution requests carry the same fields, so the sustainability impact is assessed before a change is accepted.

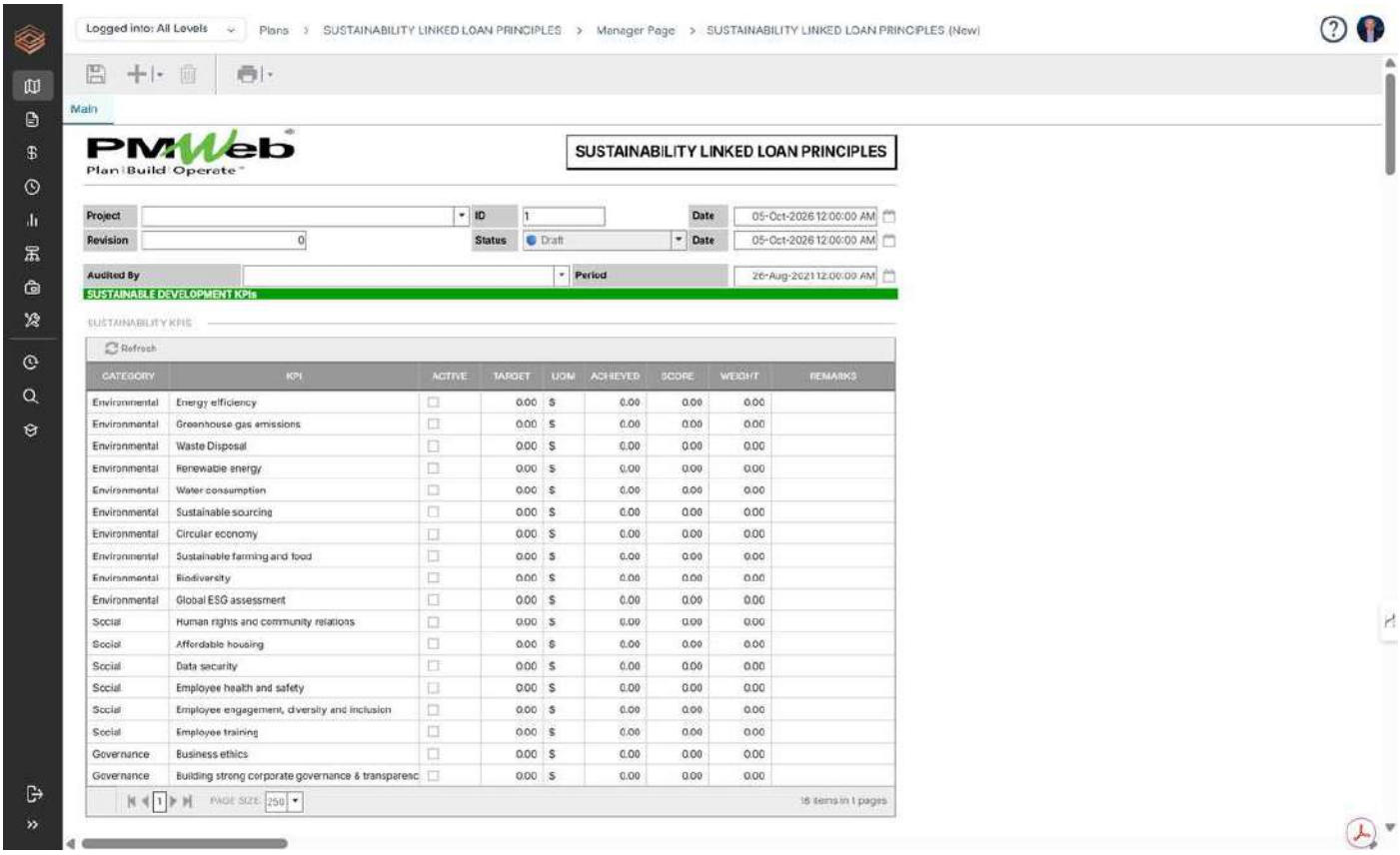


Construction waste and site practices

Waste management moves from a site cabinet to a daily record. Waste tickets are logged in a custom waste log or daily reports with stream, quantity, destination and diversion status, receipts attached. Site environmental practices are covered by inspection checklists, with shortfalls raised as non-conformance reports.

Credit documentation tracking

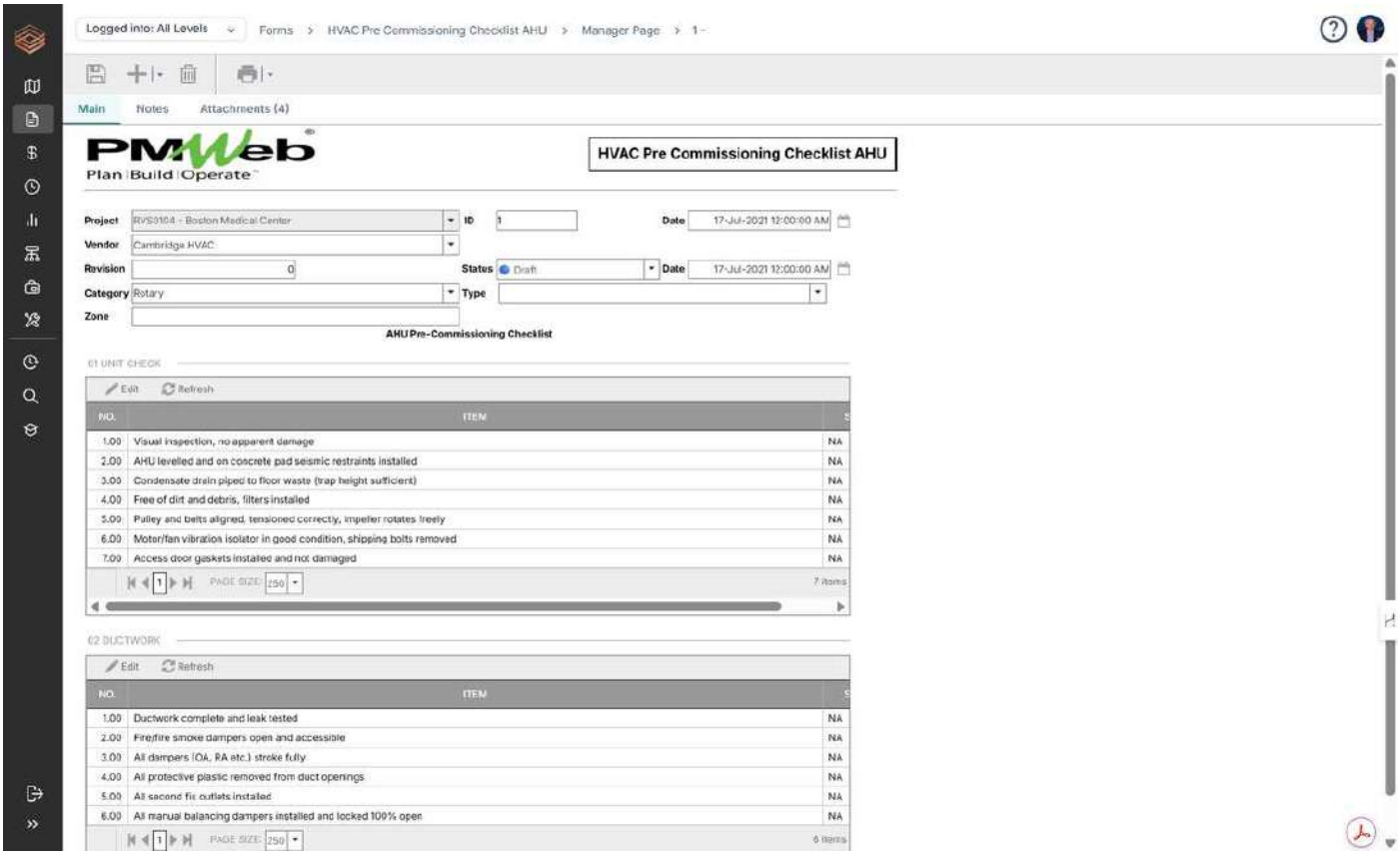
Every rating-system credit becomes a record linked to its evidence: the submittals, inspections, waste logs, commissioning records and design documents that support it. When the time comes to prepare the design-stage or construction-stage submission, the PMC is assembling a package from records already reviewed and approved rather than searching for them.



CM responsibility	PMWEB capability	Evidence produced
Define owner sustainability goals and target rating	Project profile and custom requirements register in Form Builder	Approved goals and targets with owner sign-off and date
Track design against energy, water and carbon targets	Design review checklists, action items and workflow escalation	Stage-by-stage status of each target with comments and responses
Verify sustainable materials	Submittals with structured sustainability fields and substitution requests	Reportable material data per credit, linked to approved submittals
Manage construction waste	Custom waste log, daily reports and inspection checklists	Cumulative waste and diversion records with supporting receipts
Assemble rating-system documentation	Credit records linked to submittals, inspections and documents	Credit-by-credit evidence package with audit trail
Coordinate enhanced commissioning	Commissioning checklists, issues log and punch lists	Test results, open and closed issues, sign-offs by system
Support measurement and verification	Custom M and V forms, asset register and dashboards	Measured against modelled performance with investigation records
Manage climate and resiliency risk	Risk register with climate categories and mitigation actions	Owned risks, mitigations and review history

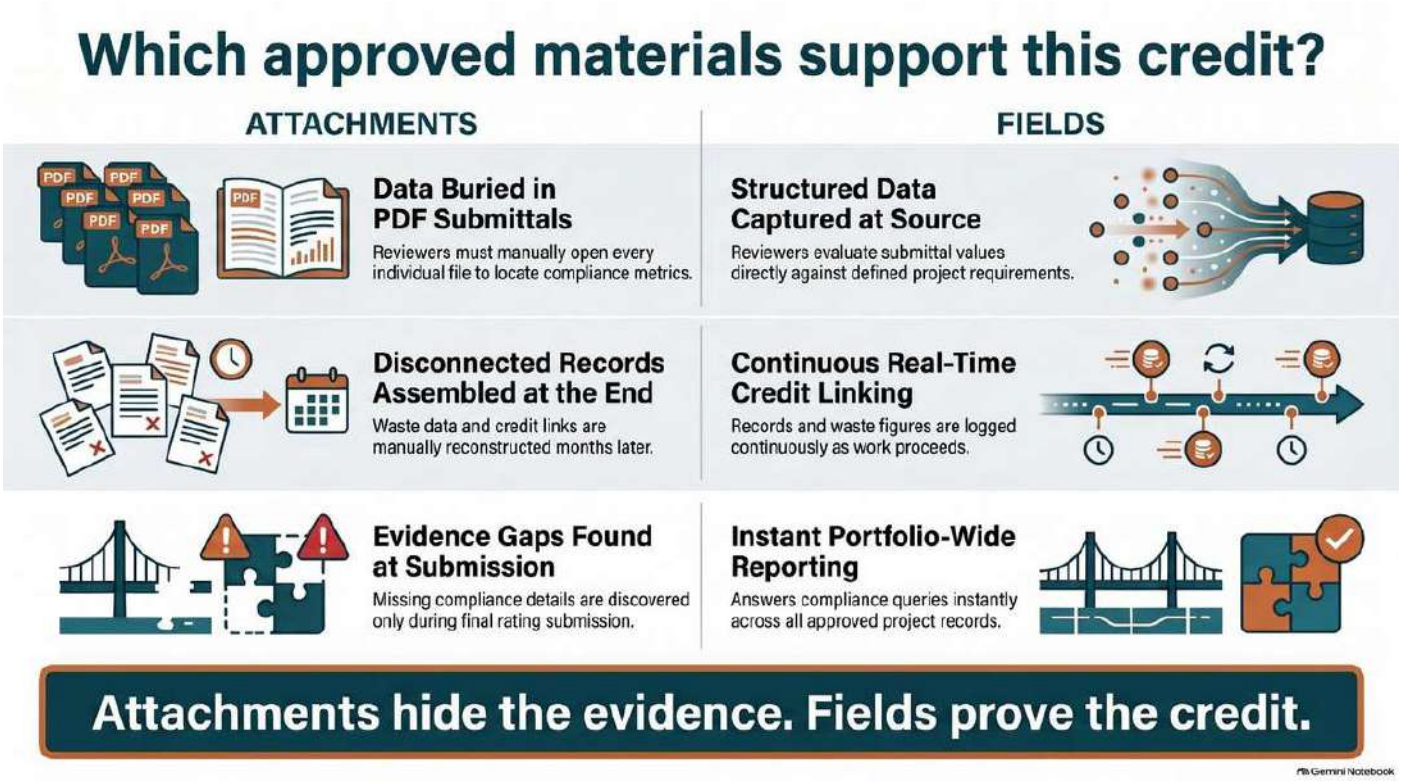
Enhanced commissioning

Enhanced commissioning starts in design, with the commissioning authority's review of the owner's project requirements and basis of design recorded as review comments and action items. During construction, commissioning checklists are configured by system type, and each failed item becomes an issue with an owner and due date. Seasonal and peak-load testing, which matters in a cooling-dominated climate, is scheduled and tracked rather than forgotten after handover.



Measurement and verification and handover to operations

Measurement and verification compares actual performance with modelled targets. A configured form records the metering period, measured and target values and any variance explanation, with an investigation workflow where variance exceeds the owner's tolerance. The asset register and warranties are handed over with the targets attached, so the facility manager knows what each system is supposed to achieve.



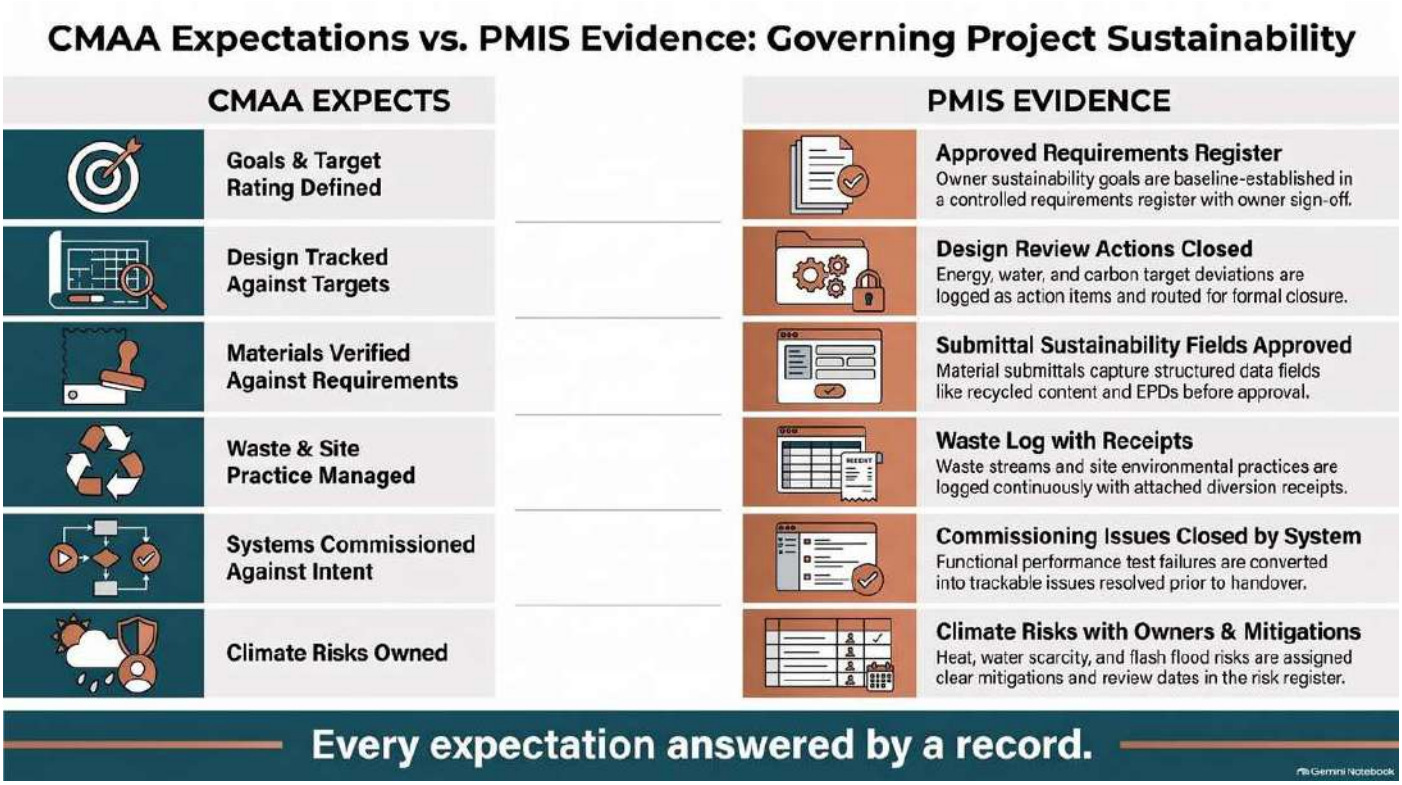
Climate and resiliency risk

Resiliency in the GCC is concrete. Extreme heat affects labour, worker welfare, curing, storage and cooling performance. Water scarcity shapes irrigation and cooling strategy. Flash flooding tests drainage, basements and access routes. The PMC configures climate and resiliency categories in the risk register so these risks have owners, mitigations and review dates, and links design decisions to the risks they address.

Configuring PMWEB to Your Firm's Procedures

The CMAA Standard sets the expectation; each PMC firm and each client decides how it is executed. PMWEB is configured to those decisions rather than imposing its own.

What the firm or client decides	How it is configured in PMWEB
Which green building rating system and target level apply	Requirements register and credit records structured by the categories of the rating system the owner specifies
What sustainability data each submittal must carry	Form Builder fields, value lists and mandatory rules on submittal and substitution forms
Who approves targets, deviations and credit packages	Workflow routes and approval thresholds mapped to the owner's delegation-of-authority (DoA) matrix
How waste and site environmental practice are recorded	Custom waste log, daily report fields and inspection checklists aligned to the owner's HSE standards
How progress is reported to the owner's leadership	Dashboards and report formats matching the owner's ESG reporting template, with the firm's numbering conventions
Which language the owner requires	Bilingual English and Arabic labels, forms and reports where the owner requires
Where the data must reside and how it reaches operations	In-country hosting where the owner requires, and asset register data structured for the owner's FM or ERP system



Evidence That the Practice Is Working

A PMC can tell whether its sustainability process is genuinely working as the CMAA Standard intends by watching indicators such as these:

- **Credit evidence completeness:** the share of targeted credits with all required evidence linked and approved, reported by stage.
- **Submittal sustainability data capture:** the proportion of relevant submittals where sustainability fields are completed at approval rather than chased later.
- **Waste record currency:** the time between waste leaving site and its entry in the waste log with supporting receipts.

- **Commissioning issue closure:** the age profile of open commissioning issues by system, and the number reopened after closure.
- **Target variance investigation:** the proportion of measured performance variances that have a documented investigation and outcome.
- **Resiliency risk coverage:** the number of climate and resiliency risks with named owners, mitigations and a current review date.
- **Handover completeness:** the share of assets handed to operations with their performance targets and warranties attached.

Key takeaway

Sustainability commitments in the GCC are now reported at board level and to investors. The PMC that can prove delivery, credit by credit and system by system, is protecting its client's reputation as well as the building's performance.

PMWEB lets each PMC firm run sustainability its own way while meeting the CMAA expectation: goals defined, targets tracked, evidence captured as structured data, commissioning governed, performance verified and climate risks owned. The rating system, approval routes and reports follow the owner's choices; the evidence trail stays the same.

Next in the series: *Article 12 — Programme Management: The PMC as the Owner's PMO*

About the Author

Bassam Samman, PMP, PSP, EVP, GPM is the Chairman and Chief Executive Officer of CMCS FZ-LLC, the PMWEB Authorised Implementation Partner for the Gulf Cooperation Council and broader Middle East and North Africa region. CMCS holds the PMWEB Partner of the Year 2025 designation and serves capital project owners, contractors and consultants across the UAE, Saudi Arabia, Qatar, Kuwait and India.

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Programme Management: The PMC as the Owner's PMO — How GCC PMC Firms Use PMWEB to Digitalise Programme Governance Across Every Project

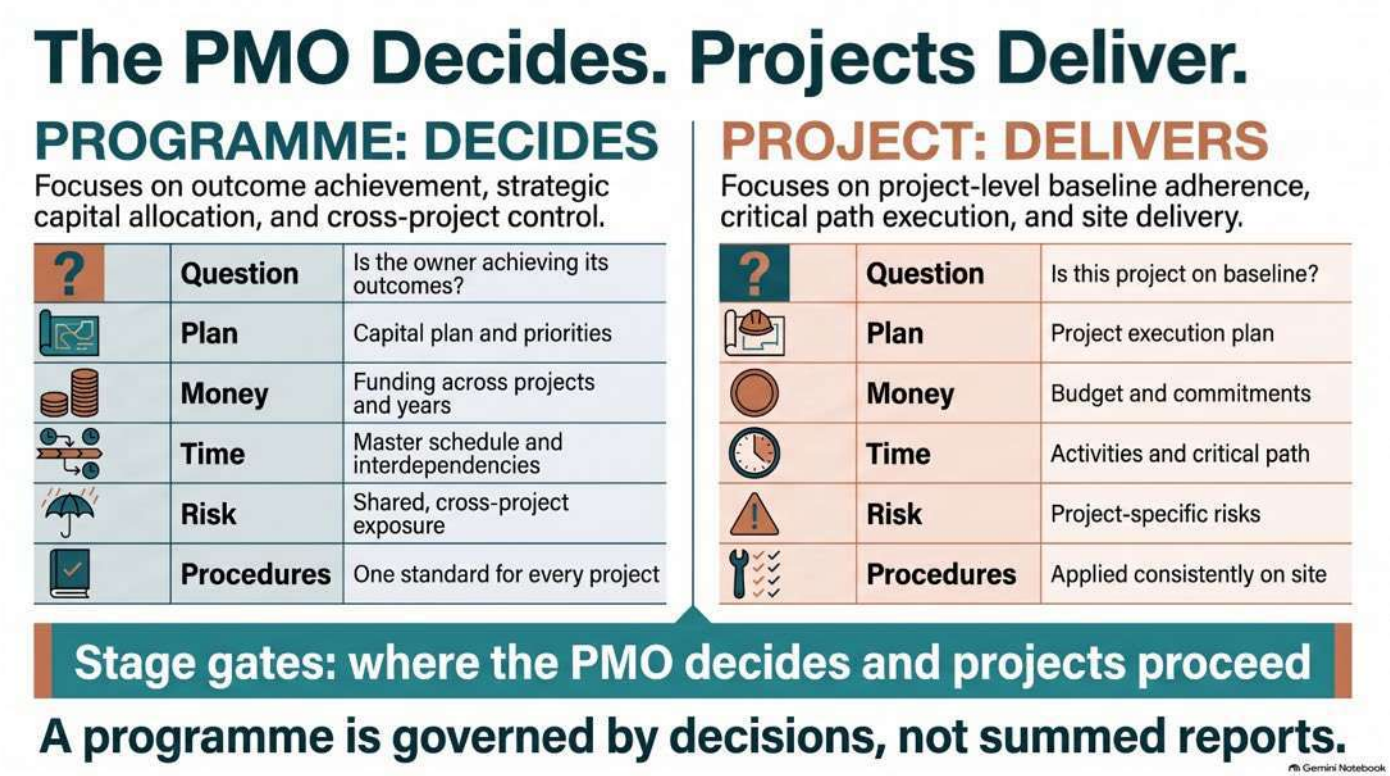
Stage gates, capital planning, master schedules and consolidated reporting, executed in one governed system

When a GCC owner appoints a PMC to act as its PMO, the question changes from "is this project on track?" to "is this programme delivering what the owner set out to achieve?" Answering it needs one set of rules, one set of data and one version of the truth across every project.

Many of the largest PMC appointments in the GCC are no longer for a single project. A PIF-backed giga-project appoints a PMC to run the delivery office across dozens of packages. A Kuwaiti ministry wants one to manage its schools programme. An Abu Dhabi infrastructure owner wants every road and utility project reported on one screen.

In each case the PMC is doing a different job. Programme management is about benefits, priorities, funding, interdependencies and governance: which projects proceed, in what order, with what money, under what rules. Project management then delivers each approved project within that framework.

The problem is that many PMC firms run a programme with project tools. Each project keeps its own spreadsheet, reporting format and interpretation of the procedures. The PMO spends its week reconciling data rather than analysing it, and leadership receives a consolidated report that is out of date on the day it is issued.



What the CMAA Standard Expects

The CMAA Standard recognises that CM services can be delivered at programme level, managing a group of related projects for the owner. In general terms, it expects the programme manager to define objectives and priorities with the owner, establish consistent procedures and controls, maintain the programme budget and master schedule, coordinate resources and interfaces, manage programme risk, and report status consistently.

Programme initiation and planning

The programme manager is expected to understand the owner's strategic objectives and its funding and organisational constraints, leading to a programme management plan, a procedures manual, a budget and funding plan, and a master schedule showing interdependencies.

Programme execution and control

The programme manager is expected to apply the same procedures, controls and reporting across all projects, make or recommend decisions at defined gates, reallocate resources and funds within the owner's authority, and manage shared risks such as common contractors, utility connections or funding timing centrally.

Programme closeout and benefits

As projects complete, the programme manager is expected to make sure they are closed consistently, lessons learned are captured and applied to later projects, and the programme's intended outcomes are tracked beyond individual handovers.

At programme level the CMAA phases still apply, but they run in parallel across many projects at once. The PMO's job is to govern each phase the same way on every project.

CMAA phase	What the CM is expected to do
Pre-design	Set programme objectives and priorities with the owner, prepare the capital and funding plan, and approve projects into the programme through a gate decision.
Design	Apply consistent design review, estimating and schedule procedures across projects, and decide at defined gates whether each project proceeds.
Procurement	Coordinate packaging and procurement timing across the programme under the owner's procurement rules, avoiding overloaded contractors and clashing tenders.
Construction	Run the same change, payment, quality, safety and risk procedures on every project, manage interdependencies through the master schedule and report consistently.
Post-construction	Close projects consistently, capture lessons learned and track the programme's intended outcomes beyond individual handovers.

Every PMC firm has its own PMO methodology, and every owner its own governance culture. One owner wants gate recommendations; another delegates certain decisions to the PMC. One PMC uses a short gate sequence; another a longer one. The CMAA Standard stays the reference. PMWEB is configured to the firm's methodology and the owner's governance, then applied identically across every project.

How GCC PMC Firms Typically Do It Today

The pain points of running a PMO without a single system are familiar:

- **Reporting by collection.** Project managers submit reports in their own formats, and the PMO spends days reconciling them into a deck leadership questions immediately.
- **Procedures that drift.** Each team interprets the procedures manual differently, so change approvals, payment certification and RFI turnaround vary by project.
- **Capital plan disconnected from delivery.** Funding allocations live in finance spreadsheets and commitments in project cost reports; nobody sees funding exposure in real time.
- **Master schedule as a drawing.** The master programme schedule is a summary bar chart updated by hand, with no live link to the project schedules beneath it.
- **Stage gates by email.** Gate submissions are emailed packs; the decision, conditions and approvers are recorded in minutes, if at all.
- **Programme risk invisible.** Risks that span projects, such as a shared utility connection or a contractor overloaded across several packages, sit in no single register.

How PMWEB Digitalises It

PMWEB is built around a portfolio and programme structure, so the PMO is not an overlay on top of project tools. Programmes, projects and packages sit in one hierarchy, with the same modules, forms, value lists and workflows available at every level.

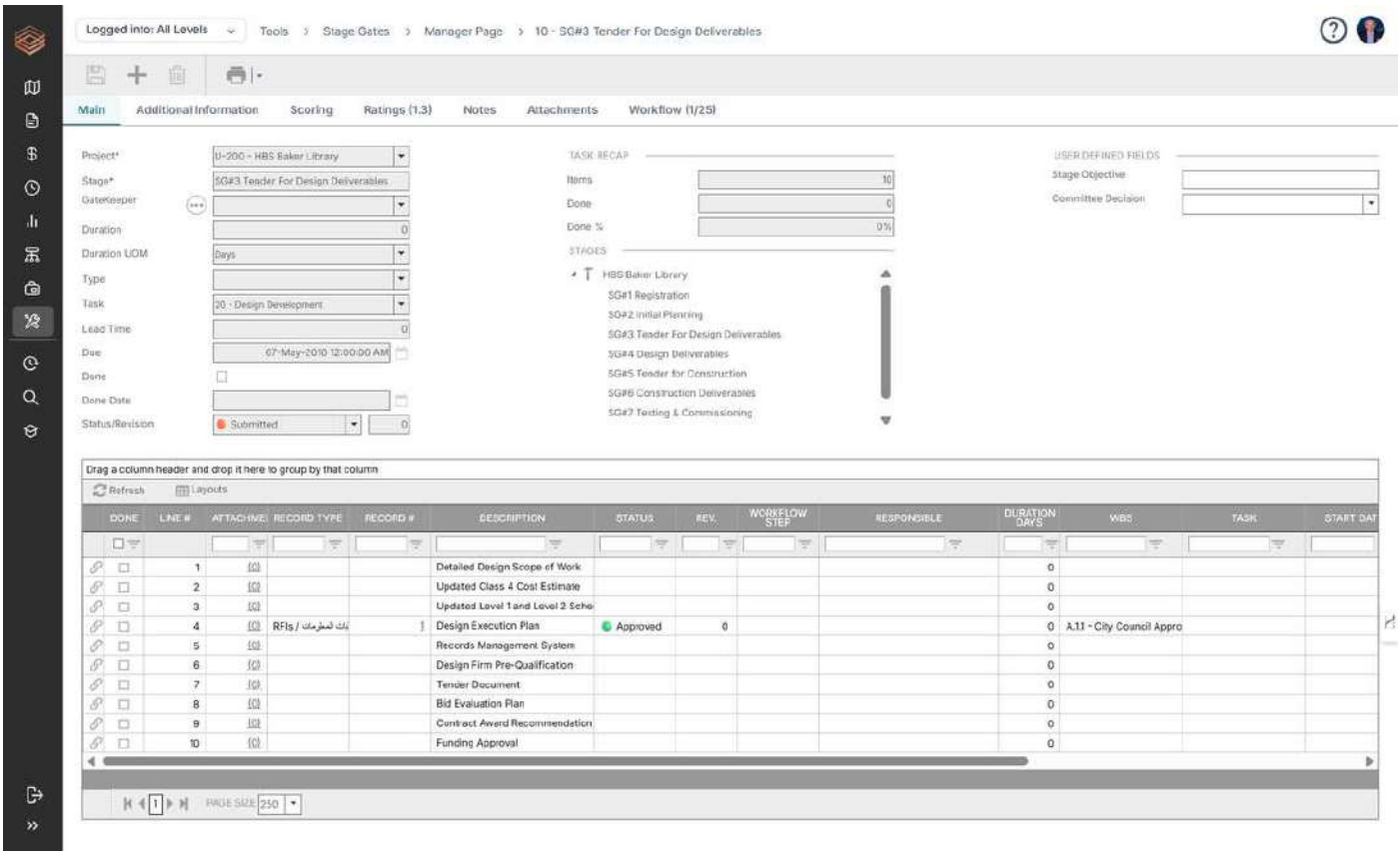
PMO set-up and governance

The PMC configures the portfolio and programme structure to match the owner's organisation, by region, asset class, funding source or phase. The procedures manual becomes standard workflows, forms and value lists applied from a programme template. The DoA matrix is configured in the workflow engine with role-, value- and type-based routing, so a change order, budget transfer or payment certificate follows the same approval path on every project, with delegation and escalation keeping decisions moving.

Where procedures differ legitimately, for example a design-build project alongside a traditional one, the variation is configured deliberately rather than improvised by the project team.

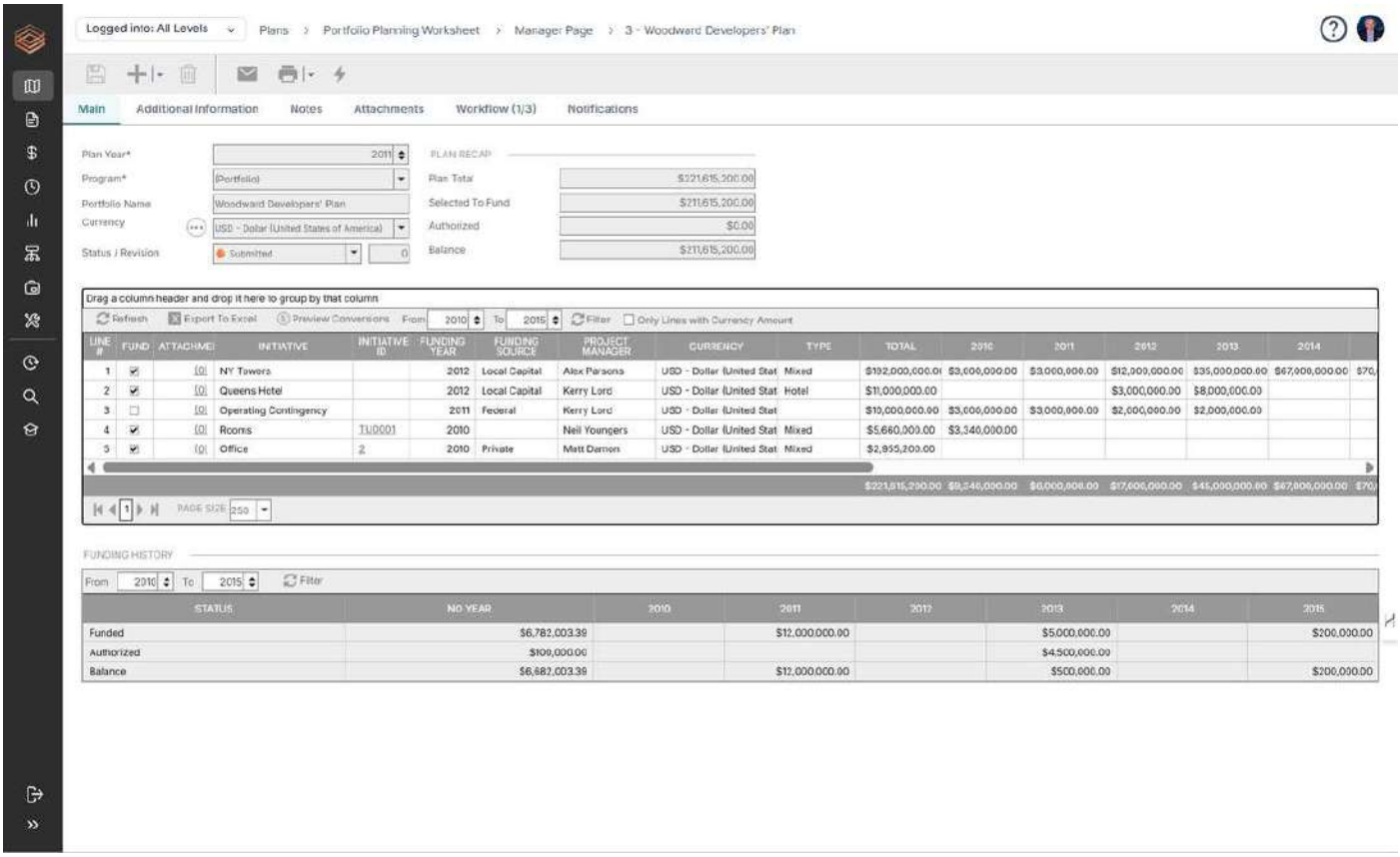
Stage gates

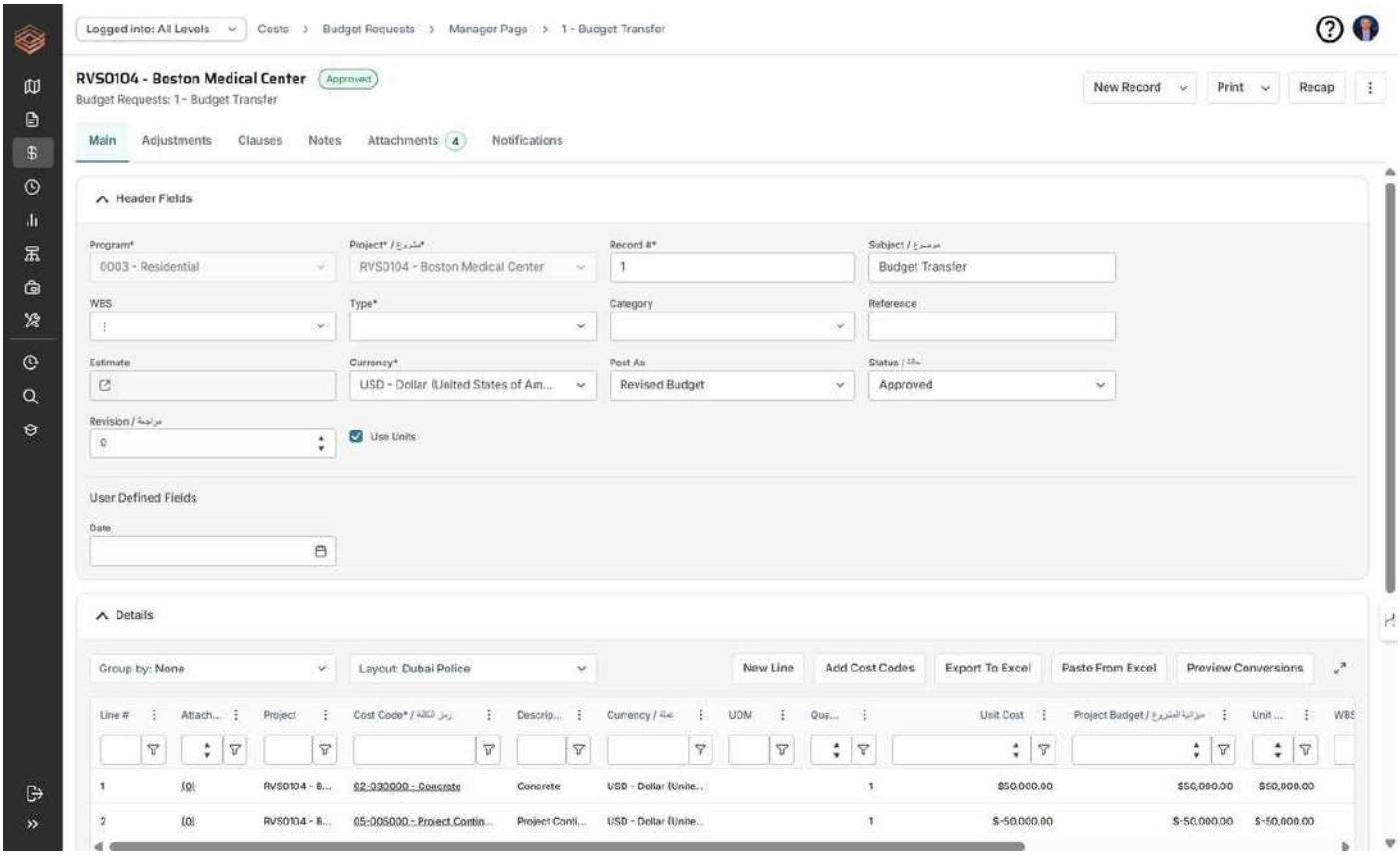
Each project's life cycle is configured as a series of gates. A gate review form collects the business case, estimate, schedule, risk assessment and procurement strategy as linked records. The workflow routes it to the reviewers, captures the decision (proceed, proceed with conditions, hold or stop) and records conditions as action items with owners and due dates. A project cannot move to the next phase until the gate is passed: a hard control, not a soft reminder.



Capital planning, prioritisation and portfolio budgets

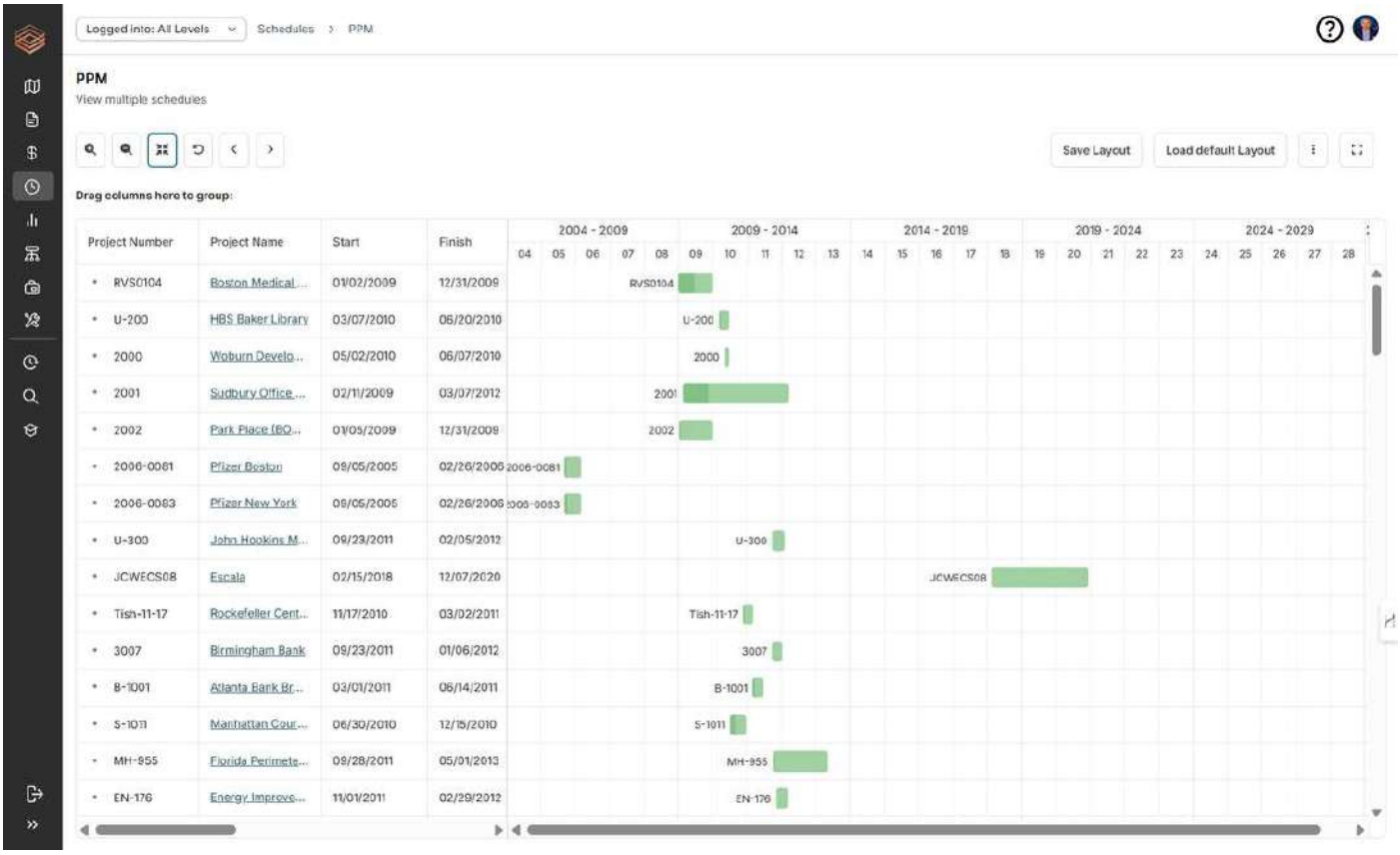
Capital planning lets the PMO register candidate projects, score them against the owner's prioritisation criteria and model funding across years. Approved projects move into the programme with their budgets, giving a direct line from capital decision to project baseline. Commitments and forecasts roll up to show funding exposure by source and year, and budget transfers are governed by workflow under the DoA.





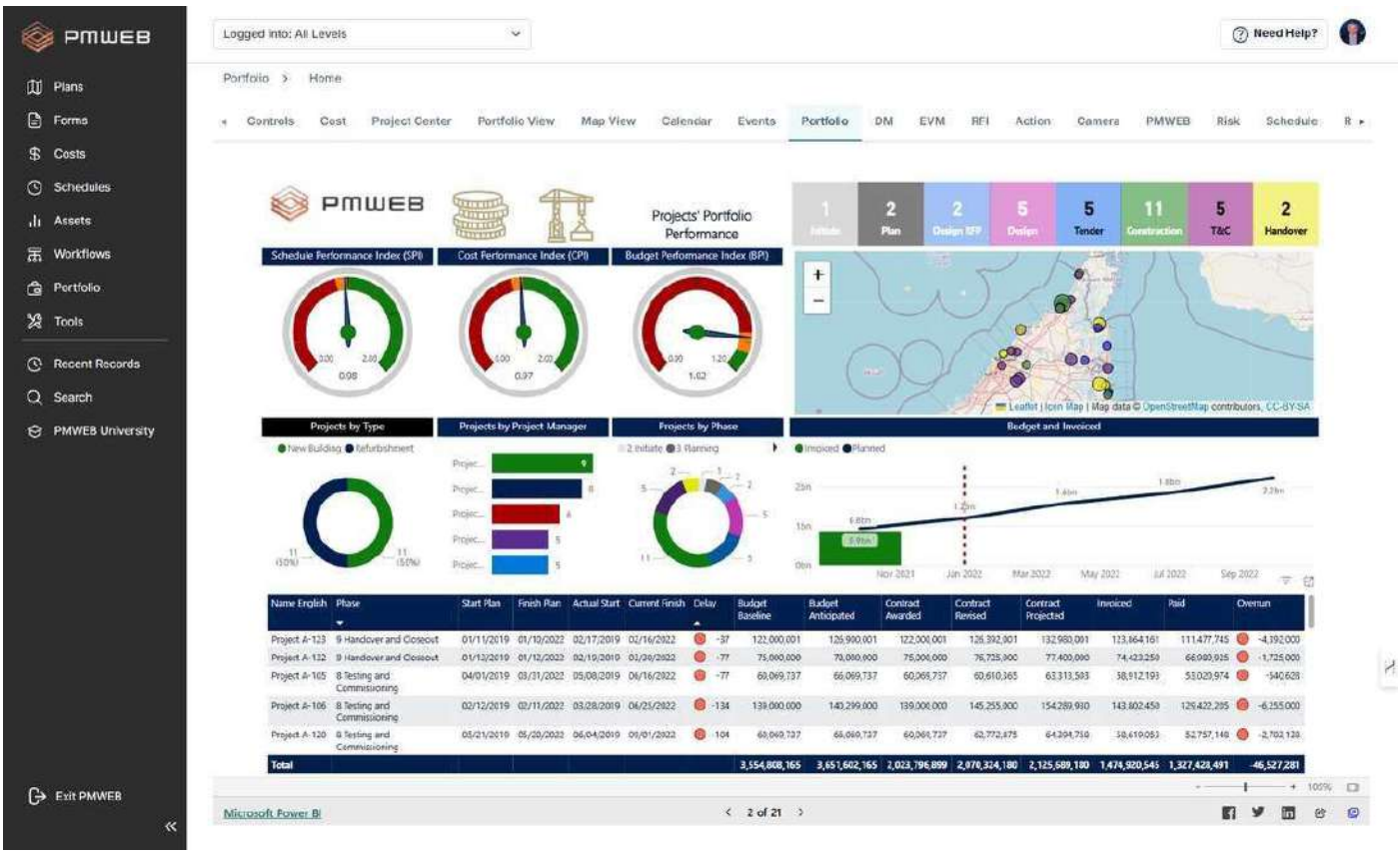
Master programme schedule

Project schedules in Primavera P6 or MS Project are integrated with PMWEB, and key milestones roll up into the master programme schedule. Interdependencies, such as a utility connection needed before several buildings can be energised, are visible at programme level the moment a project schedule is updated.



Standard procedures, templates and consolidated dashboards

Because every project uses the same forms and value lists, programme dashboards need no reconciliation. The PMO sees cost, schedule, change, quality, safety and risk across the programme on one screen, with drill-down to the record. SSRS reports and Power BI produce the leadership pack from live data, and the monthly report becomes a review rather than a collection exercise.

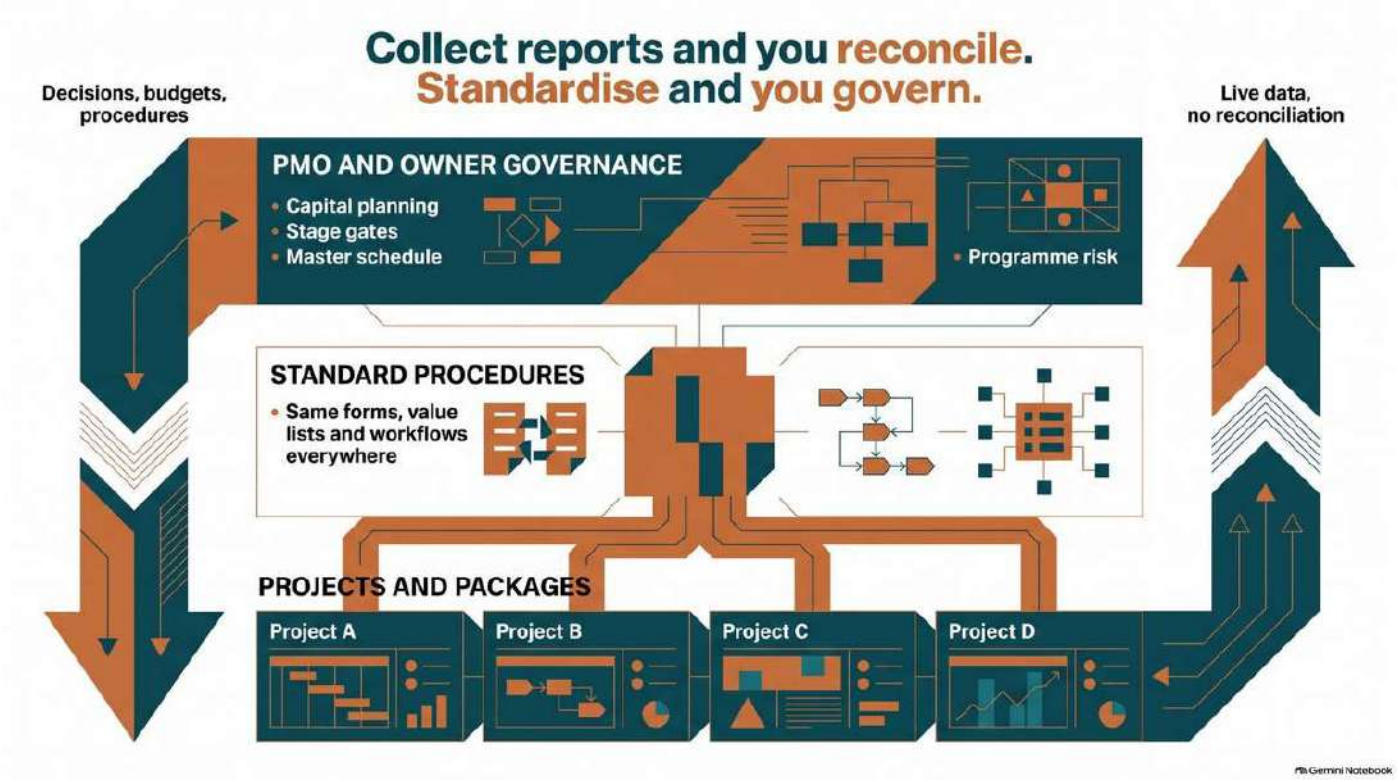


Resource planning and programme-level risk

Resource planning shows where the PMC's staff and the owner's approvers are allocated across projects, so conflicts surface before they become delays. Programme-level risks sit in a programme risk register linked to the

projects they affect, and project risks with programme consequences are escalated through workflow rather than duplicated.

CM responsibility	PMWEB capability	Evidence produced
Establish programme governance	Portfolio and programme structure, programme templates, workflow engine with DoA routing	Configured procedures applied identically across projects
Run stage gates	Gate review forms with linked evidence and decision workflow	Gate decisions, conditions and approver history for every project
Plan and prioritise capital	Capital planning with scoring criteria and multi-year funding	Prioritised capital plan traceable to approved project budgets
Control portfolio budgets and funding	Budget, funding, commitments, budget transfers and cash flow	Funding exposure by source and year with audited transfers
Maintain the master schedule	Scheduling with P6 and MS Project integration and milestone roll-up	Programme milestones linked to live project schedules
Report consistently	Dashboards, SSRS reports and Power BI integration	Leadership reporting from live data with drill-down to records
Manage programme risk and resources	Programme risk register, escalation workflow and resource planning	Owned cross-project risks and visible resource conflicts
Capture and apply lessons	Lessons learned module linked to projects and categories	Lessons searchable and applied to later projects



Two operating models: the PMC's instance or the owner's

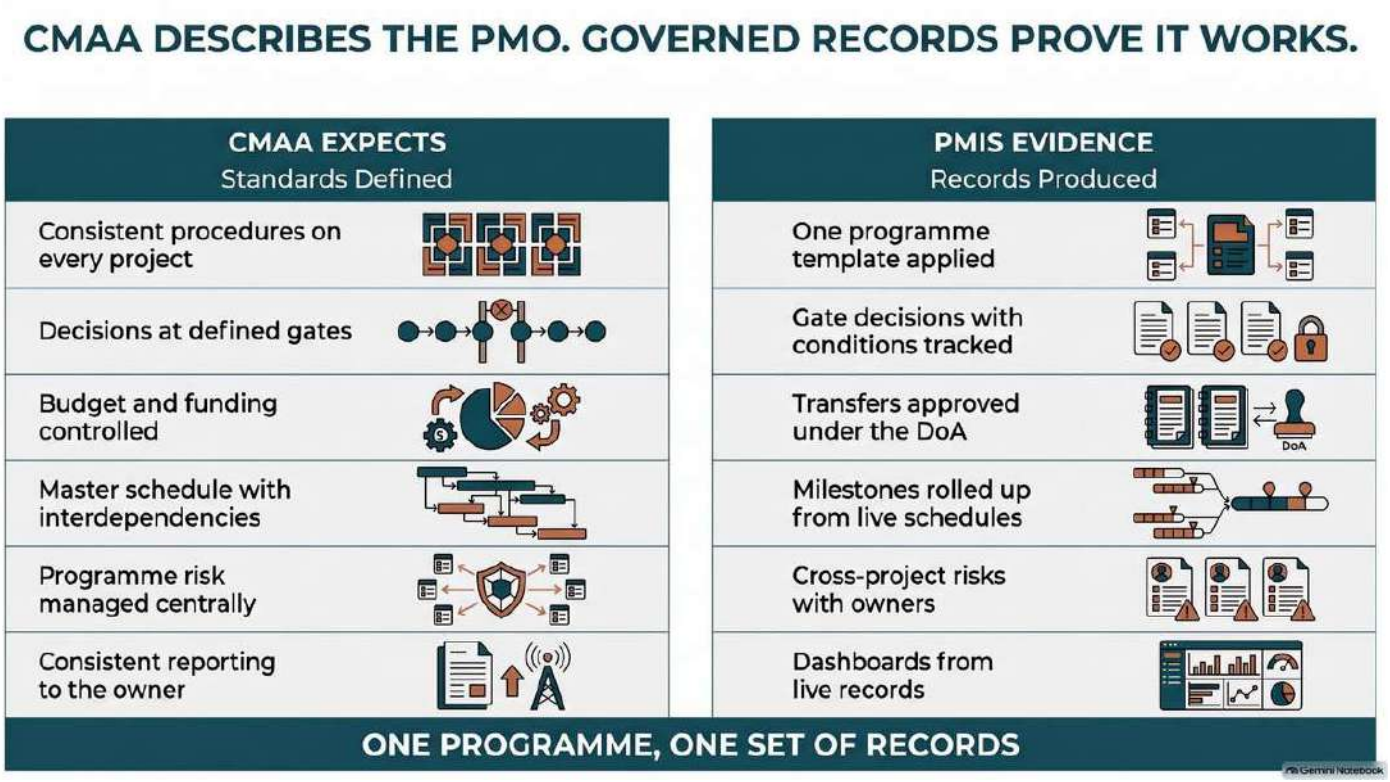
PMC firms act as the owner's PMO in one of two ways. The PMC may run the programme on its own PMWEB instance, bringing a proven configuration to mobilisation and giving the owner, designers and contractors role-based access; this suits owners without their own PMIS. Or the PMC may operate inside the owner's PMWEB instance, within the owner's configuration, data standards and hosting; this suits owners who want continuity when PMC appointments change.

Both models work. What matters is that the decision is explicit in the appointment: who owns the configuration, who owns the data, how the data transfers at the end of the appointment, and which party's procedures prevail where they differ. In either case, the owner's data remains the owner's record.

Configuring PMWEB to Your Firm's Procedures

The CMAA Standard describes what a programme manager does; the PMC's methodology and the owner's governance decide how. PMWEB is configured once to those decisions and then applied the same way on every project.

What the firm or client decides	How it is configured in PMWEB
How the programme is structured	Portfolio and programme hierarchy by region, asset class, funding source or phase, with a programme template for new projects
Which gates a project passes and who decides	Gate review forms, decision values and workflow routes reflecting the owner's governance framework
Approval routes and DoA thresholds	Workflow routing mapped to the owner's delegation-of-authority (DoA) matrix, by role, value and transaction type
How capital is prioritised and funded	Scoring criteria, funding sources and planning periods matched to the owner's budgeting cycle or funding tranches
How procurement is run across packages	Procurement workflows and forms reflecting the owner's procurement rules, configured once for every project
How contracts are administered	Change, notice and payment workflows reflecting the conditions of contract, with owner amendments configured once
What leadership sees and in which language	Dashboard and report formats to the owner's template, numbering to the firm's conventions, bilingual English and Arabic where the owner requires
Where the data resides and what it connects to	In-country hosting where the owner requires, and integration with the owner's ERP for budgets, commitments and payments



Evidence That the Practice Is Working

A PMC acting as the owner's PMO can test whether its programme management is working as the CMAA Standard intends by tracking indicators such as:

- **Procedure consistency:** the proportion of projects running on the programme template without unapproved local variations.
- **Reporting latency:** the time between a project event and its appearance in the programme dashboard.

- **Gate discipline:** the number of projects that progressed without a recorded gate decision, and the age of open gate conditions.
- **Funding visibility:** whether funding exposure by source and year can be produced from live data without manual reconciliation.
- **Approval cycle time by level:** how long items wait at each level of the DoA across the programme.
- **Cross-project risk coverage:** the number of programme-level risks with owners, mitigations and links to affected projects.
- **Lessons applied:** the number of lessons learned from completed projects that are referenced in the plans of later projects.

Key takeaway

When a PMC acts as the owner's PMO, its value lies in governance, consistency and foresight across the programme, not in the volume of reports it produces. The CMAA Standard describes that role clearly; the challenge is executing it the same way on every project.

PMWEB lets each PMC firm bring its own PMO methodology, configured once and applied everywhere, whether on its own instance or inside the owner's. Standardised programme data gives leadership one version of the truth, gate by gate and project by project.

Next in the series: *Article 13 — Technology Management: Governing the PMIS as the CM's System of Record*

About the Author

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Technology Management: Governing the PMIS as the CM's System of Record — How GCC PMC Firms Plan, Configure, Integrate, Secure and Govern PMWEB

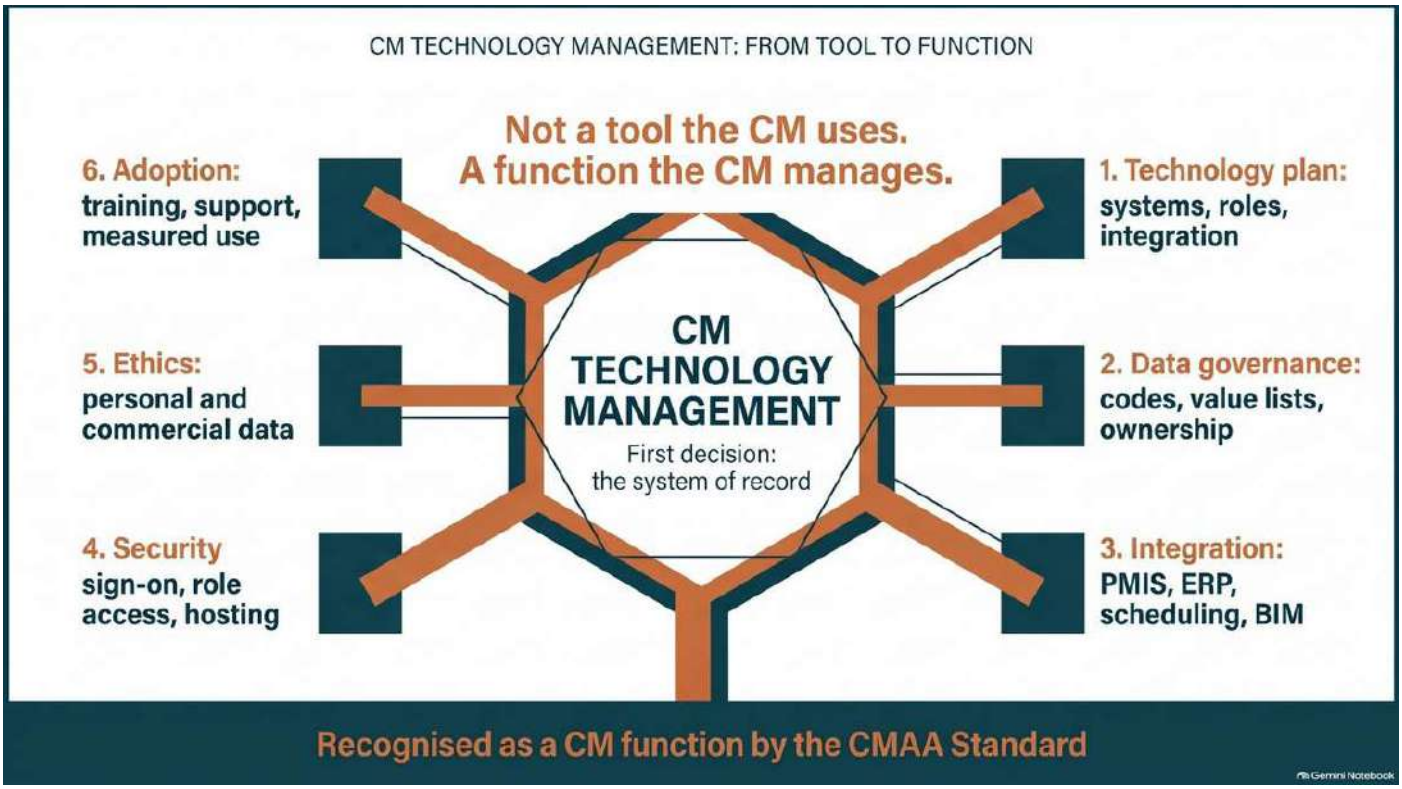
Technology as a CM function, and the system of record that lets a PMC prove its practice

Technology is no longer something the CM simply uses; it is something the CM is expected to manage. The PMC that deliberately plans, configures, integrates, secures and governs the system holding its record of decisions, money, time and quality is the PMC that can prove its practice on every project.

Over the previous twelve articles, this series has walked through the functions of construction management, from delivery methods to programme management. In each, the same pattern appeared. The CMAA Standard describes what a competent CM does, each PMC firm executes that practice its own way, and the proof lives, or fails to live, in the data.

That makes technology the function that holds the others together. The 2021 edition of the CMAA Construction Management Standards of Practice recognised this by adding technology management as a CM function in its own right: choosing, configuring, integrating, securing and governing project technology is part of the CM's professional responsibility, not a task to hand entirely to IT.

In the GCC, the question arrives in a practical form. Owners run ERP platforms, scheduling tools, BIM models and their own IT policies, and they expect the PMC to fit into that landscape on day one. The PMC that treats its PMIS as a governed system of record, rather than as one more tool, is the one that can answer the owner's questions with evidence. This article sets out the technology management practice the CMAA Standard expects and how PMC firms govern PMWEB to deliver it.



What the CMAA Standard Expects

The CMAA Standard now expects the CM to take an active role in technology management. In general terms, it expects the CM to understand the owner's technology priorities and constraints, help plan which technology is used and how, make sure the right information is captured, controlled and available, protect it, and hand it over in a form the owner can use.

CMAA's Technology Management Guidelines, published in 2023, expand on this. They address evaluating the owner's technology priorities, technology investment, how the delivery method influences technology choices, data, ethics, common project/program control tools, cybersecurity and BIM. Together they frame technology as deliberate decisions the CM makes and documents, not tools that accumulate on a project.

Planning and mobilisation

The CM is expected to understand what technology the owner has, what it needs to achieve, what investment is justified and what the delivery method implies for who uses which system. The result is a technology plan: the system of record for each process, roles and permissions, data standards and coding structures, integration points and security requirements.

Execution

The CM is expected to operate the agreed systems consistently, maintain data quality, manage access as people join and leave, keep integrations working, protect sensitive information and support users.

Handover and retention

The CM is expected to deliver records, asset information and the audit trail in a usable, structured form, in line with the owner's retention policies.

CMAA phase	What the CM is expected to do
Pre-design	Understand the owner's technology priorities, existing platforms and constraints, and advise on technology investment and the delivery method's implications.
Design	Agree the technology plan, name the system of record for each process, define coding structures and data standards, and configure the systems before design reviews begin.
Procurement	Write technology, data and system-use obligations into tender documents and contracts, and plan access for each party as packages are awarded.
Construction	Operate the systems consistently, govern data quality, keep integrations healthy, manage access and cybersecurity, and measure adoption.
Post-construction	Hand over the structured record, asset information and audit trail in the form the owner needs, and close access in line with the owner's policies.

As in every function, each PMC firm executes technology management its own way. Some have a digital delivery team; others rely on project controls leads. Some owners mandate their own platforms; others expect the PMC to bring them. The CMAA Standard stays the reference; the technology plan and the PMWEB configuration follow the firm's practice and the owner's requirements.

How GCC PMC Firms Typically Do It Today

The gaps are familiar across the region:

- **No explicit system of record.** Change orders exist as PDFs in a shared folder, in a spreadsheet as a log and in the ERP as commitments, and they do not agree.
- **Technology chosen by default.** Tools accumulate project by project, chosen by whoever mobilised first, with no decision on which one holds the CM's record.
- **Coding structures that differ.** Cost breakdown, WBS, ERP cost centres and document numbering use different codes, so integration becomes monthly manual mapping.
- **Access managed by spreadsheet.** Accounts are created on request and rarely removed; former consultants keep access long after they leave.
- **Integration by export.** Data moves between systems by exported files, uploaded late and reconciled by hand.
- **Adoption assumed.** A single training day at launch, and within months key processes drift back to email.

How PMWEB Digitalises It

The system-of-record decision

The CM's record is the record of business processes and the data they create: budgets and revisions, commitments and schedules of values, potential change orders, change order requests and change orders,

payment certification with retainage and VAT, baseline and updated schedules, RFIs, submittals, inspections, non-conformance reports, risks, safety records, notices and claims, approvals under the DoA, and the reporting built on all of it.

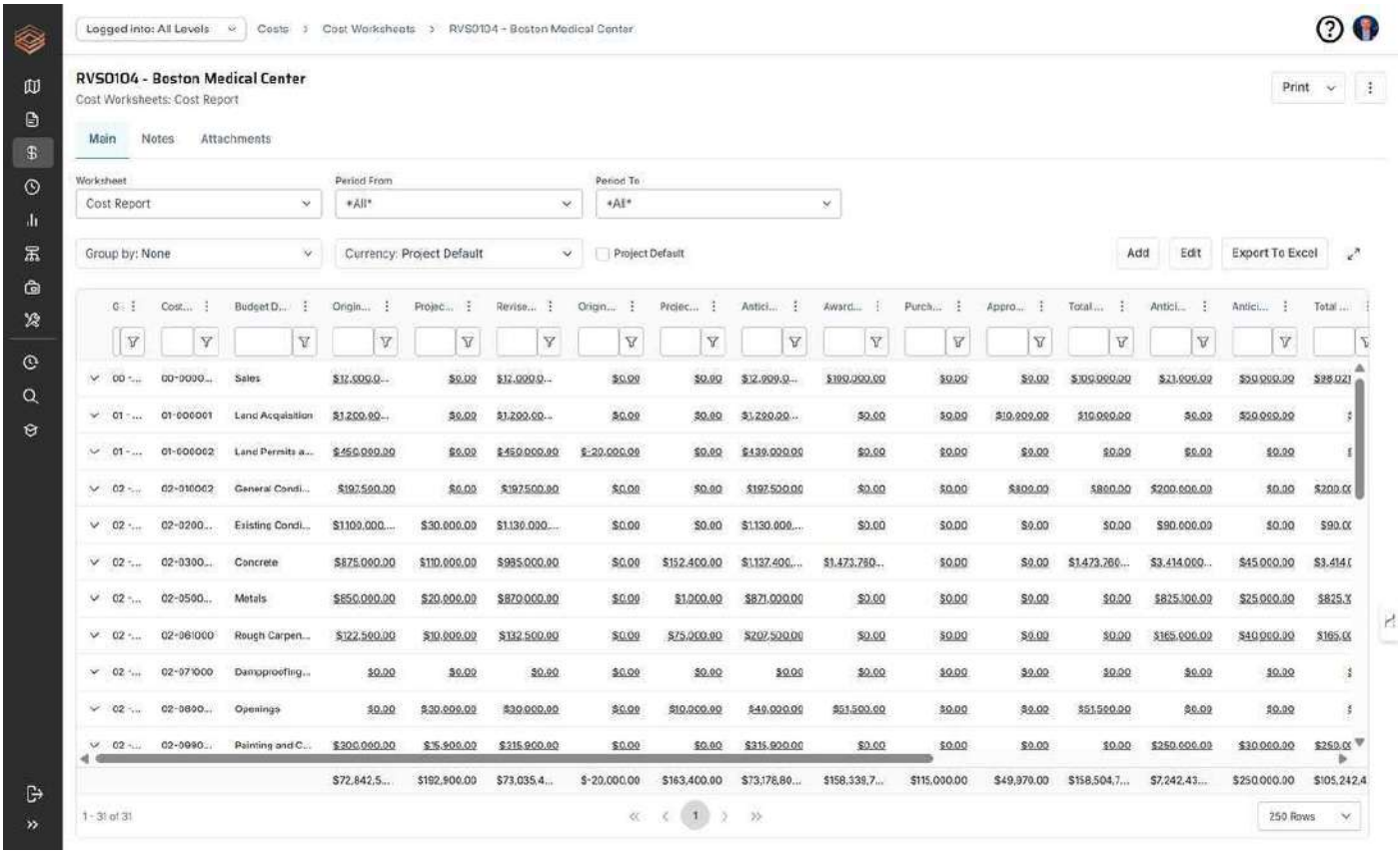
These are not documents with a status. They are structured records with fields, calculations, relationships and rules. A change order updates the committed cost, draws down contingency, triggers an approval level under the DoA, may carry a time extension and adds to the cumulative variations on the contract. The CMAA Standard expects the CM to control cost, time, quality, contracts, safety and risk and to prove that it did, and that proof is in the process data: who decided what, when, under what authority, with what effect. That is why the PMC names PMWEB as the system of record for these processes, and why the decision belongs with the people accountable for the practice: the PMC's leadership, project controls and contract administration leads, working with the owner's IT team.

The technology plan and technology investment

The PMC begins with a technology plan agreed with the owner, naming the system of record for each process, the supporting platforms, integration points, data standards, roles, security requirements and adoption plan. The plan reflects the delivery method: under CM agency the owner's parties need one set of access, under design-build the contractor's design team needs another, and in a PPP the concessionaire's reporting obligations shape what is captured. In PMWEB the plan becomes configuration: portfolio structure, modules, Form Builder forms, workflows, value lists and security roles, documented so the owner can see exactly how the plan was implemented and what the investment is delivering.

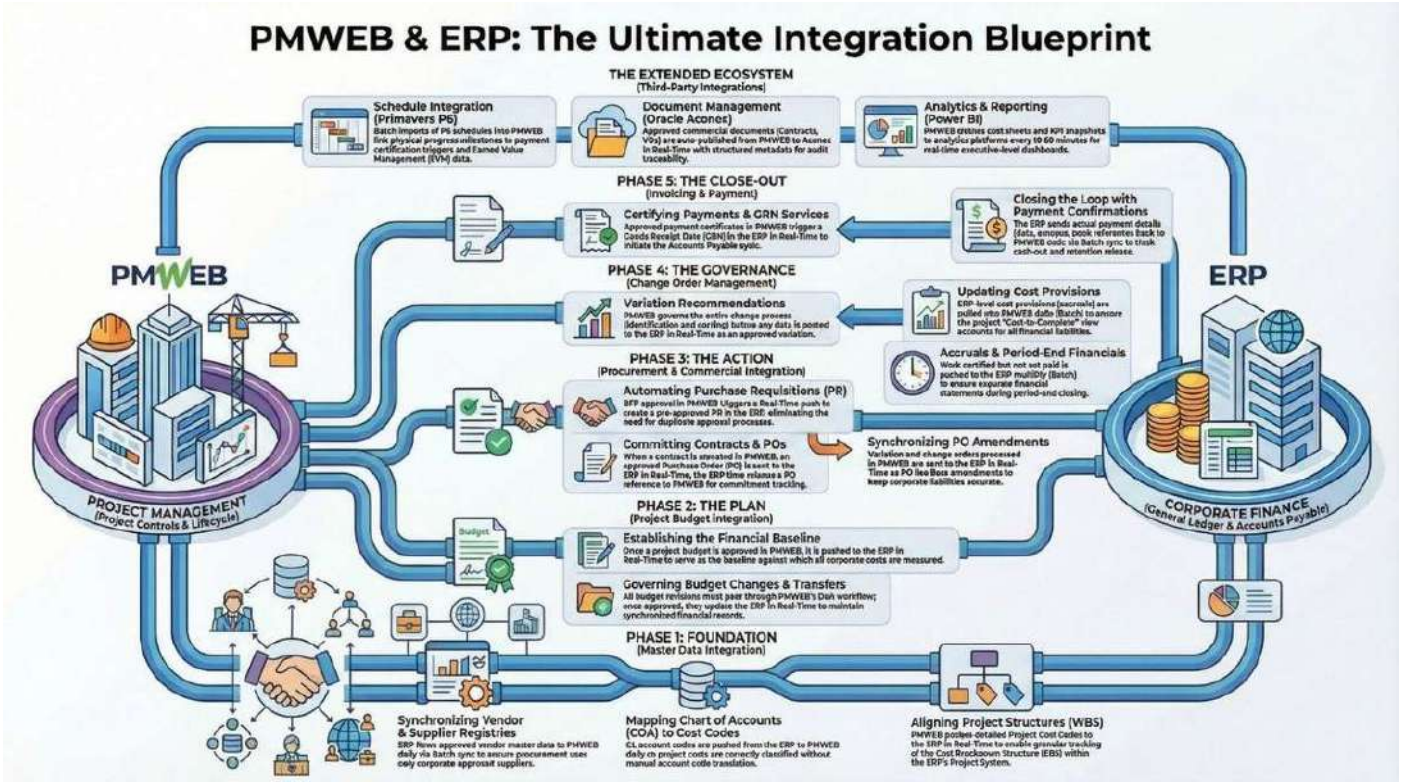
Data governance and coding structures

Data governance is the foundation of everything else. The PMC defines, with the owner, the coding structures that tie the systems together: cost breakdown structure, WBS, contract and package codes, location and asset codes, and document numbering. In PMWEB these are controlled value lists used by every form, so a cost code on a change order matches the budget, the schedule and the ERP. Mandatory fields and validation stop incomplete records entering the system, and ownership, retention and archiving rules are applied.



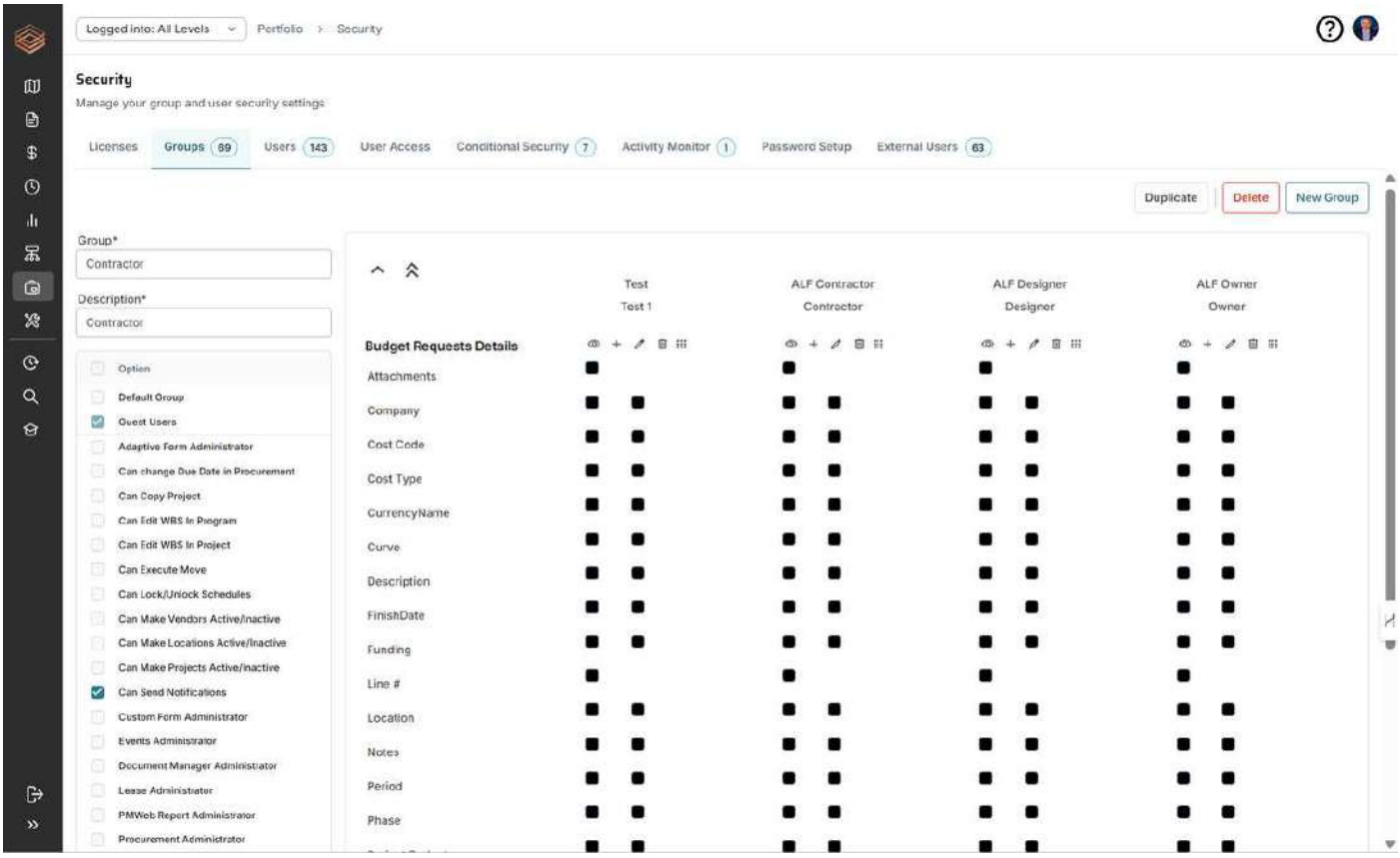
Integration architecture

The integration architecture connects PMWEB with the owner's other platforms. Primavera P6 and MS Project schedules flow into PMWEB and milestones roll up to programme level. ERP integration with SAP, Oracle or Microsoft Dynamics exchanges commitments, invoices and payments so finance and project controls see the same figures. BIM model elements, GIS locations and the owner's document control platform are linked through PMWEB's open REST and SOAP APIs, and Power BI reports across all of it. Each integration is defined in the technology plan with direction, frequency, owner and error handling.



Cybersecurity

Security is designed in from the start. Single sign-on with the owner's identity provider means users authenticate with corporate credentials under the owner's multi-factor authentication policies. Role-based security controls what each user can see and do by project, module and record. Access is granted and removed through a controlled process with periodic reviews, hosting can be in-country where the owner requires, and the audit trail records every change.



Data ethics

CMAA's guidelines recognise that technology raises ethical questions. For a PMC these are practical: personal data in safety and incident records, commercial confidentiality between contractors, and fair use of performance

data. The PMC restricts sensitive data to those who need it, applies field- and record-level security, and makes sure any decision affecting a party is made and recorded by an accountable person.

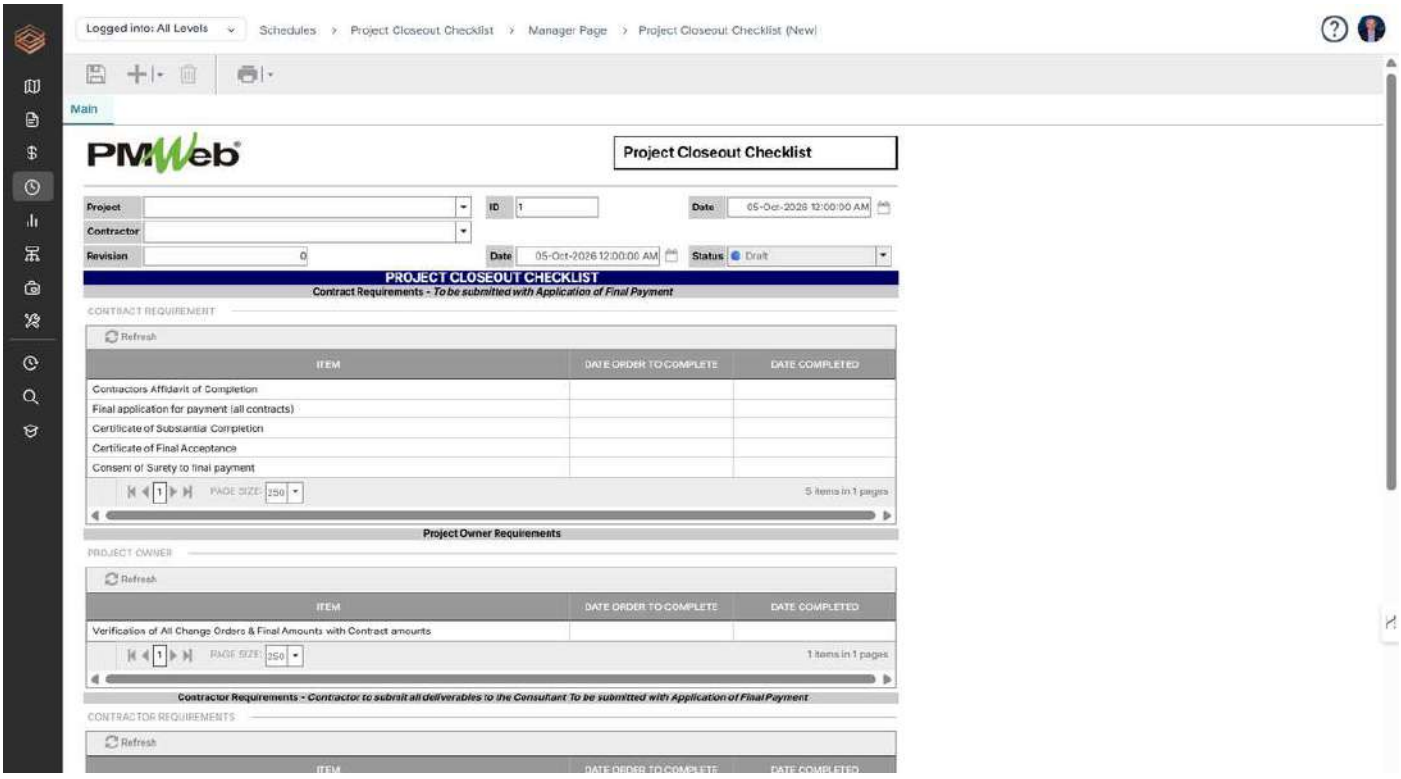
Adoption and change management

A system of record only works if people use it. The PMC plans adoption as managed change: role-based training tied to the configured procedures, a support channel, mobile app access for site teams and regular measurement of usage. Where a process drifts back to email, the PMC treats it as a finding and fixes the cause.

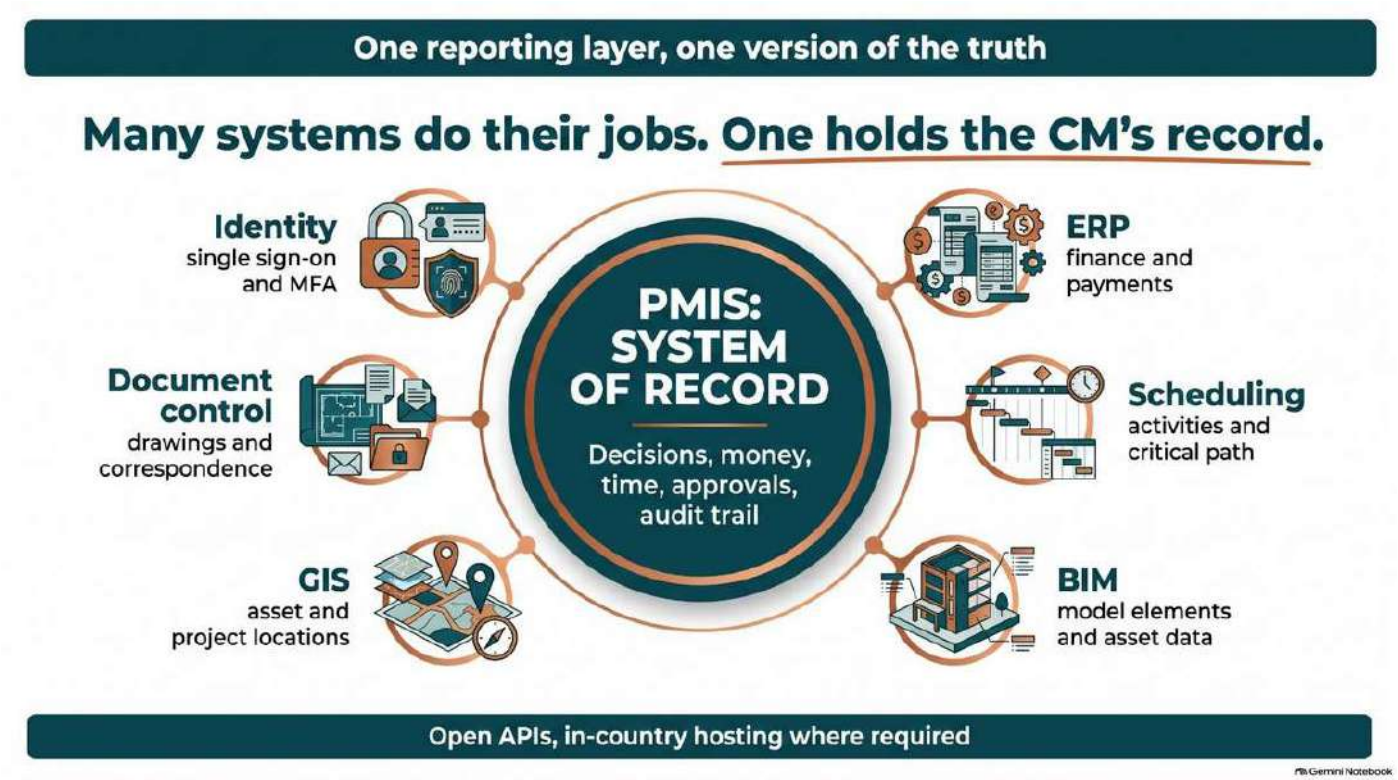


Handover and retention

At closeout the owner receives a structured record, not an archive of files. Closeout checklists confirm that every process is closed, the asset register is complete and warranties are attached, and the audit trail shows how every record reached its final state. Access is then closed or transferred in line with the owner's policies, and the data is retained or migrated as the technology plan specified.



CM responsibility	PMWEB capability	Evidence produced
Name the system of record	Configured modules for every CM process, linked records and audit trail	One authoritative record per process, traceable to its approver
Plan project technology	Documented configuration of structure, modules, forms, workflows and roles	Technology plan realised as a reviewable configuration
Govern data	Controlled value lists, coding structures, mandatory fields and validation	Consistent, complete records traceable to one coding standard
Integrate platforms	Scheduling integration, ERP integration, open REST and SOAP APIs	Reconciled data across PMIS, ERP, scheduling and connected platforms
Secure information	SSO with MFA, role-based security, in-country hosting options, audit trail	Access records, access reviews and change history for every record
Apply data ethics	Field- and record-level security, controlled access to personal and commercial data	Evidence that sensitive data is restricted to those who need it
Drive adoption	Mobile app, dashboards of usage, workflow reporting	Measured usage by process, organisation and user
Hand over records	Closeout checklists, asset register, document management and audit trail	Complete, structured project record delivered to the owner



Configuring PMWEB to Your Firm's Procedures

The CMAA Standard and its guidelines set the technology management expectation. The technology choices themselves belong to the firm and the owner, and PMWEB is configured to them.

What the firm or client decides	How it is configured in PMWEB
Which processes PMWEB holds as the system of record	Modules, Form Builder forms and workflows enabled for those processes, with links to the platforms that hold the rest
Forms, fields and terminology	Form Builder layouts, field names and value lists in the firm's or owner's terminology

What the firm or client decides	How it is configured in PMWEB
Approval routes and DoA thresholds	Workflow routing by role, value and transaction type mapped to the owner's delegation-of-authority (DoA) matrix
Coding and numbering	Cost breakdown, WBS, location, asset and record numbering aligned to the owner's chart of accounts and the firm's conventions
Report formats	Dashboards, SSRS reports and Power BI outputs matching the owner's reporting templates
Language of forms and outputs	Bilingual English and Arabic forms, reports and dashboards where the owner requires
Hosting and access	In-country hosting where the owner requires, SSO with the owner's identity provider, and role-based security reflecting the owner's IT and cybersecurity policies
Integration with the owner's platforms	Interfaces to the owner's ERP (SAP, Oracle or Microsoft Dynamics), scheduling tools and other platforms through open REST and SOAP APIs



Evidence That the Practice Is Working

A PMC can test whether its technology management is working as the CMAA Standard intends through indicators such as:

- **System-of-record clarity:** whether every CM process has a named system of record, and whether its records exist anywhere else.
- **Data completeness:** the proportion of records submitted with all mandatory fields and valid codes.
- **Integration health:** the number and age of unresolved integration errors between PMWEB and connected platforms.
- **Access hygiene:** the time taken to remove access for leavers, and the outcome of periodic access reviews.
- **Adoption by process:** the proportion of RFIs, change requests and inspections running through PMWEB rather than email.
- **Reporting from live data:** whether leadership reports come directly from the system without manual reconciliation.

- **Handover completeness:** whether the owner receives a structured record, asset register and audit trail at closeout.

Key takeaway

The 2021 CMAA Standard made technology management part of the CM's job, and the most important technology decision a PMC makes is which system holds the record of its practice. Planning that system, governing its data, integrating it with the owner's platforms, securing it and handing it over are now professional duties, not IT chores.

Across thirteen articles the pattern has held: the CMAA Standard is the reference, each firm executes it its own way, and the evidence lives in structured data. PMWEB lets GCC PMC firms configure their own practice, digitalise it function by function and prove it, record by record.

Next in the series: *Article 14 — AI for PMC Firms: How PMWEB 2026 and the Releases That Follow Turn a Structured Practice into Better Project Delivery*

About the Author

Bassam Samman, PMP, PSP, EVP, GPM is the Chairman and Chief Executive Officer of CMCS FZ-LLC, the PMWEB Authorised Implementation Partner for the Gulf Cooperation Council and broader Middle East and North Africa region. CMCS holds the PMWEB Partner of the Year 2025 designation and serves capital project owners, contractors and consultants across the UAE, Saudi Arabia, Qatar, Kuwait and India.

Bassam has over four decades of experience providing project management, project controls services and project management information systems to more than two hundred capital projects with a combined value exceeding one hundred billion US dollars. He is the author of four published books on project management digitalisation and has lectured at more than three hundred and fifty international events. He holds a Master's degree in Engineering Administration (Construction Management), with Faculty Commendation, from George Washington University and a Bachelor's degree in Civil Engineering from Kuwait University, with executive education at Harvard Business School and London Business School.

About PMWEB

PMWEB is an enterprise-class, web-based capital construction project management platform trusted by organisations worldwide including Harvard University, the United Nations, and Atlanta Airport. Built on Microsoft .NET technology, PMWEB manages the entire project lifecycle within a single integrated platform — from portfolio planning and cost management through document control, procurement, scheduling, asset management, and business intelligence. With 150+ pre-configured SSRS reports, drag-and-drop dashboard design, multi-currency support, and open REST/SOAP API integration, PMWEB delivers enterprise capability with implementation timelines measured in months, not years.

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AI for PMC Firms — How PMWEB 2026 and the Releases That Follow Turn a Structured Practice into Better Project Delivery

The series finale: why the digitalised CMAA functions are the foundation AI needs, at project and programme level

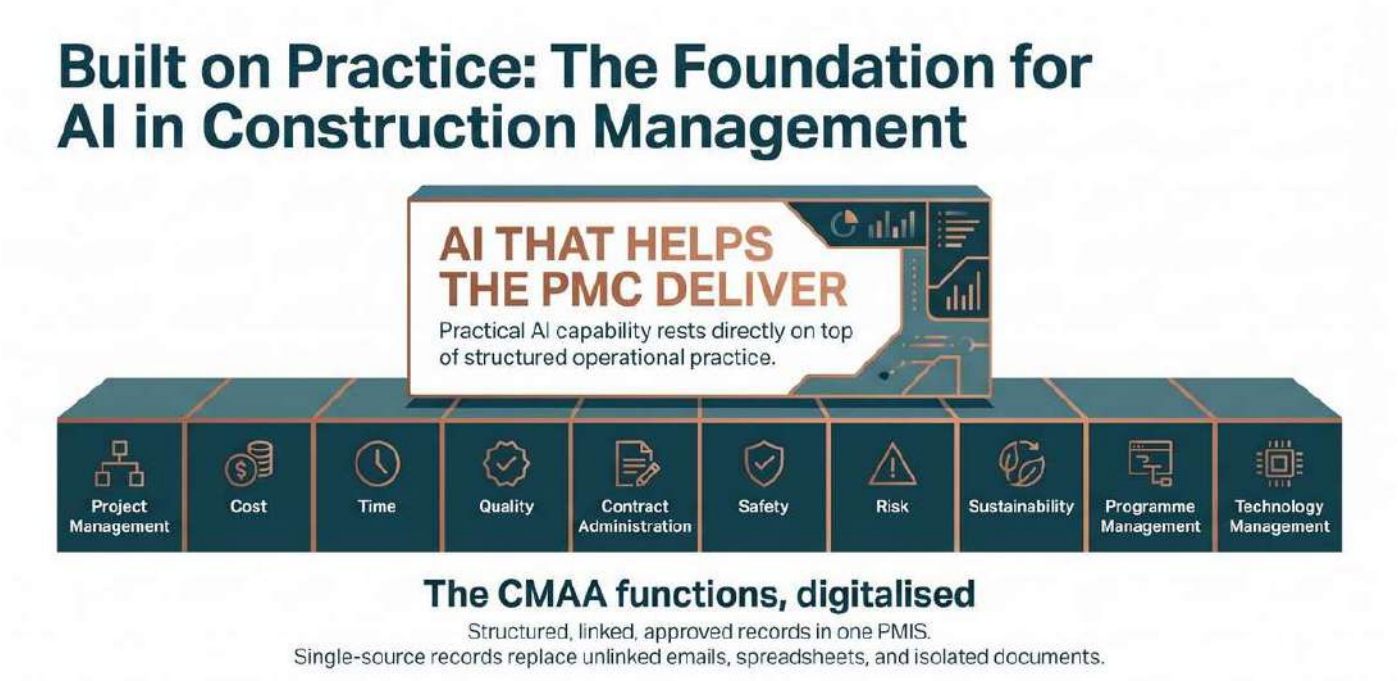
Every PMC firm is being asked how it will use AI. The honest answer is that AI can only work with the practice a firm has already captured. A PMC that runs the CMAA functions in PMWEB is not starting its AI journey. It has already built the foundation.

Over the last thirteen articles, this series has walked through the functions of construction management described in the CMAA Construction Management Standards of Practice: delivery methods, project management, cost, time, quality, contract administration, safety, risk, sustainability, programme management and technology management. In every one of them, the same pattern held. The CMAA Standard describes what the construction manager must do, each PMC firm executes it in its own way, and PMWEB captures the result as structured, linked and approved records.

This final article asks what that pattern makes possible. Owners across the GCC now ask their PMC firms the same question in every interview and every proposal clarification: **how will you use AI on our projects?** Many firms answer with a tool. The better answer is a foundation.

AI is only as good as the information under it. A PMC firm whose practice lives in email, spreadsheets and scanned PDFs gives AI nothing reliable to work on: the same figure appears in three versions, approvals cannot be traced, and nobody can say which document is current. A firm whose practice runs in PMWEB holds something very different: budgets, commitments, changes, schedules, RFIs, submittals, inspections, non-conformance reports, risks, safety records and decisions, each one structured, validated at entry, linked to the records around it and approved under the delegation of authority.

That is why the value of AI for a PMC firm is not a separate topic from the rest of this series. It is the return on everything the series has described.



AI is not where a PMC starts. It is what structured practice makes possible.

Why Structure Decides What AI Can Do

The difference between a document and a record is the difference between what AI must guess and what it can read. A change order stored as a PDF is a document: an AI tool can search its text, but it cannot know whether it is the approved version, whether it breached an approval threshold or which contingency it consumed. A change order stored in PMWEB is a record: its value, status, approver, approval date, cost code, linked RFI and schedule impact are fields the system already knows.

Across the thirteen functions in this series, PMWEB captures the CMAA practice in exactly that form. The table below summarises what each function contributes to the foundation.

CMAA function	What PMWEB holds as structured records	What that gives AI to work with
Project management	CM plan, procedures, meeting minutes, action items, correspondence	Who committed to what, by when, and whether it happened
Cost management	Budget, estimates, commitments, changes, payment certificates, forecasts	Exposure, contingency and forecast built from approved figures
Time management	Baselines, updates, schedule reviews, time impact records	Trends across successive updates, not a single snapshot
Quality management	Submittals, inspections, non-conformance reports, punch lists	Review cycles, recurring defects and open items by package
Contract administration	RFIs, notices, potential changes, change orders, claims log	The full chain from question to cost and time consequence
Safety management	Inspections, observations, incidents, corrective actions	Patterns in observations and near misses by location and contractor
Risk management	Risk register, scores, owners, responses, contingency links	Risks connected to the issues, changes and drawdowns they caused
Programme management	Portfolio structure, gates, programme schedule and budget	Comparable data across every project in the programme

Two features of this foundation matter more than any single module.

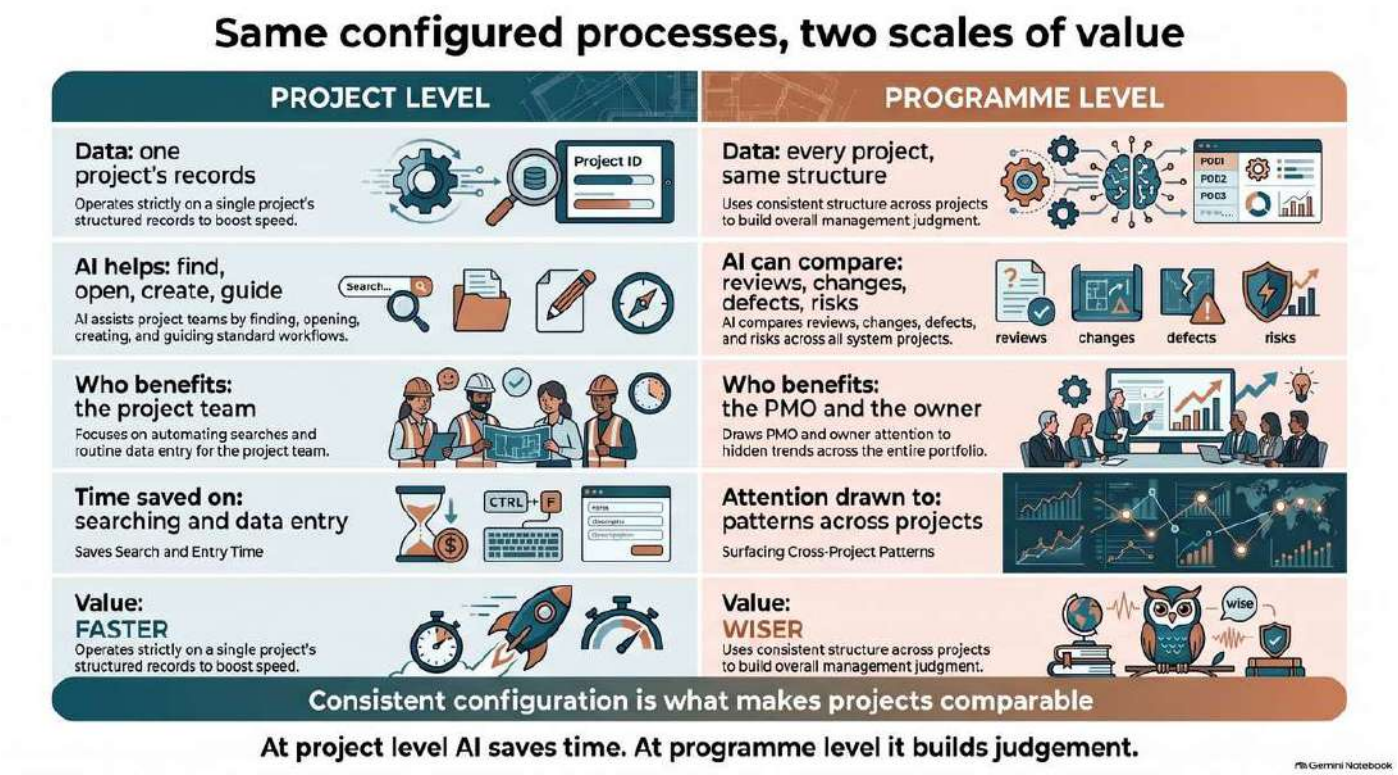
- **It is consistent.** Because PMWEB is configured once for the firm, and then adapted per client, the same process produces the same fields on every project. AI can compare one project with another only when the data means the same thing in both.
- **It is connected.** Records are linked: the RFI to the change order, the change order to the commitment and the schedule, the risk to the contingency it consumed. AI can follow a chain of cause and effect only when the chain exists in the data.

Project Level and Programme Level: Where the Value Multiplies

At **project level**, structured records let a PMC team find what it needs in seconds, prepare routine records faster and spend more of its time on judgement. That is valuable, but it is the smaller prize.

At **programme level**, the value multiplies. Many PMC firms in the GCC act as the owner's PMO, running dozens of projects for a master developer, a PIF-backed giga-project or a government programme. When every one of those projects runs the same configured processes in PMWEB, the programme holds a body of structured experience that no individual project manager can see: how long reviews really take, where changes cluster, which packages generate recurring non-conformance, which risks keep turning into issues. That body of experience is what AI can learn from, compare across and surface for attention.

This is also why the CMAA's addition of technology management to the construction manager's role matters for AI. The CMAA Technology Management Guidelines include data and ethics among the topics a CM must address when managing project technology. A PMC that governs its data well, with clear coding structures, value lists, ownership and access rules, is the PMC that will be able to use AI responsibly.



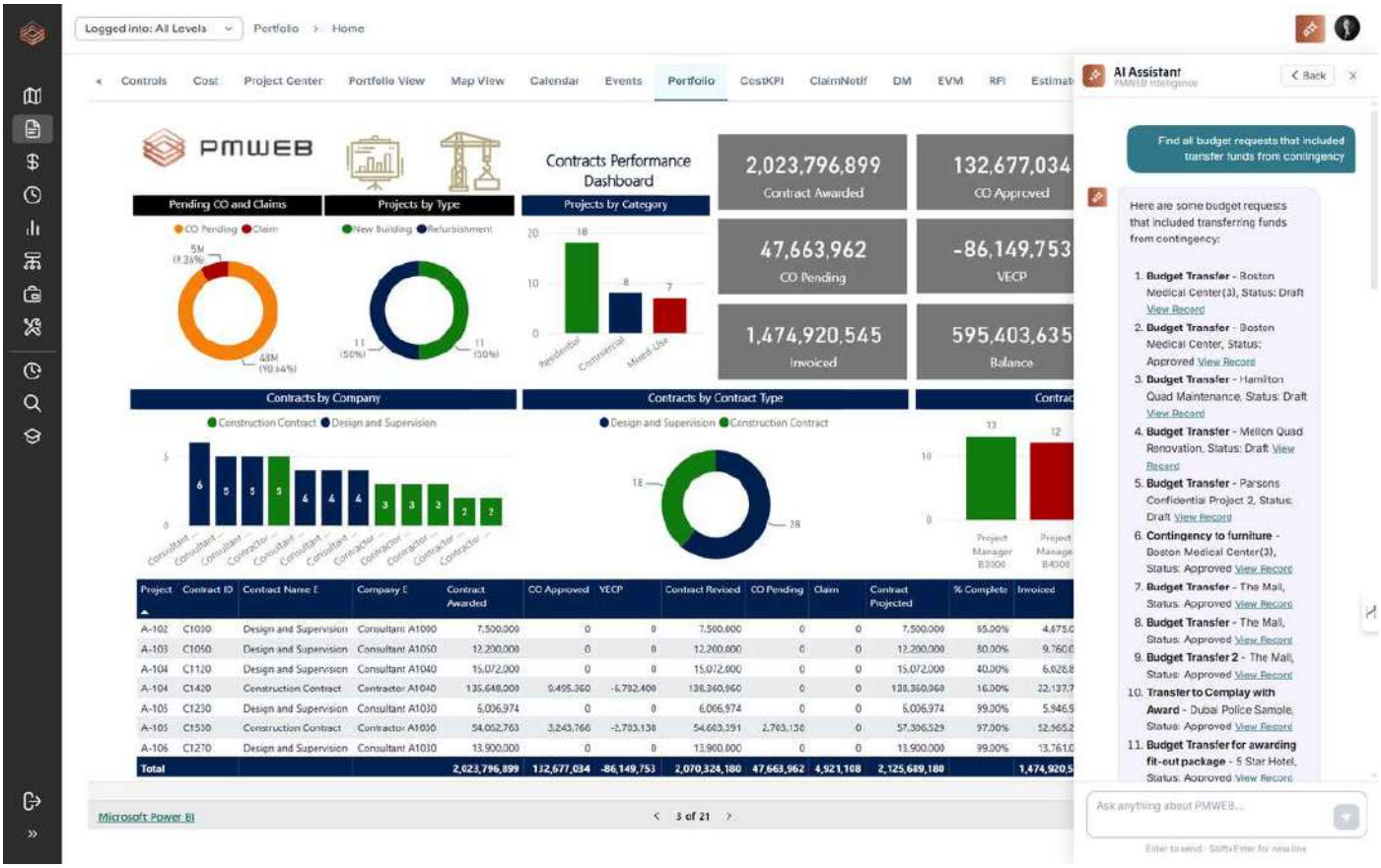
Available in PMWEB 2026: The AI Assistant

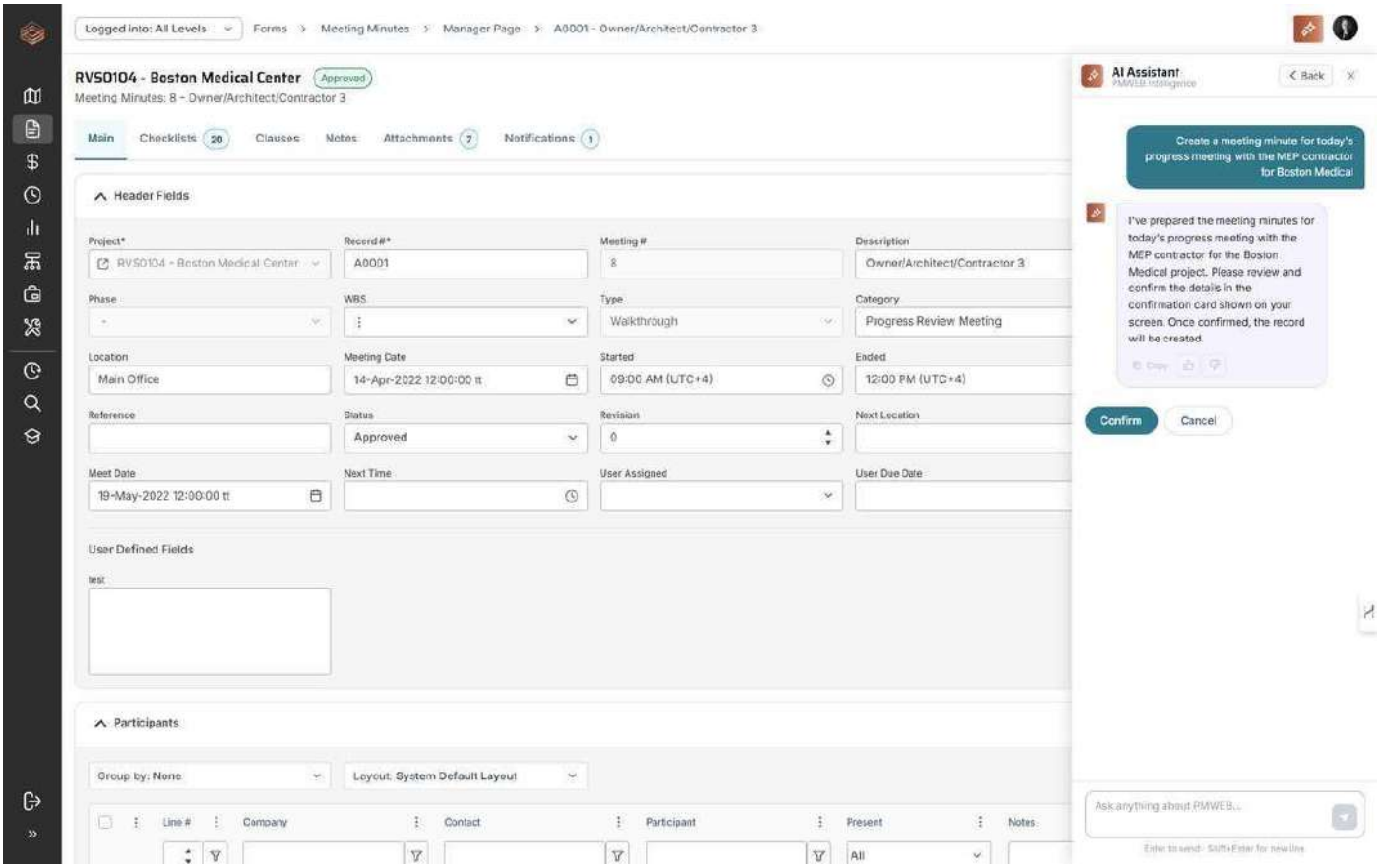
The PMWEB 2026 release introduces the **PMWEB AI Assistant**. In this first release the Assistant works in four modes, each designed around the way project teams already work in PMWEB.

Mode	What it does	Example request from a PMC team member
Find	Locates records from a plain-language request	"Find all open RFIs on Tower B older than 14 days"
Open	Goes straight to the record the user names	"Open change order 045 on the podium package"
Create	Prepares a new record from a plain-language instruction, for the user to review	"Create a meeting minute for today's progress meeting with the MEP contractor"
Help	Guides the user through how to perform a task in PMWEB	"How do I delegate my approvals while I am on leave?"

For a PMC firm, each mode answers a real cost of running the CMAA practice:

- **Find** removes the time spent filtering logs and spreadsheets to answer the questions owners ask every week: what is overdue, what is pending, what is waiting on whom.
- **Open** takes a reviewer straight to the record under discussion, in a meeting or on site, without navigating menus.
- **Create** lets engineers and inspectors start routine records such as meeting minutes, RFIs, observations and non-conformance reports from a plain instruction, so they spend less time on forms and more on the content.
- **Help** shortens onboarding. PMC firms rotate staff across projects and clients, and each owner's configuration is slightly different. Guidance inside the system means new team members follow the configured process from their first day.


Logged into: All Levels
Portfolio
Home
Controls
Cost
Project Center
Portfolio View
Map View
Calendar
Events
Portfolio
CostKPI
ClaimNotif
DM
EVM
RFI
PMWEB
Contracts Performance Dashboard
2,023,796,899
Contract Awarded
132,677,034
CO Approved
47,663,962
CO Pending
-86,149,753
VECP
1,474,920,545
Invoiced
595,403,635
Balance
Pending CO and Claims
Projects by Type
Projects by Category
Contracts by Company
Contracts by Contract Type
Microsoft Power BI
3 of 21
AI Assistant
Back
Find all budget requests that included transfer funds from contingency
Here are some budget requests that included transferring funds from contingency:
1. Budget Transfer - Boston Medical Center(3), Status: Draft View Record
2. Budget Transfer - Boston Medical Center, Status: Approved View Record
3. Budget Transfer - Hamilton Quad Maintenance, Status: Draft View Record
4. Budget Transfer - Mellon Quad Renovation, Status: Draft View Record
5. Budget Transfer - Parsons Confidential Project 2, Status: Draft View Record
6. Contingency to furniture - Boston Medical Center(3), Status: Approved View Record
7. Budget Transfer - The Mall, Status: Approved View Record
8. Budget Transfer - The Mall, Status: Approved View Record
9. Budget Transfer 2 - The Mall, Status: Approved View Record
10. Transfer to Complay with Award - Dubai Police Samole, Status: Approved View Record
11. Budget Transfer for awarding fit-out package - 5 Star Hotel, Status: Approved View Record
Ask anything about PMWEB...


Logged into: All Levels
Forms
Meeting Minutes
Manager Page
A0001 - Owner/Architect/Contractor 3
RVS0104 - Boston Medical Center
Approved
Meeting Minutes: 8 - Owner/Architect/Contractor 3
Main
Checklists 20
Clauses
Notes
Attachments 7
Notifications 1
Header Fields
Project*
RVS0104 - Boston Medical Center
Record #*
A0001
Meeting #
8
Description
Owner/Architect/Contractor 3
Phase
WBS
Type
Walkthrough
Category
Progress Review Meeting
Locaton
Main Office
Meeting Date
14-Apr-2022 12:00:00 tt
Started
09:00 AM (UTC+4)
Ended
12:00 PM (UTC+4)
Reference
Status
Approved
Revision
0
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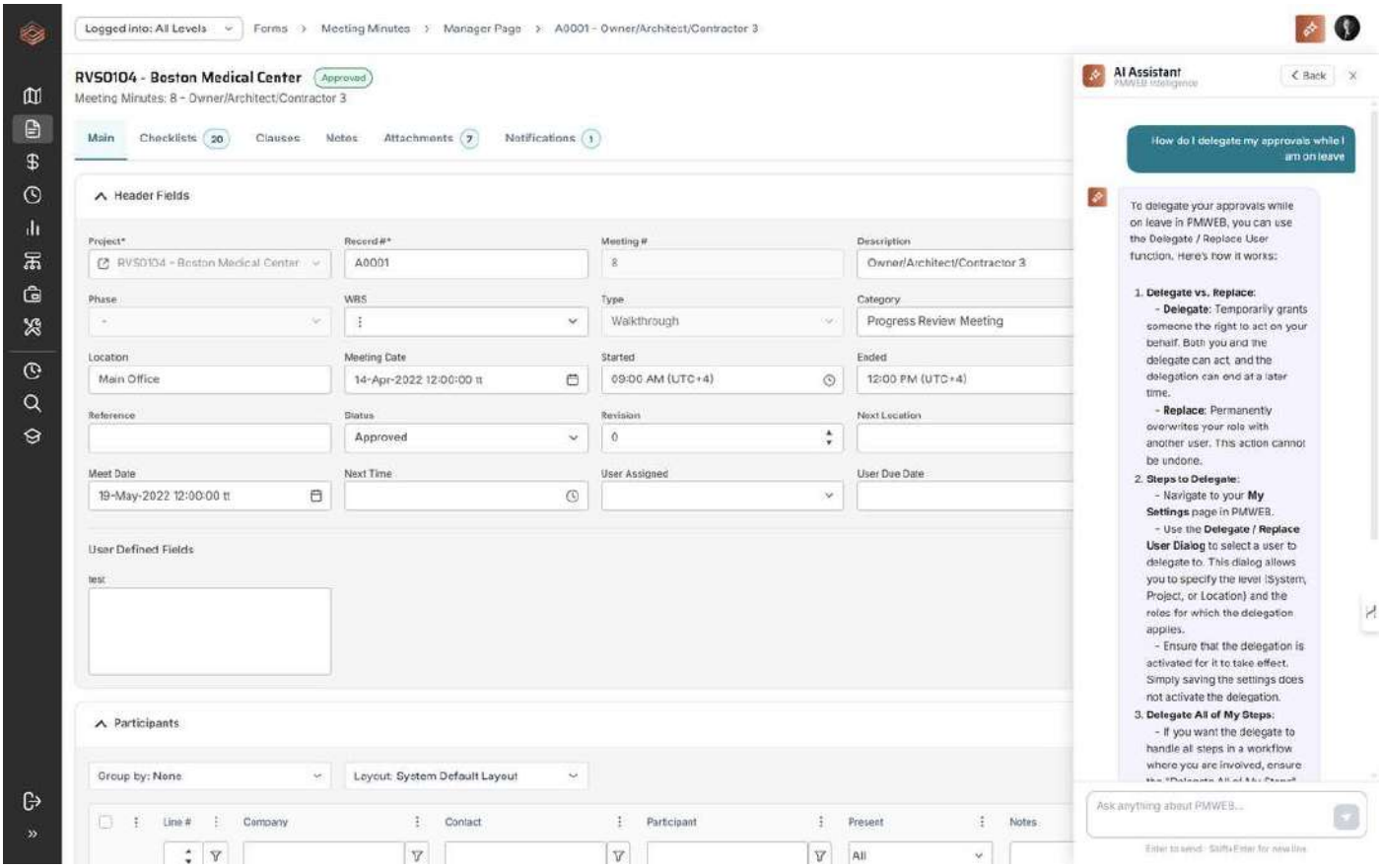
Meet Date
19-May-2022 12:00:00 tt
Next Time
User Assigned
User Due Date
User Defined Fields
test
Participants
Group by: None
Layout: System Default Layout
Line #
Company
Contact
Participant
Present
Notes
All
AI Assistant
Back
Create a meeting minute for today's progress meeting with the MEP contractor for Boston Medical
I've prepared the meeting minutes for today's progress meeting with the MEP contractor for the Boston Medical project. Please review and confirm the details in the confirmation card shown on your screen. Once confirmed, the record will be created.
Confirm
Cancel
Ask anything about PMWEB...

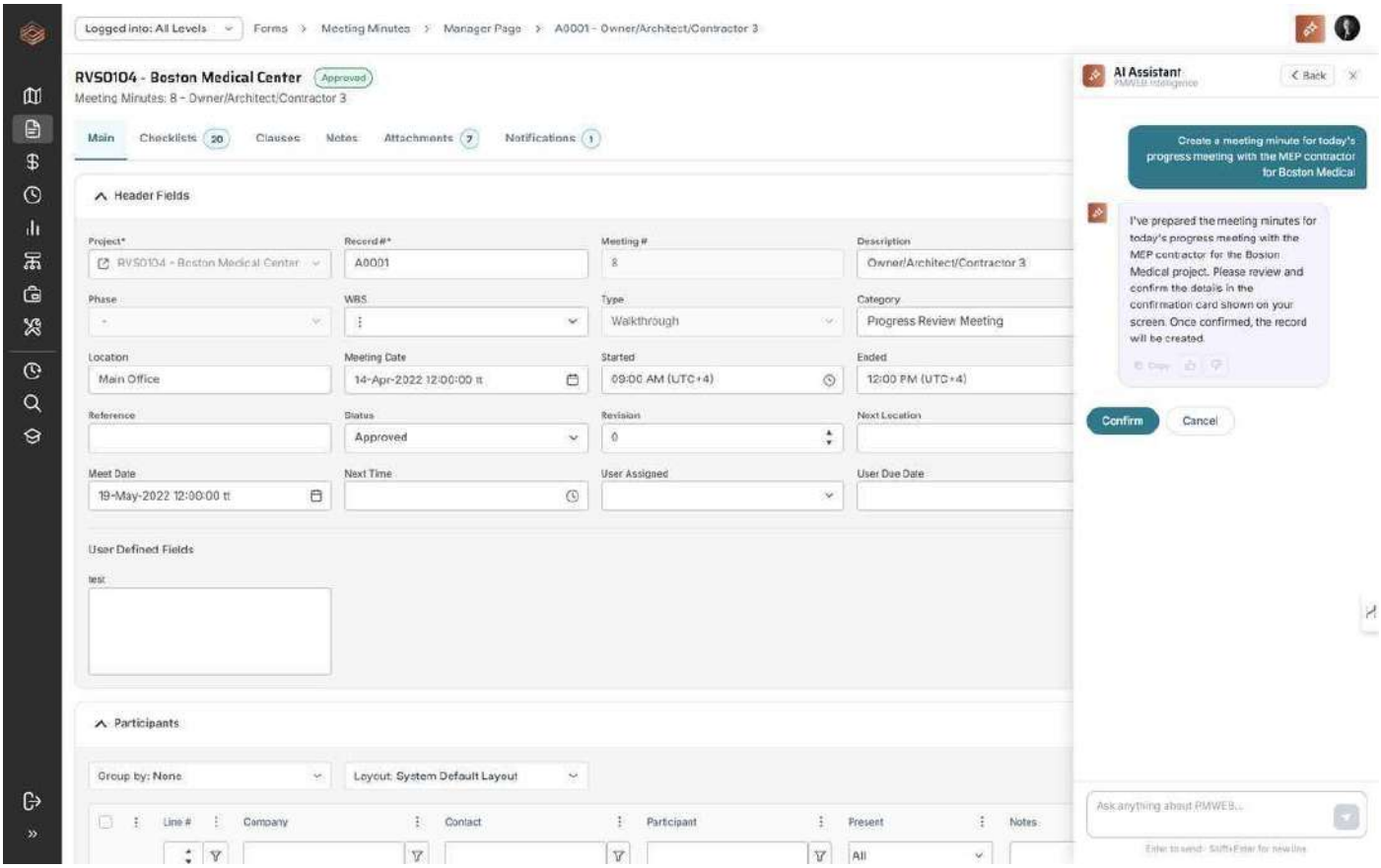


Guardrails: Why Owners Can Trust It

Owners in the GCC rightly ask how AI will be controlled on their projects. Two principles built into PMWEB AI answer that question directly.

- **Action taken only with your approval.** The Assistant prepares; the user decides. Nothing is created, routed or approved without the user confirming it, so the delegation of authority configured for the project remains the only route to a decision.
- **PMWEB AI honours security settings.** The Assistant sees and acts only on what the user's role permits. A contractor's user cannot reach the owner's internal budget through the Assistant, and confidential commercial records stay confidential.

For a PMC firm, these guardrails matter because its professional accountability does not change when AI is used. The CMAA Standard expects the CM to act in the owner's interest and to keep accurate records. An AI that respects approvals and access rights supports that accountability rather than blurring it.

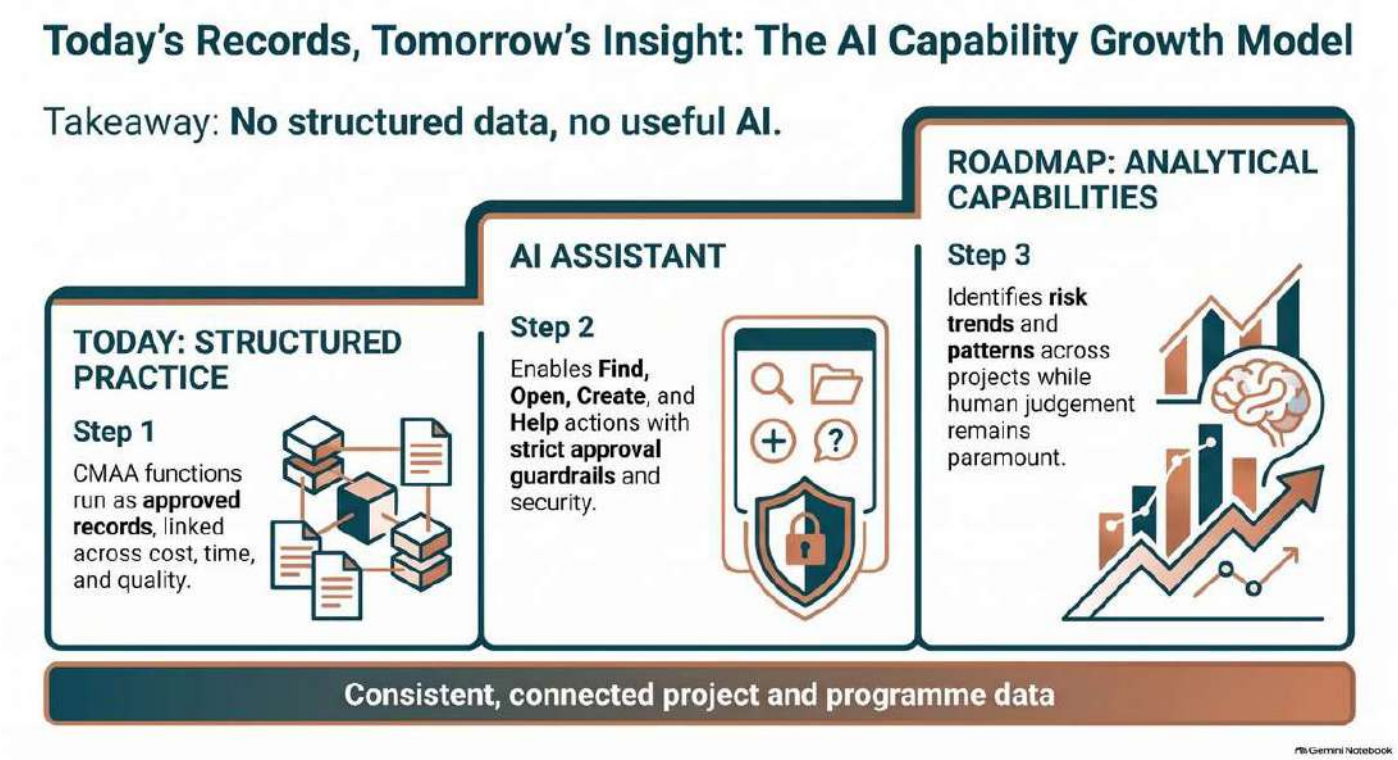


Where the Next Releases Are Heading

Later releases on the PMWEB AI roadmap are planned to move from helping users work with records to helping them understand what the records mean, with **risk identification** as the direction already signalled. For a PMC firm, that is where AI begins to support the practice itself, not just the people using the system.

The direction is easy to see in the functions this series has covered. A cost manager would want early sight of pending changes accumulating against remaining contingency. A planner would want to notice float eroding across successive updates. A quality manager would want recurring defects by package or contractor brought forward. A PMO would want risks that keep becoming issues across several projects drawn to its attention. These are directions, not dated features, and the professional judgement of the PMC remains the decision-maker.

What is certain is the dependency. Every one of those capabilities will be only as good as the structured records captured today. A PMC firm that digitalises its practice now will be ready to benefit from each release as it arrives; a firm that waits will first have to rebuild its data.



Preparing Your Practice for AI

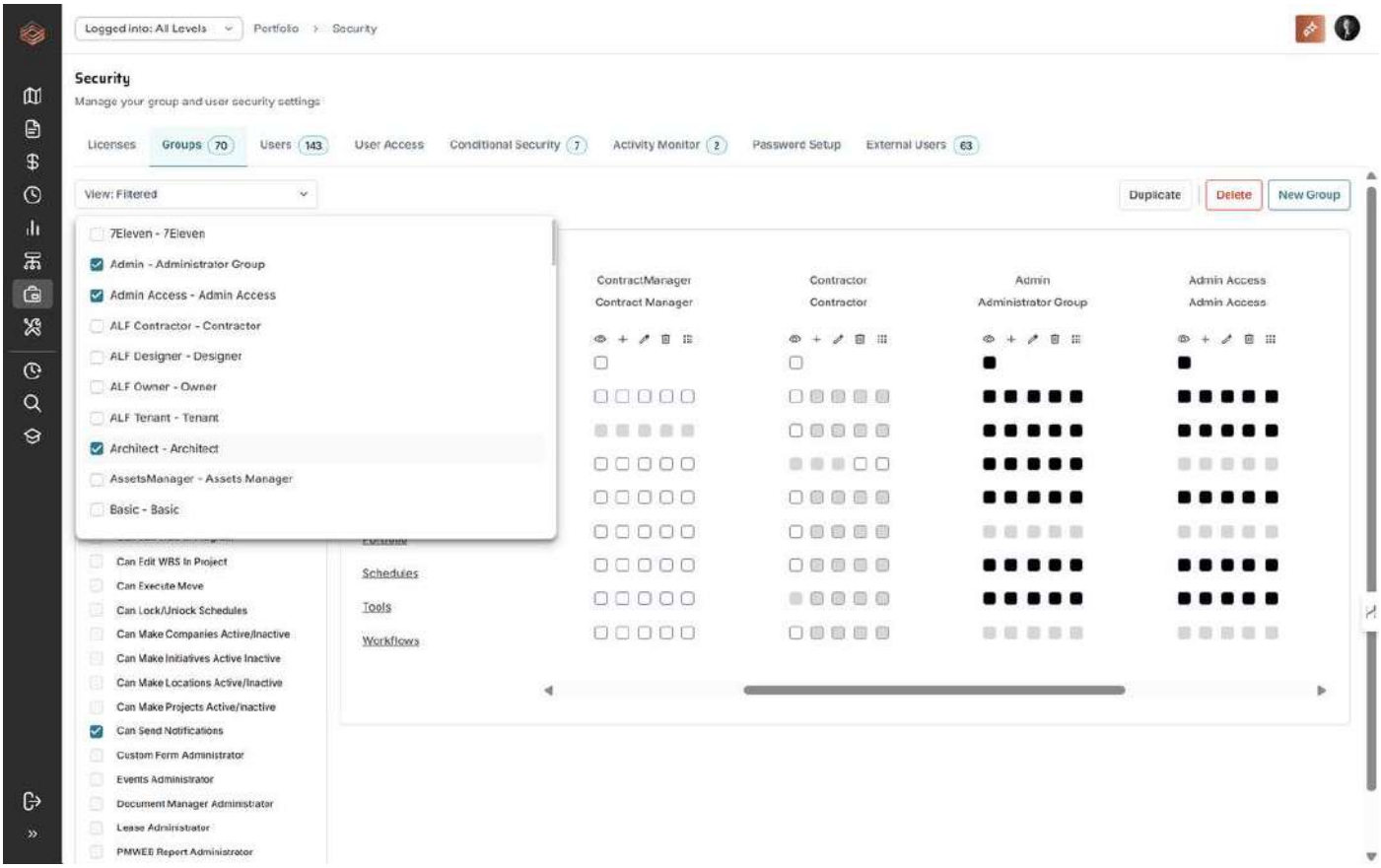
The practical steps are the same ones this series has recommended function by function. Seen together, they form an AI readiness plan for a PMC firm.

1. **Standardise the forms and value lists.** Configure each CMAA process once for the firm, with consistent fields, categories and status values, then adapt it per client.
2. **Standardise the coding structures.** Use a common cost breakdown structure, work breakdown structure, location codes and document numbering, so records from different projects can be compared.
3. **Link the records.** Make the links between RFIs, changes, commitments, schedule activities, risks and inspections part of the process, not an afterthought.
4. **Enforce the workflow.** Keep approvals inside PMWEB under the delegation of authority, so every decision is a record with an approver and a date.
5. **Close out properly.** Capture lessons learned and closeout data as structured records, so each project adds to the firm's experience instead of disappearing into an archive.
6. **Govern access and data.** Define roles, security levels and data ownership, so AI can be switched on with confidence that it will respect them.

Configuring PMWEB AI to Your Firm's Procedures

As with every process in this series, each PMC firm and each client will make its own choices about how AI is used. PMWEB is configured to those choices.

What the firm or client decides	How it is configured in PMWEB
Who may use the AI Assistant	Role-based access, aligned with the user's existing PMWEB permissions
What the Assistant can see	The same security settings that govern each user's access to records
Which records it may help create	The forms and templates the firm has configured for each process
How prepared records are approved	The existing workflows and delegation-of-authority routes, unchanged
How AI use is introduced	Phased roll-out by project or team, with Help mode used in onboarding
Where data is hosted	The owner's hosting choice, including in-country hosting where required



Evidence That the Practice Is AI-Ready

A PMC firm can measure its readiness for AI with indicators drawn from its own PMWEB data:

- **Process coverage:** the share of the firm's CMAA processes that run as configured PMWEB workflows rather than outside the system.
- **Data completeness:** the share of key fields completed at entry on records such as RFIs, changes, inspections and risks.
- **Link density:** the share of change orders linked to an originating RFI or instruction, and of risks linked to the contingency or issues they affected.
- **Approval traceability:** the share of commitments and changes approved through the workflow with a recorded approver and date.
- **Cross-project consistency:** the number of projects in the programme using the same forms, value lists and coding structures.
- **Lessons captured:** closed projects with structured lessons learned and closeout records.

Key takeaway

AI will not fix a PMC firm's practice. It will amplify whatever practice the firm has already captured. A firm that runs the CMAA functions in PMWEB, as structured, linked and approved records at project and programme level, has already built what AI needs.

The PMWEB 2026 AI Assistant puts that foundation to work today, and the releases that follow will build on it. The firms that digitalise their practice now will be the ones ready to benefit.

Next in the series: *This concludes the series — thank you for following it. If you lead a PMC practice in the GCC, the best next step is an honest assessment of your practice against the CMAA Standard, function by function, to see where your processes already run as structured records and where they still live in email and spreadsheets.*

About the Author

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