



CMCS INSIGHTS · OWNERS · PRACTICE

# PMWEB in Practice

Five in-depth articles on specific PMWEB processes for owners and PMOs: RFIs as structured data, contingency and management reserves, real-time line-item variance reporting, Activity Boards that keep project conversations on the record, and contingency managed as a portfolio buffer.

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CEO & Chairman, CMCS

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# RFIs as Data, Not Correspondence — The Added Value of Managing RFIs in PMWEB

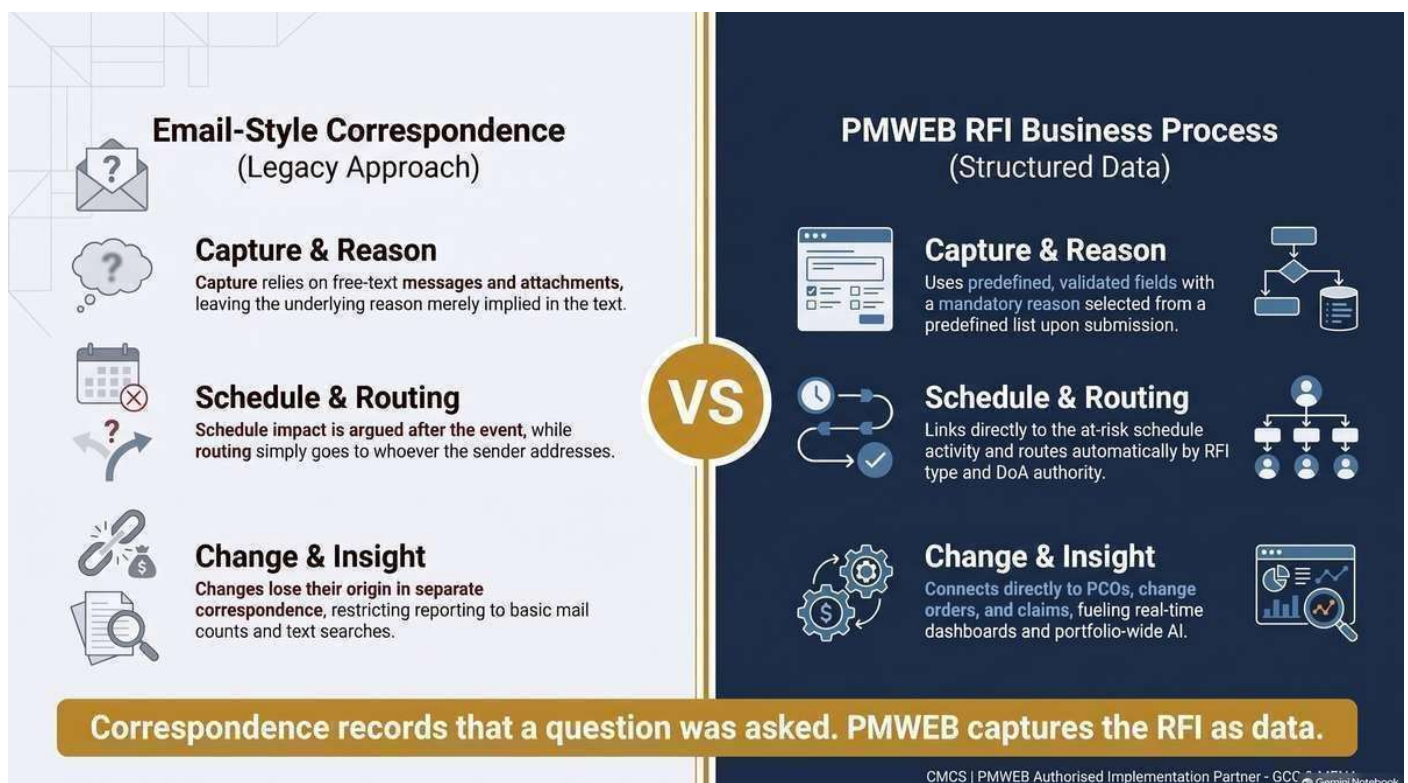
*From a mail thread that records a question to a business process that governs its consequences*

**Every construction project raises hundreds of RFIs, and large programmes raise thousands. Most owners can say how many were sent. Very few can say which ones put the critical path at risk, which ones committed them to cost, and which ones were raised to open the door to a claim.**

A Request for Information, known on many projects as a Technical Query or a request for clarification, is how the contractor asks the design team to resolve an ambiguity in the drawings, specifications, bills of quantities or the contract itself. The principle is simple. The exposure is not. A late answer can delay a critical activity. An answer given without the right authority can commit the owner to cost. An RFI raised with intent can become the first document in a variation or a claim.

On many GCC projects, RFIs are exchanged as correspondence on email-style document control platforms such as Aconex. The question is sent, the answer comes back and the thread is archived. That proves a communication took place. It does not capture the RFI as data. The reason it was raised, the activity it threatens, the authority needed to answer it and the change it triggered all stay buried in free text and attachments, where no workflow, report or AI model can reliably use them.

PMWEB treats the RFI as a business process rather than a message. This article explains how capturing each RFI as granular, structured data allows PMWEB to link it to the project schedule, route it by type, enforce the owner's Delegation of Authority (DoA) matrix, connect it to potential change orders and claims, report on it in real time and, with PMWEB 2026, learn from RFIs across the owner's entire portfolio of projects.



## What a Well-Managed RFI Process Must Achieve

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Whatever the contract form, FIDIC or bespoke, owners expect the RFI process to deliver the same six outcomes. Each one depends on data that must be captured when the RFI is raised, not reconstructed later.

| Objective       | What it requires                                                                                                  |
|-----------------|-------------------------------------------------------------------------------------------------------------------|
| Clarity         | The question is specific, references the exact contract documents and offers the contractor's proposed solution.  |
| Timeliness      | Answers are issued within the contractual response period and prioritised by schedule risk, not by date received. |
| Right expertise | Each RFI is reviewed by the discipline that owns the design element in question.                                  |
| Right authority | Any answer with time or cost consequences is approved at the level set in the owner's DoA matrix.                 |
| Traceability    | Every RFI that leads to a change order or claim can be traced in both directions.                                 |
| Learning        | Patterns across projects inform design reviews, contract drafting and contractor and consultant selection.        |

## How RFIs Are Typically Managed Today

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- **The RFI is a message, not a record.** Reason, discipline, location and impact live in the subject line and body text, if they are stated at all.
- **Routing depends on the sender.** The contractor addresses whoever they think should answer, and the right reviewer may never see the query.
- **Authority is implied, not enforced.** A designer's answer that changes scope or adds time can be issued without the owner's commercial approval.
- **Schedule impact is argued after the event.** The link between an RFI and an activity first appears in an extension of time submission, months later.
- **Changes lose their origin.** A variation arising from an RFI is raised in new correspondence, and the trail back depends on someone quoting a reference number.
- **Reporting stops at counts.** The register shows how many RFIs were sent and answered. It cannot show why they were raised, where, or at what cost.

## How PMWEB Digitalises RFI Management

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The principle is to capture every attribute of the RFI once, at source, in a structured field, and then let workflows, links, reports and AI put that data to work. Each element below is configuration within PMWEB, not custom development.

### A granular RFI template

The PMWEB RFI template is built so that an ambiguous RFI cannot be submitted. Alongside the project, stage, number, revision and dates, the form captures the WBS, trade, CSI specification section, discipline and building system; the location by tower, floor and room; the drawing, specification and BoQ references; the priority and the contractual required-response date. The reason for the RFI is selected from a predefined list such as design coordination, constructability, incomplete plans or specifications, differing site conditions, material change, value engineering or BIM clash. The question, the contractor's proposed solution and the consultant's answer each have their own field.

Logged into: All Levels Forms > RFIs / طلبات المعلومات > Manager Page > 004 - Conflict

**RV50104 - Boston Medical Center** (Returned (Step 2 of 4))

RFIs / 004 - طلبات المعلومات - Conflict

New Record Print

Main Additional Information Checklists Clauses Notes Attachments 19 Workflow Step 2 of 4 Notifications 10

Alternate Proposal

RFI Date / تاريخ طلب المعلومات: 01-Jul-2011 12:00:00 tt Date Required / تاريخ الرد: 08-Jul-2011 12:00:00 tt Date Answered / تاريخ الرد: 07-Jul-2011 12:00:00 tt Status / حالة: Returned

Revision / مراجعة: 0 User Assigned / تمسك إلى المستخدم: User Due Date / تاريخ الاستحقاق الخاص بالمستخدم: Priority / أولوية: Medium

Change Event / تغيير الحدث: ☐ Affects Scope of Work / يؤثر على نطاق العمل ☐ Affects Cost / يؤثر على التكلفة ☐ Affects Schedule / يؤثر الجدول الزمني

User Defined Fields

Tower Floor Room Drawing Ref.

Specification Page and Para BoQ Page and Item Hijra Date Time

Cost Location

\$1,500.00

Details

Question / سؤال

Inter 14px B I A HTML

The specs are showing 16 on center and the drawing is showing 24 on center. Please Advise

Additional custom fields can be added without limit. A checklist tab can require the contractor to confirm that the RFI does not ask for information already contained in, or reasonably inferable from, the contract documents, and that it is not being submitted to set up a material substitution or a change order.

### Field-level security and supporting evidence

Granular data is only useful if it can be trusted. PMWEB security defines which role group can view, create or edit each field. The contractor completes the question, reason and proposed solution. Only the consultant team completes the answer and the scope, cost and schedule impact flags. Each field is owned by the party accountable for it.

Logged into: All Levels | Portfolio | Security

## Security

Manage your group and user security settings

[Licenses](#)
[Groups 69](#)
[Users 143](#)
[User Access](#)
[Conditional Security 7](#)
[Activity Monitor 1](#)
[Password Setup](#)
[External Users 63](#)

Group\*

Contractor

Description\*

Contractor

- ☐ Option
- ☐ Default Group
- ☒ Guest Users
- ☐ Adaptive Form Administrator
- ☐ Can change Due Date in Procurement
- ☐ Can Copy Project
- ☐ Can Edit WBS in Program
- ☐ Can Edit WBS in Project
- ☐ Can Execute Move
- ☐ Can Lock/Unlock Schedules
- ☐ Can Make Vendors Active/Inactive
- ☐ Can Make Locations Active/Inactive
- ☐ Can Make Projects Active/Inactive
- ☒ Can Send Notifications
- ☐ Custom Form Administrator
- ☐ Events Administrator
- ☐ Document Manager Administrator
- ☐ Lease Administrator
- ☐ PMWeb Report Administrator
- ☐ Procurement Administrator

|                                | ALF Owner<br>Owner | Commercial Lead ...<br>Commercial Lead ... | ContractManager<br>Contract Manager | Contractor<br>Contractor |
|--------------------------------|--------------------|--------------------------------------------|-------------------------------------|--------------------------|
| <b>Budget Requests Details</b> |                    |                                            |                                     |                          |
| Attachments                    |                    |                                            |                                     |                          |
| Company                        |                    |                                            |                                     |                          |
| Cost Code                      |                    |                                            |                                     |                          |
| Cost Type                      |                    |                                            |                                     |                          |
| CurrencyName                   |                    |                                            |                                     |                          |
| Curve                          |                    |                                            |                                     |                          |
| Description                    |                    |                                            |                                     |                          |
| FinishDate                     |                    |                                            |                                     |                          |
| Funding                        |                    |                                            |                                     |                          |
| Line #                         |                    |                                            |                                     |                          |
| Location                       |                    |                                            |                                     |                          |
| Notes                          |                    |                                            |                                     |                          |
| Period                         |                    |                                            |                                     |                          |
| Phase                          |                    |                                            |                                     |                          |

Every RFI carries its evidence: drawings, specification extracts, BoQ pages, site photos and BIM model snapshots, uploaded to the PMWEB document management repository and attached to the record with a comment explaining the relevance of each. Project emails imported into PMWEB can be linked to the RFI too, so correspondence becomes part of the record instead of a substitute for it.

Logged into: All Levels | Forms | RFIs / طلبات المعلومات | Manager Page | 004 - Conflict

## RV50104 - Boston Medical Center

RFIs / 004 - طلبات المعلومات - Conflict

Returned (Step 2 of 4)

[New Record](#)
[Print](#)

[Main](#)
[Additional Information](#)
[Checklists](#)
[Clauses](#)
[Notes](#)
[Attachments 19](#)
[Workflow Step 2 of 4](#)
[Notifications 10](#)

Sort By: None

19 Attachments

|                                     |                                       |                                       |                                      |
|-------------------------------------|---------------------------------------|---------------------------------------|--------------------------------------|
| Boston Medical - 004 - Conflict.doc | Boston Medical Center - 004 - Con...  | Boston Medical Center - 004 - Con...  | Boston Medical Center - 004 - Con... |
| brochure_summit.pdf                 | cad_drawing.png                       | Link - D6F4CB5C-EFC2-4470-B89...      | Link - D6F4CB5C-EFC2-4470-B89...     |
| Link - D6F4CB5C-EFC2-4470-B89...    | Link - New Observation - This what... | Link - New Observation - This what... | Parsons Payment Certificate.pdf      |
| rvs-educed-sample-project-Spe...    | rvs-educed-sample-project-Spe...      | rvs-educed-sample-project-Spe...      |                                      |

# ANATOMY OF A GRANULAR PMWEB RFI



Every field captured once, at source, by the party accountable for it.

CMCS | PMWEB Authorised Implementation Partner | Gemini Notebook

## Linking every RFI to the project schedule

An RFI matters to the schedule only if it sits on, or near, the path of the work it affects. In PMWEB the contractor must name the schedule activity that the RFI could impact if it is not answered on time, at the moment the RFI is submitted. Because the schedule and the RFI log share one database, that single field changes the conversation.

- **Prioritisation by float.** The consultant sees which open RFIs are tied to critical or near-critical activities and answers those first.
- **Early warning.** Comparing the required-response date with the linked activity's start shows how much margin remains before a late answer becomes a delay.
- **Contemporaneous evidence.** If a delay occurs, the owner holds a dated record of the nominated activity, the date raised, the contractual response date and the actual answer date, which is exactly what is needed to assess or rebut a time claim.

Logged into: All Levels Forms > RFIs / طلبات المعلومات > Manager Page > 005 - Drawing A-500 Issues

**RV50104 - Boston Medical Center** Approved

RFIs / 005: طلبات المعلومات - Drawing A-500 Issues

Main Additional Information Checklists Clauses 1 Notes Attachments 12 Notifications

**Details**

Question/ سؤال

Inter 14px B I U A HTML

The details on Drawing A-500 refer us to the structural drawings for the concrete foundation walls. Further, F3/A-500 indicates "see S-301 for under slab conditions-typ." The details on A-500 show what appears to be rigid insulation below the perimeter of the slab and at the interior of the foundation walls

1. There is no Drawing S-301. Please confirm.
2. There is no specification for rigid insulation. Please confirm.
3. Structural drawings and details do not require rigid insulation below grade except at the bleacher pier footing locations at details 6 & 7/S-301. Please confirm

Proposed Solution/ الحل المقترح

Inter 14px B I U A HTML

Answer / إجابة

Inter 14px B I U A HTML

Since the building is an unheated building we do not need to have the insulation against the foundation wall and under slab as shown in the wall sections on A-500. Typical under slab condition should be as per detail "Typical Slab on Grade Construction" found on S-301. Rigid insulation is required at detail 6 on S-301.

## From RFI to Schedule Impact



CMCS | PMWEB Authorised Implementation Partner - GCC & MENA

## Workflow that routes each RFI by type

PMWEB workflow maps every step needed to review and answer an RFI: who is assigned, how long each step may take, the actions available (approve, return, reject, delegate, request team input) and where the RFI goes on return and resubmission. Because discipline, building system, CSI section and reason are captured as fields, conditional branches send each RFI to the right reviewer automatically.

- Structural, MEP and architectural RFIs go to the responsible design consultant.
- RFIs citing differing site conditions or utility conflicts also go to the PMC site team.
- BIM clash RFIs pass through the BIM coordinator before reaching the designer.

- Value engineering and material change RFIs are copied to the owner's technical and commercial teams.

Logged into: All Levels | Workflows: Business Processes (System)

Roles: Business Processes (BPM) | Defaults | APM Rules

Select Template: D026 - GCC\_RED\_Commitment Co - Contractor

BPM ID\*: D026

Template Name\*: GCC\_RED\_Commitment Co - Contractor

Recalculate Due Dates On Actions: ☒

Single "All Must Approve" Email: ☐

Associate With: Commitment Change Orders

BPM MANAGERS: [Empty Box]

OVERDUE ALERT: ☒

Alert Active: ☒

Days (+/-): 0

Role(s): -- Overdue Approver --

Email: ☐

Onscreen: ☐

ROLES & APM RULES

Roles: [List of roles including Document Manager, Submitter, admin, AIF Contractor, AIF Designer, AIF owner, Ambika]

Branch Rules: [Empty Box]

STEPS

| STEP # | TYPE                      | DESCRIPTION | LEVEL  | ACTION        | RETURN TO | DELEGATE                            | DOCUSIGN                 |
|--------|---------------------------|-------------|--------|---------------|-----------|-------------------------------------|--------------------------|
| 1      | PMT L2                    |             | System | Next Step     |           | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2      | PMT L1                    |             | System | Next Step     |           | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3      | Commercial Manager        |             | System | Next Step     |           | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 4      | GM - Projects             |             | System | Next Step     |           | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 5      | The value is more than 5M |             |        | Branch        |           | <input type="checkbox"/>            | <input type="checkbox"/> |
| 5.1    | Finance Team              |             | System | Final Approve |           | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

VISUAL WORKFLOW

SHOW ROLES: ☒ | SHOW USER NAMES: ☐

SUBMITTER → PMT L2 → PMT L1 → COMMERCIAL MANAGER → GM - PROJECTS → THE VALUE IS MORE THAN 5M → FINAL APPROVE (or REJECT)

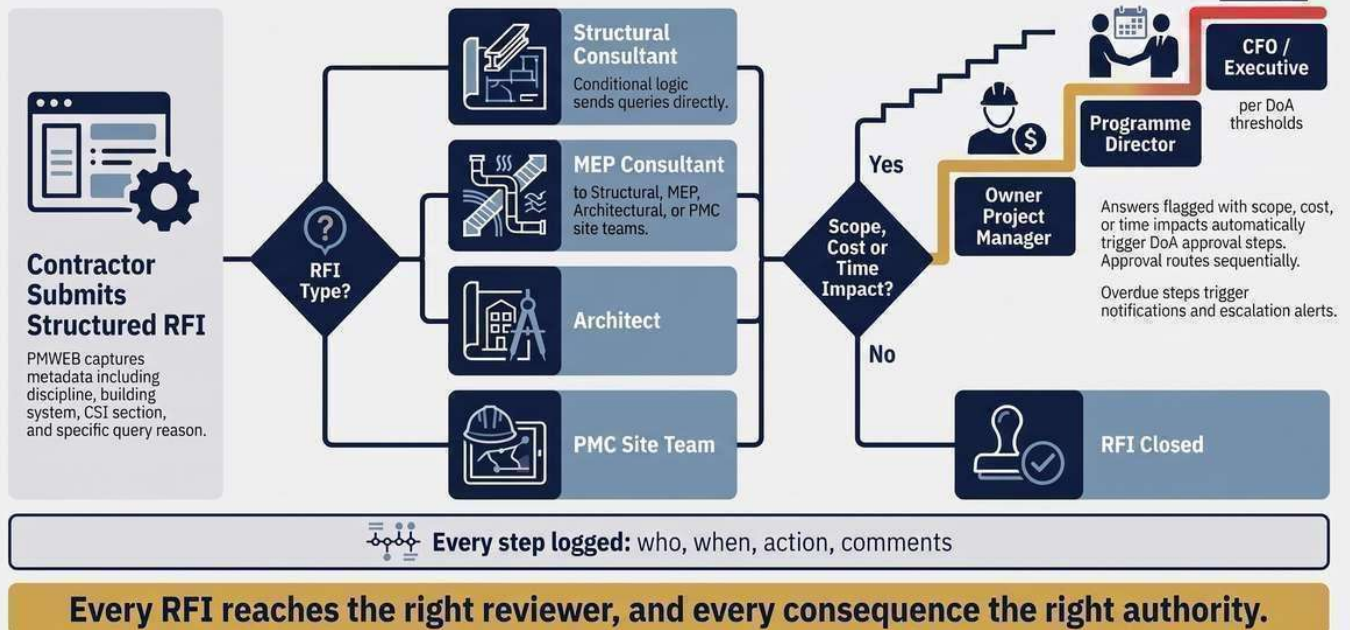
## Embedding the DoA matrix

Not every RFI is purely technical. Once the consultant flags that an answer affects scope, cost or schedule, the RFI can no longer be closed by the designer alone. PMWEB workflow reads those flags, and the estimated value or days, to add the approval steps required by the owner's DoA matrix.

| Impact of the answer                   | Workflow path                                                                   |
|----------------------------------------|---------------------------------------------------------------------------------|
| <b>No scope, cost or time impact</b>   | Design consultant answers, PMC reviews, RFI closed.                             |
| <b>Time impact only</b>                | Adds PMC planning review and owner project manager approval.                    |
| <b>Cost within PM authority</b>        | Adds PMC cost review and owner project manager approval.                        |
| <b>Cost or time above PM authority</b> | Adds programme director and, where the DoA requires, CFO or executive approval. |

The thresholds are set by each owner's own DoA matrix. Once submitted, every workflow step is logged automatically: who acted, when, the action taken and any comments. Overdue steps trigger notifications, and the workflow inbox shows every pending RFI by project, step and due date. Accountability no longer depends on someone chasing replies.

# Right Reviewer, Right Authority



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## From RFI to potential change order and claim

Many change orders and claims begin life as an RFI. An answer that clarifies design intent can also reveal an omission, a conflict between contract documents or a differing site condition. In PMWEB, an RFI flagged with a scope, cost or schedule impact is linked to a change event and carried into a potential change order (PCO) and then a change order, each record referencing the one before it. The same linked-records capability connects RFIs to submittals, meeting minutes and non-conformance reports.

- **Forward:** from any RFI, see whether it produced a PCO, the estimated and approved values and the change order status.
- **Backward:** from any change order or claim, see the RFI that started it, when it was raised, the proposed solution and the answer.
- **Aggregate:** measure how much approved change and claimed time and cost originated from RFIs, by reason, discipline and design package.

That aggregate view is a direct measure of design quality and contract document completeness. It also exposes RFI misuse: a pattern of RFIs raised to expose consultant omissions or to set up material substitutions becomes visible once RFI and change data sit in the same database.

Logged into: All Levels > Costs > Online Change Requests / طلبات التغيير غير المؤتمتة > Manager Page > 003 - New Design Request

**RV50104 - Boston Medical Center** Draft

Online Change Requests / 003: طلبات التغيير غير المؤتمتة - New Design Request

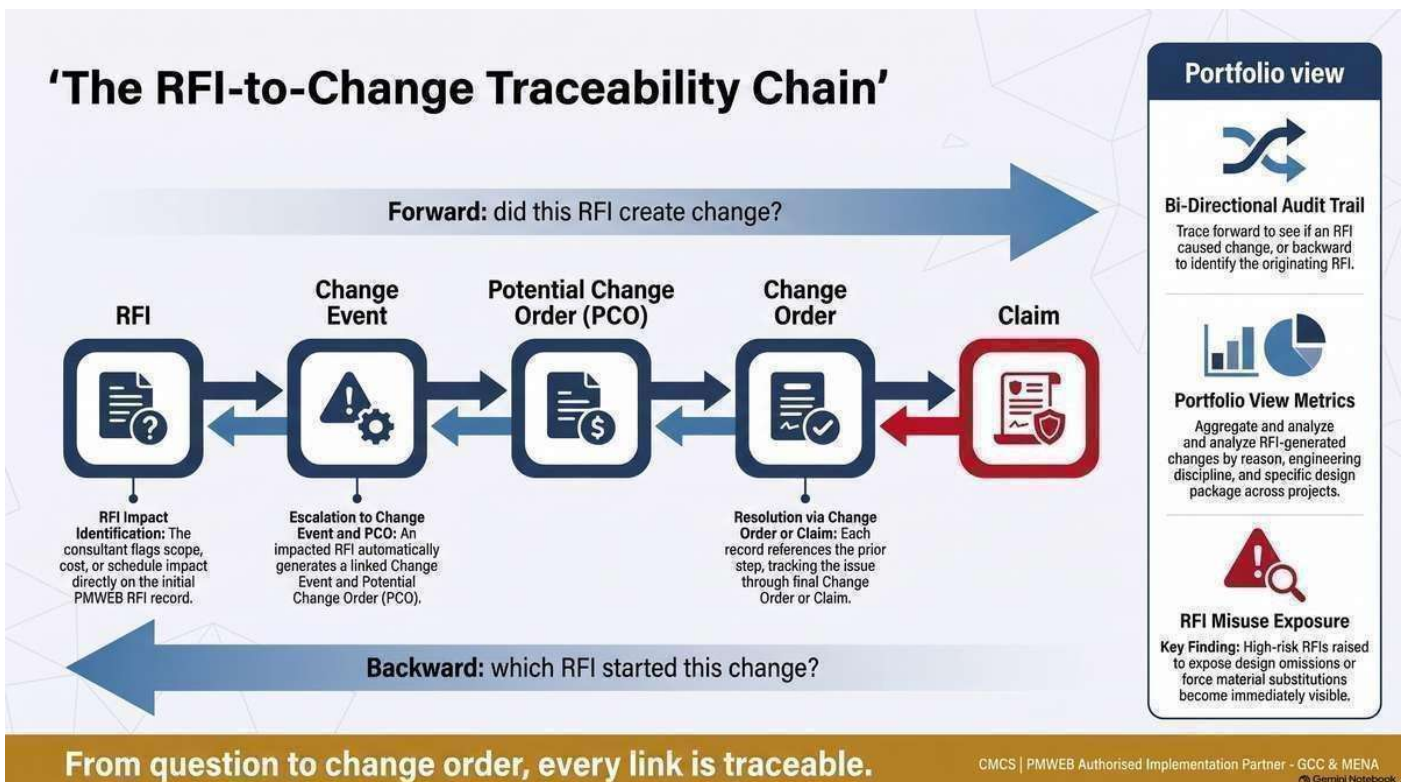
Main Additional Information Checklists Clauses Notes Attachments

**Header Fields**

|                                                                                  |                                                      |                                                                    |                                 |
|----------------------------------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------|
| Vendor / بائع<br>Rockwell Architects                                             | Project* / مشروع*<br>RV50104 - Boston Medical Center | Commitment* / التزام*<br>001 - Design Services                     | Claim No / رقم المطالبة*<br>003 |
| Subject / موضوع<br>New Design Request                                            | Currency*<br>USD - Dollar (United States of Am...    | Action Before Next Month / إجراء قبل الشهر التالي<br>Revised Scope | WBS / هيكل تقسيم العمل<br>:     |
| Type / نوع<br>RFC Request for Change                                             | Category / فئة<br>RFC Request for Change             | Post As / نشر باسم<br>Revised Scope                                | RFC / طلب تغييرات (RFC)         |
| Risk Analysis / تحليل المخاطر<br>3 - Bassam Samman Risk Register                 | AVI<br>001 - Design Changes                          | Status / حالة<br>Draft                                             | Revision / مراجعة<br>0          |
| Vendor aware of the issue / المورد على دراية بالمشكلة<br>19-Nov-2020 12:00:00 tt | Date<br>:                                            | Cause / سبب<br>:                                                   | Contact / اتصال<br>:            |
| Remarks / ملاحظات<br>Use Units / استخدام الوحدات                                 |                                                      |                                                                    |                                 |

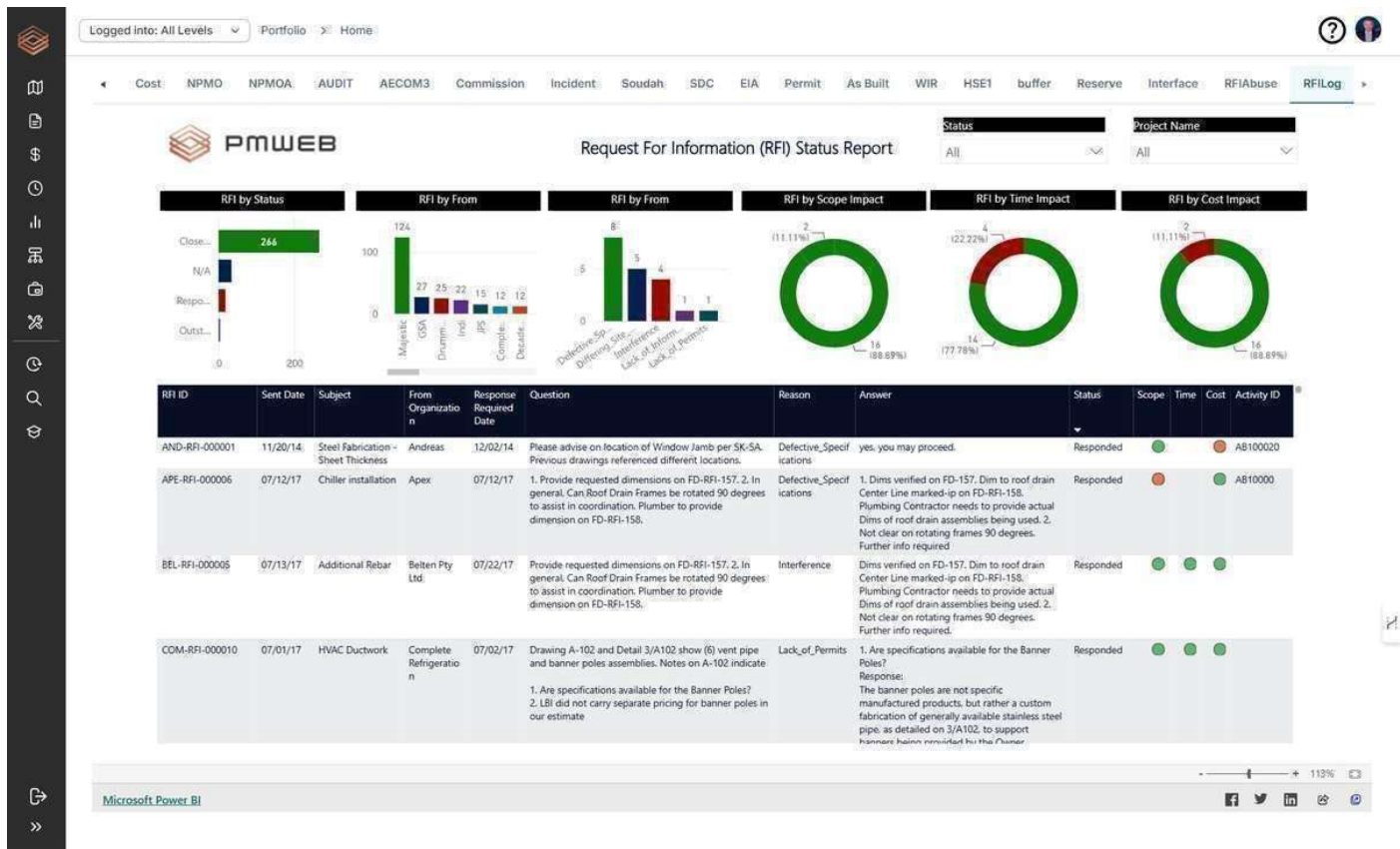
**User Defined Fields**

|                                   |                           |             |                                       |
|-----------------------------------|---------------------------|-------------|---------------------------------------|
| <input type="checkbox"/> In Scope | Cost<br>:                 | Time<br>:   | Activity Impacted<br>:                |
| Days<br>0                         | Reason for Variation<br>: | Profit<br>: | Brief Description of Instruction<br>: |



## Reports and dashboards that answer real questions

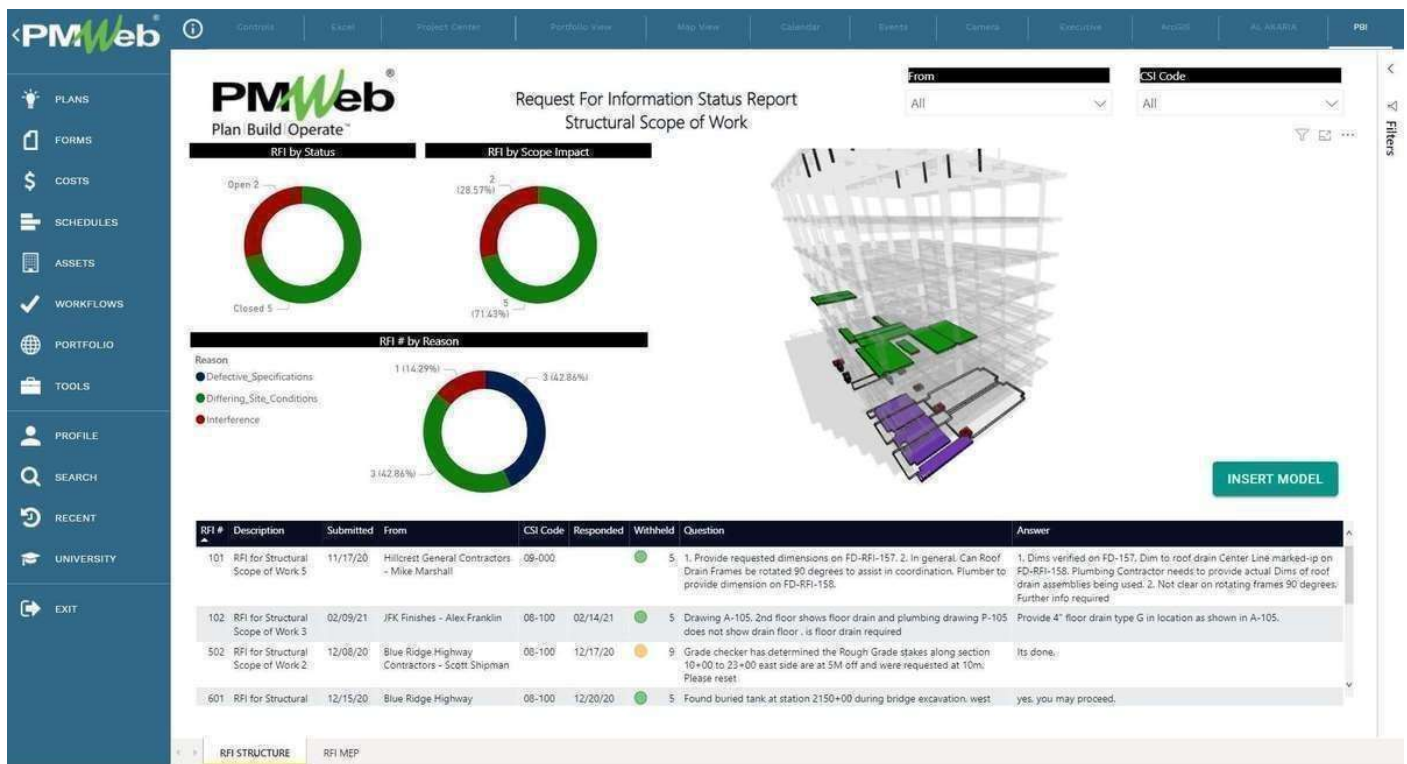
A report can only slice data by what was captured. Because every RFI attribute in PMWEB is a field, every attribute becomes a dimension for filtering and drill-down on one project or across the portfolio. The RFI status dashboard shows open, closed and overdue RFIs alongside scope, schedule and cost impact and the category of each, with the full log beneath.



The same data supports analysis no register can provide: RFIs by CSI code and category, the RFI and PCO trend over six months, and RFIs by reason. When RFI volume and RFI-related change rise together, the owner sees it while there is still time to act.



Because RFIs carry their discipline, location and model references, they can also be shown on the BIM model by scope of work, so the project team sees where the queries concentrate. PMWEB reports can be formatted to the owner's branding, and the data feeds Power BI dashboards that combine RFIs with cost, schedule and change information, current at the moment they are opened.



## PMWEB 2026 AI: learning from RFIs across the portfolio

AI is only as useful as the data it reasons over. Applied to a mailbox, AI has to infer from free text what each RFI was about, why it was raised and whether it mattered. Applied to PMWEB, it starts from RFIs already classified by reason, discipline, location, WBS, schedule activity, impact and outcome, and already linked to the change orders and claims they influenced. No data, no AI. And without structured data, no reliable AI.

The PMWEB 2026 release introduces the PMWEB AI Assistant, which helps users find, open and create records and get help on the system. It honours PMWEB security settings and acts only with the user's approval. A project engineer can ask for the open RFIs on a given floor, open a specific RFI or start a new one in natural language, within the access already defined for their role.

### PMWEB SCREENSHOT TO CAPTURE B

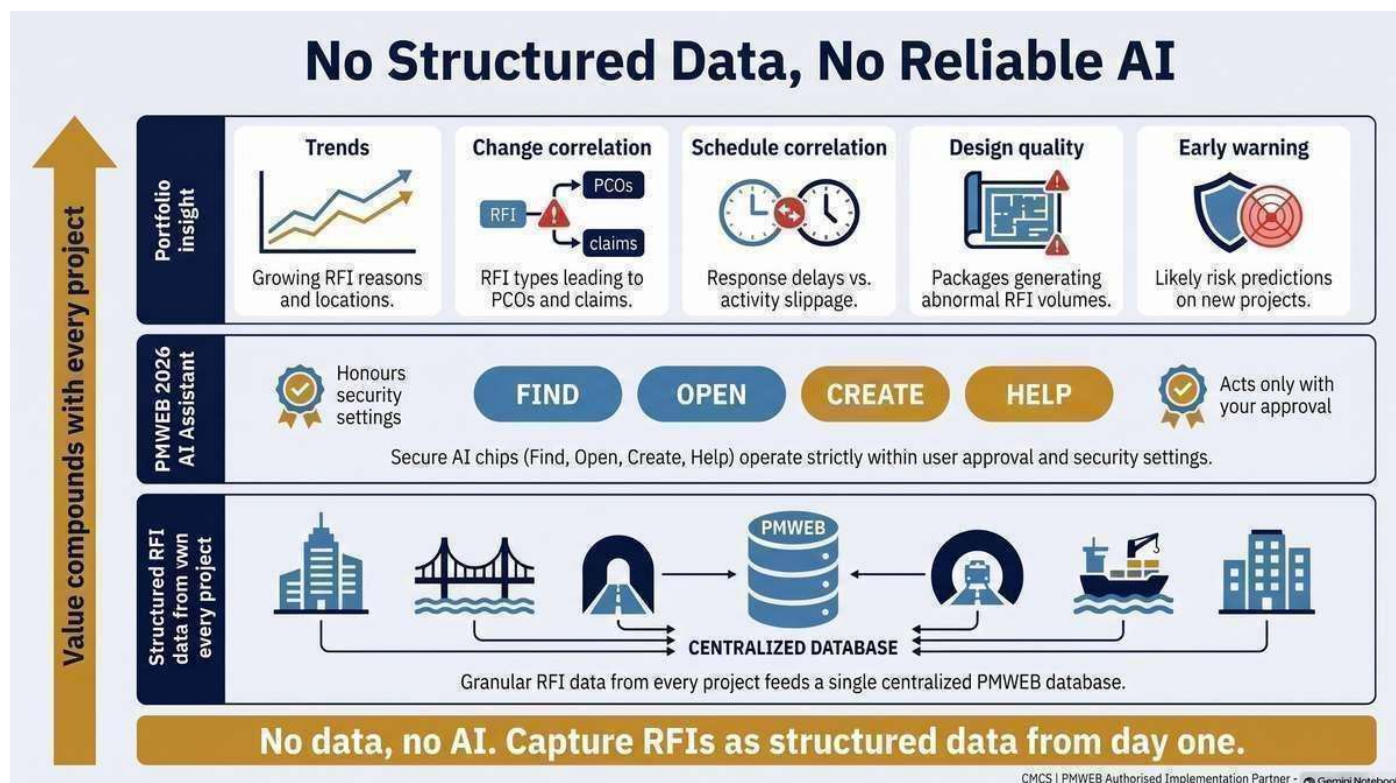
## PMWEB 2026 AI Assistant working with RFIs

Capture: a natural-language request that finds the open RFIs on a project and opens the selected RFI.

The larger prize is the RFI data an owner accumulates across every active and completed project. Held in one PMWEB database, that data can be analysed at portfolio level by PMWEB AI in this and future releases, and by AI solutions that integrate with PMWEB, to answer questions such as:

- **Trends:** which RFI reasons are growing, and on which project types, contractors or design consultants?
- **Change correlation:** which RFI reasons and disciplines most often lead to PCOs, change orders and claims, and at what average value and time?
- **Schedule correlation:** do projects with slow RFI responses show more slippage on the linked activities?
- **Process correlation:** do RFI peaks precede spikes in submittal rejections, NCRs or site instructions?
- **Design quality:** which design packages generate RFIs well above the portfolio norm?
- **Early warning:** given the RFI pattern in a new project's first months, which issues are most likely to follow, based on comparable projects?

Lessons learned stop being anecdotes in close-out reports and become evidence the owner applies to design reviews, contract drafting, contractor selection and the RFI response periods it specifies.



## Email Correspondence vs PMWEB: Side by Side

Correspondence platforms still have a role: transmittals and formal letters must be controlled. But an RFI is a decision-making process with time and cost consequences, and that needs structured data, defined accountability and an audit trail that a mail thread cannot provide.

| Capability                | Email-style correspondence (e.g. Aconex)     | PMWEB RFI business process                                 |
|---------------------------|----------------------------------------------|------------------------------------------------------------|
| <b>Data capture</b>       | Subject line, free-text body and attachments | Predefined fields and value lists, validated on submission |
| <b>Reason for the RFI</b> | Implied in the text, if stated               | Mandatory selection from a predefined list                 |
| <b>Schedule impact</b>    | Narrated after the event                     | Linked to the at-risk schedule activity at submission      |

| Capability                 | Email-style correspondence (e.g. Aconex) | PMWEB RFI business process                              |
|----------------------------|------------------------------------------|---------------------------------------------------------|
| <b>Routing</b>             | Whoever the sender addresses             | Workflow by RFI type, discipline and reason             |
| <b>Approval authority</b>  | Whoever replies                          | DoA thresholds embedded in workflow steps               |
| <b>Change management</b>   | Separate follow-up correspondence        | Linked to change event, PCO, change order and claim     |
| <b>Field-level control</b> | Whole message visible to recipients      | Role-based rights per field                             |
| <b>Reporting</b>           | Mail register and counts                 | Real-time reports and dashboards on any attribute       |
| <b>Portfolio AI</b>        | Text search across messages              | Structured data across all projects, ready for analysis |

## Configuring PMWEB to the Owner's RFI Procedures

Every owner, and every contract, defines its RFI procedure slightly differently. Those decisions become configuration in PMWEB, saved in project templates and reused on each new project.

| What the owner decides           | How it is configured in PMWEB                                                            |
|----------------------------------|------------------------------------------------------------------------------------------|
| <b>Forms and fields</b>          | RFI template, checklists and custom fields built to the owner's procedure                |
| <b>Reason and category lists</b> | Predefined value lists for reason, discipline, building system and priority              |
| <b>Response periods</b>          | Required-response dates calculated from the contract's response period                   |
| <b>Routing rules</b>             | Conditional workflow branches by discipline, reason and location                         |
| <b>DoA thresholds</b>            | Approval steps triggered by scope, cost and time flags and values                        |
| <b>Numbering</b>                 | RFI numbering by project, package, discipline and contractor                             |
| <b>Notifications</b>             | Alerts and escalation for overdue workflow steps                                         |
| <b>Report formats</b>            | RFI registers, dashboards and output forms in the owner's format                         |
| <b>Integration</b>               | Schedules from Primavera P6 or Microsoft Project, imported project emails and BIM models |

## Evidence That RFI Management Is Working

- **Response timeliness.** RFIs answered within the contractual response period, by consultant and discipline.
- **Reviewer cycle time.** Average days spent at each workflow step, showing where answers stall.
- **Critical-path exposure.** Open RFIs linked to critical or near-critical activities, and the margin remaining on each.
- **Impact ratio.** The share of RFIs flagged with scope, cost or schedule impact.
- **RFI-to-change conversion.** RFIs that became PCOs, change orders or claims, and their value.
- **Repeat reasons.** Recurring RFI reasons by design package, signalling where documents need improving.
- **Submission quality.** RFIs returned or rejected because the answer was already in the contract documents.

## Key takeaway

Managing RFIs as correspondence answers one question: was the query sent and answered? Managing them as a business process in PMWEB answers the questions that protect the owner. Was the RFI justified? Did the right reviewer answer it on time, with the authority to accept its consequences? Which activity was at risk? Did it lead to a change order or claim, and for how much?

The difference is granularity. Structured fields, field-level security, schedule links, DoA-driven workflow, change management links, real-time dashboards and portfolio-wide AI all depend on capturing each RFI as data the moment it is raised. Owners who make that choice turn the RFI from a source of delay, cost and dispute into one of their richest sources of project intelligence.

**Talk to us:** to see how the PMWEB RFI business process, workflows and dashboards can be configured for your projects, contact CMCS at [info@CMCS-MENA.com](mailto:info@CMCS-MENA.com).

#PMWEB #CMCS #RFI #TechnicalQueries #ConstructionManagement #ProjectControls #PMIS  
#CapitalProjects #AlinConstruction

## 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.

## Reserves as Governance Indicators, Not Budget Buffers — The PMO's Role in Managing Contingency and Management Reserve with PMWEB

*From a percentage added to the estimate to a risk-based reserve the PMO can see, attribute, defend and redeploy across the portfolio*

***Every capital project carries a contingency, and most owners also hold a management reserve. Most PMOs can report how much of it remains. Very few can say whether what remains is enough for the risks still ahead, which party and package is consuming it, and whether it is being spent faster than value is being delivered.***

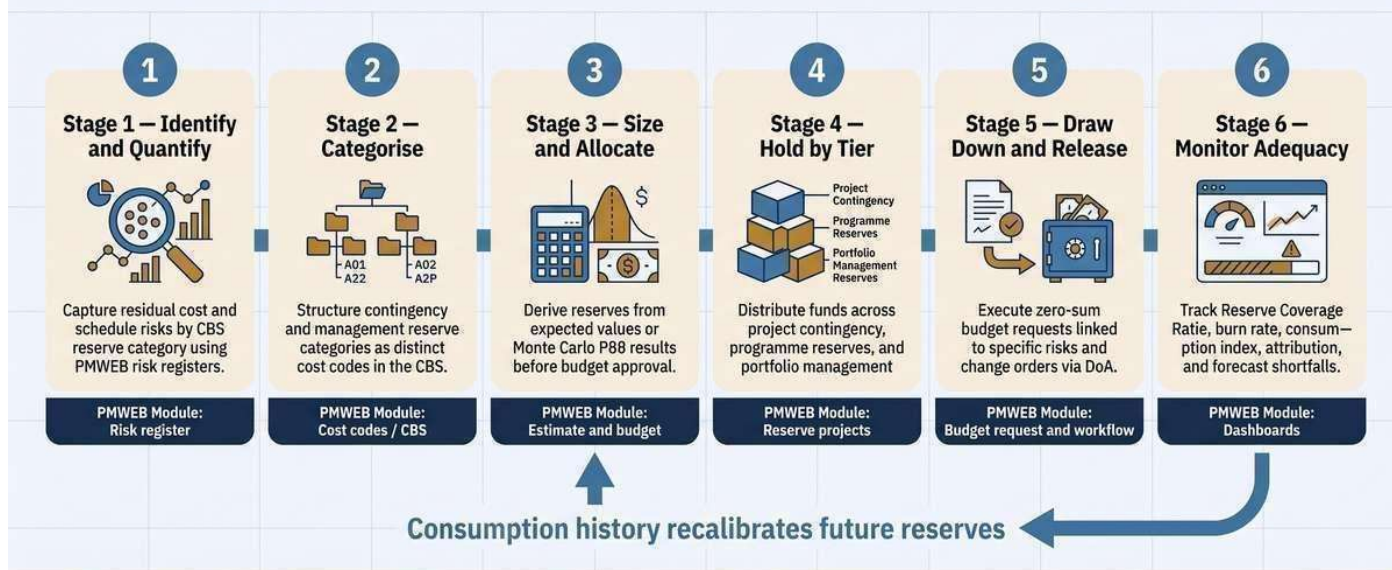
On a mega-project or programme with multiple contractors, vendors, consultants and stakeholders, Contingency Reserve and Management Reserve are not simply budget buffers. They are the owner's quantified answer to uncertainty, and the way they are consumed is one of the earliest signals that a project is drifting. A contingency line that has dropped by 30 percent while the project is 15 percent complete says more about delivery health than most progress reports.

Yet on many projects, reserves are still set as a flat percentage of the estimate, held as a single line, drawn down by email approval and reported as a closing balance in a spreadsheet. The link between each risk, the money set aside for it and the money spent when it occurred is lost. At portfolio level the problem compounds. Reserves become trapped in projects that no longer need them, while other projects run short.

This article explains the role of the PMO in governing both reserves at portfolio level, and how PMWEB supports that role end to end: identifying and quantifying risks in the PMWEB risk register, breaking reserves into categories within the cost breakdown structure (CBS), allocating them in the budget before approval, controlling every drawdown through the PMWEB budget request module, and reporting the indicators that tell executives whether the remaining reserve is adequate. It closes with how PMWEB 2026 AI, and AI solutions that integrate with PMWEB, add value once that data is captured in structured form.

# From Risk Register to Reserve Adequacy: The PMO Reserve Governance Lifecycle

Is our remaining reserve adequate for the risks we still have, and where is the exposure coming from?



**Reserves are portfolio governance indicators, not budget buffers.**

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## Two Reserves, Two Lines of Authority

Each reserve covers a different kind of uncertainty and is released by a different authority. Mixing them is the most common reason reserves cannot be governed.

| Dimension        | Contingency Reserve                                                      | Management Reserve                                          |
|------------------|--------------------------------------------------------------------------|-------------------------------------------------------------|
| Covers           | Known-unknowns: identified risks and estimate immaturity                 | Unknown-unknowns: unidentified risks and extreme events     |
| Basis for sizing | Risk register, estimate class and quantitative risk analysis (P50 / P80) | Owner policy, portfolio exposure and judgement              |
| Position         | Inside the cost baseline                                                 | Outside the cost baseline, inside the total approved budget |
| Released by      | Project manager or project director, within the DoA matrix               | Sponsor, steering committee or board                        |
| Drawdown         | Budget transfer from the contingency category to the affected cost codes | Formal approval to move funds into the cost baseline        |

The same split applies to time. **Schedule contingency** is a buffer on critical and near-critical paths, sized by schedule risk analysis. The **owner's management time reserve** is held back between the contractual completion date and a business-critical date such as an opening or an event. **Float ownership** is set by the contract and should be defined explicitly, because it decides who benefits when a buffer is consumed.

## What the PMO Must Be Able to Answer

A mature PMO does not only ask how much reserve remains. It asks whether the remaining reserve is adequate for the risks still open, and where the exposure is coming from. Answering that requires seven indicators, monitored continuously rather than at quarterly reviews.

| Indicator                    | The question it answers                                                         |
|------------------------------|---------------------------------------------------------------------------------|
| Reserve Coverage Ratio (RCR) | Is the remaining reserve sufficient for the remaining quantified risk exposure? |
| Reserve Burn Rate            | How quickly is contingency being consumed, per period and cumulatively?         |
| Reserve vs Physical Progress | Are reserves being consumed faster than value is being delivered?               |
| Reserve Attribution          | Which party, package, risk or reserve category is consuming the reserve?        |
| Cross-Party Exposure         | How much risk is created by interfaces and dependencies between parties?        |
| Management Reserve Available | How much strategic buffer remains for emerging events?                          |
| Forecast Reserve Shortfall   | Will the current reserve remain adequate through project completion?            |

None of these can be produced from a closing balance. Each one depends on data captured when the risk is identified, when the reserve is allocated and when every drawdown is approved.

## How Reserves Are Typically Managed Today

- **A percentage, not a quantification.** Contingency is set at 5 to 10 percent of the estimate, whatever the project's actual risk profile.
- **One line, many purposes.** Design development, escalation, ground conditions and owner changes share a single contingency line, so no one can tell which allowance is being consumed.

- **Allowances mixed with risk money.** Provisional sums and prime cost sums sit inside contingency and hide the real burn.
- **Drawdowns without a cause.** Funds move by email or spreadsheet adjustment, with no link to the risk that occurred or the change order the money paid for.
- **Trapped reserves.** Contingency behind retired risks stays locked in projects that no longer need it, while other projects run short.
- **Reporting stops at the balance.** The PMO sees what remains, not whether it is enough or who is consuming it.

## How PMWEB Digitalises Reserve Governance

The principle is the same as for any business process in PMWEB: capture each attribute once, at source, in a structured field, and let workflows, links, reports and AI put that data to work. Each element below is configuration within PMWEB, not custom development.

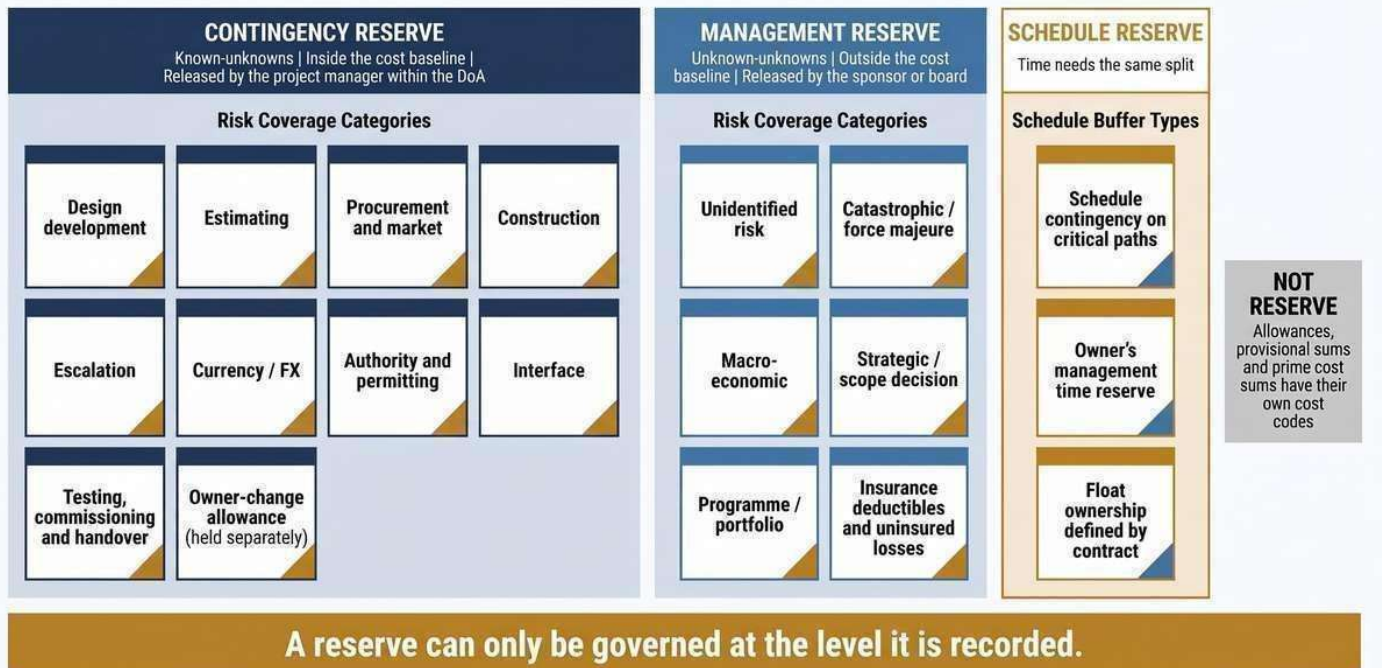
### A reserve breakdown structure inside the CBS

A reserve can only be governed at the level it is recorded. The first step is to break both reserves into categories within the CBS, so that each category has its own cost code, budget, drawdown history and balance. A typical owner-side structure:

| Category                                   | Reserve                      | What it covers                                                                                                                                |
|--------------------------------------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Design development</b>                  | Contingency                  | Scope growth as design matures from concept to IFC. Largest at Class 5 and Class 4 estimates, and should be consumed by tender.               |
| <b>Estimating</b>                          | Contingency                  | Quantity and rate uncertainty, take-off errors and pricing gaps.                                                                              |
| <b>Procurement and market</b>              | Contingency                  | Tender prices above estimate, supplier availability and long-lead items.                                                                      |
| <b>Construction</b>                        | Contingency                  | Unforeseen site and ground conditions, utilities, coordination clashes, rework and claims arising from contract ambiguity.                    |
| <b>Escalation</b>                          | Contingency                  | Material and labour inflation over the project duration, often held as a separate line.                                                       |
| <b>Currency / FX</b>                       | Contingency                  | Imported equipment and foreign-currency contracts.                                                                                            |
| <b>Authority and permitting</b>            | Contingency                  | NOC conditions, code changes and utility-provider requirements.                                                                               |
| <b>Interface</b>                           | Contingency                  | Package-to-package and third-party interfaces, especially on programmes.                                                                      |
| <b>Testing, commissioning and handover</b> | Contingency                  | Integrated systems testing failures, snagging and operational-readiness gaps.                                                                 |
| <b>Owner-change allowance</b>              | Contingency, held separately | Client-directed changes within the approved scope intent, held apart so they do not consume risk contingency.                                 |
| <b>Unidentified risk</b>                   | Management reserve           | The true unknown-unknowns.                                                                                                                    |
| <b>Catastrophic / force majeure</b>        | Management reserve           | Pandemics, sanctions, geopolitical disruption and extreme weather beyond insured limits.                                                      |
| <b>Macro-economic</b>                      | Management reserve           | Commodity shocks or currency devaluation beyond what the escalation contingency assumed.                                                      |
| <b>Strategic / scope decision</b>          | Management reserve           | Sponsor decisions to upgrade specifications or respond to market or regulatory shifts. True out-of-scope additions go through change control. |



## Reserve Breakdown Structure: What Each Reserve Covers and Who Releases It



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### The risk register as the basis for every reserve

Contingency is only defensible if it can be traced to the risks it covers. The PMWEB risk register, built with the custom form builder, captures each risk with fields selected from predefined value lists: risk breakdown structure (RBS) category, risk type and nature, WBS level, CBS reserve category, the schedule activity the risk threatens (imported from Primavera P6 or Microsoft Project), the company owning the risk and the risk owner. Pre-mitigation likelihood and impact, the mitigation actions with their cost, and post-mitigation likelihood and impact are scored on the same form.

Three additional fields turn the register into a reserve tool: the **residual cost impact** (most likely, with optional minimum and maximum), the **residual schedule impact** in days, and an **interface flag** naming the parties on each side of the risk. Multiplying the residual impact by the post-mitigation probability gives each risk's expected value. Because every risk carries its CBS reserve category, those expected values roll up into the quantified exposure behind each contingency category.

Logged into: All Levels | Schedules | Risk Identification and Assessment | Manager Page | 1 - Scope of Work for Procured Packages is not Well Defined

Main | Notes | Attachments (3)

## PMWeb Risk Identification and Assessment

Project: RVS0104 - Boston Medical Center | ID: 1 | Date: 19-Nov-2019 12:00:00 AM | Status: Draft

Revision: 0 | Date: 19-Nov-2019 12:00:00 AM

### Risk Identification

Risk: Scope of Work for Procured Packages is not Well Defined | Nature: Threat

Category: 02 Contract Acquisition Risks

Type: 0102 Project scope definition is poor or incomplete

WBS: A.4.1 - Engineering | Activity:

CBS: 02-010002 - General Conditions

Company: Wagner & Williams

Owner: Bassam Samman | Initiator: Syed Abrar | Action: Mark Braga

### Risk Assessment

| Pre-Mitigation |        |       | Post-Mitigation |        |       |
|----------------|--------|-------|-----------------|--------|-------|
| Likelihood     | Impact | Score | Likelihood      | Impact | Score |
| 3              | 4      | 12    | 2               | 2      | 4     |

### Risk Mitigation Actions

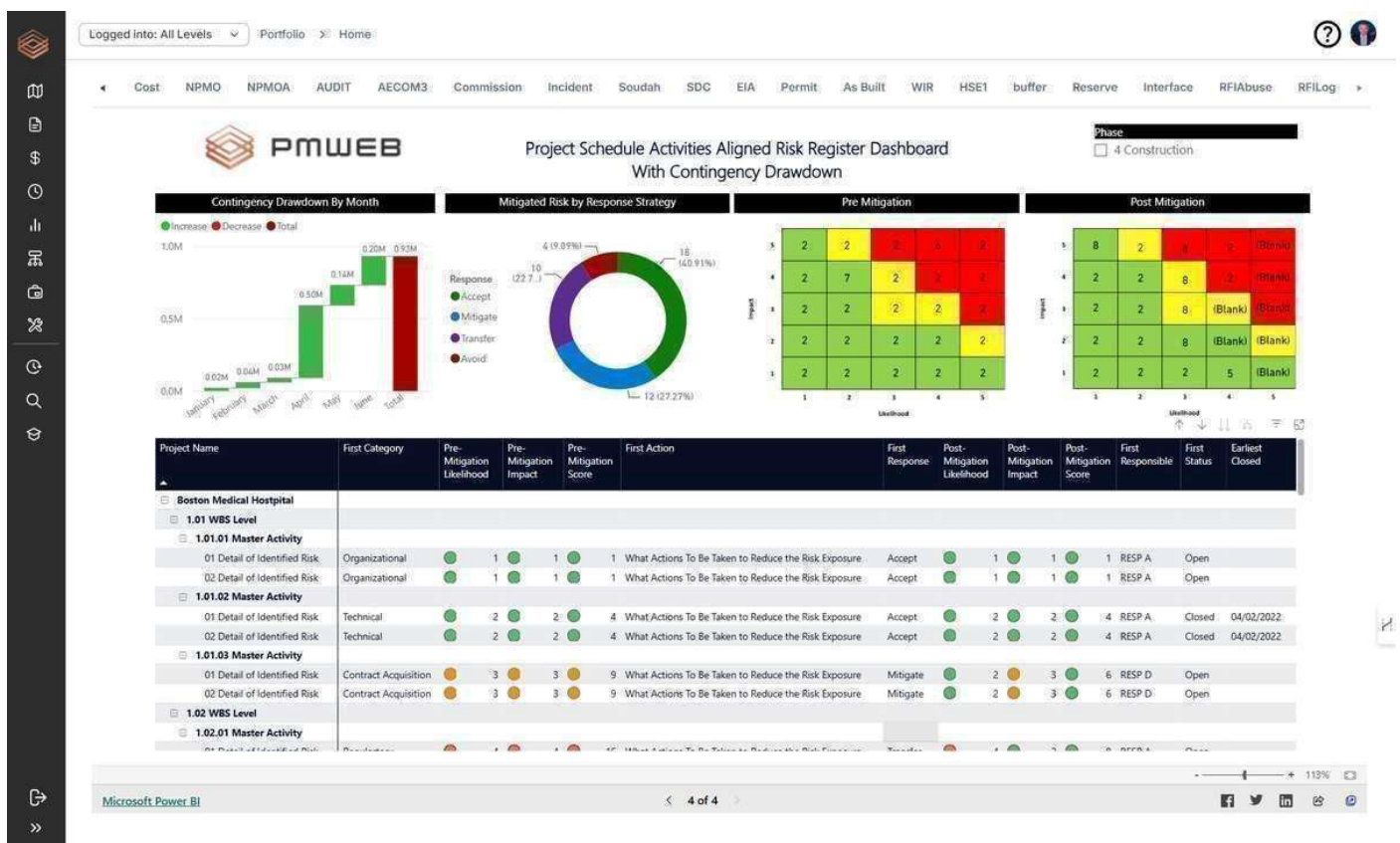
RISK MITIGATION ACTIONS

Edit | Add | Delete | Refresh

| NO.  | TYPE     | MITIGATION ACTION                                | COST        | SELECTED |
|------|----------|--------------------------------------------------|-------------|----------|
| 1.00 | Mitigate | Conduct constructability and bidability workshop | \$20,000.00 | Yes      |

Page 1 of 1 | PAGE SIZE: 250 | 1 items in 1 pages

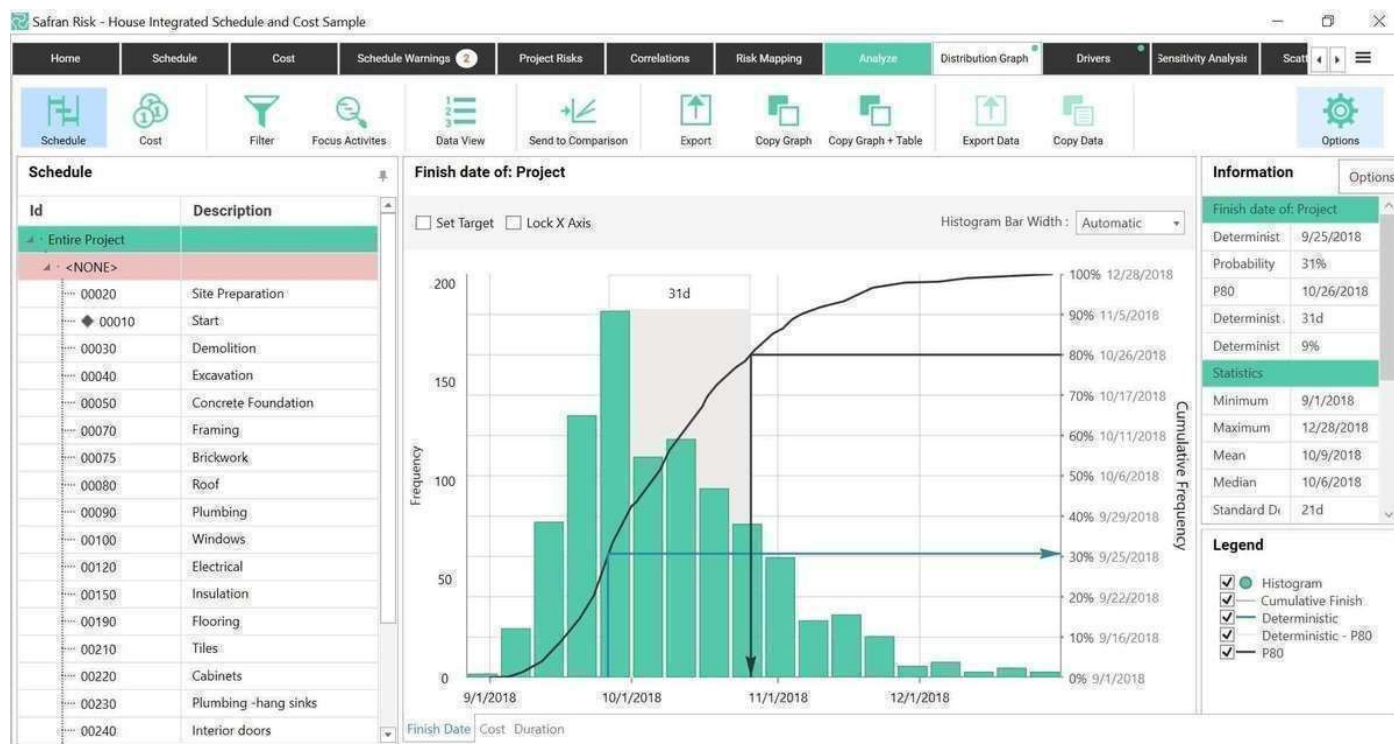
The risk register dashboard shows risks by category and response strategy, with pre- and post-mitigation heat maps. With residual values added, the same dashboard shows quantified exposure by reserve category, project, package and risk owner.



## Sizing the reserve: from expected value to confidence level

For smaller projects, the sum of residual expected values by category, plus an estimating allowance tied to the estimate class, is a sound basis. For major projects, the PMWEB risk register report is exported in the format required by Monte Carlo tools such as Safran Risk, where integrated cost and schedule risk analysis produces the P50 and P80 outcomes. The owner

selects the confidence level it funds. The difference between the deterministic estimate and that confidence level becomes the contingency, and the gap between it and the owner's policy ceiling informs the management reserve.



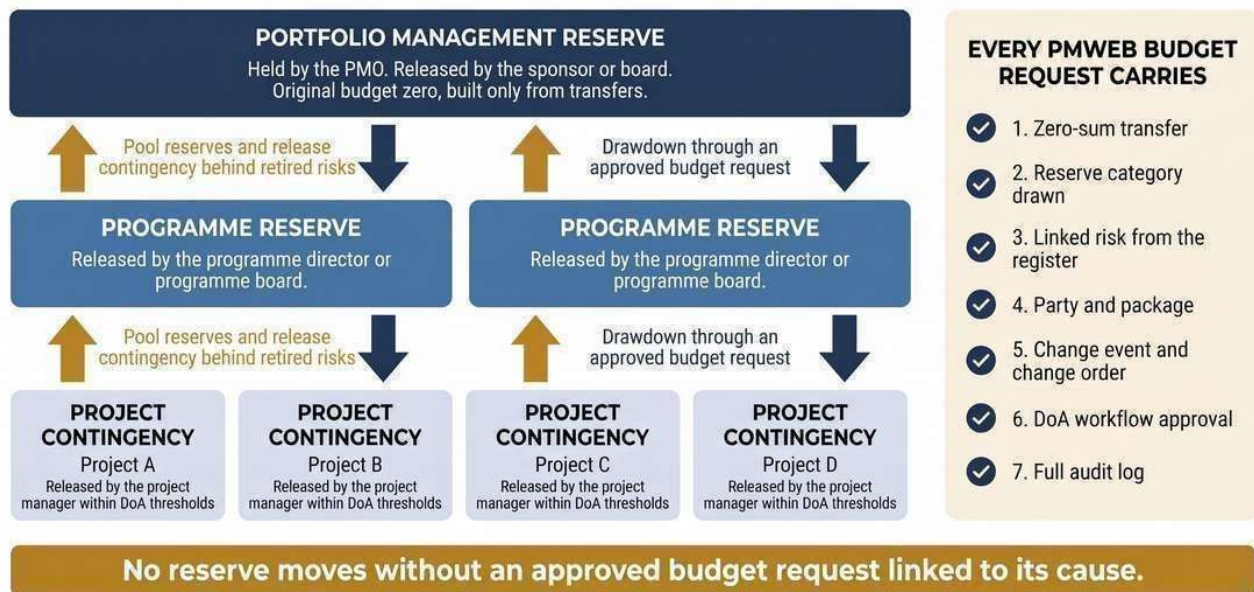
Whatever the method, the results are recorded against the reserve categories in PMWEB. The basis of every reserve, the risks behind it and the confidence level it represents stay attached to the budget for the life of the project.

### Allocating reserves in the budget before approval

Whether the cost estimate is prepared in PMWEB or imported from a third-party estimating tool, the contingency and management reserve allowances are added to their CBS categories before the budget goes for approval. The approved estimate generates the budget, and the reserve lines carry through at the same level of detail. Budget versions can be created as the estimate matures through the design stages, but only one baseline can be approved, and its approval follows the owner's workflow and DoA.



# Three Tiers, One Flow: How Reserves Move Through PMWEB



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## Every drawdown through the PMWEB budget request

Any movement of reserve, whether from a contingency category to a cost code, from a project to the portfolio reserve or back again, is made through the PMWEB budget request module. Each request is a zero-sum transfer: the increase on the affected cost code equals the decrease on the reserve category, so the total budget never changes without formal approval. Where schedule buffer is also consumed, the same request records the time adjustment.

Logged into: All Levels > Costs > Budget Requests > Manager Page > 1 - Budget Transfer

**RV50104 - Boston Medical Center** (Approved)

Budget Requests: 1 - Budget Transfer

Main Adjustments Clauses Notes Attachments (4) Notifications

**Header Fields**

Program\* 0003 - Residential Project\* / مشروع\* RV50104 - Boston Medical Center Record #\* 1 Subject / موضوع\* Budget Transfer

WBS : Type\* Category Reference

Estimate: Currency\* USD - Dollar (United States of Am... Post As Revised Budget Status / حالة\* Approved

Revision / مراجعة\* 0 Use Units

User Defined Fields

Date

**Details**

Group by: None Layout: Dubai Police New Line Add Cost Codes Export To Excel Paste From Excel Preview Conversions

| Line # | Attach... | Project        | Cost Code* / رمز التكلفة        | Descrip...          | Currency / عملة       | UOM | Qua... | Unit Cost    | Project Budget / ميزانية المشروع | Unit...      | WBS |
|--------|-----------|----------------|---------------------------------|---------------------|-----------------------|-----|--------|--------------|----------------------------------|--------------|-----|
| 1      | [0]       | RV50104 - B... | 02-030000 - Concrete            | Concrete            | USD - Dollar (Unit... |     | 1      | \$50,000.00  | \$50,000.00                      | \$50,000.00  |     |
| 2      | [0]       | RV50104 - B... | 05-005000 - Project Contingency | Project Contingency | USD - Dollar (Unit... |     | 1      | \$-50,000.00 | \$-50,000.00                     | \$-50,000.00 |     |

Each budget request records the attributes the PMO needs for attribution: the reserve category drawn, the risk from the register that occurred (or the reason the event was unforeseen), the contractor, vendor or consultant involved, the package, and the linked change event and change

order. The PMWEB change event aligns the commitment change order with the budget transfer that funded it, so the PMO can see both why the reserve was needed and what it paid for.

Logged into: All Levels > Costs > Request For Change / طلب تغيير > Manager Page > 3 - Additional Design Services

RVS0104 - Boston Medical Center Submitted  
Request For Change / 3 - طلب تغيير - Additional Design Services

New Record Print Recap

Main Adjustments Clauses 3 Notes Attachments 2 Notifications

3

☐ Use Units Budget / استخدام ميزانية الوحدات ☐ Use Units Cost / تكلفة الوحدة المستخدمة

Budget

Group by: None Layout: System Default Layout

New Line Add Items Export To Excel Paste From Excel Preview Conversions

| Line #... | Attach... | Status... | Item / ...          | Description / وصف | Currency / عملة       | Adjust... | Tax    | Adjust... | This RF...  | This RF...  | Cost T... |
|-----------|-----------|-----------|---------------------|-------------------|-----------------------|-----------|--------|-----------|-------------|-------------|-----------|
| 1         | [0]       | Approved  | Additional Services |                   | USD - Dollar (Unit... | \$0.00    | \$0.00 | \$0.00    | \$15,000.00 | \$15,000.00 |           |
| 1=1 of 1  |           |           |                     |                   |                       |           |        |           |             |             |           |

Cost

Group by: None Layout: System Default Layout

New Line Add Items Link Change Requests Export To Excel Paste From Excel

| Line #... | Status... | Linked Bu...      | Item / ...          | Description / وصف | Currency / عملة       | This...     | Contract...       | Cost Ty... | Sub Project | WBS | Location |
|-----------|-----------|-------------------|---------------------|-------------------|-----------------------|-------------|-------------------|------------|-------------|-----|----------|
| 1         | Approved  | 1- Additional ... | Additional Services |                   | USD - Dollar (Unit... | \$12,500.00 | 001 - Rockwell... |            |             |     |          |
| 1=1 of 1  |           |                   |                     |                   |                       |             |                   |            |             |     |          |

PMWEB workflow routes each request through the steps required by the owner's DoA matrix. Conditional branches read the reserve type, category and amount.

| Drawdown                        | Workflow path                                                          |
|---------------------------------|------------------------------------------------------------------------|
| Contingency within PM authority | Cost controller review, project manager approval.                      |
| Contingency above PM authority  | Adds programme director and, where the DoA requires, finance approval. |
| Interface contingency           | Adds review by the interface manager and the PMO.                      |
| Management reserve              | Adds PMO review and sponsor, steering committee or board approval.     |
| Release of unused contingency   | PMO review, then transfer back to the programme or portfolio reserve.  |

The thresholds are set by each owner's own DoA matrix. Every workflow step is logged automatically: who acted, when, the action taken and any comments. Supporting documents such as the risk assessment, the contractor's notice or the change order valuation are attached to the request from the PMWEB document management repository.



| Indicator                         | Calculation                                                                                                                                        | PMWEB data source                                   |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| <b>Forecast Reserve Shortfall</b> | Remaining exposure plus forecast emerging exposure, less remaining contingency and available management reserve. A positive result is a shortfall. | Risk register; reserve balances; trend of new risks |

### The two executive ratios

**Reserve Coverage Ratio = Remaining Reserve ÷ Remaining Quantified Risk Exposure**

**Portfolio Reserve Adequacy = (Remaining Contingency + Available Management Reserve) ÷ (Remaining Risk Exposure + Forecast Emerging Exposure)**

A ratio of 1.0 means the reserve exactly matches the exposure it is meant to cover. The thresholds are the owner's to set. Many use bands such as 1.2 and above as healthy, 1.0 to 1.2 as watch, and below 1.0 as a shortfall that needs action.

## Seven Indicators Every PMO Should Monitor

### RESERVE COVERAGE RATIO



#### Reserve Burn Rate

How quickly is contingency being consumed?



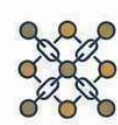
#### Reserve vs Physical Progress

Is reserve consumed faster than value is delivered?



#### Reserve Attribution

Which party, package or risk is consuming it?



#### Cross-Party Exposure

How much risk do interfaces between parties create?



#### Management Reserve Available

How much strategic buffer remains?



#### Forecast Reserve Shortfall

Will the reserve last to completion?

**PORTFOLIO RESERVE ADEQUACY = (Remaining Contingency + Available Management Reserve) ÷ (Remaining Risk Exposure + Forecast Emerging Exposure)**

**"Not how much reserve remains, but whether it is enough for the risks still ahead."**

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### A worked example

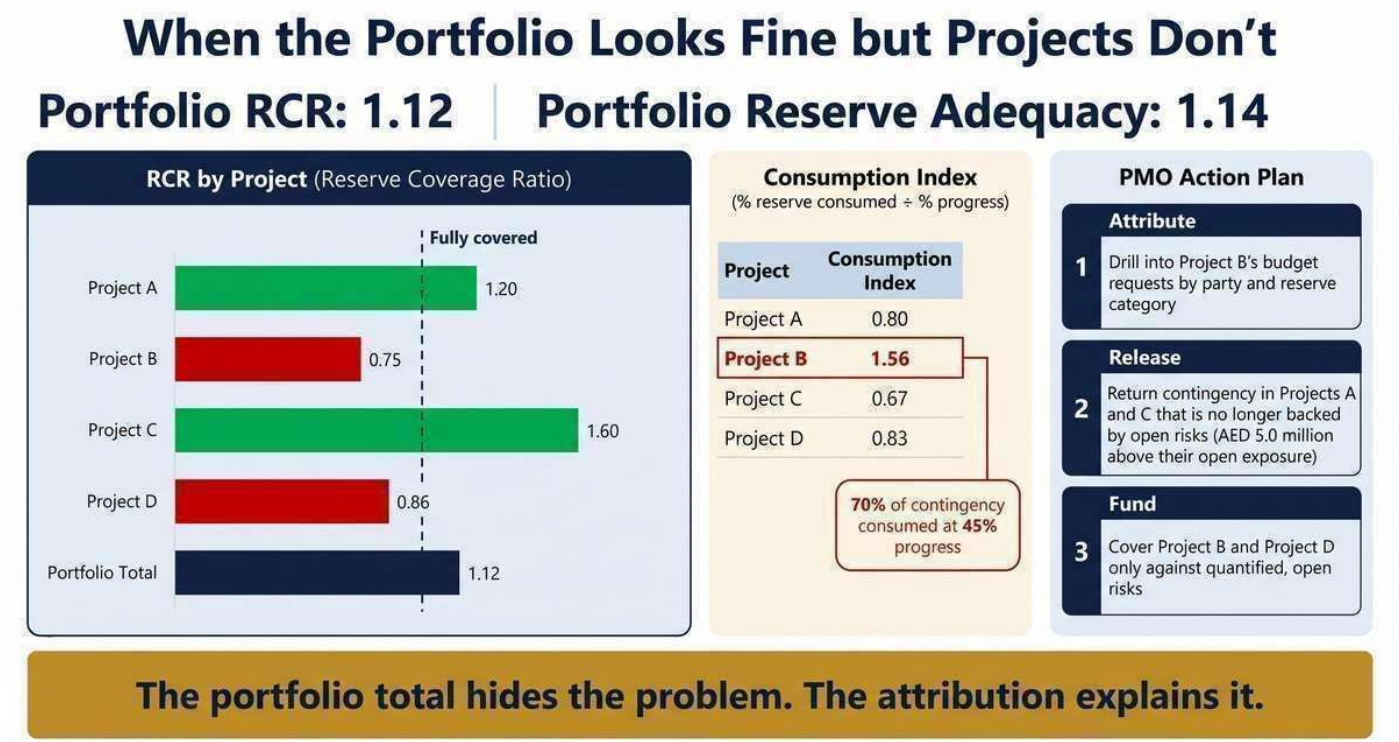
Consider a portfolio of four projects, with values in AED million.

| Project          | Original    | Consumed          | Remaining   | Progress | Consumption index | Remaining exposure | RCR         |
|------------------|-------------|-------------------|-------------|----------|-------------------|--------------------|-------------|
| Project A        | 20.0        | 8.0 (40%)         | 12.0        | 50%      | 0.80              | 10.0               | 1.20        |
| Project B        | 15.0        | 10.5 (70%)        | 4.5         | 45%      | 1.56              | 6.0                | 0.75        |
| Project C        | 10.0        | 2.0 (20%)         | 8.0         | 30%      | 0.67              | 5.0                | 1.60        |
| Project D        | 6.0         | 3.0 (50%)         | 3.0         | 60%      | 0.83              | 3.5                | 0.86        |
| <b>Portfolio</b> | <b>51.0</b> | <b>23.5 (46%)</b> | <b>27.5</b> | <b>-</b> | <b>-</b>          | <b>24.5</b>        | <b>1.12</b> |

At portfolio level the picture looks comfortable. The RCR is 1.12, and with AED 6.0 million of available management reserve against AED 5.0 million of forecast emerging exposure, Portfolio

Reserve Adequacy is  $33.5 \div 29.5 = 1.14$ . One level down, two projects are short. Project B has consumed 70 percent of its contingency at 45 percent progress, a consumption index of 1.56, and its remaining reserve covers only 75 percent of its open exposure. Project D is also below 1.0. Projects A and C hold AED 5.0 million more than their open risks require.

The portfolio total hides the problem, and the attribution explains it. Drilling into Project B's budget requests shows which parties and reserve categories drove the burn, for example interface contingency consumed by repeated package-to-package coordination changes, and whether the same risks are recurring on other projects. The PMO's decision is then evidence-based: recover from the responsible party where the contract allows, release unsupported contingency from Projects A and C to the portfolio reserve, and fund Project B only against quantified, open risks.



## Reports and Dashboards for the PMO

Because every reserve movement is a budget request with structured fields, reports can slice reserve data by any attribute. The budget requests analysis report shows, line by line, the original budget, each transfer and the revised budget, giving an auditable history of every reserve category.

Budget Requests Analysis

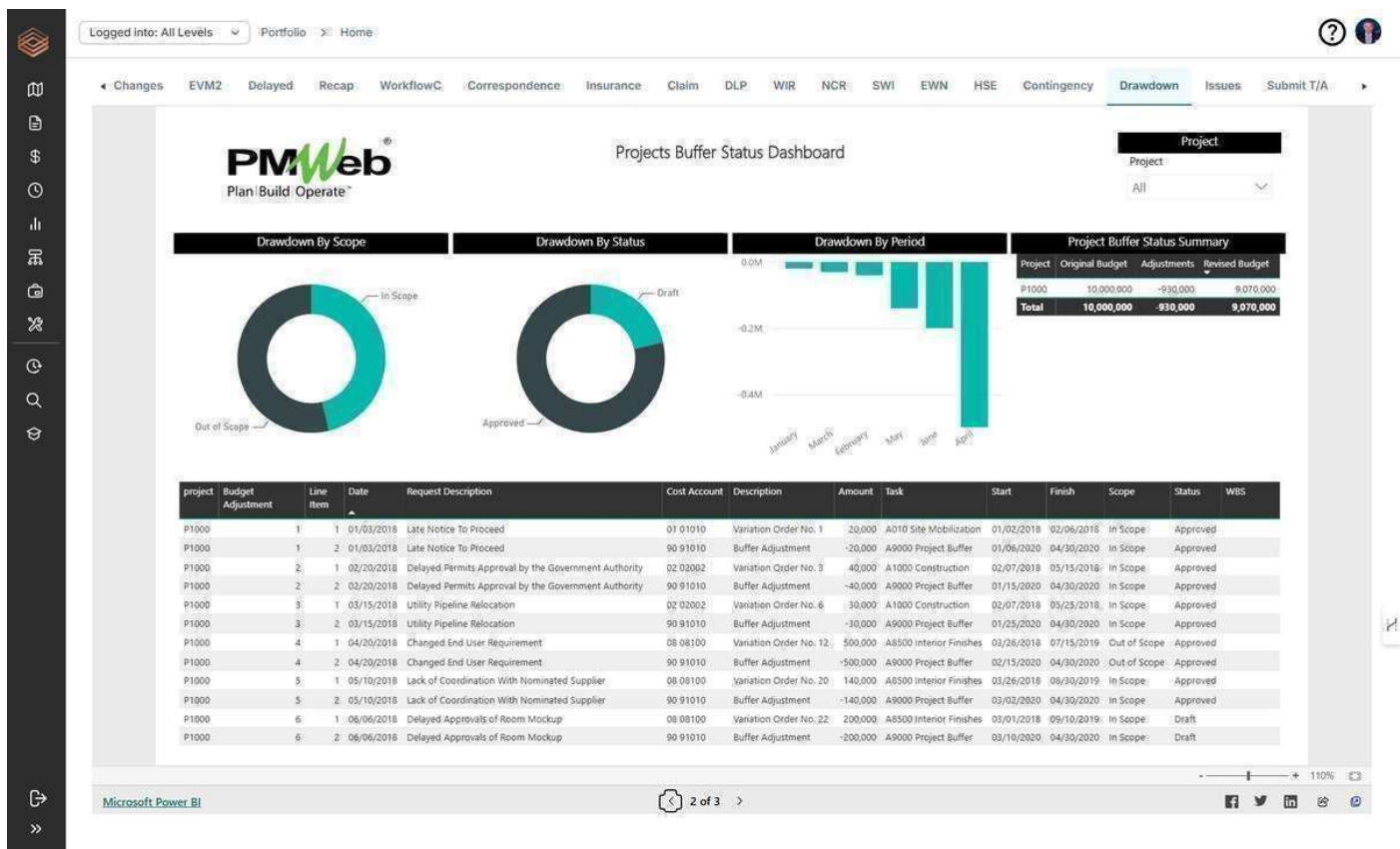
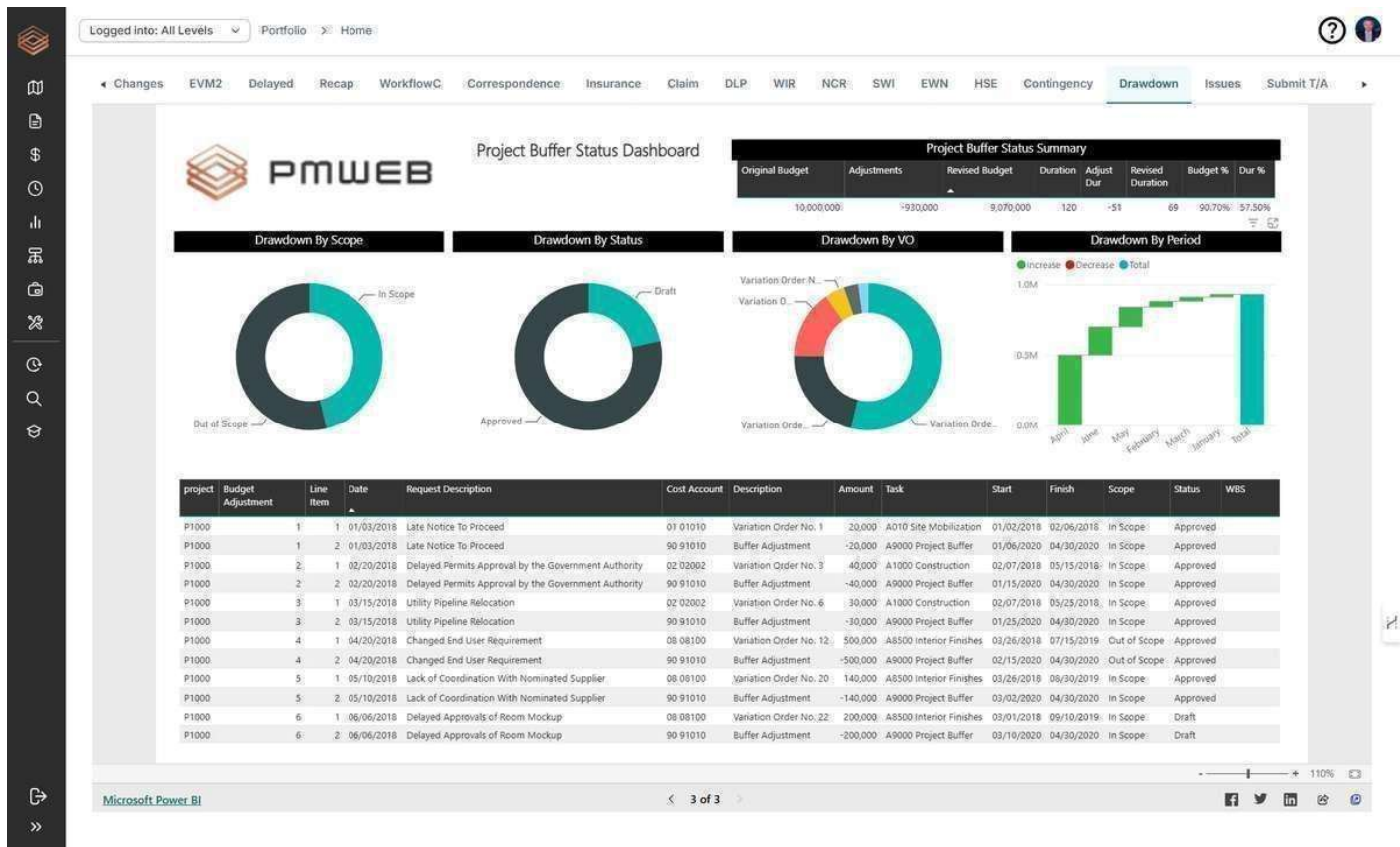
| Line # | Cost Code | Description          | Original Budget | Request: 1-Budget Transfer | Request: 2-Budget Increase | Request: 3-Budget Increase | Revised Budget |
|--------|-----------|----------------------|-----------------|----------------------------|----------------------------|----------------------------|----------------|
| 5      | 02-030000 | Concrete             | \$875,000.00    | \$50,000.00                | \$50,000.00                | \$0.00                     | \$1,850,000.00 |
| 6      | 02-050000 | Metals               | \$850,000.00    | \$0.00                     | \$0.00                     | \$20,000.00                | \$870,000.00   |
| 7      | 02-061000 | Rough Carpentry      | \$122,500.00    | \$0.00                     | \$0.00                     | \$10,000.00                | \$132,500.00   |
| 8      | 02-099000 | Painting and Coating | \$300,000.00    | \$0.00                     | \$0.00                     | \$15,900.00                | \$315,900.00   |
| 20     | 05-005000 | Project Contingency  | \$700,000.00    | \$-50,000.00               | \$0.00                     | \$0.00                     | \$650,000.00   |
| 23     | 02-142000 | Elevators            | \$0.00          | \$0.00                     | \$0.00                     | \$12,000.00                | \$12,000.00    |
| 24     | 02-080000 | Openings             | \$0.00          | \$0.00                     | \$0.00                     | \$30,000.00                | \$30,000.00    |
| Totals |           |                      | \$2,847,500.00  | \$0.00                     | \$50,000.00                | \$87,900.00                | \$2,985,400.00 |

1 of 1

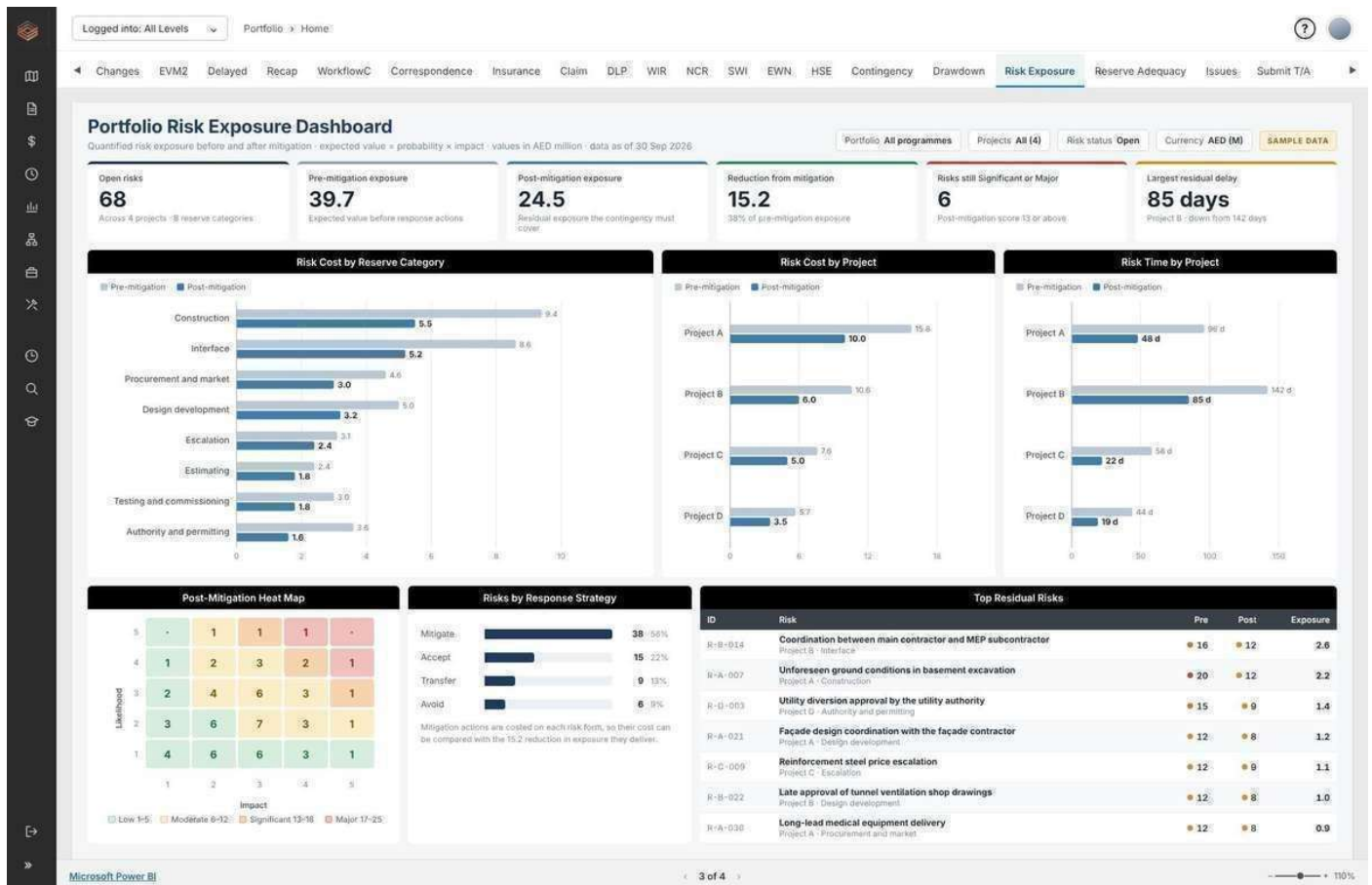
Printed on 08-Oct-2026 1:18:47 PM

104 - PMWEB

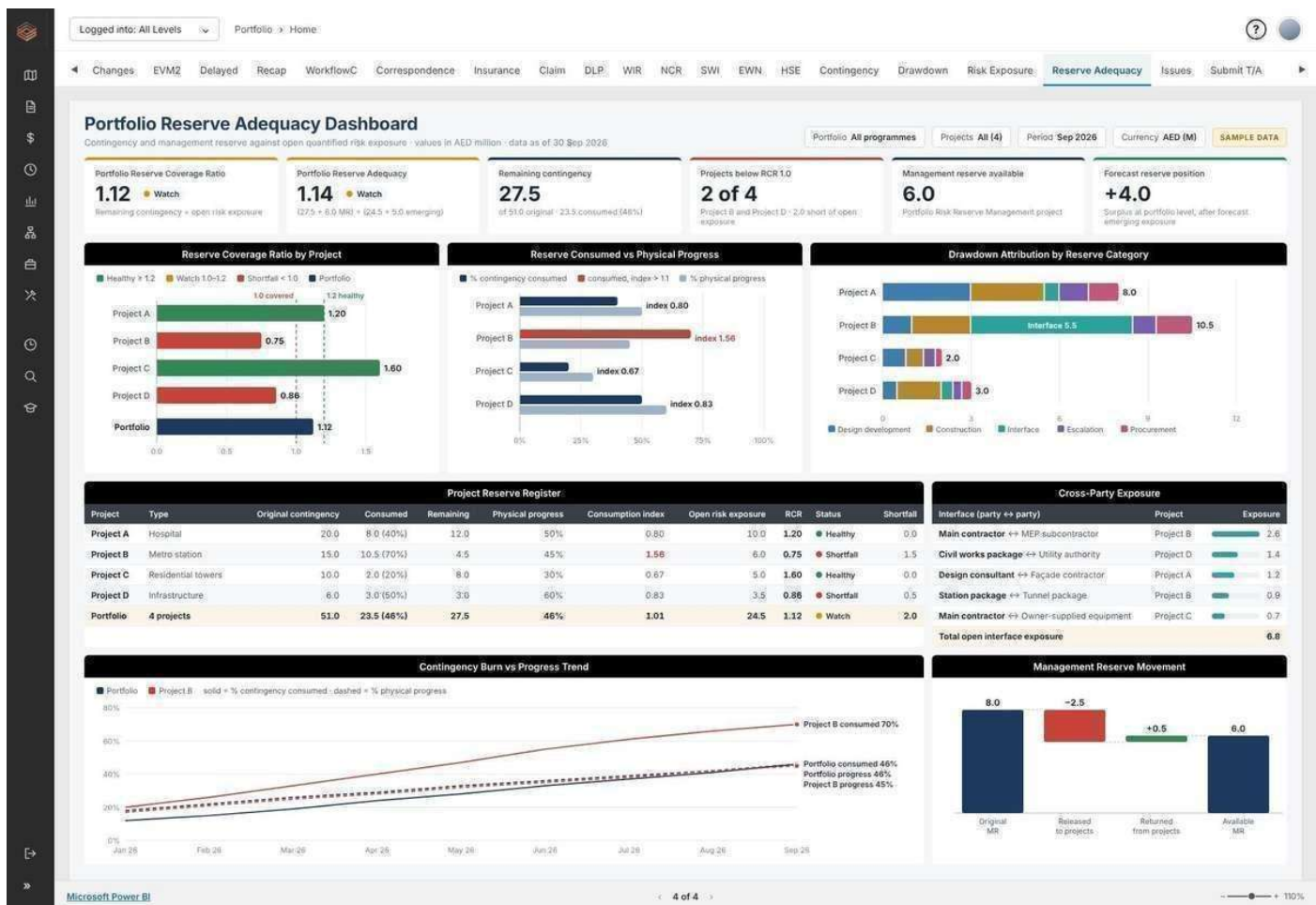
The project buffer status dashboard shows contingency drawdown by scope, status, variation order and period, with the full log of budget adjustments beneath. The same layout at portfolio level shows executives how much contingency each project has consumed and how much it still holds.



Risk exposure dashboards show quantified risk cost and time by category and by project, pre- and post-mitigation. This is the denominator of every coverage ratio.



Bringing these together, the PMO's portfolio reserve adequacy dashboard presents RCR by project against the owner's thresholds, the consumption index, attribution by party and category, cross-party exposure, management reserve available and the forecast shortfall, with drill-down from any value to the budget requests and risks behind it. Built on PMWEB data with PMWEB dashboards or Power BI, it is current at the moment it is opened.



## PMWEB 2026 AI: From Reserve Balances to Reserve Intelligence

AI is only as useful as the data it reasons over. Applied to a spreadsheet of balances, AI can only describe numbers. Applied to PMWEB, it starts from risks already classified by category, owner, CBS reserve category and schedule activity, with quantified residual exposure, and from drawdowns already linked to the risk, party, package, change event and change order behind them. No data, no AI. And without structured data, no reliable AI.

The PMWEB 2026 release introduces the PMWEB AI Assistant, which helps users find, open and create records and get help on the system. It honours PMWEB security settings and acts only with the user's approval. A cost controller can ask for the pending budget requests drawing on contingency on a project, open a specific request, or start a new drawdown request in natural language, within the access already defined for their role.

## PMWEB SCREENSHOT TO CAPTURE B

# PMWEB 2026 AI Assistant working with budget requests

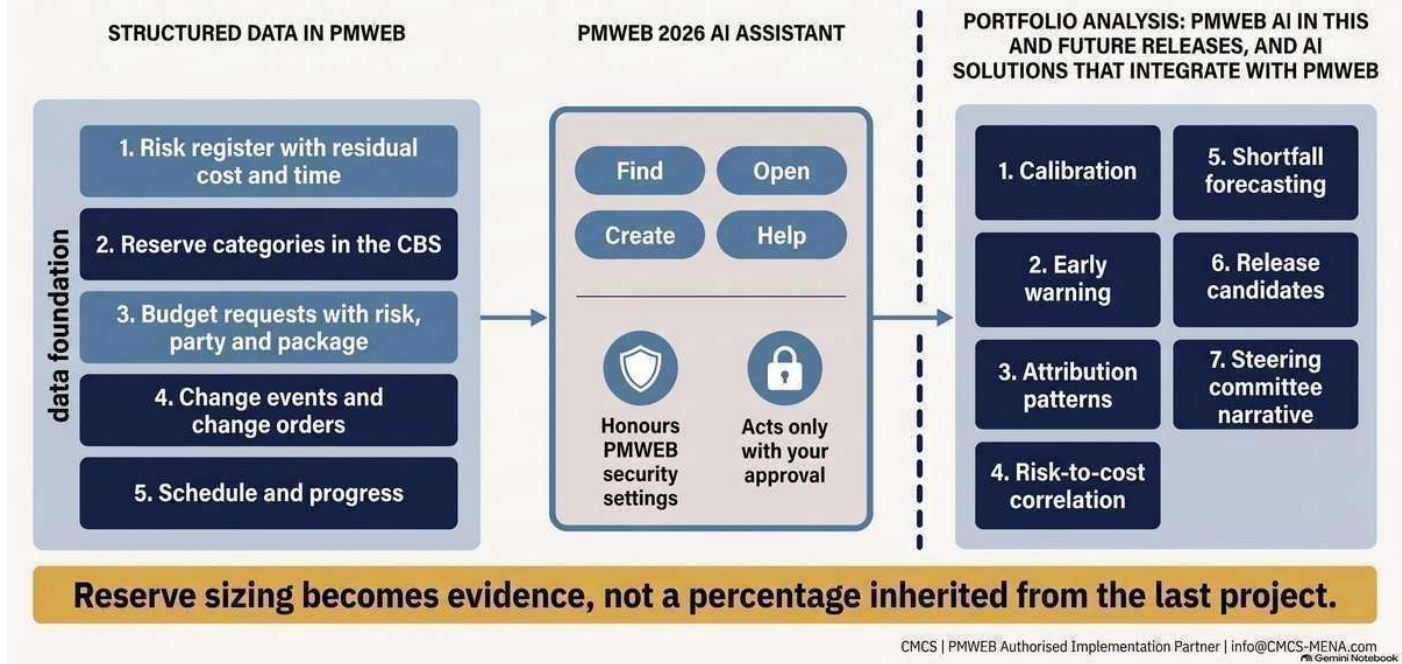
Capture: a natural-language request that finds the pending contingency drawdown requests on a project and opens the selected budget request.

The larger prize is the reserve history an owner accumulates across every active and completed project. Held in one PMWEB database, that data can be analysed at portfolio level by PMWEB AI in this and future releases, and by AI solutions that integrate with PMWEB, to answer questions such as:

- **Calibration:** how did actual contingency consumption by category compare with the reserve set at approval, by project type, delivery model and estimate class?
- **Early warning:** given a new project's burn pattern and consumption index in its first months, which past projects followed the same path, and where did they end?
- **Attribution patterns:** which contractors, consultants, packages or interfaces consume reserve disproportionately across the portfolio?
- **Risk-to-cost correlation:** which risk categories most often materialise, and at what share of their expected value?
- **Shortfall forecasting:** which projects are trending towards an RCR below 1.0 before completion, and how much management reserve would cover them?
- **Release candidates:** which contingency lines are no longer supported by open risks and can be returned to the portfolio reserve?
- **Steering committee narrative:** a draft of the monthly reserve commentary built from actual drawdowns and risk movements, for the PMO to review.

Reserve sizing then stops being a percentage inherited from the last project. It becomes evidence the owner applies to estimates, to the allocation of risk in contracts and to the release thresholds in its DoA.

# No data, no AI. Without structured data, no reliable AI.



## Configuring PMWEB to the Owner's Reserve Policy

Every owner sets its own reserve policy. Those decisions become configuration in PMWEB, saved in project templates and reused on each new project.

| What the owner decides      | How it is configured in PMWEB                                                                                   |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>Reserve categories</b>   | Contingency and management reserve cost codes within the CBS, separate from allowances and provisional sums     |
| <b>Risk register fields</b> | Custom risk form with RBS, CBS reserve category, schedule activity, residual cost and time, and interface flags |
| <b>Sizing method</b>        | Expected value roll-up, or export to Monte Carlo tools and recording of the funded confidence level             |
| <b>Holding tiers</b>        | Project budgets plus programme and portfolio reserve projects with restricted access                            |
| <b>Drawdown rules</b>       | Budget request types, mandatory fields and links to risks, change events and change orders                      |
| <b>DoA thresholds</b>       | Conditional workflow steps by reserve type, category and amount                                                 |
| <b>Release rules</b>        | Review when risks close, and budget requests returning unused contingency                                       |
| <b>Indicator thresholds</b> | RCR and consumption index bands for dashboards and alerts                                                       |
| <b>Report formats</b>       | Reserve logs, drawdown analyses and portfolio dashboards in the owner's format                                  |
| <b>Integration</b>          | Schedules from Primavera P6 or Microsoft Project, estimates from estimating tools and actual costs from the ERP |

## Evidence That Reserve Governance Is Working

- **Traceability.** Every contingency category traces to quantified risks, and every drawdown traces to a risk, a party and a change order.
- **Coverage.** No project sits below the owner's RCR threshold without an approved recovery action.

- **Pace.** Consumption indices stay close to 1.0, and the outliers are explained.
- **Separation.** Owner changes and allowances never consume risk contingency.
- **Release.** Contingency behind retired risks is returned to the portfolio within the agreed review cycle.
- **Discipline.** No reserve moves outside an approved PMWEB budget request.
- **Learning.** Reserve levels for new projects are set from the portfolio's own consumption history.

### Key takeaway

Reporting reserves as a balance answers one question: how much is left? Governing them in PMWEB answers the questions that protect the portfolio. Is the remaining reserve adequate for the risks still open? Which party, package and category is consuming it? Is it being spent faster than value is delivered? Where is reserve trapped, and where is it short?

The difference is granularity. Categorised reserves in the CBS, a quantified risk register, approval through the DoA, every drawdown made through a budget request linked to its cause, real-time indicators and portfolio-wide AI all depend on capturing the data once, at source. PMOs that make that choice turn reserves from a financial buffer into a strategic portfolio governance tool.

**Talk to us:** to see how PMWEB risk registers, reserve structures, budget request workflows and portfolio reserve dashboards can be configured for your projects, contact CMCS at [info@CMCS-MENA.com](mailto:info@CMCS-MENA.com).

#PMWEB #CMCS #PMO #ContingencyManagement #ManagementReserve #RiskManagement #ProjectControls #PMIS #CapitalProjects #PortfolioManagement #AIinConstruction

### 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.

# From Number to Narrative — Real-Time, Traceable Line-Item Variance Reporting in PMWEB

*How eight cost records on one cost breakdown structure explain every movement on a cost line*

***A variance is a number. An explained variance is a decision. The difference is whether every number on the cost report is the sum of records that can be opened, read and traced to an approval.***

Every capital project owner has sat through the same meeting. The cost report shows that a work package is AED 290,000 above its concept estimate. Someone asks why. The cost manager promises an answer by next week, then spends that week reconciling spreadsheets, e-mails and contract files to rebuild a story the organisation already lived through once.

The problem is not the arithmetic. Any spreadsheet can subtract one number from another. The problem is that the number arrives without its history: which quantities moved, which rates moved, which transfers were approved, which changes were negotiated, which invoices were certified, and who approved each step.

Line-item variance reporting solves this only when the history travels with the number. That is what PMWEB does when the estimate, budget, budget requests, commitments, change events, potential change orders, change orders and progress invoices all share one cost breakdown structure (CBS) and live in one database. This article explains how each of those records contributes to a variance report that is real time, traceable and explainable line by line.

## One Cost Code, Eight Records, One Database

Every number on the cost report is a record you can open



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*Infographic I-1 — One cost code, eight records, one database*

## Why Estimate-to-Estimate Variance Is Not Enough

Modern estimating platforms have made line-item variance a standard feature. Pick any two estimate versions and the tool lists every line that was added, edited or removed, with the base value, the new value and the delta for quantity, unit cost and total. Grouping deltas roll up by package or system, and colour separates savings from increases at a glance.

That is useful, and PMWEB users should expect the same discipline for their own estimate revisions. But those tools are candid about the limit: the comparison covers quantity, unit cost and total between two snapshots of an estimate, and it is explicitly not an audit trail.

Once a project is approved, the estimate stops being the place where cost moves. Cost moves when funds are transferred, when a subcontract is awarded above or below budget, when a design revision triggers a change event, when a potential change order is priced and negotiated, and when a contractor submits a progress invoice. None of those events lives inside an estimating tool.

### How Owners Typically Explain Variance Today

- **The estimate, the budget and the contract register are separate files.** Each is maintained by a different team, on a different cost structure, and they are reconciled by hand at month end.
- **Budget transfers happen by e-mail.** Contingency is drawn down and funds are moved between packages, but the approval sits in a mailbox rather than on the cost line.
- **Changes are agreed before they are recorded.** Site instructions and design revisions are priced informally, so exposure is invisible until a change order lands.
- **Invoices are certified against totals, not lines.** Progress is measured at contract level, so nobody can say which cost code has been earned and which has not.
- **Variance is explained in narrative, not in records.** The monthly report says costs rose "due to design development" with no quantity, rate or reference behind the sentence.
- **Every review starts from scratch.** Auditors, boards and claims consultants each ask the project team to rebuild the same story.

### How PMWEB Makes Every Variance Traceable

The approach is to hold every movement of cost on a record, and every record on the same cost code. Each record type then explains one kind of variance, and the Cost Worksheet adds them up.

#### The cost spine: one CBS across every cost record

Every line item on every PMWEB cost record carries a cost code from the project CBS. Because they do, the Cost Worksheet shows each cost code as a row and each record type as a column: Original Budget, Approved Budget Requests, Current Budget, Original Commitments, Approved Changes, Pending Changes, Revised Commitments, Invoiced to Date and Estimate at Completion. None of these cells is typed. Each is the sum of line items on source records, and each drills down to those records, their attachments and their workflow history.

Logged into: All LevelsCosts > Cost Worksheets > RVS0104 - Boston Medical Center

RVS0104 - Boston Medical Center

Cost Worksheets: Cost Report

Print

MainNotesAttachments

Worksheet: Cost ReportPeriod From: \*All\*Period To: \*All\*

Group by: Group1Currency: Project DefaultProject Default

AddEditExport To Excel

| Group1                  | Cost Code | Budget D...       | Origin...      | Projec...    | Revise...      | Origin...    | Projec...    | Antici...      | Award...       | Purch...     | Appro...    | Total ...      | Antici...      |
|-------------------------|-----------|-------------------|----------------|--------------|----------------|--------------|--------------|----------------|----------------|--------------|-------------|----------------|----------------|
| Group1: 00 - Sales      |           |                   |                |              |                |              |              |                |                |              |             |                |                |
| 00 - Sales              | 00-000000 | Sales             | \$12,000.0...  | \$0.00       | \$12,000.0...  | \$0.00       | \$0.00       | \$12,000.0...  | \$100,000.00   | \$0.00       | \$0.00      | \$100,000.00   | \$21,000.00    |
|                         |           |                   | \$12,000.0...  | \$0.00       | \$12,000.0...  | \$0.00       | \$0.00       | \$12,000.0...  | \$100,000.00   | \$0.00       | \$0.00      | \$100,000.00   | \$21,000.00    |
| Group1: 01 - Land Costs |           |                   |                |              |                |              |              |                |                |              |             |                |                |
| 01 - Land Costs         | 01-000001 | Land Acquisition  | \$1,200.00...  | \$0.00       | \$1,200.00...  | \$0.00       | \$0.00       | \$1,200.00...  | \$0.00         | \$0.00       | \$10,000.00 | \$10,000.00    | \$0.00         |
| 01 - Land Costs         | 01-000002 | Land Permits a... | \$450,000.00   | \$0.00       | \$450,000.00   | \$-20,000.00 | \$0.00       | \$430,000.00   | \$0.00         | \$0.00       | \$0.00      | \$0.00         | \$0.00         |
|                         |           |                   | \$1,650,000... | \$0.00       | \$1,650,000... | \$-20,000.00 | \$0.00       | \$1,630,000... | \$0.00         | \$0.00       | \$10,000.00 | \$10,000.00    | \$0.00         |
| Group1: 02 - Hard Costs |           |                   |                |              |                |              |              |                |                |              |             |                |                |
| 02 - Hard Costs         | 02-010002 | General Condi...  | \$197,500.00   | \$0.00       | \$197,500.00   | \$0.00       | \$0.00       | \$197,500.00   | \$0.00         | \$0.00       | \$800.00    | \$800.00       | \$200,000.00   |
| 02 - Hard Costs         | 02-020000 | Existing Condi... | \$1,100,000... | \$30,000.00  | \$1,130,000... | \$0.00       | \$0.00       | \$1,130,000... | \$0.00         | \$0.00       | \$0.00      | \$0.00         | \$90,000.00    |
| 02 - Hard Costs         | 02-030000 | Concrete          | \$875,000.00   | \$110,000.00 | \$885,000.00   | \$0.00       | \$152,400.00 | \$1,137,400... | \$1,473,780... | \$0.00       | \$0.00      | \$1,473,780... | \$3,414,000.00 |
|                         |           |                   | \$72,842.5...  | \$192,900.00 | \$73,035.4...  | \$-20,000.00 | \$163,400.00 | \$73,178.80... | \$158,339.7... | \$115,000.00 | \$49,970.00 | \$158,504.7... | \$7,242.43...  |

1 - 8 of 8<<<1>>>250 Rows

PMWEB screenshot S-1 — Cost Worksheet by cost code

PMWEB estimates hold quantity, unit of measure and unit rate per line, each line coded to the CBS. Each design-stage revision is kept as its own record, so concept, schematic and detailed design estimates can be compared line by line through PMWEB reports. Because quantity and rate are separate fields, every delta between two revisions can be split into a quantity effect and a rate effect rather than reported as a single number.

PMWEB screenshot S-2 – Estimate line items with quantity, unit and rate

The approved estimate is loaded as the original budget, so the budget baseline carries the same lines and codes. From then on, the budget changes only through budget requests: transfers between cost codes, draws on contingency or additional funding. Each request routes through the owner's delegation-of-authority workflow, and its lines post to the Approved Budget Requests column when approved. A transfer therefore always shows where funds came from, where they went and who authorised the move.

Logged into: All Levels Costs > Budget Requests > Manager Page > 1 - Budget Transfer

**RV50104 - Boston Medical Center** Approved

Budget Requests: 1 - Budget Transfer

New Record Print Recap

Main Adjustments Clauses Notes Attachments 4 Notifications

Program\* 0003 - Residential Project\* / مشروع\* RVS0104 - Boston Medical Center Record #\* 1 Subject / موضوع Budget Transfer

WBS : Type\* Category Reference

Estimate: Currency\* USD - Dollar (United States of Am... Post As Revised Budget Status / حالة Approved

Revision / مراجعة 0 Use Units

User Defined Fields

Date

Details

Group by: None Layout: Dubai Police New Line Add Cost Codes Export To Excel Paste From Excel

| Line # | Attach... | Project        | Cost Code* / رمز التكلفة    | Descrip...       | Currency / عملة       | UOM | Qua... | Unit Cost    | Project Budget / ميزانية المشروع | Unit ...     | WBS |
|--------|-----------|----------------|-----------------------------|------------------|-----------------------|-----|--------|--------------|----------------------------------|--------------|-----|
| 1      | [0]       | RVS0104 - B... | 02-030000 - Concrete        | Concrete         | USD - Dollar (Unit... |     | 1      | \$50,000.00  | \$50,000.00                      | \$50,000.00  |     |
| 2      | [0]       | RVS0104 - B... | 05-005000 - Project Cont... | Project Conti... | USD - Dollar (Unit... |     | 1      | \$-50,000.00 | \$-50,000.00                     | \$-50,000.00 |     |
| 2      |           |                |                             |                  |                       |     |        | \$0.00       | \$0.00                           | \$0.00       |     |

PMWEB screenshot S-3 — Budget request with transfer lines and approval history

## Commitments

Subcontracts and purchase orders are entered as commitments with a schedule of values coded to the same CBS, carrying awarded quantity and rate where the work is measurable. The difference between Current Budget and Original Commitments on each line is the buyout variance: the saving or overrun that procurement delivered against the authorised budget.

Logged into: All Levels Costs > Commitments / الإلتزامات > Manager Page > 002 - GMP Contract

**RV50104 - Boston Medical Center** Submitted (Step 1 of 2)

Commitments / 002 - الإلتزامات: GMP Contract

New Record Print Recap

Main Adjustments Additional Information Clauses 3 Variations (AVI) 3 Progress Invoices 9 Payments Notes Attachments 79 Workflow Step 1 of 2 Notifications

Header Fields

Billing And Shipping

Billing Terms / شروط الفوترة Retention on Services / الاستبقاء على الخدمات 10.00 % Retention on Stored Materials / الاستبقاء بالمواد المخزنة 10.00 % Allow Overbilling of Revised Value / السماح بالفرافير بقيمة المراجعة No

Overbilling of Revised Value Percentage / المبالغ في المراجعة بنسبة القيمة المراجعة 0.00 % Allow Overbilling of Line Item / السماح بزيادة الفوترة لعدد البند No Overbilling of Line Item Percentage / المبالغ في الفوترة بنسبة البند 0.00 % Contract Date / تاريخ العقد 23-Sep-2011 12:00:00 tt

Contract End Date / تاريخ انتهاء العقد 23-Sep-2011 12:00:00 tt Ship Via / الشحن Ship To / إرسال إلى

Details

Group by: None Layout: Dubai Police Export To Excel Preview Conversions

| Attach... | Cost Code / تسمية     | Description / وصف   | UOM / وحدة | Quanti... | Unit C...      | Currency / عملة                         | Comm...        | Advan... | Total ...      | Cost Period / فترة التكلفة | WBS / رمز العمل |
|-----------|-----------------------|---------------------|------------|-----------|----------------|-----------------------------------------|----------------|----------|----------------|----------------------------|-----------------|
| [0]       | 02-010002 - Gener...  | General Conditions  |            | 2         | \$100,000.00   | USD - Dollar (United States of America) | \$200,000.00   | \$0.00   | \$200,000.00   | *Split*                    |                 |
| [0]       | 02-020000 - Existi... | Existing Conditions |            | 0.09      | \$1,000,000.00 | USD - Dollar (United States of America) | \$90,000.00    | \$0.00   | \$90,000.00    | *Split*                    |                 |
| [0]       | 02-030000 - Concr...  | Concrete            |            | 8         | \$425,000.00   | USD - Dollar (United States of America) | \$3,400,000.00 | \$0.00   | \$3,400,000.00 | *Split*                    |                 |

PMWEB screenshot S-4 — Commitment schedule of values by cost code

## Change events, potential change orders and change orders

A change event records the trigger, whether a design revision, an instruction, a site condition or a claim, before anyone has agreed a price. Potential change orders price that event per cost code, on the owner side and on the contractor side, and appear on the Cost Worksheet as Pending Changes. When a PCO is negotiated and approved, it becomes a change order that revises the commitment. The chain from event to PCO to change order is linked in PMWEB, so every approved change carries its origin and every pending one is visible as exposure before it becomes cost.

The screenshot displays the PMWEB interface for a project titled 'RVS0104 - Boston Medical Center'. The user is logged in as 'All Levels' and is viewing the 'Request For Change / 3 - Additional Design Services' page. The page has a top navigation bar with 'Costs' and 'Manager Page' links. The main content area is divided into two sections: 'Budget' and 'Cost'.

**Budget Section:** This section shows a table with columns for Line #, Attach..., Status..., Item / ..., Description / وصف, Currency / عملة, Adjust..., Tax, Adjust..., This RF..., This RF..., and Cost T... The table contains one row with Line # 1, Status 'Approved', Item 'Additional Services', and a total cost of \$15,000.00.

**Cost Section:** This section shows a table with columns for Line #, Status..., Linked Bu..., Item / ..., Description / وصف, Currency / عملة, This..., Contract..., Cost Ty..., Sub Project, WBS, and Location. The table contains one row with Line # 1, Status 'Approved', Linked Bu '1 - Additional ...', Item 'Additional Services', and a total cost of \$12,500.00.

PMWEB screenshot S-5 — Change event linked to its PCO and change order

## Progress invoices

Progress invoices are raised against the commitment's schedule of values, line by line, with previous, current and cumulative quantities and values. Retention and deductions are calculated on the same lines. The Invoiced to Date column therefore shows how much of each cost code is earned and certified, and the balance to finish is known per line, not only per contract.



# Eight Records, Eight Questions Answered

The life of a cost line in PMWEB



Each answer is a record number, not an opinion.

PMWEB Gemini Notebook

Infographic I-2 — Eight records, eight questions answered

## Explaining a Difference, Line by Line

Comparing two numbers line by line shows where cost moved. Explaining it means splitting each delta into causes a reviewer can accept or challenge. With quantity and rate held on every PMWEB line, five causes cover almost every movement.

- **Quantity variance.** The scope measured differently: the change in quantity, priced at the earlier rate.
- **Rate variance.** The same scope priced differently, from market movement, specification or buyout: the change in rate, applied to the new quantity.
- **Scope added or removed.** Lines that exist in one version and not the other, each tied to a design revision or change event.
- **Transfer.** Funding moved between cost codes by an approved budget request. It moves budget, not cost, and nets to zero across the project unless new funds are added.
- **Change.** Approved change orders, which are in the numbers, and pending PCOs, which are exposure not yet in the numbers, each traced to its change event.

For any line, the first two causes reconcile exactly to the total delta:

$$\Delta \text{ Total} = (Q_2 - Q_1) \times R_1 + (R_2 - R_1) \times Q_2$$

The split is simple, but it works only when quantity and rate are stored as separate fields on every record. Lump-sum lines and spreadsheet totals cannot be decomposed after the fact, which is why CBS and unit-rate discipline must be set in PMWEB from the first estimate, not retrofitted at the first variance review.

## Worked Example: One Cost Code from Concept Estimate to Forecast

Take one cost code, 03-31-00 Structural concrete, podium slab, on an illustrative owner project. The forecast now stands AED 291,450 above the concept estimate. In PMWEB that number is the sum of nine records.

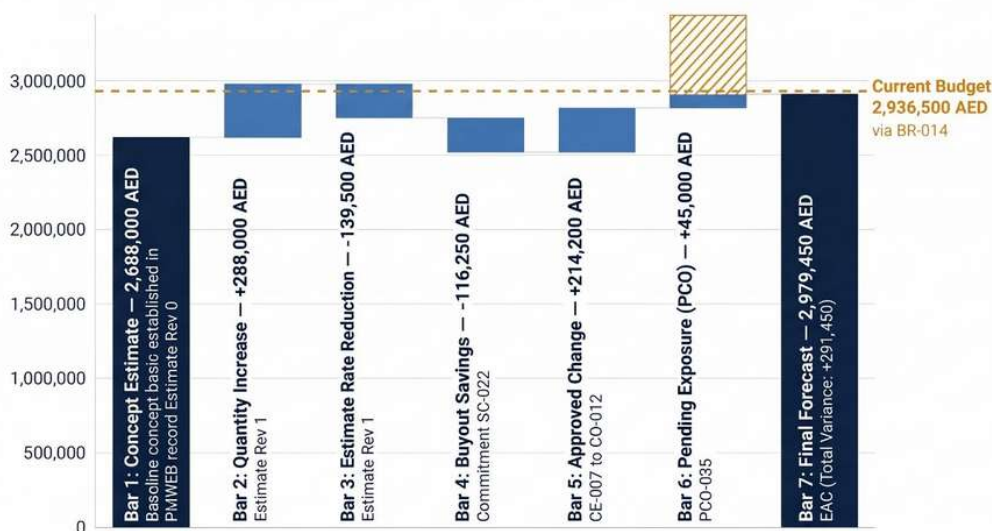
| # | PMWEB record                            | Quantity × rate            | Value (AED) | Effect on the line          |
|---|-----------------------------------------|----------------------------|-------------|-----------------------------|
| 1 | Estimate Rev 0, concept                 | 4,200 m <sup>3</sup> × 640 | 2,688,000   | Concept basis               |
| 2 | Estimate Rev 1, detailed design         | 4,650 m <sup>3</sup> × 610 | 2,836,500   | +148,500 vs Rev 0           |
| 3 | Budget, original                        | Loaded from Rev 1          | 2,836,500   | Original Budget             |
| 4 | Commitment SC-022, concrete subcontract | 4,650 m <sup>3</sup> × 585 | 2,720,250   | Buyout 116,250 below budget |

| # | PMWEB record                                                     | Quantity × rate                                                     | Value (AED) | Effect on the line            |
|---|------------------------------------------------------------------|---------------------------------------------------------------------|-------------|-------------------------------|
| 5 | Change Event CE-007, transfer-beam zone added by design revision | Logged, then priced                                                 | —           | Exposure opened               |
| 6 | PCO-031 negotiated to Change Order CO-012                        | 380 m <sup>3</sup> × 585 claimed; 360 m <sup>3</sup> × 595 approved | 214,200     | Revised Commitment 2,934,450  |
| 7 | Budget Request BR-014, transfer from contingency                 | —                                                                   | 100,000     | Current Budget 2,936,500      |
| 8 | Progress Invoices PI-01 to PI-06                                 | 3,250 m <sup>3</sup> × 585 + 120 m <sup>3</sup> × 595               | 1,972,650   | 67.2% invoiced; 961,800 to go |
| 9 | PCO-035, cold-joint treatment (pending)                          | Lump sum under review                                               | 45,000      | EAC 2,979,450                 |

| Cause of variance                                 | Source record           | Variance (AED)  |
|---------------------------------------------------|-------------------------|-----------------|
| Quantity: design measured 450 m <sup>3</sup> more | Estimate Rev 1 vs Rev 0 | +288,000        |
| Rate: estimate rate fell from 640 to 610          | Estimate Rev 1 vs Rev 0 | -139,500        |
| Rate: subcontract bought out at 585 vs 610        | SC-022 vs Budget        | -116,250        |
| Scope added: transfer-beam zone                   | CE-007 → CO-012         | +214,200        |
| Pending exposure: cold-joint treatment            | PCO-035                 | +45,000         |
| <b>Total: forecast vs concept estimate</b>        |                         | <b>+291,450</b> |

## The Variance Bridge: Concept Estimate to Forecast

Cost code 03-31-00, Structural concrete, podium slab (AED)



**Budget requests move funding, not cost. The bridge explains cost.**

## What the records tell us

### 1. Growth was quantity, not price

Design-stage growth stemmed from a 450 m<sup>3</sup> scope increase rather than unit rate increases.

### 2. Buyout funded most of the change

Procurement savings of 116,250 AED offset over half of the approved change order cost.

### 3. Pending PCO would exceed budget by 42,950 AED

Unapproved exposure is caught before commitment, exceeding the Current Budget of 2,936,500 AED.

Gemini Notebook

Infographic I-3 — The variance bridge: concept estimate to forecast

Three conclusions come straight out of the records. First, design-stage growth was mostly quantity, not price, which is a question for the design team rather than the estimator. Second, the buyout saving funded more than half of CO-012, so only AED 100,000 had to be drawn from contingency through BR-014. Third, the line is funded for approved cost, with a Current Budget of 2,936,500 against a Revised Commitment of 2,934,450, but PCO-035 would push the forecast AED 42,950 over budget. The cost manager sees that before PCO-035 is approved, not after.

BR-014 does not appear in the variance bridge. A budget request moves funding, not cost: it explains the budget column, while the bridge explains the cost column. Keeping the two apart is what stops a transfer being mistaken for a saving.



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 | <a href="#">001</a> | Design Services | 23-Sep-2011 10:00:57 PM | <a href="#">\$493,000.00</a> | \$23,345.00                  | \$500.00   | \$516,345.00 | \$503,350.00 | \$12,995.00 | \$1,700.00 |
| Change Orders         |                     |                 |                         |                              |                              |            |              |              |             |            |
|                       | <a href="#">001</a> | Design Changes  | 27-Sep-2011 12:00:00 AM |                              | <a href="#">\$12,500.00</a>  |            |              |              |             |            |
|                       | <a href="#">004</a> |                 | 02-Jun-2024 12:00:00 AM |                              | <a href="#">\$845.00</a>     |            |              |              |             |            |
| Total Changes         |                     |                 |                         |                              | \$13,345.00                  |            |              |              |             |            |
| Invoices              |                     |                 |                         |                              |                              |            |              |              |             |            |
| <a href="#">1</a>     | Invoice 1           |                 |                         |                              | <a href="#">\$147,900.00</a> |            |              |              |             | \$0.00     |
| <a href="#">2</a>     | Invoice 2           |                 | 05-Mar-2018 12:00:00 AM |                              | <a href="#">\$54,514.20</a>  |            |              |              |             | \$0.00     |
| <a href="#">3</a>     | Invoice 3           |                 | 05-Mar-2018 12:00:00 AM |                              | <a href="#">\$65,598.00</a>  |            |              |              |             | \$0.00     |
| <a href="#">4</a>     | Invoice 4           |                 | 05-Mar-2018 12:00:00 AM |                              | <a href="#">\$64,090.00</a>  |            |              |              |             | \$0.00     |
| <a href="#">5</a>     | Invoice 5           |                 | 05-Mar-2018 12:00:00 AM |                              | <a href="#">\$69,518.80</a>  |            |              |              |             | \$0.00     |
| <a href="#">6</a>     | Invoice 6           |                 | 05-Mar-2018 12:00:00 AM |                              | <a href="#">\$66,729.00</a>  |            |              |              |             | \$0.00     |
| <a href="#">7</a>     | Invoice 7           |                 | 13-Aug-2019 12:00:00 AM |                              | <a href="#">\$34,000.00</a>  |            |              |              |             | \$2,700.00 |
| <a href="#">8</a>     | Invoice 8           |                 | 16-Mar-2025 12:00:00 AM |                              | <a href="#">\$1,000.00</a>   |            |              |              |             | \$1,700.00 |
| Total Invoices        |                     |                 |                         |                              | \$503,350.00                 |            |              |              |             |            |

1 of 9

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299 - PMWEB

PMWEB screenshot S-7 — Drill-down from Revised Commitments to source records

## Configuring PMWEB to Your Cost Procedures

Each owner decides how cost is structured, approved and reported. Those decisions become configuration in PMWEB, set once and reused across the portfolio.

| What the owner decides                    | How it is configured in PMWEB                                                                                                      |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| <b>Cost breakdown structure</b>           | CBS levels and cost codes shared by every cost module, at the level variance will be explained                                     |
| <b>Measurement basis</b>                  | Quantity, unit of measure and unit rate held separately on estimate, commitment, change order and invoice lines                    |
| <b>Cost Worksheet columns</b>             | Columns and formulas for budget, commitments, approved and pending changes, invoiced, EAC and variance, in the owner's terminology |
| <b>Approval routes and DoA thresholds</b> | Role-based workflows for budget requests, PCOs, change orders and invoices, mapped to the delegation-of-authority matrix           |
| <b>Contingency rules</b>                  | Contingency held on its own cost codes and drawn only through budget requests                                                      |
| <b>Change process</b>                     | Change event, PCO and change order forms linked, with reason codes for design, client, site and claim                              |
| <b>Reporting</b>                          | SSRS variance reports and dashboards from live data, with Power BI where the owner has standardised on it                          |
| <b>Integration</b>                        | Commitments, invoices and actuals exchanged with the owner's ERP on the same cost codes                                            |

## Evidence That Variance Reporting Is Working

- **Every movement is a record.** No budget transfer, change or invoice affects a cost line without a PMWEB record behind it.
- **Variance explained by cause.** Each material variance is split into quantity, rate, scope, transfer and change, with record references.
- **Exposure visible early.** Pending PCOs appear on the Cost Worksheet before they are approved, and their value is reported with the forecast.
- **Transfers net to zero.** Budget requests that move funds between codes balance across the project unless new funding is approved.
- **Invoices reconcile to lines.** Invoiced to Date on each cost code agrees with the certified progress invoices against it.
- **No month-end reconciliation.** Cost reports are generated from live data and agree with the records the team works in every day.

### Key takeaway

Comparing two estimates line by line tells an owner what changed in the estimate. Holding the estimate, budget, budget requests, commitments, change events, PCOs, change orders and progress invoices on one CBS in PMWEB tells the owner what changed in the money, why, on whose authority, and what is still coming.

That is the difference between reporting a variance and explaining one. Every number on the report is a record you can open.

**Talk to us:** [info@CMCS-MENA.com](mailto:info@CMCS-MENA.com) | [#CMCS](#) [#PMWEB](#) [#CostManagement](#) [#ProjectControls](#)

### 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

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# The Conversation Is the Record — Why Project Teams Should Work on PMWEB Activity Boards

*How ad-hoc collaboration, captured in the project's own database, becomes the evidence behind decisions, claims and lessons learned*

**Most project decisions are not made in a workflow. They are made in a conversation. When that conversation lives in a chat group, the decision survives but its reasons do not.**

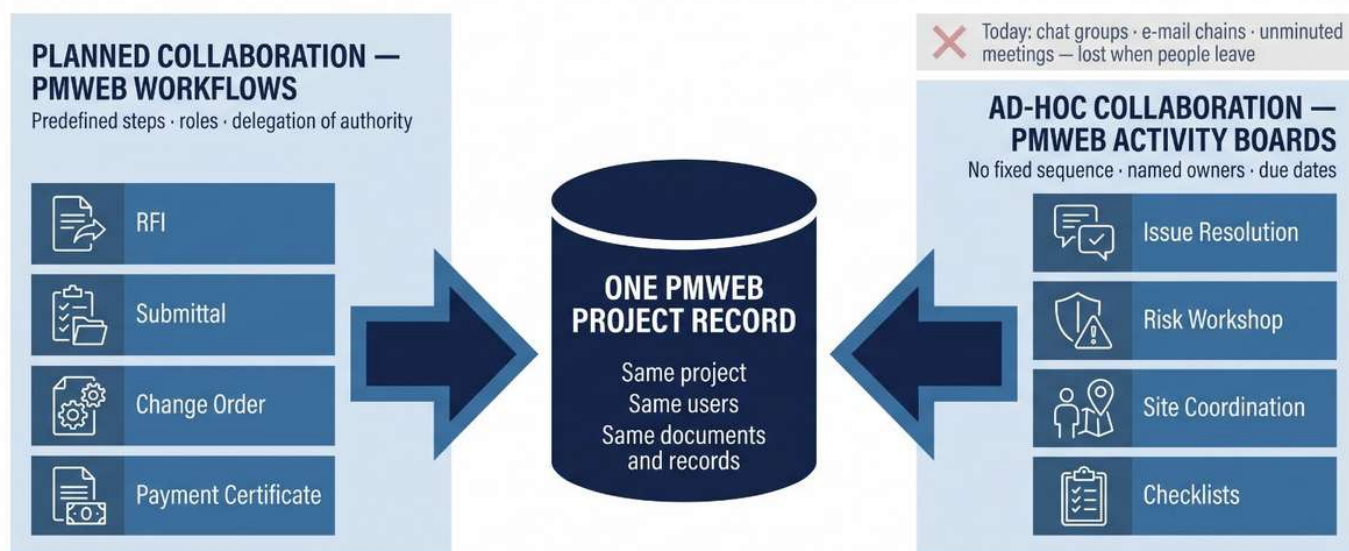
Every capital project runs on two kinds of collaboration. The first is planned. An RFI, a submittal, a change order or a payment certificate is routed through a workflow that maps who submits, who reviews and who approves under the delegation of authority. A project management information system (PMIS) is built for this, and PMWEB manages it across more than a hundred business processes.

The second kind is ad-hoc. It is the site coordination that unblocks a concrete pour, the three-day exchange between the designer, the MEP contractor and the cost manager about a clash, and the workshop that produces the first cut of the risk register. It has no predefined sequence, but it does have owners, deadlines and outcomes. On most projects it happens in chat groups, e-mail chains and meeting rooms, outside the project record.

The cost shows up later. Fourteen months into construction, a contractor submits an extension of time claim for a clash it says the owner took six weeks to resolve. The owner's team remembers resolving it in a week. The proof is in a chat group on the phone of an engineer who has since left the project.

PMWEB Activity Boards are built for this second kind of collaboration. This article explains why owners and PMOs should promote them as the default place for ad-hoc teamwork, how the module works, and what the captured record is worth when a decision has to be defended.

## TWO KINDS OF COLLABORATION, ONE PROJECT RECORD



**WORKFLOWS RECORD WHAT WAS APPROVED. ACTIVITY BOARDS RECORD HOW THE TEAM GOT THERE.**

Gemini Notebook

*Infographic I-1 — Two kinds of collaboration, one project record*

## Where Ad-Hoc Collaboration Lives Today

- **Chat groups.** Fast and familiar, but held on personal phones, mixed with unrelated traffic, and lost when people change roles or leave.

- **E-mail chains.** Split across inboxes. The one person not copied is the one who needed to know, and attachments drift away from the discussion about them.
- **Meetings without a live record.** Actions are agreed verbally and minuted days later, if at all. The reasoning behind them rarely reaches the minutes.
- **Personal trackers.** Spreadsheets and whiteboards that only their owner updates and only their owner can find.
- **No link to project records.** The RFI, the NCR, the drawing and the site photo sit in the PMIS. The discussion about them sits somewhere else.
- **Knowledge leaves with people.** Turnover on a multi-year project is normal, and the context each person carried leaves with them.

## Why the Discussion Becomes Evidence

---

The formal record shows what was decided. The discussion shows why it was decided, when the problem was known, who was involved, which options were considered and how long it took. Those are exactly the questions asked when:

- **A decision is revisited.** A new project director, a board, a lender or a regulator asks why one option was chosen over another.
- **A claim is made or defended.** Delay and disruption analysis depends on contemporaneous records of when an issue was raised and how it was handled.
- **An audit is performed.** Internal audit expects a decision trail, not a recollection.
- **Lessons are learned.** The next project needs the reasoning, not just the outcome.

A record made at the time the work is done carries a weight that a reconstruction never will. That is the case for moving ad-hoc collaboration into PMWEB: not to formalise it, but to keep it.

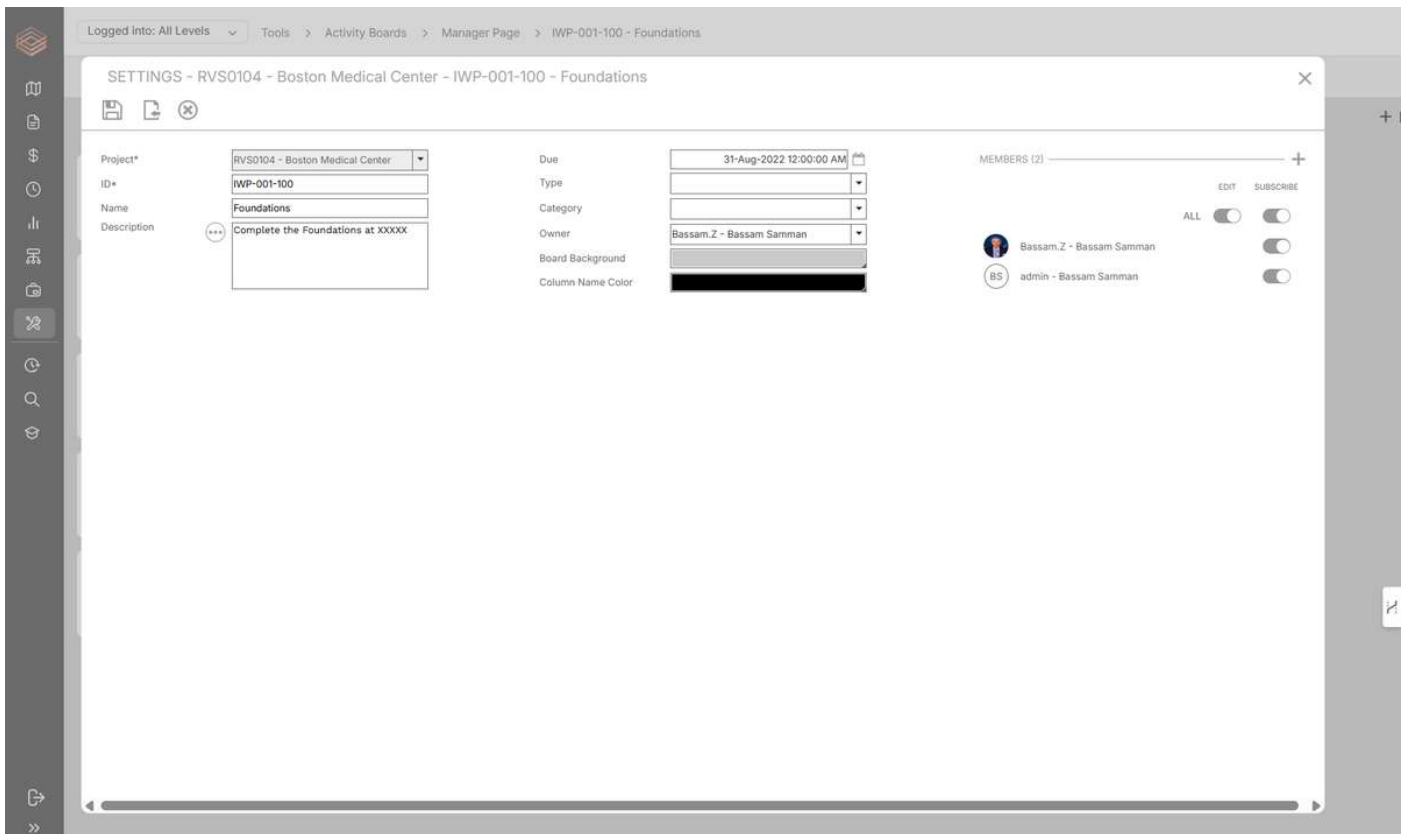
## How PMWEB Activity Boards Work

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Activity Boards is a Kanban-style collaboration module under PMWEB Tools. A board holds any number of columns and task cards, and cards are dragged between columns as the work moves. What separates it from a stand-alone Kanban app is where it lives: on the same project, users, documents and records as everything else in PMWEB.

### A board belongs to a project

Each board is created in Board Settings with a **Project** (required, and locked once members are added), an **ID**, **Name**, **Description**, **Due** date, **Type**, **Category** and **Owner**, plus the board and column colours. Type and Category let the PMO classify boards consistently across the portfolio, for example issue resolution, risk workshop, site coordination or checklist.

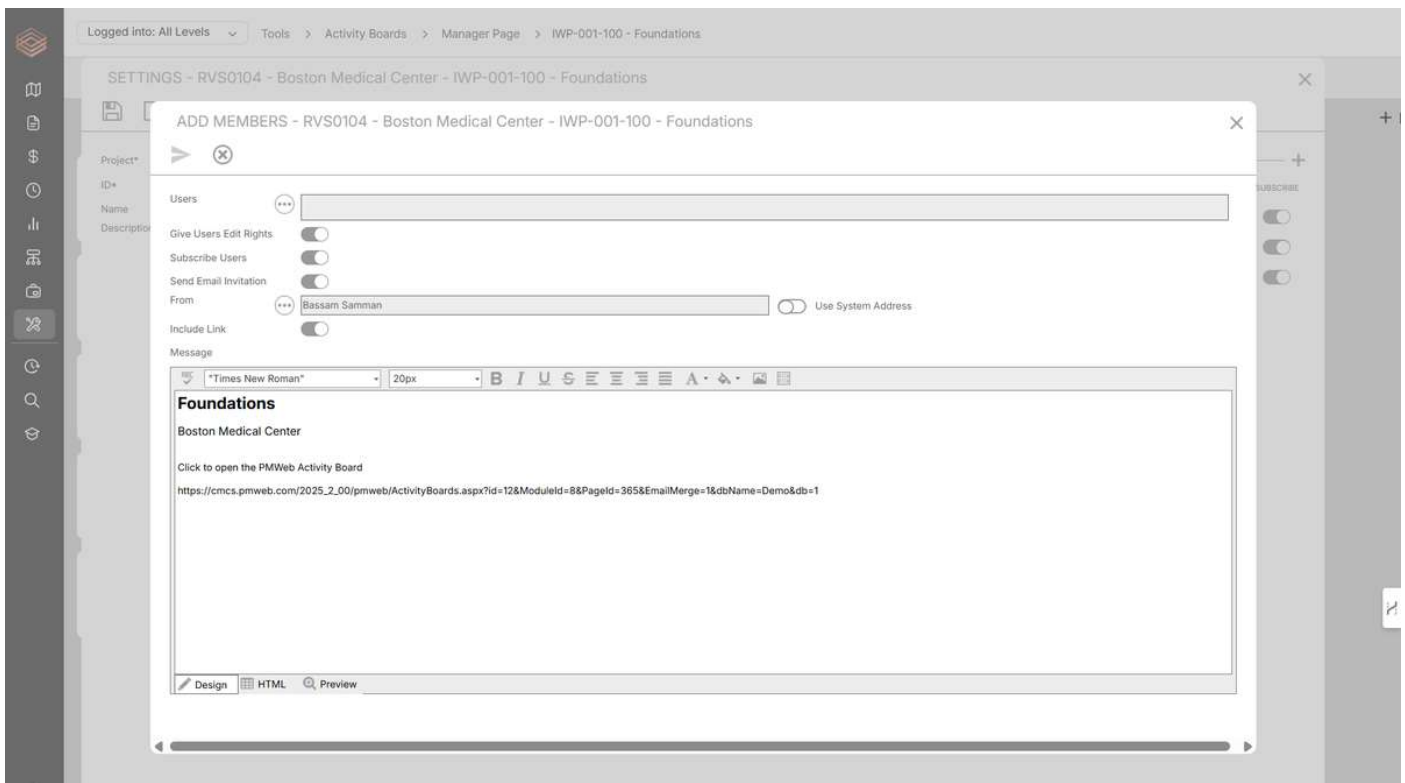


PMWEB screenshot S-1 — Board Settings with project, type, category and owner

## Members, edit rights and subscriptions

The owner adds members from the project's PMWEB users. Each member has two switches: **edit rights** and **activity e-mail subscription**. The creator, the owner and the PMWEB administrator always hold full rights. Other members with edit rights cannot delete the board, add or remove members, or edit or delete other users' comments. When a member is removed, they lose access to the board, but their activity stays on it.

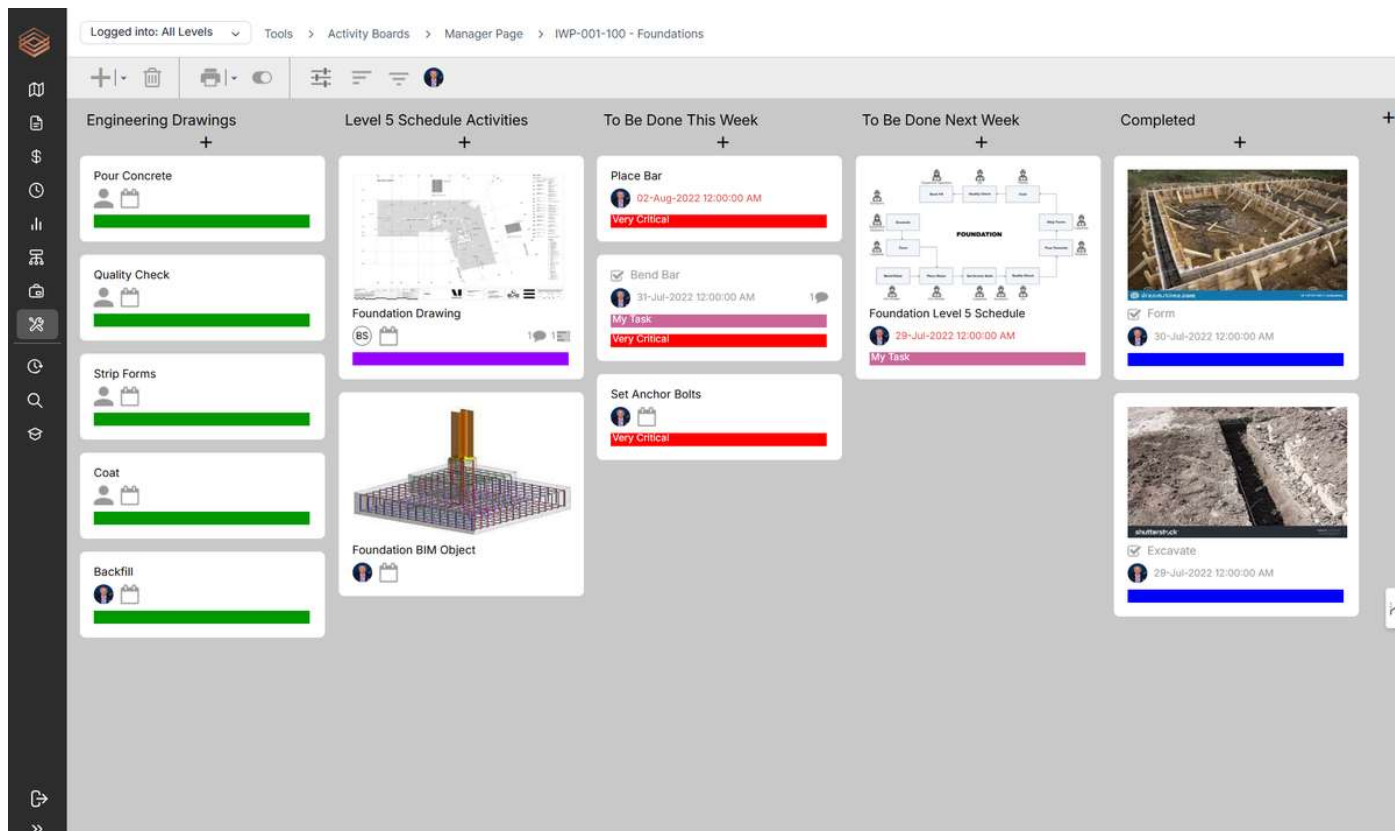
That last rule matters more than it looks. The record does not leave with the person.



PMWEB screenshot S-2 — Members section with edit-rights and subscription switches

## Columns, cards and flags

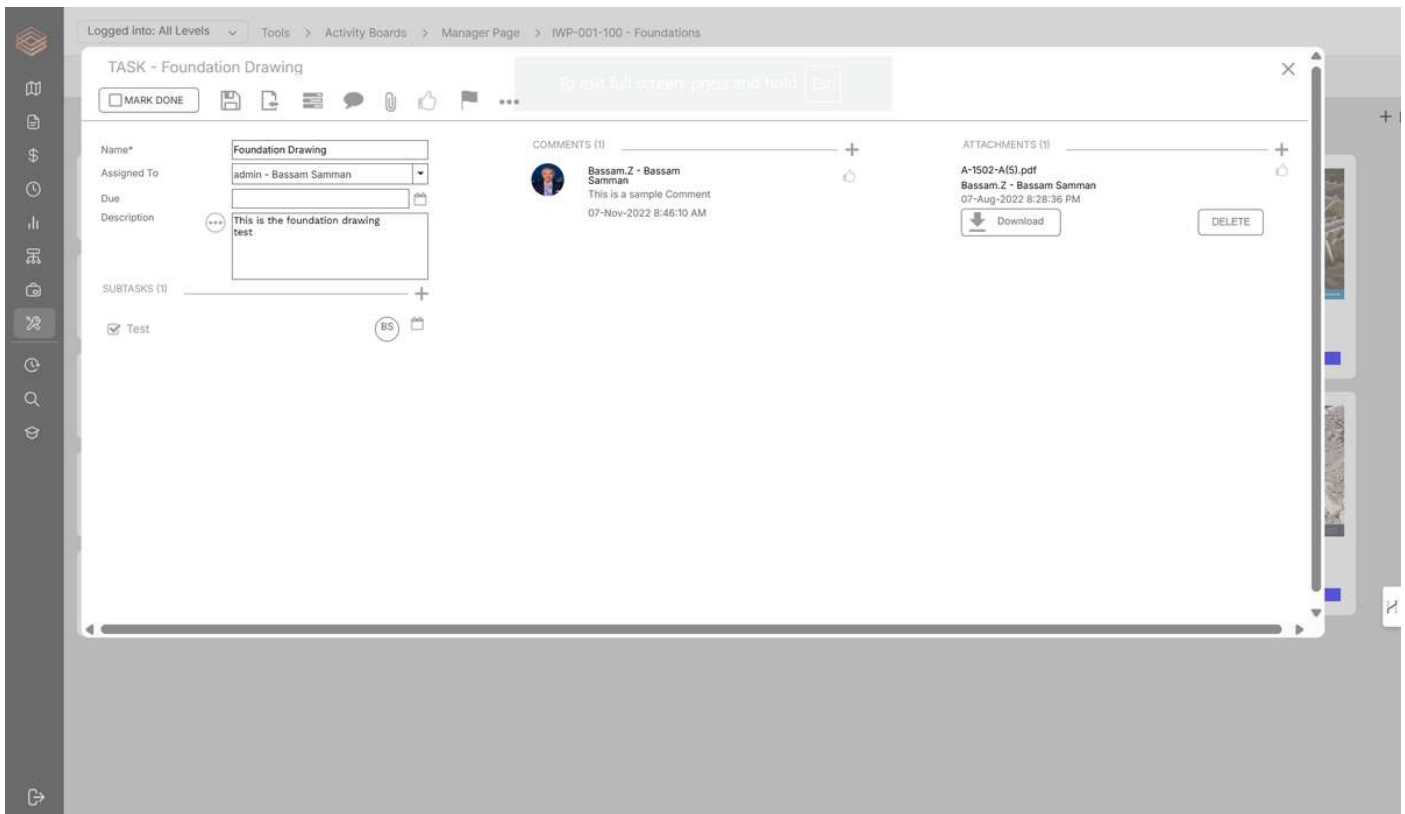
In Card View, columns are named to suit the purpose, and there is no limit on columns or cards. Each card shows its name, assignee and due date, which turns red when overdue. It also shows counts of likes, comments and subtasks, an optional cover image, and one or more **flags**. Flags are coloured bars whose meaning is set once for the whole board, such as Critical, High, Medium and Normal, so every card reads the same way.



PMWEB screenshot S-3 — Card View of an issue resolution board with flags and cover photos

## The task card: owner, due date and subtasks

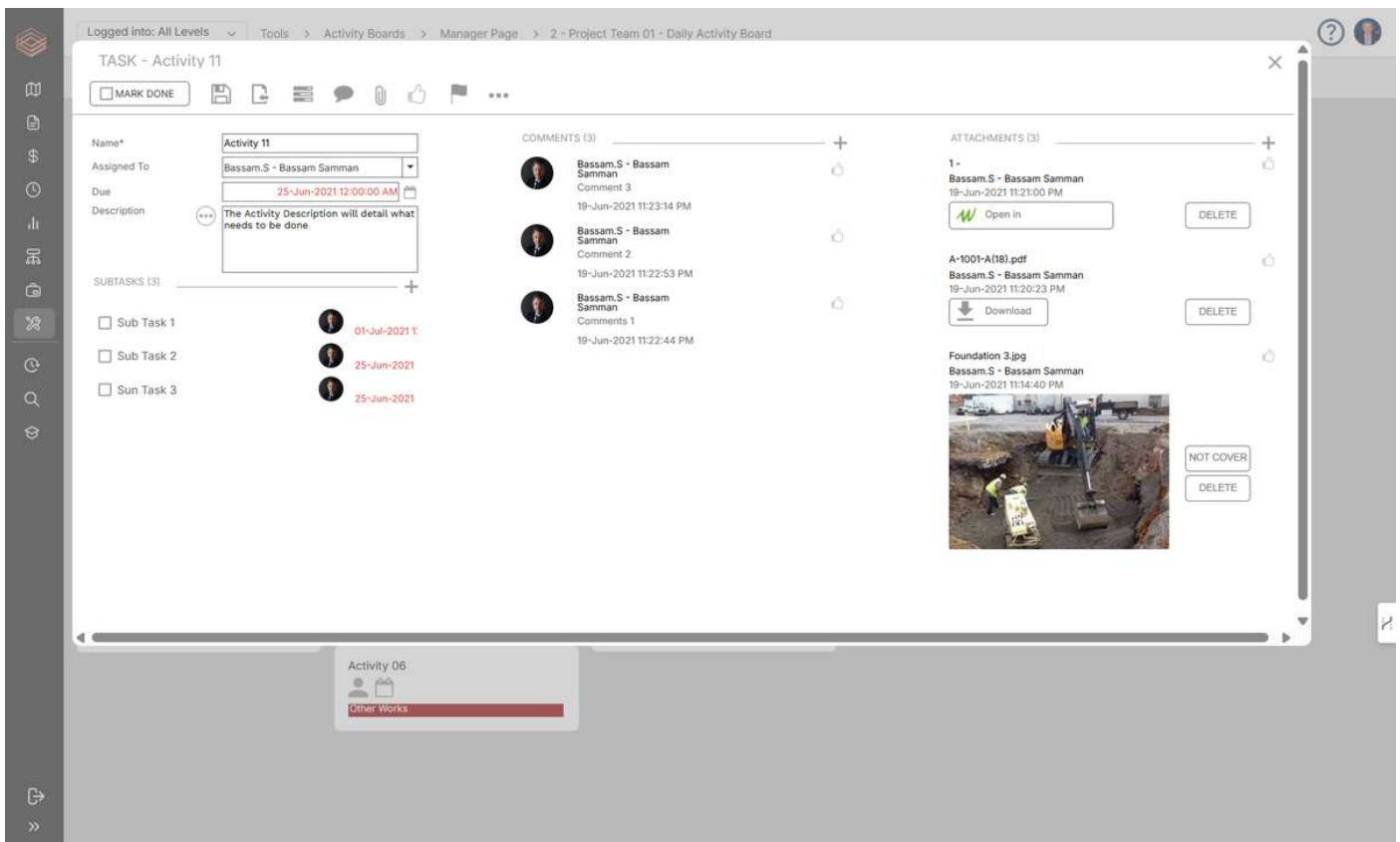
Opening a card shows the Task Details: **Name**, **Assigned To**, **Due**, **Description** and a **Mark Done** toggle. A task can be broken into **subtasks**, each with its own assignee and due date. Subtasks can be nested without limit, and a double-click drills down the chain. Tasks can be copied or moved to another board, which lets a standard set of tasks be reused across projects.



PMWEB screenshot S-4 — Task Details with subtasks assigned across entities

## Comments: the conversation, in order

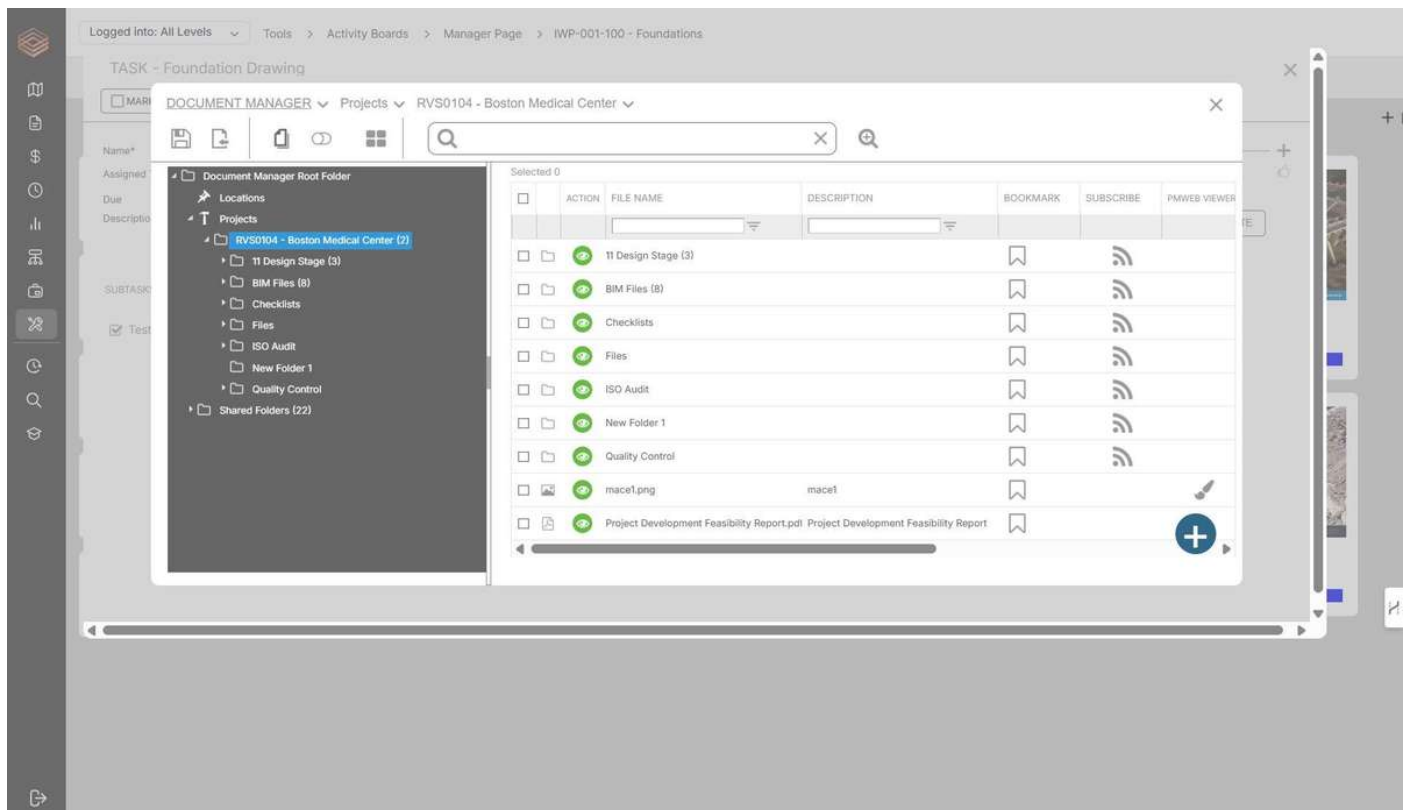
Every task carries an unlimited comment thread with the latest comment on top. Members can edit or delete only their own comments, so nobody can quietly rewrite what someone else said. Likes on comments and attachments act as a lightweight acknowledgement that a message was seen.



PMWEB screenshot S-5 — Comment thread on a task

## Attachments and links to PMWEB records

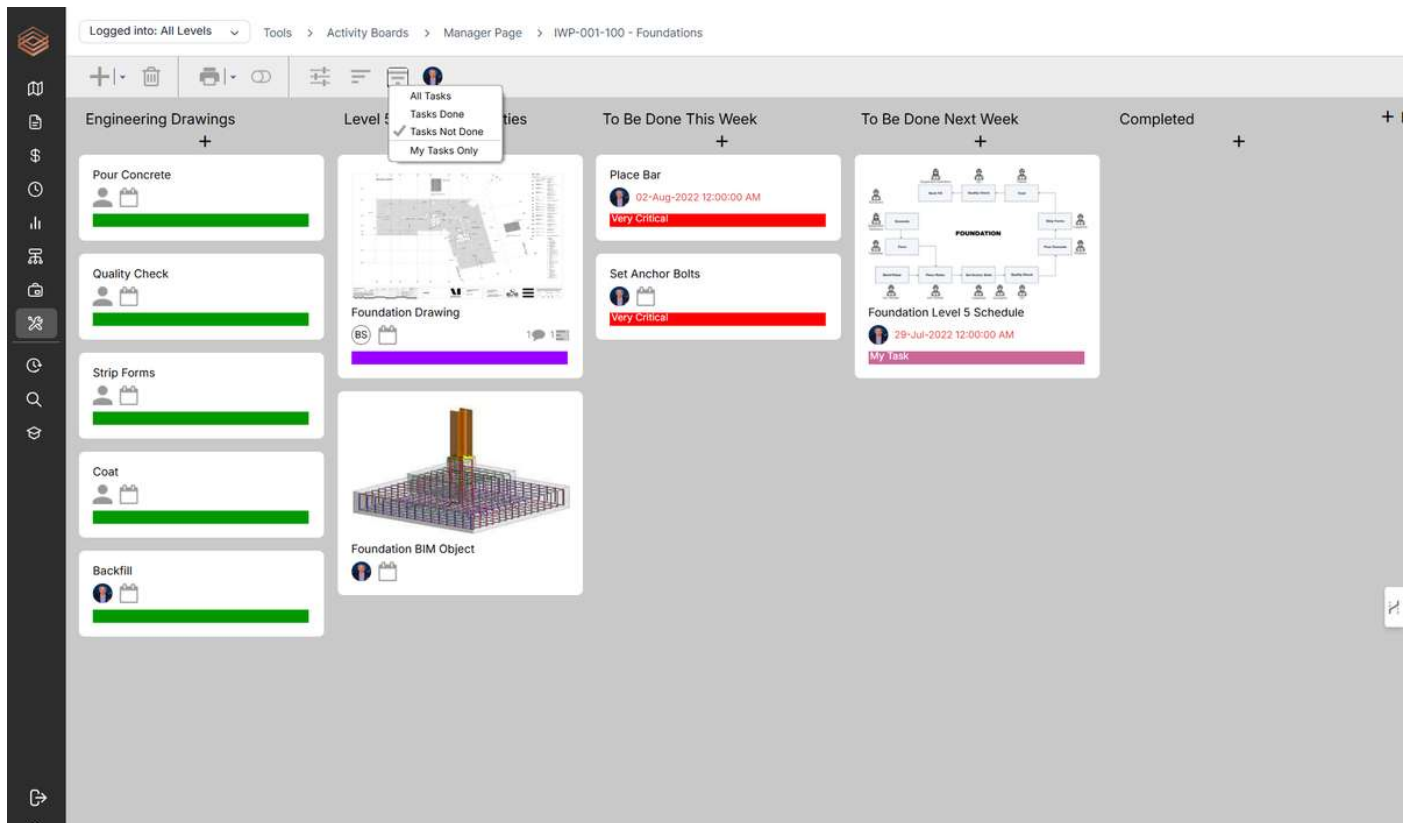
Attachments come from four sources: **Your Computer**, **Document Manager**, **PMWEB Record** and **Web URL**. Files can be dragged straight onto a card, and an image or PDF can be set as the card cover. The PMWEB Record option links the card to the RFI, NCR, change event, schedule or any other record the discussion concerns, so the conversation points directly at the formal records it relates to.



PMWEB screenshot S-6 — Attachments with a Document Manager file, a PMWEB record link and a photo cover

## List View, filters and notifications

List View shows the same tasks as a table, with filters on Task, Assigned To and Due. The header filter switches between All Tasks, Tasks Done and Tasks Not Done, with an independent **My Tasks Only** option. Several tasks can be selected together and acted on in one step. In the Profile dialog, each member chooses an e-mail for every new comment and a periodic **summary** e-mail with an attached report, so the board reaches people who do not open it every day.



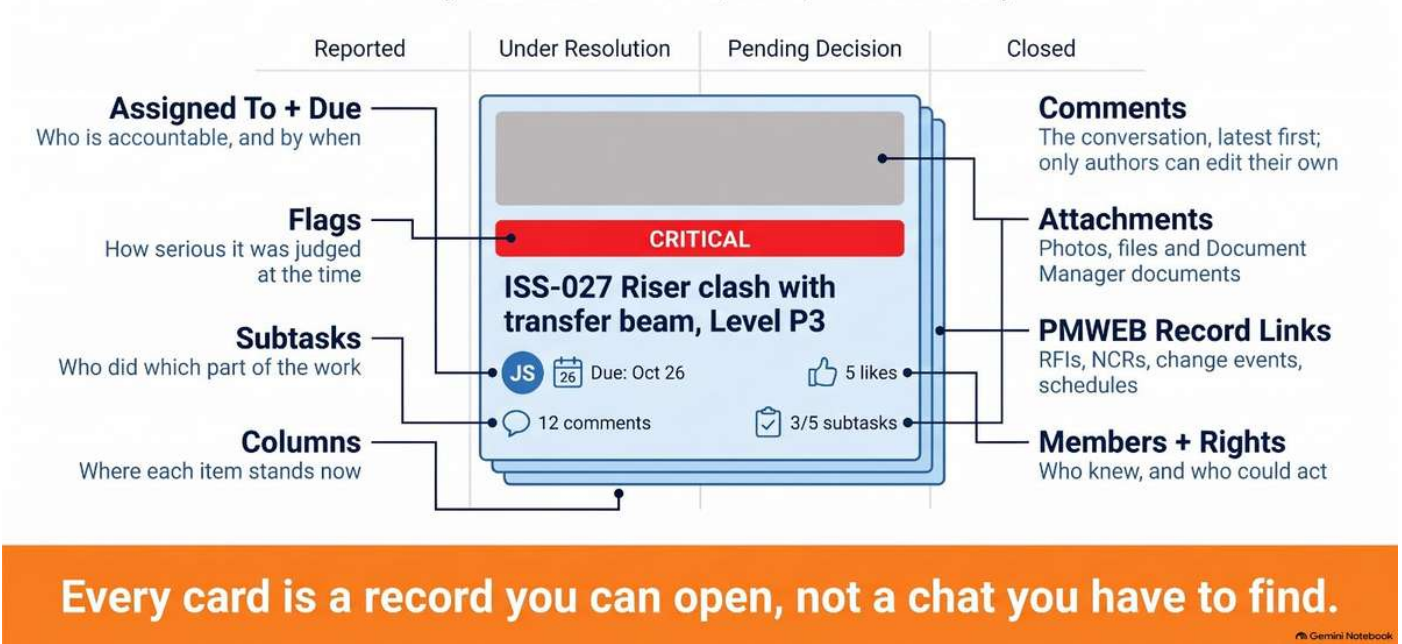
PMWEB screenshot S-7 — List View filtered to My Tasks Only and Tasks Not Done

## What each element captures

| Board element                 | What it captures                                       | The question it answers later                                             |
|-------------------------------|--------------------------------------------------------|---------------------------------------------------------------------------|
| <b>Board settings</b>         | Project, purpose (type, category), owner, due date     | Which project and purpose did this collaboration serve, and who owned it? |
| <b>Members</b>                | Who was invited, with which rights                     | Who knew about it, and who could act?                                     |
| <b>Columns and card moves</b> | Status of each item                                    | Where is each item now, and what is stuck?                                |
| <b>Task fields</b>            | Assignee, due date, done status                        | Who was accountable, and was it done on time?                             |
| <b>Subtasks</b>               | Breakdown and delegation                               | Who did which part of the work?                                           |
| <b>Comments and likes</b>     | The discussion in order, by author; acknowledgement    | What was said, by whom, and was it seen?                                  |
| <b>Attachments</b>            | Photos, files, Document Manager documents, web links   | What information was the team looking at?                                 |
| <b>PMWEB record links</b>     | RFIs, NCRs, change events, schedules and other records | Which formal records did the discussion concern?                          |
| <b>Flags</b>                  | Priority or category, defined once per board           | How serious was it judged to be at the time?                              |

# Anatomy of an Activity Board Card

Every card answers who, what, when and why



Infographic I-2 — Anatomy of an Activity Board card

## The Use Case with the Biggest Payback: Issue Resolution

Activity Boards suit many purposes: risk workshops, checklists, project charter development, daily site coordination and handover snag closure. The one that returns the most value to a capital project is issue resolution. A risk is a problem that may happen. An issue is a problem happening now, and every day it stays open costs time and money. Every unresolved issue is also a potential claim. The speed of resolution and the record of how it was resolved are both worth money.

### Setting up the board

| Board setting            | Issue resolution configuration                                                                                            |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------|
| <b>Type and category</b> | Type: Issue Resolution. Category by discipline, or one board per category where different people resolve different issues |
| <b>Columns</b>           | Reported · Under Resolution · Pending Management Decision · Closed                                                        |
| <b>Flags</b>             | Red: Critical · Orange: High · Yellow: Medium · Blue: Normal                                                              |
| <b>Owner</b>             | Project manager                                                                                                           |
| <b>Members</b>           | Design manager, planner, cost manager, contract administrator, contractor project manager, key subcontractor coordinators |
| <b>Linking rule</b>      | Every card links the RFI, NCR, site instruction or change event it relates to                                             |

### Worked example: one issue, nine days, one record

Take one issue on an illustrative owner project. **ISS-027: chilled-water riser clashes with transfer beam, Level P3, Core B.** Every row below is something that happened on the board.

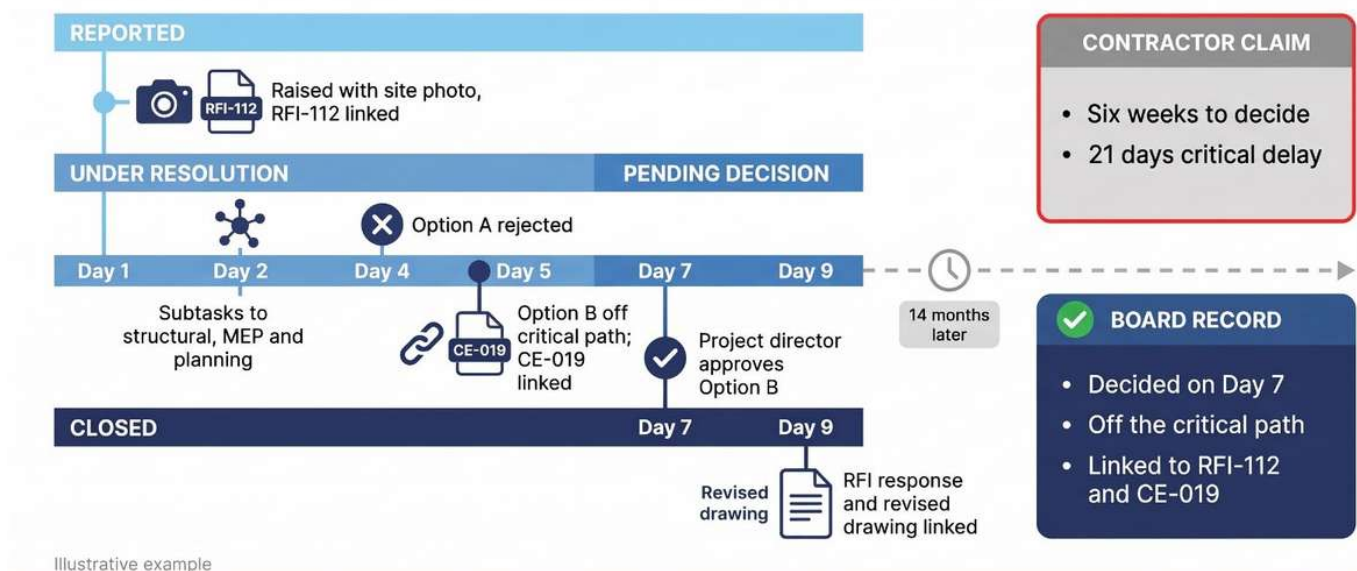
| Day | Who                           | Action on the board                                                                         | What the record now shows                         |
|-----|-------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------|
| 1   | MEP subcontractor coordinator | Creates the card in Reported, attaches a site photo as cover, links RFI-112                 | When the issue was raised, by whom, with evidence |
| 1   | Project manager               | Flags it Critical, assigns it to the design manager due Day 8, moves it to Under Resolution | Priority and accountability at the time           |

| Day | Who                 | Action on the board                                                                                                                   | What the record now shows                     |
|-----|---------------------|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| 2   | Design manager      | Adds subtasks: structural check of a beam penetration (structural engineer), reroute option (MEP designer), schedule impact (planner) | Delegation, with due dates                    |
| 3   | MEP designer        | Comments: Option B reroutes through shaft S2 and avoids the beam; attaches a sketch from Document Manager                             | The options considered                        |
| 4   | Structural engineer | Comments: penetration not acceptable without strengthening; marks subtask done                                                        | The technical basis for rejecting Option A    |
| 5   | Planner             | Comments: Option B adds three working days to riser installation, off the critical path                                               | Schedule impact assessed before the decision  |
| 5   | Cost manager        | Comments with the cost estimate for Option B; links change event CE-019                                                               | Cost exposure opened as a formal record       |
| 7   | Project director    | Comments: Option B approved; revised drawing and RFI-112 response to follow                                                           | The decision, the decision maker and the date |
| 9   | Design manager      | Links the RFI-112 response and the revised drawing, marks the task done, moves it to Closed                                           | Closure, tied to the formal records           |

Fourteen months later the contractor's extension of time claim says the clash caused 21 days of critical delay and that the owner took six weeks to decide. The owner's team opens ISS-027. The issue was raised on Day 1, decided on Day 7 and closed on Day 9. The planner's assessment at the time placed the work off the critical path. The decision is linked to the RFI response and the change event that priced it.

Answering that part of the claim takes an hour, not a month. More importantly, it rests on records created while the work was happening, not on what people remember. The board does not replace contractual notices or the formal RFI and change processes. It shows how the issue was handled between them, and that is the part most often lost.

## From Conversation to Decision to Evidence



**RECORDS MADE AT THE TIME BEAT MEMORIES REBUILT LATER.**

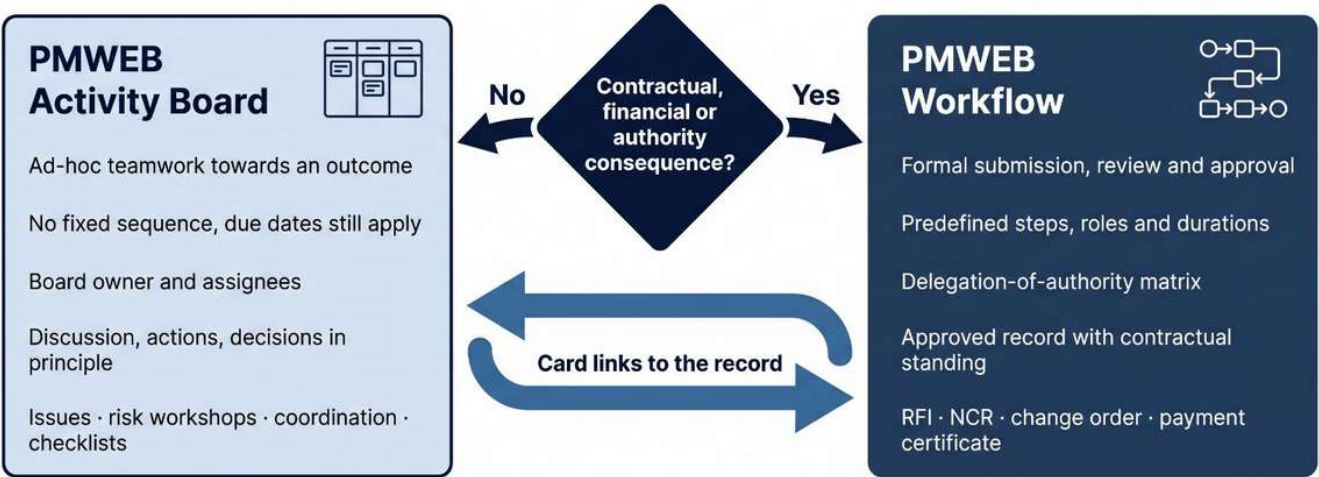
*Infographic I-3 — From conversation to decision to evidence*

# Activity Boards Complement Workflows. They Do Not Replace Them

One rule keeps the two in balance. Anything with a contractual, financial or delegation-of-authority consequence goes through the formal PMWEB business process and its workflow. The board is where the team works out what to put into that process, and the card links to the record once it exists.

|            | Activity Board                                                  | PMWEB business process with workflow        |
|------------|-----------------------------------------------------------------|---------------------------------------------|
| Purpose    | Ad-hoc teamwork towards an outcome                              | Formal submission, review and approval      |
| Sequence   | No predefined sequence; due dates still apply                   | Predefined steps, roles and durations       |
| Authority  | Board owner and assignees                                       | Delegation-of-authority matrix              |
| Output     | Discussion, actions, decisions in principle                     | Approved record with contractual standing   |
| Examples   | Issue resolution, risk workshops, site coordination, checklists | RFI, NCR, change order, payment certificate |
| Connection | Card links to the records it concerns                           | The record is the formal outcome            |

## Board or Workflow? Where Each Conversation Belongs



- Making it stick
- 1

One template board per purpose
- 2

A named owner on every board
- 3

Meetings run from the board
- 4

Every card links its records
- 5

Project discussions on the board, not in chat groups

Discuss on the board. Decide in the workflow. Link the two.

Infographic I-4 – Board or workflow? Where each conversation belongs

## Promoting the Use of Activity Boards

The module takes minutes to learn. Adoption is a management decision, and it sticks when the PMO sets a few rules once and applies them on every project.

| What the PMO decides       | How it is applied in PMWEB                                                                                                                                                      |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Who takes part             | Activity Boards option enabled for each participating user in Portfolio > Administer > Security > Define Users, including contractor and consultant users who hold PMWEB access |
| Board purposes             | Standard Type and Category values for issue resolution, risk, coordination, checklists and handover                                                                             |
| Standard columns and flags | One template board per purpose, with its columns, flag meanings and standard tasks, copied to each project                                                                      |
| Ownership                  | A named owner on every board, usually the project manager or discipline lead                                                                                                    |

| What the PMO decides           | How it is applied in PMWEB                                                                                      |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>Edit rights</b>             | Granted to members who need to change tasks, not by default to everyone                                         |
| <b>Notifications</b>           | Comment and summary e-mails set per member, which each member can adjust in their Profile                       |
| <b>Meeting practice</b>        | Coordination and issue meetings run from the board on screen, with actions recorded on cards during the meeting |
| <b>Linking rule</b>            | Every card that relates to a formal record links to it                                                          |
| <b>The project instruction</b> | Project discussions belong on the board, not in chat groups                                                     |

## Evidence That Activity Boards Are Working

- **Meetings run from the board.** Coordination and issue meetings open the board, not a slide or a spreadsheet.
- **Every open item has an owner and a due date.** Nothing sits in Reported without an assignee for more than a day.
- **Chat groups go quiet on project matters.** They are used to say “see the board”, not to make decisions.
- **Cards link to records.** Closed issues point to the RFI, NCR or change event that formalised them.
- **Decisions are findable.** Anyone with access can answer “why did we do this?” from the card, without asking the people involved.
- **Nothing leaves with people.** When a team member moves on, their comments, files and decisions stay on the project.

## From Captured Conversation to Usable Knowledge

There is a further reason to promote Activity Boards. Comments, subtasks, attachments and record links are held in the PMWEB database alongside the project’s structured records. A discussion that never reaches the PMIS cannot be searched, summarised or analysed by people or by AI. Moving ad-hoc collaboration onto the board is the precondition for applying AI to a project’s real decision history, not only to its approved forms. No data, no AI.

### Key takeaway

A workflow records what was approved. An Activity Board records how the team got there. Capital projects need both, and on most projects the second is lost in chat groups and inboxes.

Make PMWEB Activity Boards the default place for ad-hoc teamwork, start with issue resolution, and link every card to the records it concerns. The project then keeps its reasons as well as its decisions.

**Talk to us:** [info@CMCS-MENA.com](mailto:info@CMCS-MENA.com) | [#CMCS](#) [#PMWEB](#) [#Collaboration](#) [#IssueManagement](#) [#ProjectControls](#)

## About the Author

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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.

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# Stop Freezing Contingency Project by Project: Managing Contingency as a Portfolio Buffer with Critical Chain Thinking and PMWEB

*Why owners with a large capital portfolio should size contingency from residual risk, pool it like a critical chain buffer, and control every release through a PMWEB contingency master commitment*

Bassam Samman, PMP, PSP, EVP, GPM | Chairman & CEO, CMCS FZ-LLC | PMWEB Authorised Implementation Partner, GCC & MENA

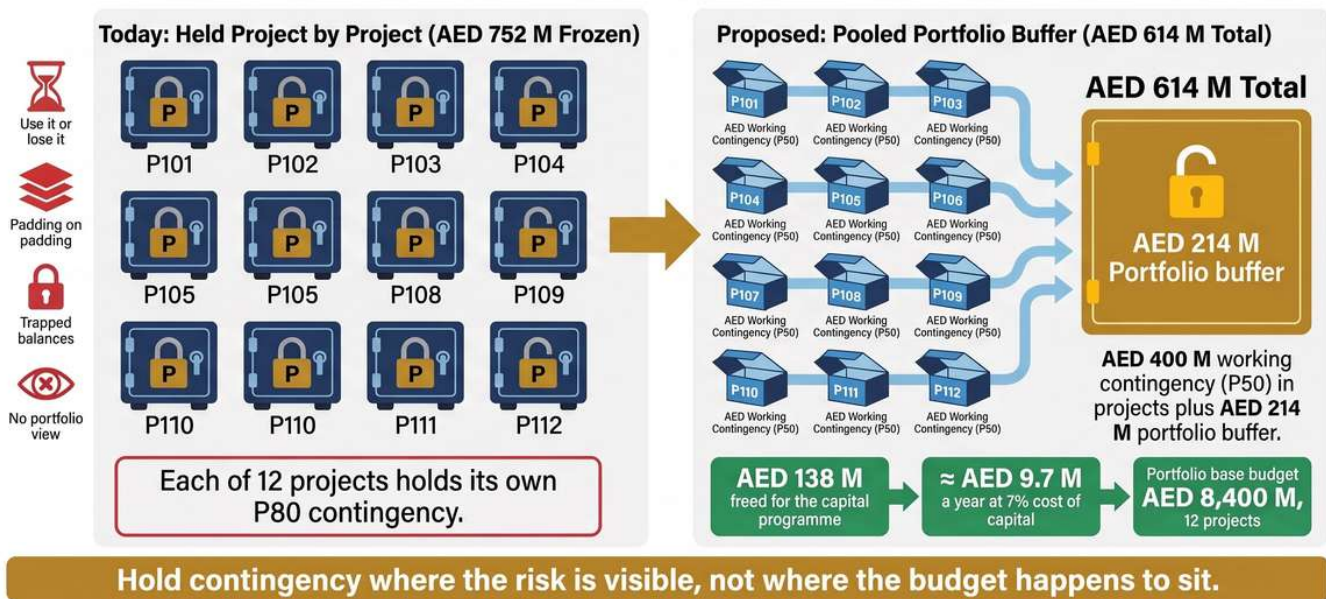
*Every capital project is approved with a contingency. Add those contingencies up across a portfolio of twenty, fifty or a hundred projects and the owner is holding a very large sum of money that is approved, funded and frozen, waiting for events that will never all happen at the same time.*

For one project, holding contingency at a high level of confidence is prudent. For an owner with a significant portfolio, holding it project by project is expensive. The money cannot be committed to the next project. It sits in budget appropriations or on the balance sheet at a cost. And because it is ring-fenced to one project, it tends to be spent there whether or not the risk it was set aside for ever occurs. Contingency that is not needed is rarely returned. It usually finds a use.

There is a second cost that is harder to see. When contingency is scattered across dozens of project budgets, nobody looks at it as a whole. Each project manager sees their own balance. Nobody sees that the same risk, steel price escalation, a stretched MEP subcontractor market or a slow utility authority, is sitting in seven risk registers at once, priced seven different ways and drawn down seven times with no common lesson learned.

This article proposes a different model, borrowed from **Critical Chain Project Management**. Size contingency from the residual risk in each project's risk register. Keep a working share at project level. Pool the rest in a **portfolio contingency buffer** managed by a dedicated, risk-oriented group that reviews risk across the whole portfolio. And make every release spend-oriented by holding that buffer in PMWEB as a **contingency master commitment**, so that each release is traceable to a project, a contract, a cost code and a risk.

# The Hidden Cost of Contingency Held Project by Project



CMCS | PMWEB Authorised Implementation Partner, GCC & MENA

Figure 1: The cost of holding contingency project by project

# The Hidden Cost of Contingency Held Project by Project

Most owners ask each project to carry contingency at a stated confidence level, often P80: an 80 percent chance that the contingency will be enough. That is a sound rule for a project. Applied to every project in a portfolio, it produces a total that is far higher than the portfolio actually needs, because projects do not all reach their bad outcomes at the same time. **The sum of the P80s is not the P80 of the sum.**

In the sample portfolio used throughout this article, twelve projects with a combined base budget of AED 8,400 million each hold their own P80 contingency. Together that is **AED 752 million**. Sized as one portfolio, the same risks at the same 80 percent confidence need **AED 614 million**. The difference, **AED 138 million**, is money the owner is freezing for no additional protection. At a 7 percent cost of capital that is roughly AED 9.7 million a year.

The behaviour around project-level contingency adds to the cost. Eliyahu Goldratt described how safety time built into individual tasks is wasted: work expands to fill the time available, and people start late because they know the safety is there. Contingency money behaves the same way.

| Symptom                   | What happens on the project                                                                                   | Cost to the owner                                                              |
|---------------------------|---------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Use it or lose it         | Unused contingency is treated as the project's money and spent before close-out, often on scope.              | Contingency funds betterment that was never approved as change.                |
| Padding on padding        | Allowances in the estimate, contingency in the budget and a programme reserve all cover the same uncertainty. | The same risk is funded two or three times.                                    |
| Trapped balances          | Projects that no longer need contingency keep it; projects that do need it ask for new funding.               | New approvals while approved money sits idle elsewhere.                        |
| Closing-balance reporting | Contingency is reported as a remaining amount, not against the risks still open.                              | Nobody can say whether what remains is enough.                                 |
| No portfolio view         | Each project sees its own risks and its own balance.                                                          | Common-cause risks are priced and absorbed separately, with no shared lessons. |

None of this is a criticism of project teams. It is what any team will do when contingency is allocated to them as a fixed amount and the reward for not using it is losing it. The fix is structural: change where contingency is held and who releases it.

# Not All Contingency Is the Same

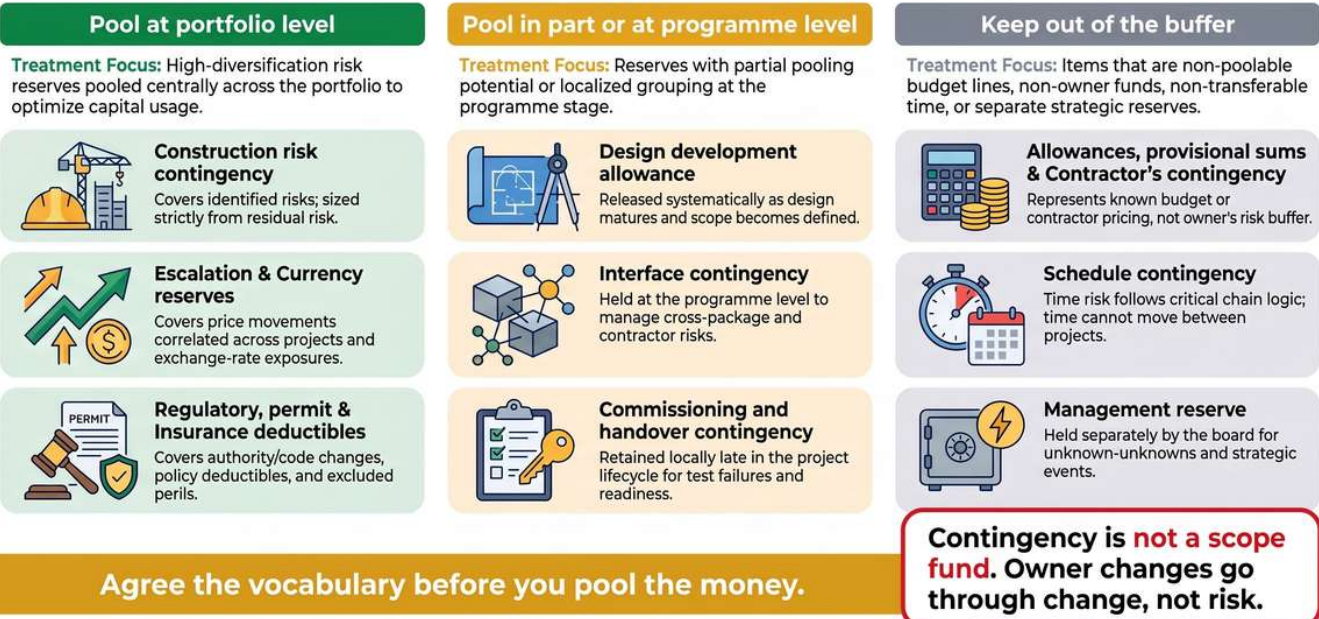
Before anything is pooled, the owner needs a common vocabulary. The word contingency is used loosely for reserves that cover different kinds of uncertainty, are sized on different bases and are released by different authorities. Some can be pooled at portfolio level. Some must stay with the project. Some are not contingency at all.

| Reserve                                           | What it covers                                                                          | Sizing basis                                                | Held by                                                   | Pool?                                 |
|---------------------------------------------------|-----------------------------------------------------------------------------------------|-------------------------------------------------------------|-----------------------------------------------------------|---------------------------------------|
| <b>Design development allowance</b>               | Growth in quantities and detail as design matures, within the approved scope            | Estimate class and design maturity                          | Project; reduces at each design stage                     | Partly                                |
| <b>Allowances and provisional sums</b>            | Known items not yet defined or priced (provisional and prime cost sums in the contract) | Priced item                                                 | Project or contract                                       | No: these are budget, not risk        |
| <b>Construction risk contingency</b>              | Identified risks: ground conditions, design errors, supply chain, productivity, weather | Residual expected value from the risk register; P50 and P80 | Working share at project; balance in the portfolio buffer | Yes: the core of the pool             |
| <b>Escalation reserve</b>                         | Price movement in materials, labour and energy beyond the estimate base date            | Indices and forecasts                                       | Portfolio                                                 | Yes: correlated across projects       |
| <b>Currency reserve</b>                           | Exchange-rate movement on foreign-currency contracts                                    | Exposure by currency and hedging policy                     | Portfolio or treasury                                     | Yes                                   |
| <b>Interface contingency</b>                      | Risks between packages, contractors, utilities and authorities                          | Interface and risk registers                                | Programme                                                 | Yes, at programme level               |
| <b>Regulatory and permit contingency</b>          | New authority requirements, code changes, approval delays                               | Risk register                                               | Programme or portfolio                                    | Yes                                   |
| <b>Commissioning and handover contingency</b>     | Test failures, re-commissioning, operator readiness                                     | Risk register                                               | Project, late in its life                                 | Partly                                |
| <b>Insurance deductibles and uninsured losses</b> | Deductibles under contractors' all-risks policies and excluded perils                   | Policy terms and claims history                             | Portfolio                                                 | Yes: natural pooling                  |
| <b>Contractor's contingency</b>                   | The contractor's own risks inside a lump-sum price                                      | Contractor's pricing                                        | Contractor                                                | No: not the owner's money             |
| <b>Schedule contingency</b>                       | Time risk on critical and near-critical paths                                           | Schedule risk analysis                                      | Project                                                   | No: time cannot move between projects |
| <b>Management reserve</b>                         | Unknown-unknowns, extreme events, strategic decisions                                   | Owner policy and judgement                                  | Sponsor or board                                          | Held separately, outside the buffer   |

Three points from this table matter most. First, **allowances are not contingency**. A provisional sum for a known item belongs in the budget. Second, **contingency is not a scope fund**. An owner-requested change should be funded through change, not by drawing on risk money; on the dashboards later in this article, these non-risk drawdowns are flagged separately. Third, **schedule contingency follows the same critical chain logic inside each project**, with project and feeding buffers, but it cannot be pooled across projects the way money can. A day saved on a school does not help a hospital. The rest of this article is about cost contingency.

# Not All Contingency Is the Same

Twelve reserves, three different treatments



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Gemini Notebook

Figure 2: Reserve and contingency types, and which can be pooled

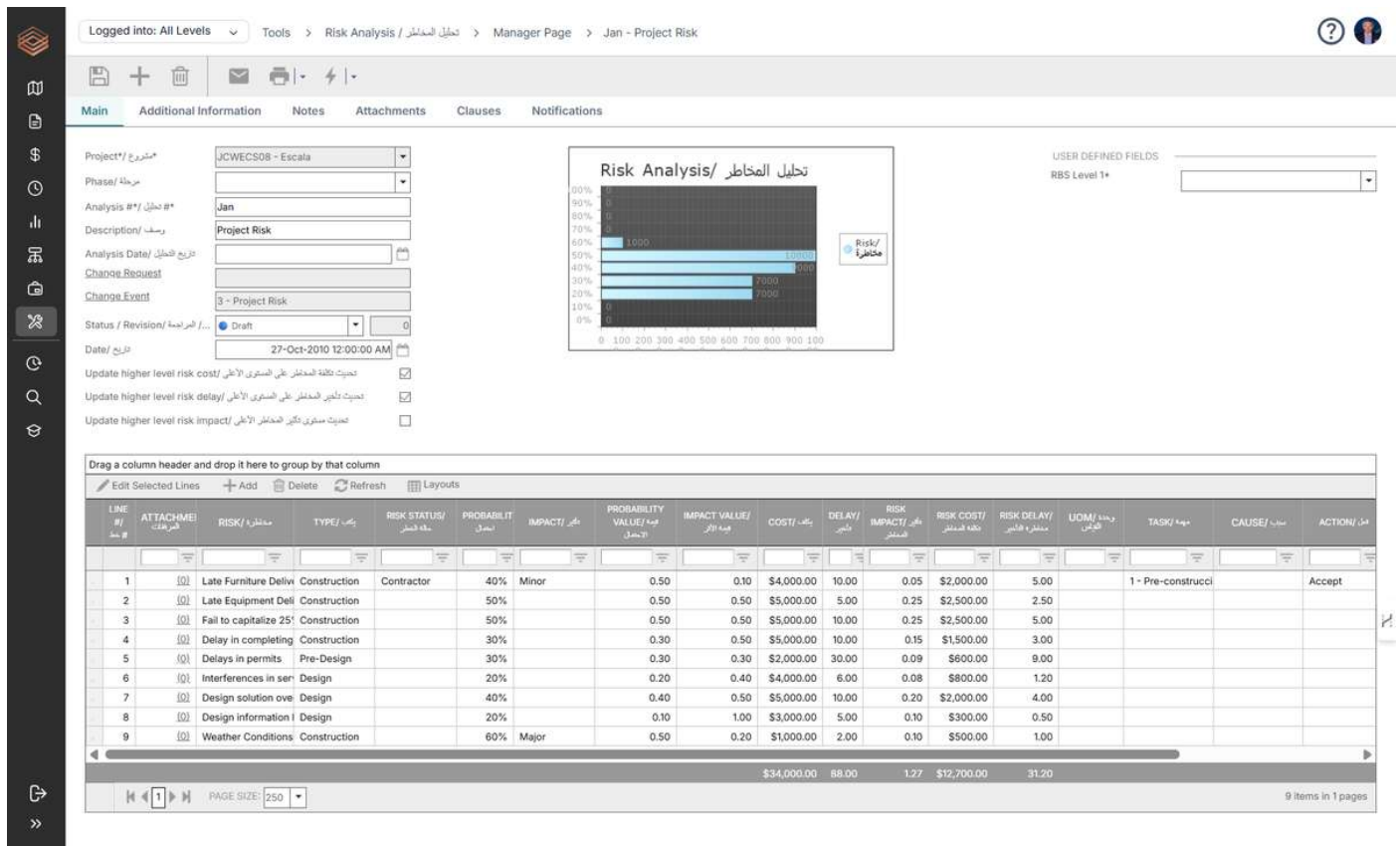
# Where Contingency Comes From: The Risk Register and Residual Risk

A contingency that cannot be traced to risks cannot be governed, defended or released. The starting point is each project's risk register, and in particular the **residual** risk: what is left after the response has been planned and paid for.

| Step                    | What is recorded                                                                                                       | Effect on budget and contingency                                         |
|-------------------------|------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| 1. Identify             | Cause, event and effect; category; risk owner; project, package and contract                                           | None yet                                                                 |
| 2. Assess inherent risk | Probability and cost and time impact before any response                                                               | Sets priority                                                            |
| 3. Plan the response    | Avoid, transfer, mitigate or accept (for opportunities: exploit, share, enhance)                                       | The cost of the response goes into the base budget, not into contingency |
| 4. Assess residual risk | Probability and a three-point cost impact (minimum, most likely, maximum) after the response                           | Residual expected value = probability × most likely impact               |
| 5. Add secondary risks  | New risks created by the response itself                                                                               | Added to the residual exposure                                           |
| 6. Set the trigger      | The observable event that shows the risk is occurring, and the contingent response                                     | The trigger is what justifies a drawdown                                 |
| 7. Size contingency     | Sum of residual expected values (close to P50) and the range from three-point estimates or quantitative analysis (P80) | P50 becomes working contingency; P80 minus P50 goes to the buffer        |
| 8. Close                | Actual cost when the risk occurred, or closure when it can no longer occur                                             | Contingency behind closed risks is reviewed for return                   |

Three rules follow. **The response cost belongs in the base budget.** If an owner decides to pay for additional ground investigation to reduce a ground risk, that is a planned cost, not contingency. **Contingency is sized only for residual risk.** And **every risk that closes should release the contingency behind it**, otherwise contingency outlives the risks that justified it.

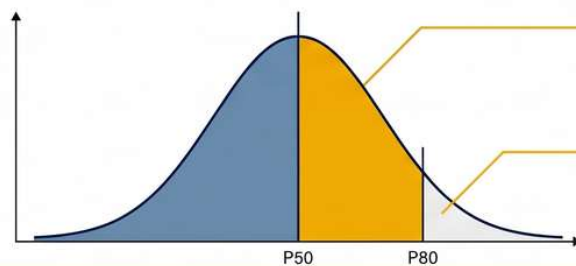
For portfolio management, two further fields are essential. The **reserve type** links each risk to one of the categories above, so that drawdowns can be reported by type. The **common-cause theme** tags risks that share a driver across projects, such as steel prices, a currency, a utility authority or a constrained subcontractor market. These tagged risks are the ones that do not diversify when they are pooled, and the ones the portfolio group must manage once rather than twelve times.



Screenshot S1: PMWEB risk form with residual assessment, reserve type and common-cause theme

## From Risk Register to Contingency

Contingency is sized for residual risk only



**Upper Branch:**  
**P50 Working Contingency**  
 Retained in the project, released within the project's Delegation of Authority (DoA).  
**Lower Branch:**  
**P80 minus P50 Portfolio Buffer**  
 Pooled into portfolio buffer, released by the Contingency Review Board.

**"No risk, no contingency. Every amount traces back to a residual risk."**

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Figure 3: From risk register to working contingency and portfolio buffer

# The Critical Chain Idea, Applied to Money

In 1997 Eliyahu Goldratt published Critical Chain, applying his Theory of Constraints to projects. His observation was that each task estimate carries hidden safety, and that the safety is lost because of how people work with it. His answer was to cut task estimates to an aggressive but achievable duration, remove the individual safety, and place a single **project buffer** at the end of the critical chain, with **feeding buffers** where non-critical chains join it. Because the variation of a sum grows more slowly than the sum of the variations, the shared buffer can be much smaller than the safety it replaces and still protect the completion date.

The same reasoning applies to contingency across a portfolio.

| Critical chain (time, inside one project)            | Contingency (money, across a portfolio)                           |
|------------------------------------------------------|-------------------------------------------------------------------|
| Task estimate at an aggressive, achievable duration  | Project working contingency at P50                                |
| Safety removed from each task                        | Contingency between P50 and the project's standalone P80          |
| Project buffer at the end of the critical chain      | Portfolio contingency buffer held by the Contingency Review Board |
| Feeding buffer where a non-critical chain joins      | Programme-level buffer for interface and programme risks          |
| Buffer sized from the aggregated variation           | Buffer sized from the portfolio's aggregated residual risk at P80 |
| Fever chart: buffer consumed against chain completed | Contingency consumed against project progress                     |

## Why the pooled buffer is smaller

If each project's residual risk has a spread, the spread of the portfolio total is not the sum of the spreads. Where project risks are independent, it is the square root of the sum of the squares. Where they are partly correlated, a correlation term is added. The buffer needed at 80 percent confidence is therefore:

### Portfolio buffer at P80

**Buffer** =  $z \times \sqrt{(\sum \sigma_i^2 + \sum \sum \rho \sigma_i \sigma_j)}$

where  $\sigma_i$  is the spread of project i's residual risk (from the gap between its P50 and P80),  $\rho$  is the correlation between projects' risks, and  $z$  is 0.84 for 80 percent confidence. With  $\rho = 0$  the projects are independent and pooling saves the most. With  $\rho = 1$  they move together and pooling saves nothing.

## A worked example

The sample portfolio has twelve projects with a combined base budget of AED 8,400 million. Each project's P50 and standalone P80 come from its own risk register.

| Project | Description            | Base budget | P50 (working) | Standalone P80 | P80 – P50 |
|---------|------------------------|-------------|---------------|----------------|-----------|
| P101    | Hospital, 400 beds     | 1,450       | 72            | 131            | 59        |
| P102    | Metro depot            | 1,120       | 61            | 112            | 51        |
| P103    | Mixed-use tower        | 980         | 44            | 82             | 38        |
| P104    | Highway interchange    | 760         | 38            | 71             | 33        |
| P105    | University campus      | 690         | 31            | 60             | 29        |
| P106    | Water treatment plant  | 640         | 35            | 66             | 31        |
| P107    | Logistics park         | 520         | 22            | 41             | 19        |
| P108    | Schools package (6)    | 480         | 19            | 37             | 18        |
| P109    | District cooling plant | 430         | 23            | 44             | 21        |
| P110    | Police HQ              | 390         | 17            | 33             | 16        |

| Project      | Description         | Base budget | P50 (working) | Standalone P80 | P80 – P50 |
|--------------|---------------------|-------------|---------------|----------------|-----------|
| <b>P111</b>  | Coastal park        | 310         | 13            | 25             | 12        |
| <b>P112</b>  | Housing, 900 villas | 630         | 25            | 50             | 25        |
| <b>Total</b> | 12 projects         | 8,400       | 400           | 752            | 352       |

Held project by project, the portfolio carries **AED 752 million**. Pooled, each project keeps its P50 as working contingency (AED 400 million in total) and the portfolio buffer holds the balance needed for portfolio P80 confidence. Assuming a modest correlation of 0.3 between projects, the buffer is **AED 214 million**, against the AED 352 million of P80 safety it replaces.

| Scenario                                                 | Portfolio buffer | Total contingency | Capital freed |
|----------------------------------------------------------|------------------|-------------------|---------------|
| <b>Held project by project (each at P80)</b>             | —                | 752               | —             |
| <b>Pooled, independent risks (<math>\rho = 0</math>)</b> | 112              | 512               | 240           |
| <b>Pooled, correlation 0.3 (used in this article)</b>    | 214              | 614               | 138           |
| <b>Pooled, fully correlated (<math>\rho = 1</math>)</b>  | 352              | 752               | 0             |

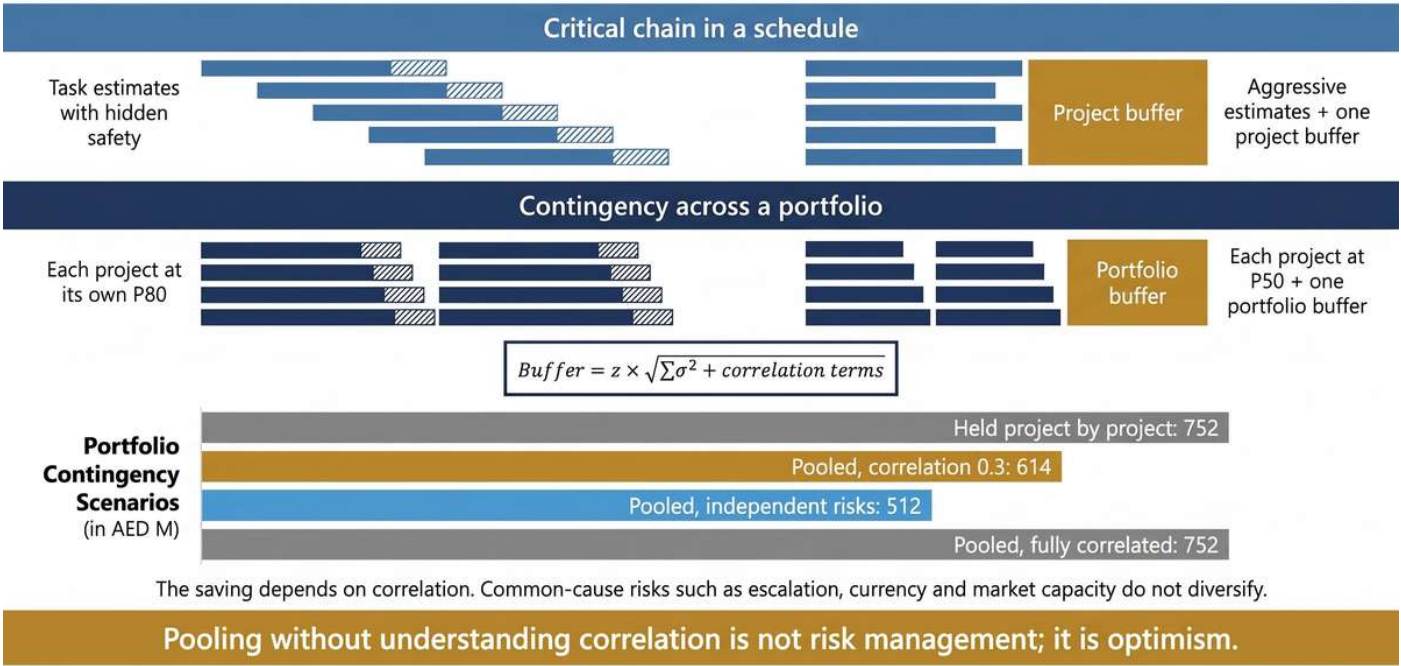
The sensitivity matters as much as the headline. The saving depends on how correlated the risks really are, and correlation comes from common causes: escalation, currency, market capacity, the same authority. That is why the common-cause theme in the risk register is not a detail. It is what tells the owner how much pooling is genuinely safe. **Pooling without understanding correlation is not risk management; it is optimism.**

## What stays where

- **At the project:** working contingency at P50, released by the project manager or director within the delegation of authority (DoA). In the example, AED 400 million.
- **In the portfolio buffer:** the pooled balance for portfolio P80 confidence, released by the Contingency Review Board. In the example, AED 214 million.
- **Outside the buffer:** management reserve for unknown-unknowns, held by the sponsor or board (AED 210 million, 2.5 percent of base, in the example); allowances and provisional sums; the contractor's own contingency; and schedule contingency.

Pooling does not take money away from projects. A project whose risks occur keeps the right to call on the buffer. What changes is that the call is made against evidence, the risk and its trigger, to a group that sees the whole portfolio.

# The Critical Chain Idea, Applied to Money



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Figure 4: Critical chain buffering applied to portfolio contingency

# A Dedicated, Risk-Oriented Group: The Contingency Review Board

Pooling only works if someone owns the pool. The owner should establish a **Contingency Review Board**: a small group, separate from project delivery, whose job is risk rather than progress. Its independence is the point. A project director asking for buffer should be asking a group that has no stake in that project's reported performance.

| Element | Recommended set-up                                                                                                                                                          |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Chair   | Head of the PMO or the Chief Risk Officer                                                                                                                                   |
| Members | Portfolio risk manager, head of cost control, finance or treasury representative, head of contracts; programme directors attend for their own items and do not vote on them |
| Holds   | The portfolio contingency buffer and the authority to release, return, re-size and request top-up within limits set by the board                                            |
| Rhythm  | Monthly review meeting; urgent releases decided within an agreed number of working days; buffer re-sized each quarter                                                       |
| Inputs  | Every project's risk register, contingency budget and drawdowns, progress, and pending requests, all from one PMWEB database                                                |
| Outputs | Decisions recorded on PMWEB records, the monthly contingency pack, and a lessons-learned log                                                                                |

## What the board decides

| Decision                | When                                                                                                      | Result in PMWEB                                                                        |
|-------------------------|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Release from the buffer | A risk has triggered and the project's working contingency is exhausted or the amount exceeds project DoA | Release linked to the contingency master commitment; budget transferred to the project |
| Return to the buffer    | Risks have closed and working contingency exceeds the open residual risk                                  | Budget transferred back from the project to the portfolio contingency project          |
| Top-up                  | Open residual risk across the portfolio exceeds the remaining buffer                                      | Request to the sponsor or board to transfer management reserve or approve new funding  |
| Re-size                 | Quarterly, or after a major change in the portfolio's risk profile                                        | Buffer value adjusted; master commitment changed accordingly                           |
| Re-classify             | A request is really an owner scope change, not a risk                                                     | Rejected as a drawdown and routed to the change process                                |
| Capture lessons         | Every release and every closed risk                                                                       | Actual cost against residual estimate, root cause and response effectiveness recorded  |

## Why spending improves

Contingency is spent better when one group sees all of it. The board can see that a risk on one project is about to occur on another, and act before it does. It can recognise that ground risks on coastal sites are consistently under-estimated, or that façade supplier risk is concentrated in two firms that appear on four projects. It applies the same rules to every request, separates real risk from scope, and removes the incentive to spend contingency before it is lost, because unused contingency returns to a pool the project can still call on.

Over time the lessons-learned log becomes something more valuable: a record of how each risk category actually behaved, how close the residual estimates were to what was spent, and which responses worked. That is the reference base for sizing the contingency of the next project from evidence, in the spirit of reference class forecasting, rather than from a percentage.

# The Contingency Review Board

Risk-oriented, independent of delivery, one view of the whole portfolio

## Board Composition & Governance



**Chair:** Head of PMO or Chief Risk Officer

**Members**

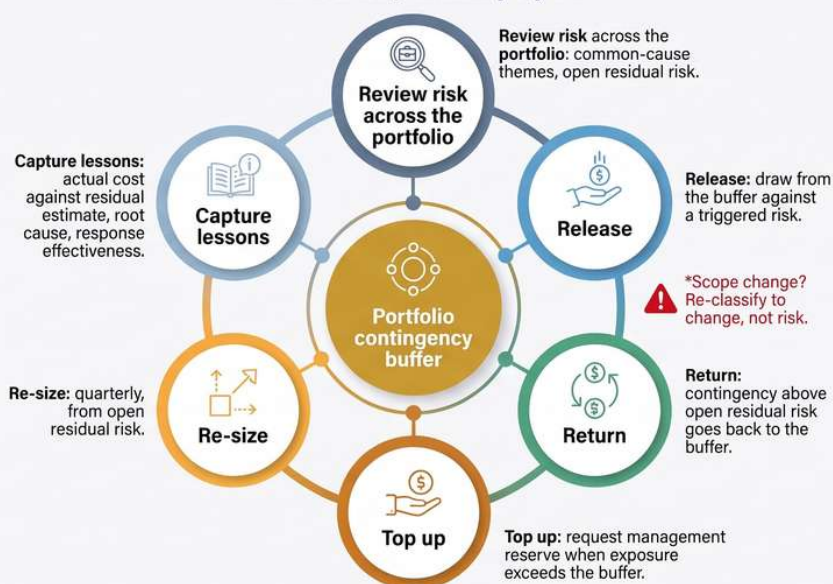
- Portfolio risk manager
- Head of cost control
- Finance or treasury
- Head of contracts

Programme directors for their own items (no vote)

**Capture lessons:** actual cost against residual estimate, root cause, response effectiveness.

**Re-size:** quarterly, from open residual risk.

## The Six-Step Monthly Cycle



**One group, one buffer, one set of rules, and every release a lesson.**

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Figure 5: The Contingency Review Board and its monthly cycle

## Buffer Management: Two Indicators, Two Questions

Critical chain manages buffers with a simple visual, the fever chart, which compares how much buffer has been used with how much of the work is done. Two indicators give the board what it needs.

| Indicator                | Calculation                                                                     | Question it answers                                            |
|--------------------------|---------------------------------------------------------------------------------|----------------------------------------------------------------|
| <b>Consumption index</b> | % of working contingency consumed (including buffer calls) ÷ % project complete | Is contingency being used faster than work is being delivered? |
| <b>Coverage ratio</b>    | Remaining contingency ÷ open residual risk expected value                       | Is what remains enough for the risks still ahead?              |

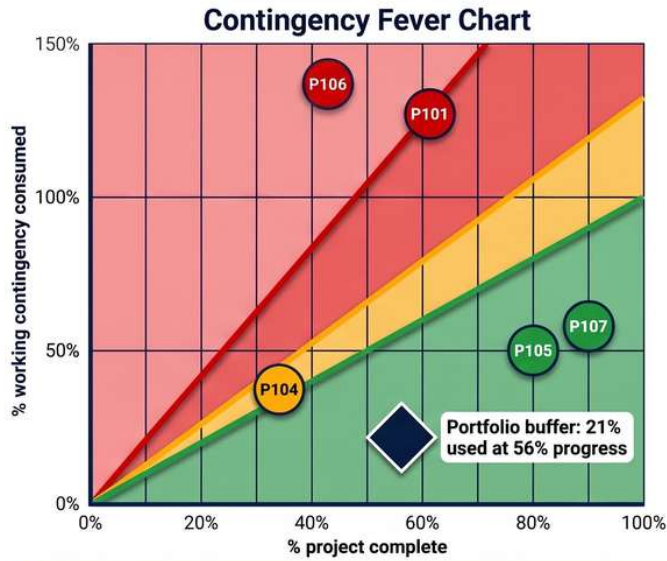
The consumption index looks back; the coverage ratio looks forward. A project can have a healthy index and a weak coverage ratio if large risks are still to come, so the board needs both.

| Zone         | Consumption index   | Action                                                                                    |
|--------------|---------------------|-------------------------------------------------------------------------------------------|
| <b>Green</b> | Up to 1.0           | No action; review release of contingency behind closed risks                              |
| <b>Amber</b> | Above 1.0 up to 1.3 | Project presents its open risks and recovery options at the next review                   |
| <b>Red</b>   | Above 1.3           | Recovery plan required; any buffer call scrutinised against the risk register and trigger |

The thresholds are the owner's policy, not universal values. What matters is that they are set in advance, applied to every project in the same way, and reported from data. In the sample portfolio, the buffer is 21 percent consumed at 56 percent portfolio progress and the portfolio coverage ratio is 1.49: healthy overall, while three projects sit in the red zone and account for all of the buffer used so far.

# Reading the Contingency Fever Chart

Is contingency being used faster than work is delivered, and is what remains enough?



## Consumption Index (Looks Back)

Calculated as % working contingency consumed ÷ % complete to evaluate past burn rate.

## Coverage Ratio (Looks Forward)

Calculated as remaining contingency ÷ open residual risk expected value (Portfolio baseline: 1.49).

## Fever Chart Performance & Action Matrix

### Green Zone (Up to 1.0)

Plot coordinates:  
P107 (88%, 55%)  
P105 (80%, 58%)

Triggered Action:  
No action; review release of contingency behind closed risks.

### Amber Zone (1.0 to 1.3)

Plot coordinates:  
P104 (35%, 39%)

Triggered Action:  
Project presents open risks and recovery options at next review.

### Red Zone (Above 1.3)

Plot coordinates:  
P101 (62%, 129%)  
P106 (41%, 131%)

Triggered Action:  
Recovery plan required; buffer calls scrutinised against risk and trigger.

**Look back with the consumption index, look forward with the coverage ratio. The board needs both.**

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Figure 6: Reading the contingency fever chart

# Making Contingency Spend-Oriented: The Contingency Master Commitment in PMWEB

A pooled buffer held as a budget line shows money that is available. It does not show where that money has gone. To make the buffer spend-oriented, the proposal is to hold it in PMWEB as a **contingency master commitment**.

In PMWEB, a master commitment holds an overall value against which commitments on multiple projects and contracts can be issued, and PMWEB tracks how much of that value has been committed and how much remains. Owners already use it for framework agreements and term contracts that serve many projects. Applied to contingency, the master commitment becomes the single instrument through which the portfolio buffer is released, and its register becomes the drawdown history of the whole portfolio.

## Setting it up

| Step | PMWEB record                                                                                                         | Purpose                                                                           |
|------|----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| 1    | Risk register on every project, with reserve type, residual expected value and common-cause theme                    | Traceability from contingency to risk                                             |
| 2    | Project budget with working contingency in contingency cost codes, split by reserve type                             | Working contingency at P50, visible by type                                       |
| 3    | A Portfolio Contingency project, with access restricted to the board                                                 | Holds the buffer budget by reserve type                                           |
| 4    | Master commitment MC-CONT-2026 on that project at the buffer value, with the owner's own organisation as the company | The buffer as one controlled instrument                                           |
| 5    | A dedicated commitment type for contingency releases, reported in its own column rather than in committed cost       | Avoids counting the same money twice when the contractor's change order is issued |
| 6    | Workflow on releases and budget requests routed by amount and reserve type under the DoA                             | Every release approved at the right level and logged                              |

Logged into: All Levels Costs > Cost Codes / التكاليف > \* Master \*

**\* Master \***  
Create and edit your project cost codes

Print

Main Notes Attachments

Levels

Format: X-XX-XX

Level: 1  
Description: Lead Design Consultant - The Villas  
Characters: 1

Level: 2  
Description: Secondary Infrastructure Contractor - The Villas  
Characters: 2

Level: 3  
Description: Main Construction Works - The Villas  
Characters: 2

Codes

Group by: None

New Line Export To Excel Paste From Excel

| Inactive                 | Cost Code | Description | Lead Design Consultant - The Vi...  | Secondary Infrastructure Contra... | Main Construction Works - The ... | Notes                                  |
|--------------------------|-----------|-------------|-------------------------------------|------------------------------------|-----------------------------------|----------------------------------------|
| <input type="checkbox"/> | All       |             |                                     |                                    |                                   |                                        |
| <input type="checkbox"/> | No        | 1-11-11     | Authorities Approvals               | 1 - Pre Contract                   | 11 - Feasibility                  | 11 - Authorities Approvals             |
| <input type="checkbox"/> | No        | 1-11-12     | Development and Financial Appraisal | 1 - Pre Contract                   | 11 - Feasibility                  | 12 - Development and Financial Appr... |
| <input type="checkbox"/> | No        | 1-11-13     | Land Purchase                       | 1 - Pre Contract                   | 11 - Feasibility                  | 13 - Land Purchase                     |
| <input type="checkbox"/> | No        | 1-11-15     | Technical Assessment                | 1 - Pre Contract                   | 11 - Feasibility                  | 15 - Technical Assessment              |
| <input type="checkbox"/> | No        | 1-11-60     | Miscellaneous                       | 1 - Pre Contract                   | 11 - Feasibility                  | 60 - Miscellaneous                     |
| <input type="checkbox"/> | No        | 1-12-11     | Authorities Approvals               | 1 - Pre Contract                   | 12 - Master Plan / Pre-Concept    | 11 - Authorities Approvals             |
| <input type="checkbox"/> | No        | 1-12-12     | Development Financial Appraisal     | 1 - Pre Contract                   | 12 - Master Plan / Pre-Concept    | 12 - Development and Financial Appr... |
| <input type="checkbox"/> | No        | 1-12-16     | Master Plan Design                  | 1 - Pre Contract                   | 12 - Master Plan / Pre-Concept    | 16 - Master Plan Design                |

Screenshot S2: PMWEB budget with working contingency by reserve type



Logged into: All Levels Costs > Commitments / الإلتزامات > Manager Page > 1010 -

**U-300 - John Hopkins Medical Center** Approved

Commitments / 1010 : الإلتزامات -

New Record Print Recap

Main Adjustments Additional Information Clauses Variations (AVI) Progress Invoices Payments Notes Attachments Notifications

RFP # / طلب تقديم عروض ريف : Status / حالة : Revision / مراجعة : ☐ Use Units / استخدام الوحدات

☐ Paid In Full / تم الدفع بالكامل

User Defined Fields

Contract Mgr : Original Completion : Revised Completion : Projected Completion :

Actual Completion : Work Package : test delete : \$0.00

Billing And Shipping

Details

Group by: None Layout: Dubai Police New Line Add Items Export To Excel Paste From Excel Preview Conversions

| Attach... | Cost Code/ التكلفة      | Description/ وصف      | Currency/ عملة                          | Comm... | Advan... | Total ...  | Cost Period/ فترة التكلفة | WBS/ تفرقة العمل | Annua... | Annual Budget ... |
|-----------|-------------------------|-----------------------|-----------------------------------------|---------|----------|------------|---------------------------|------------------|----------|-------------------|
| (0)       | 01-21 - Engineering ... | Construction Admin... | USD - Dollar (United States of America) | \$0.00  | \$0.00   | \$5,000.00 |                           |                  |          | \$0.00            |
| (0)       | 01-21 - Engineering ... | Contract Documents    | USD - Dollar (United States of America) | \$0.00  | \$0.00   | \$3,000.00 |                           |                  |          | \$0.00            |
| (0)       | 01-21 - Engineering ... | Design Development    | USD - Dollar (United States of America) | \$0.00  | \$0.00   | \$1,000.00 |                           |                  |          | \$0.00            |
| (0)       |                         | Schematic Desion      | USD - Dollar (United States of America) | \$0.00  | \$0.00   | \$0.00     |                           |                  |          | \$0.00            |

Screenshot S4: Buffer release on P101 linked to the contingency master commitment

Logged into: All Levels Costs > Budget Requests > Manager Page > 1 - Budget Transfer

**RVS0104 - Boston Medical Center** Approved

Budget Requests: 1 - Budget Transfer

New Record Print Recap

Main Adjustments Clauses Notes Attachments 4 Notifications

WBS : Type\* : Category : Reference :

Estimate : Currency\* : Post As : Status / حالة :

Revision / مراجعة : ☒ Use Units

User Defined Fields

Date :

Details

Group by: None Layout: Dubai Police New Line Add Cost Codes Export To Excel Paste From Excel Preview Conversions

| Line # | Attach... | Project        | Cost Code* / رمز التكلفة        | Descrip...          | Currency / عملة       | UOM | Qua... | Unit Cost    | Project Budget / ميزانية المشروع | Unit ...     | WBS |
|--------|-----------|----------------|---------------------------------|---------------------|-----------------------|-----|--------|--------------|----------------------------------|--------------|-----|
| 1      | (0)       | RVS0104 - B... | 02-030000 - Concrete            | Concrete            | USD - Dollar (Unit... |     | 1      | \$50,000.00  | \$50,000.00                      | \$50,000.00  |     |
| 2      | (0)       | RVS0104 - B... | 05-005000 - Project Contingency | Project Contingency | USD - Dollar (Unit... |     | 1      | \$-50,000.00 | \$-50,000.00                     | \$-50,000.00 |     |
|        |           |                |                                 |                     |                       |     |        | \$0.00       | \$0.00                           | \$0.00       |     |

1 - 2 of 2 << < 1 > >> 20 Rows

Screenshot S5: Budget request transferring buffer to the project cost code

Logged into: All Levels | Workflows > Business Processes > (System)

Roles | Business Processes (BPM) | Defaults | APM Rules

Select Template: D026 - GCC\_RED\_ Commitment Co - Contractor

BPM ID\*: D026  
 Template Name\*: GCC\_RED\_ Commitment Co - Contractor  
 Recalculate Due Dates On Actions: ☒  
 Single "All Must Approve" Email: ☐  
 Associate With: Commitment Change Orders

BPM MANAGERS

OVERDUE ALERT: ☒  
 Alert Active: ☒  
 Days (+/-): 0  
 Role(s): -- Overdue Approver --  
 Email: ☒  
 Onscreen: ☐

ROLES & APM RULES

Roles

- ☐ Roles
- ☒ -- Document Manager --
- ☒ -- Submitter --
- ☐ admin (QussayPM - Qussay Qumssan)
- ☐ Alf Contractor (ASKHAN - AS KHANNAN)
- ☐ Alf Designer (aswini - Aswini Nag)
- ☐ Alf owner (indhu - Indhu)
- ☐ Ambika (Ambika - Ambika S)

Branch Rules

STEPS

| STEP # | TYPE | DESCRIPTION               | LEVEL  | ACTION        | RETURN TO | DELEGATE                            | DOCSIGN                  |
|--------|------|---------------------------|--------|---------------|-----------|-------------------------------------|--------------------------|
| 1      | LOCK | PMT L2                    | System | Next Step     |           | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2      | LOCK | PMT L1                    | System | Next Step     |           | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3      | LOCK | Commercial Manager        | System | Next Step     |           | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 4      | LOCK | Assignee                  | System | Next Step     |           | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 5      | LOCK | GM - Projects             | System | Next Step     |           | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 6      | LOCK | The value is more than 5M | System | Branch        |           | <input type="checkbox"/>            | <input type="checkbox"/> |
| 6.1    | LOCK | Finance Team              | System | Final Approve |           | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

VISUAL WORKFLOW

☒ SHOW ROLES  
☐ SHOW USER NAMES

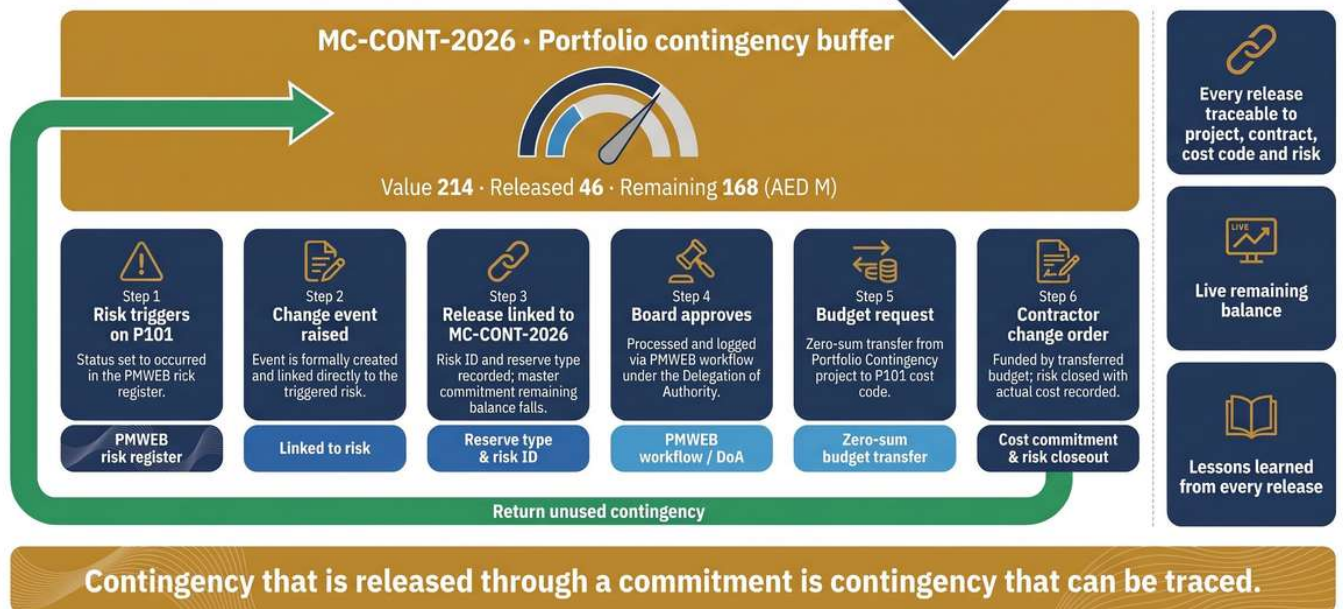
SUBMITTER → PMT L2 → PMT L1 → COMMERCIAL MANAGER → ASSIGNEE → GM - PROJECTS → THE VALUE IS MORE TH... → FINAL APPROVE

WITHDRAW → REJECT

Screenshot S6: Workflow routing for buffer releases under the DoA

## The Contingency Master Commitment in PMWEB

From money held to money traced



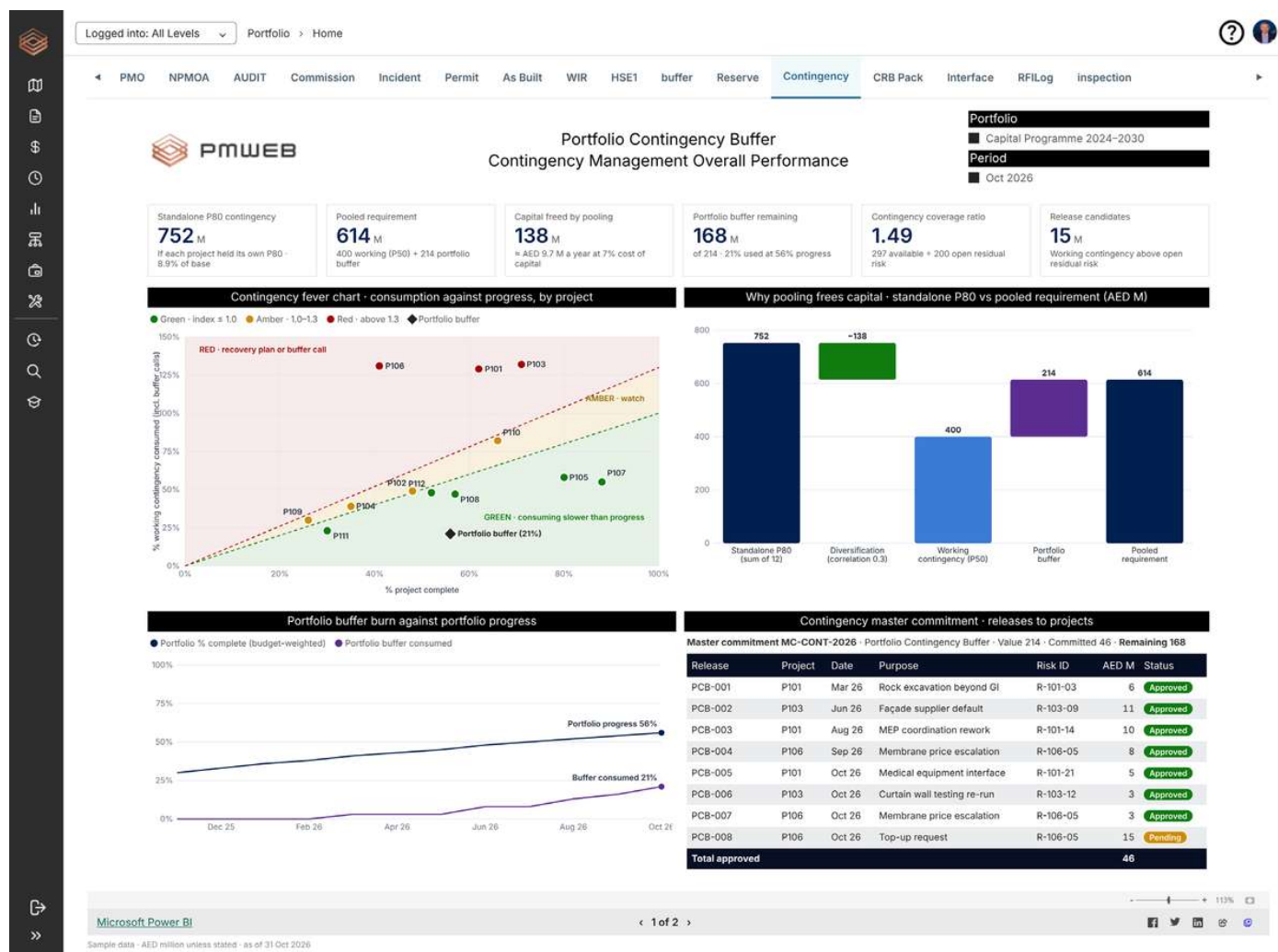
CMCS | PMWEB Authorised Implementation Partner, Gemini Notebook

Figure 7: The contingency master commitment flow in PMWEB

# What the Board Sees in PMWEB

Because the risk register, budgets, master commitment, releases, budget requests, change orders and progress are held in one PMWEB database, the board's dashboards are calculations, not compilations. The two dashboards below are shown as they would appear inside PMWEB, using the sample portfolio.

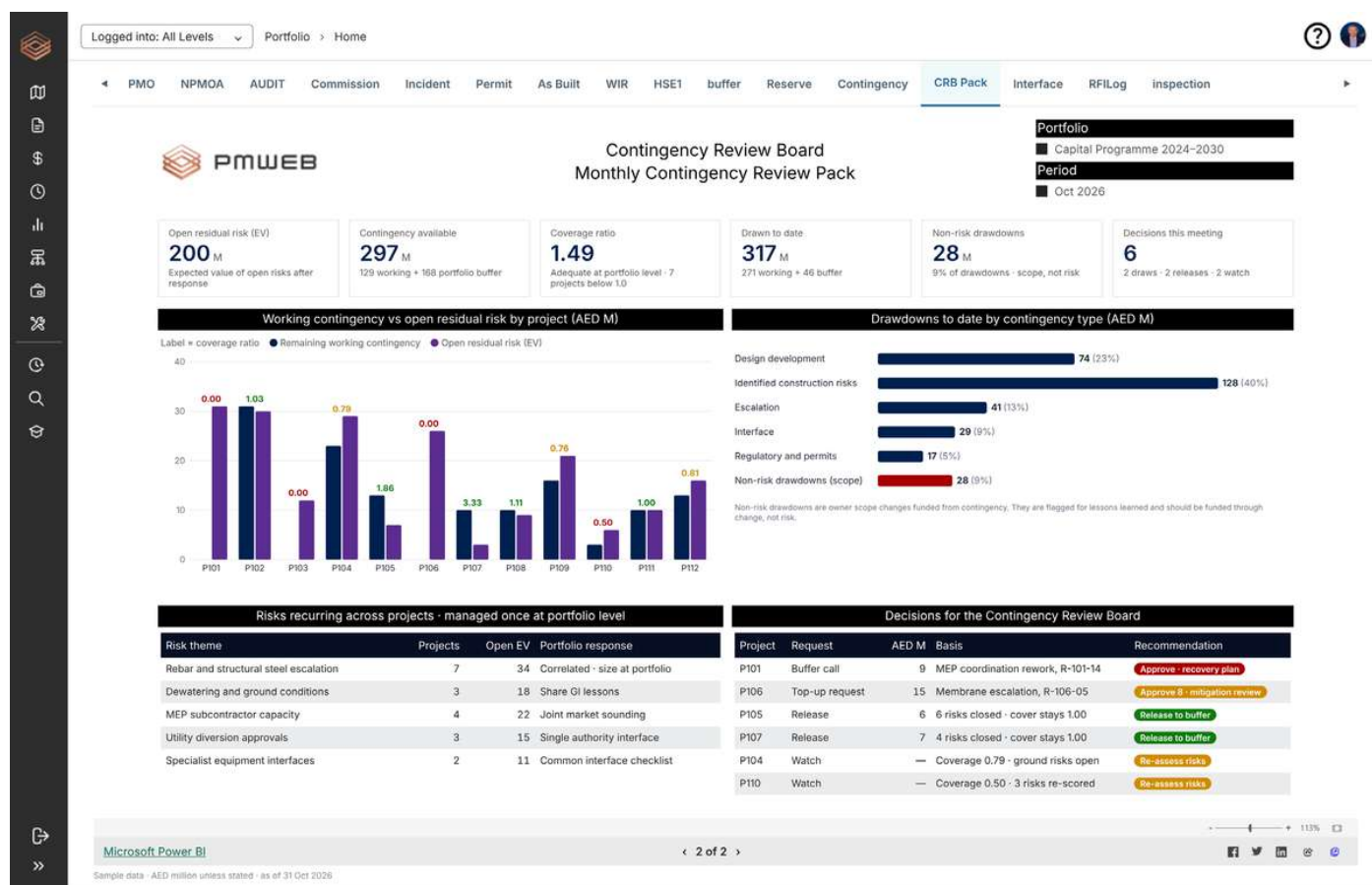
## Dashboard 1: Portfolio Contingency Buffer



Dashboard 1: Portfolio Contingency Buffer, shown in the PMWEB interface (sample data, AED million)

- **The case for pooling in one view.** The bridge shows AED 752 million held project by project against AED 614 million pooled, with AED 138 million freed.
- **The fever chart.** Three projects, P101, P103 and P106, are in the red zone and account for all AED 46 million called from the buffer. Most of the portfolio is green.
- **The buffer is not being burned faster than work is delivered.** 21 percent consumed at 56 percent portfolio progress.
- **The master commitment register.** Every release, by project, date, purpose and risk ID, with AED 168 million remaining and one top-up request pending.

## Dashboard 2: Contingency Review Board Monthly Pack



Dashboard 2: Contingency Review Board monthly pack, shown in the PMWEB interface (sample data, AED million)

- **Coverage by project.** Seven projects have less working contingency than open residual risk. The portfolio as a whole is covered 1.49 times because the buffer sits behind them; that is the buffer doing its job.
- **Drawdowns by type.** AED 28 million, 9 percent of all drawdowns, funded owner scope changes rather than risk. These are flagged for lessons learned and should have gone through change.
- **Common-cause risks.** Steel escalation appears on seven projects and is managed once, at portfolio level, rather than seven times.
- **The decisions list.** Two draws, two returns and two watch items, each with its basis and recommendation, ready for the meeting.

The same dashboards drill down from portfolio to project to the individual risk, release, budget request or change order, so a question at the board can be answered from the record in the meeting.

## Where PMWEB 2026 AI Adds Value

The **PMWEB 2026 AI Assistant** lets users find, open and create records in natural language: for example, listing the pending buffer release requests on a project, or opening the budget request behind a release. For a board working across many projects, that removes much of the effort of finding the record behind a number.

Broader analysis becomes possible with PMWEB AI in this and future releases, and with AI solutions that integrate with PMWEB: comparing actual release costs with residual estimates across hundreds of closed risks, spotting a common-cause theme emerging in new risk entries, or drafting the monthly contingency pack from the records. All of it depends on the same condition. The risk register, the reserve types, the releases and the lessons learned must be captured in structured form in the first place. No data, no AI.

# Questions to Settle Before Pooling

| Question                                         | Why it matters                                                                                                                                                                                                 |
|--------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Do budget rules allow pooling of funds?          | Some government and semi-government budgets must appropriate contingency to each project. Where that applies, pool control rather than funding: keep the appropriation, but release it only through the board. |
| Which legal entities are involved?               | Contingency usually cannot move freely between separate entities, SPVs or joint ventures. Pool within an entity, or by agreement.                                                                              |
| How correlated are the risks?                    | Correlation decides how much pooling is safe. Use the common-cause theme and do not assume independence.                                                                                                       |
| What does the project manager still control?     | Working contingency within DoA keeps decisions close to the work. The board handles the buffer, not every drawdown.                                                                                            |
| What is contingency for, and what is it not for? | A written rule that scope change is funded through change, not risk, prevents the most common misuse.                                                                                                          |
| How is the buffer re-sized?                      | Quarterly, from open residual risk across the portfolio, so the buffer shrinks as risks retire.                                                                                                                |

## What the PMO Must Put in Place

- A reserve taxonomy that every project uses, with allowances, contingency, management reserve and schedule contingency kept distinct.
- A PMWEB risk register on every project with residual probability, three-point residual cost impact, expected value, trigger, reserve type and common-cause theme.
- Contingency sized from residual risk, with P50 as working contingency and the P80 balance pooled.
- A Contingency Review Board with a written mandate, membership, DoA limits and meeting rhythm.
- A Portfolio Contingency project and a contingency master commitment in PMWEB, with a dedicated release commitment type.
- Workflow for releases, returns and top-ups, routed by amount and reserve type.
- The consumption index and coverage ratio, with zone thresholds set by policy.
- A lessons-learned log populated from every release and every closed risk.

### Key takeaway

Contingency held project by project is safe for each project and expensive for the owner. The sum of the P80s is not the P80 of the portfolio, and the difference is capital frozen for no additional protection.

Size contingency from residual risk, keep a working share at project level, pool the rest as a critical chain buffer under a dedicated Contingency Review Board, and release it through a PMWEB contingency master commitment. The owner frees capital, spends contingency on risk rather than scope, and learns from every release.

**How does your organisation hold contingency today: project by project, or as a portfolio? And who decides when it is released?**

**Talk to us:** [info@CMCS-MENA.com](mailto:info@CMCS-MENA.com)

#CMCS #PMWEB #ContingencyManagement #RiskManagement #CriticalChain #PortfolioManagement #PMO #ProjectControls #CapitalProjects #GCC

# About the Author

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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 Global Partner of the Year 2025 designation and serves capital project owners, contractors and consultants across the UAE, Saudi Arabia, Qatar and Kuwait.

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 PMWEB Authorised Implementation Partner for the GCC and MENA regions, awarded PMWEB Global Partner of the Year 2025. CMCS markets, implements and supports PMWEB for more than 60 enterprise clients across the UAE, Saudi Arabia, Qatar and Kuwait, helping capital project owners, PMC firms and contractors digitalise their project management processes on a single, governed platform. Contact: [info@CMCS-MENA.com](mailto:info@CMCS-MENA.com)