



CMCS INSIGHTS · OWNERS · HSSE

Health, Safety, Security and Environment on Capital Projects with PMWEB

Eight articles on running HSSE in PMWEB, from the risk register to the LTI dashboard: risk assessment driven by incident data, permits to work and gate passes, an inspection library for every hazard and item of equipment, daily inspections and monthly audits, a speak-up safety culture, incident reporting and investigation, and the KPIs that measure it all. Rewritten and consolidated from nineteen earlier articles.

By Bassam Samman, PMP, PSP, EVP, GPM
CEO & Chairman, CMCS

8 articles

-
- 01 HSSE as a System of Record: The HSSE Processes Every Capital Project Owner Must Govern
 - 02 Assessing HSSE Risk: From the Risk Register to Likelihood Driven by Incident Data
 - 03 Controlling High-Risk Work and Site Access: Permits to Work and Security Gate Passes
 - 04 Designing the HSSE Inspection Library: One Checklist for Every Hazard, Area and Item of Equipment
 - 05 Running Inspections and Audits on Site: Daily Inspections, the Monthly Joint Audit and Corrective Actions
 - 06 Building a Speak-Up Safety Culture: Don't Walk By, Safety Violation Notices and Toolbox Talks
 - 07 When Things Go Wrong: Reporting, Investigating and Learning from Safety Incidents
 - 08 Measuring HSSE Performance: LTI, LTIFR, LTISR and the Real-Time HSSE Dashboard
-

HSSE as a System of Record — The HSSE Processes Every Capital Project Owner Must Govern

From the HSSE management plan to the performance dashboard: one HSSE record, owned by the owner

A safe site is not proven by a plan on a shelf. It is proven by the permits, inspections, audits, observations and incident reports the plan requires, recorded every day and visible to the people accountable for them.

Every construction project, whatever its type, size or location, needs a Project Health, Safety, Security and Environment Management Plan (PHSEMP). The plan defines the project's HSSE policies, procedures, criteria and areas of application, and the responsibilities and accountabilities of everyone involved.

Implemented well, the plan provides a safe and healthy workplace. It integrates environmentally sound practices into all processes, complies with the applicable laws, regulations, policies and standards, conserves natural resources and energy, provides the resources needed to meet the HSSE goals and objectives, and ties those goals to the organisation's overall business strategy. The difficulty is not writing the plan. It is running the hundreds of processes the plan requires, on every project, and knowing whether they are being followed.

Is this series for you?

This series is written for capital project owners, project management consultants (PMCs), supervision consultants and contractors who are responsible for health, safety, security and the environment on site. In particular, it is for organisations that:

- **Run HSSE processes in Word, Excel and email**, so the effort and knowledge of the HSSE team is spent on paperwork and lost when the project ends.
- **Issue permits, inspections and audits on paper**, and cannot see across projects which were completed, which failed and which were never done.
- **Use generic checklists** that do not reflect the hazard, area or equipment being inspected.
- **Report incidents in one tool and assess risk in another**, so the risk register never learns from what actually happened on site.
- **Prepare monthly HSSE reports by hand**, so senior management sees last month's picture rather than today's.

Each part shows how a Project Management Information System (PMIS) like PMWEB turns one group of HSSE processes into governed, evidenced and reportable records.

This series brings together, rewrites and updates nineteen of my earlier articles on how PMWEB is used to manage HSSE on capital projects. Part 1 sets out the HSSE processes an owner must govern and why they belong in one system. Parts 2 to 7 take each group in the order the project meets them: risk assessment and the risk register, permits to work and site access, the design of the inspection library, running inspections and audits on site, building a speak-up safety culture, and reporting and investigating incidents. Part 8 shows how the records of all these processes become the HSSE key performance indicators and the real-time HSSE dashboard.

The HSSE Processes an Owner Must Govern

The details of HSSE processes differ from one organisation to another, and sometimes from one project to another. The family of processes is the same. Some are obligations of the contractor, some are performed jointly with the owner's representative, and some belong to the owner. All of them produce evidence the owner will need, whether to stop unsafe work, investigate an incident, hold a contractor to account or report to the board.

The HSSE processes covered in this series

Process	What it controls	Part
HSSE risk assessment and risk register	The hazards of the work, their likelihood and impact, and the control actions that reduce them	Part 2
Permits to work	High-risk activities such as hot work, live electrical work, lifting, work at height and confined spaces, allowed only under a formal permit	Part 3
Site security gate passes	Who enters the site, for what purpose and when	Part 3
HSSE inspection checklists and self-assessments	Compliance areas, fire prevention, tower cranes, scaffolding, construction equipment, environmental compliance and labour accommodation	Parts 4 and 5
Daily HSSE inspection and monthly joint audit	Site conditions checked by the safety team every day, and the owner and contractor verifying the agreed risk controls every month	Part 5
Don't Walk By observations	Unsafe acts and conditions reported by anyone on site, from a smartphone	Part 6
Safety violation notices	Formal warnings and disciplinary actions for not following safety rules	Part 6
Toolbox talks	Short, task-specific safety briefings, their attendance and the actions agreed	Part 6
Safety incidents	Every incident, injury and work-related illness, its causes, root cause and corrective actions	Part 7
HSSE performance reporting	Lost-time injury indicators and the HSSE dashboard, calculated from the records above	Part 8

The HSSE Lifecycle in PMWEB

Every HSSE process, from the first risk assessment to the performance dashboard, in one system of record.



One record per transaction. One HSSE picture per project.

CMCS | PMWEB Authorised Implementation Partner – GCC & MENA

Why These Processes Belong in One System

Organisations that still manage HSSE processes manually or semi-manually in Microsoft Word and Excel pay twice. First, they waste the project team's effort and knowledge in capturing, sharing and accumulating everyday HSSE information. Second, they make it difficult for senior management and other stakeholders to see and understand how far HSSE compliance has actually been achieved on the projects being executed.

None of this needs advanced technology. It needs common sense applied with the right tool. When every HSSE process runs on the same web-enabled platform, the organisation gets the practices it has always wanted from its HSSE plan: lean processes, transparency, accountability, a paperless environment, knowledge that accumulates across projects and a real-time, single version of the truth on HSSE performance.

What changes when HSSE is managed in PMWEB

Practice	Manual or semi-manual	PMWEB
Lean	Forms retyped, copied and chased by email	Every process follows the same five steps: input, attachments, workflow, output form and register
Transparency	Each project uses its own version of each form	One standard set of HSSE forms, with predefined values in the fields, used on every project
Accountability	Nobody knows where a form is held	A workflow defines who submits, reviews and approves, within what time, and reports delayed, due and not-due actions
Paperless	Paper forms signed, scanned and filed	Soft copies of every form as PDF, digitally signed if needed, linked to their documents and shared with users and non-users
Knowledge	Lessons stay with the people who were there	Data from every project aggregated to analyse trends, generate lessons learned and improve the risk register
Real-time reporting	A monthly report compiled by hand	Dashboards and registers generated from the records, viewed anywhere, anytime, on any device

How PMWEB Supports Every HSSE Process

Five steps, the same for every process

PMWEB automates HSSE processes in five steps. The designated team member captures the information on the process form. Supporting documents and pictures are attached, other PMWEB records are linked and relevant emails are imported. The form is submitted, reviewed and approved through its assigned workflow, following the project's responsibility assignment matrix. The output form is produced in the exact form and format of the HSSE plan, showing the signatures from the workflow. Finally, every transaction is listed in a real-time register that can be selected, sorted and grouped in any way the HSSE team needs.

Ready-made modules and the custom form builder

PMWEB comes ready with many of the forms the HSSE plan needs, including the project directory, meeting minutes, safety incidents, the organisation chart and HSSE resource requirements. The rest, such as permits to work, gate passes, inspection and audit checklists, self-assessments and the HSSE risk register, are created with the PMWEB **custom form builder**. That flexibility matters because the details of each process differ between organisations and projects.

What the custom form builder gives every HSSE process

Capability	What it does for HSSE
Data fields	Text, number, date, values from a predefined dictionary, notes, currency and Boolean fields, so each process captures exactly the data it needs
Checklist tables	Predefined lists of items to inspect or verify, for example the prerequisites of each permit to work type, with their values predefined
Multiple tables per form	A form can hold several tables, each with its own list of items and even its own design, for example the sections of an environmental inspection checklist
Access rights per table	Each table can be set so that a team member can edit it, only view it or have no access, so each inspector completes only their part
Workflow	The sequence of tasks, durations, return and resubmit actions, and conditions that follow the plan's approval authority levels
Notifications	PMWEB users added in the cc field of a workflow step, non-users added in the manual cc field, with a PDF of the form attached so it can be viewed without logging in
Mobile design	Forms used on site, such as Don't Walk By, designed to fit a smartphone, with pictures and video taken and attached on the spot

PMWeb (Portfolio) > Tools > Forms > ENVIRONMENTAL INSPECTION CHECKLIST > 1 -

PMWeb Environmental Inspection Checklist

Project: [Dropdown] Date: 29-Jun-2022 ID: 1 Status: Draft

Revision: 0

SECTION 1: GENERAL

Reference	Organization	Action Risk Rating	Priority
Date of Inspection: 12-Jun-2019	Contract	1 Extreme	Immediately - must be closed out on the day of inspection
Last Inspection: 12-Jun-2019	Location	2 High	Within 24hrs
Type	Accompanied By	3 Medium	Within 3 Working Days
Report By	Attention Of	4 Low	Within 5 Working Days

SECTION 2: ENVIRONMENTAL COMPLIANCE CHECKLIST ITEMS

01.00 AIR EMISSIONS

NO.	QUESTION	COMPLIANCE	DESCRIPTION OF ACTION IF REQUIRED	ACTION RISK RV	COMPLETION SIGN C
01.01	Is dust suppression adequate?				
01.02	Are stockpiles dampened/covered/controlled to minimize dust?				
01.03	Are vehicle speed controlled?				
01.04	Is idling of equipment/vehicle prevented?				
01.05	Are emissions controlled (vehicle/equipment)?				
01.06	Are emissions controlled (generators)?				
01.07	Is cement dust controlled?				
01.08	Is the site free of odours?				

02.00 NUISANCE CONTROL

An HSSE form built with the PMWEB custom form builder: a general section with action risk ratings and priorities, followed by environmental compliance tables by topic. Earlier PMWEB release; names generalised.

Access to each form, and to the fields within each form, is restricted as the HSSE plan requires. Some processes, such as Don't Walk By, will always be started on the construction site, where the only device people carry is their phone, so those forms are designed for the phone first.

Registers and dashboards from the same records

The PMWEB report writer, or a third-party reporting tool such as Microsoft Power BI, is used to create a register for each HSSE process in the desired form and format. Each register can include visuals that summarise the process, and its table lists every transaction with a hyperlink to that transaction's PDF form. Because all the information and documents of every HSSE process sit on the same platform, the organisation can design the dashboards it needs to monitor, evaluate and report each project's HSSE performance in real time.



One platform, many HSSE views: the HSSE performance dashboard with the permit to work, risk register and audit dashboards generated from the same records. Earlier PMWEB release; sample data.

Who Owns the HSSE Data

HSSE processes must be run, and reported, whether the project control system is managed by the owner or by the contractor. The processes are the same; the difference is who owns the data they produce. When the contractor runs them in its own system, the owner receives reports. When the owner runs them in its own PMIS, with the contractor and consultants working inside it, the owner holds the evidence itself.

That ownership is what turns HSSE records into knowledge. PMWEB manages the organisation's whole portfolio of projects, so the HSSE data captured on each project can be aggregated, analysed for trends and turned into lessons learned. The same knowledge is used to build better risk registers, better checklists and better permits for the next project.

Key takeaway

The HSSE management plan is delivered through a family of processes: risk assessment, permits, gate passes, inspections, audits, observations, violation notices, toolbox talks and incident reports.

Run in Word, Excel and email, those processes consume the HSSE team's time and hide the real picture from senior management.

PMWEB gives every HSSE process the same foundation: a standard form, attached evidence, a governed workflow, a digital output form and a real-time register.

Owners who run HSSE in their own PMIS own the evidence and carry what they learn from one project into the next.

Next in the series: Part 2, Assessing HSSE Risk, covers the HSSE risk assessment form, the likelihood and impact scales, the control actions, the risk register dashboard and how incident data turns likelihood from an estimate into a measurement.

Talk to us: If your HSSE processes still run on paper, spreadsheets and email, CMCS can configure PMWEB for your HSSE management plan, from permits and checklists to incident reporting and the HSSE dashboard. Contact CMCS at info@CMCS-MENA.com.

#PMWEB #CMCS #HSSE #HealthAndSafety #ConstructionSafety #CapitalProjects #PMIS #ProjectOwners
#DigitalTransformation #Construction

About the Author

Bassam Samman, PMP, PSP, EVP, GPM is the Chairman and Chief Executive Officer of CMCS FZCO, 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 is a co-founder of the Project Management Institute Arabian Gulf Chapter. 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 and PMWEB Global Partner of the Year 2025, with offices in Dubai, Abu Dhabi and Riyadh. CMCS specialises in digital project management solutions for real estate developers, government entities, infrastructure owners, project management consultants and construction companies across the Middle East and North Africa.

Assessing HSSE Risk — From the Risk Register to Likelihood Driven by Incident Data

How a governed risk assessment process, and the incidents that really happened, keep the HSSE risk register honest

A risk register is only as good as the likelihood and impact it assigns to each hazard. When those values come from opinion, the register describes what the team fears. When they come from recorded incidents, it describes what actually happens on site.

One of the key requirements of the project HSSE management plan is a register of the risks and hazards of high-risk construction work. The register sets out every identified risk, the assessment of its likelihood and impact, how it will be controlled, and the reassessment of its likelihood and impact once the selected control actions are in place.

This part describes the register in two stages. The first is the basic HSSE risk register, built in PMWEB from a governed risk assessment form. The second is its data-driven extension, in which the safety incidents recorded on the organisation's projects set the likelihood of each risk, so the register improves with every incident it learns from.

Is this article for you?

- **HSSE managers** who maintain the risk register in a spreadsheet and want every assessment reviewed, approved and traceable.
- **Owners and portfolio managers** who want the same risk categories, scales and control types on every project.
- **Organisations with several projects** that want the likelihood of each risk to reflect their own incident history, not a guess.

The HSSE Risk Assessment Form

The PMWEB custom form builder is used to create the form for the HSSE risk identification, assessment and response process. Its output is the HSSE risk register. The form captures the identified risk, the risk category selected from a predefined list, the risk owner, and the likelihood and impact of the risk both before mitigation and after the control actions are implemented. Two calculated fields give the pre-mitigation and post-mitigation risk levels.

A table on the form records the mitigation actions that reduce the risk level. Each row holds an action number, the control action type selected from a predefined list, and the details of the control action.

The screenshot displays the PMWeb HSE Risk Assessment interface. The top navigation bar includes the PMWeb logo, a search bar, and a language selector. The main content area is titled 'HSE Risk Assessment' and contains a form with the following details:

- Project:** Sample Project
- ID:** 3
- Date:** 07-25-2019
- Subject:** Burns from contact with corrosive chemicals
- Category:** 02 Hazardous Chemicals
- Revision:** 0
- Data:** 07-25-2019
- Status:** Draft

The 'HSE Risk Detail' section shows the following values:

Risk Owner	Pre-Mitigation Likelihood	Pre-Mitigation Impact	Pre-Mitigation Level	Post-Mitigation Likelihood	Post-Mitigation Impact	Post-Mitigation Level
Risk Owner A	4	5	20	1	2	2

The 'Mitigation Response Actions' section contains a table with the following data:

No.	Control Category	Control Action Detail
1	5 Administrative controls	Chemical Handling and Storage Procedures
2	5 Administrative controls	Training for employees who have contact with chemicals
3	5 Administrative controls	Inclusion of chemical emergency procedures in the Emergency Management Plan
4		
5		

An HSSE risk assessment in PMWEB: risk category and owner, pre- and post-mitigation likelihood, impact and level, and the mitigation response actions. Earlier PMWEB release; names generalised.

Standard lists for categories and control types

The PMWEB lists module holds the predefined values that keep every assessment consistent. The list of risk categories covers the risks and hazards most commonly encountered on construction projects: fire, hazardous chemicals, working at height, exhaustion, moving objects, slips, trips and falls, noise, hand-arm vibration syndrome, material and manual handling, collapse of excavations and trenches, asbestos encounter, dust and electrocution. A second list holds the control action types that can be applied against each risk.

As with every other PMWEB process, documents from the PMWEB document repository can be attached to the assessment and other PMWEB records can be linked to it. A workflow assigned to the form makes sure each risk assessment and its response actions are formally reviewed and approved before they enter the register.

Scoring Likelihood and Impact

In the basic register, each identified risk is scored on two five-point scales. The risk level is the product of the two, so it ranges from 1 to 25.

The scales of the basic HSSE risk register

Score	Likelihood of occurrence	Impact (consequence)
5	10 or more known occurrences on similar construction sites in the past 3 years	Fatality
4	2 or more known occurrences on similar construction sites in the past 3 years	Permanent partial or total disability
3	Any known occurrence on similar construction sites in the past 6 years	Medical treatment or rescue required
2	Any known occurrence on similar construction sites in the past 10 years	First aid or self-rescue possible
1	No known occurrence on similar construction sites in the past 10 years	Insignificant

The register classifies each risk by its level: **High** for a level from 8 to 25, **Medium** from 5 to 7, and **Low** below 5. The same classification is applied before and after mitigation, so the register shows how far the control actions bring each risk down.

Choosing the Control Actions

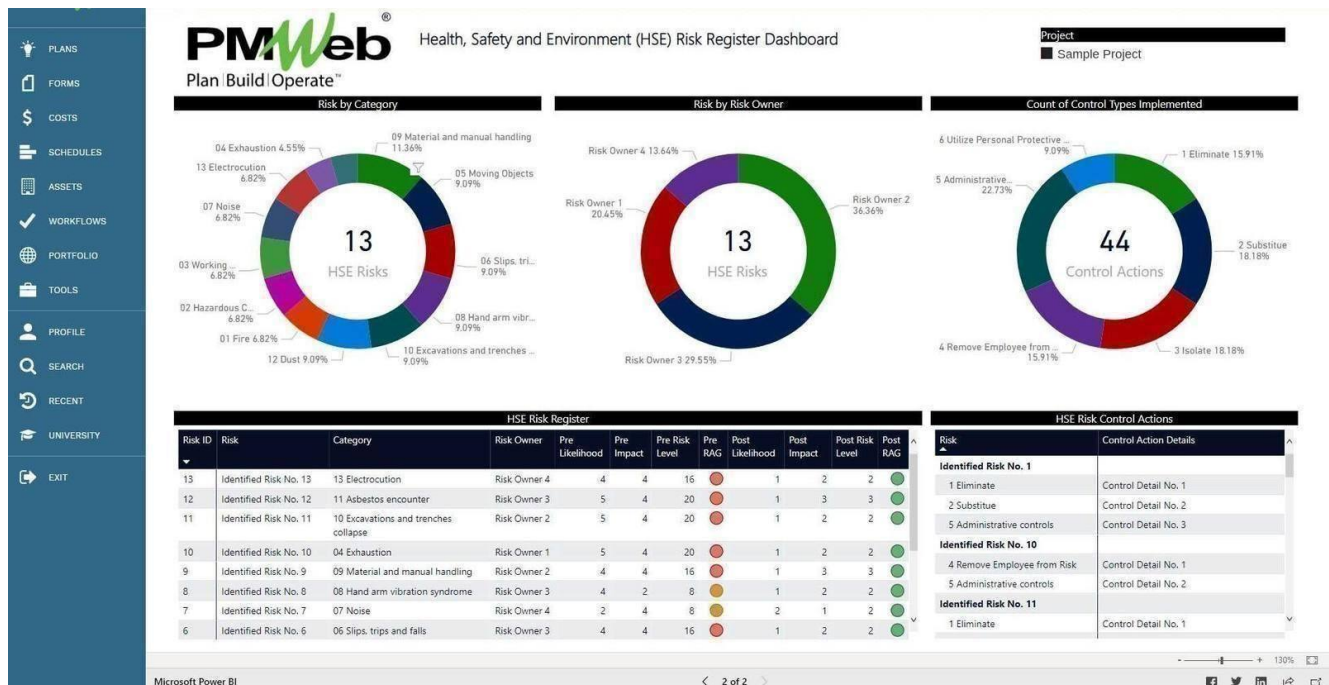
The control action types are listed in order of preference. The team works down the list and uses personal protective equipment only for the risk that remains.

Control action types for HSSE risks

Control action type	When it is used
1 Eliminate	The risk can be removed altogether
2 Substitute	A different product, or a different way of doing the task, that is less hazardous is used instead
3 Isolate	The hazard can be contained, for example by putting a noisy piece of equipment in an acoustic box
4 Remove employee from risk	The employee can be separated from the hazard, for example by operating the process from a panel in another room
5 Administrative controls	Exposure can be reduced through education or effective signage
6 Personal protective equipment	The last resort, only for residual risk the methods above cannot control: face masks, gloves, aprons, safety shoes, hard hats

The Register and Its Dashboard

The HSSE risk register is generated automatically from the risk assessment records. Its layout and visuals can be designed in any form and format the organisation's HSSE reporting requires. The register shows each risk's level as High, Medium or Low before and after mitigation, and the dashboard can classify risks by category and by risk owner and count the control actions taken by control action type.



The HSSE risk register dashboard: risks by category and owner, control actions by type, and the register with pre- and post-mitigation levels. Earlier PMWEB release; names generalised.

The Data-Driven Extension: Likelihood from Recorded Incidents

The people accountable for the HSSE risk register need to know the probable causes of HSSE risks, how likely they are to occur, and what they do to the project's people, progress on site and cost. That information can vary

from one country to another and sometimes from one entity to another. Whoever performs the assessment, and wherever, a meaningful assessment depends on the quality of the data behind it.

The only way an organisation can have trustworthy, traceable, auditable and real-time data for its risk assessment is to capture the safety incidents that have occurred on its own projects. The safety incident form is the natural place to capture that data, provided it is aligned with the HSSE risk register. In PMWEB, both processes run on the same platform, so the alignment is a matter of configuration.

The severity and likelihood categories of the extension

The data-driven register uses its own, consistent set of categories. Severity is assessed in four accident severity categories across three types of impact: people, production and cost.

Accident severity categories

Category	People	Production	Cost
4 Catastrophic	Single or multiple loss of life from injury or occupational disease, immediately or delayed	Loss of the whole production for more than 3 days	Total loss above US\$1 million
3 Critical	Reportable major injury or occupational disease, more than 7 man-days lost, or a dangerous occurrence	Damage to works or plant causing delays of up to 3 days	Total loss above US\$250,000, up to US\$1 million
2 Marginal	Reportable injury or occupational disease, 4 to 7 man-days lost	Damage to works or plant causing delays of up to 1 day	Total loss above US\$25,000, up to US\$250,000
1 Negligible	Minor injury, 1 to 3 man-days lost, or no lost time, or the person returns to work during the shift after treatment	Damage to works or plant causing no significant delay	Total loss up to US\$25,000

Likelihood is set in five categories, each defined by how often the risk occurs. Severity and likelihood together give a risk index from A to D.

Likelihood categories and the risk index

Likelihood	Definition	Catastrophic	Critical	Marginal	Negligible
Frequent	Likely to occur 12 times or more per year	A	A	A	B
Probable	Likely to occur 4 or more times, but fewer than 12, per year	A	A	B	C
Occasional	Likely to occur once or more, but fewer than 4 times, per year	A	B	C	C
Remote	Likely to occur once in a 5-year project period	B	C	C	D
Improbable	Unlikely, but may exceptionally occur	C	C	D	D

The risk index tells the team what to do with each risk. **A, Intolerable:** the risk shall be reduced by whatever means possible. **B, Undesirable:** the risk shall be accepted only if further risk reduction is not practicable. **C, Tolerable:** the risk shall be accepted subject to demonstration that it is as low as reasonably practicable. **D, Acceptable:** the risk is acceptable.

Aligning the safety incident form with the register

The PMWEB safety incident module comes ready with most of the fields needed. Three fields are added, each with a predefined list of four values matching the accident severity categories, to record the incident's impact on people, on work on site and on cost. Five cause fields are added as well: the primary cause, secondary cause, immediate cause and contributing factors, completed by the reporter, and the root cause, completed by the safety manager to associate the incident with the HSSE risk that results from that cause.

All five cause fields use the same predefined list of causes, standard for every project the organisation manages. The list could include vehicle incident, slip and fall, misuse of ladder, falling hazard, roof fall, scaffolding problem, power tool accident, lifting or body strain, collapsed excavation wall or trench, improper or inadequate training, improper PPE, eyes not on task, inadequate design, ergonomics, rushing, poor lighting, workstation design, fatigue, incorrect mapping, unsafe action, slipped, broken or worn tool, mechanical failure, lack of process in the management system, wrong type of material for the job, incorrect tool or equipment selection, complacency, defective raw materials, communicable-disease controls and others. The list should always be extended as new causes emerge.

For each cause, the causes section of the incident form records a description and notes, and it can hold further causes beyond the five categories. Those details matter when the causes and impacts of each incident are analysed. Part 7 describes the safety incident form in full.

Measuring likelihood instead of estimating it

With causes and impacts captured on every incident, the remaining parameter is the likelihood of each root cause. The incident date provides it: counting the actual occurrences of each root cause over the past 12 months places it in the Frequent, Probable, Occasional or Remote category. Any root cause that falls into none of these is presumed Improbable.

The risk likelihood report can cover a single project, a programme, a portfolio of projects and programmes, or every project the organisation manages. It holds four identical histograms, one for each of the Frequent, Probable, Occasional and Remote categories, showing the count of occurrences of each root cause. The bars are colour-coded by accident severity: Catastrophic in red, Critical in orange, Marginal in yellow and Negligible in green. A table lists every incident of the year with its description, date, root cause, reporter, severity category and the primary, secondary, immediate and contributing causes.



The HSSE root causes likelihood analysis: occurrences of each root cause by likelihood category, colour-coded by severity, with the incidents behind them. Earlier PMWEB release; names generalised.

From Hazard to Register — and Back

A governed risk assessment, kept honest by the incidents that really happen.



Likelihood measured, not guessed.

CMCS | PMWEB Authorised Implementation Partner – GCC & MENA

From Project Records to Organisational Knowledge

Because PMWEB manages the organisation's whole portfolio, the HSSE data captured on each project can be aggregated, analysed for trends and turned into lessons learned. The register for the next project does not start from a blank page or from generic tables. It starts from the risks, causes, impacts and control actions the organisation has already recorded, and its likelihoods reflect the organisation's own history.

Key takeaway

Build the HSSE risk assessment as a governed PMWEB form, with standard categories, standard control types and a review and approval workflow.

Score every risk before and after mitigation, and work down the control types from elimination to PPE.

Generate the register and its dashboard from the records, so the register is always current.

Align the safety incident form with the register, so recorded incidents set the likelihood of each root cause and the register learns from what actually happens on site.

Next in the series: Part 3, Controlling High-Risk Work and Site Access, covers permits to work: permit types, prerequisite checklists, the hot work permit, the issue and close workflow, the permit log and dashboard, and site security gate passes.

Talk to us: CMCS can configure the HSSE risk assessment, the risk register and its alignment with your safety incident records in PMWEB, so your register reflects your own projects. Contact CMCS at info@CMCS-MENA.com.

#PMWEB #CMCS #HSSE #RiskAssessment #RiskRegister #ConstructionSafety #HierarchyOfControls #CapitalProjects
#PMIS #ProjectOwners

About the Author

Bassam Samman, PMP, PSP, EVP, GPM is the Chairman and Chief Executive Officer of CMCS FZCO, 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 is a co-founder of the Project Management Institute Arabian Gulf Chapter. 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 and PMWEB Global Partner of the Year 2025, with offices in Dubai, Abu Dhabi and Riyadh. CMCS specialises in digital project management solutions for real estate developers, government entities, infrastructure owners, project management consultants and construction companies across the Middle East and North Africa.

Controlling High-Risk Work and Site Access — Permits to Work and Security Gate Passes

No high-risk work without a formal permit, and no site access without a recorded pass

A permit to work is the moment the risk assessment meets the task. If the prerequisites are not checked, the permit is only a signature. If the permit cannot be found, nobody can prove that it was ever issued.

One of the key requirements of the HSSE management plan on construction projects is a formal procedure for controlling activities considered high-risk. The permit to work is that procedure. It allows authorised personnel to carry out a high-risk activity at specified times, in the way set out in the permit and its referenced documents. Without it, high-risk work could start without a formal risk assessment against a predefined checklist.

The same discipline applies to the people who enter the site. Site security gate passes record who came in, for whom, for what purpose and when. This part covers both processes: the permit to work as the control on high-risk activities, and the gate pass as the control on site access.

Is this article for you?

- **HSSE managers** who issue permits on paper and cannot see, at any moment, which permits are open, where and for whom.
- **Owners and portfolio managers** who want one permit standard and one permit dashboard across all their projects.
- **Contractors** who want permits evaluated and issued without delay, with a clear record of what was checked.

Which Activities Need a Permit

A permit to work is usually required for a long list of activities. The list differs between organisations, but it typically includes those in the table below. Each type has its own prerequisites, which is why each needs its own form.

Activities that typically require a permit to work

Energy and fire	Access and height	Structure and ground
Live electrical works	Work at height	Excavation
Hot works	Work to roofs	Temporary works
Pressure testing	Lift shaft entry	De-shuttering of formwork
Lone working	Work in confined spaces	Removal of edge protection and floor opening covers
Lifting operations	Mast climbers and cradles	Demolition

One Permit Form per Permit Type

PMWEB formalises the process of submitting, evaluating and issuing every type of permit to work, and keeps track of all issued permits and their status. The PMWEB custom form builder is used to create a form specific to each permit type, because the list of prerequisites and the general requirements differ from one type to another.

The hot work permit as an example

A hot work permit is needed for any activity that can be a source of ignition when flammable material is present, or that can be a fire hazard regardless of whether flammable material is present. Common hot work includes welding, soldering, cutting, brazing, burning and the use of powder-actuated tools, or similar fire-producing operations, outside designated hot work areas. Its prerequisites therefore differ from those of a cold work permit, where no flammable material is present, and from those of every other permit type.

The header of the hot work permit records the project, the company requesting the permit, the permit validity, the hot work operator, the fire watcher, the type of hot work, the actual start and finish dates and times, and any other details the HSSE team believes are needed to manage the process.

The screenshot shows the PMWEB interface for a 'Hot Work Permit for Welding Works at Roof Truss North End'. The form is divided into several sections:

- Header:** Includes fields for Date (18-01-2019), Subject (Hot Work Permit for Welding Works at Roof Truss North End), Project (Sample Project), Record # (1), Status (Submitted), Created By (HSSE Officer), Record Date (18-01-2019), Revision (0), and Vendor (Contractor A).
- CUSTOM FORM FIELDS:** Includes fields for Description of Task, Detail of Surroundings, Permit Validity Date (17-01-2019), Time From, Time To, Hot Work Operator, Hot Work Operator Contact, Fire Watcher, Fire Watcher Contact, and Type of Hot Work (Gas Cutting Oxy Acetylene).
- PREREQUISITES:** A table with a Refresh button and a table with columns NO., PREREQUISITES, and CHECKED.

NO.	PREREQUISITES	CHECKED
1	Risk assessment/ method statement developed, approved and communicated?	
2	Operator is competent and certified	
3	Stand-by fire watcher is trained & competent	

A hot work permit in PMWEB: the header, the operator and fire watcher, the type of hot work and the prerequisites table. Earlier PMWEB release; names generalised.

Standardise the common fields

The fields that are common to all permit types should be standardised, with a predefined list of values to select from wherever possible. That speeds up the preparation of each permit and reduces entry errors. It also means that reports and dashboards can be built from the data of every permit, of every type, on every project.

Prerequisites: the Checklist Behind the Signature

Each permit form carries a list of predefined prerequisites that must be reviewed before the permit is issued. The person evaluating the permit checks each one and confirms it as **Yes** (done or available), **No** (not done or not available) or **NA** (not applicable). The prerequisites capture the HSSE team's experience of managing the process, and the list should be updated with new items whenever the team finds it necessary.

The custom form builder allows these inspection tables to be created with their values predefined for each permit to work checklist. For the hot work permit, the list starts with items such as: a risk assessment and method statement have been developed, approved and communicated; the operator is competent and certified; and the stand-by fire watcher is trained and competent.

Issue, Close and Prove

The attachment tab holds every document and picture relevant to the permit. They are stored in their specified folder in the PMWEB document repository.

The workflow captures the evaluation and review steps needed to issue the permit, and the step that closes it when the specified scope of work is completed. That is what makes the issue of every permit accountable: each step has a named role, a duration and a recorded action.

The permit's output form can be designed in the exact layout the HSSE team wants. In addition to the header and prerequisite fields, it can capture the signature details automatically from the workflow steps and list the attached documents at the end of the form. The permit is a governed digital record, not a paper form that has to be found later.

The Permit Log and Dashboard

The PMWEB reporting tool is used to create a log of hot work permits and of every other permit issued on the project, summarising their status and the important details of each. A second report shows the workflow status of the requested permits, so the team can see where each request is held for review and approval and make sure no permit is delayed.

HSSE management can have a single dashboard of every permit to work issued across the organisation's whole portfolio of projects, covering all permit types. It gives HSSE management, project managers and other executive stakeholders the details of all permits issued on one project or across all of them.



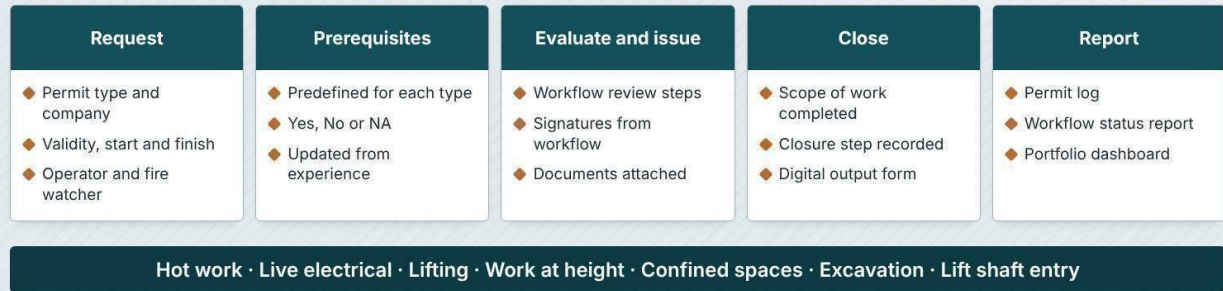
The permit to work status dashboard: new and completed permits for each permit type, filtered by project and by the company the permit was issued to. Earlier PMWEB release; sample data.

What each permit report answers

Report	Question it answers
Permit to work log	Which permits were issued, of which type, to whom, where, for which hours, and are they completed or still open?
Workflow status report	Which permit requests are waiting for review or approval, with whom, and for how long?
Permit to work dashboard	Across the project or the whole portfolio, how many permits of each type are new and how many are completed?

Anatomy of a Permit to Work

One form per permit type. The same governed steps for every permit.



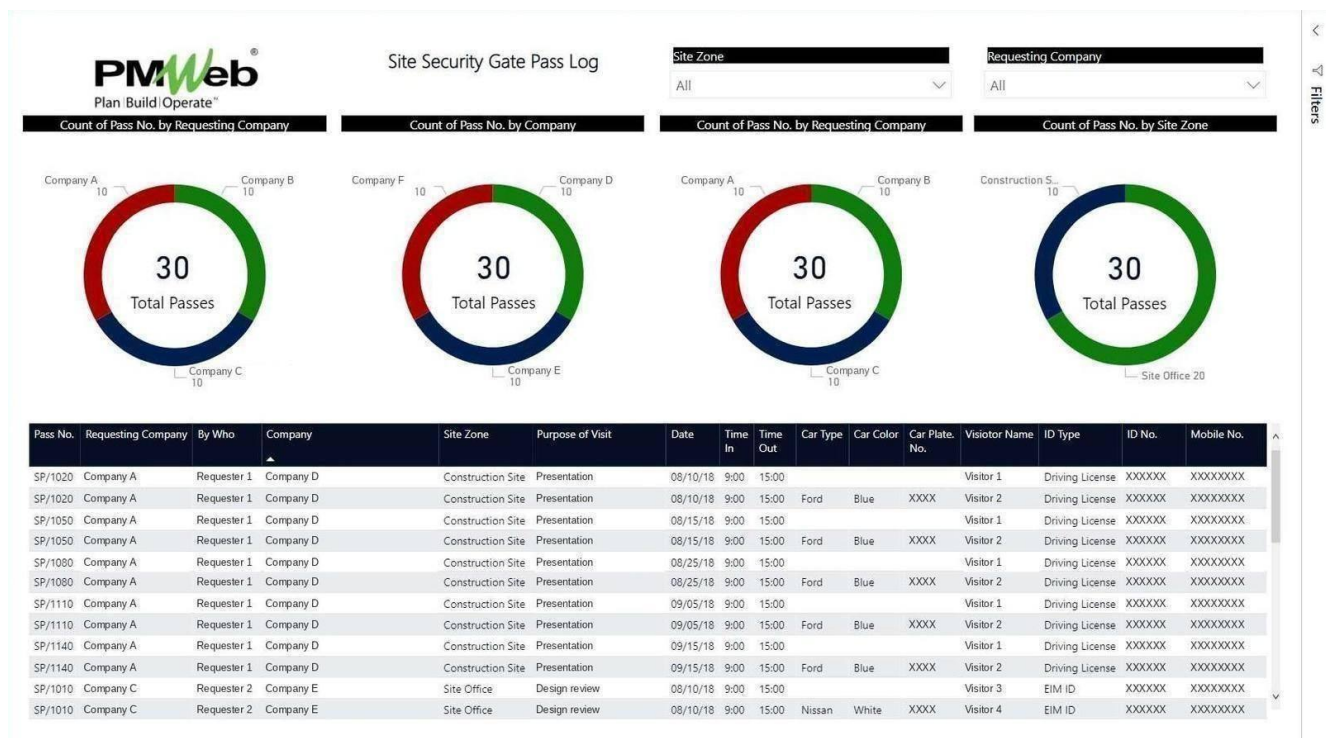
No permit, no high-risk work.

CMCS | PMWEB Authorised Implementation Partner – GCC & MENA

Site Security Gate Passes

Gate passes are another HSSE process created with the PMWEB custom form builder. Like permits, they are recorded on the same platform as every other HSSE process, so their data is available for reporting from the moment each pass is issued.

A dashboard can be created to give the status of all site security gate passes issued by the HSSE team. It includes a register of every issued gate pass and visuals that summarise the passes by category, such as the requesting company, the visiting company and the site zone.



The site security gate pass log: passes by requesting company, visiting company and site zone, with the register of each pass. Earlier PMWEB release; names and identifiers generalised.

Key takeaway

No high-risk activity should start without a formal permit, and every permit type needs its own form because its prerequisites differ.

Standardise the fields common to all permits, with predefined values, so every permit can be reported on together.

Make the prerequisite checklist the core of the permit, and keep improving it from the HSSE team's experience.

Issue and close every permit through a workflow, and report permits and gate passes from one log and one dashboard across the portfolio.

Next in the series: Part 4, Designing the HSSE Inspection Library, covers the checklists every project needs, from compliance areas and self-assessments to fire prevention, tower cranes, scaffolding, construction equipment and environmental inspections, and how each template is built.

Talk to us: CMCS can configure your permits to work, their prerequisite checklists and your site gate passes in PMWEB, with the logs and dashboards that go with them. Contact CMCS at info@CMCS-MENA.com.

[#PMWEB](#) [#CMCS](#) [#HSSE](#) [#PermitToWork](#) [#HotWork](#) [#SiteSecurity](#) [#ConstructionSafety](#) [#CapitalProjects](#) [#PMIS](#)
[#ProjectOwners](#)

About the Author

Bassam Samman, PMP, PSP, EVP, GPM is the Chairman and Chief Executive Officer of CMCS FZCO, 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 is a co-founder of the Project Management Institute Arabian Gulf Chapter. 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 and PMWEB Global Partner of the Year 2025, with offices in Dubai, Abu Dhabi and Riyadh. CMCS specialises in digital project management solutions for real estate developers, government entities, infrastructure owners, project management consultants and construction companies across the Middle East and North Africa.

Designing the HSSE Inspection Library — One Checklist for Every Hazard, Area and Item of Equipment

How a standard library of HSSE checklists decides what is inspected before the inspector arrives

An inspection is only as complete as the checklist behind it. When the checklist is written for the hazard, the area or the piece of equipment being inspected, every inspector checks the same items, on every shift and on every project.

Inspection checklists are among the most common HSSE processes on capital construction projects. Their purpose is to gather the information needed to assess the risks and hazards on site, and to evaluate whether the health and safety systems deployed there are efficient, reliable, effective and compliant. A compliance checklist confirms that contractors meet the safety regulatory requirements that prevent work-related incidents, injuries and fatalities.

Whether a checklist covers fire prevention, a tower crane or a scaffold, every one of them shares the same need: a predefined list of the items to be inspected. This part describes how that library of checklists is designed and built in PMWEB. Part 5 describes how it is used on site.

Is this article for you?

- **HSSE managers** who want every inspector to check the same items, against the same responses, on every project.
- **Owners and owner's representatives** who want one standard HSSE checklist library across the portfolio.
- **Contractors** who want to know in advance what will be inspected on their equipment, scaffolds and work areas.

What the Library Must Cover

The list of items to be inspected usually comes from previous experience, best practices and the regulations of the civil defence and other public-sector entities that must be complied with. It can differ with the project type, its location and even the project owner. The areas a library typically covers are wide.

Typical areas covered by HSSE compliance checklists

Work activities	Plant and equipment	Site conditions	Health and environment
Excavation and trenching	Lifting operations	Housekeeping	Personal protective equipment
Hot works	Lifting accessories	Barricades and fencing	Noise control
Confined spaces	Plant and machinery	Fire prevention	Dust control
Fall protection and lifelines	Mobile elevating work platforms (MEWP)	Electricity	Skin and vibration

Work activities	Plant and equipment	Site conditions	Health and environment
Scaffolding	Tools and equipment	Fuel storage	Waste management; reduce, reuse and recycle
Manual handling	Vehicle management	Compressed gas	Welfare and communicable-disease controls

Toolbox talks also appear on many compliance lists. They are covered in Part 6.

One Template per Checklist Type

The PMWEB custom form builder is used to create a unique form for each checklist type, holding only the items specific to that checklist. Once created, the checklists are available on every project in the organisation's portfolio and can be accessed by authorised PMWEB users anywhere, anytime and on any device.

Each template records the date and location of the inspection and the contractor being inspected, and the form as a whole carries a status of **Pass** or **Fail**. There is no limit to the number of additional fields that can be added.

Choosing the response scale

Every item on a checklist needs a response from a predefined list, so that results can be counted and compared. The sources behind this library use three scales, each suited to a different kind of checklist. Whatever scale is chosen, a comment field next to each item lets the inspector record what was seen.

Response scales used in HSSE checklists

Scale	Meaning	Typical use
Compliant / Not compliant / Not applicable	Whether the item meets the deployed health and safety system	Compliance checklists by area
Yes / No / N/A	Whether the item is in place and in order	Fire prevention, tower crane, scaffold and equipment inspections
Yes / No / N/A / N/O	Complete or correct; incomplete or deficient; not applicable; applicable but not observed during the assessment	Self-assessment checklists

Self-assessment checklists

More and more organisations that deliver construction projects use self-assessment checklists to identify and control health and safety risks in the workplace. They help the project team understand what to look for to make the workplace safe, enforce health and safety responsibilities, and identify risks and control hazards.

A self-assessment template is created for each work category, for example confined space entry; cranes, hoists and rigging; earthmoving equipment; excavations; fall protection; and scaffolding. It holds a table of all the assessment items grouped by category, each answered Yes, No, N/A or N/O. A second table lists every deficient item, those answered No, with the corrective action planned or taken and the date it was corrected. Every deficiency must be brought to the immediate attention of the people responsible for fixing the hazard.

PMWeb (Portfolio) > Assets > Forms > HS SELF-ASSESSMENT CHECKLIST - EXCAVATIONS > 1 -

000566-

MAIN NOTES ATTACHMENTS (4) WORKFLOW (1/5)

Date: 18-03-2019

Project: Sample Project

Record #: 1

Status: Submitted

Created By: HSSE Officer

Record Date: 18-03-2019

Revision: 0

SECTION 1 - HSSE SELF-ASSESSMENT CHECKLIST

Refresh

CATEGORY	ASSESSMENT ITEM	RESPONSE
PERSONNEL SAFE WORK PRACTICES	1. Competent person has completed daily inspection and has authorized entry	
PERSONNEL SAFE WORK PRACTICES	2. Personnel aware of entry requirements established by competent person	
PERSONNEL SAFE WORK PRACTICES	3. Protective systems are free from damage and in stable condition	
PERSONNEL SAFE WORK PRACTICES	4. Surface objects/structures secured from falling into excavation	
PERSONNEL SAFE WORK PRACTICES	5. Potential hazardous atmospheres have been tested and found to be at safe levels	
PERSONNEL SAFE WORK PRACTICES	6. Precautions have been taken to prevent cave-in from water accumulation	
PERSONNEL SAFE WORK PRACTICES	7. Personnel wearing appropriate PPE, per HSP/PSI	
EXCAVATION ENTRY	8. Trenches > 4' deep provided with safe means of egress within 25'	
EXCAVATION ENTRY	9. Structure ramps designed and approved by competent person	
EXCAVATION ENTRY	10. Potential hazardous atmospheres tested prior to entry	

An HSSE self-assessment checklist for excavations in PMWEB: assessment items grouped by category, with a response for each. Earlier PMWEB release; names generalised.

Examples from the Library

Fire prevention for site offices and stores

Fire is one of the significant risks on construction projects, harming both people and property. Formal fire prevention reviews should be done periodically, covering the construction site and temporary facilities such as site offices and stores. The inspection should be aligned with the contractor's HSSE policies and practices, the country's civil defence rules and regulations, and the insurer's recommendations for the execution of works on site. The checklist must cover every item that must be inspected and reported on. In PMWEB it holds two separate lists, one for site offices and one for stores, each with a Yes, No or NA status and a comment for every item.

Tower cranes

One rarely finds a construction site without at least one tower crane, and its operation can injure people and damage property. The causes include structural failure of any crane component, such as the boom, jib, hydraulic rams or wire rope; collapse when the crane becomes unstable through overloading, contact or collision with other plant, structures or tower cranes; falling objects during erecting, jumping and dismantling, or from the way loads are secured during lifting; and falls from height by workers erecting, dismantling or maintaining the crane. Formal inspection is crucial, because the measures that avoid these failures must be performed daily and for each shift.

The tower crane template records the project details and the crane details, such as the brand, the date of purchase, the third-party inspection certificate of the crane and the third-party certificate of its operator. Its checklist, built from the organisation's experience, the crane manufacturer's requirements and other compliance requirements, is verified daily, with a comment against each item and a remarks field for the inspection as a whole. A copy command lets the inspector start from the previous inspection, so data that has not changed does not have to be entered again.

Scaffolding

Working on a scaffold is dangerous if the scaffold has been erected inappropriately. To minimise the risk, a complete inspection of each scaffold should be carried out weekly, against a checklist of every item to be inspected, by qualified individuals trained and certified by recognised bodies. The scaffold template records the project, the company responsible for the scaffold and its location, and the inspector verifies each item every week, with a comment against it.

(Portfolio) > Schedules > Forms > HSE TOWER CRANE INSPECTION FORM > 1 -

000653-

MAIN NOTES ATTACHMENTS (5)

HSE Tower Crane Inspection Form

Project: Sample Project ID: 1 Date: 19-09-2019
 Contractor: 1st Shift: 2nd Shift: Status: Draft
 Revision: 0

TOWER CRANE DETAILS

TC No. 3rd Party Inspection of Tower Crane valid 19-09-2019 3rd Party certificate of Operator valid 19-09-2019

TOWER CRANE INSPECTION

TC INSPECTION CHECKLIST

NO.	DESCRIPTION	STATUS	COMMENT
1	Foundation bolts/ anchors	NA	
2	Main power disconnect switch	NA	
3	Hook sheaves/ swivel	NA	
4	Access ladders/ platforms	NA	
5	Section connecting bolts/ pins	NA	
6	Communication device (walkie talkie available/ working)	NA	
7	Hydraulic hoses for leaks	NA	

The tower crane inspection form: crane details, third-party certificate validity for the crane and the operator, and the daily checklist by shift. Earlier PMWEB release; names generalised.

Construction equipment

Every construction site has many items of equipment and tools deployed by the contractors and their subcontractors, and sometimes by the project owner for the contractors' use. Whoever owns them, the general rule is the same: only equipment and tools that have been formally inspected and found fit for use may be operated on site. The inspection must also confirm that the equipment has a valid registration and licence, which in turn requires a valid insurance policy for each item.

The inspection differs from one type of equipment to another. For example, the inspection checklist created by ISGEC Heavy Engineering for a backhoe loader differs from the checklist for an excavator. A unique template is therefore created for each type of equipment or tool. That makes each inspection relevant and complete, and it builds a history of every inspection of every item of equipment across the organisation's whole portfolio. Equipment templates can also include a picture of the item, with the inspection points marked on it.

Environmental inspections and labour accommodation

Some checklists need more than one table. An environmental inspection checklist holds a table for each environmental topic, each with its own list of items and even its own design. Labour accommodation inspections are built the same way, with a table for each area to be inspected. The same template design applies to the other checklists an organisation runs during construction, testing and commissioning.

PMWeb (Portfolio) > Tools > Forms > EQUIPMENT INSPECTION BACKHOE LOADER (JCB) > 1 -

PMWeb Plan | Build | Operate™

Equipment Inspection BACKHOE LOADER (JCB)

Project: [Dropdown] ID: 1 Date: 29-Jun-2022

Contractor: [Dropdown] Revision: 0 Status: Draft Date: 29-Jun-2022

Equipment Details

Make: [Dropdown] Model: 0 Plate: [Dropdown]

Insurance: [Dropdown] Policy: [Dropdown] Expiry: 28-Jul-2021

Equipment Inspection Checklist

INSPECTION CHECKLIST

Refresh

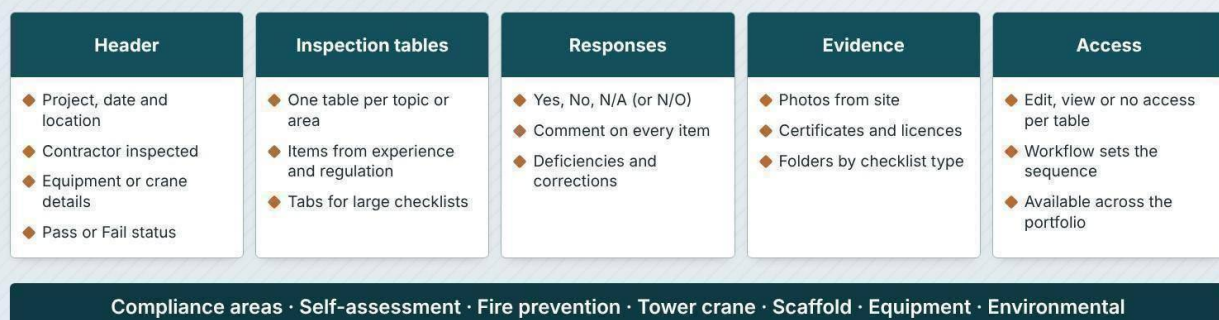
NO.	DESCRIPTION	STATUS	REMARKS
1.00	Machine should be physically good & certified by competent authority.	NA	
2.00	No damage in tire (Bolts, crack, cuts & air pressure, etc.).	NA	
3.00	Head & tail light and indicators are in working condition.	NA	
4.00	Side mirror should be in good condition.	NA	
5.00	Wind shield/glass should be in proper condition.	NA	
6.00	Wiper should be in running condition.	NA	
7.00	Operator cabin and driver seat should be made by good & sound quality of material.	NA	
8.00	Hydraulic cylinders and hoses are in good condition and free from leakage.	NA	
9.00	Outrigger should be free from damages.	NA	
10.00	Red triangle/reflective tape should be fixed in front of vehicle.	NA	
11.00	Front & reverse horn.	NA	
12.00	Fire extinguisher in operator cabin.	NA	
13.00	First aid box in operator cabin.	NA	
14.00	Operator have valid and suitable license. #	NA	

14 items in 1 pages

An equipment inspection template for a backhoe loader: equipment details, insurance policy and expiry, and the checklist for this equipment type. Earlier PMWEB release; sample data.

Anatomy of an HSSE Checklist Template

One template per checklist type. The same structure on every project.



The checklist decides what is inspected, not the inspector.

CMCS | PMWEB Authorised Implementation Partner – GCC & MENA

Tables, Access Rights and Sequence

Where a checklist groups its items into several tables, different HSSE team members may be responsible for different tables, and there may be a set sequence for completing them. The custom form builder allows a template to hold as many tables as required, either on the same form or on a separate tab for each table. For each table it sets who can edit it, who can only view it and who has no access.

When the tables must be completed in a predefined sequence, a workflow is assigned to the template and aligned with its tables, so each inspector completes their table in turn. On a self-assessment, the same approach lets each category be reviewed by a different team member, with the tables aligned to the workflow steps.

Organising the Library So People Find It

Every checklist produces photographs, certificates and supporting documents. In the PMWEB document repository, folders and subfolders are created for them, structured by checklist type and title, so that documents

are stored where the next person will look for them. The same structure holds the certificates of each crane and its operator, and of each item of equipment, alongside its inspection history.

Key takeaway

Every HSSE checklist shares one need: a predefined list of items, drawn from experience, best practice and the regulations that apply.

Build a unique PMWEB template for each checklist type, hazard and type of equipment, with a response scale chosen for its purpose and a comment on every item.

Use multiple tables, per-table access rights and a workflow where different inspectors complete different parts in sequence.

Organise the documents of each checklist by type and title, and build an inspection history for every crane, scaffold and item of equipment.

Next in the series: Part 5, Running Inspections and Audits on Site, puts the library to work: the daily HSSE inspection on a mobile device, the monthly joint audit between the owner and the contractor, and the corrective actions that close every failed item.

Talk to us: CMCS can build your HSSE checklist library in PMWEB, from compliance areas and self-assessments to cranes, scaffolds and construction equipment, and set up the document structure that goes with it. Contact CMCS at info@CMCS-MENA.com.

[#PMWEB](#) [#CMCS](#) [#HSSE](#) [#SafetyInspection](#) [#Checklists](#) [#TowerCrane](#) [#Scaffolding](#) [#FirePrevention](#) [#CapitalProjects](#)
[#PMIS](#)

About the Author

Bassam Samman, PMP, PSP, EVP, GPM is the Chairman and Chief Executive Officer of CMCS FZCO, 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 is a co-founder of the Project Management Institute Arabian Gulf Chapter. 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 and PMWEB Global Partner of the Year 2025, with offices in Dubai, Abu Dhabi and Riyadh. CMCS specialises in digital project management solutions for real estate developers, government entities, infrastructure owners, project management consultants and construction companies across the Middle East and North Africa.

Running Inspections and Audits on Site — Daily Inspections, the Monthly Joint Audit and Corrective Actions

Capture inspections on a phone where the work is done, give every failed item an owner and a due date, and report the results across inspectors, locations and projects

A checklist that is filled in at the end of the day from memory proves very little. An inspection is worth what it records at the point of work: the item, the result, the photograph, and the name of the person who must fix what failed and by when.

Part 4 described how to design the HSSE inspection library: one checklist for every hazard, area and item of equipment. This part covers how those checklists are used on site. It follows the daily HSSE inspection carried out by the safety team, the monthly joint audit carried out by the owner and the contractor, the corrective action loop that closes every failed item, and the reports that consolidate the results.

Is this article for you?

- **HSSE managers and safety officers** who carry out daily inspections and want the results on record before they leave the area.
- **Owners' representatives** who run the monthly joint audit with the contractor and need every non-compliance closed and approved.
- **Project and portfolio managers** who want to compare inspection results across inspectors, locations, periods and projects.

Scheduled and Ad-hoc Inspections

Each checklist in the library has its own rhythm. Some are carried out every day or every shift, some every week, some every month, and some only when a situation calls for one. In PMWEB, compliance checklists can be scheduled for set dates or carried out ad hoc, and each type can have its own workflow.

Typical inspection and audit regimes on a capital project

Checklist	Frequency	Carried out by
Daily HSSE inspection	Daily	The safety team, by inspection category and location
Tower crane inspection	Daily, for each shift	A qualified inspector, against the crane's inspection items
Scaffolding inspection	Weekly	Inspectors trained and certified by recognised bodies
Fire prevention, site offices and stores	Periodic	The inspection team, against HSSE policy, civil defence rules and the insurer's recommendations
HSSE compliance checklists	Scheduled or ad hoc	Safety officers, one checklist per compliance area
Joint HSSE audit	Monthly	The owner's authorised representative and the contractor, together

The Daily HSSE Inspection

The daily HSSE inspection is part of every project HSSE management plan. The safety team inspects a set of categories, each with its own list of items. Typical categories include accident prevention, scaffolds and mobile towers, power tools and equipment, trenching, excavation and shoring, hot works, crane lifting devices, working conditions, housekeeping and environment, plant, machinery and vehicles, fall prevention, transportation, temporary electrical, personal protective equipment (PPE), signage, barricades and openings, and welfare facilities.

Each item is recorded as **Pass**, **Fail** or **Not Applicable**. The form also records the location of the inspection and the inspector, and it includes a table of corrective actions for the items that failed, each with the party responsible for closing it and a due date.

Capturing the evidence on site

PMWEB is a web application that runs in the browser of any device, so the inspection form is designed to be completed on an iPhone or Android phone. When the form is opened on a device with a camera, PMWEB recognises the camera and offers to take a photograph or record a video and attach it to the checklist. Other documents can be attached directly or linked from the PMWEB document repository.

The **Notes** tab lets inspectors add their observations. Each note records its author and the date and time it was added. Notes are rich text, so they can be formatted and can include pictures.

Daily HSSE inspection completed on a smartphone: header, inspection categories with Pass/Fail status, and the corrective actions table with owner and due date. Earlier PMWEB release; names generalised.

When several inspectors share one inspection

On a large site, the categories in a daily inspection are often inspected by different people. PMWEB supports two ways of handling this.

Two ways to split inspection categories between inspectors

Option	How it works
Separate checklists (recommended)	Create a separate daily inspection checklist for each inspector, holding only the categories that inspector is assigned.
One checklist, table rights	Keep all categories on one checklist and give each inspector edit rights only to their own category tables. Tables that an inspector should not see can be hidden. Add a workflow that sets the order in which the tables are completed.

Asking for input from people who are not PMWEB users

While an inspection is under way, the inspector often needs the view of someone else on the project. The PMWEB email notification sends the checklist to other team members, whether they are PMWEB users or not, asking for their opinion on inspected items. Every notification sent is recorded on the checklist's **Notifications** tab. Through the integration with Microsoft Outlook, the replies are imported into PMWEB and linked to the checklist, so the exchange becomes part of the record rather than sitting in someone's inbox. The same notification command sends a copy of a completed inspection output form, such as a tower crane or scaffolding inspection, to people outside PMWEB.

The Monthly Owner–Contractor Joint Audit

The Project HSSE Management Plan (PHSEMP) usually requires the owner's authorised representative and the contractor to carry out a joint HSSE audit every month. The audit checks that the HSSE risk controls selected for the project have been put in place, and that the safety practices seen on site comply with the criteria in the checklist. Every non-compliance it finds must be put right through a corrective action.

Regular audits are carried out to:

- find out whether the health and safety programmes and procedures are working;
- confirm that field staff and management are engaged in the safety programmes;
- check that the project's HSSE processes comply with company policies and regulations, and with OSHA or any other HSSE rules the project has adopted;
- check that health and safety activities are being documented properly;
- discover and identify potential hazards, and evaluate whether existing management controls are effective;
- check the safety of the workplace and of the project's equipment;
- evaluate the safety training and performance of the contractor's supervisors and of field staff.

The audit checklist is created with the PMWEB custom form builder, with a table for each section of the audit, for example **Office Procedures**, **Site Security and Warning Signs** and **Safety Requirements**. Each table lists the items to be audited, a status of Yes, No or Not Applicable, and a corrective action for every item marked No. Photographs and videos taken by the audit team on a mobile device, and any other relevant documents, are attached to the checklist.

PMweb

PLANS

FORMS

COSTS

SCHEDULES

ASSETS

WORKFLOWS

PORTFOLIO

TOOLS

PROFILE

SEARCH

RECENT

UNIVERSITY

EXIT

(Portfolio) > Assets > Forms > HSE MONTHLY AUDIT CHECKLIST > 1 -

MAIN

Date28-Jun-2022

Project*

Record #1

StatusDraft

Created BySample User

Record Date28-Jun-2022

Revision0

Vendor

SECTION 1: OFFICE PROCEDURES

Refresh

NO.	DESCRIPTION	STATUS	CORRECTIVE ACTION
1.00	Safety & health poster posted.		
2.00	Emergency telephone numbers posted.		
3.00	First aid kit & supplies on job.		
4.00	Copy of OSHA safety standard in the office.		
5.00	Toolbox meeting reports issued, forwarded to Project Superintendent & filed.		
6.00	Safety notices issued, forwarded to appropriate personnel and filed.		
7.00	Received visit from OSHA this month.		
8.00	Emergency stretcher located on job – near hoist or elevator.		
9.00	Any first aid injuries reported were forwarded to Site Management.		
10.00	OSHA 300 log posted.		

1

PAGE SIZE: 20

SECTION 2: SITE SECURITY & WARNING SIGNS

Refresh

NO.	DESCRIPTION	STATUS	CORRECTIVE ACTION
1.00	Site secured with fence and gates. Gates closed and locked.		
2.00	Warning signs posted for general public.		

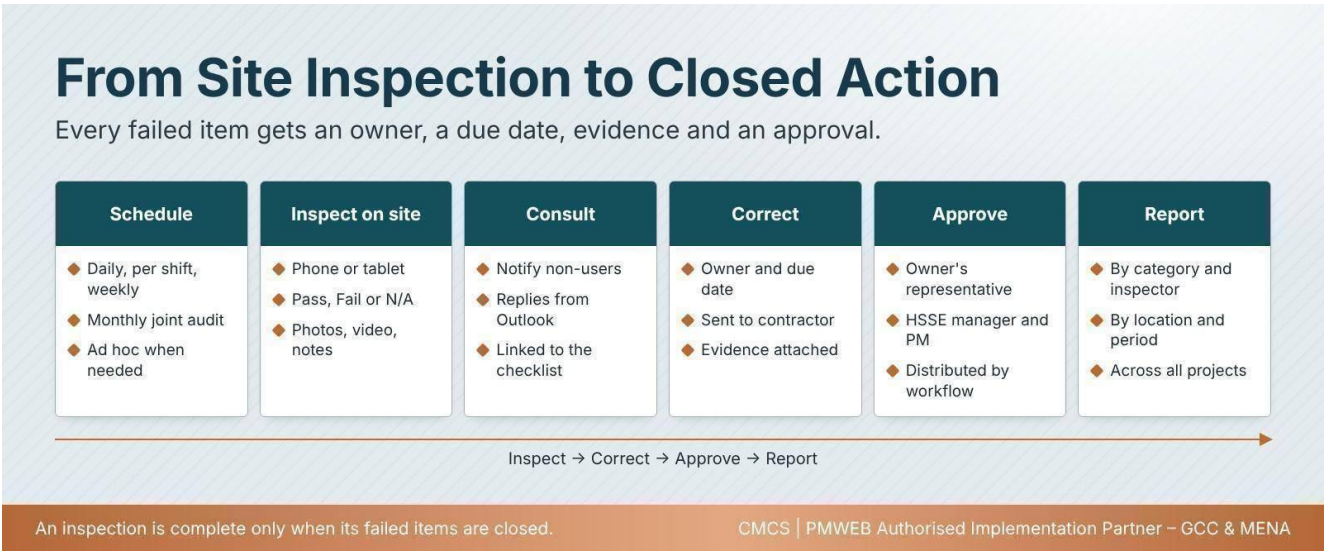
HSSE monthly audit checklist: one table per audit section, each item with a status and a corrective action. Earlier PMWEB release; names generalised. The on-screen item referring to OSHA Form 200 has been updated to the OSHA 300 log.

The Corrective Action Loop

An inspection or an audit is only complete when every failed item has been closed. The workflow assigned to each checklist makes this happen: it sets the tasks, their sequence, who is accountable for each and how long each may take, using the project’s responsibility assignment matrix and approval authority levels. Email notifications go to each person when their task falls due.

From a failed item to an approved close-out

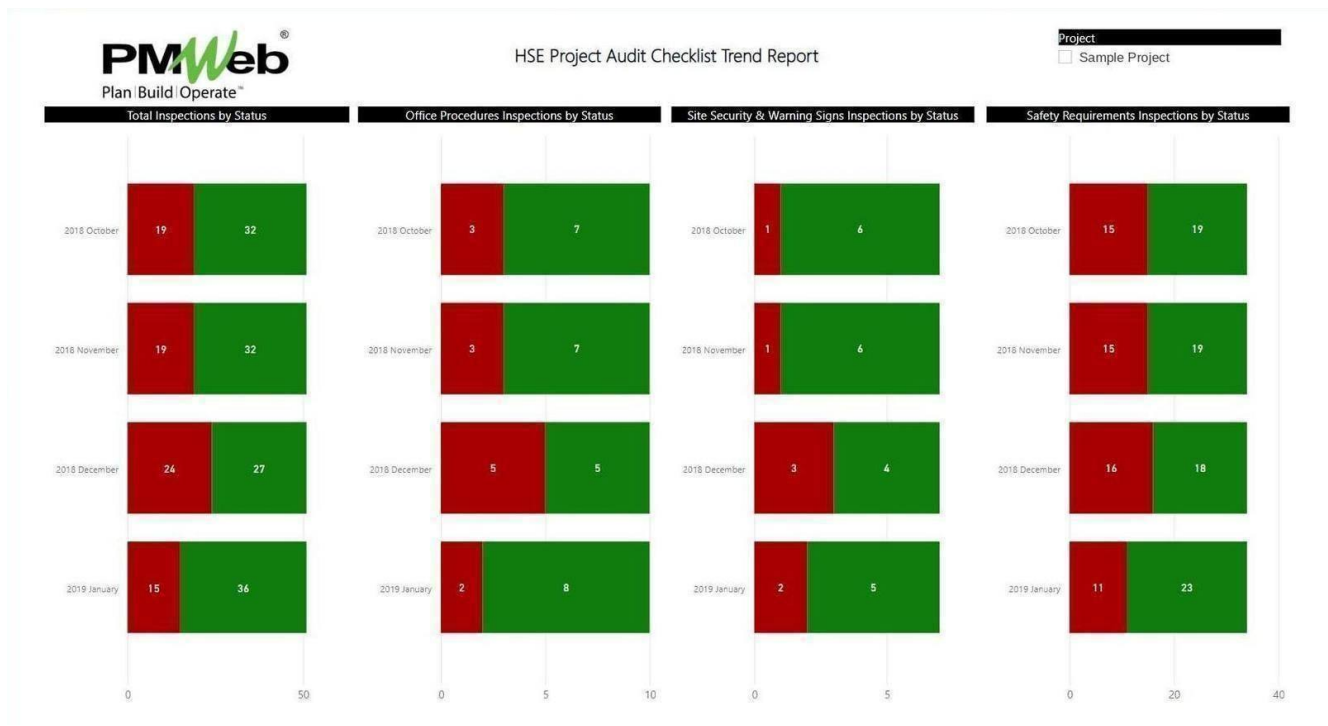
Step	What happens and what is recorded
Record	The inspector or audit team marks the item as Fail or No, attaches photographs and states the corrective action required.
Assign	Each corrective action is given a responsible party and a due date.
Send	The workflow sends the checklist formally to the contractor to carry out the corrective actions.
Rectify	The contractor completes the actions, records what was done and the date, attaches evidence, and resubmits the checklist.
Review and approve	The owner’s authorised representative reviews and approves the audit. Daily inspections are reviewed by the HSSE manager and the project manager. Where categories are reviewed by different people, each table is aligned with its own workflow step.
Distribute and link	The approved checklist is distributed to the stakeholders who need the results, and can be linked to related records such as safety incidents.



Consolidating and Reporting the Results

Because every inspection is a record in the same system, the results of many checklists can be combined. Reports consolidate the daily inspections carried out by different inspectors at different locations, compare periods, and compare projects across the organisation’s portfolio. Typical visuals group the inspected items by category, inspector and location, split into those that passed and those that failed, together with the corrective actions raised for the failed items. Each month the safety officer can report how many compliance checklists were carried out and how many passed or failed.

For the joint audit, the **audit checklist report** gives the status of each period: a table of every item inspected in each audit section with its status and, for non-compliant items, the corrective action taken, together with a summary visual for all sections and one for each section. The **audit trend report** shows the results period by period, so the owner can see whether non-compliance in each section is falling or rising.



HSE Project Audit Checklist Trend Report: items passed and failed each month, in total and for each audit section. Earlier PMWEB release; names generalised.

Key takeaway

Give every checklist its own rhythm: daily, per shift, weekly, monthly, scheduled or ad hoc.

Complete inspections on a phone at the point of work, with photographs, videos and notes attached as they are taken.

When several inspectors share an inspection, use separate checklists, or one checklist with table rights and a workflow.

Treat the monthly joint audit as a workflow: sent to the contractor for corrective action, then returned to the owner for approval.

Close the loop on every failed item with an owner, a due date and evidence, then report the results by category, inspector, location, period and project.

Next in the series: Part 6 covers the processes that build a speak-up safety culture: Don't Walk By observations, safety violation notices and toolbox talks.

Talk to us: CMCS can configure daily HSSE inspections, the monthly joint audit and their corrective action workflows in PMWEB, with the status and trend reports to go with them. Contact CMCS at info@CMCS-MENA.com.

#PMWEB #CMCS #HSSE #SafetyInspection #HSSEAudit #CorrectiveAction #ConstructionSafety #CapitalProjects #PMIS #Construction

About the Author

Bassam Samman, PMP, PSP, EVP, GPM is the Chairman and Chief Executive Officer of CMCS FZCO, 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 is a co-founder of the Project Management Institute Arabian Gulf Chapter. 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 and PMWEB Global Partner of the Year 2025, with offices in Dubai, Abu Dhabi and Riyadh. CMCS specialises in digital project management solutions for real estate developers, government entities, infrastructure owners, project management consultants and construction companies across the Middle East and North Africa.

Building a Speak-Up Safety Culture — Don't Walk By, Safety Violation Notices and Toolbox Talks

Give everyone on site a simple way to report what they see, act formally when safety rules are broken, and keep a record of every safety conversation

Inspections find what the safety team goes looking for. A safety culture finds everything else. It depends on people who are confident enough to stop an unsafe act, on rules that are enforced the same way every time, and on short, regular conversations about the risks of the work in hand.

Parts 4 and 5 covered the inspections and audits carried out by the safety team. This part covers three processes that involve everyone else on site: the **Don't Walk By** observation, the **safety violation notice** and the **toolbox talk**. Each one is simple. Their value comes from being used every day, and from leaving a record that can be reviewed, reported and recognised.

Is this article for you?

- **HSSE managers** who want every worker and engineer on site to report unsafe acts and conditions, not only the safety team.
- **Owners and project managers** who need violations by contractors, subcontractors and suppliers dealt with formally and consistently.
- **Site supervisors and safety officers** who run toolbox talks and want the attendance, discussion and actions on record.

Don't Walk By

The Don't Walk By (DWB) procedure is about creating a culture of awareness and openness, in which people have the confidence to identify and challenge unsafe acts and conditions and to suggest improvements. Every member of the construction and safety team is responsible for reporting what they see, and they record each observation on the DWB form.

The DWB form is created with the PMWEB custom form builder. Except for the details of the unsafe act, every field is selected from a predefined list, so an observation takes seconds to record and is reported consistently across the project.

The fields of the Don't Walk By form

Field	Values
Location	Where the unsafe act or condition was seen
Action taken	Stop Work, Fix Hazard or Manage
Hazard rating	High, Moderate or Low
Hazard type	For example working at height, fire prevention, plant and equipment, scaffolds and ladders, trip hazard, electrical hazard, barriers, PPE, handling, health, housekeeping, edge protection and openings, and noise
Impact category	A: potential to result in fatal or major injuries; B: potential to result in minor injuries; C: minimal risk or injury

Field	Values
Personal card	Whether the observation serves as a personal yellow, red or blue card, selected with a tick box
Unsafe act details	Free text describing what was observed, which can be dictated using speech to text

Designed for the smartphone

A DWB observation is always raised on the construction site, where the only device most people carry is their phone. The DWB template is therefore designed to be used on an iPhone or Android phone. On the phone, the unsafe act details can be filled in with speech to text, and PMWEB recognises the camera so that a photograph or video of the unsafe act can be taken and attached. Other documents can be attached if needed.

The Don't Walk By form on a desktop browser (left) and on an Android phone (right): the same template, with predefined values for location, action and hazard rating. Earlier PMWEB release; names generalised.

Telling the supervisor straight away

When an unsafe act or condition is noticed, the observer submits the DWB form in PMWEB and explains the observation to the nearest foreman, chargehand or supervisor. From the form's **Notifications** tab, the observer emails the selected people a hyperlink to the submitted form. If an output report has been designed with the PMWEB report writer, the observation can also be saved as a PDF and shared by email, WhatsApp or any other share option on the phone.

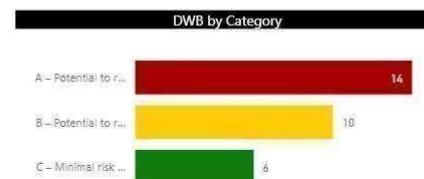
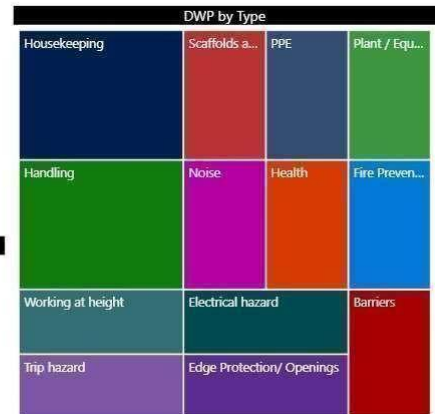
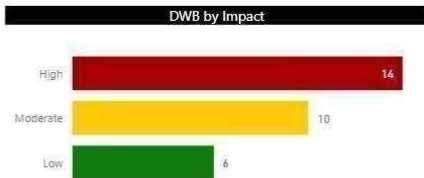
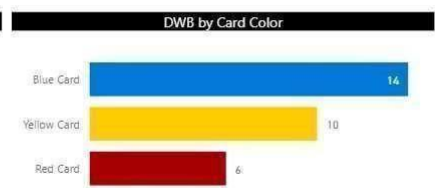
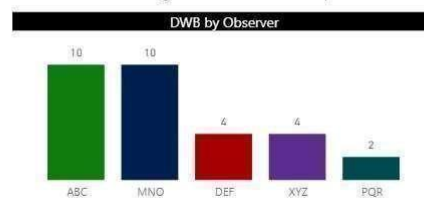
A workflow makes sure that every observation reaches the safety supervisor and, where required, the HSSE manager. It can be a simple workflow with a few steps, or a more detailed one that involves other team members depending on how serious the reported unsafe act is.

Recognising observers and reporting the observations

Because every observation is captured in PMWEB, the organisation can run a fair process to give awards, commendations or recognition to the people who raise the most credible DWB observations. The observations also become one of the HSSE reports presented to management: a register of all unsafe act observations, with visuals analysing them by observer, impact, category, card colour and hazard type.

ID	Date	Unsafe Act Details
1	01/10/2020	Details of the reported unsafe act by the observer
2	01/17/2020	Details of the reported unsafe act by the observer
3	01/24/2020	Details of the reported unsafe act by the observer
4	01/31/2020	Details of the reported unsafe act by the observer
5	02/07/2020	Details of the reported unsafe act by the observer
6	02/14/2020	Details of the reported unsafe act by the observer
7	02/21/2020	Details of the reported unsafe act by the observer
8	02/28/2020	Details of the reported unsafe act by the observer
9	03/06/2020	Details of the reported unsafe act by the observer
10	03/13/2020	Details of the reported unsafe act by the observer
11	03/20/2020	Details of the reported unsafe act by the observer
12	03/27/2020	Details of the reported unsafe act by the observer
13	04/03/2020	Details of the reported unsafe act by the observer
14	04/10/2020	Details of the reported unsafe act by the observer
15	04/17/2020	Details of the reported unsafe act by the observer
16	04/24/2020	Details of the reported unsafe act by the observer
17	05/01/2020	Details of the reported unsafe act by the observer
18	05/08/2020	Details of the reported unsafe act by the observer
19	05/15/2020	Details of the reported unsafe act by the observer
20	05/22/2020	Details of the reported unsafe act by the observer
21	05/29/2020	Details of the reported unsafe act by the observer
22	06/05/2020	Details of the reported unsafe act by the observer
23	06/12/2020	Details of the reported unsafe act by the observer
24	06/19/2020	Details of the reported unsafe act by the observer
25	06/26/2020	Details of the reported unsafe act by the observer
26	07/03/2020	Details of the reported unsafe act by the observer
27	07/10/2020	Details of the reported unsafe act by the observer

"Do Not Walk By" Monitoring and Evaluation Report



Don't Walk By monitoring and evaluation report: the register of observations, analysed by observer, card colour, impact, category and hazard type. Earlier PMWEB release; sample data.

Safety Violation Notices

Every HSSE plan needs a process for issuing safety violation notices to contractors and subcontractors that do not follow safety rules during production, manufacturing and construction on site. The same notice can be used to warn suppliers that have not complied with required certifications.

The **Safety Violation Notice** is created with the PMWEB custom form builder. It describes the violation, the disciplinary action that will follow if the problem is not corrected, and the names of the employees and workers involved. It records the disciplinary action taken: a written warning, suspension or temporary removal from the site, or termination or permanent removal from the site. An acknowledgement section confirms that the employee understands that safety rules exist to prevent accidents and injuries, and that disciplinary measures will be applied.

The screenshot shows the PMWeb interface for creating a 'Safety Violation Notice'. The left sidebar contains navigation links: PLANS, FORMS, COSTS, SCHEDULES (highlighted), ASSETS, WORKFLOWS, PORTFOLIO, TOOLS, PROFILE, SEARCH, RECENT, and UNIVERSITY. The main content area has a header with the PMWeb logo and a title 'Safety Violation Notice'. Below the header, there are input fields for Project, Subject, Company, Supervisor, Revision, ID (set to 1), Date (set to 26-10-2021), Employee, and Status (set to Draft). A section titled 'VIOLATION AND DISCIPLINARY ACTION' contains two text areas for 'Description of Violation' and 'Description of Disciplinary Action', and a text area for 'Name of Workers in Violation of This Notice'. Below these are three checkboxes for 'Written Warning', 'Suspension/ Temporary Removal from the Site', and 'Termination/ Permanent Removal from the Site'. The final section is 'ACKNOWLEDGEMENT', which includes a statement: 'I (the employee) understand that safety rules and practices are necessary to reduce accidents and injuries on the job. Safe behavior on the job not only protects me, but my fellow workers as well. It is also understood that my employer, by law, must impose disciplinary procedures, which could include termination.'

Safety Violation Notice: description of the violation and of the disciplinary action, workers involved, the action taken and the employee's acknowledgement. Earlier PMWEB release; sample data.

Photographs of the violation, taken on site with a phone or tablet, and details of the people involved are attached to the notice. A workflow makes sure the notice is reviewed and closed as the HSSE plan requires. When the notice is issued, the workflow notifies the people who need to know: PMWEB users through the cc field of the workflow step, and people who are not PMWEB users through the manual cc field, with a PDF of the notice attached so they can read it without logging in (the mechanism is described in Part 1).

A safety violation notice register lists every notice issued, and the number of notices becomes one of the measures reported on the HSSE performance dashboard covered in Part 8.

Toolbox Talks

A toolbox talk is a short, informal group discussion among the people of one team that focuses on a particular safety issue. Topics range from electrical safety to lifting basics. A talk usually lasts about 15 minutes and is held daily or weekly, in a comfortable location at the start of a shift or after the lunch break. Anyone can lead one, but it is best given by someone with expertise in the topic.

Toolbox talks are used for communication after an accident, to reinforce safe work practices, for pre-task planning, and as talking points for hands-on training or tabletop exercises. Participants receive a pamphlet that summarises the topic, prepared by the organisation itself or taken from safety bodies such as the Occupational Safety and Health Administration (OSHA).

When the other HSSE processes already run in PMWEB, the same platform can manage toolbox talks, which keeps the whole HSSE plan on one single version of the truth.

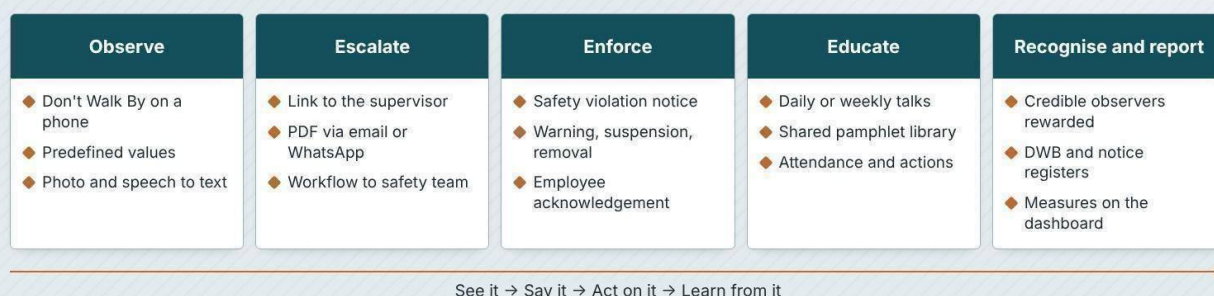
How PMWEB supports each part of a toolbox talk

PMWEB feature	Use for toolbox talks
Shared document folder	A shared folder in the document repository holds every toolbox talk pamphlet and makes it available to all projects. Subfolders group pamphlets by topic.
Meeting calendar	Schedules toolbox talks alongside the project's other meetings, so participants know when each will take place.
Meeting minutes	Records each talk: the team members who attended and the comments made during the discussion.

PMWEB feature	Use for toolbox talks
Business items	Records each action agreed during the talk and the person or people responsible for it.
Create Next	Confirms the date, time and location of the next talk and creates its agenda. The minutes state the next topic and who will present it.
Attachments	Holds the pamphlet and other documents shared during the talk, and a video recording if one was made, so those who missed the talk can see what was discussed.

Three Habits of a Speak-Up Site

Observe and report, enforce the rules, and talk about the risks of the work in hand.



A safety culture is built one recorded conversation at a time.

CMCS | PMWEB Authorised Implementation Partner – GCC & MENA

Key takeaway

Design the Don't Walk By form for the smartphone, with predefined values, speech to text and the camera, so anyone can raise an observation in seconds.

Notify the nearest supervisor at once, and route every observation to the safety supervisor through a workflow.

Use the captured observations to recognise the people who raise credible concerns, and report them by observer, impact, category, card and type.

Issue safety violation notices through a workflow, with photographs, the disciplinary action taken, the employee's acknowledgement and a PDF for those outside PMWEB.

Schedule daily or weekly toolbox talks in the meeting calendar, record attendance and actions in the minutes, and use Create Next to set up the next talk.

Next in the series: Part 7 covers what happens when things go wrong: reporting, investigating and learning from safety incidents.

Talk to us: CMCS can configure Don't Walk By, safety violation notices and toolbox talks in PMWEB, with the mobile forms, workflows and reports to go with them. Contact CMCS at info@CMCS-MENA.com.

#PMWEB #CMCS #HSSE #SafetyCulture #DontWalkBy #SafetyViolation #ToolboxTalks #ConstructionSafety #CapitalProjects #PMIS

About the Author

Bassam Samman, PMP, PSP, EVP, GPM is the Chairman and Chief Executive Officer of CMCS FZCO, 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 is a co-founder of the Project Management Institute Arabian Gulf Chapter. 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 and PMWEB Global Partner of the Year 2025, with offices in Dubai, Abu Dhabi and Riyadh. CMCS specialises in digital project management solutions for real estate developers, government entities, infrastructure owners, project management consultants and construction companies across the Middle East and North Africa.

When Things Go Wrong — Reporting, Investigating and Learning from Safety Incidents

Report every incident, capture the facts while they are fresh, and turn causes into data the risk register can use

Every incident is reported, whatever its apparent severity. What the project records in the hours after an incident decides whether it will ever learn why it happened.

The earlier parts of this series covered the processes that prevent harm: risk assessment, permits, inspections, audits and a speak-up culture. This part covers what happens when an incident occurs anyway. It follows the immediate response, the safety incident form, the causes and impact fields that make the incident data useful, the investigation workflow and the reports that turn individual incidents into lessons.

Is this article for you?

- **HSSE managers and safety officers** who must report and investigate incidents to a standard that will stand up to review.
- **Owners and PMCs** who want every incident on every contract recorded the same way, including near misses.
- **Risk managers** who want actual incident causes to inform the likelihood and impact in the HSSE risk register.

The First Hour: Priorities and Preliminary Information

On a construction project, every incident, whatever its perceived severity, must be reported to the project safety management team after it occurs and before medical treatment is sought, except where an injury is life-threatening. This includes damage to property, damage to construction equipment and vehicle-related incidents. The priorities come first: care for the injured, take control of the accident scene, and notify the right project personnel.

Once the priorities are dealt with, the designated member of the safety team gathers as much preliminary information as possible:

- who was involved, and the nature and extent of any injury;
- what happened, where it happened and how it happened;
- the names of any witnesses;
- photographs of the scene, taken as soon as possible and before conditions are changed, where it is practical to do so.

The Safety Incident Form

PMWEB includes a ready-to-use Safety Incident form. It must be completed for every incident, injury and work-related illness. Incident types can include incidents caused by unsafe acts or unsafe conditions, motor vehicle incidents, loss of containment, non-work-related fatalities, near misses and other damaging incidents.

What the Safety Incident form records

Section	What it records
Header	Project, phase and the WBS level of the scope of work where the incident happened; the company involved; incident type and category; subject and description; incident date, time and location; who submitted the form and when
Weather	Conditions, temperature and precipitation at the time of the incident
Work in progress	The work activity under way when the incident happened
Describe incident	A rich-text account of what happened
People involved	Each person involved, with company, worker classification, age, years of experience, injury type, injured body part, injury severity and working hours lost
Witnesses	Each witness, with notes
Causes	The causes and root cause of the incident, each with a description and notes

Safety Incident form, main tab: project and WBS, company, incident type and category, weather, work in progress, description, people involved with injury details, and the user-defined impact and cause fields. Earlier PMWEB release; names generalised.

Photographs of the incident, police and medical reports and other related documents are uploaded and attached to the form. For this form, PMWEB can also display selected documents, such as a photograph of the scene, on the form header.

Causes, Root Cause and Impact

An incident record that only says what happened cannot tell the organisation how likely it is to happen again or how much it costs when it does. For that, the incident form must be aligned with the HSSE risk assessment and register described in Part 2. The PMWEB Safety Incident form already holds most of the fields needed. Two groups of user-defined fields complete it.

Five cause fields

Five fields record the causes of the incident: the **primary cause**, **secondary cause**, **immediate cause** and **contributing factor**, and a fifth, the **root cause**, completed by the safety manager to associate the incident

with the HSSE risk that results from this cause. All five use the same predefined list of causes, standard across every project the organisation manages.

The list could include, for example, vehicle incident, slip and fall, misuse of ladder, falling hazard, roof fall, scaffolding problem, power tool accident, lifting or body strain, collapsed excavation wall or trench, improper or inadequate training, improper PPE, eyes not on task, inadequate design, ergonomics, rushing, poor lighting, workstation design, fatigue, incorrect mapping, unsafe action, slipped, broken or worn tool, mechanical failure, lack of process in the management system, wrong type of material for the job, incorrect tool selection, complacency, defective raw materials and communicable disease. The list must be kept up to date as new causes emerge.

For each cause, the causes section of the form records a description and notes, and further causes can be added beyond the five fields. These descriptions matter when the causes and impacts of the incident are analysed.

PEOPLE INVOLVED

EditAddDeleteRefresh

LINE #	NAME	COMPANY	WORKER CLASSIFICATION	AGE	YEARS EXPERIENCE	INJURY TYPE	INJURED BODY PART	INJURY SEVERITY	CURRENT CON
1	Worker 1	Contractor A		40	10.00	Crushing	Body	1. Minor	...

1

PAGE SIZE10

CAUSES

Update RecordsCancel

LINE #	CAUSE CATEGORY	DESCRIPTION	NOTES
1	Collapsed Excavation Wall or Trench	...	...
2	Falling Hazard	...	...
	Collapsed Excavation Wall or Trench		
	Falling Hazard		
	Lifting/Body Strain		
	Misuse of Ladder		
	Power Tool Accident		
	Roof Fall		
	Scaffolding Problem		
	Slip and Fall		
	Vehicle Accident		

WITNESSES

EditAdd

LINE #	NAME	NOTES
1	Witness 1	...

The people involved, causes and witnesses sections of the Safety Incident form, with causes selected from the organisation's standard list. Earlier PMWEB release; names generalised.

Three impact fields

Three further fields assess the impact of the incident on human resources, on work on site and on cost. Each has four predefined values aligned with the accident severity categories used in the risk register: 4 Catastrophic, 3 Critical, 2 Marginal and 1 Negligible.

The impact of each incident is classified using the same four severity categories as the risk assessment in Part 2: **Catastrophic**, **Critical**, **Marginal** and **Negligible**, each defined for people, production and cost. Using one scale for planned risks and actual incidents is what allows the incident data to drive the likelihood of risks, as Part 2 described.

With causes and impacts recorded on every incident, the last parameter of the risk assessment, the likelihood of each root cause, can be derived from the incident dates. Part 2 shows how the root-cause likelihood report uses this data to keep the HSSE risk register grounded in what has actually happened on the organisation's projects.

Investigation and the Incident Record

A predefined workflow makes sure the safety incident form and all its supporting documents are completed and submitted to the HSSE department, which classifies the incident and decides whether further investigation is needed. The recorded causes and root causes are the input to a formal root cause analysis, which recommends corrective actions that are then distributed to the people involved.

The output of the incident is a governed digital record, not a printed, signed and stamped copy. PMWEB provides a default output form with the details of the safety incident, which can be used as it is, or the layout can be designed to meet the reporting requirements of the project HSSE management plan. The output can be saved as a PDF and digitally signed where needed, with hyperlinks to the photographs and reports attached to the incident, and it can be shared with people who do not use PMWEB. The workflow history shows who reviewed and approved the incident record and when.

From Incident to Lesson Learned

Each incident record carries the facts, the causes and the impact the risk register needs.

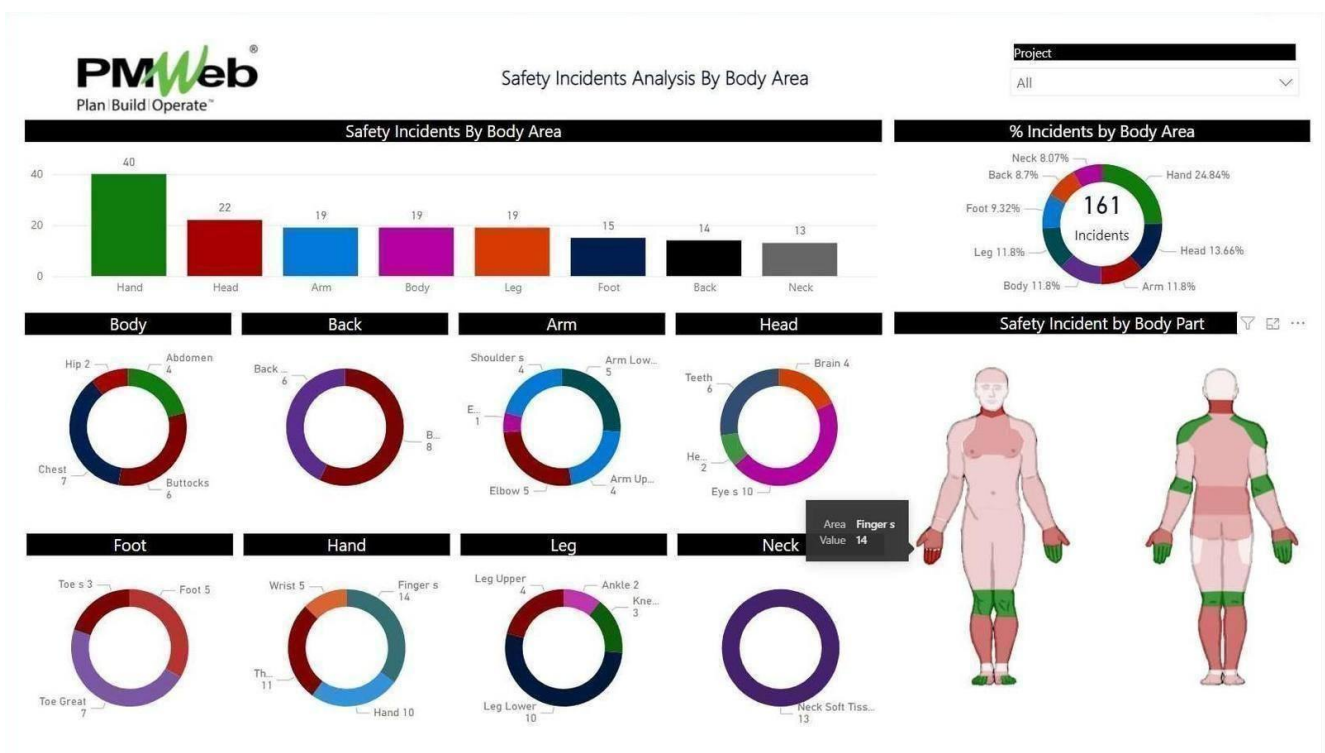


An incident recorded well is an incident the project can learn from.

CMCS | PMWEB Authorised Implementation Partner – GCC & MENA

Learning from Incidents

The data captured in the safety incident forms becomes the basis for monitoring and evaluating the project's HSSE performance. One of the most useful reports is the **Safety Incidents Analysis by Body Area**. For a single project or a portfolio of projects, it shows where on the body the reported injuries occurred, so that PPE, methods and training can be targeted at the injuries that actually happen.



Safety Incidents Analysis by Body Area: incidents by body area, percentage share, the breakdown within each area and a body heat map. Earlier PMWEB release; sample data.

The same incident data, together with the manhours worked, also produces the lost time injury KPIs and the HSSE performance dashboard covered in Part 8.

Key takeaway

Report every incident, including property, equipment and vehicle damage and near misses; care for the injured, control the scene and notify first, then gather the facts.

Use the PMWEB Safety Incident form for every incident, injury and work-related illness, with people involved, injury details, lost hours, witnesses and attached evidence.

Add five cause fields and three impact fields that use standard lists aligned with the HSSE risk register.

Route every incident through a workflow to the HSSE department for classification and root cause analysis, and keep the output as a governed digital record.

Analyse incidents by body area, cause and severity, and feed the results back into the risk register and the HSSE dashboard.

Next in the series: Part 8 closes the series with measurement: LTI, LTIFR and LTISR, and the real-time HSSE dashboard built from every process in Parts 2 to 7.

Talk to us: CMCS can configure the PMWEB Safety Incident form with cause and impact fields aligned to your HSSE risk register, together with the investigation workflow and incident reports. Contact CMCS at info@CMCS-MENA.com.

[#PMWEB](#) [#CMCS](#) [#HSSE](#) [#SafetyIncident](#) [#IncidentInvestigation](#) [#RootCause](#) [#NearMiss](#) [#ConstructionSafety](#)
[#CapitalProjects](#) [#PMIS](#)

About the Author

Bassam Samman, PMP, PSP, EVP, GPM is the Chairman and Chief Executive Officer of CMCS FZCO, 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 is a co-founder of the Project Management Institute Arabian Gulf Chapter. 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 and PMWEB Global Partner of the Year 2025, with offices in Dubai, Abu Dhabi and Riyadh. CMCS specialises in digital project management solutions for real estate developers, government entities, infrastructure owners, project management consultants and construction companies across the Middle East and North Africa.

Measuring HSSE Performance — LTI, LTIFR, LTISR and the Real-Time HSSE Dashboard

Calculate safety KPIs from auditable records, and report every HSSE process from a single version of the truth

A safety KPI is only as reliable as the two numbers behind it: the injuries recorded and the hours worked. When both come from governed records in the same system, the KPI can be trusted, traced and audited.

Parts 2 to 7 described each HSSE process in turn. This final part shows what the owner gains once all of them run in PMWEB. Whether the project control system is run by the owner or by the contractor, one of its key reporting requirements is the current status of the HSSE key performance indicators. This part covers the lost time injury KPIs, where their data comes from, the dashboards that report them, and the registers that every earlier process feeds.

Is this article for you?

- **Owners, PMOs and portfolio managers** who report HSSE performance to the board and need numbers they can defend.
- **HSSE managers** who calculate LTIFR and LTISR every month and want the manhours and lost days to come from auditable records.
- **Project control teams** who build HSSE dashboards and registers in PMWEB or Microsoft Power BI.

The Lost Time Injury KPIs

The KPIs most often reported for HSSE are lost time injuries (LTI), the lost time injury severity rate (LTISR) and the lost time injury frequency rate (LTIFR). They are **lagging** indicators: they show how safe the project has been over the period that has passed, but they do not necessarily indicate how safe it will be.

A lost time injury is an event that results in a fatality, a permanent disability or time lost from work, which may be as short as one day or one shift. For every LTI, the number of days of lost time caused by the incident must be recorded.

The lost time injury KPIs

KPI	What it shows	Calculation	Example
LTI	Events that caused a fatality, permanent disability or lost time	Count of LTI events, with the days lost for each	—
LTISR	How serious the injuries on site have been to date	$(\text{Days lost} \times 1,000,000) \div \text{manhours worked}$	An LTISR of 10 means 10 days lost for every 1,000,000 hours worked
LTIFR	How often lost time injuries occur on site	$(\text{LTI events} \times 1,000,000) \div \text{manhours worked}$	An LTIFR of 7 means 7 lost time injuries for every 1,000,000 hours worked

KPI	What it shows	Calculation	Example
LTI score	The overall lost-time safety environment of the project; the higher the score, the poorer the environment	$LTIFR \times LTISR$	—

The **LTI score** is a measure the author uses, not an industry-standard KPI. It follows the logic of a risk score, which multiplies the likelihood of a risk by its impact. The LTIFR describes how often LTI events happen, which plays the role of likelihood; the LTISR describes how severe they are, which plays the role of impact.

Where the Numbers Come From

Reporting these KPIs requires real-time, trustworthy data on three things: the number of LTIs on site, the time lost because of each one, and the total labour hours worked on site to date. In PMWEB, all three come from two ready-to-use modules.

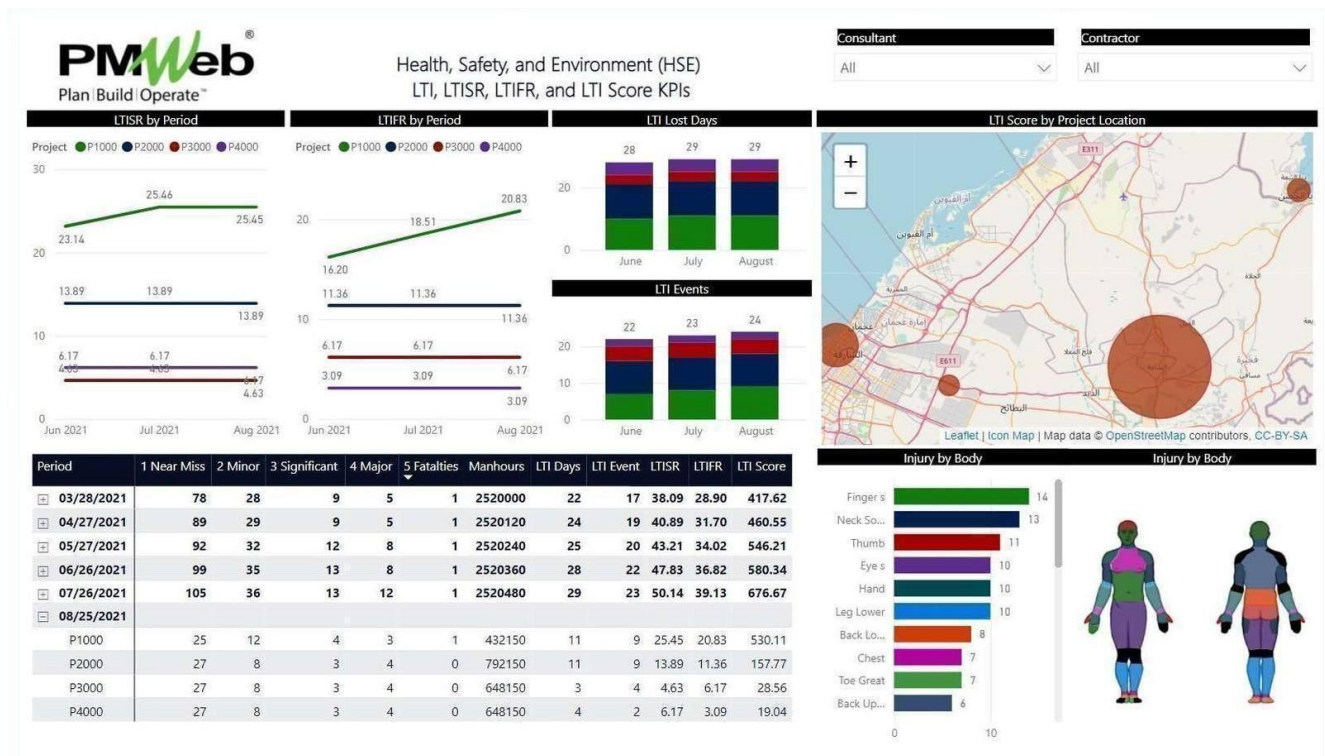
The sources of the LTI KPIs

PMWEB module	What it provides	Why it can be trusted
Daily reports	Total labour manhours worked on the project, captured on the timesheet tab of each daily report	Recorded daily by the site team and approved, so the manhours used in LTISR and LTIFR are accurate and auditable
Safety incidents	LTI events, incident date, type and causes, and the working hours lost for each person involved (Part 7)	Every incident goes through a workflow to the HSSE department for classification

The LTI KPI Dashboard

The KPIs can be reported in different forms. Line charts show the LTISR and LTIFR trends over the last three periods, and histograms show the LTI events and the days lost for the same periods. The current LTI score of each project can be shown as a bubble on a map of the project locations. Another chart shows the severity of the safety incidents, and a scorecard lists all the data used to calculate the KPIs, so each figure can be checked.

The HSSE Performance Dashboard



LTI, LTISR, LTIFR and LTI score dashboard: trends by project, LTI events and days lost, and LTI score by project location. Earlier PMWEB release; sample data. Map data © OpenStreetMap contributors.



HSSE performance dashboard: incident frequency rate, LTIFR, incidents and near misses, incident causes, planned and actual inspections and tours, and location of injuries. This sample plots frequency rates per 100,000 hours worked; this series uses 1,000,000 hours, and the basis should match the one set in the project HSSE plan. Earlier PMWEB release; sample data.

The incident data, together with the data from the other HSSE processes, also produces the HSSE performance dashboard. It analyses the frequency of safety incidents against manhours worked, the LTIFR trend, the categories of safety incidents in each period, the causes of incidents and the location of injuries. It also shows planned and actual HSSE site tours and inspections, and the number of safety violation notices issued (Part 6) is one of its measures.

Every Process Feeds a Register

Each HSSE process described in this series keeps its own register. The registers are built with the PMWEB report writer or with Microsoft Power BI, in whatever form and format the HSSE plan requires. Each register combines visuals that summarise the process with a table of its transactions, and each transaction is hyperlinked to its PDF form so it can be opened when needed.

The registers and dashboards fed by each part of the series

Part	Process	Register or dashboard
2	HSSE risk assessment	Risk register and dashboard: risks by category and owner, control types, pre- and post-mitigation levels; root-cause likelihood report
3	Permits to work and gate passes	Permit status log and dashboard by permit type; site security gate pass log
4–5	Inspections, compliance checklists and audits	Inspection status by category, inspector and location; compliance checklist status; equipment inspection status; audit checklist and trend reports
6	Don't Walk By, violation notices, toolbox talks	DWB monitoring report by observer, impact, category, card and type; safety violation notice register; toolbox talk minutes
7	Safety incidents	Incident register; analysis by body area; causes and severity
8	KPIs	LTI, LTISR, LTIFR and LTI score dashboard; HSSE performance dashboard



Compliance checklists status report: total items passed and failed, monthly results for the current year, and results by compliance area. Earlier PMWEB release; names generalised. The on-screen Covid-19 category has been renamed communicable disease controls.

From HSSE Records to Trusted KPIs

Every number on the dashboard is traceable to the record behind it.



HSSE reported on the record, not on opinion.

CMCS | PMWEB Authorised Implementation Partner – GCC & MENA

From Project to Portfolio

Because every project in the organisation's portfolio runs its HSSE processes in PMWEB, the data can be aggregated across projects. The organisation can analyse it, identify trends and draw lessons learned to improve its HSSE practice, and use that knowledge to keep its risk registers up to date. The dashboards and reports can be viewed at any time, from any web browser on any device, including phones.

Bringing the Series Together

This series has followed HSSE through a capital project: the processes the owner must govern and the five-step pattern that digitalises each of them; risks assessed and kept current with actual incident data; high-risk work and site access controlled through permits and gate passes; an inspection library with a checklist for every hazard, area and item of equipment; inspections and joint audits run on site with every failed item closed; a speak-up culture built on Don't Walk By, violation notices and toolbox talks; and incidents reported, investigated and learned from. Each is a process, and each produces a record.

The KPIs and dashboards are the reward for that discipline. Once the processes run in PMWEB, they cost almost nothing to produce, and they give the owner what no spreadsheet can: a real-time, single version of the truth on HSSE across the portfolio, with every number traceable to the record behind it.

Key takeaway

Report LTI, LTISR and LTIFR per 1,000,000 hours worked, and remember that they are lagging indicators.

Take manhours from the daily report timesheets and LTIs and lost days from the safety incident records, so every KPI is auditable.

Show trends, LTI events, lost days, severity and a scorecard of the data behind each KPI on one dashboard.

Give every HSSE process its own register, with each transaction hyperlinked to its PDF form.

Aggregate the data across the portfolio to find trends, learn lessons and keep the risk registers current.

Talk to us: CMCS can configure the full HSSE suite in PMWEB, from risk assessment, permits and inspections to safety incidents, the LTI KPIs and the real-time HSSE dashboard. Contact CMCS at info@CMCS-MENA.com.

#PMWEB #CMCS #HSSE #LTIFR #SafetyKPI #HSSEDashboard #PowerBI #ConstructionSafety #CapitalProjects #PMIS

About the Author

Bassam Samman, PMP, PSP, EVP, GPM is the Chairman and Chief Executive Officer of CMCS FZCO, 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 is a co-founder of the Project Management Institute Arabian Gulf Chapter. 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 and PMWEB Global Partner of the Year 2025, with offices in Dubai, Abu Dhabi and Riyadh. CMCS specialises in digital project management solutions for real estate developers, government entities, infrastructure owners, project management consultants and construction companies across the Middle East and North Africa.