national highways

Visual Performance Management

Minimum Standards
V1.2 April 2023

Contents

1

Purpose of the Standard

This standard intends to provide the minimum requirements for Visual Performance Management on National Highways projects. It adds detail to National Highways general guidance found in ‘An introduction to the Visual Performance Management’.

The standard is for National Highways and supply chain teams working on projects in the development, design and construction stage.

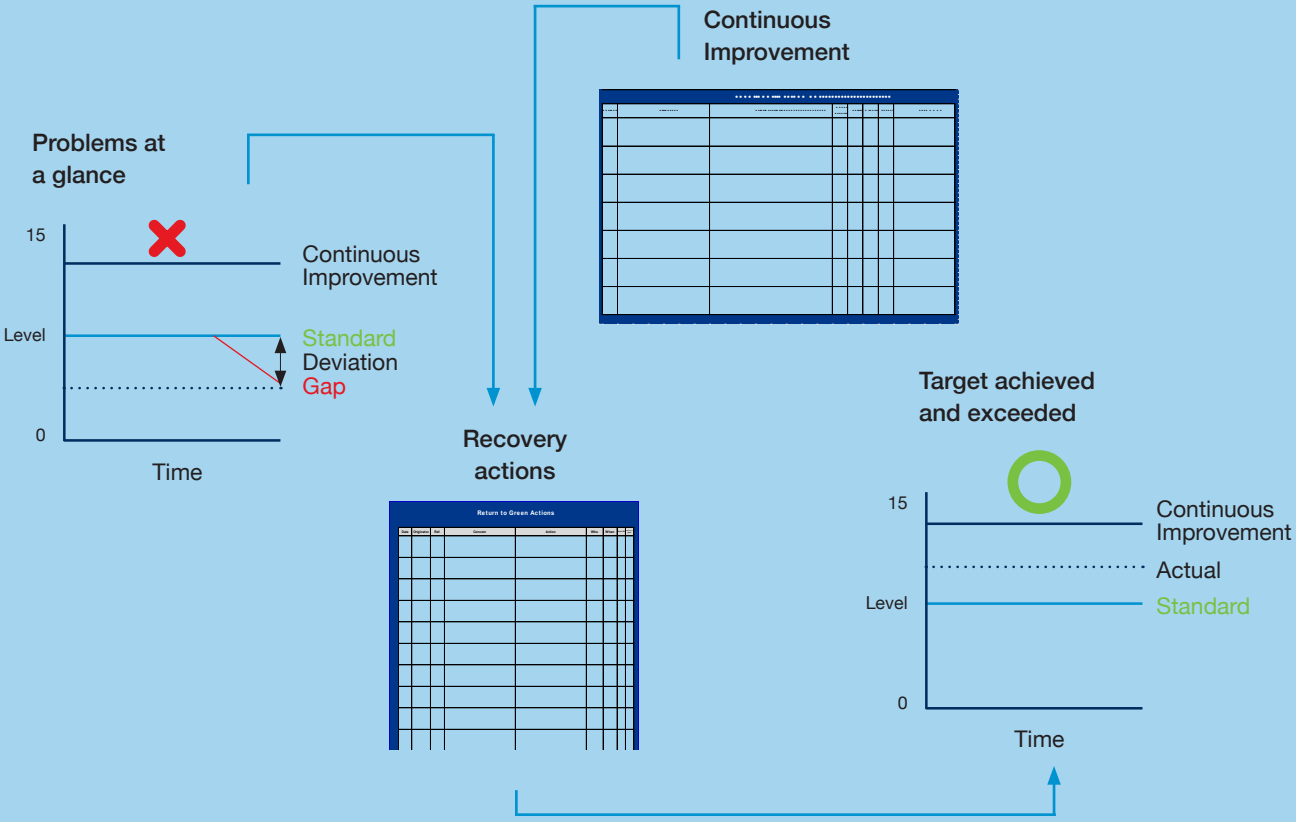
National Highways have benefited from the implementation of Lean Visual Management across Major Projects, therefore National Highways is taking the lead by introducing a minimum standard for Visual Performance Management for adoption across the business.

2

Visual Performance Management at a Glance

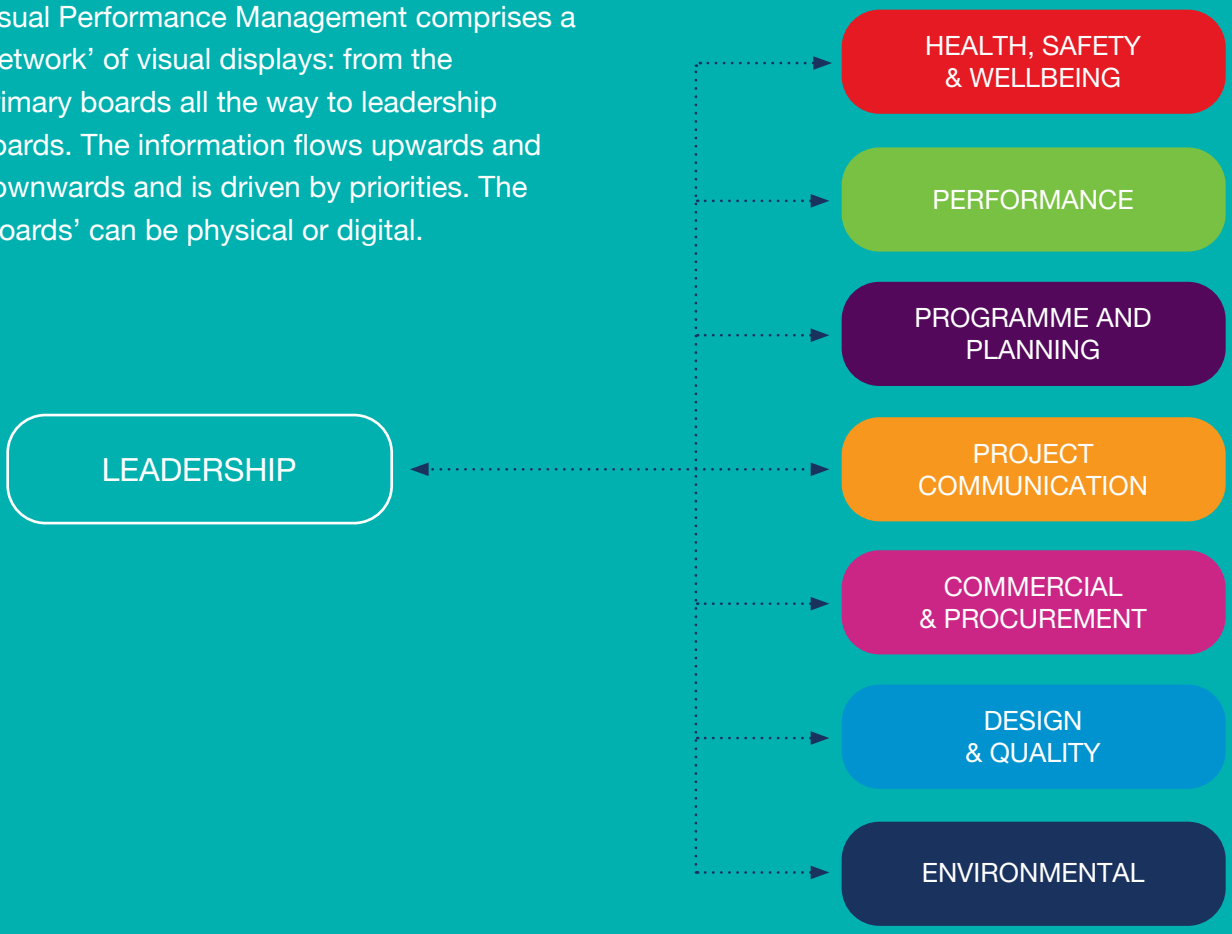
Visual Performance Management is a system that highlights problems ‘at a glance’. This drives actions which, together with continuous improvement, helps us to achieve set targets.

Primary Board



Boards Link

Visual Performance Management comprises a ‘network’ of visual displays: from the primary boards all the way to leadership boards. The information flows upwards and downwards and is driven by priorities. The ‘boards’ can be physical or digital.



Daily Activity Briefing

Visual Performance Management enables teams to view their performance and provide information on what they need to action and where they can improve.

3

Benefits of Visual Performance Management

Key benefits of Visual Performance Management are:

- The improved communication of key information, such as schedule, delivery and risks
- Helping everyone in the team to have the same picture
- Improving collaboration, promoting teamwork and improved morale
- A forum where all staff are able to raise any issues
- Establishing a team identity
- Promoting problem solving of key issues
- Measuring progress, identifying trends and analysing performance
- Focusing on, and establishing goals for Continuous Improvement.

Specifically, Visual Performance Management:

- Supports teamwork and team-coordination
- Provides structure and focus to team meetings
- Supports team coordination
- Simplifies progress reporting
- Supports the team to understand the customer's needs
- Aids process transparency
- Displays team related information to all team members
- Increases the transparency of team performance
- Facilitates better information flow between team members
- Enables more effective task and resource management
- Supports task planning and control
- Leads to improved task delivery by team members
- Helps with team resource allocation and levelling
- Enables more efficient use of team resources
- Supports task delegation, empowerment and employee autonomy.

4

What is Visual Performance Management

Visual Performance Management is the connection between people, performance and data. It is where information is provided in a simple format that is easy to understand and available in the workplace. It enables teams to view their performance and provide information on and provide information on where they can improve.

Fundamentally it involves doing three things:

- Using Visual Displays
- Having Daily Activity Briefings (DAB)
- Seeking Continuous Performance Improvement

This is achieved by measuring, monitoring and reviewing team performance.

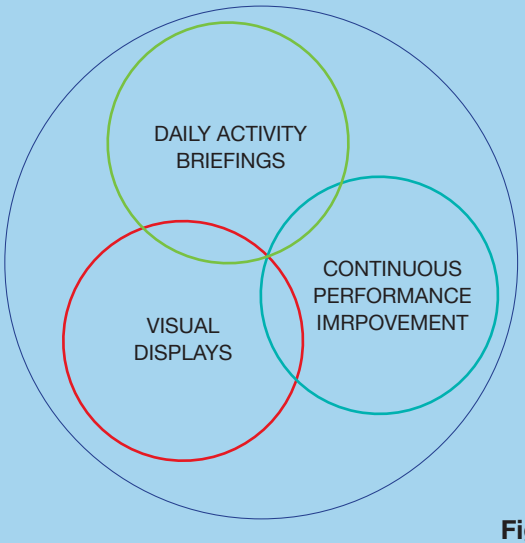


Fig. 1
Fundamentals of Visual Performance Management

5

Visual Displays

5.1 Physical Visual Performance Management

This is a descriptor of the physical tools that can be used to create visual boards - which can be created in-house or bespoke printed. There should be clear, accessible space for all visual displays, as close as possible to the place of work.

Equipment

Engagement and update of visual boards should be accessible and interactive. This is best achieved using white boards with pens along with magnets or sticky notes.

- Magnetic whiteboards (suggest 2m x 1.2m as minimum size)
- Organised into component areas using black tape or bespoke printed laminate templates.
- Container for:
  - Whiteboard pens and wipes
  - Black tape to design the boards
  - Magnetic RAG sticky notes and magnets
  - Sticky notes

Use of RAG rating in task management

Tasks, actions and general items within tracker boards should utilise a RAG (Red/ Amber/ Green) rating to give visual board users an instant understanding of status. Colour blindness may prevent clear communication and understanding of the RAG colours and therefore they should be used with the associated letter (R/A/G) or with an appropriate symbol as illustrated on page 11.

Space

It is essential that visual displays are located as close to the place of work as practically possible and where they can be seen by all, therefore promoting accessibility for all team members and effective engagement and behaviours at Daily Activity Briefings. Sufficient wall space for Visual Displays should be made whilst ensuring there is enough floor space in front of the displays to accommodate all those attending Daily Activity Briefings safely. Moveable boards on wheels can be an effective solution where wall space is insufficient / not available.

RAG status

A consistent way to visualise action progress by colour and shape:

- Issue which will impact budget, schedule or scope
- Issue which, without mitigation, will impact budget, schedule or scope
- Action planned or in progress, no issues identified
- Action complete

5.2 Digital Visual Performance Management

It is not always possible to have all team members located in one place and some teams have a desire to adopt a technological solution rather than the usual at site or office Visual Performance Management approach. The principles and steps of Visual Performance Management however must still be applied. A digital platform for visualising information and results ensures that people stay connected to the work and each other no matter what time it is or where they happen to be. Whenever someone needs information about the state of work or process, this is always available at a glance.

Digital platforms can be as simple as a combination between Excel and Teams, as well as bespoke, but the most common are off-the-shelf solutions such as:

- Aphex Planner
- Visilean
- Smartsheets
- BIM360 Plan
- Datascope
- Power BI (Fig. 2)

When creating or selecting a digital Visual Performance Management platform or tool the following functionality should be present:

- Must be accessible to all team members (consider what equipment the team requires to view, such as tablet devices on site or large screens in office).
- Must always show live or up to date data.
- Must contain easily interpreted information so it can be understood at all levels.
- Can be automatically updated from Digital Collaborative Planning system.

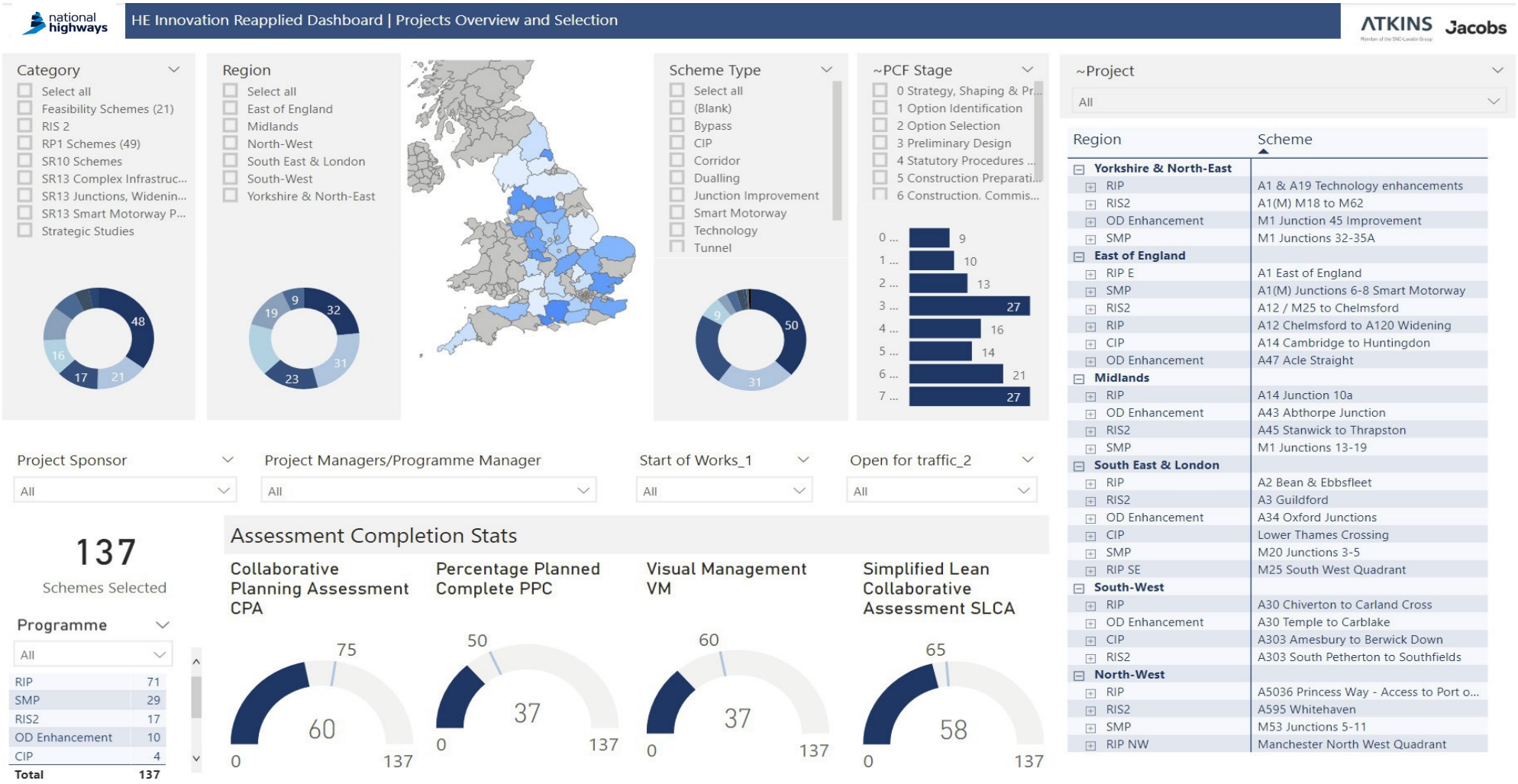


Fig. 2
Visual Performance Management Board Using Power BI


For you

5.3 Visual Display Examples

6

Daily Activity Briefing (DAB)

The benefits of visual displays are best achieved through Daily Activity Briefings. A standard project approach, attended by disciplined participants and facilitated robustly will deliver the most effective outcome.

6.1 Agenda

- Team update (all)
  - Last 24 hours / week progress
  - Next 24 hours / week progress
  - Obstacles / Issues
- Review performance measures (highlighting any concerns).
- Review performance improvement progress and team suggestions.

6.2 Behaviours and Standards

- Update visual displays before the briefing if you own them.
- Prepare topics to be raised beforehand.
- Be punctual and remain present for the duration of the briefing.
- Eliminate distractions: phones to silent and no food/drink.
- One voice at a time: allows others to be heard.
- Focus on the priorities (RAG: Reds & Ambers).
- Short discussion and to the point.
- Challenge ideas, not individuals.
- Capture clear actions with owners, using the boards.
- Do not alter displays that you do not own.

In the cases where Digital Performance Management is used, the location of each individual is also very important:

- Dedicated space such as:
  - Office
  - Dedicated room at home
- The environment should be:
  - Quiet
  - Free from distractions

6.3 Facilitating Daily Activity Briefing (DAB)

Effective DAB are enabled by robust facilitation by appropriate team members/ managers/Lean practitioners.

Facilitators should:

- Lead by example and adhere to the behaviours and standards of Daily Activity Briefings.
- Enforce the agenda to give structure to the discussion.
- Challenge ideas and raise questions.
- Control bold participants and encourage quiet ones.
- Ensure all actions are captured with suitable owners.
- Challenge / escalate overdue actions.
- Update stakeholders and management of key progress, escalation points and lessons learnt.

7

Performance Improvement

7.1 Improvement Suggestion Systems

Continuous Improvement activity focuses on process and performance improvement, looking at where you can add value and reduce waste. It prompts people to take the time to think about and review their work, at the same time helping with early problem identification. Continuous Improvement offers problem solving and work improvement opportunities using Lean tools. It supports the team in making intelligent decisions, based on the available information.

Four Folders

The 'Four Folder' approach aims to capture improvement suggestions generated by the team, facilitating team members to influence the way that they work and reduce waste. Suggestions are submitted by team members at any time, reviewed in the Daily Activity Briefings to confirm whether the improvement can be undertaken by a member of the team, or 'too big' and escalated, or not feasible and discounted. Completed improvements are moved into the final folder and shared with other teams as lessons learnt.

Four Folders System

Fig. 3
Example Improvement Suggestion System

Identify Waste

Waste is any product, process or service which does not add value to the ultimate customer/ client. In Lean applications, National Highways identifies eight types of waste:

- Transportation (e.g. moving aggregate from depot to site).
- Inventory (stock) excess (e.g. raw material, work in progress including design work and finished work not yet required and float in the programme, unused plant).
- Motion excess (e.g. excessive haulage roads on site).
- Waiting time (e.g. excavating plant waiting for spoil removal vehicles to become available).
- Over production/ construction (e.g. making more than the customer/ client wants).
- Over processing and extra process steps (e.g. unnecessarily high quality paint finish).
- Defects/ rejects (e.g. fixing defects or scrap).
- Skills misapplication (e.g. appointing inappropriate people to business improvement roles).

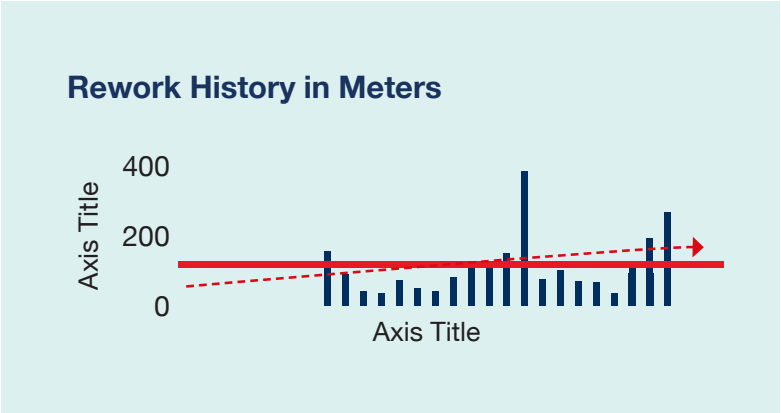
TIMWOODS Waste Classification

Transportation
Inventory
Motion
Waiting
Over-production
Over-processing
Defects
Skills

7.2 Trend Analysis

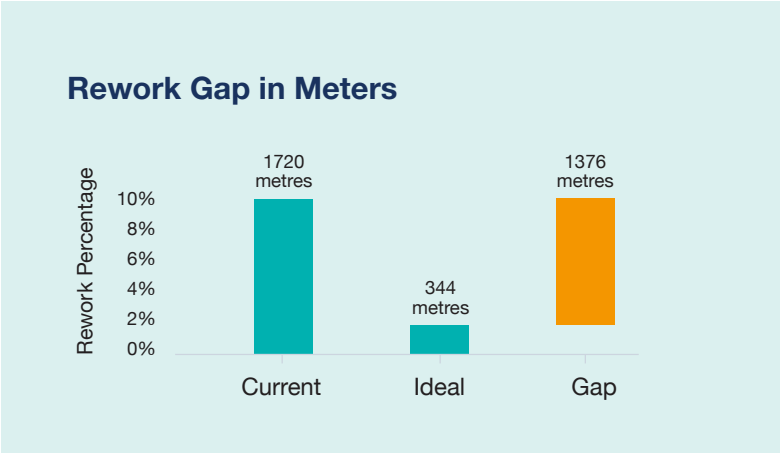
By visually highlighting the trends (improvements/ deteriorations) in the data, gathered intelligence can be formed to steer Continuous Improvement activity with the team providing suggestions for improvements on the project.

Continuous Improvement activity must have its roots/ initial source in the performance analysis. Here are a few examples of how to help the team understand whether improvement activity is needed. They can also help detect special causes of variation and ensure better process stability and predictability.



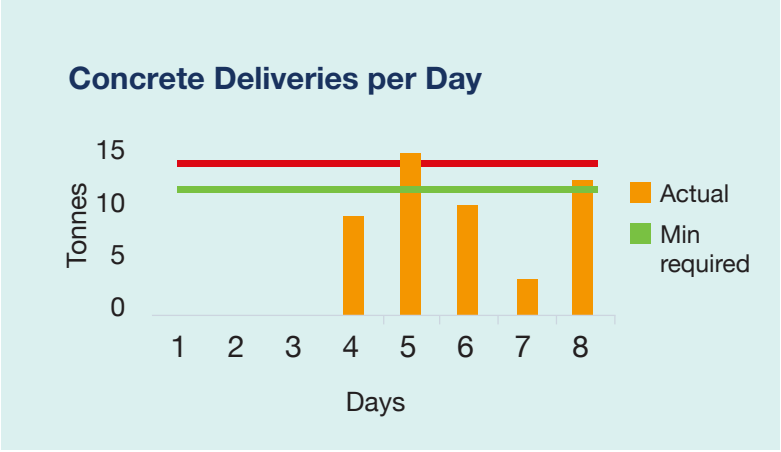
Bar Chart With Target and Trend

Ideal for displaying the trend over a period of time and pin-point where the problems are and improvements need making.



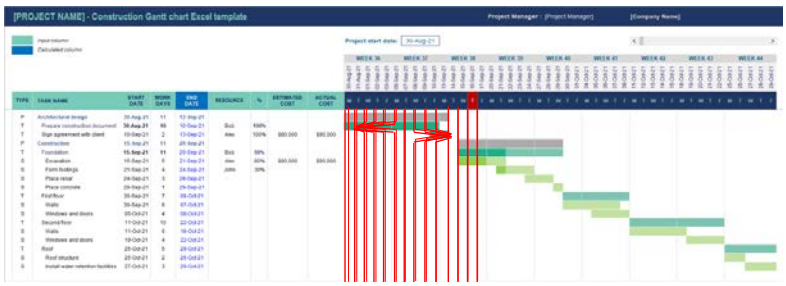
Bar Chart for Gap Visualisation

Ideal for displaying the gap in performance. This can be used at the stage when we set the targets for improvements.



Bar Chart With Minimum and Maximum

Ideal for identifying what the problem is. Can be used at the beginning of an investigation ('Discovery' phase), where the data needs stratification.



Gantt Chart With Status Line

Ideal for displaying the progress (both leading and lagging problems are identified here).

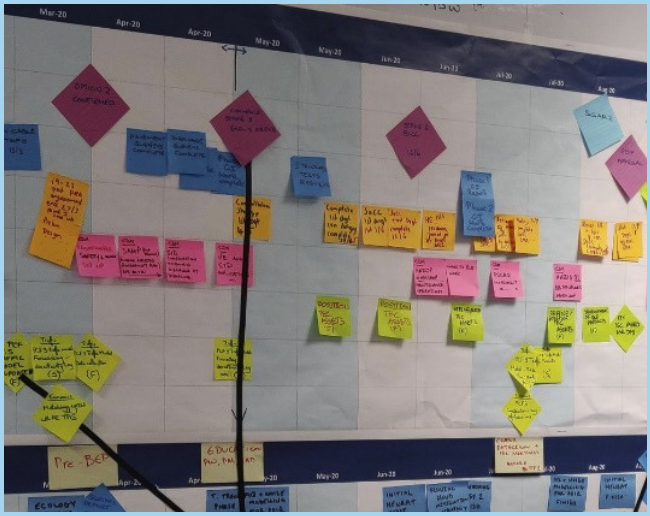
8

Visual Displays

This standard identifies various types of Visual Display, referred to as components, that can be found in projects at various stages of their life cycle. Effective Visual Displays must be resourced sufficiently and physically located in the appropriate spaces to enable collaborative use by members of the team.

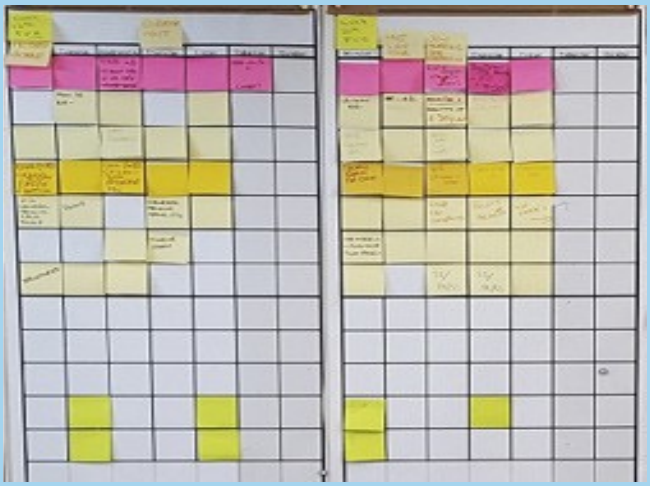
Visual Displays can range from single display boards for small teams to full mission rooms for significant projects in the construction phase.

8.1 Required Components



Visual Programme & Milestones (Master)

When delivering a project a simple visual representation is to use a High-level Plan (a product of Lean Collaborative Planning) that highlights key activities and milestones within the project stage. This visual gives a holistic view of timelines within which the project outputs must be delivered to achieve the desired outcomes.



Weekly/ Daily Work Plans/ Visual Task Trackers (i.e. Kanban)

A rolling detailed day-by-day plan (for construction phase) or week-by-week (for optioneering and design phases). It should cover at least 2 weeks and should never be more than a week out of date. The work plan enables review of the team's current workload and dependencies for completion, improving reliability and reducing abortive work.

Visual Programme (Look ahead)

Look-ahead provides a detailed plan for the next 12 weeks including milestones and critical tasks which help identify workload priorities and dependencies to enable successful completion of tasks (this is part of the Lean Collaborative Planning process). It will most likely be a product (particularly within the Construction Phase) created using sticky notes or magnets and found in a dedicated space for Lean Collaborative Planning. For projects within optioneering or design phases the look-ahead plan may be summarised in a digital format. Visualisation of the look-ahead plan can help aid early identification of problems giving scope to plan and prepare to avoid negative impacts to the delivery of a project.

Performance and Productivity Metrics

Productivity measures how efficiently production inputs, such as labour, plant and material are being used to produce a given level of output. Productivity is a key source of competitiveness and the basic statistical information for industry comparisons and organisations' performance assessments.

- Labour content is the dominant factor of overall unit productivity in construction whereas automation effectiveness is much more significant in manufacturing. Therefore improving labour effectiveness and construction processes will have a direct impact on construction productivity.
- Percent of Plan Complete (PPC) will be measured on a weekly basis at each production cell. As per the minimum standard for Collaborative Planning, PPC on critical path items will be highlighted both at the production meeting and captured on the Visual Management System.
- Milestones (as agreed at the outset of the phase) will be tracked - no changes to the milestones in phase are allowed, (even if scope changes), to allow a true measurement against the project start baseline. Milestones will be 'as determined in the project planning guidance'.

Fig. 5 Example of PPC Tracker

- The highest value items, as per the Work Breakdown Structure (WBS) Level 2/3, will be reviewed monthly to ensure that highest value items are being tracked. Each section of a project will track weekly productivity against its highest value items. Initially all projects will be expected to measure site establishment and earthworks productivity. Earthwork represents the largest value of works in the majority of RIP projects. Target levels of productivity will be based upon the planned work in the accepted programme.
- Where measures exist for assessing the carbon footprint of the highest value items, these should be recorded, together with any reductions made because of improved productivity and reported on the Environment visual management board.
- Productivity metrics include:
  - Overall PPC
  - Detail PPC
  - Critical Path activity
  - PPC
  - Cost Performance Management
  - Performance Indicators (PI)
  - Milestone S-curves
  - Performance Excellence (Improvement ideas generated, in process)
  - Productivity (unit per time)

Customer Priorities / Voice of the Customer

Customers can be the end user of the project (i.e. drivers, local community etc.) or the recipient of your particular work (e.g. the construction team are the customer of those generating the design). Understanding customer concerns and priorities enables the output of a team to be achieved 'right first time' thus maximising value.

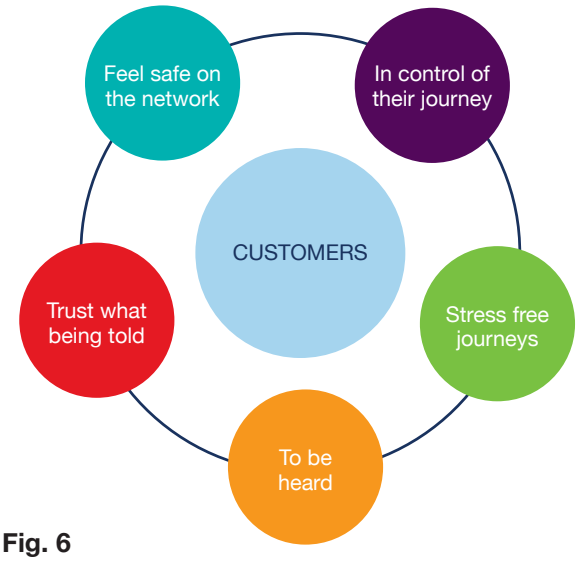


Fig. 6
Example of Customer Concerns and Priorities

Incomplete Tasks and Root Causes

The measurement of task completion should occur within Production Control meetings. Through continuous measurement we can identify trends which can enable Continuous Improvement activities. We can continuously improve if we look at:

- What has been achieved/ tasks completed since the last meeting.
- Completion dates against schedule to track progress.
- The reasons where activities have been completed ahead of schedule and late/ non-completion.

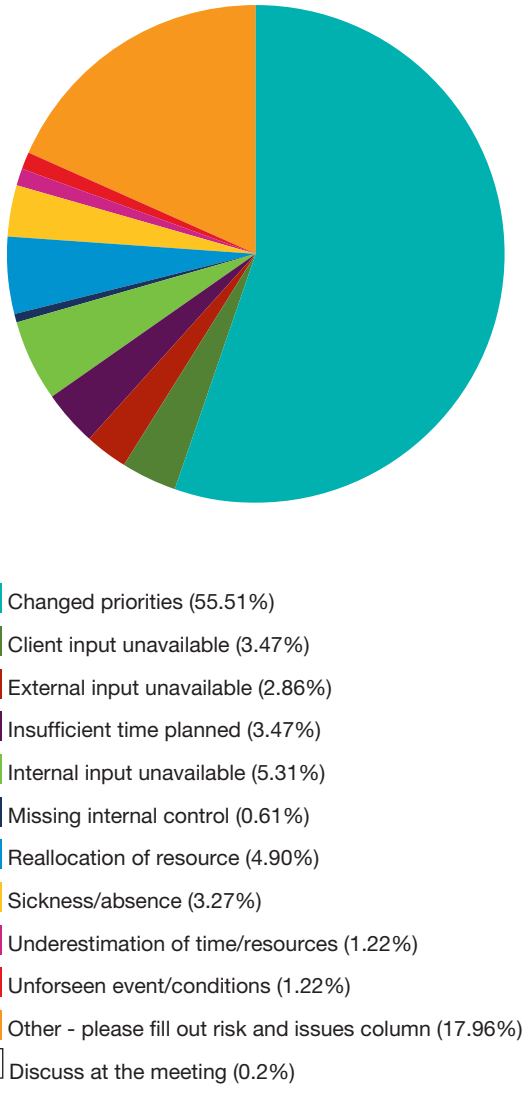


Fig. 7 Pie Chart of Root Causes

Lead and Lag Measures

Tracking of project leading measures highlights enablers which can be used to influence and improve activities. Identifying lagging past performance measures, enables identification of areas with highest value and greatest benefit to improve.

- H&S Leading measures = EWs, HIPOS
- Examples of measures and where this has been deployed within projects required. Specifically what do we refer to in design and construction as lead and lag measures.
- Risks / Escalation Log (threats to project delivery) Escalate the priorities and areas of concern (RAG Red and Ambers) that have the potential to affect project delivery.

Alerts / News (including Key Lessons)

Developments and changes within the project that have an influence on delivery should be communicated efficiently, reaching all of the intended audience. Including alerts in Visual Displays ensures this information is made available to teams on a regular basis.

Potential Notice Topics

- Training
- Engagement event
- Leadership priorities
- Site Visits schedule
- Tools and Techniques
- Latest learning and improvements
- Successes & Key Benefits delivered
- Outputs from data analytics

Risks					
Date	Risk	Mitigation	Who	When	Status
					✗

Key Decisions (linked to Risks)

The record and visual communication of key decisions both in design and construction ensures that team members are rapidly aware of the direction and guidance to work. There is particular benefit in the handover between teams / shifts. This reduces the risk of delay due to seeking clarification on the status of key decisions.

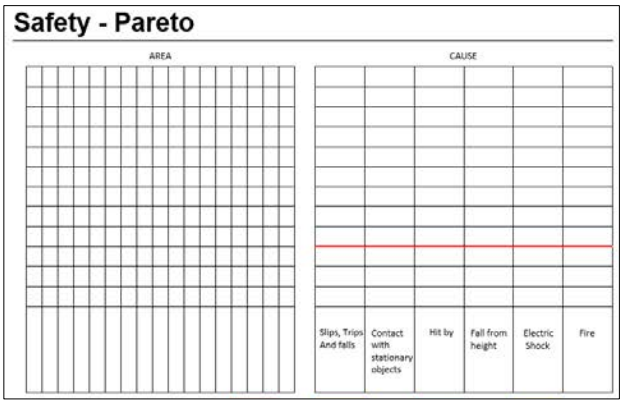
3C						
Date	Concerns	Cause	Countermeasure	Who	When	Status
						✓

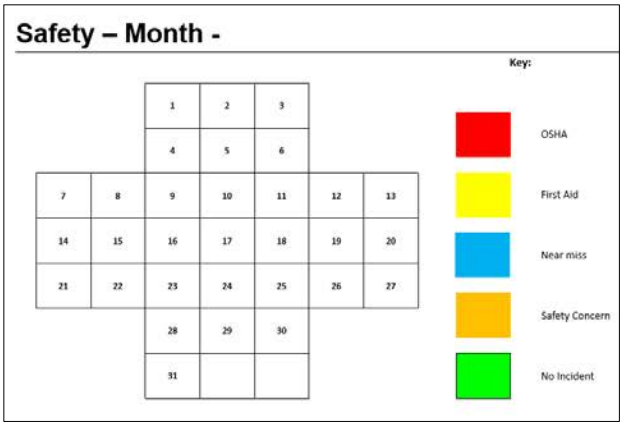
Concerns

Throughout the Lean Collaborative Planning approach the capture of concerns against performance and delivery should occur. Effective management of countermeasures/ actions can then occur. Trends in concerns can be used to inform the prioritisation of problem solving and Continuous Improvement efforts.

Wellbeing and Safety Notices

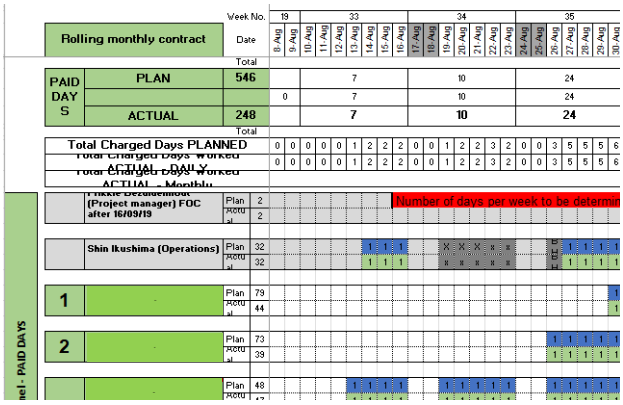
- Providing the team with an area to highlight key messages in respect of Health Safety & Wellbeing on the project and look to improve individual and team working conditions, building engagement and morale.
- The safety area should include Safety Performance Tracking and Actions against non-conformities.

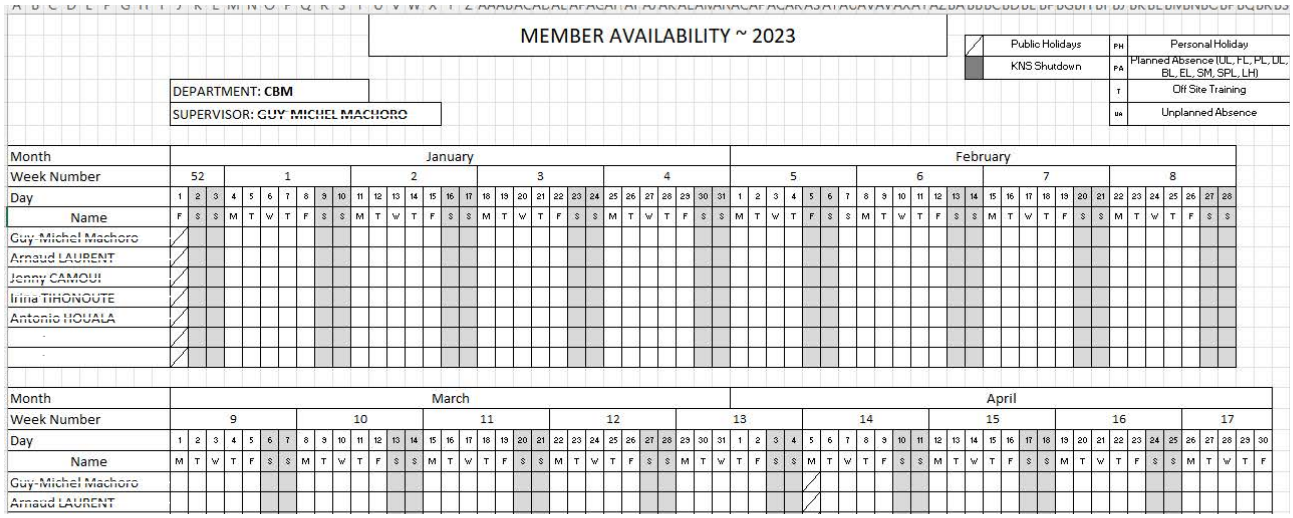




Shift Schedules / Team holiday charts

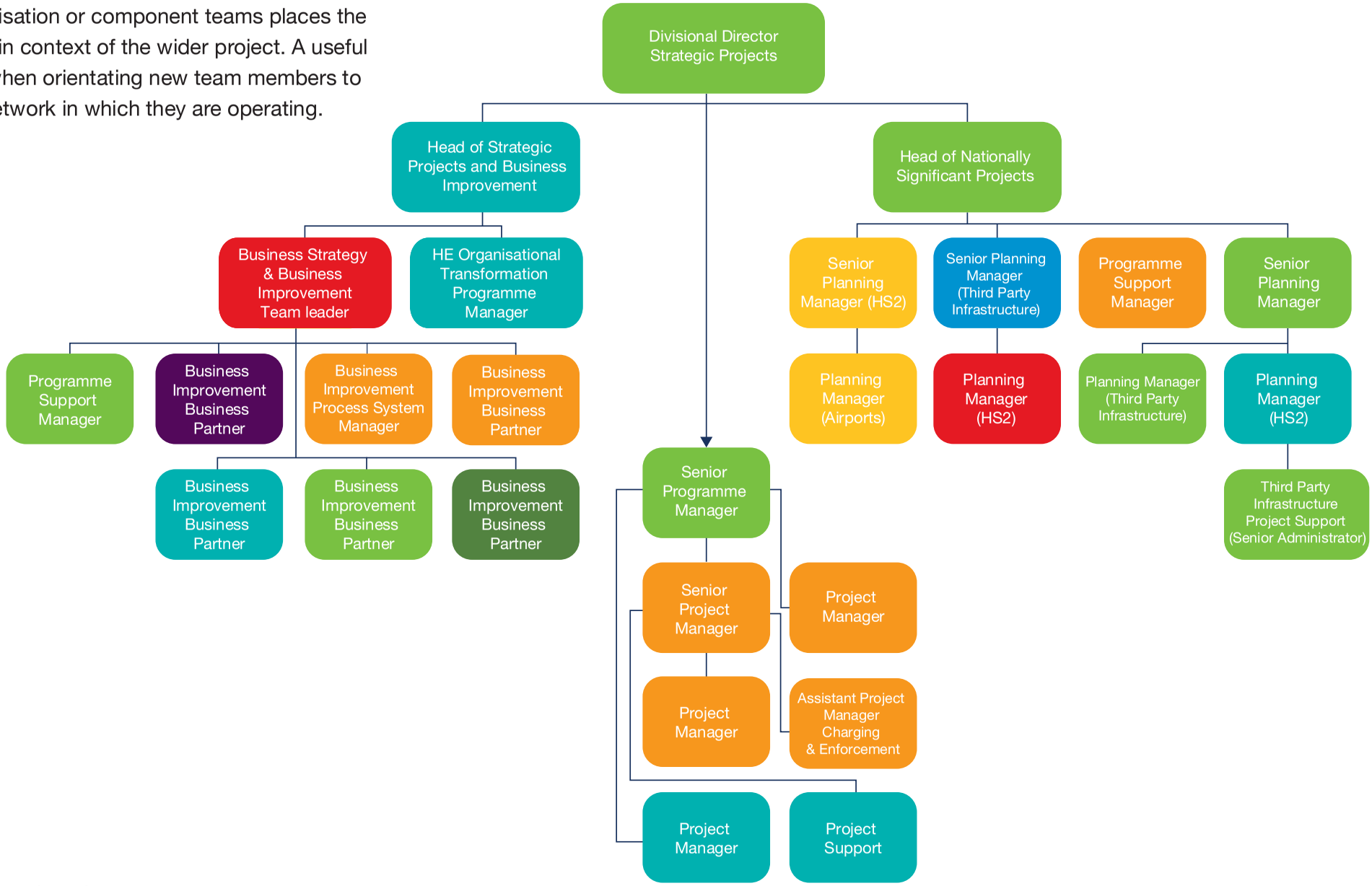
Having a visual tool that captures the whole team's availability, helps the team to see the complete picture when planning to improve its coordination.





Organisation charts

Visual representation of the project organisation or component teams places the team in context of the wider project. A useful tool when orientating new team members to the network in which they are operating.



8.2 Implementation

Not all components in this standard are required at every stage of a project. Figure 8 identifies the degree of implementation by project phase using the following categories:

- Must (the visual display component is essential to enabling Daily Activity Briefings and performance improvement).
- Should (the visual component is expected but not essential).
- Could (consider whether the visual component can be administered, will add value to Daily Activity Briefings and performance improvement activity).

Visual Display Structure

National Highways recognises that the supply chain may have developed standard designs, layouts and structure to their visual displays; this standard does not seek to state a specific layout requirement. Where projects do not have mature visual displays they should consider the SCALE structure for grouping of visual display components. SCALE utilises action titles to describe how the visuals are used within Daily Activity Briefings:

Share - Provide a quick project overview and key information, such as:

- Programme
- Processes
- Performance Metrics

Control - An interactive section that drives delivery, containing:

- Production Metrics (PPC)
- Weekly Work Plans

Action - An interactive section that captures actions and containing:

- 3Cs (Concern, Cause, Countermeasure)
- Risks and Escalation Log

Look After - Devoted to people, containing:

- Key successes, project news and alerts
- Safety & well-being messages
- Organisation charts
- Calendars, shift plans and holiday charts

Evolve - Devoted to Continuous Improvement, containing:

- Improvement ideas
- 'Four Folders'

Visual Display Component	Optioneering Phase	Design Phase	Construction Phase
Visual Programme (High-level & Lookahead Plan)	MUST	MUST	MUST
Weekly/daily work plans	SHOULD	SHOULD	MUST
Performance & Productivity Metrics (KPIs)	MUST	MUST	MUST
Customer Priorities	SHOULD	SHOULD	SHOULD
Incomplete Tasks & Root Causes	MUST	MUST	MUST
Lead & Lag Measures	SHOULD	SHOULD	MUST
Risk/Escalation Log	COULD	MUST	MUST
Key Decisions	MUST	MUST	MUST
Concerns (3Cs)	MUST	MUST	MUST
Improvement Ideas	MUST	MUST	MUST
Alerts/News	MUST	MUST	MUST
Wellbeing & Safety Notices	MUST	MUST	MUST
Shift Schedules Team Holiday Charts	COULD	COULD	MUST
Organisation charts	SHOULD	SHOULD	SHOULD


RE-DO
Planned
DIRECT
Growth

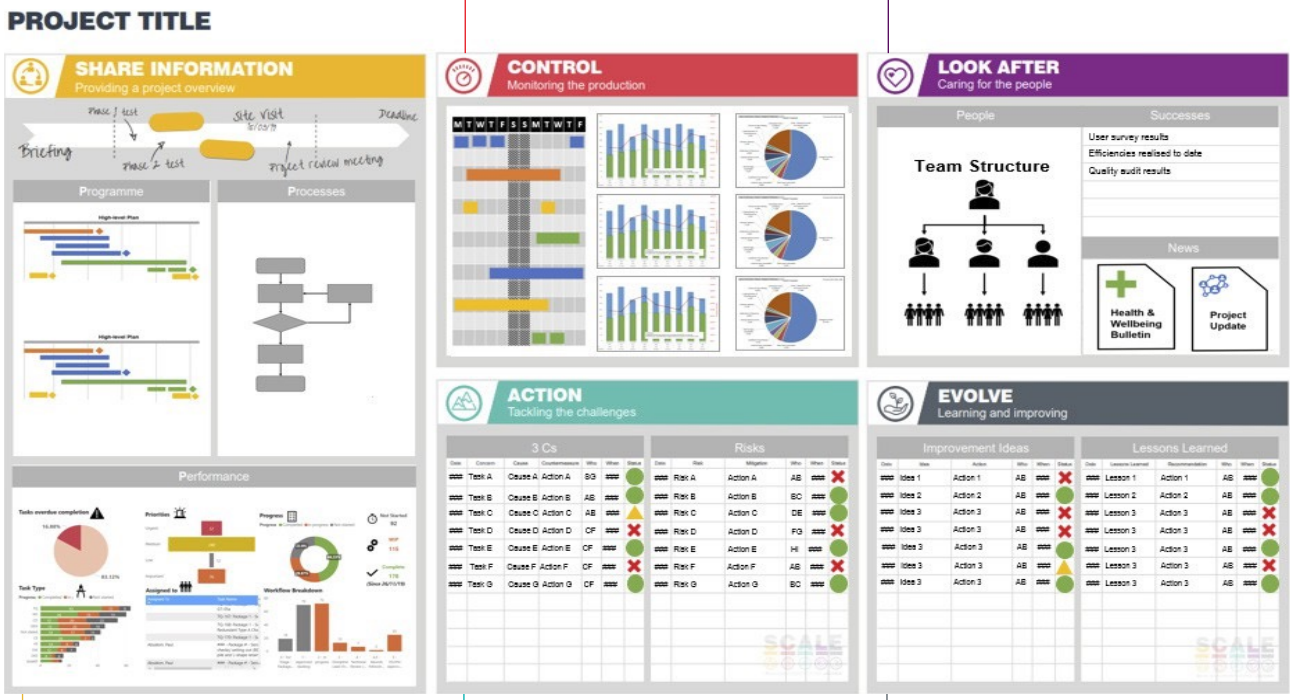
Example Visual Display Board

Control the Work

- Plan Percent Complete (PPC)
- Reasons for non-completion
- Lead/Lag measures

Look Ater Your People

- Project Notices
- Safety & Wellbeing Alerts
- Organisation Charts
- Successes



Understanding Programme, Process & Performance

- Key Milestones
- High-level Plans
- Processes
- KPIs

Act on Information

- 3Cs Board (Concern, Cause, Countermeasure)
- Risk/Escalation Log

Improve Performance

- Improvement Ideas
- Continuous Improvement Actions

8.3 Mission Rooms and Visual Performance Management

Mission Rooms

The primary purpose of a Mission Room (also known as War Room, Control Room Big Room or Obeya) is to create a holistic view of a project status. It should be a collection of Visual Displays telling a story about the project as whole, which as a result: achieves transparency in project performance, enables engagement across tiers of the project hierarchy and enables effective decision making.

The Mission Room acts as the common information environment used by both those doing the work (design/ construction teams) and those supporting (management), creating one version of the truth. This transparency of information makes Mission Rooms the ideal place for project briefings, decision making and the sharing of Continuous Improvement ideas.

Mission Rooms can encompass all of the visual display components listed in this standard, and can be organised by discipline, by delivery workstream.

Mission rooms can be enhanced with digital tools and displays to visualise content such as programmes, digital models and live asset data from site.

Design the System

It is best to take a considered approach to the establishment of Mission Rooms and Visual Performance Management on a project. Key steps are:

1. Confirm key performance/ result areas the project intends to measure and the key performance indicators within that area.

2. Establish visual display components that align to key performance areas and map out the practical distribution of visual displays across disciplines and teams.

3. Establish project wide Visual Displays, which can be in the form of a Mission Room.

1

Key Performance Indicators

Confirm key areas of performance and the Key Performance Indicators (KPIs) to be measured.

2

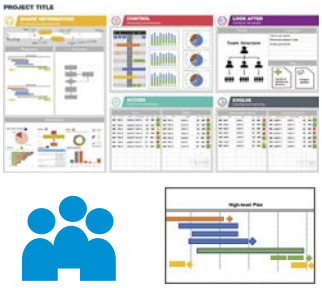
Visual Displays at Team/ Discipline Level

Establish visual display components. Map out the number of, location and ownership of Visual Displays in the project.

3

Mission Room

Establish Mission Room (encompassing collaborative mapping products where possible).



4

External Facing Visuals

Communicate select visuals beyond the project team.

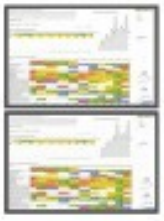


Fig. 9
Visual Performance Management Process

Primary Boards

For Visual Management to work there needs to be consistency in how information is displayed and the number of key reportable areas. It is important that all workstreams are given equal opportunity to visualise and use displays relevant to their work.

Projects may find organising visual displays as primary boards, each feeding into a leadership board, will work as an effective mechanism. The recommended hierarchy is shown in figure 10. Teams can add secondary boards as required for the project.

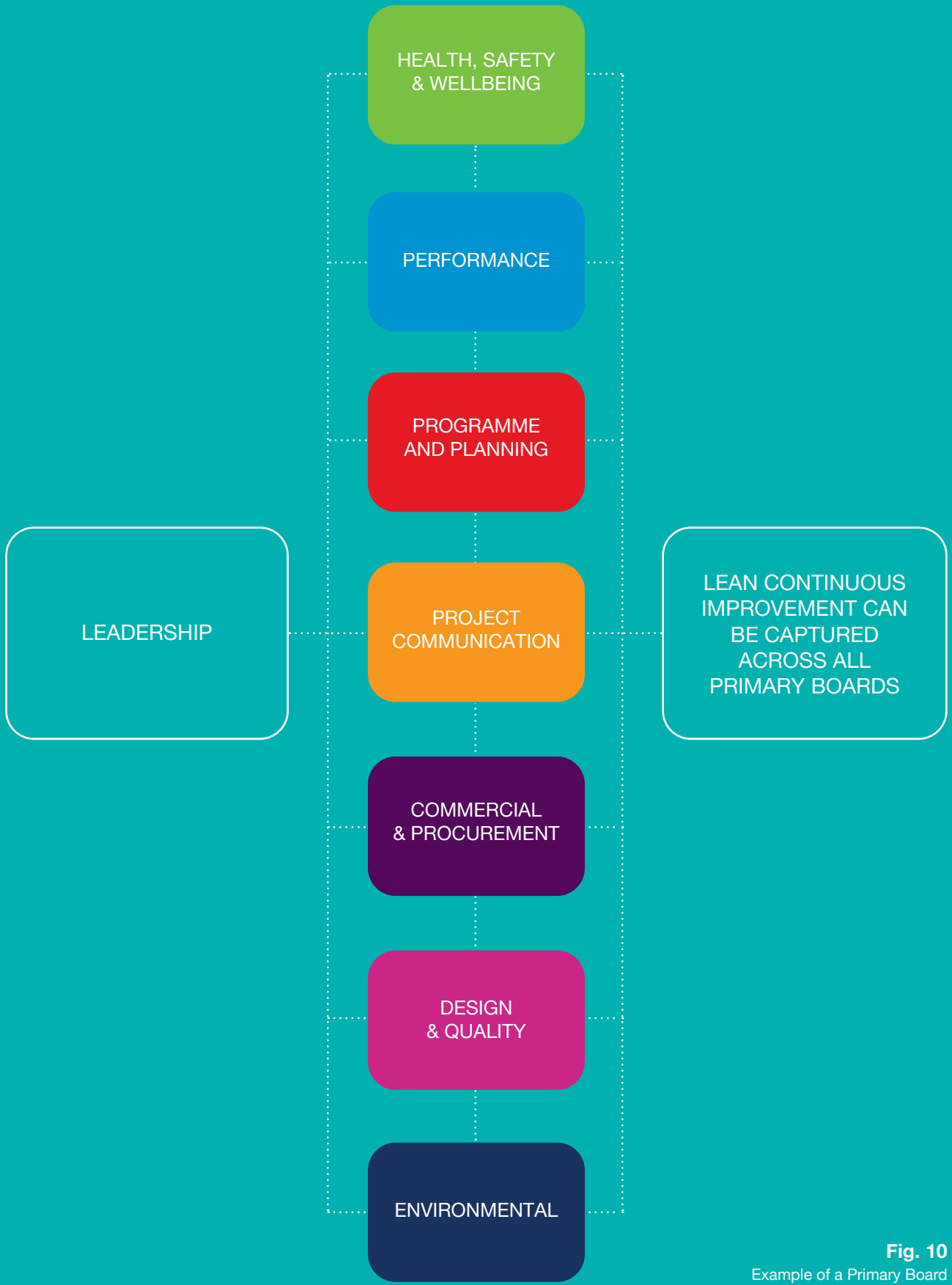


Fig. 10
Example of a Primary Board feeding into an overarching leadership board

9

Visual Controls

Visual Controls are a quick and easy method to convey when a specific action is required and can highlight non-conforming conditions at a glance so that mistakes can be put right.

Visual Controls support safe working by considering how people work and interact within their working environment and then eliminating, reducing, isolated or controlling the Health and Safety risks ('ERIC' hierarchy).

Visual Control is a tool that is used to guide process outcomes and is realised through the four basic types of visual tools; visual indicators, visual signs and signals, visual controls and visual guarantees.

We use Visual Controls across construction sites, such as using signage to indicate dangerous or hazardous situations, colour coding electrical wiring and, visual indicators such as designating and communicating floor space allocated for equipment and machinery.

Visual Controls facilitate quick understanding, helping to prevent errors and accidents such as clearly marked walkways or parking areas or signage to identify sites where PPE is mandatory.

Visual Controls can be used to maximise safety provisions when looking at improving production processes and productivity outputs.

Visual Controls limit the number of conceivable mistakes, providing a guided approach, which is informative, providing answers without the need to ask further questions.

Visual Controls can help support delivery by highlighting when inventory levels are low and need replenishing.

The Visual Guarantee (error proofing) approach maximises visual control to prevent mistakes from being made.

Visual Controls can be incorporated in design using Visual Guarantees (error proofing) so that only the correct parts and installation position is possible, working in prevention and avoiding waste in the process. This is achieved by colour, part shapes and sizes.

The Andon system is a visual control system that has been used in National Highways construction projects to provide real-time project status indicators for reactive interventions and improvements. Andon helps capture and document reasons for defects in processes.

5s is a Lean tool aimed at optimising the workplace environment, providing visual order so that it works to visually enhance performance in an efficient manner, whilst maintaining a safe working environment. Adding a standardised approach to Visual Control helps provide clear understanding of what is required, enabling planning and leads to greater adherence to plans, enabling processes to be repeated, visually analysing performance to look at improving accuracy, quality and reducing costs.

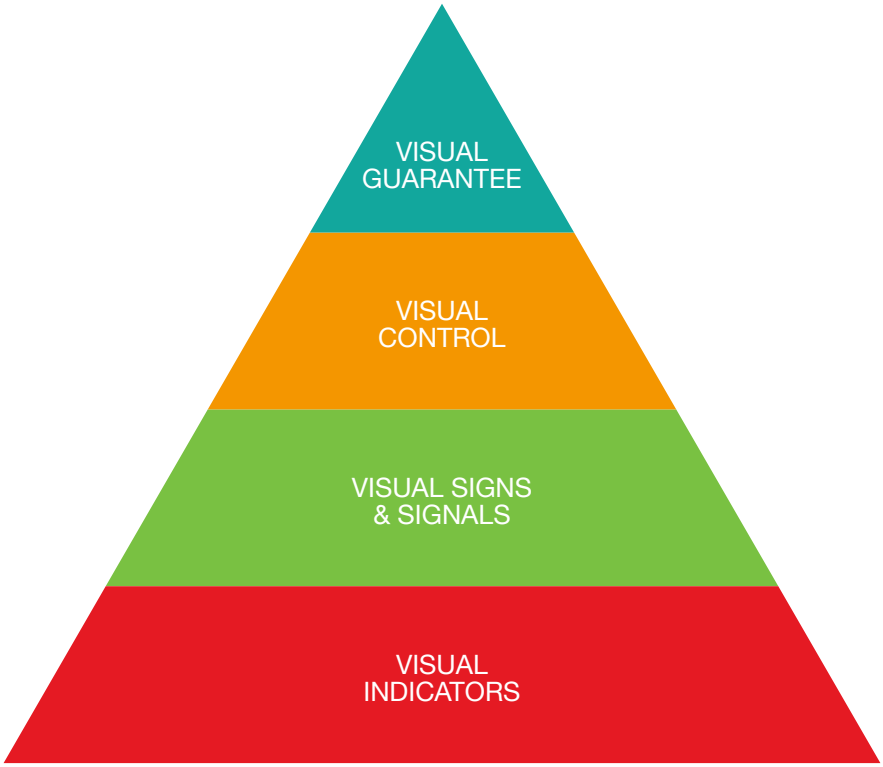
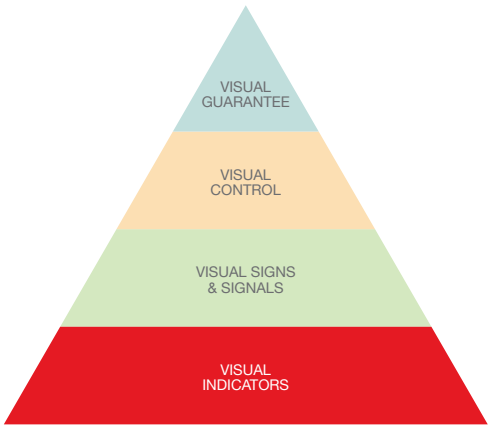
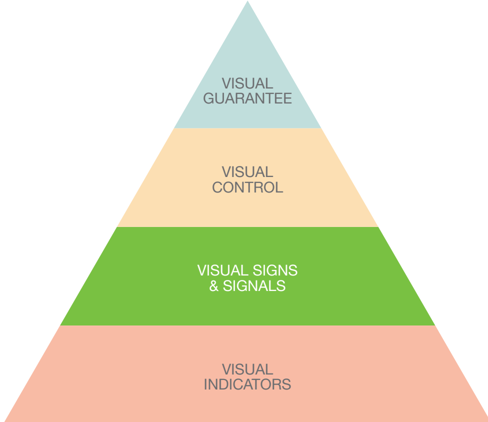


Fig. 11
Visual Controls
Usage Pyramid

Examples of Visual Control




VISUAL
GUARANTEE
VISUAL
CONTROL
VISUAL SIGNS
& SIGNALS
VISUAL
INDICATORS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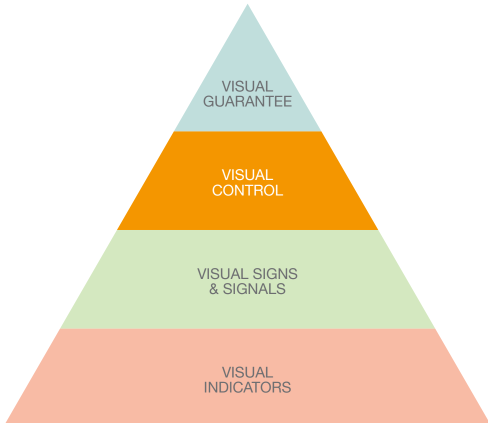
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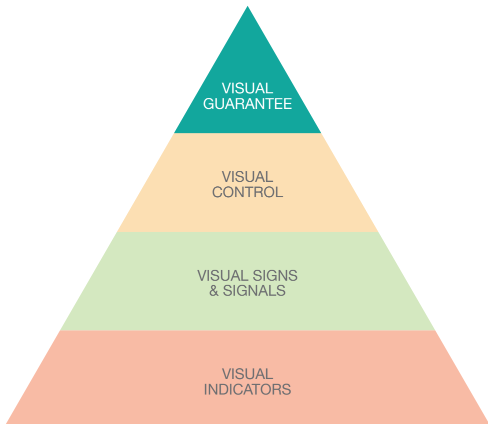
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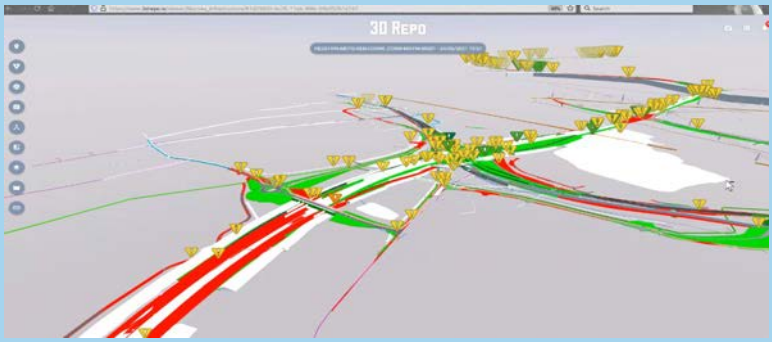
VISUAL SIGNS
& SIGNALS
VISUAL
INDICATORS


37.93

9.1 Digital Images

Example of ‘Synchro’

By using 4D modelling specialised software a three-dimensional image can be portrayed with project related information, allowing the project team to better visualise and plan the sequencing of the project’s construction aiding “right first time” delivery.



Example of ‘3D Repo’ Program

3D Repo benefits from full recording and dialogue capabilities, allowing every party in a project to interact in real-time.

Example of ‘Single View Of the Network’

Single View of the Network (SVN) used in Operations collects data from numerous sources to provide information on the Strategic Road Network in one place and in real-time.

Example of ‘Studio Max’ Program

Studio Max supports a huge number of tools that are easily available for modeling, it is user-friendly in modeling and complex animation, it also supports powerful and multiple tools for animation, as well as supporting the Material Editor that allows the user to create and edit materials and maps in their scenes.

9.2 Visual Order (5S)

Sort - Identify essentials making them readily available and surplus/non-essential items either disposed of or set aside.

Set - Arranging items so that those used often are easily located and in easy reach and those that are rarely used are moved to the back.

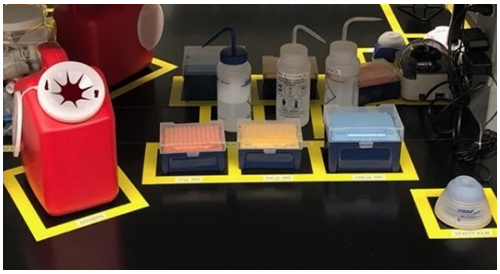
Shine - General housekeeping layout, where items are placed to cause minimal risk of injury, removing trip hazards, looking at manual handling arrangements and warnings.

Standardise - Develop standard processes that can be easily complied with by those who have access to the items, incorporating visual markers or shadow boards as a visual indicator.

Sustain - Don't slip back into old ways, maintain the new improved ways of working continuously improving and adapting to changes as required

5S Examples

Shadow Board

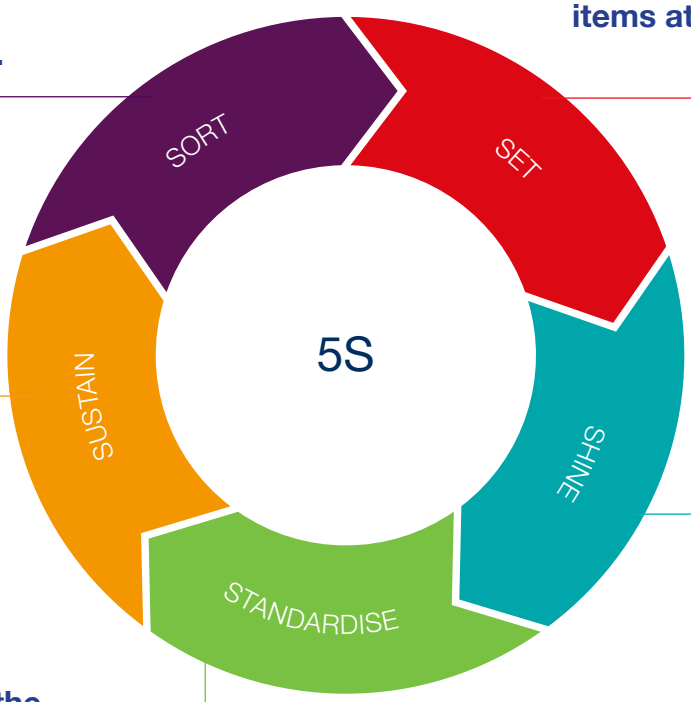


Problem at a Glance

Home Position

1. Sort
Dedicate a sorting area. Remove items that should not be there.

2. Set
Organise the area so that things are easy to find, the most frequently used items at eye height and the easiest to reach.



5. Sustain
Introduce a simple and quick audit for the new area.

3. Shine
Give the area a good clean. Set a standard you are proud of, and you want to maintain.

4. Standardise
Use visual management tools to achieve 'problem-at-a-glance'.

Fig. 11
Visual Order
5S Diagram

10

Visual Performance Management and Lean Collaborative Planning

While Visual Performance Management can be used as a standalone technique, the benefits it delivers can be enhanced by the Collaborative Planning System. The figure below shows how these two techniques complement one another.

At its core, the Lean Collaborative Planning approach is focused on planning the work. Similarly, Visual Performance Management is focused on putting people to work.

The quality of work assignments distributed via Daily Activity Briefings can be enhanced through the use of Production Control techniques by ensuring that all inputs, controls and resources required to successfully complete assignments are in place prior to stating work. In addition, the Continuous Improvement activity spans both techniques as they both work towards performance and process improvements. Together, they provide teams with a set of tools with which to add value and reduce waste.

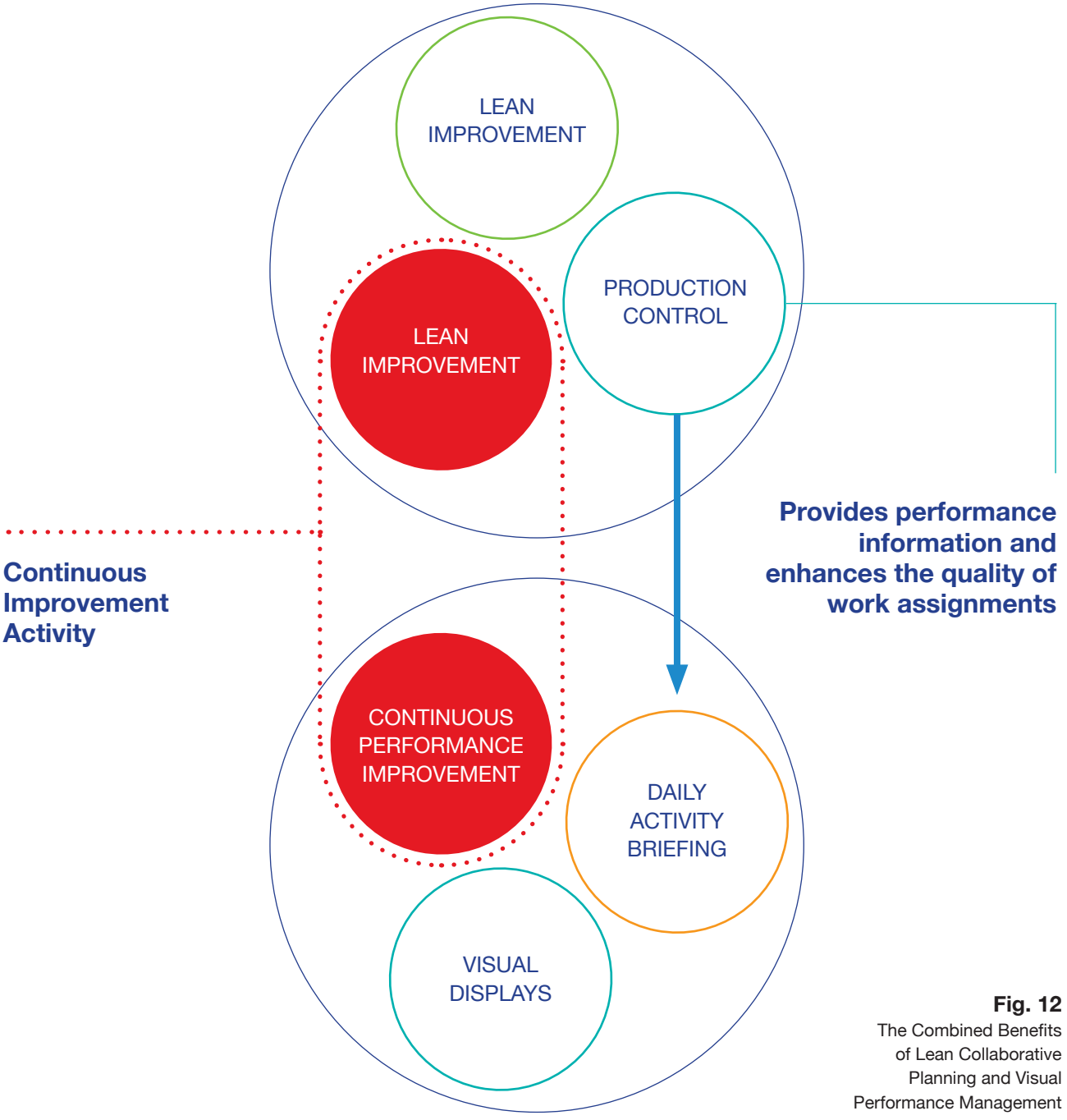


Fig. 12
The Combined Benefits of Lean Collaborative Planning and Visual Performance Management

11

Visual Performance Management Assessment & Tool

Visual Performance Management can be applied anywhere where teams work together to undertake activities. National Highways has found Lean Visual Management to be highly beneficial in successful project delivery and therefore developed an assessment tool to ensure Visual Performance Management is adopted and highlights best practice across its supply chain. This assessment should be carried out by experienced personnel who are familiar with the principles of Visual Performance Management together with the National Highways Lean Team, who will support assessors to ensure scoring is consistent across projects. This tool can be used to review and measure the quality of your Visual Management performance cell and ensure it is still working for the team.

The frequency of the assessments should be every 6 months.

The four areas assessed are:

1. Standard format
2. Governance
3. Meeting behaviour
4. Leadership

The assessor will briefly note areas where there may be 'opportunity to improve' and elements of 'good practice' to share against the areas as necessary. There is no need to retain any written evidence. The assessment should take no more than two hours, including observation, scoring and submission. The initial assessment must take place once Visual Performance Management is established. Reviews should be carried out at intervals of no more than three months and should be focussed on areas of change i.e. to discuss by exception.

11.1 Scoring

Each section is scored based upon the assessor/s view of the maturity of Lean Visual Performance Management on the project. The overall maturity of Lean Visual Performance Management will be the average of the five section scores.

The assessment focuses on five areas, of which the scores attract an equal weighting (scoring between levels 0-4). A minimum attainment of level 3 is expected for all projects.

Level Classification and Expectation	Typical Activities and Behaviours
Level 4 – Excellent continuous improvement culture adopted for whole project delivering significant benefits with all team members/suppliers/stakeholders engaged.	All team members adopt all aspects of the Lean Collaborative Planning (LCP) system and proactively undertake Continuous Improvement activities. Evidence of an improved system being developed as the project progresses.
Level 3 – Good practice and performance improvement evident in all key and many other areas.	All senior and most other team members support Lean Collaborative Planning and undertake Continuous Improvement activities, good practice is shared with wider highways community. Benefits are tracked and high-performance levels are evident in key areas.
Level 2 – Developing and delivering in specific areas.	Processes are widely adopted by most team members, Continuous Improvement visible in specific areas and performance is routinely tracked to identify areas for action. Benefits are being realised.
Level 1 – Initial fragmented activity.	Priority change.
Level 0 – Process not started and no systems in place.	There is little evidence of the process taking place and where implemented activity is sporadic, benefits are not recorded and lack focus.

11.2 How the Assessment Will be Used

Project Team - This assessment shall be supported by experienced personnel from the project team who are familiar with the principles of Visual Performance Management together with the National Highways Project Manager. The assessment will be conducted by an assessor and representative from National Highways Lean Team.
Evidence to support this assessment - The project representatives shall provide evidence to demonstrate compliance in each area being assessed. Failure to provide evidence will result in a no score; the onus will be on the project representatives to provide evidence. The assessment level will be representative of the project not individual suppliers.

How to assess against levels – Individual questions should be answered using a system of 5 choices:

- No Evidence
- Little (or sporadic evidence)
- Some (evidence)
- Most (cases have evidence)
- All (consistent evidence)

Recording Scores - The project representative is to complete the Visual Performance Management Assessment on the Project Assessment Toolkit.

Distribution - Assessment results are to be distributed to the National Highways Project Manager, the supplier's Project Manager, the National Highways Regional Lean Area Manager, the National Highways Lean Improvement team and the relevant National Highways programme office. The assessment will be recorded and reported in monthly performance reviews.

Improvement Plans - If the project does not achieve the minimum of 3.0 in any area, it will be assessed at failing to meet the requirements of implementing effective Visual Performance Management. An improvement plan must be submitted to the Lean Area Manager & National Highways Programme Manager within 1 month. A follow up assessment shall take place within a further month. Failures will be reported through the performance management process.

11.3 Evidence Examples

1	Standard Format	Possible Evidence
1.1	Visual Performance Management Boards are in place in an accessible and central location	Improvement projects
1.2	KPI's & Productivity measures are shown (external and internal) with actual performance against the set targets.	PPC boards are up-to-date, with the root cause analysis displayed
1.3	Targets and Trends are also shown	Root cause analysis complete and shown
1.4	3C's in place (Concern, Cause, Countermeasure) with effective mitigation measures that refer to the root causes.	3C Tracker shown
1.5	Constraints are clearly indicated and follow up actions are identified	Constraints management PPC boards up and with owners and status shown.

2	Governance	Possible Evidence
2.1	Meeting attendance appropriate and timely (with dial in options available)	Stakeholders identified and displayed on the meeting minutes/ invitations
2.2	Meetings held weekly	Record of meeting (use meeting minutes)
2.3	Meeting keeping to time	Dedicated time keeping team member. Record for over-runs with 'Do Again' and 'Do Better' for the repeatable concerns
2.4	Meeting flow in accordance with visualisation flow/content	Board set up in sync with meeting agenda
2.5	Data and actions status is up-to-date for Performance Measure	Board owners and 'Last Updated' clearly displayed

3	Meeting Behaviour	Possible Evidence
3.1	Questions raised appropriately and driving solutions	Opportunities and Benefits Tracker
3.2	Actions are captured during the meeting including owner and due dates	Actions Tracker
3.3	After the meeting follow-up actions identified to ensure ownership of tasks	Owners listed on Action Tracker
3.4	Overdue actions are challenged to get resolved / escalated	Status shown on Actions Tracker
3.5	The project / business status is clear and weekly updates sent to Senior Leadership Team and Stakeholders	Evidence of updates sent

4	Leadership	Possible Evidence
4.1	Weekly plan analysis	Weekly plan analysis
4.2	The meeting is lead objectively	Use of standard agenda
4.3	Confront misaligned behaviour	3C Tracker
4.4	Discipline is strongly reinforced	Use of standards and guidance is evident
4.5	Key points are summarised at the end of review	Evidence of review

14. Glossary

Andon: A device that calls attention to defects, equipment abnormalities, other problems, or reports the status and needs of a system typically by means of lights - red light for failure mode, amber light to show marginal performance, and a green light for normal operation mode.

Collaborative Planning: (Last Planner®): The structured approach to planning, monitoring, controlling and improving work activities.

DMAICT: Define, Measure, Analyse, Improve, Control and Transfer is a data-driven quality Strategy used to improve processes.

Five whys: The practice of asking “why” five times whenever a problem is encountered; repeated questioning helps identify the root cause of a problem so that effective countermeasures can be developed and implemented.

Flow: The progressive achievement of tasks and/or information as it proceeds along the value stream, flow challenges us to reorganize the Value Stream to be continuous… “one by one, non-stop”.

Key Performance Indicators: (KPI): A method of tracking or monitoring the progress of existing daily management systems.

PDCA Cycle: Plan-Do-Check-Act. An iterative four-step problem solving process typically used in quality control. It is also known as the Deming Cycle, Shewhart Cycle, Deming Wheel, or plan-Do-Study-Act.

Pull: Principle that no one upstream function or department should produce a good or service until the customer downstream asks for it.

Root Cause: The ultimate reason for an event or condition.

Standard Work: An agreed upon set of work procedures that effectively combines people, materials, and machines to maintain quality, efficiency, safety, and predictability; establishes A routine for repetitive tasks, provides a basis for improvement by defining the normal and highlight.

Value: When a product or service has been perceived or appraised to fulfil a need or desire, as defined by the customer, the product or service may be said to have value or worth.

Visual Perfomance Management: The connection between people, project and data. It is where Information Is provided in a simple format that is easy to understand and available in the workplace. It enables teams to view their performance and provide information on what they need to action and where they can improve.

Voice of the Customer: The desires and expectations of the customer, which are of Primary importance in the development of new products, services, and the daily conduct of the business.

Waste: Any operation or activity that takes time and resources but does not add value to the product or service sold to the customer. Four Folders: The ‘Four Folder’ approach aims to capture improvement suggestions generated by the team, facilitating team members to influence the way that they work and reduce waste.

Visual Control: Is a tool that is used to guide process outcomes and is realised through the four basic types of visual tools; visual indicators, visual signs and signals, visual controls and visual guarantees.

Four Folders: The ‘Four Folder’ approach aims to capture improvement suggestions generated by the team, facilitating team members to influence the way that they work and reduce waste.

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