How to Deliver a Visual Workplace

Value Chain Competitiveness (VCC)

Version: 2

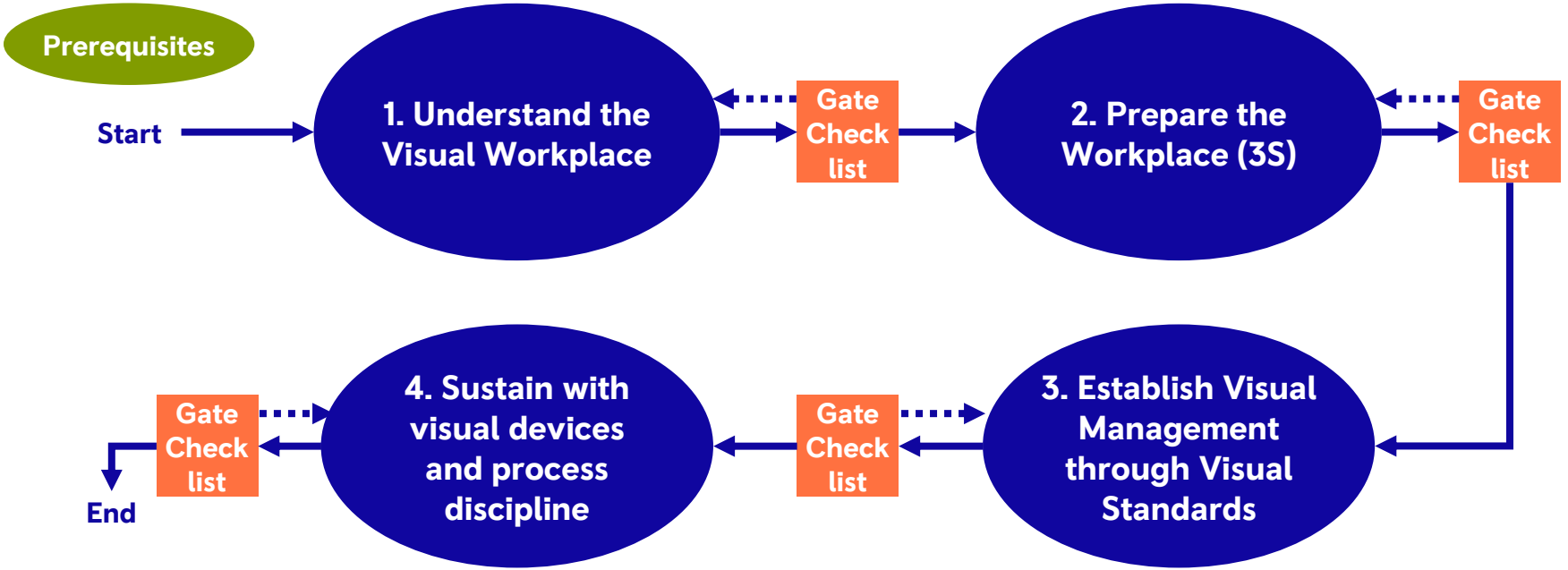
February 2020

How to Deliver a Visual Workplace

BACK Map NEXT

Scope

Objectives & Principles



Scope

This ‘How To’ will enable you to:

- Implement a ‘visual workplace' aligned to customer requirements
- Implement 5S and visual order as a basis for operation of the process
- Use visual devices to ensure sustainability and achieve self-management

Objective and Principles

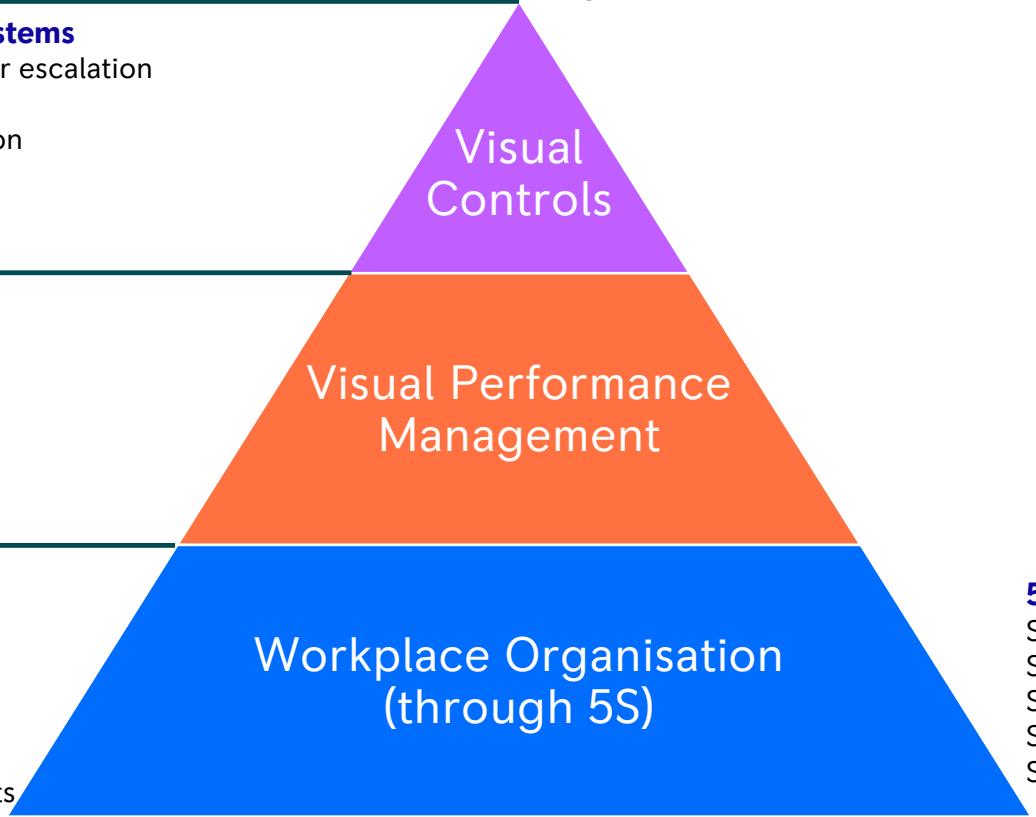
BACK Map NEXT

A visual workplace is a combination of visual order, visual management & visual controls

Visual Control and Error Proofing Systems
- RAG Status Indicators with auto stop or escalation
- 'No-entry/exit' barriers (hard and soft)
- Automatic shut down on error detection
- Go/No-Go gates (hard and soft)

Visual Performance Dashboards and Indicators
- BPD Flow Down
- SQCDP Performance Boards
- Value Stream Maps
- Milestone Plans
- Task Allocation Systems

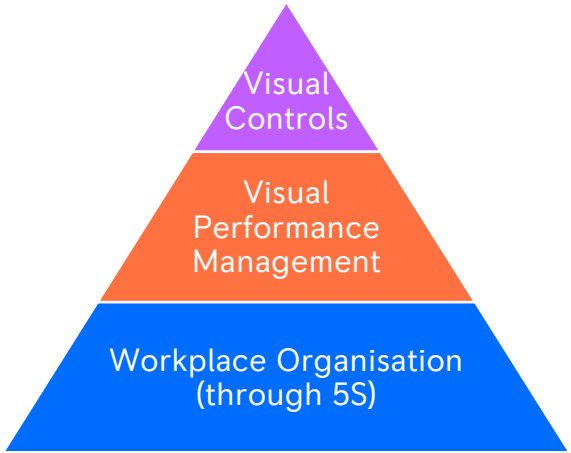
Visual Environmental Signals (Visual Factory)
- Route Markings
- Location Signs
- Sign Posts
- Min/max indicators
- Date and version control on documents



5S
Sort, Straighten, Sweep, Standardise, Sustain

Objective and Principles

A visual workplace is an environment where



1. STANDARDS are easily recognisable
   - Easy to see an abnormality immediately
2. Where visual devices are utilised in order to;
   - Understand the “status at a glance” against a plan or target
   - Support “3-minute management”
   - Your senses (sights & sounds) tell you all you need to know
   - The workplace visual tells you all that you need to share
   - Prompt a “Go-Look-See” approach
3. Where the working environment is safe, welcoming, and ‘spotless’

- More than 5S!
  - 5S will give you the visual order that is required, but it is essential that it is supported by management systems and tools to create a truly visual workplace

Prerequisites

Knowledge:

- Knowledge of the current situation
- Knowledge of 5S tools

Commitment:

- Buy-in from the team (including the support team) to establish a visual performance management process, and act upon its results

1. Understand the Visual Workplace

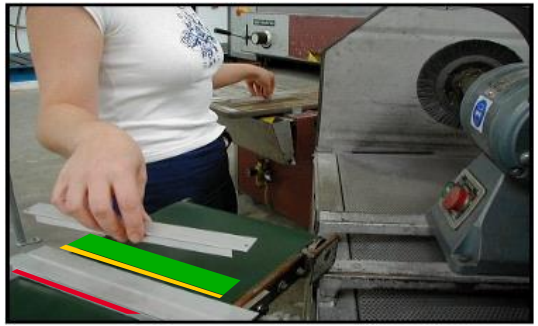
Visual Workplace

A visually managed workplace using principles of visual management

Visual signals

Visual performance management

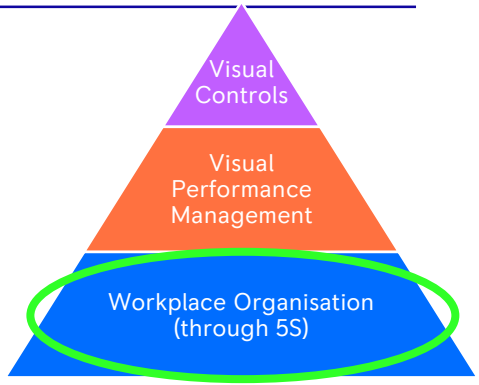
Visual control

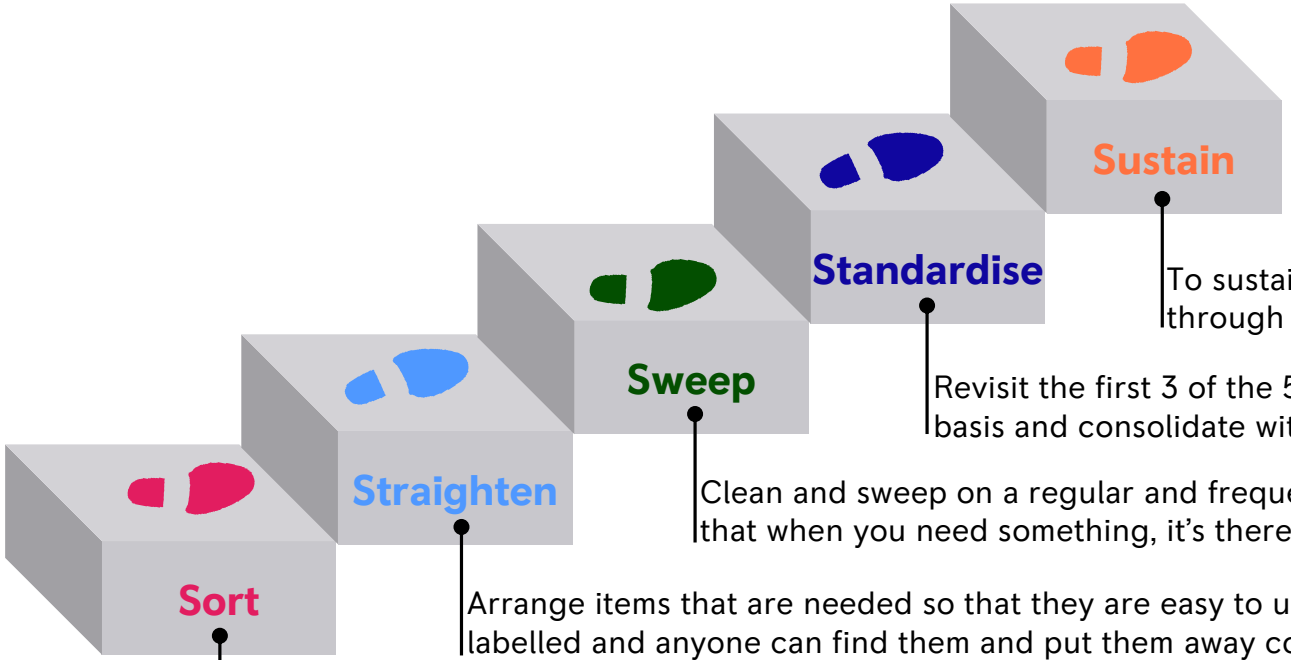


1. Understand the Visual Workplace

BACK Map NEXT

5S sets the standards for an organised workplace





To sustain and improve 5S activities through clear policy and systems

Revisit the first 3 of the 5Ss on a regular and frequent basis and consolidate with standard procedures

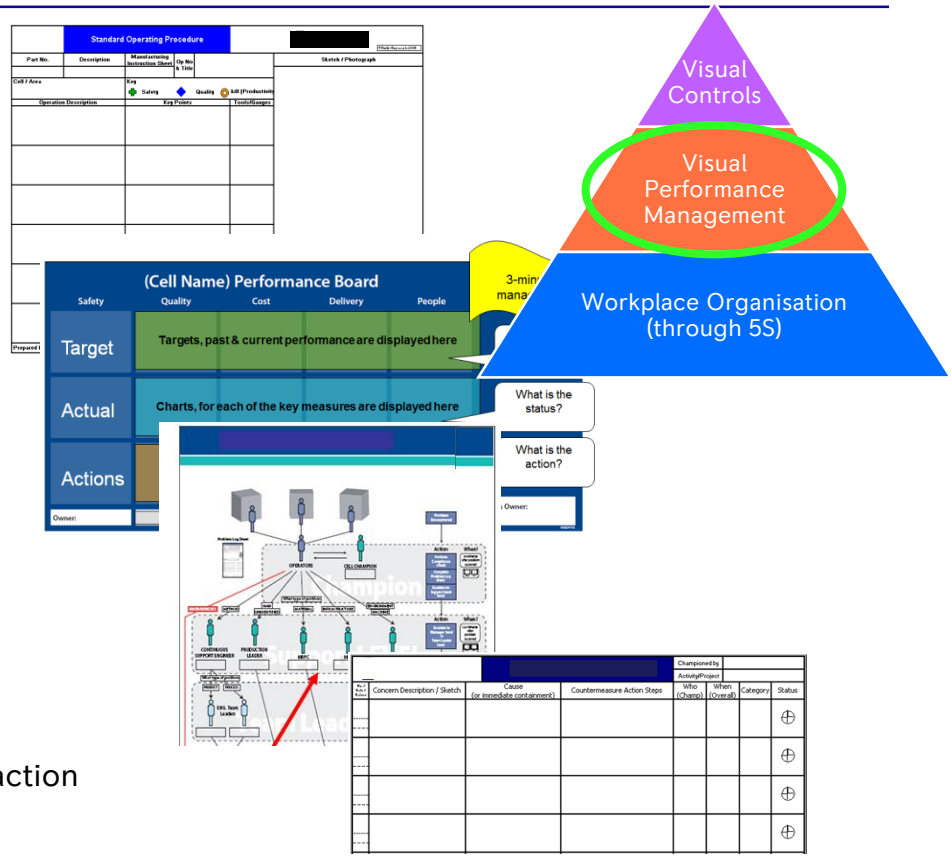
Clean and sweep on a regular and frequent basis, so that when you need something, it's there and it works

Arrange items that are needed so that they are easy to use, labelled and anyone can find them and put them away correctly

Determine what is required and what is not, in the amount needed and only when needed

1. Understand the Visual Workplace

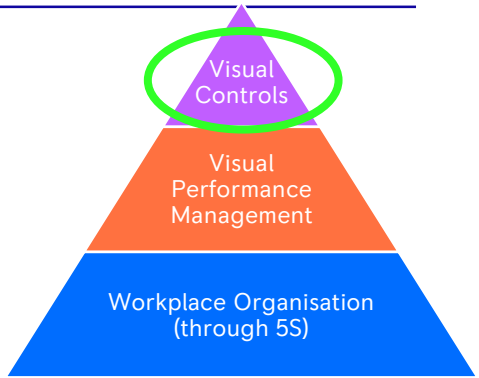
- Standard operating procedure
  - Description of the step
  - Key points – incl. Safety, Quality, and technique points
  - Tools required
  - Photos, pictures, diagrams
  - Author, owner and version control
- Performance management board
  - 3-minute management
  - Target, Actual, Actions, Owner
- Escalation procedure
  - What issues need escalating?
  - What triggers the escalation?
  - Who to escalate to & how to do it?
- Management of corrective actions
  - Problem follow-up sheet
  - What is the problem, root cause and countermeasure action
  - What is the status, who and by when



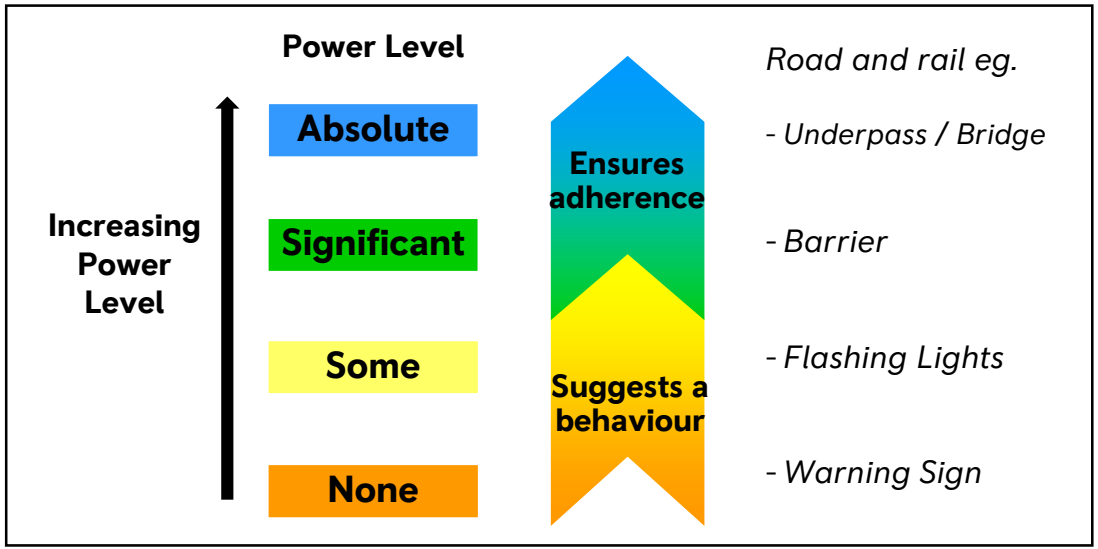
1. Understand the Visual Workplace

BACK Map NEXT

- A Visual Workplace consists of Visual techniques that;
  - Influence, direct or limit behaviour
  - Make vital information available
  - Do not require the 'spoken word' to tell you the status



- The effectiveness of visual devices is governed by their 'Power Level'

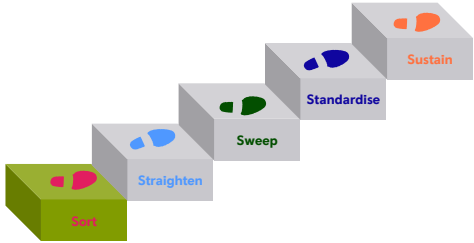


Gate checklist 1: Understand the Visual Workplace

- ☑ The team are aware, and can explain, the difference the Visual Workplace in it's three core elements
  - ☑ Workplace Organisation
  - ☑ Visual Performance Management
  - ☑ Visual Controls
- ☑ Users have an appreciation of the tools that will be used to achieve a visual workplace
  - ☑ 5S
  - ☑ Visual management applications
  - ☑ Visual Devices

2. Prepare the Workplace (3S)

Sort (1st S)



By applying the 5S 'Sort' principle we establish

- What is supposed to be stored here?
- Is it easy to find what you want?
- Are there excess items stored here?

The workplace becomes safe, efficient, well organised

Visual order allows the workplace to be self-explaining and self-ordering

Determine what is required and what is not, in the amount needed and only when needed

2. Prepare the Workplace (3S)

Sort (1st S) - Follow a rigorous process of clearing out the workplace

The 5S 'Sort' Process

1. Select the team
2. Carry out an initial 5S audit
3. Take 'before' photographs
4. Identify a quarantine area
5. Discard obvious items
6. Systematically decide what is needed and what is not – use 'Red Tag'
7. Determine rules for quarantined items

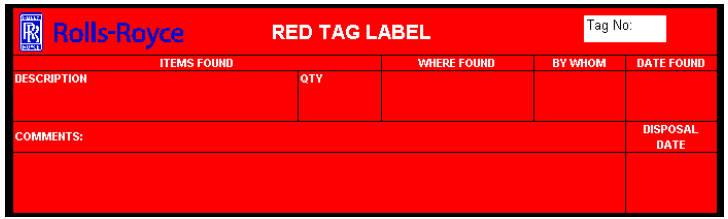
- Unless an item contributes directly to current workplace activities it should be cleared out
- Look at all items in the workplace
  - Raw materials
  - Cupboards / shelving
  - Office products
  - Packing material
  - Work in progress
  - Tools, fixtures & machines
  - Notice boards

2. Prepare the Workplace (3S)

Sort (1st S) - Follow a rigorous process of clearing out the workplace

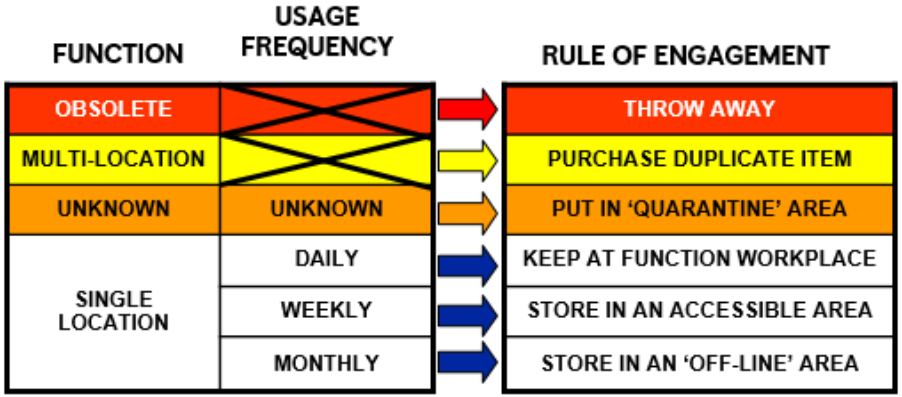
6. Systematically decide what is needed and what is not – use 'Red Tag'

- Items that are deemed to be not required in the area must be red tagged and moved to the quarantine area
- The team must agree what is tagged and moved out
- Use a tag summary sheet to record what has been tagged



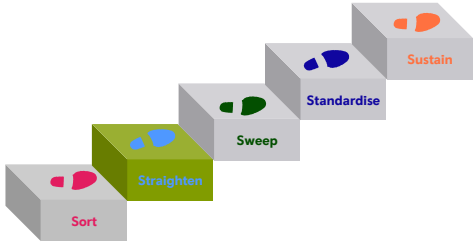
7. Determine rules for quarantined items

- Some items may not be required 'now', but at a time in the future, or when an order is scheduled again
- Rules must be applied to determine how these items are managed



2. Prepare the Workplace (3S)

Straighten (2nd S)



By applying the 5S 'Straighten' principle we

- Ensure that standards are maintained
- Minimise wasted motion by locating items at the point of use
- Ensure items can only be replaced in their correct location – 'item recoil'

Arrange items that are needed so that they are easy to use, labelled and anyone can find them and put them away correctly

2. Prepare the Workplace (3S)

Straighten (2nd S) - Follow the straighten process

1. Specify and put boundaries in place
2. Classify items in terms of their usage
3. Identify means of organising and storing items
4. Implement item recoil – location addresses and I.D labels

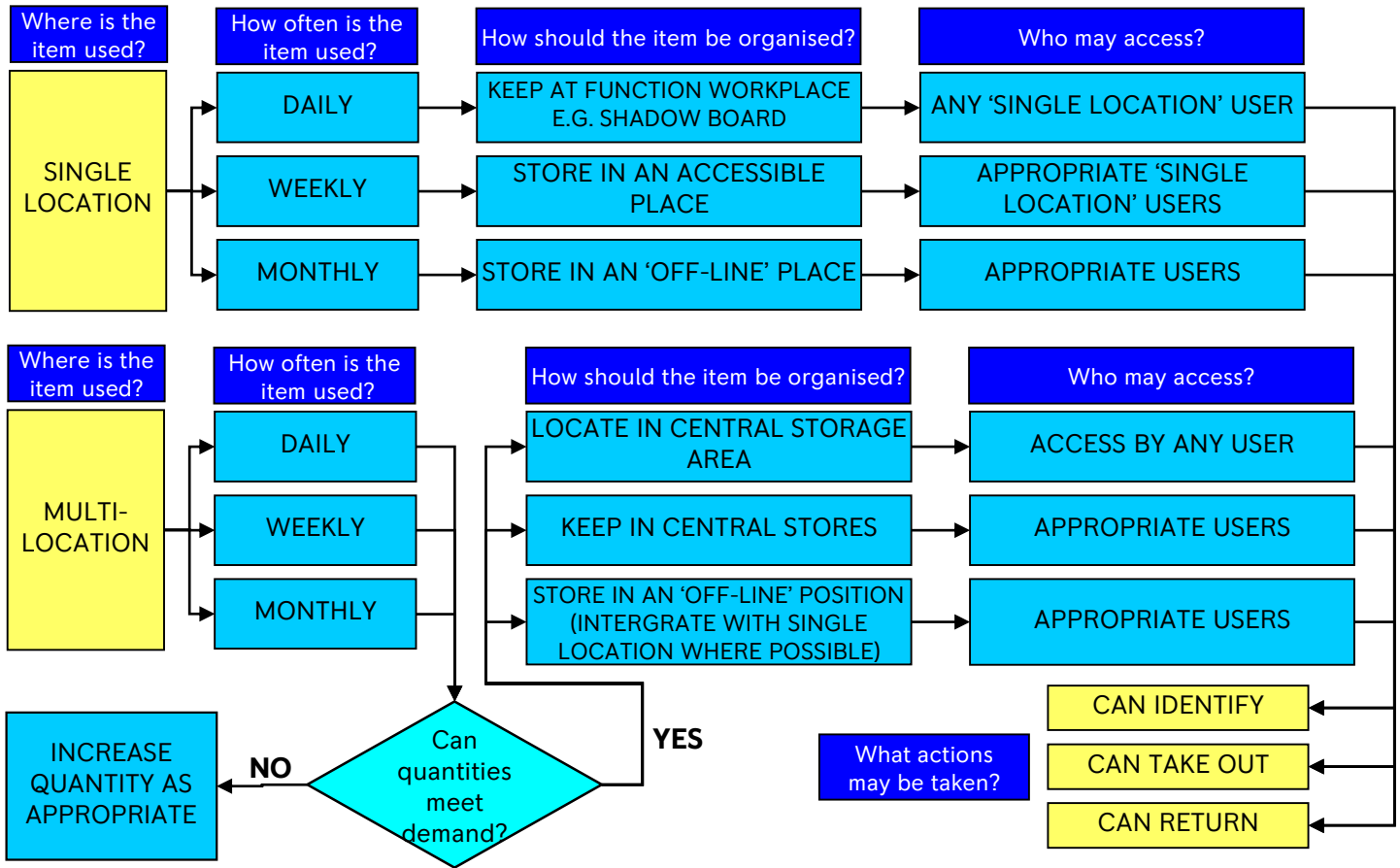
- Organisation is required in order that we
- Ensure there is ‘a place for everything, and everything is in its place’
- Can see what equipment is available for use
- Save time searching
- Set limits, locations and rules on quantities permitted in the area
- Ensure equipment is returned to a point of storage after use, in correct quantities
- Improve safety within the workplace

1. Boundary examples

2. Prepare the Workplace (3S)

BACK Map NEXT

2. Classify items in terms of their usage



2. Prepare the Workplace (3S)

3. Identify means of organising and storing items

‘Shadow Boards’

Racking and Shelving

Visual re-order trigger

Signal – is there a file missing?

Labelled drawers and items

Labelled drawers

Cupboards

Perspex doors

2. Prepare the Workplace (3S)

4. Implement item recoil – location addresses and I.D labels

Colour Coding where appropriate

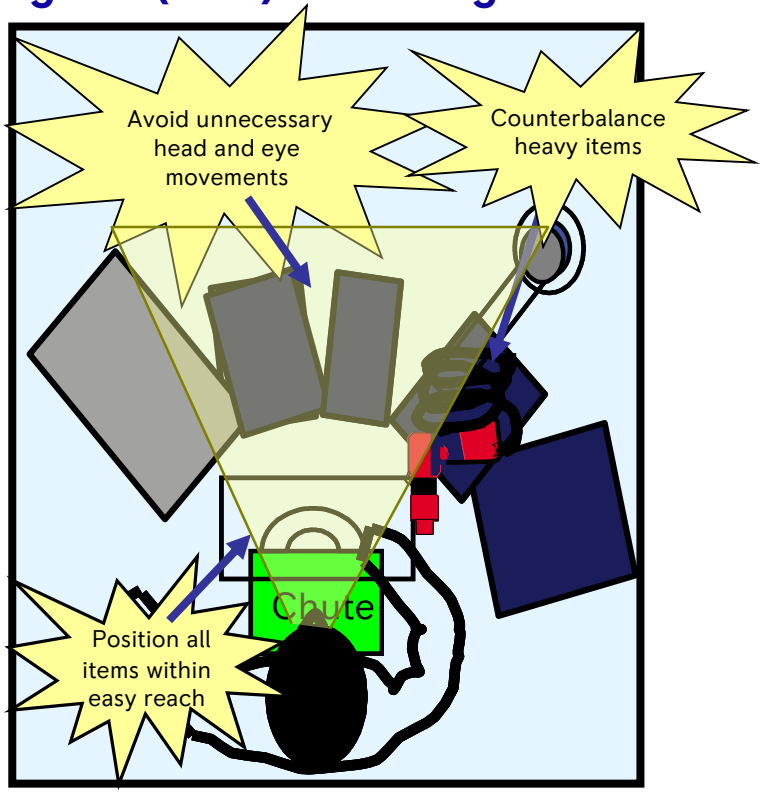
Location pins for item recoil

Tool Shadows for item recoil

- ‘Item recoil’ is the ability of an item to be relocated to its correct location, based upon the information included in a location address and identification label
- The location address should be sited where the item is stored
  - Floor, drawer, bench or shelf
- I.D labels are physically attached to the item, and mimic the location address
- Visual prompts also aid the item recoil
  - Photos, shadows, symbols

2. Prepare the Workplace (3S)

Straighten (2nd S) - Place regular use items in the field of vision

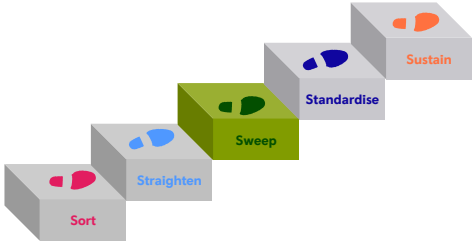


Identify wasted motion in the process

- ELIMINATE
  - Position equipment to reduce movements
- COMBINE
  - Wherever possible, can tasks be combined or done at the same time
- SIMPLIFY
  - Redesign equipment, choose simple tools. Place smaller items where they can be most easily located within the primary field of vision (without head or eye movement)

2. Prepare the Workplace (3S)

Sweep (3rd S)



By applying the 5S 'Sweep' principle we

- Create ownership for the equipment within the workplace
- Create a clean working environment
- Share responsibility with the team to keep the workplace clean and organised
- Discover abnormalities with equipment

Clean and sweep on a regular and frequent basis, so that when you need something, it's there and it works

2. Prepare the Workplace (3S)

Sweep (3rd S) - Follow the straighten process

1. Clean 'outside and inside' the workplace and equipment
2. Develop cleaning schedules
3. Refresh the workplace equipment through painting

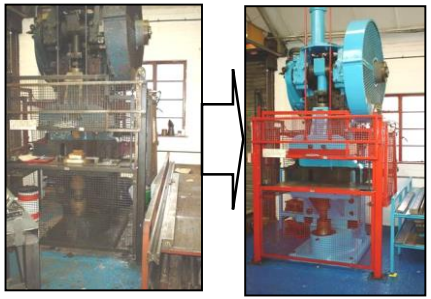
A clean workplace is required in order

- that we can
- Improve workplace safety
- Identify abnormalities with equipment / tools before a failure occurs
- Improve product quality

1. Clean - Uncover problems & improvements

2. Clean schedules - the standard to sustain

3. Refresh - See abnormalities quickly



Gate checklist 2: Prepare the Workplace (3S)

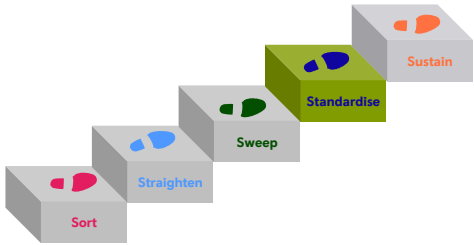
- ☑ The workplace has been cleared of all unnecessary items – all items remaining have a purpose
- ☑ All items needed have been designed into the layout according to frequency of use, size and flow principles (value field principles)
- ☑ All items required in the workplace have an identified home address and are located in the optimum location
- ☑ The workplace is clean – sources of contamination have been eliminated
- ☑ The means of organising and storing items in the workplace is visually simple – the workplace visually tells us if anything is missing
- ☑ Good engagement by all in SORT, STRAIGHTEN and SWEEP elements of 5S

3. Establish Visual Management through Visual Standards

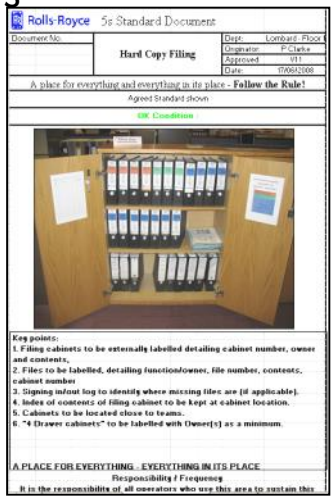
BACK Map NEXT

Standardisation (4th S) - Follow the standardisation process

1. Define where a visual standard will be implemented
2. Set Visual Management standards
3. Define the escalation process for a non-conformance
4. Ensure the standards are sustained



Revisit the first 3 of the 5S on a regular and frequent basis and consolidate with standard procedures


Rolls-Royce 5s Standard Document

Hard Copy Filing

A place for everything and everything in its place - Follow the Rule!

Agreed Standard shown

OK Condition

Key points:
1. Filing cabinets to be externally labelled detailing cabinet number, owner and contents.
2. Files to be labelled, detailing function/owner, file number, contents, cabinet number
3. Signing in/out log to identify where missing files are (if applicable).
4. Index of contents of filing cabinet to be kept at cabinet location.
5. Cabinets to be located close to teams.
6. "4 Drawer cabinets" to be labelled with Owner(s) as a minimum.

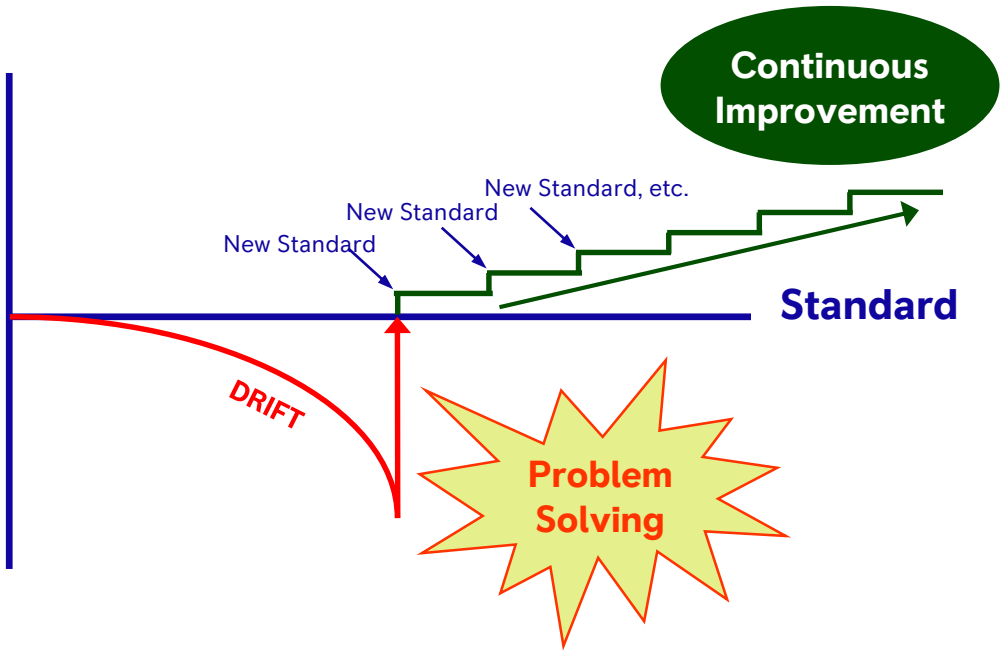
A PLACE FOR EVERYTHING - EVERYTHING IN ITS PLACE

Responsibility / Frequency

It is the responsibility of all operators who use this area to sustain this

3. Establish Visual Management through Visual Standards

Standardisation (4th S) – Why?



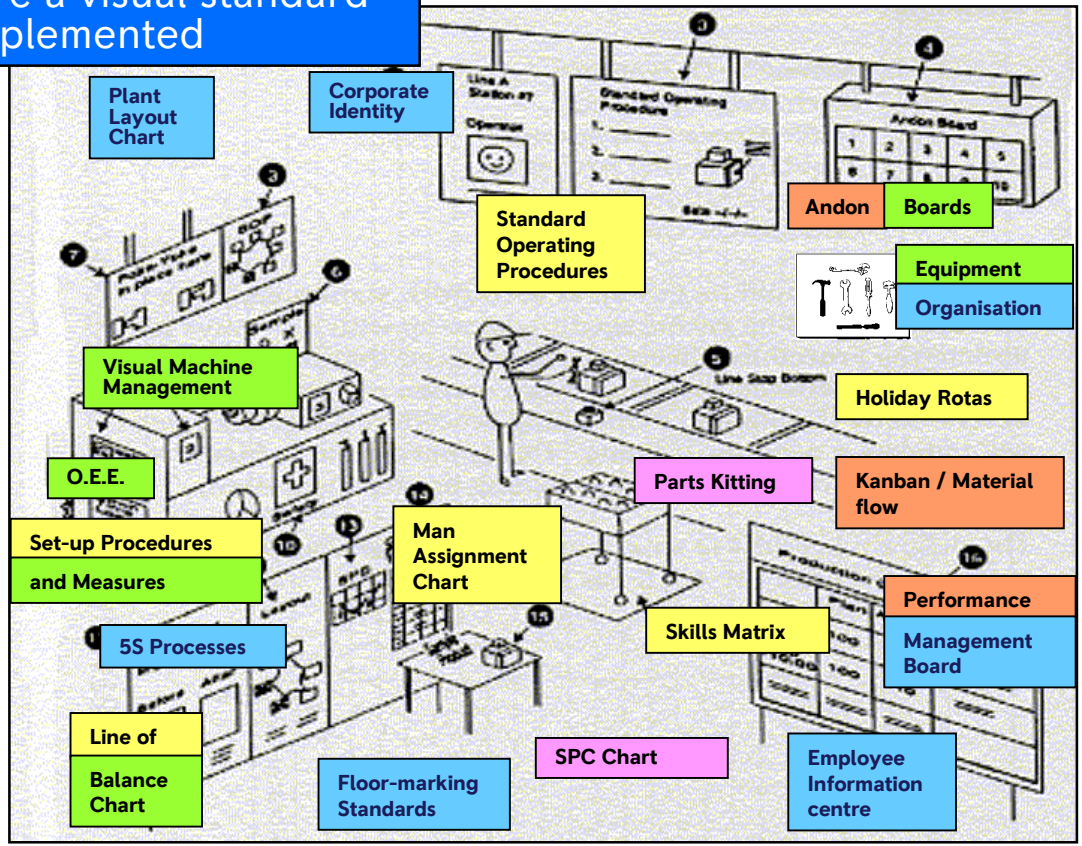
Why do we need standards?

- The first step to improvement is the creation of a standard
- Where there is no standard:
  - You don't know if you have a problem or not
  - There can be no sustained improvement

3. Establish Visual Management through Visual Standards

BACK Map NEXT

1. Define where a visual standard will be implemented



Fundamental

Real-time feedback

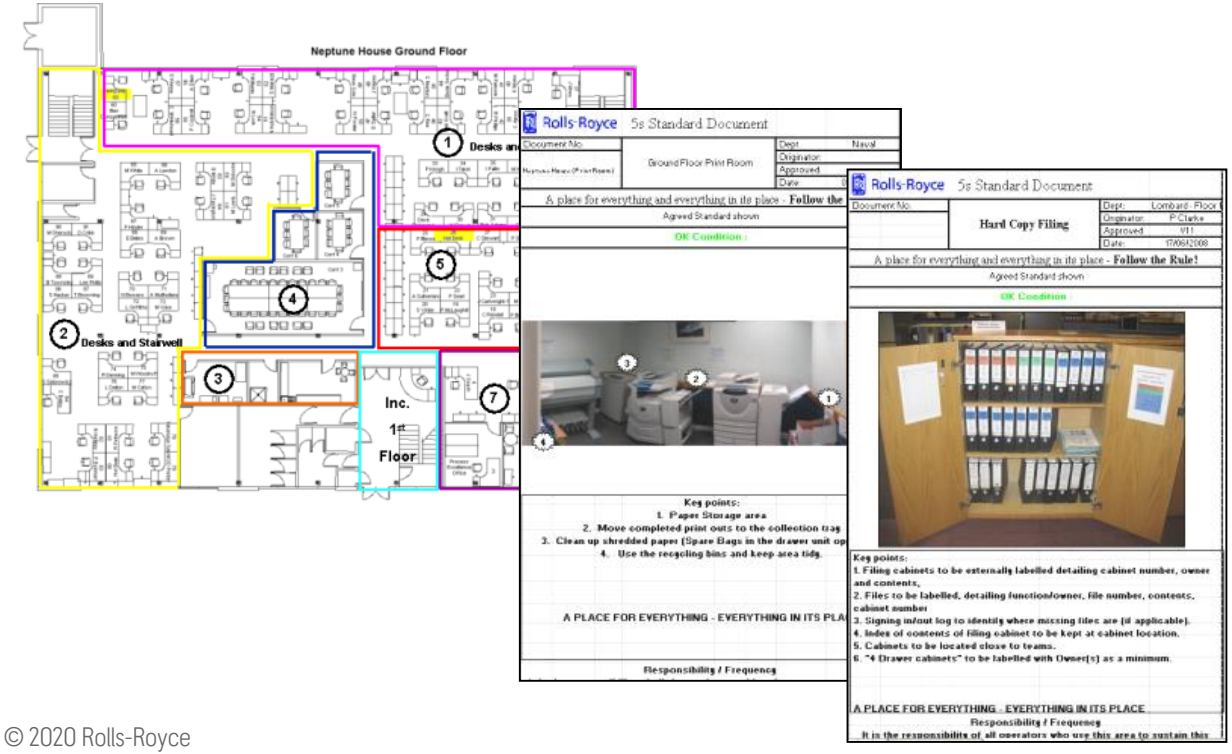
People

Equipment

Quality

3. Establish Visual Management through Visual Standards

2. Set Visual Management standards



Use the 5S Standards template to record the 'OK' condition for each Zone

- Take a photograph of the area as it should look – this is the OK condition
- Use the 'key points' to emphasise items for particular attention

3. Establish Visual Management through Visual Standards

BACK Map NEXT

3. Define the escalation process for a non-conformance

Define the standard escalation process for non-conformance

- Agree what happens when the standard is not being maintained (use a problem follow-up sheet)
  - How do we record the concern?
  - How do we record what caused the problem?
  - How do we record what to do to fix the problem?
  - How do we record who owns the action, when it will be done and the current status?

- Agree how often the team will review the progress being made in resolving issues

- Agree how to decide when progress is not being made, and who to talk to for further support.

- Make a simple, visual flow chart to explain the steps in the escalation process, who is responsible and over what time period each action is required

3. Establish Visual Management through Visual Standards

4. Ensure the standards are sustained

- By reference to a STANDARD
  - After photos
  - Does the workstation / desk still look like it did at the end of the 3S event?

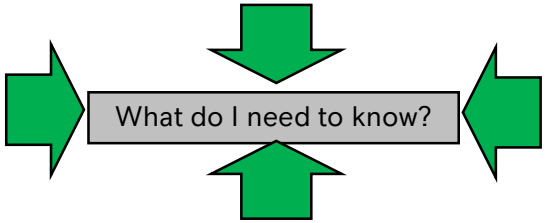
- Embed the habits of 5S into the daily routine by
  - Establishing and agreeing standards that everyone works to, e.g. documentation, storing equipment, safety, best practices

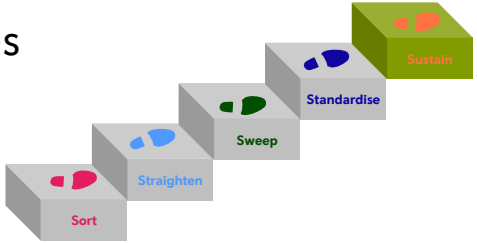
Gate checklist 3: Establish Visual Management through Visual Standards

- ☑ Appropriate application of visual management has been defined
- ☑ Standards have been set for controlling and maintaining processes
- ☑ A standard escalation process has been defined for deviations from the standard
- ☑ Visual performance data gives “status at-a-glance” of the workplace

4. Sustain with visual devices and process discipline

Consider the following questions in order to define the visual devices you implement





- The level of device that you implement could also be associated with the Risk level of non-adherence
- Eg. if non-conformance to the process could mean scrapping a part / cause injury / cost money, then you will need a greater level of control – a warning sign may not be enough

4. Sustain with visual devices and process discipline

Sustain (5th S) – Implement a confirmation system to maintain standards

The T-Card System uses cards to confirm processes to a standard. Being a visual tool, it promotes the "go – look- see" approach

1.

1. Place all T-cards in slots on the LH rack *(red side out)*. (Evenly distribute all of the activities (cards) across the week)
2. Select a card according to the correct day of the week.

2.

1. Go to the area specified on the card, along with the standard document described on the card
2. Check the area against the standard

3.

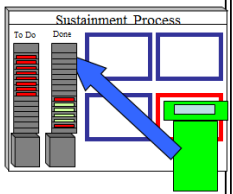
Return the card to the RH rack, according to the following:

Result = Not OK

1.Card with RED side facing out.
2.Take action if appropriate.
3.Write concern/action on 3c Chart.

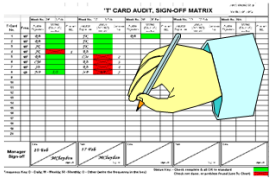
Check Result = OK

1.Card with GREEN dot facing out.



NB – checks not completed, remain in the LH rack, red side out

4.



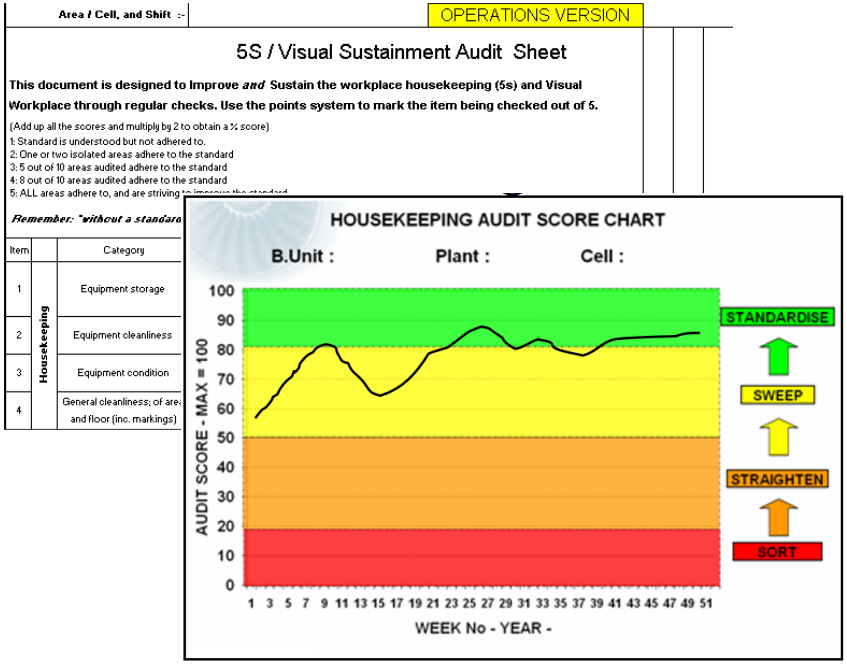
1. Complete the sign-off matrix: Highlight GREEN if OK, RED if not OK,
2. Complete the 3c chart

The system should be:

- Visual – understand the status at a glance
- Simple – quick to set-up and anyone should be able to understand how it operates
- Owned – clear ownership and accountability is a requirement
- Maintainable – it must be easily self-maintained with minimum documentation, or reliance on outside personnel to generate graphs and status reports, etc.
- Flexible – quick to adjust to suit changing requirements (frequency, additional new check items, customer incidents, etc.)

4. Sustain with visual devices and process discipline

Sustain (5th S) – Implement a confirmation system to maintain standards



Area / Cell, and Shift :-

OPERATIONS VERSION

5S / Visual Sustainment Audit Sheet

This document is designed to Improve *and* Sustain the workplace housekeeping (5s) and Visual Workplace through regular checks. Use the points system to mark the item being checked out of 5.

(Add up all the scores and multiply by 2 to obtain a % score)
1: Standard is understood but not adhered to.
2: One or two isolated areas adhere to the standard
3: 5 out of 10 areas audited adhere to the standard
4: 8 out of 10 areas audited adhere to the standard
5: ALL areas adhere to, and are striving to

Remember: "without a standard

Item		Category
1	Housekeeping	Equipment storage
2		Equipment cleanliness
3		Equipment condition
4		General cleanliness; of are and floor (inc. markings)

- In order to check if the 3Ss are sustained, you need a standard to check against.
- Record activity to track improvement
- Identify workplace improvements
- Plot the audit score on the graph

Gate checklist 4: Sustain with visual devices and process discipline

BACK Map

- ☑ The workplace consists of visual devices that act together to guide, limit, control or influence our behaviour
- ☑ Error proofing devices are incorporated into the workplace where safety, quality or compliance is paramount
- ☑ A sustainment process is used to visually manage progress towards a sustainable system
- ☑ Visual audits are owned by the local workplace team and track improvements
- ☑ The visual system is sustained and self-improving