



Case Study

If you want a workplace that encourages high quality output from your staff and has an excellent safety record, you need to embrace 5S methodology.

► Various Service and Manufacturing Clients

Summary

➤ Sort

A work place is for working, not for storing; if in doubt – throw it out.

➤ Set in Order

Everything has a place, everything in its place.

➤ Shine

Cleaning is Inspection.

➤ Standardise

Maintain the first three pillars

➤ Sustain

Cascade the know how



Case Study

Lean six sigma



5S is a foundation lean principal, it leads to efficient processes, underpins safety and can help companies to win new contracts.

Overview

5S provides a useful structure for improving workplace environments, but the real benefits arise when excellent housekeeping becomes embedded as a key priority in an organisation's culture. If you visit an office or a manufacturing plant that has a proven track record of high quality and safety, you will often notice how clean and tidy everything is. This is no coincidence. Good housekeeping is both an indicator and propagator of quality and safety.

5S underpins and reflects a culture where procedures are followed, processes are carefully controlled, quality and safety are respected and employees at all levels are motivated and diligent. 5S provides a structured approach to improving and maintaining workplace housekeeping. As the name suggests it involves 5 steps that all start with the letter S. 5S is a method for creating and maintaining an organised, clean and high-performance workplace which enables anyone to distinguish between normal and abnormal conditions at a glance. Many regard 5S as little more than housekeeping, this couldn't be further from the truth as 5S increases quality, supports employee safety, improves morale, and it can be a precursor to winning contracts. 5S is the foundation for continuous improvement, zero defects, cost reduction, and creating a safe work area. It leads to higher productivity, produces fewer defects and less material losses.



5S uses a list of five Japanese words to establish a five-step process.

1. Sort (seiri)
2. Set in Order (seiton)
3. Shine (seiso)
4. Standardise (seiketsu)
5. Sustain (shitsuke)

These five steps are further grouped into three distinct phases;



Sort (Seri); Set the Standard

- A work place is for working not for storing'
- 'If in doubt, throw it out'
- 'Categorise items as 'store', 'sell', 'skip'

5S begins with the premise that a work place is for working, not for storing. Only the essential items that are needed for the operation or clerical task should be within the workplace. If in doubt throw it out. The goal of this stage is to remove all items from the workplace that are not needed for current production or the current clerical task.

Depending on the level of 5S maturity within your organisation, 5S is either initiated through a Kaizen / blitz event or it forms part of ongoing standard practices. Where there is a culture of 5S there is probably a system of identifying equipment and items for consideration. In many companies this is called 'red tagging'.

If you are implementing 5S for the first time, assemble a team, order a skip, and begin to sort through the area under scrutiny. Categories, the items as (1) 'Store' – it is needed either within the workplace or somewhere else in the business, (2) 'Sell' – it is not needed, but the item has commercial value and (3) 'Skip' – the item is obsolete or not needed. Many people find 'Skip' hard to action. Intuitively you will hold onto items 'just in case', but when was that item last used? If the answer is "some time ago", it isn't needed; sell it or skip it – if in doubt throw it out.

Red Tags - typically 5S is initiated through a Kaizen or blitz event but perhaps the 5S programme is more established. In these situations, throughout the work period an employee may notice that an item of equipment is defunct or not being used, as such it can be tagged, this is



often referred to as 'red tagging'. Red tags are used to identify potentially unneeded items. If it is needed, is it needed in this quantity? If it is needed, does it need to be located here?

Red Tags can be purchased from www.the5Sstore.com

Within a manufacturing environment, 5S can be quite intuitive and, as such, quite easy to initiate. The office environment is, perhaps, less obvious. Start by reviewing the files you are storing – are they needed for compliance reasons? If so keep them. Do you have several versions or revisions of a tender? Are they all needed? If not, they are taking up storage space and probably slowing down your computer. Delete them and then empty your waste basket/ recycle bin.



Raw materials blocking the stairwell.



How do you retrieve these items?



What are the problems here?

Set in Order (Seiton); Set the Standard

- 'Have everything at hand to make the job easy'
- 'A place for everything and everything in its place'
- 'Can anyone spot the missing item?'

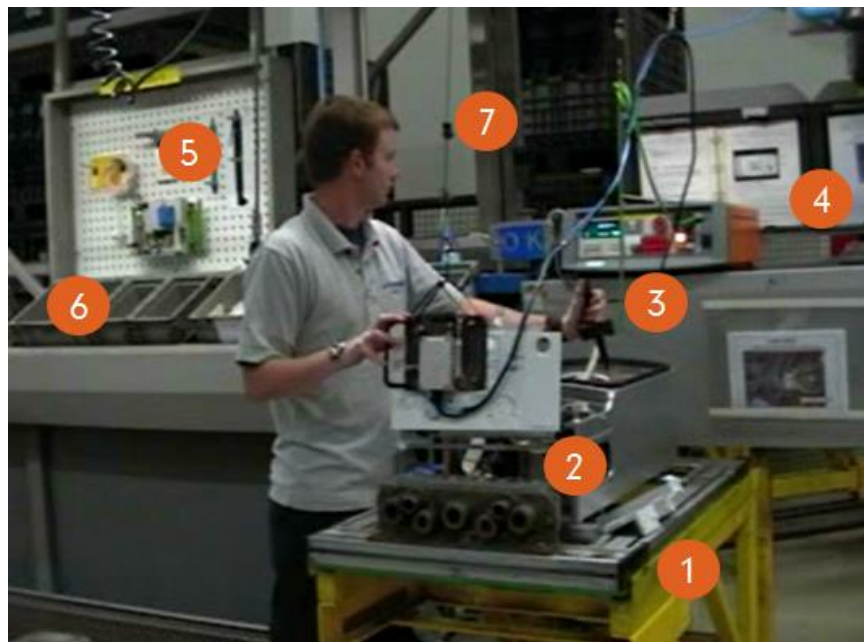
Having removed all the unnecessary items from the workplace only the needed items are left. It is now necessary to establish the work place so that everything is at hand and the area is ergonomically designed.

The goal of 'set in order' is to arrange needed items in the work area and to identify or label them so that anyone can find them or put them away. The key word is 'anyone'. To achieve this the design should be intuitive, logical and instinctive. Based on frequency of use, the design phase should determine the best location for tools, equipment, and materials. Store items together if they are used together, and store them in the sequence they are used. Store infrequently used items away from the point of use. Keep it simple and visual.



Ergonomic Design;

1. The product is secured and assembled on a bogey, the bogey moves down the production line. This helps to prevent damage to the product.
2. The product being assembled is a gas fired boiler.
3. The test equipment is at eye level.
4. The work instructions or standard operating procedures are accessible at the work place
5. A shadow board contains the essential tools and equipment.
6. There is a Kan-Ban material replenishment system.
7. Air tools are suspended above the workplace, they are easily retrieved and set down.



By arranging all needed work items in line with the physical workflow, and making them easy to locate and use, 5S helps to bring about efficient working practices. Tools, parts, work instructions and test equipment are stored and located neatly. It should be obvious where the item should be and what that item is. This is typically achieved with shadow boards and the use of colour.

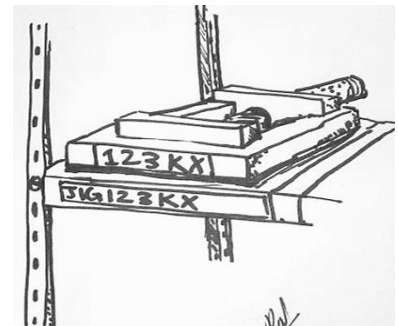
Examples of 5S and the use of 'Shadow Boards' within Manufacturing and Service Environments

(1) As the name suggests a shadow board contains a shadow of the item to be stored. In this cartoon image, we see a missing hammer.



This shadow board was created quite simply, the missing items are easily identified, note how the shadow is of the actual tool, it is not a generic shape.

This cartoon image highlights how labelling provides the finishing touches to 'set in order'.



Similarly, in this office drawer we can see an empty space. The space is labelled identifying the missing item. A small improvement would be to replace the labels with pictures of the item to be stored.

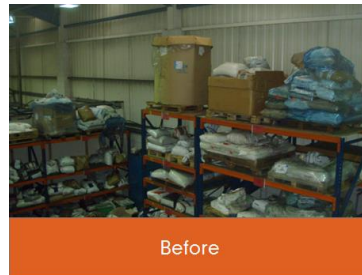
Here we see the use of colour to identify different file or topic types;





A simple line across the spine of these folders helps to identify a missing folder, but it doesn't identify which folder is missing, can 'anyone' identify which folder is missing?

Here we see a before and after photograph – the 5S activity took place at a plastic injection moulding company. The items have been organised into material types (polyesters, nylons, polythene etc.) and then stored according to frequency of use. Low use items were stored at the top of the racking as access to these materials requires use of a fork lift truck. Labelling still needs to be applied, as this system does not enable 'anyone' to find the materials.

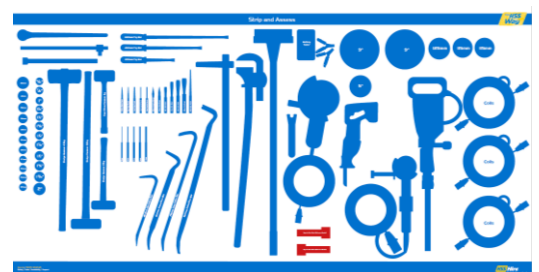


Before

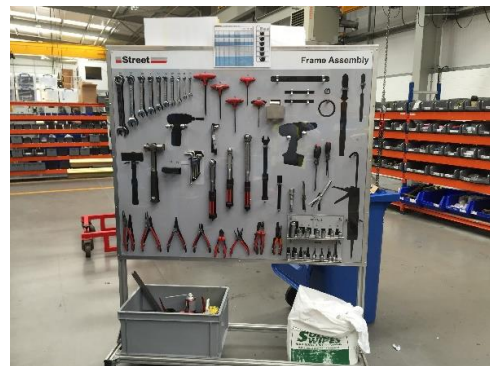


After

This manufacturing client set out the tools they required. Through employee engagement, the frontline staff achieved this through a short Kaizen event. The selected tools were photographed and taken away by the design team, (at lean6-sigma our preferred supplier is www.vervecreative.com) who produced a design. Following a number of iterations the design was approved by the team and then printed.



For complete flexibility the shadow board was mounted on a movable frame.



Shine (Seiso); Maintain and Improve

- Cleaning is Inspection.
- Set a schedule and determine the daily, weekly and monthly tasks.

Shine is the first principal of maintaining the standard, as such it is an activity that takes place at regular intervals. This might be every day, every week or every month etc.

Typically, it takes place at the end of a shift with clearing down. Set a housekeeping schedule and assign responsibilities. List responsibilities in detail, including which areas are to be cleaned, at which times of the day, and what "cleaning" involves. Assign responsibility for completing housekeeping chores.

Create procedures for continued daily shine processes. Create a table that shows which housekeeping task must be performed, how often and by whom.



Before



After

Standardise (Seiketisu); Maintain and Improve

- 'Improvement is impossible without existing standards'
- '5s is the Way We Work'
- 'Standardise means doing the right things the right way, every time.'



Review the procedures for Sort, Set in Order and Shine. How are they incorporated into everyday work activity? Standardise really means discipline. 5S should be 'the way we work', it isn't an activity completed as an annual event. Layered audits and Leader Standard work provide a mechanism for maintaining the 5S workplace. In this system varying levels of the organisation are responsible for differing levels of inspection within various time frames. The key is that everyone is responsible for something at a predetermined frequency or timeframe. For example, the frontline operator may complete daily checks, their supervisor weekly checks and so on. This should roll up all the way to the top, with the CEO setting the example and inspecting something once a year or once a quarter. 5S is the work horse that helps to create the visual workplace, and Standardise is the discipline to maintain this.

Sustain (Shitsuke); Cascade

- Maintain the Standard
- Cascade the Know How

If sort and set in order are responsible for 'setting the standard'; Shine and Standardise are the principals aimed at maintaining that standard, what role does 'Sustain' play? Sustain is principally responsible for cascading the know-how. Intuitively there is an overlap with Standardise, however, Sustain provides the mechanism for Standardise. That is to say, Standardise tells us when audits should take place, Sustain tells us when and how. Start by creating an audit sheet that is relevant to your business. From your audit you should create a radar chart and all this information should be displayed at the work place. With 5S ANYONE should be able to tell the difference between normal and abnormal conditions.

