

# Study of **Visual Factory** and **5S** techniques at the University of Pretoria Bindery

## 1. Background

The bindery functions as an internal part of the University of Pretoria's library. The 3 services delivered by the bindery includes the binding of theses, the binding of journals, and the restoration of books. The binding of theses is the only profitable service, as the binding of journals and the restorations of books are funded internally by the library.



## 2. Project Aim

Increase the productivity of the bindery in order to satisfy the high demand, while remaining within the financial constraints

## 3. Rationale

- The binding of theses is the bindery's only profitable service. Currently, there is too much demand for the bindery to service due to inadequate productivity (A binder retired in a previous year). Thus, the bindery has to turn away customers, resulting in major financial losses.
- The bindery is working with outdated machinery and equipment. With the current financial constraints, the bindery cannot afford better machinery. Thus, the only option to satisfy the demand is to increase productivity via Industrial Engineering techniques that do not require additional financial resources.
- Late deliveries have a negative impact on the image of the bindery and the library of the university
- Pressure is placed on the bindery staff to meet the high demand. With the current methods of operation, the demand cannot be reached, resulting in the demotivation of staff.



## 4. Techniques used

### 5S Methodology

- Seiri: Removing waste and unnecessary objects from the facility
- Seiton: Establishing order in the facility by allocating space
- Seiso: Cleaning of the facility and equipment
- Seiketzu: Standardise operations via rules and responsibilities
- Shitsuke: Sustain the first 4 S's and continuously improve

### Visual Factory

The effective transfer of information via colour coding and visual techniques

### Facility Layout

Rearrangement of workstations within a facility, in order to increase flexibility and space utilisation.

### Change Management

Guidance in the preparation and support of individuals regarding changes in the work place, in order to achieve organisational success

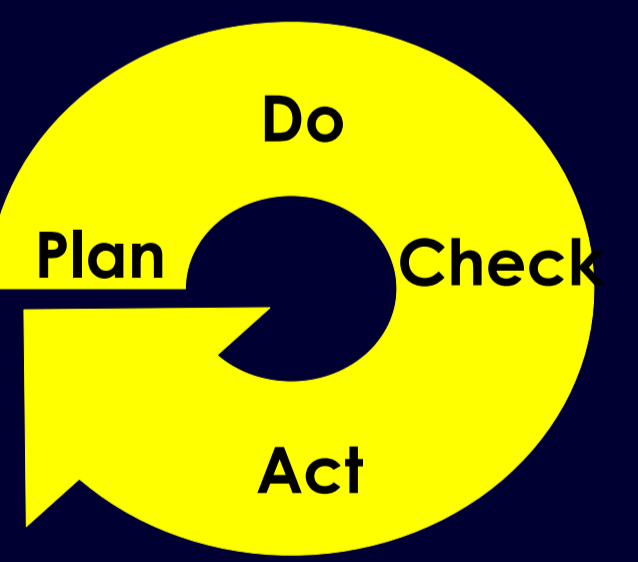
## 5. Methodology

**1. Seiri** – Red-tagging of waste, objects that can be sold, and objects that should be discarded.

**5. Shitsuke** – Creation of short term goals, continuous training of staff, and having daily meetings to track and update the operational plan.

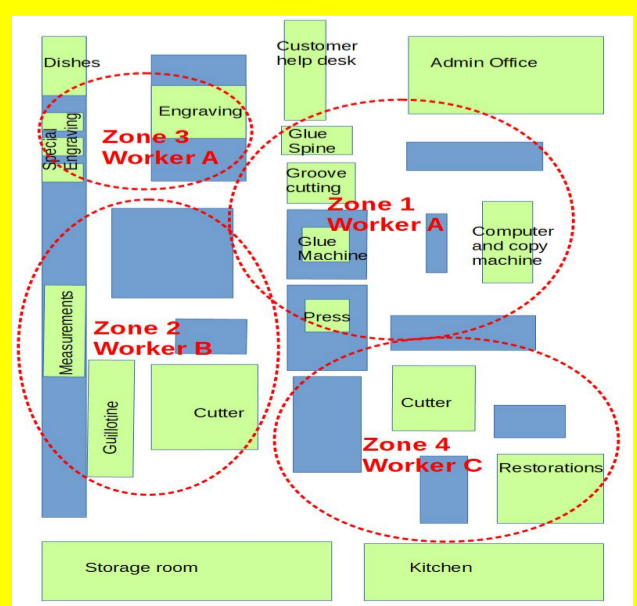
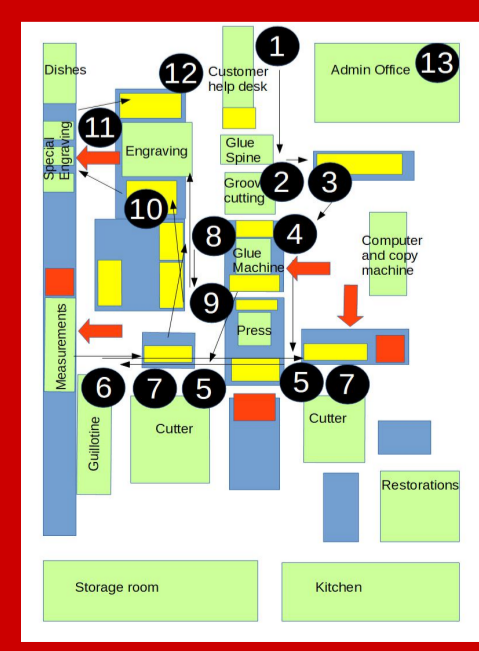
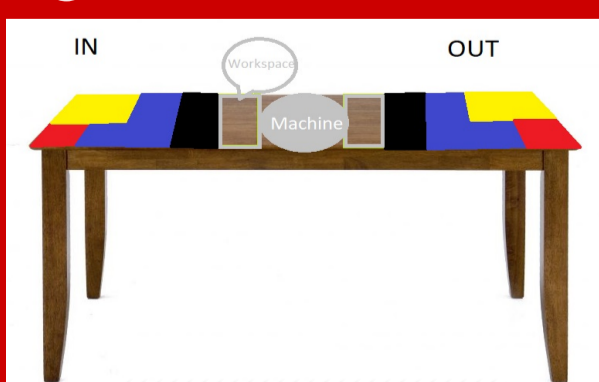
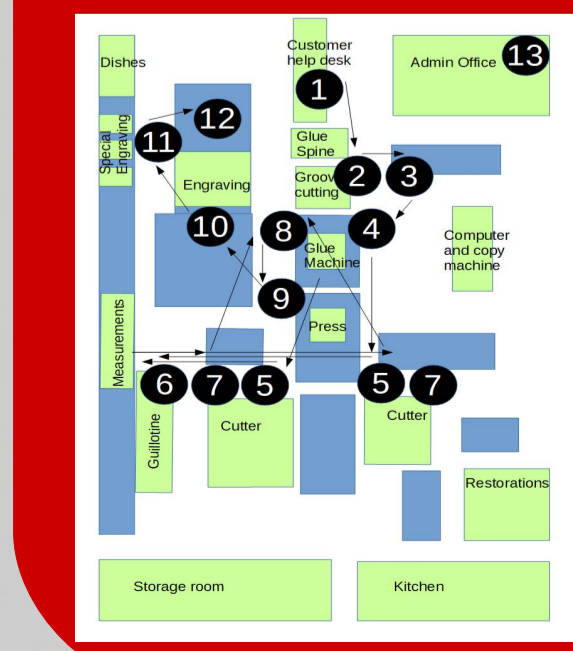
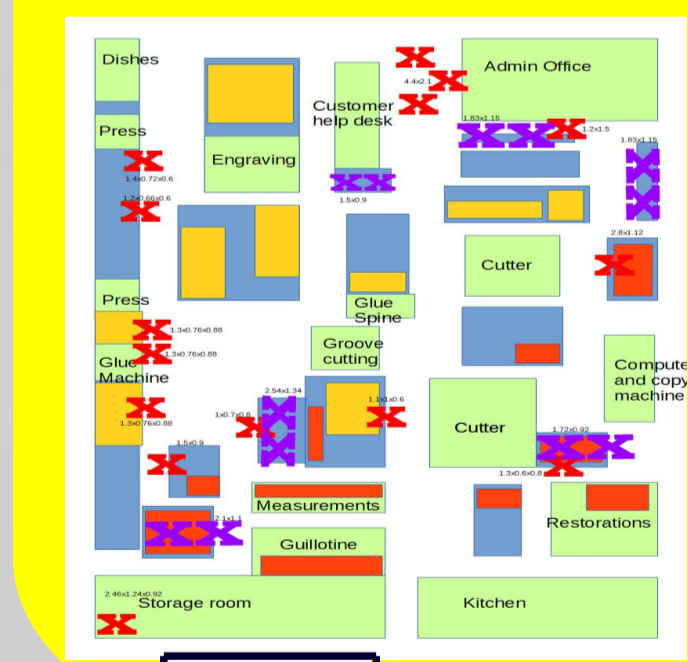
**4. Seiketzu** – Creation and enforcement of:

- Cleaning procedures
- Maintenance schedules
- New production methods
- Specific staff responsibilities

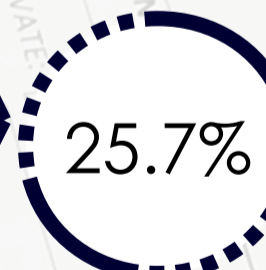


**2. Seiton** – New facility layouts, storage methods, safety precautions, and colour coding to reduce service time.

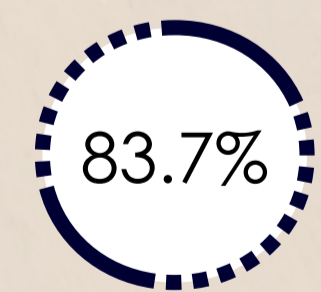
**3. Seiso** – Specify the cleaning zones, methods, tools and equipment



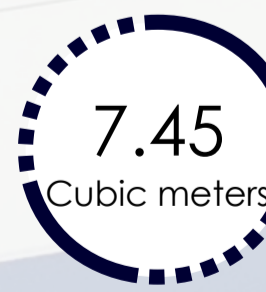
## 6. Results



Increase in floor space after the Red-tagging process of the first S of the 5S system.



Reduction in service time spent looking through job cards



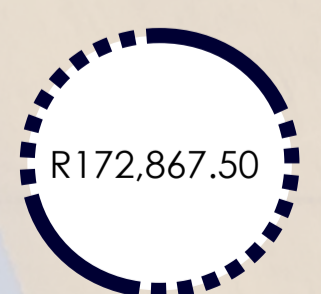
Increase in storage space after removal of waste



Productivity increase



Reduction in walking distance between workstations by implementing the new facility layout



Financial gains that can be made by selling unused equipment and tools