



**Singapore Healthcare Management 2017**

# Autonomous Floor Scrubber Unit at NHCS

## Project Members

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## BACKGROUND

Clean floors in a healthcare facility is important to help reduce the spread of infections.

Areas with high human traffic flow will require daily floor cleaning to prevent possible damage and optimum surface protection.

## PROBLEMS FACED

- ❑ Cleaning with conventional tools such as floor mops, floor brushes and floor scrubbing machines are highly labour intensive tasks and not time efficient , especially for large floor areas.
- ❑ Inconsistency in the quality of work performed by different housekeepers.

## METHODOLOGY & IMPLEMENTATION

The long term solution is to explore state of the art technology to perform the routine housekeeping tasks that are labour intensive.

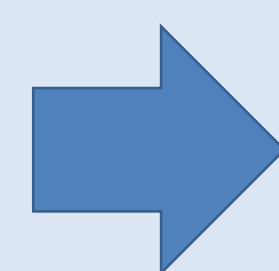
The Cleanfix RA 660 Navi Robotic Scrubber Dryer has proven its effectiveness in automation. It is an autonomous floor scrubbing machine, which is able to perform floor scrubbing independently with its unique patented navigation system and laser technology.

The machine is equipped with four different types of laser and eight sonar sensors to detect any object within its five meters of range. It will automatically slow down and stop if needed to prevent collision

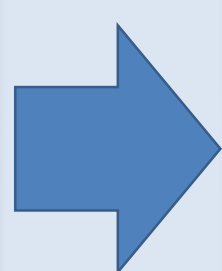
### How Does The Autonomous Floor Scrubber Unit Work?



Mapping of floor areas were carried out.



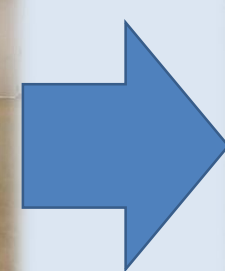
Floor layouts were entered into the system.



Signages are placed around the work area.



Unit in operation.



Water tank are emptied after cleaning complete.

## RESULTS & BENEFITS

### 630 Man Hours Saved Per Annum!

Time saved on performing the cleaning task each year, approximately 630 hours

The project led to an estimated **Man Hour** savings of **\$10,800 per annum!**



**Automation**



### Quicker Dry Time

The autonomous floor scrubbing unit enables large areas to be cleaned and dried concurrently in a timely manner. This will help decrease the likelihood of falls and accidents related to wet floors.

### HCIs

Clean floors help reduce the spread of healthcare-associated infections (HCIs). Cleaning solution are poured into the water reservoir of the scrubber unit and the floor can be cleaned in a timely manner.

### Greater Cleaning Efficiency

The scrubber unit delivers consistent cleaning performance and improves the quality of cleaning tasks.

### Streamlining Housekeeping Project Work Scheduling

The unit allow housekeeping to streamline project works scheduling for optimum utilization of its pool of staff.

## CONCLUSION

The autonomous floor scrubbing machine is operational at NHCS building since April 2017. It enable our housekeeping team to be resilient to both manpower shortages and rising labour cost, which leads to a good opportunity to redesign the workflow and redistribute workload.

More importantly, the machine improves the quality of cleaning tasks while freeing up manpower to perform other tasks.