

# CLEAN & SMART RESTROOMS

*Open SAP -IoT  
Prototype Challenge*

## Story

Ops manager has the task to make sure all restrooms managed by his maintenance outsourcing firm is kept in pristine condition always, to be used by its patrons. The mission of his organization is to upkeep clean restroom facilities managed by smart processes, lean crew, efficient utilization of resources, whilst making no compromise to quality.

The manager needs to know the list of facilities under his purview, its resources, location, usage pattern & stock level (soap, tissue rolls, hand towels, etc). He is tasked to maintain these restroom facilities with the help of his crew of sanitation professionals, cleaning & restocking supplies, transportation & cleaning equipment.

He needs to manage cost, human efforts as well as consumables. At the same time, he cannot leave any of the facilities under-maintained. He needs to keep watch of any out-of-stock, out-of-service equipment. Unforeseen outages of facility (plumbing issues or damaged resources) needs are to be attended with high priority and right professionals. Communication to customers is key in these instances.

## John Davis

[Operations (Ops) Manager]



**“ Keeping the restroom facilities clean & operational, with an efficient crew is my goal. Quality of work is non-negotiable ... ”**

- 40, process oriented, 15 years in facility management. I work out of my firm’s HQ
- I have to keep the cost low, efficiency high & undeterred commitment to quality
- I spend most of my time on computer manually recording and tracking key process indicators, on phone with crew, firefighting outages & customer calls.
- I work with sanitation crew, buyers (for supplies), plumbing contractors and customers

### Responsibilities

- I am responsible for setting restroom stock thresholds
- I am responsible to come up with optimal maintenance windows for facilities, make schedule for crew
- I will have to work with contractors in case of plumbing / equipment outage & service
- I am tasked with process and resource optimization

### Main Goals

- Keep the restroom facilities clean & functional all the time
- Optimal resource utilization - human efforts, travel time of crew, restroom resources (soap, hand towels, tissue rolls, etc) & cleaning supplies

### Needs

- To know all restroom facilities & their location
- To know usage patten (Peak & off-peak usage)
- Know stock levels in each restroom at any given time – why to restock & when not to.
- To know when facility has issues

### Pain Points

- No data points on usage of each facility
- Sometimes facilities run out of supplies (soaps, tissues). Other times, half used tissues rolls and hand towels are replaced with fresh ones (else stock might run out before next service window)
- Equipment outages are notified manually – delay in response

## Point of View

As an ops manager, I would like to have real time data on restroom usage, equipment/supply status at the restroom and crew status, so that I can plan logistics & crew utilization optimally while keeping cost low and restrooms in pristine condition.

## User Experience Journey - A day in Ops Manager's life

ACTIONS	Start the day. Review backlog.	Review Daily planning chart & Crew roster. Amend daily planning chart if required	Receive customer call on maintenance delay or restroom service disruption	Call Sanitation Crew / Call plumbing contractor for remediation	Review crew utilization & Restroom maintenance history.	Identify areas of improvement, efficiency and cost optimization
MINDSET	What are we up for today??"	"Can cleaning crews handle work load for the day?" "Can their efforts be optimized?"	"Oh, this needs attention ASAP"	"How soon a crew or contractor reach the site?" "Let's get this fixed"	"How good are we at our work?" "Is my crew being utilized efficiently?"	"How can I improve customer satisfaction? Crew utilization" "If only I had more data and insight on usage patterns"
FEELING	😊					
TOUCH POINTS	Computer, Work log, Reports	Planning Chart, Crew roster	Phone, Email, Message(Text)	Phone, Email	Computer, Charts, Reports	Computer, Reports

## Mock Up – Landing Page / Dashboard view



Restrooms To Be Cleaned - Today :



Highway Facilities:



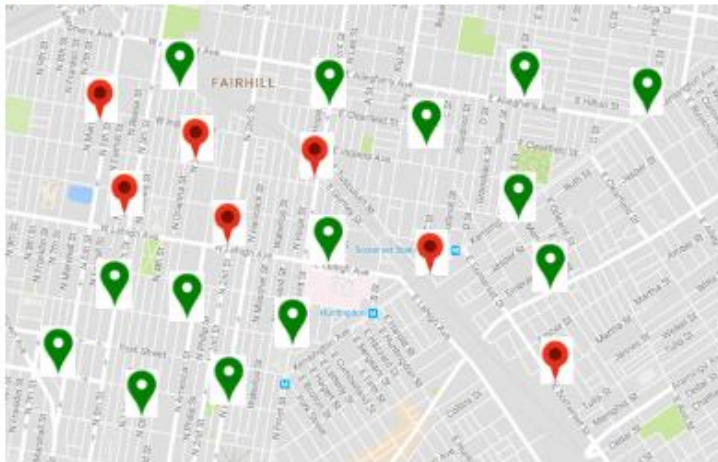
Restroom Cleanliness Index:



Crew Utilization:




Urban Facilities:





Notifications:

-  Restroom 3256-M Reported by Customer Needs floor cleaning
-  Restroom 1654-W Soap level Low Needs refill
- Restroom 6357-M Maintenance complete Faucet fixed
-  Crew 33 Delayed in traffic Delay in schedule. Replan
-  Restroom 5398-W Hand towel dispenser not working Needs attention

## Mock Up – Detailed View Page






[View All...](#)




Address: 274 W Maint St

Restroom #: 7359-23-M



Connected 

Active 

Assigned Crew: C-23




Notifications:



-  3 Hrs ago Hand towel / napkin level low
- 2 Days ago Faucet leak fixed
-  2 Days ago Contractors working on Faucet leak


Restroom Clean Index: ★★★★★ Crew ETA :  6 Hrs

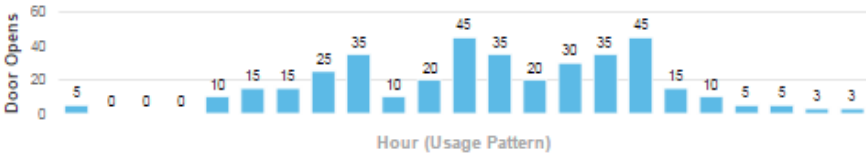
Customer Contact



Steve Smith








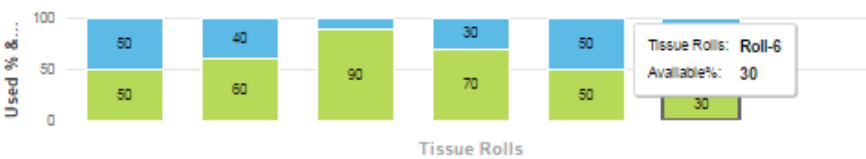


Hour	Door Opens
1	5
2	0
3	0
4	0
5	10
6	15
7	15
8	25
9	35
10	10
11	20
12	45
13	35
14	20
15	30
16	35
17	45
18	15
19	10
20	5
21	5
22	3
23	3

Plumbing Service Info:







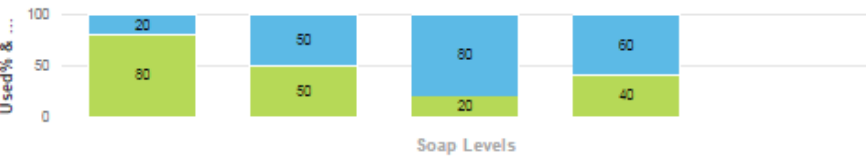


Roll	Used %	Available %
1	50	50
2	40	60
3	0	90
4	30	70
5	50	50
6	0	30

Check Lights







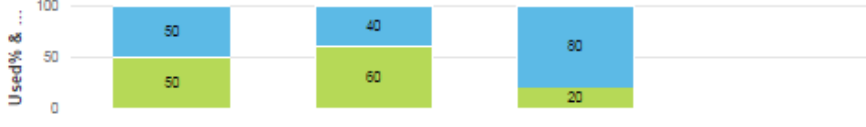


Level	Used %	Available %
1	20	80
2	50	50
3	80	20
4	60	40

Check Temperature







Sanitizer	Used %	Available %
1	50	50
2	40	60
3	80	20

**Study :** <https://standard.build.me/user-research/f14b5130ea8a52fe0e1d5ce6/participant/e37774539f0f2fb00e1f2af1>