

KÄRCHER

makes a difference



CLEANING ON DEMAND

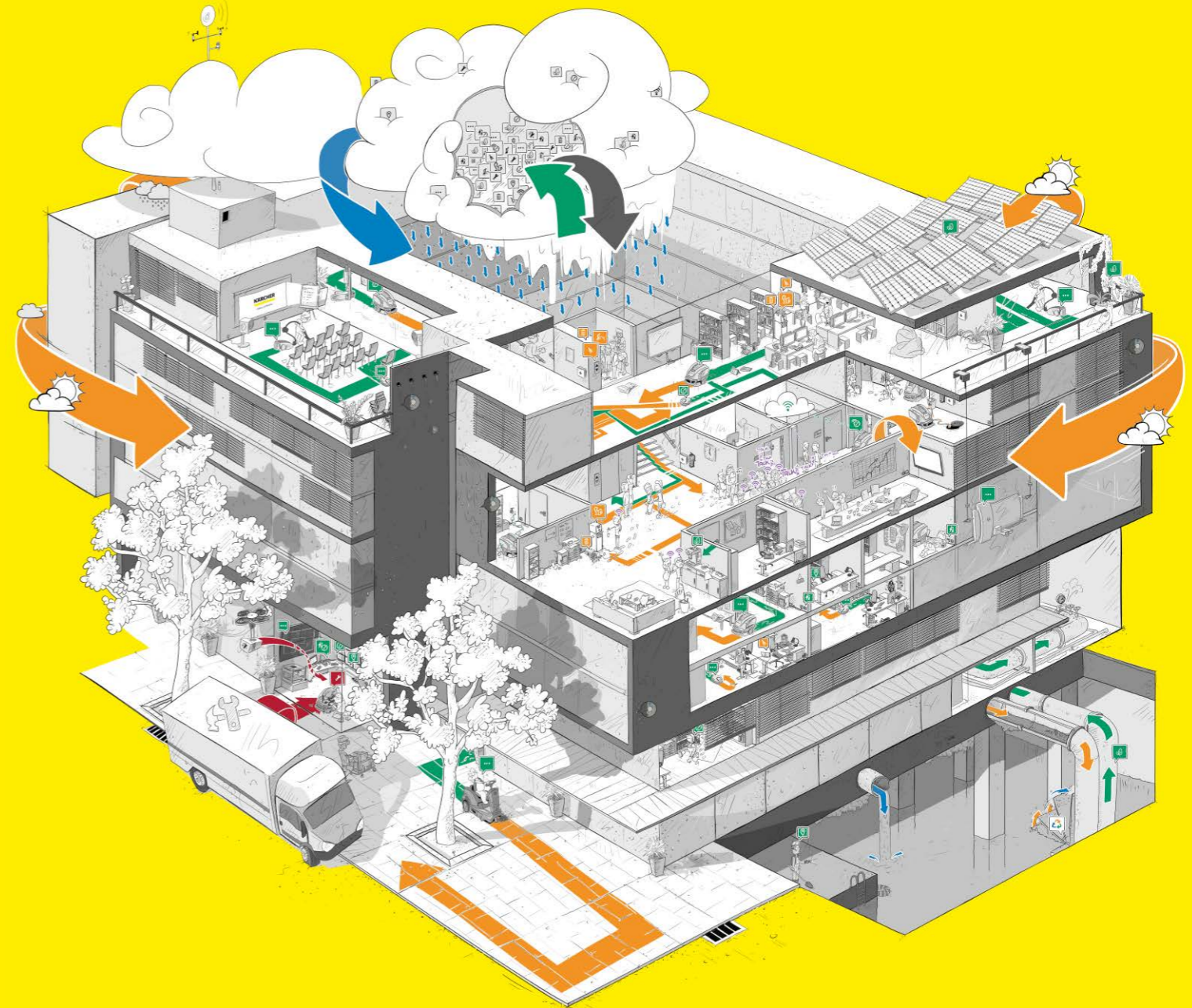
We make digitisation happen

PROFESSIONAL | CONNECTED CLEANING

DIGITISATION – A MEGATREND

The future is here. Digitisation is changing our world. Digital transformation is driving change in every aspect of life, for example the evolution of smart buildings. This is boosting the demand for intelligent cleaning solutions.

With our digital product portfolio "Connected Cleaning" we are taking a leading role in developing and implementing state-of-the-art building cleaning solutions.



SOLVING COMPLEXITY



Cleaning on Demand manages cleaning based upon actual needs and is an element of connected cleaning.

Cleaning buildings is an incredibly complex task. Many different areas, the dynamic behaviour of occupants and visitors and changing outside conditions are factors which cleaning service providers have to consider to balance quality and cost. This task is virtually impossible with static cleaning schedules.

A FUNDAMENTAL CHANGE IN CLEANING STRATEGY: CLEANING ON DEMAND

- Cleaning on Demand is an element of connected cleaning
- A system tailored to enable cleaning according to actual demand
- Managing cleaning staff based on matching measured cleaning needs



CUSTOMER PROBLEMS

A FIXED SCHEDULE FOR CLEANING:

- Cleaning is not done when it is needed
- The work required is unclear and the cleaning quality is inconsistent.
- No measurement of the need for cleaning

CUSTOMER SOLUTIONS

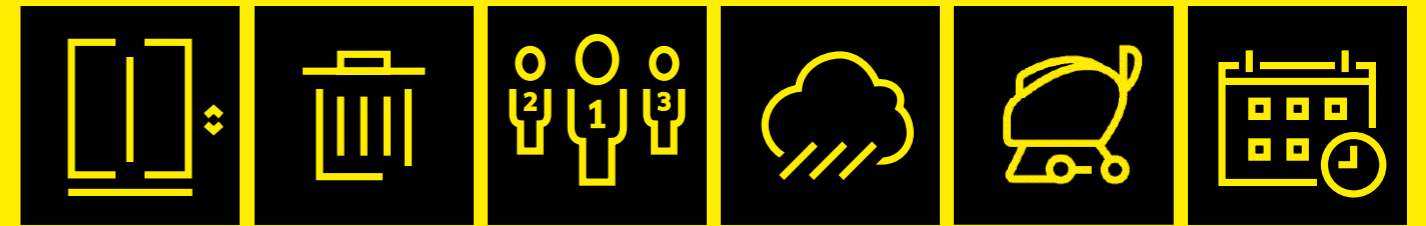
A SYSTEM FOR DYNAMIC, NEEDS-BASED CLEANING:

- Definition and constant measuring of cleaning needs based on different data sources
- Dynamic changes cleaning plans

SYSTEM. NETWORK. INSIGHT.

Kärcher Cleaning on demand uses inputs from different data sources and turns them into meaningful information that is used to dynamically adjust the cleaning schedule of a building.

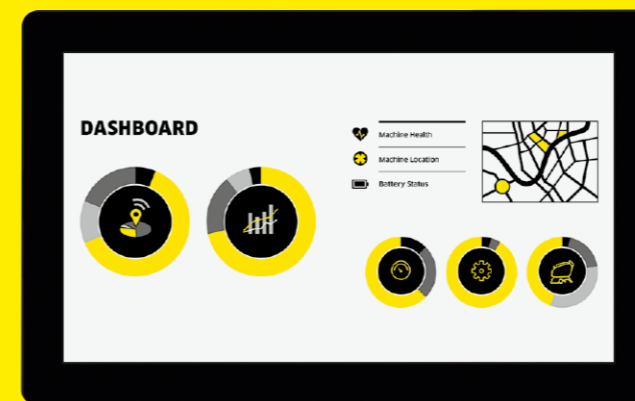
1 RELEVANT DATA RECORDING



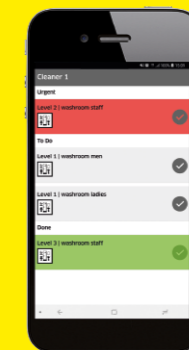
2 ALGORITHMS AND PROCESSING



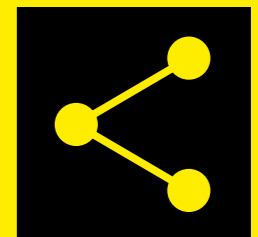
3 VISUALISATION AND AVAILABILITY



Kärcher web portal



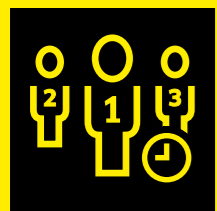
Device for cleaners



APIs to FM-Systems

ALLOCATION OF CLEANING TASKS

Incoming data gets processed and evaluated. Algorithms identify the most suitable time and cleaner to perform a recognised cleaning task. One example of this data is the number of people.



Once a sensor has been passed by a given number of people a cleaning task is generated.



The cleaning task is sent to the mobile device of the relevant cleaner.



The cleaner completes the task and reports this to the system.

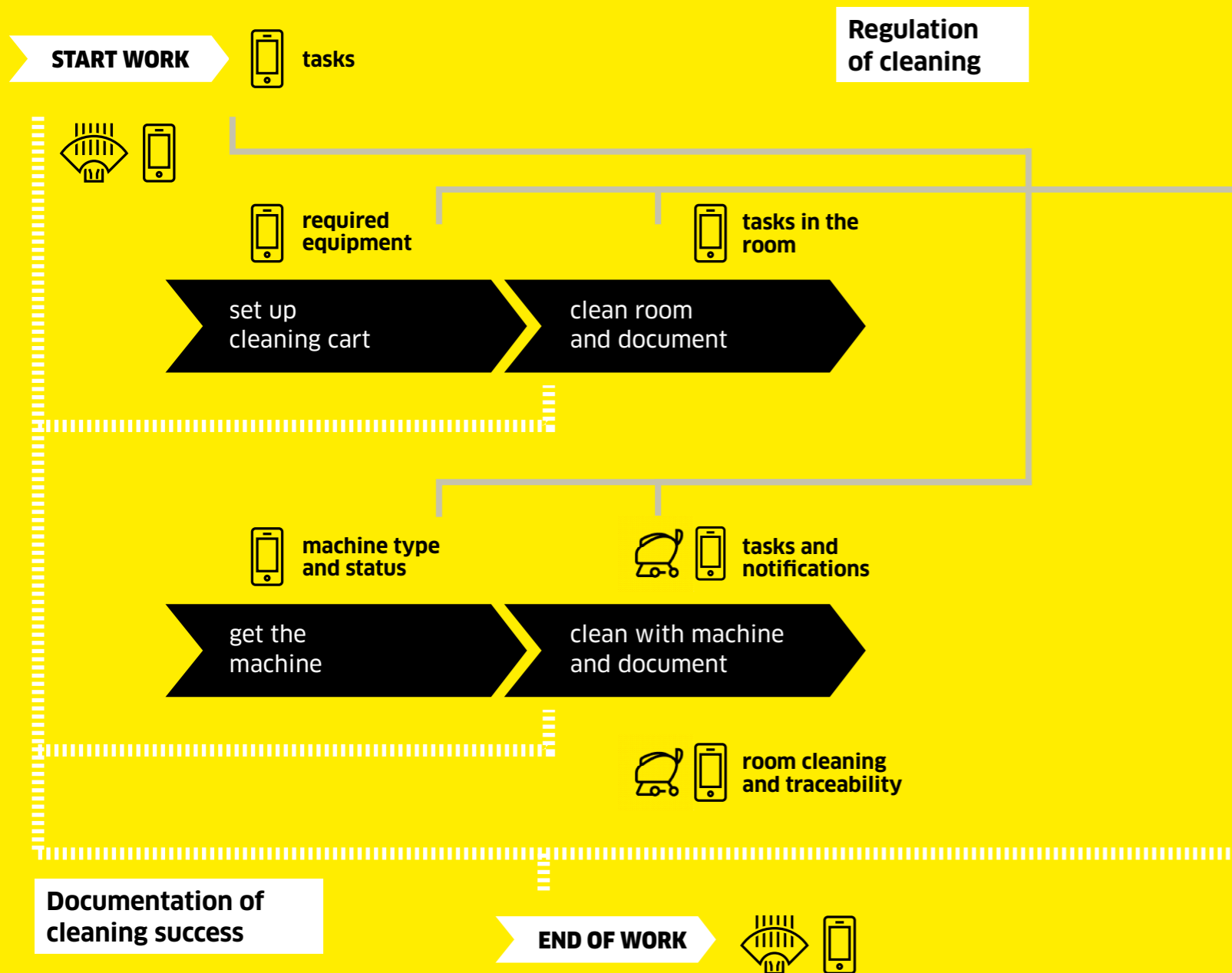


POSSIBLE USE CASES

Data sources can be used individually or in combination - depending on availability and customer need.

- Combination of room usage plans and presence sensors
- Combination of user feedback and connected washrooms
- Combination of cleaning plans and cleaning machine status
- Combination of weather data and people counters

PERFECT INTERACTION



The close integration within Connected Cleaning provides substantial added value for the customer in the cleaning process.

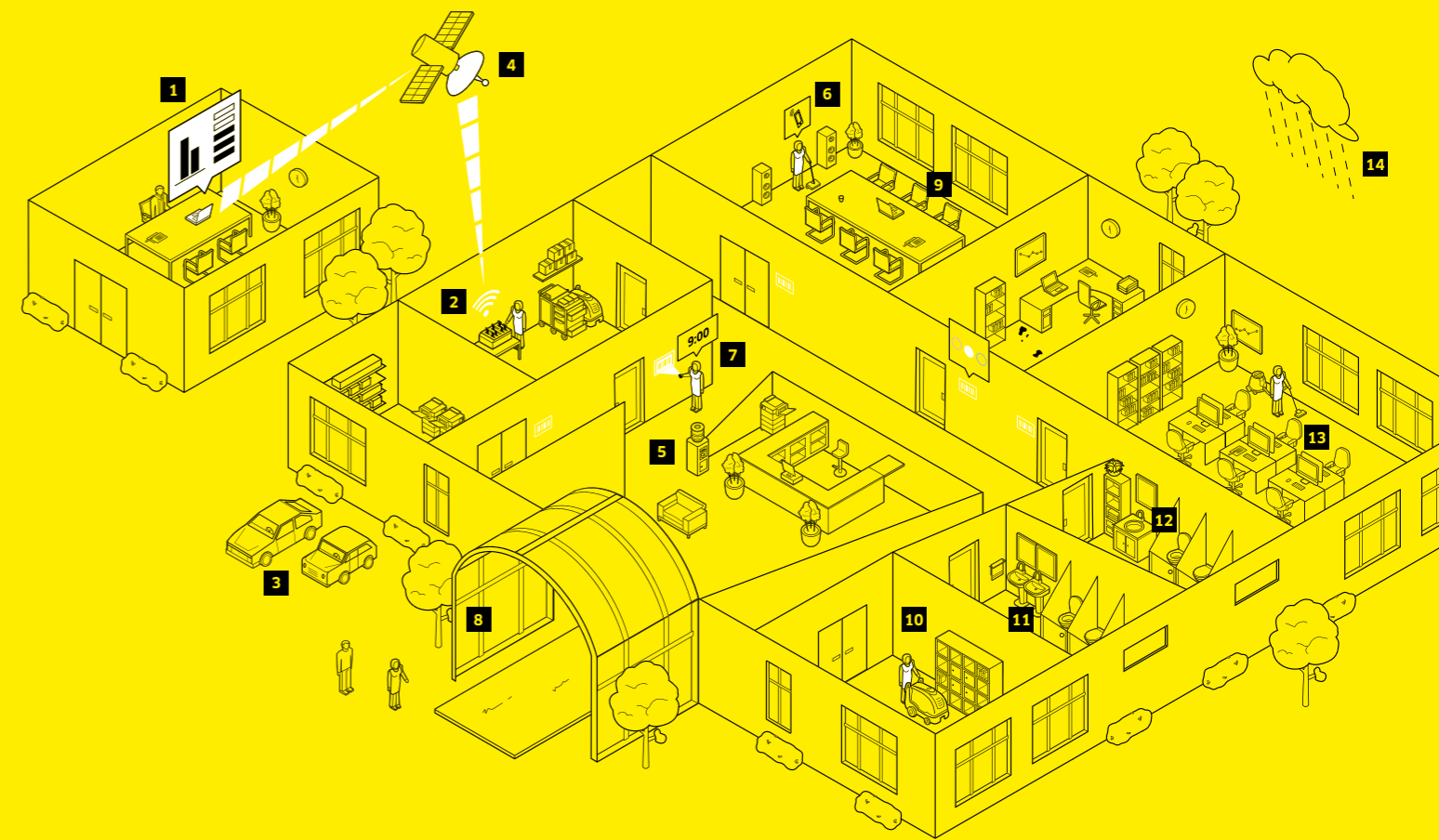


TRANS- PARENCY

Connected Cleaning provides deep insight into all relevant aspects of cleaning. These include the cleaning needs, the performance of cleaning machines, daily cleaning times and the desired cleaning quality in buildings.

The result is a consistent overview and transparency throughout the cleaning process.

- 1** Analysis in the Kärcher Web Portal
- 2** Transfer of scanner data with the docking station
- 3** Car park data is used to determine need for outside cleaning
- 4** Communication via mobile phone network
- 5** Kärcher Fleet sends water usage data and service notifications
- 6** Notification of cleaning staff about cleaning tasks
- 7** Recording of working and cleaning times
- 8** People counters track numbers to calculate cleaning needs
- 9** Cleaning based on room usage plans
- 10** Kärcher Fleet sends data such as machine position and status
- 11** Connected washrooms send notifications on required actions
- 12** Users give feedback about actual cleaning needs
- 13** Fill level sensors for bins
- 14** Weather data to adapt cleaning



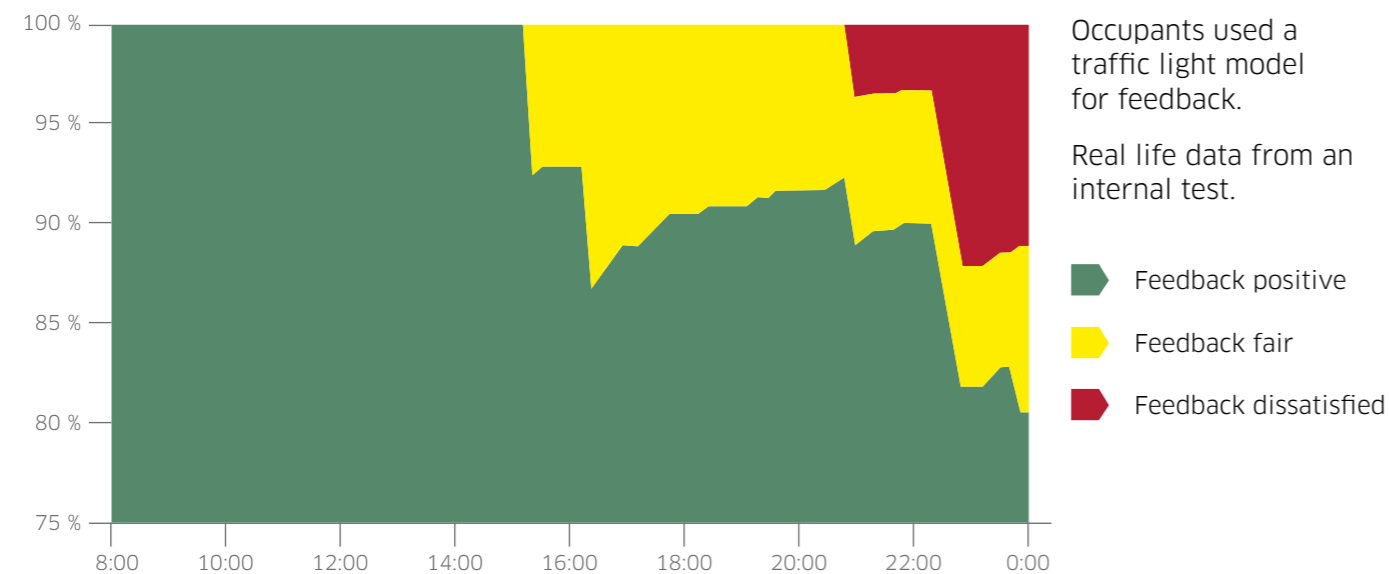
QUALITY

Highest quality in cleaning service means that there is never any dirt anywhere.

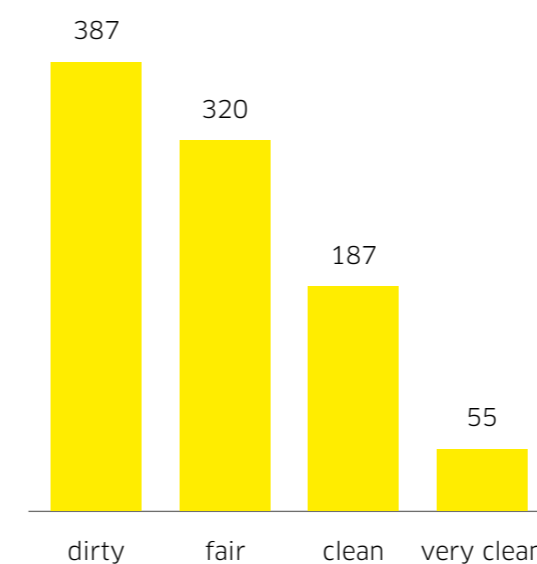
RECORDED DATA AND EFFECTIVE CLEANLINESS ARE CORRELATED

Adapting cleaning schedules according to predicted dirt and reducing periods of low cleanliness is a main element of Kärcher Cleaning on Demand.

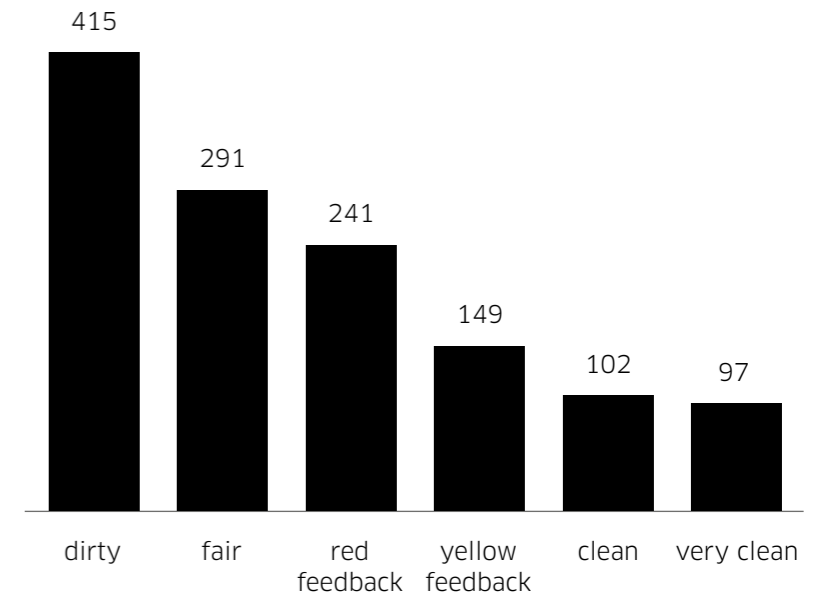
PERCENTAGE DISTRIBUTION OF FEEDBACK OVER A DAY AFTER CLEANING



AUDITORIUM



RESTROOMS



EFFICIENCY

Cleaning can be efficient if you allocate your cleaning resources to the tasks that are most needed. Part of this involves cleaning only when it is necessary – and not based on a schedule with fixed intervals.

During the period in which data was recorded, an average of **11% of cleaning time** was saved.

CLEANING ON DEMAND – A FIELD STUDY

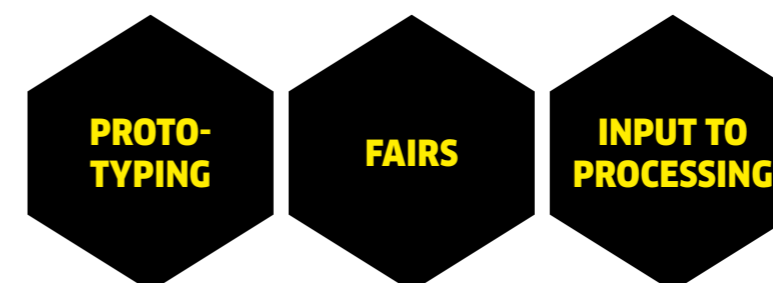
Cleaning object
Object type: **office building**
Levels: **5**
Cleaning area: **1000 m²**

Cleaning frequency: **5 times a week**
Data collection period: **4 - 8 July 2016**
One week of data collection assuming that no room use leads to no cleaning.

Increase in efficiency: Save in every aspect and improve quality: reduce working time and the use of consumables, wear parts, energy etc.

WHAT'S NEXT

We are currently developing a prototype of our Cleaning on Demand System. We will introduce this at the ISSA Interclean fair. Beyond that, we invite you to get involved in our Cleaning on Demand during our development phase:



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