

RE-OPEN

BEST PRACTICES AND GUIDELINES

KONE Health and Well-being Solutions
KONE People Flow Planning And Consulting



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SUPPORTING A SAFE RETURN TO WORKPLACES

The workplace as we know it is being reinvented in real-time. The pandemic has transformed the way we work and do business. Working from home, remote meetings, social distancing and restrictions on how people move around mean that office buildings will have to meet new expectations as they start to be repopulated.

To help our customers welcome employees back to their office buildings in a safe manner, KONE has put together this report summarising the best practices and guidelines for safe People Flow. It includes measures that can be taken for vertical lift traffic, which are specific to plans for recovery and reopening of office building requirements.

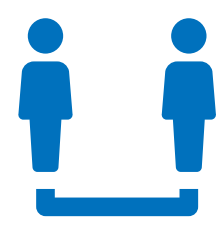
This report has been prepared by the KONE People Flow Planning and Consulting experts as a part of KONE's Health and Well-being solutions.

For decades, KONE has developed and fine-tuned methods to plan and analyse the flow of people in buildings. Our teams of people flow experts are at your disposal to help determine the right approach for your building and its users.

THIS DOCUMENT PROVIDES INFORMATION AND GUIDELINES FOR:



How office buildings can be gradually repopulated in a safe and efficient manner



Supporting safe operations by making the social distancing targets tangible in relation to vertical traffic parameters



Communicating global best practices and illustrating the concepts through a practical case example

KEY CONSIDERATIONS FOR SAFER PEOPLE FLOW

Crowding management measures



- Limiting the amount of persons allowed in lift cars according to guidelines
- Staggering morning arrival, lunch break and exit times
- Restricting the number of people in lift lobbies

Crowd reduction measures



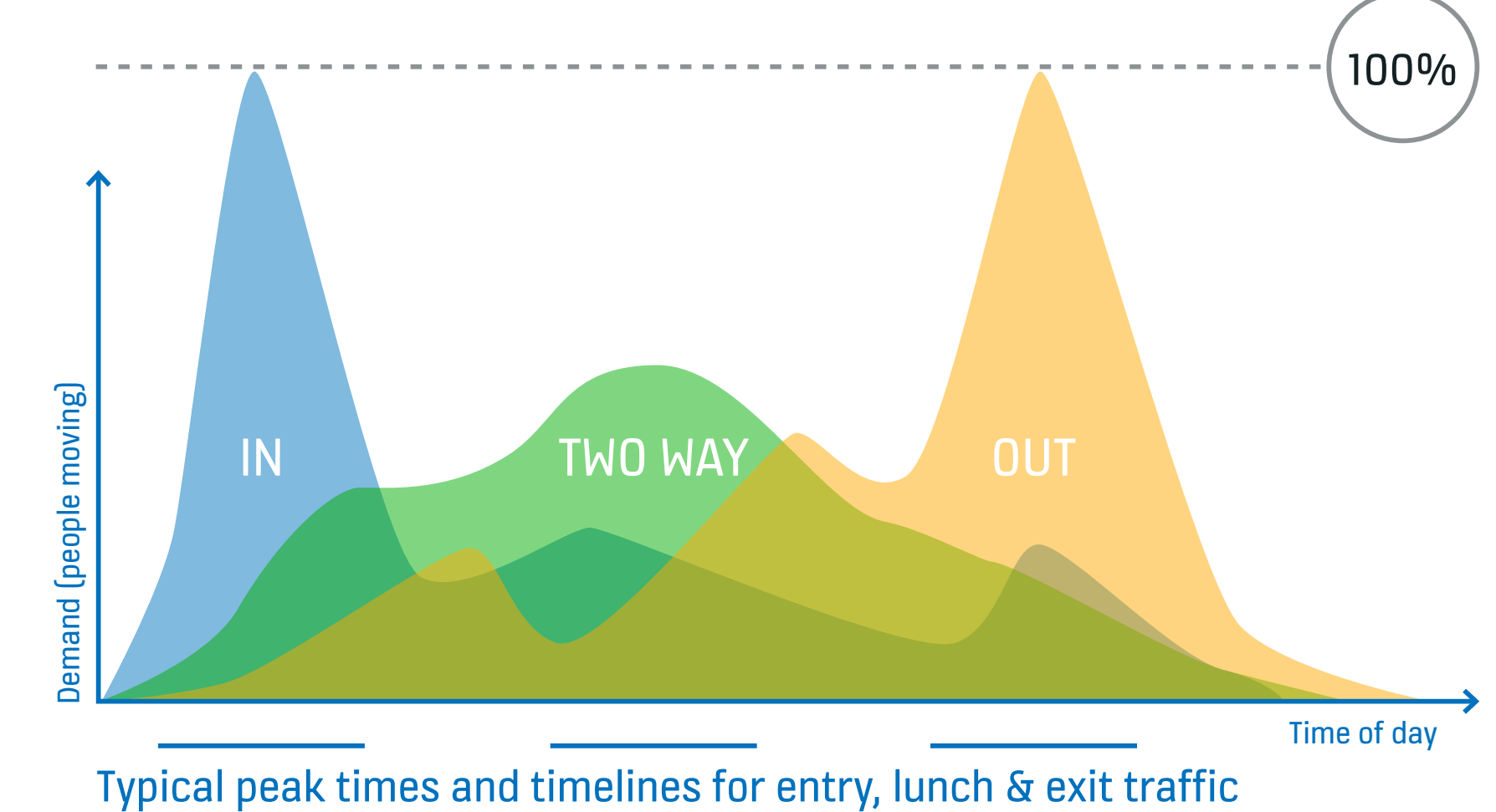
- Reducing the number of people in a building by, for example, 50%
- Implementing bi-weekly team allocation and/or remote working options
- Dedicating the use of stairs by encouraging one-way traffic on stairs for exit or entry purposes

Limiting movement within the building

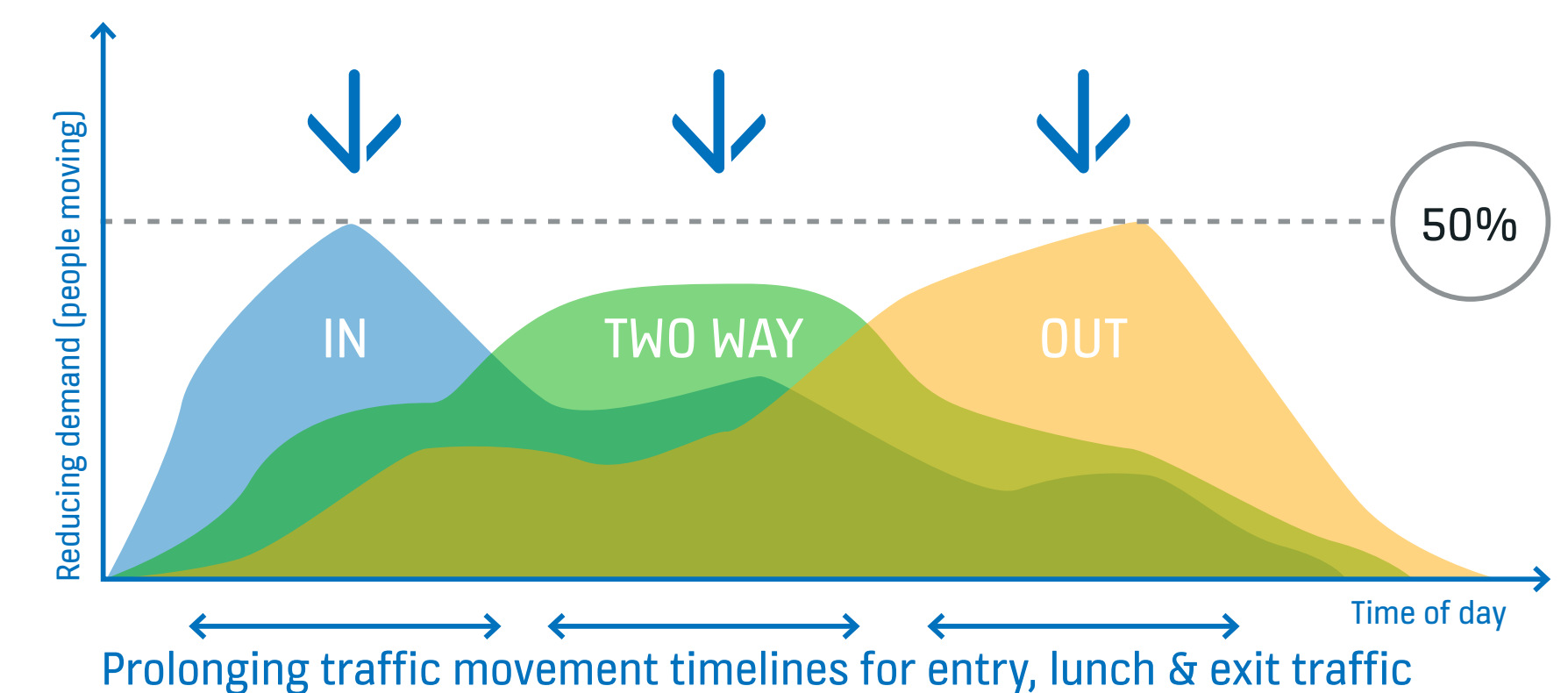


- Introducing measures to reduce the need to move between office floors by limiting use of typically busy social areas, such as floors with restaurants or cafés
- Limiting access through some exit and entry floors
- Dedicating the use of stairs as part of a vertical transportation strategy – restricting or eliminating lift use for short travel distances

TYPICAL OFFICE BUILDING LIFT TRAFFIC - PRE COVID19



PROPOSED OFFICE BUILDING LIFT TRAFFIC - POST COVID19



RESTRICTING LIFT CAPACITY TO MEET THE SOCIAL DISTANCING GUIDELINES

Quick reference for reducing the number of people in standard lift cars with different social distancing guidelines

Rated load (kg)	Car width (mm)	Car depth (mm)	Persons in lift car per distance guideline		
			(1.0 m)	1.5 m	2.0 m
1000	1600	1400	1	1	1
1150	1600	1550	1	1	1
1250	2000	1400	2	1	1
1350	2000	1500	2	1	1
1600	2100	1600	2	1	1
1800	2350	1600	2	2	1
2000	2350	1700	3	2	1



1 person limit for lift car rated up to 1600 kg with min. 1.5 m social distancing



2 person limit for lift car rated 2500 kg or greater with min. 2.0 m social distancing

NOTE:
Rated loads according to EN 81-20:2014 and raw-car dimensions according to ISO 8100-30:2019. The occupancy area of a passenger is taken as 0.21 m² within the Fruin body ellipse (600 mm in width and 450 mm in depth).

NOTE:
Persons in the car represents the maximum number of persons that fits in the car with the given social distance. If dividers are used in the car, an additional person may fit in. It is also recommended to check the number of persons with the actual car dimensions.

NOTE:
Some regulatory requirements for social distancing vary:
WHO – 1 m
Ireland – 2 m
UK – 2 m



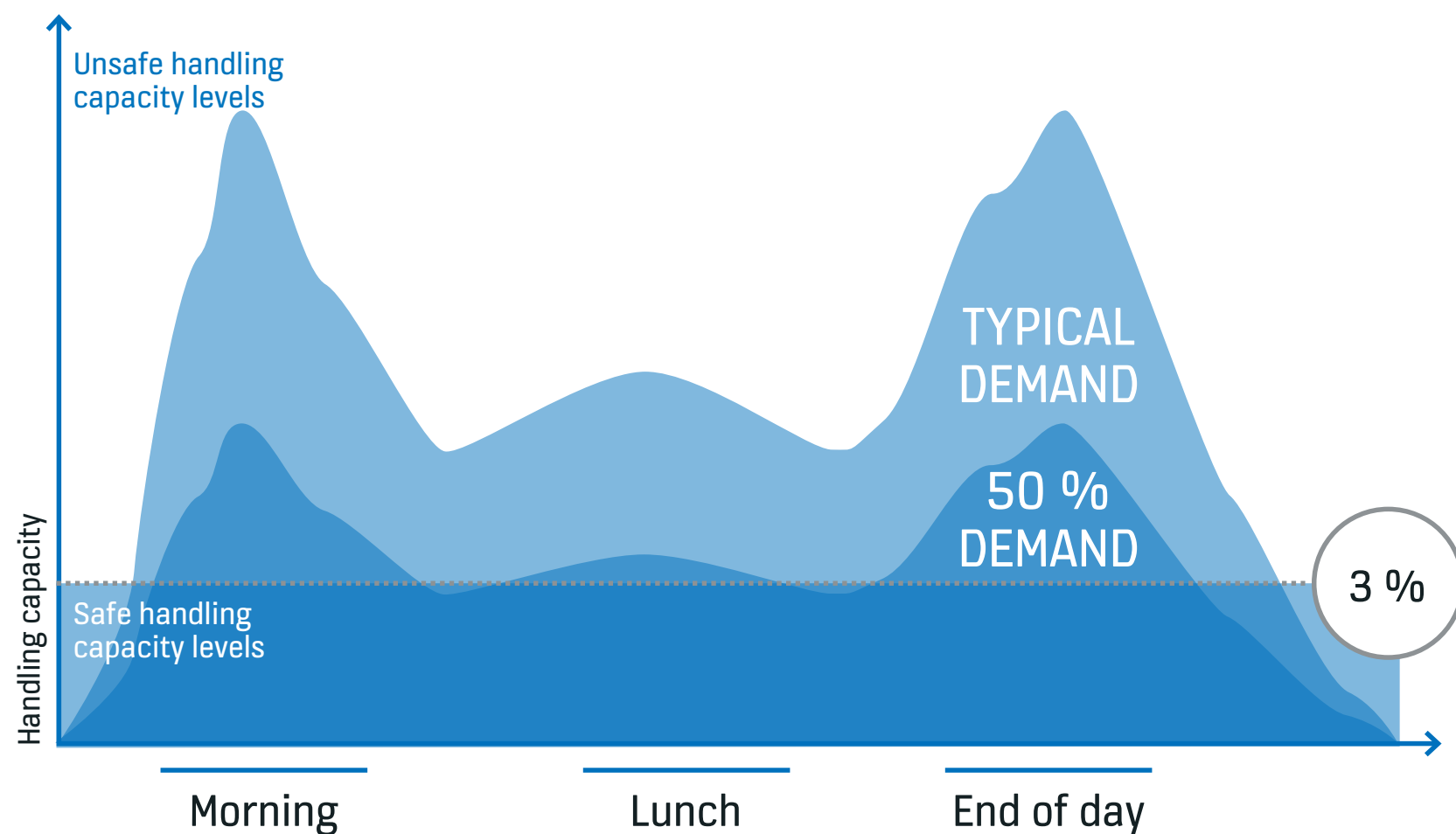
Additional guidance for hygienic use of lifts available. Ask your KONE contact for details.


PLANNING FOR AN OFFICE BUILDING RE-OPENING


Reducing demand alone may not be enough to reach safe guideline targets or to maintain reasonable building user experiences.


In the example below, the morning incoming traffic and lunch traffic amount still rises above the 3 % handling capacity guideline without implementing any additional crowd management measures.

MULTI-TENANT VERTICAL TRAFFIC MOVEMENT WITH 50% REDUCTION




 Establish the amount of people allowed in the lift cars.

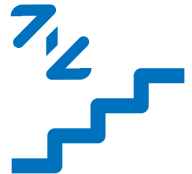
 What is a safe person limit in the lift car?


 What is the demand for lift traffic in the building? Can the population be reduced? What other movement limits might be needed?

 +  How many people use the building? Can traffic between floors be reduced? How?

 What is the capacity in the building lobby? What are the working habits in the building? How should the user experience expectations be defined?

 +  +  Can staggered timelines for entry and exit be allocated? How should lunch time & social floor traffic be limited? What is a reasonable building entry process time?

 How can the building staircases be best utilised with the safe traffic planning?

To make impact of the changes concrete, we have prepared an example building case study with three different re-open setups on the following pages. 

OPTION 1: MID-RISE OFFICE BUILDING

- Reduced occupancy
- Staggered arrival
- Managed entry process


THE SETTING


A mid-rise office building that is considering to open up for business with the following measures:


	Opt. 1	Opt. 2	Opt. 3
Limiting the amount of people in lifts to 2	✓	✓	✓
Limiting persons in the lift lobby to 4	✓	✓	✓
Reducing the population to 50% of the pre-COVID19 levels	✓	✓	✓
Stipulating 1.5 m social distancing	✓	✓	✓
Reduced occupancy	✓	✓	✓
Social distancing	✓	✓	✓
Staggered arrival		✓	✓
Managed entry process			✓

Main building parameters


Office space ratio	1 person / 11 m2
Amount of lifts	4
Floor levels	16
Lift size	1500 kg (20 persons)
Building population	850
Reduced occupancy	425
Social distancing	1.5m

	2 Person limit in the lift	4 Person limit in the lift lobby	<p>How to interpret the results: Adhering to the social distancing guidelines, the building owner limits the building population to 50% by assigning bi-weekly teams. At the same time, number of people in each lift is limited to 2, and in the lift lobby to 4.</p>
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	30-35 People arriving at a time during the busiest 5 min slot capacity	NOTE: This is 1/3 of the normal amount due to reduced lift capacity	<p>How to interpret the results: The combined reduction of building population and lift capacity means in this case that the lifts can serve only up to 30-35 people per 5 minutes during busy morning up-peak time.</p>
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	64 min Filling time	NOTE: This is 3X the amount of time needed compared to a normal capacity situation	<p>How to interpret the results: Limiting the amount of people in lifts reduces the lift transportation capacity, thus increasing the time that is needed to transport all building users to their floors. Stairs could also be utilised for users to reach - for example, the first 5 floor levels.</p>
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	50 sec Average lift lobby dwell time	<p>How to interpret the results: The average time people spend in the lift lobby is longer than with normal capacity, but remains mainly at reasonable service level. This does not, however, take into account the time needed to reach the lift lobby safely after arriving to the building.</p>
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	4-5 Average amount of people in the lift lobby	17 Amount of persons in lift lobby at most crowded moment	<p>How to interpret the results: Also the average number of people in the lift lobby is in line with the building owner's guidelines, but the safe social distancing threshold is momentarily exceeded and the lobby could get very crowded.</p>
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OPTION 2: MID-RISE OFFICE BUILDING

- Reduced occupancy
- Staggered arrival
- Managed entry process


THE SETTING


A mid-rise office building that is considering to open up for business with the following measures:


	Opt. 1	Opt. 2	Opt. 3
Limiting the amount of people in lifts to 2	✓	✓	✓
Limiting persons in the lift lobby to 4	✓	✓	✓
Reducing the population to 50% of the pre-COVID19 levels	✓	✓	✓
Stipulating 1.5 m social distancing	✓	✓	✓
Reduced occupancy	✓	✓	✓
Social distancing	✓	✓	✓
Staggered arrival		✓	✓
Managed entry process			✓


Main building parameters


Office space ratio	1 person / 11 m ²
Amount of lifts	4
Floor levels	16
Lift size	1500 kg (20 persons)
Building population	850
Reduced occupancy	425
Social distancing	1.5m

	2 Person limit in the lift	4 Person limit in the lift lobby	<p>How to interpret the results: In this scenario, the building owner's guidelines regarding the building population and # of people in lifts and lift lobby remain unchanged compared to Option 1.</p>
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	30-35 People arriving at a time during the busiest 5 min slot capacity	NOTE: This is 1/3 of the normal amount due to reduced lift capacity	<p>How to interpret the results: The transportation capacity remains the same as in Option 1.</p>
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	105 min Filling time	NOTE: This is 5X the amount of time needed compared to a normal capacity situation	<p>How to interpret the results: In this option the building owner also implements a staggered arrival process in order to reduce potential crowding. This is planned as 30 min slots with 15 min breaks between each time bin.</p>
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	26 sec Average lift lobby dwell time	NOTE: This result is at a good service level according to KONE service level standards	<p>How to interpret the results: The lift demand expands across a longer time period, which helps reduce dwell times to good service levels.</p>
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	2 Average amount of people in the lift lobby	13 Amount of persons in lift lobby at most crowded moment	<p>How to interpret the results: The lift lobby occupancy remains predominantly within the "safe zone" threshold (max 4). However, due to a non-managed entry process, the lift lobby crowding can momentarily rise above safe distancing levels.</p>
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OPTION 3: MID-RISE OFFICE BUILDING

- ✓ Reduced occupancy
- ✓ Staggered arrival
- ✓ Managed entry process


THE SETTING


A mid-rise office building that is considering to open up for business with the following measures:


	Opt. 1	Opt. 2	Opt. 3
Limiting the amount of people in lifts to 2	✓	✓	✓
Limiting persons in the lift lobby to 4	✓	✓	✓
Reducing the population to 50% of the pre-COVID19 levels	✓	✓	✓
Stipulating 1.5 m social distancing	✓	✓	✓
Reduced occupancy	✓	✓	✓
Social distancing	✓	✓	✓
Staggered arrival		✓	✓
Managed entry process			✓

Main building parameters


Office space ratio	1 person / 11 m2
Amount of lifts	4
Floor levels	16
Lift size	1500 kg (20 persons)
Building population	850
Reduced occupancy	425
Social distancing	1.5m

 <p>2 Person limit in the lift</p>	<p>4 Person limit in the lift lobby</p>	<p>How to interpret the results: In our third option the building owner sets in place a process for managing the arrival and entry to the building in addition to already reducing demand with bi-weekly team allocation and staggered arrival.</p>
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 <p>30-35 People arriving at a time during the busiest 5 min slot capacity</p>	<p>NOTE: This is 1/3 of the normal amount due to reduced lift capacity</p>	<p>How to interpret the results: The transportation capacity remains the same as in options 1 and 2.</p>
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 <p>105 min Filling time</p>	<p>NOTE: This is 5X the amount of time needed compared to a normal capacity situation</p>	<p>How to interpret the results: In this option the filling time remains the same. The building owner advises occupants to use stairs strategically to relieve extra pressure from lift travel. Dedicated upward stair use is recommended during morning up-peak especially to reach lower floor levels. The general need for short trips during the day is reduced with office management and lunch policy restrictions. Stair use direction is changed to downwards as an additional option for building exit at the end of the day.</p>
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 <p>50 sec Average building lobby dwell time</p>	<p>26 sec Average lift lobby dwell time</p>	<p>How to interpret the results: With a managed building entry process, the building user journey can be planned in a safe manner. This helps provide a clear understanding of how long it will take to reach a desired destination floor from the moment a person arrives to the building, and of the required touchpoints along the journey.</p>
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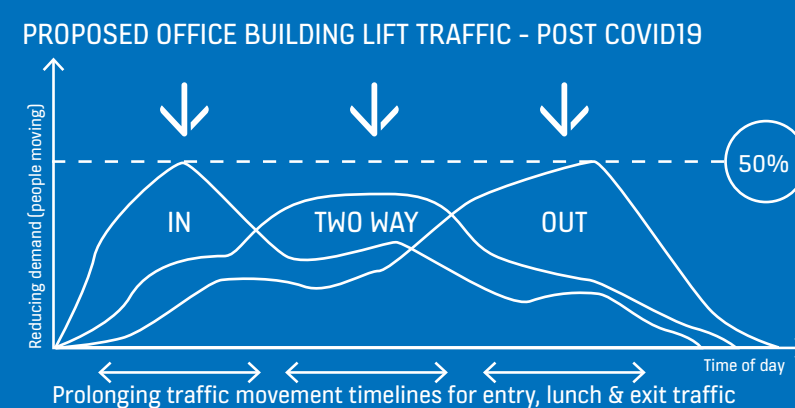
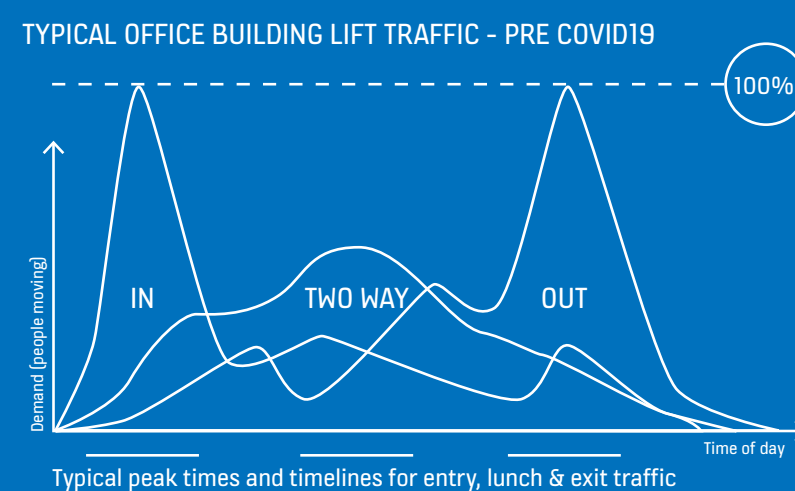
 <p>3.7 Average number of people in building lobby (queue length)</p>	<p>1.8 Average amount of persons in the lift lobby</p>	<p>How to interpret the results: On average, each person will pass through the building and lift lobby in just over one minute. The arrival to the office is safe, smooth and without unplanned queuing. At the peak time, the queue length in the building lobby is at most 14 people, which the building owner can safely accommodate in the lobby's designated waiting areas. The occupancy levels in the building lobby and lift lobby remain safe at all times, without additional need for waiting. The customer experience is secure and safely planned.</p>
<p>14 Maximum number of people in building lobby (queue length)</p>	<p>4 Persons in lift lobby at most crowded moment</p>	

PLAN YOUR BUILDING FOR SAFE RE-OPENING

To support our customers when re-opening their office buildings in a safe manner, our People Flow experts at KONE are at your disposal to help determine the right approach for your building and its users.

1 RE-OPEN BEST PRACTICES AND GUIDELINES

Segment-specific people flow examples, KONE's health and safety guidelines, and introduction to our health and safety solutions.



2 WELCOME TO OFFICE DATA INTO INSIGHTS

Customer specific lift traffic analysis and safe lobby guidelines, support the re-entry to workplaces in a safe way.

- Lift traffic analysis based on customer specifics
- Customers can use the analysis to determine:
 1. How many persons can enter building lifts safely
 2. If any other measures to manage traffic should be considered, such as staggering entries, or other restrictions as seen detailed on previous pages in this document

3 PEOPLE FLOW PLANNING AND CONSULTING

Case-specific 3D simulation with horizontal building lobby planning to address the concerns in the new Covid-19 environment.

- Comprehensive report with lift traffic & horizontal flow analysis and recommendations based on customer specifics.
- Customers can use the analysis to determine:
 1. How crowding can be avoided at building entry and lift lobbies
 2. How to best manage the whole building entry process with Health and well-being solution recommendations for each touch point of the customer journey

INCLUDED: YOU'RE READING ME!

XXX £/€

XXX £/€



KEEP YOUR EQUIPMENT RUNNING 24/7

Keeping every unit running is now more critical than ever. Office buildings will experience constant shifts in usage, due to the ramp-up and change in operations. KONE 24/7 Connected Services can help you stay on top of equipment reliability whilst allowing for maintenance services to be catered to your specific needs.

- Minimise disruptions and maximise availability of critical lifts to guarantee optimal people flow (e.g. offices, hospitals, elderly care homes)
- Optimise on-site maintenance work required by spotting critical service needs and planning accordingly (to secure social distancing)
- Keep staff up to date on equipment status

How it works?

- The system keeps a constant eye on critical parameters
- Intelligent technology analyses maintenance needs and predicts faults
- Our engineer gets the right information at the right time
- You get trustworthy insights into the health of your assets and proposals for the future



Contact your local KONE representative
to learn more about KONE 24/7 Connected Services





MAKING YOUR JOURNEY SAFE, HYGIENIC AND SMOOTH

How people interact with everyday environments has changed. Safe and hygienic will be even more of a priority. KONE's expertise in people flow planning, along with a suite of health and well-being solutions, can help you re-plan and end user journeys in a new environment.



KONE health and well-being solutions promote health and well-being. However, the solutions do not ensure that no new diseases or infections will occur at premises where they are being used. KONE cannot be held liable for any infections or diseases occurring at such facilities or the resulting medical consequences.

CONTRIBUTE TO A
HEALTHIER ENVIRONMENT

REDUCE THE NEED TO
TOUCH SURFACES

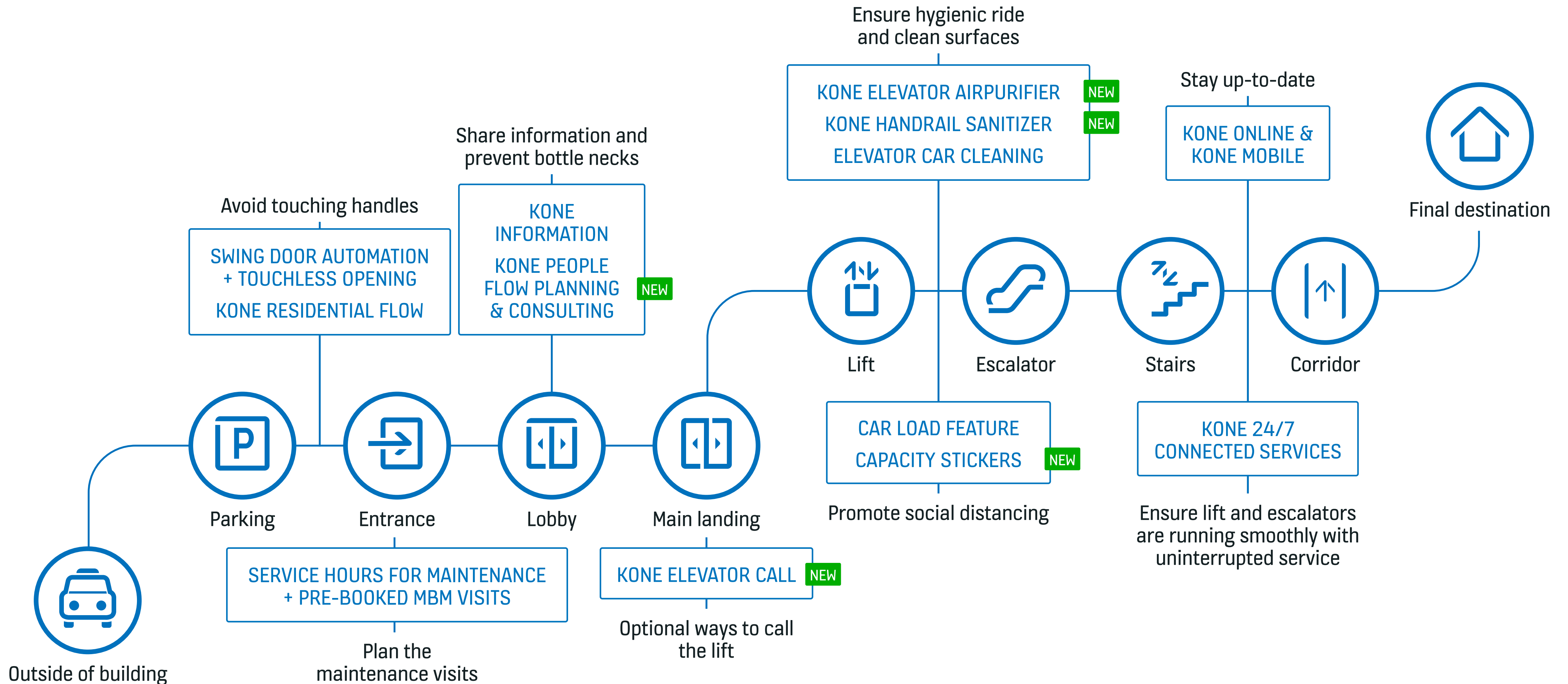
KEEP EQUIPMENT
RUNNING AND SAFE

HELP PREVENT THE
SPREAD OF DISEASE

KONE DELIVERS THE BEST PEOPLE FLOW® EXPERIENCE



SAFE, EASY AND EFFECTIVE EXPERIENCES OVER THE FULL LIFE CYCLE OF BUILDINGS



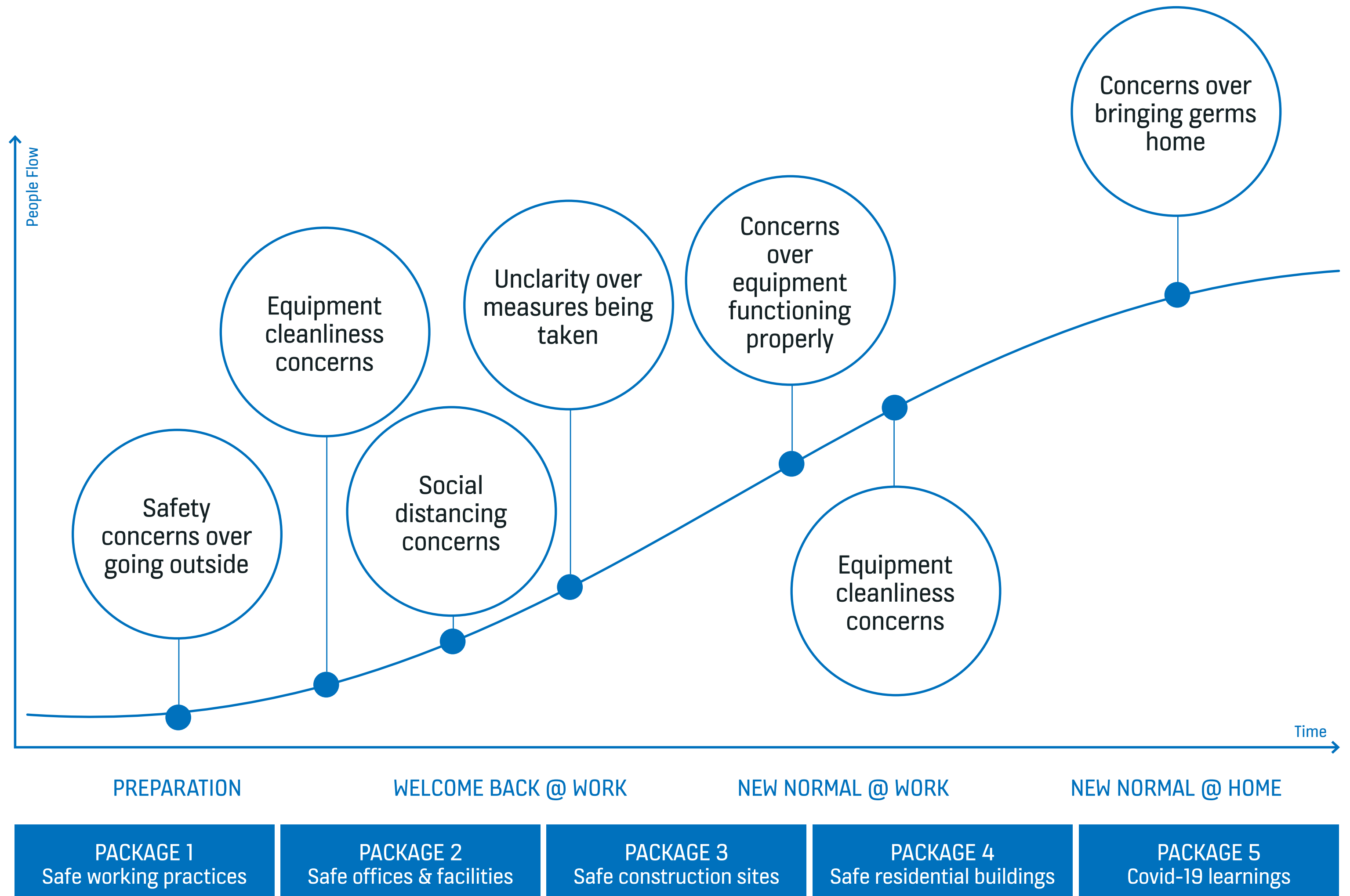
AT KONE, SAFETY, HEALTH AND WELLBEING OF OUR PEOPLE AND OUR CUSTOMERS IS OUR TOP PRIORITY

The coronavirus pandemic is an unprecedented crisis which affects all of us. We care deeply about our customers and the communities we serve, at KONE we are taking extra precautions to help protect our people and our customers' businesses.

We take our role seriously in keeping society running and we are taking actions to keep people moving safely, whilst working closely and in line with local governments and health authorities. During these exceptional times we have strong actions and processes in place to help you safely return back to work and business.

With this in mind, we have compiled an overview of best-practices, specifically for customers.

They include an overview of our safety practices, guidelines for safe site planning and how to manage the flow of people at office premises. We also intend to bring you more information through a series of webinars.



 Contact your local KONE representative to learn more about KONE's material packages

Dedicated to People Flow™



THANK YOU

While KONE has taken reasonable efforts to ensure the accuracy of this document, KONE shall not be liable for any errors or omissions herein. The models, solutions and products described herein do not ensure that no diseases or infections will occur at premises where they are being used. KONE cannot be held liable for any infections or diseases occurring at such premises or the resulting medical consequences.