



Smart access in residential buildings

From mechanical to digital and beyond

New inventions have made access in residential buildings easier and safer

Flexible access

Innovative door solutions

Reliably unlock, open and close, ensuring a secure and user-friendly experience for every resident.

Easy entry

Automated doors facilitate entering the house, be it an electric strike which releases the door bolt via an intercom system or a motorized lock. For advanced convenience, the door leaf can be moved automatically via an electric drive, while premium buildings often feature an automatic sliding door for effortless passage.

Closed doors at all times

Closed doors are essential in residential buildings, where door closers help reduce drafts and enhance security, especially in high-traffic areas.

All for one

Both electronic access and mechanical key systems can offer the comfort of one single access medium for all authorized doors. In more and more apartment buildings, electronic solutions are being embraced by owners and residents alike for their ability to balance efficiency and security.

In modern multi-family buildings, many people come and go, so safe and easy access is an essential requirement of day to day life for those of all ages and abilities.

Especially in modern residential buildings with additional services, **electronic access systems** prove their value:

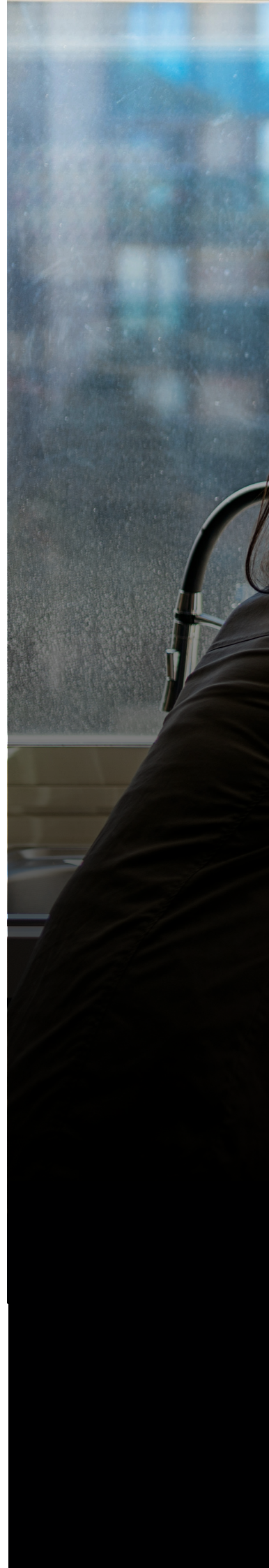
- One single key fob or smartphone can be used not only to access all doors but also to retrieve parcels from the electronic postbox and to unlock EV charging stations for cars
- Issue digital keys for service providers or friends on the go
- Lost keys can be blocked instantly and authorizations altered flexibly

Existing buildings

Housing companies with thousands of residential units in existing buildings can also benefit greatly from electronic access as key management becomes much easier and flexible: whether needing a change of tenant, remote key handover or key loss measures.

Part of the growing smart building trend, this technology is becoming ever more available and affordable, with more and more buildings featuring electronic access. For building owners, operators and property managers, it is reducing the mid-to-long term cost and complexity of managing access while enabling their residents to move freely and safely throughout the building.

Housing companies of all sizes can benefit from electronic access solutions





Top reasons to introduce electronic access systems in residential buildings:

01

Easy key management & more transparency

02

Future-proof building infrastructure

03

Increased building security

Access through the ages



The serrated key

The invention of the tumbler lock in the mid-1800s marked a pivotal moment. Since then, the key has been further developed to offer ease of use, low maintenance, and enhanced security.



The multipoint lock

The multipoint lock, invented in 1912, operates multiple deadbolts with a single turn of the key, and is commonly used in main entrance doors to enhance both security and comfort and comfort.



The reversible key

Invented by Kaba in the 1930s, it can be inserted either way, protecting clothing from sharp edges, and is now a popular choice for premium mechanical key systems.



The door closer

The mechanical door closer was invented to act like an assistant, ensuring doors close automatically to improve security, reduce drafts, energy loss and noise, especially in common areas.



The electric strike

The electric strike, part of newly invented intercom systems, allows residents to unlock the main entrance door remotely for visitors, increasing comfort, especially in multifamily houses with many floors.

1850's

1910's

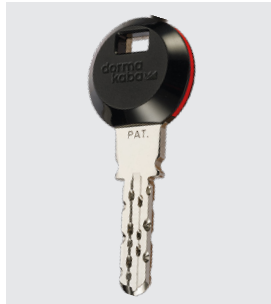
1930's

1940's



The automated door

The automation of doors was a milestone in building design. Sensor-controlled operators open and close doors automatically, providing hands-free access and enhancing accessibility.



The mechatronic key

The mechatronic key, equipped with an RFID chip, was a breakthrough, opening both mechanical and mechatronic cylinders. With electronic locks, the first smart keys combined traditional and modern security features.



Server-based

The first electronic access systems require on-premise servers, making them primarily used in larger commercial buildings, where they remain relatively exclusive.



Cloud-based

Cloud-based access systems eliminate the need for a server on premise, making them an appealing option for non-commercial buildings like apartment blocks and enabling mobile access.



Wallet access

Access is being integrated natively into ecosystem apps, alongside other smart building features like alarm systems, heating, lighting and much more.

1950's 1980's 2000 2020 Today

As a property manager, we want to make our tenants feel at home. Easy and secure access upgrades their living experience.

Access that's easier to manage and easier to use

In a typical apartment building, there are multiple areas where the latest technology can transform how access is managed and controlled.

Apartment

Grant access on the move

Residents only need their single access medium and can issue access rights temporarily to service providers or friends' smartphones without the need to be home or having to hand over a physical key.

Elevator

Floor control

Better control of who enters which floor. Both panel activation in the elevator and the elevator call outside, per floor can be integrated into the access management system.

Lobby

One for all

Residents, property managers and service providers only need one access medium to enter the authorized doors. Communal doors may be additionally equipped with door closers and an electric drive.

Electronic postbox

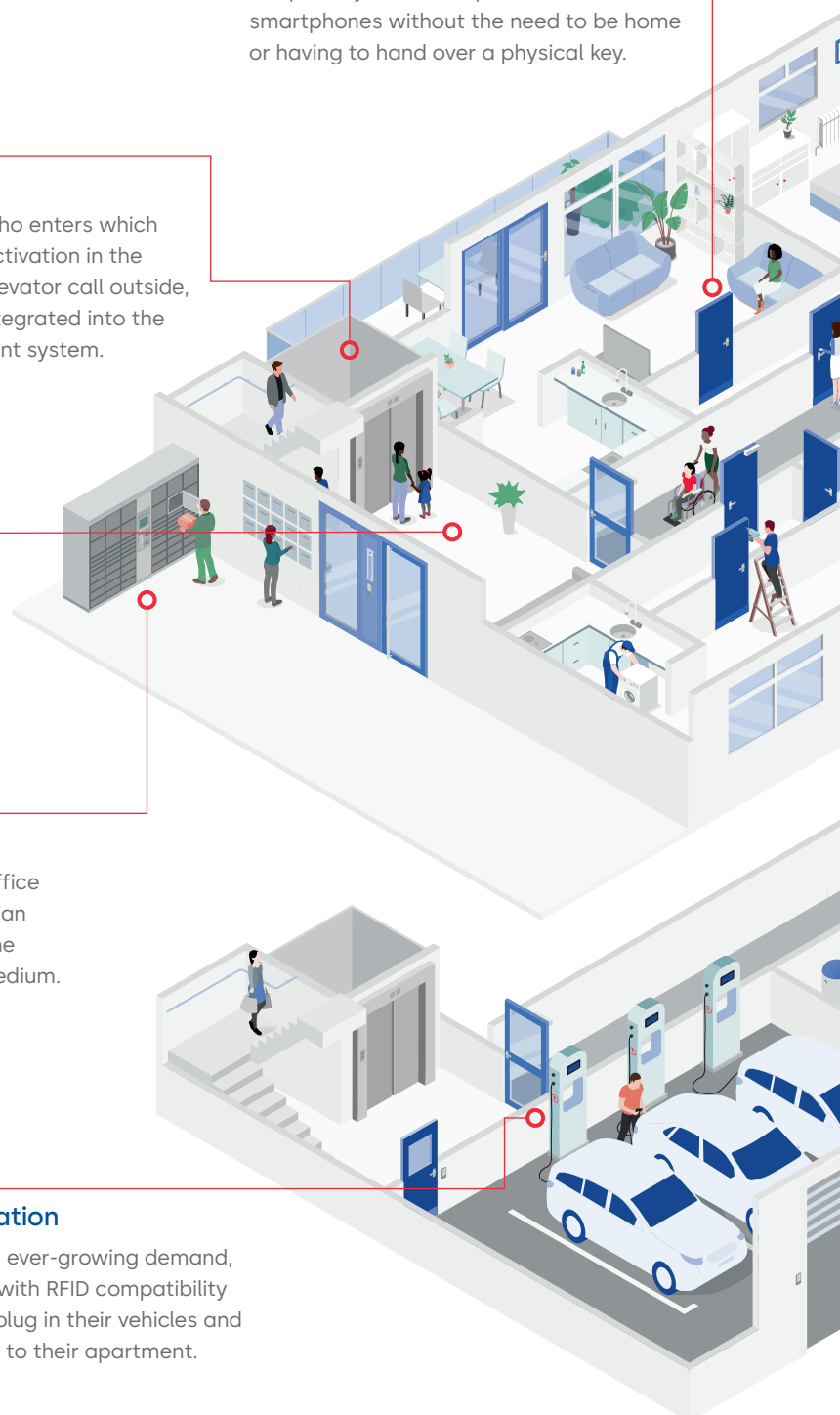
No more missed parcels

Gone are the days of trips to the post office or asking neighbors for help. Residents can now collect their parcels directly from the electronic postbox using their access medium.

EV Charging

Direct identification

With EV charging in ever-growing demand, electronic readers with RFID compatibility allow residents to plug in their vehicles and assign the charges to their apartment.



Guest room

Digital key handover

Available guest rooms connected to the smart building ecosystem can be easily booked and access rights sent directly to the guest's smartphone.

55% of new electronic systems are introduced as part of a renovation project. In 96% of cases, this includes the main entrance door

Source: Study on the diffusion of electronic key systems, 2021

Garden

Resident only access

Secure access to outdoor communal areas.

Apartment in construction mode

Limit access and track passages

Digital access makes it easier for service providers to access the property during working hours, whilst an 'office' mode that locks after the shift helps to reduce the risk of theft, contamination or damage.

Cellar unit

Exclusive access

The single access medium also unlocks the individual cellar unit.

Bike & stroller room

Restricted access

Only authorized people can enter and optional tracking protects who has access to valued bikes, strollers and other vehicles.

Garbage room

More control

Access to communal spaces, such as the garbage room, can be secured and optionally tracked to identify non-compliant behavior.

Car park

Freedom of access

An electronic reader allows residents to access the car park and come and go freely.

Technical & heating room

Staff only

Technical rooms with digital door locks and door closers can ensure only authorized staff enter, with optional tracking reducing incidents of theft.

Electronic door locks vs mechanical locks

	Access Hardware	Access medium	Master key system intelligence
Electronic	 Card reader, electronic cylinder, digital cylinder, mechatronic lock	 Fob, smartphone, card, mechatronic key	 Access Control Software
Mechanical	 Mechanical cylinder	 Mechanic key	 Master key plan

What are the pros and cons?

Deciding whether to introduce the newest generation of access technology will depend on many factors from aesthetics to simplicity and the cost of switching from a traditional set-up.

In new high-end buildings with additional services such as guest rooms for rent, communal EV charging and electronic postboxes among others, state-of-the-art access technology is a must-have feature for residents. Both residents and building operators can now get the control and visibility they need and expect.

In existing buildings or where budgets are limited, owners can take a phased approach to explore the benefits of electronic access, often starting with the communal entrance and shared areas such as the car park or laundry before deciding whether to roll out the technology to the apartment doors.



Separation of sovereignty

It can be legally defined who has the technical ability to enter premises and who can grant this right

Source: Study on the diffusion of electronic key systems, 2021

Electronic vs. mechanical locks

Pros

Easy key management

- Instant access rights via digital processes and apps, meaning no requirement to keep track of physical keys

Reduced costs in case of key loss

- No need to replace cylinders due to lost keys, meaning fewer site visits for granting access and less physical maintenance required

Easy maintenance and upgrades

- Systems can be updated wirelessly to troubleshoot and add new functionality, future-proof

Remote temporary access

- Simple to grant mobile access to tradespeople, cleaners and visitors, fewer site visits for granting access

Choice of media

- Residents can choose one preferred access credential to unlock all doors – fob, card or smartphone. Mechatronic key when combined with mechanical key systems

Integration into smart building systems

- Comprehensive smart home systems allow residents to control access alongside many other features such as heating, aircon, lights and security cameras in one app

No.1 benefit to tenants of electronic key systems:
Ease of replacing a lost key

Source: Study on the diffusion of electronic key systems, 2021

Non-adopters say they are worried about the cost and complexity of introducing the latest access technology for their tenants

Cons

Initial cost

- The initial investment costs are higher than with a mechanical cylinder, the locks need to be serviced and in case of software as a service there is a recurring fee. But you save in the long run whenever access authorizations need to be added, altered or blocked. What is more, with remote key handovers property managers save potential empty runs

Complexity

- You have to familiarize yourself with access management software, but once you know how it works, all key related operational processes become more efficient and you have the full and instant overview of all access media in circulation





Mechanical

Pros

Trusted

- Mechanical locks have been trusted for years, offering durability, security and peace of mind

Simple

- Easy to install and use – no software or apps required, no battery change

One key for all access points

- Based on a master key system and plan, this set-up allows residents to open all relevant doors with only one key

Initial Cost

- The initial acquisition and installation costs of mechanical cylinders are relatively low, making them an affordable option for many homeowners while still providing reliable security

Relative flexibility

- Mechanical premium cylinders offer the feature to change access rights twice in case of key loss before the cylinder needs to be replaced. Whilst simple cylinders must be replaced right away to ensure security

Cannot decide? Take both

You can integrate an electronic door lock into an existing mechanical key system and still use a single key: a mechatronic key with an RFID chip that opens both mechanical and electronic doors.

Cons

Key management

- In cases of key loss or tenant change, where the number of keys in circulation is unknown, main and common door cylinders are typically replaced to prevent the possibility of unauthorized access and ensure security. However, premium mechanical systems allow access rights to be changed up to three times in existing cylinders before replacement is necessary

Physical limitations

- When keys are lost, residents must wait for a replacement to be dispatched, while tradespeople needing access to perform their work, must either obtain a key on-site or rely on someone to let them in. The same applies to prospective tenants wanting to view the apartment. Key deposit systems can help streamline this process



Recommended Testing

While mechanical key systems have a long heritage and remain popular, the advantages of electronic access is becoming ever more powerful, especially as apartment blocks become bigger, introduce more services, and thus are more complex to maintain.

For owners and operators wishing to test new technology without committing to a full upgrade, there are two recommended approaches:

Upgrading entrance and communal doors

Upgrading entrance and communal doors by fitting electronic locks to main entrances and communal areas – such as cellars and parking garages – offers residents, staff, and service providers the convenience and security of electronic access. This approach allows residents to try digital access while keeping their familiar mechanical apartment locks. Meanwhile, third-party staff can be granted access via smartphone, making their work quicker and easier.



Upgrading apartments being refurbished

In a building fitted with mechanical locks, digital cylinders can be fitted to apartments being refurbished. As well as allowing electronically controlled access during the works, this can prevent theft from the construction site by tracking door movements.



Conclusion

Smarter access is here to stay

Access solutions are continually evolving and this latest chapter is seeing us embrace the digital and wireless technology that has already revolutionised the way we do everything from shop to communicate.

While the traditional lock and key will always have some part to play, managers and owners of large properties benefit from innovative products that are easier to manage and use, allowing them to operate more efficiently, while offering greater levels of security and convenience. The options range from more established products, such as door closers and automatic doors, through to app-controlled access that can be integrated into wider smart building systems.

Residents are becoming more comfortable with the technology and have even come to expect a greater level of automation, leading building owners to upgrade existing buildings and spec smart technology as standard on new properties. The trend is for electronic access control to be integrated into a comprehensive smart building ecosystem, enabling property managers and residents to control access, heating, lighting, roller shutters, and more, all through a single app.

Against the backdrop of this longstanding evolution and as the technology advances and costs keep coming down, the one certainty is that the trend towards smart access is set to continue.



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Entrance Automation
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Escape and Rescue Systems
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Access Hardware Solutions

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[dormakaba.com](https://www.dormakaba.com)

dormakaba
International Holding AG
Hofwissenstrasse 24
CH-8153 Rümlang
T +41 44 818 90 11
info@dormakaba.com
dormakaba.com