

BEWEGUNG MIT SYSTEM



BARRIER-FREE DESIGN
AND LIVING COMFORT WITH GEZE

Barrier-free with GEZE

Innovative system solutions

GEZE is one of the world's leading manufacturers of building technology. We create individual, customised solutions for complete door, window and safety technology, and offer an extensive range of services.

Our high company standards ensure that our products contribute to innovative building concepts and provide barrier-free access, comfort and safety in building technology. Intensive discussions with our customers, together with versatile products and individual solutions, help us to overcome barriers and to allow us to make your life comfortable. The operation and access of doors, as well as the opening and closing of windows are vital elements in barrier-free building design. As part of its aesthetically discerning, economically representative and realisable solutions, GEZE removes all barriers during the planning stages. In addition, we provide expert advice and instrumental information on the topic of barrier-free design.





Contents

06	_____	What does barrier-free access mean?
08	_____	Societal framework conditions
10	_____	Barrier-free despite physical limitations
18	_____	Barrier-free design and comfortable living with GEZE products
20	_____	GEZE - Competence in door, window and safety technology
22	_____	Automatic sliding door systems – For comfort and perfection
24	_____	Actuation devices
26	_____	GEZE door technology – Versatility and reliability
28	_____	GEZE window technology – Solutions to suit the most wide-ranging requirements
30	_____	GEZE ventilation systems – Safety with ventilation power
32	_____	GEZE safety technology
36	_____	Project solutions – Case studies

What does barrier-free access mean?

*If you plan for youth,
you exclude the old. If
you plan for the old,
you include youth."*

(proverb)

*Barrier-free design is
the „avoidance
of barriers and
obstacles, above all
in the design and
construction of access
routes and movement
areas in a space“.*

*(Translation of
definition from
www.baulexikon.de)*

The issue of „**barrier-free access**“ is increasingly becoming part of public consciousness, not least due to the demographic developments. It has become an important aspect in the design of public building projects and now barrier-free design and living is as well reaching out to the forefront in the private sector.

Barrier-free access allows all people, whatever their physical abilities and age, to live in an equal and self-determined way, without outside help. Barrier-free design is no longer used as a synonym for „building for the disabled“ as it has been in the past; instead it offers additional comfort for all target groups when they visit, live in or use a building. It is aimed at designing apartments and buildings in such a way that they can be used by everyone without any sort of restrictions.

Target groups for barrier-free design

People with **long-term physical limitations**:

- ▶ People with impaired mobility or other physical disabilities, or wheelchair users
- ▶ People with sensory impairments, such as blind, deaf and mute people
- ▶ Mentally disabled people and people with learning disabilities
- ▶ People of below or above average height
- ▶ People with chronic illnesses

People with **temporary or situational impaired mobility or activity limitations**:

- ▶ People dealing with the temporary effects of an accident
- ▶ Parents with prams and pushchairs
- ▶ Holidaymakers with heavy luggage, shoppers with bags
- ▶ Families with young children
- ▶ The elderly



Societal framework conditions

The global demographic age structure

Age structure

There are more and more elderly people across the world. According to UN prognoses, the average age of the population will have increased by up to 15 years by 2050. Europe already has the oldest population composition.

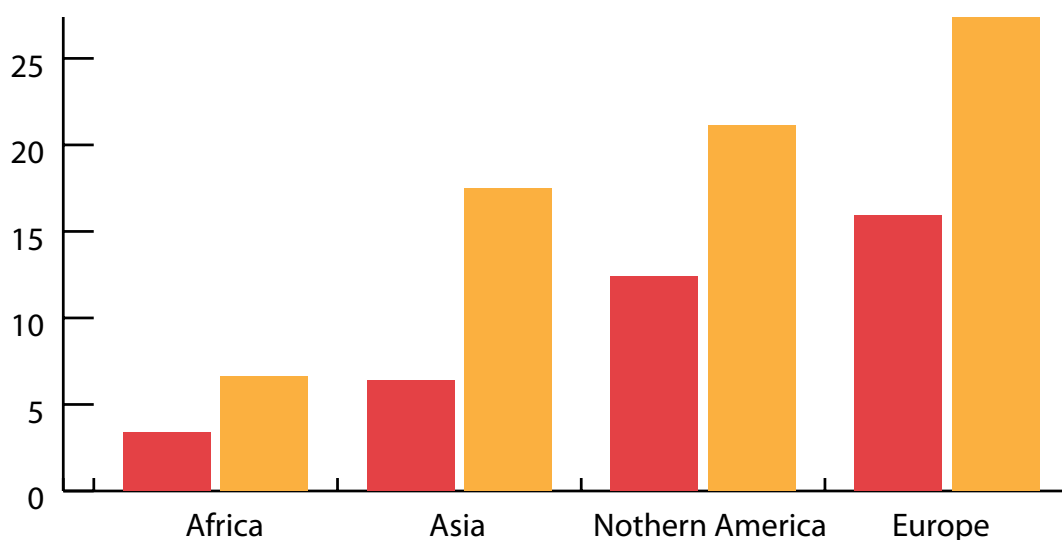
(Source: United Nations Population Prospects).

An important trend in future housing development is the increasing demand from elderly people for living quarters that are suitable for their condition. In order

to be able to lead an independent life in one's own home until late in life, measures must be taken that support and promote this independence.

The current generation of the „elderly“ is, of course, healthier, more active, more qualified and better funded than all previous generations. The effects of ageing and the costs that arise from the care required are, however, so high that the demand for a barrier-free environment is increasingly becoming a matter of course.

Age structure



Y axis: Percentage of population aged 65 or over

Source: United Nations Population Prospects

2005

2050

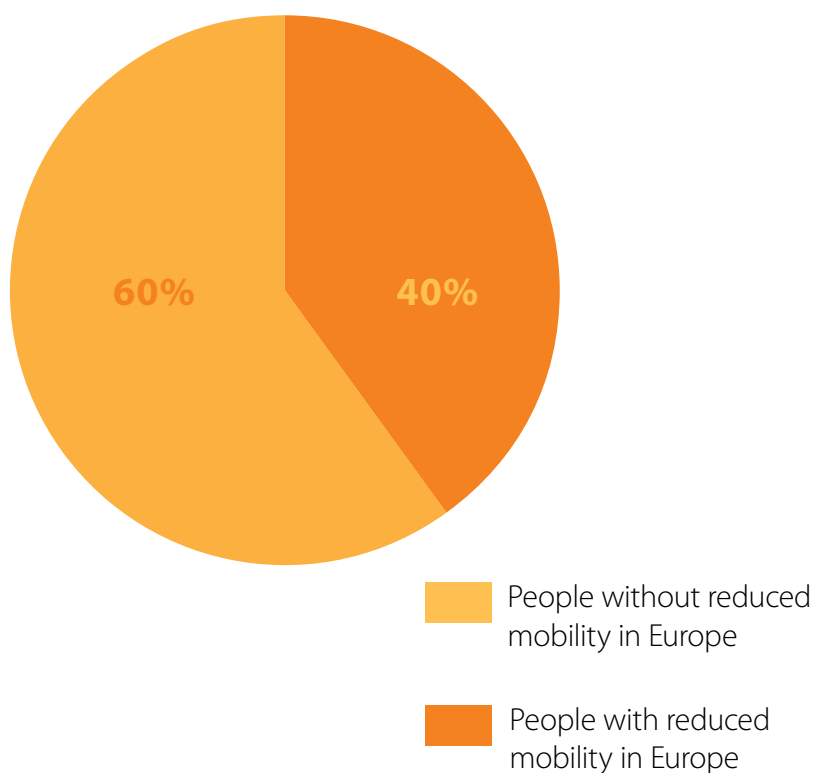
People with disabilities

Across the world, around 600 million people live with a physical disability. In Europe alone, one in every six people between the ages of 16 and 64 has a physical impairment.

The ratio of disabled people generally increases with age and already stands at over 60 percent for the European population over 45 years old.

Source: Grundtvig conference, a decade of European innovation in adult learning

People with disabilities in Europe





Barrier-free

**People with
impaired mobility,
disabilities
or illnesses often
experience serious
limitations, ...**

when they visit public buildings, schools, hospitals, care institutions, as well as in their own homes, and therefore often require outside help. Barrier-free design allows them to live their lives independently of others and provides them with a better quality of life.

Whether sitting in a wheelchair or dealing with impaired mobility or motor function - each type of physical impairment brings special requirements with it, and the environment that the person affected finds themselves in must be adapted to these.

Automatic door, window and safety solutions from GEZE do not just provide maximum barrier-free access; they also offer outstanding user convenience - wherever manual operation is too cumbersome, too exhausting or simply impossible.

Barrier-free

„My illness makes me aware of my physical limitations each day - in order to save my energy, I have decided to install doors and windows that open and close automatically for a better quality of life.“

Wolfgang M., 59 years old, severely weakened by chronic illness





Barrier-free

**Walk through doors
quickly and
without help,
or open heavy
windows without
a problem ...**

Actions that many people take for granted become a great effort or simply impossible in old age. Due to the global demographic development, the proportion of the population having to face these problems will continue to grow in the future. This is why barrier-free access for the older generations of tomorrow is already an important future issue of today.

Automatic door and window drives from GEZE, which can be controlled manually, via buttons or radars, allow the barrier-free use of windows and doors. Customised solutions from GEZE make every day easier for the elderly, both at home and in public, and provide increased safety and comfort thanks to their simple, intuitive operation.

Barrier-free



„Before I lived in an old people's home, I often had problems getting through entrances and exits with my Zimmer frame.

It is so nice that, thanks to doors which open and close automatically, I can now leave my room and our building independently. This makes it easier for me to go to the shops, for example.“

Anneliese B., 78 years old, has been living in an old people's home for 6 months



Barrier-free

It isn't just the elderly, the disabled and the mobility impaired who benefit from the increasing importance and awareness of barrier-free access in architecture

It also provides a massive increase in daily convenience for children, people with prams and pushchairs, holidaymakers with luggage, and all other users of a building. Be it when passing through an airport door as you return from your holiday with a jam-packed suitcase or when opening high windows - automatic door and window systems make the every day easier and help to provide additional quality of life.

GEZE makes this comfort possible with its product solutions; for barrier-free design with GEZE means taking the personal wishes and individual requirements of people into account and, in doing so, making life easier and more comfortable. In addition, GEZE solutions fit perfectly into the desired room concept and additionally increase energy efficiency, for example through the use of intelligent ventilation systems.

Barrier-free



„When I have collected my son from nursery and return home, I am always impressed with our automatic door opener. It is a real relief for me every day.“

Thomas S., 35 years old and son Max, 3 years old



Barrier-free

In public buildings, particularly in hospitals, care homes and residential homes, as well as in nurseries, safety must also be guaranteed in the case of emergency.

People who often stay here rely on the help of others or on the help of barrier-free building solutions. Emergency exit solutions must be designed so that immobile, weak or disorientated people can leave the building quickly, safely and in a barrier free way in the case of an emergency. This is incorporated by the term „safety“.

Safety for everyone

The requirement of the building operator indicates that emergency exit doors should be locked for security purposes in normal operation or should only be accessible by authorised persons via access control systems, is the opposite of barrier-free concept. However, in this case we are talking about „security“. This should protect the valuables and people within the building whilst preventing unauthorised access.

On the other hand, people who are inside the building - for example people suffering from dementia in a care home - should, in some circumstances, not be able to leave the building on their own decision. In order to deal with this area of conflict, GEZE offers a solution concept that ideally balances emergency exit controls with access controls.

„It doesn't matter where I am, the first thing I always do is look for the emergency exit. In the case of fire, when every second counts, there is no time for that. In my hospital, there are, thankfully, automatic emergency exits. It means that I am on the safe side despite my current handicap.“

Elfriede S., 55 years old, is on crutches after a knee operations



Barrier-free design and comfortable living

Below you can find out more about the possibilities offered by barrier-free design and comfortable living



Prestigious building entrances with automatic sliding doors



Internal doors with automatic swing door drives



Automatic swing doors and emergency exit systems for doors in emergency exit routes



Automatic covering solutions for windows



Automatic doors for disabled toilets

Comfortable living with GEZE



Hold-open devices for use in preventative fire protection



Electrical window opening systems for swing, pivot-hung, top-hung, skylight windows and light domes



Free-swing door closers



Actuation devices



Automatic sliding solutions for barrier-free access in offices and private homes



Safety technology for emergency exit routes, access controls and self-locking panic locks



Smoke and heat extraction systems (RWA/SHEV)

GEZE – Competence in door, window and safety technology

GEZE creates individual, customised solutions for complete door, window and safety technology, and offers an extensive range of services. GEZE products are an indispensable component of innovative building concepts and are proof of the global trend for increased comfort and safety in building technology.

All of the specific requirements for the project in question are taken into account - one of the most important tasks for GEZE is to live up to the societal and legal requirements concerning the issue of „barrier-free access“.

Extensive planning and coordinated products for perfect building function are a key pre-requisite for realising larger barrier-free projects. Safe and reliable door solutions, which are controlled manually, via buttons or radars and provide barrier-free access, are required for heavily frequented entrance areas. In order to fulfil the demand for barrier-free access, window solutions must, however, also be able to be operated by everyone without limitations. This is why GEZE offers ideal door and window drives with simple, intuitive operation for every application.

In addition, window features from GEZE ensure regulated smoke and heat extraction which can also be used for everyday, barrier-free ventilation.

These are accompanied by special safety concepts: doors that are only to be used by authorised users in normal operation are automatically open to all as emergency exit routes in the case of emergency.

„It is bad when illness means that you only rarely leave your house. It is a small consolation to be able to move around in your own house untroubled. This is why my partner has installed an automatic swing door drive in our home. This makes my day-to-day life a lot easier!“

Astrid P., 47 years old, spends a lot of time at home due to her impaired mobility

GEZE solutions for barrier-free access - Preventing the door from being a hindrance

The integration of barrier-free access into architecture does not just fulfil the needs of visitors with limited motor skills - it also improves the comfort of all visitors and guests to public buildings, schools, hospitals, care institutions or hotels. As a leading provider of door automation, when offering advice, GEZE is able to look back on many years of experience. Whether with purpose-built items or standard products - you can implement the desired room concept in line with the legal requirements whilst also emphasising the comfort of the operator.

Automatic swing door systems for comfort and safety

Swing door systems from GEZE make it easier to pass through a door whenever manual operation is too cumbersome or exhausting. They are distinguished by their absolute reliability and safety, as well as by a clear and modern design line. GEZE realises customised solutions and offers planners the greatest possible design freedom.



An overview of the automatic swing door systems:

- ► With their low height of just seven centimetres, the **GEZE Slimdrive EMD series** fits almost invisibly into every building architecture.
- ► The electro-hydraulic **GEZE TSA range** impresses with its secure functioning and sophisticated design. Easily mastered by members of the public, they are used wherever there is a requirement for comfort and support when opening a door, for example in hospitals, shopping centres, at airports and train stations.
- ► GEZE completes its product portfolio in the field of swing door automation with **GEZE ECTurn** - a new electro-mechanic swing door drive for doors in internal areas. The model fulfils the highest technical, safety and design requirements and was awarded with „good“ in user tests conducted by the GGT Deutschen Gesellschaft für Gerontechnik (German Society for Gerontology Technology). The GEZE ECTurn is the cost-effective first option for swing door automation.



Automatic sliding door systems

For comfort and perfection



Sliding doors save space and look elegant and contemporary. Glass versions are ideal in cases where natural light should be utilised and optical criteria need to be fulfilled. Automatic sliding doors from GEZE, which can be inconspicuously integrated into facades, allow for the most diverse user requirements to be realised in a building.

In an entrance area, as part of a porch or to automate internal doors, the automatic sliding doors from GEZE combine design and technical comfort in the design of barrier-free buildings.

They provide solutions for the barrier-free triumph over large, heavy doors. Requirements concerning emergency exit routes can be integrated.



„Hygiene is of the utmost priority in the hospital. This is why it is a great help when doors, e.g. hermetic doors, open automatically. Hands stay sterile and we can start work immediately.“

Sylvia F., 38 years old, operating theatre nurse

An overview of the automatic sliding door systems:

- ► The **Slimdrive series** variants, with a height of just seven centimetres, can be perfectly integrated into every type of architecture and can be used in a wide range of applications. A break-in prevention model, which has been tested in line with resistance class 2, is also available here.
- ► The **GEZE ECdrive series** stands for cost-effective and reliable automatic door drives. The drive is ideally suited to heavily frequented doors.
- ► The powerhouse of automatic sliding doors leaves nothing to be desired. Safety and comfort, even with heavy doors, are the trademarks of the **Powerdrive range**.
- ► As an alternative to sliding „by hand“, the **low-energy sliding door drive Perlan AUT NT** is the comfortable solution for light sliding doors within buildings.

Actuation devices

When it comes to the reliable operation of an automatic door, choosing a suitable actuation device is of the utmost importance. Only the correct choice of actuation devices and safety sensors will make automatic doors or windows completely barrier-free and comfortable.

GEZE actuation devices control and secure all GEZE products in line with international standards. They enable complete solutions for individual requirements from the one source.



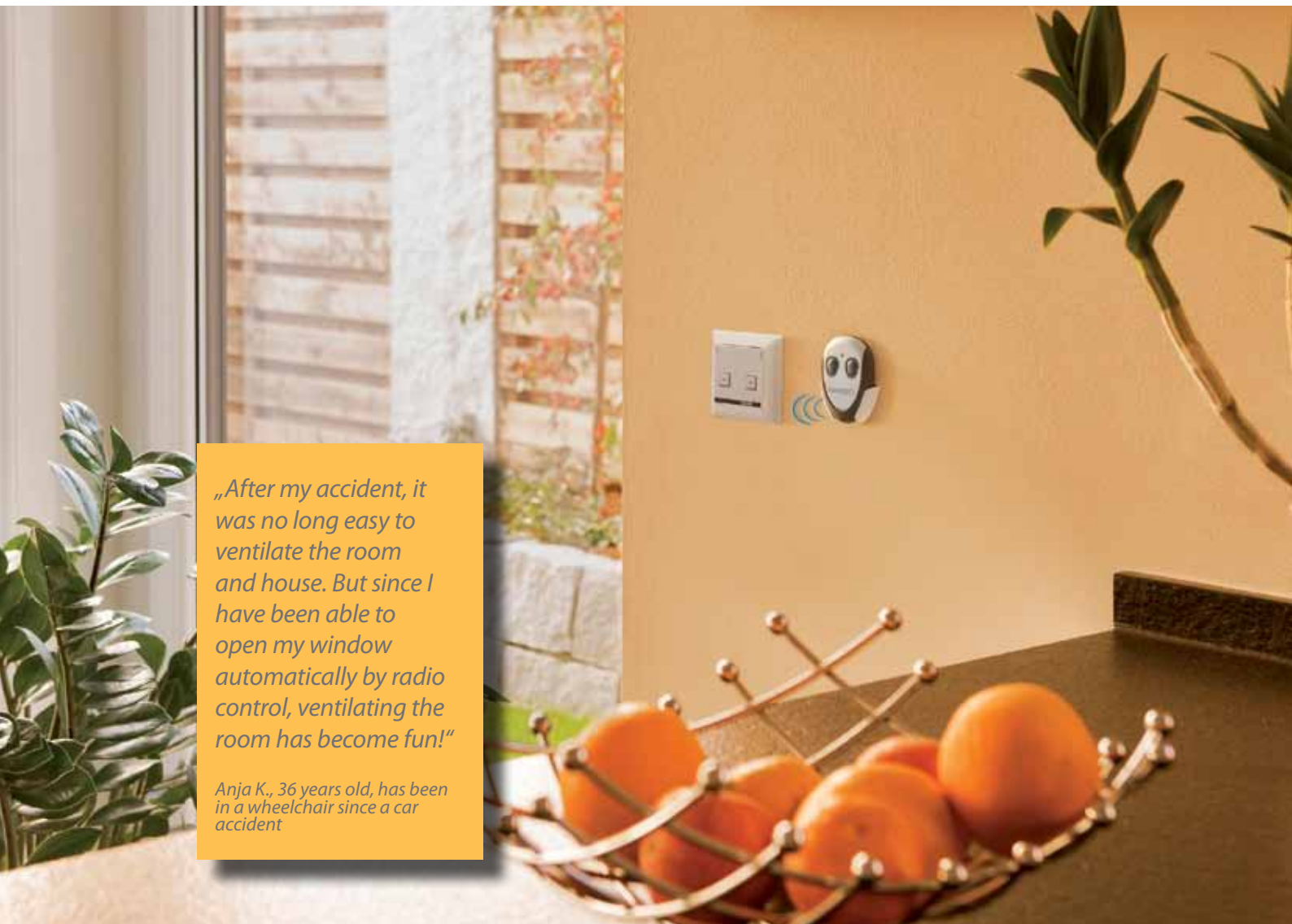
GEZE AIR 12 cleanscan active infrared sensor

The non-contact proximity switch is suitable in all situations where the opening of doors should be made easier and where hygiene plays a key role, e.g. in care institutions, hospitals, doctors' surgeries, sports facilities and swimming pools, in catering or in barrier-free design.



GEZE radio programme

Radio-controlled devices from GEZE provide quality of life. Doors, windows and RWA can be wirelessly and securely controlled at the touch of a button and can be made to open and close independently. They are increasingly becoming the standard in every day barrier-free and senior-friendly living.



„After my accident, it was no longer easy to ventilate the room and house. But since I have been able to open my window automatically by radio control, ventilating the room has become fun!“

Anja K., 36 years old, has been in a wheelchair since a car accident

A selection of actuation devices from the extensive GEZE portfolio:

- ▶ Movement detectors to control automatic doors
- ▶ Combined detectors
- ▶ Presence detectors to detect people or objects
- ▶ Programme switches to select the operating mode of automatic doors
- ▶ Activation detectors to open and close automatic doors
- ▶ Radio programmes
- ▶ Safety switches / buttons to switch off the mains voltage and to open automatic doors in an emergency
- ▶ Smoke switches for the early detection of smoke and to control catching devices on fire and smoke protection doors

GEZE door technology

Versatility and reliability

New standards, e.g. the DIN 18040 in the field of door technology, have placed new requirements on the maximum permitted operating forces on doors. Thus, a maximum opening moment of 47 Nm has been defined for doors that have to be fitted with a door closer. The high quality GEZE products, which feature excellent efficiency, mean that doors with a width of up to 1,250 millimetres can be fitted with GEZE door closers in compliance with the standard in the future.

This means that, with GEZE, neither hold-open devices nor free-swing door closers need to be used in this field in most cases, and yet the normative requirements for the barrier-free access of doors are fulfilled. In the case of products with a lower efficiency, this is only possible for doors with a door leaf width of up to 950 mm.

The renowned GEZE hold-open devices including free-swing door closers are available in the case of doors with leaf widths in excess of 1,250 mm to make these barrier-free too. Hold-open devices are generally recommended for fire doors.



Hold-open devices

GEZE hold-open devices hold fire doors open electrically. As a result, door leaves can be held in position and accessed barrier-free until they are either unlocked manually or, in the case of a fire, unlocked via the smoke switch so that the door closes safely. GEZE offers a wide range of hold-open devices for the most wide-ranging applications; they have been

specially designed for use in preventative fire protection. The interplay of four components forms a hold-open device approved by building authorities: energy provision, smoke detectors, tripping device and hold-open device. Many of the products see GEZE combining all of these components into a sophisticated, inconspicuous guide rail.

Free-swing door closers – „Freeswing“ makes doors as light as a feather

Depending on the user requirements, it is often sensible to use electric hold-open devices to hold doors constantly open. This includes the use of electric free-swing door closers with the „Freeswing“ function. This means that, once a door has been opened, it can be passed through without the need for additional force, as the door closer remains electrically loaded.

In the case of fire, this load is removed from the door closer, thus ensuring a secure, independent closing of the door. These closers are used on fire doors that are to operate as „normal“ doors but that must close securely in the case of fire. They are, therefore, ideally suited to hospitals and old peoples' homes.

The flexible all-rounder with barrier-free strengths – the TS 5000 ECline

This new door closer gives you the option of choosing between an easy opening of the door provided by the ECline technology or a stronger close thanks to the Safety Close technology. The TS 5000 ECline can be used to make doors with a leaf width of up to 1,250 millimetres barrier-free and features an extremely high efficiency; in other words, almost the entire force used to open the door is then used to close the door. Its strongly receding opening moment offers increased comfort when walking through the door by making it easier to open - and this feature can be switched off to suit personal requirements.



GEZE

Window technology

The location and weight of windows mean that they are often very difficult to open, especially for the elderly, for people with physical limitations and for children. Meanwhile, skylights are often almost impossible to reach without tools and heavy windows can rarely be opened manually.



Solutions to suit the **most**
wide-ranging
requirements



„The windows in our nursery are very high up. But I can open them myself with the touch of a button - automatic windows make us small people feel tall!“

Tim, 4 years old, likes not having to rely on the help of adults in his nursery.



It isn't just doors that can be power-assisted; the opening and closing of windows can also be made easier for users and, thus, barrier-free, by incorporating electrical window opening systems. Electrical drive systems guarantee the simple and easy opening and closing of windows. Thanks to the individual GEZE control technology, these systems also offer the opportunity for intelligent building ventilation. The technically advanced systems are subtly integrated into the windows and, as such, fit inconspicuously into the building architecture. This perfect integration allows for diverse application in both modern and old buildings.

GEZE offers a diverse product range for the most varied requirements around the theme of the power-assisted opening and closing of windows. This spans from drive systems for daily airing and ventilating, right up to complete fresh air and exhaust air solutions for a safe and fast natural smoke extraction in the case of fire.

The electrically operated drive systems from GEZE

The intelligent way to comfortably open windows in a controlled manner



The 230 V electrically operated drive systems are comfortable and easy to operate. They are used on ventilation windows for daily airing and ventilating.

The GEZE product range in the field of ventilation technology comprises:

- ► Installation and user-friendly **electric chain drives** as direct openers.
- ► Powerful **electric spindle drives**, which can be used as direct openers, fitting close to the profile, including an opening and locking system.
- ► In combination with **electrically operated linear drives** GEZE slimline fanlight scissors can also be operated electrically.

Safety with ventilation power

RWA saves lives and offers daily comfort



In the case of fire, 24 V variants of natural smoke and heat extraction system (RWA) solutions prevent the development of smoke close to the ground and, as such, ensure a fast and safe escape.

In order to safeguard the functioning of the natural smoke and heat extraction, GEZE offers systems as barrier-free fresh air solutions. Adequately dimensi-

oned fresh air areas in the lower part of the building allow cold air to flow through so that – due to the stack effect – any existing smoke rises and can be drawn out through the extraction areas in the upper part of the room or building. GEZE provides a completely coordinated RWA product range for this interaction between fresh and exhaust air openings. One of GEZE's RWA power units ensures the coordinated control and activation of all RWA fresh and exhaust air openings. These units can also be used to ensure the daily barrier-free airing and ventilating of ventilation windows.

The GEZE product range in the field of smoke and heat extraction systems (RWA) comprises:

- ▶ Standard smoke and heat extraction systems, such as, e.g. **electrical chain drives** and **electrical spindle drives**, as well as **profile-standing opening and locking systems**.
- ▶ **Natural smoke and heat exhaust ventilators (SHEVs)**: A SHEV is a natural smoke and heat ventilation device in line with EN 12101-2 which ensures the extraction of smoke and hot gases from a building in the case of fire. GEZE SHEVs offer great flexibility in the choice of approved and certified drive and profile systems.
- ▶ **Fresh air systems**
- ▶ **GEZE RWA emergency power supply units**



Safety technology

The conflict between barrier-free access and safety

„When the alarm went off in our department store due to a fire recently, no-one really knew where they needed to go. Luckily, the building has a well signposted emergency exit route and the doors on the route all open automatically within seconds. As a result, we were all able to exit the building quickly and without injury.“

Kristin, 24 years old, employee in a large department store



The desire for barrier-free access and the safety functions of doors come into particular conflict when it comes to emergency exit routes:

Emergency exit control and the controlled access to a door - these two requirements need to be brought together in a coordinated manner. With a constant systematic approach, GEZE offers compatible solutions from the one source, resulting in a decisive added value. GEZE is setting the trend when it comes to safety, functionality and design and, in addition, offers approved safety for every door.

The combination of a door control system, an emergency exit door opener and a motor lock provides the ideal system solution for single leaf doors. With this equipment, the door is locked in normal opera-

tion; can be controlled and is secured via the door control system; and is always accessible in the case of emergency - either through the pushing of an emergency button or through activation by the fire alarm system. The system is especially suited to doors that must fulfil a range of functions, e.g. when a door is freely accessible during the day but must be locked at night, and must open safely and quickly in the case of an emergency. It is also always possible to open the door in a controlled manner from the outside, either using a key or via an access control system.

This system solution from GEZE is highly flexible and overcomes the most wide-ranging tasks simply and easily. The automatic opening of doors in the case of an emergency allows all the people who are currently in a building to leave it safely and without any hindrances.

It is also possible to monitor the door condition via the GEZE SecuLogic building system for additional safety. This allows all of the doors' functions to be controlled from a central point. The result for building operators: maximum flexibility whilst saving money.

An overview of GEZE s

GEZE SecuLogic Access control systems

Solutions for every safety concept

Modern access management provides a necessary contribution to the safety of valuables, to the distribution of functions and to the flexible organisation of companies and institutions. Innovative access control systems with the latest personal identification systems regulate access to the various areas and lead people through the building in line with individually defined spatial and temporal access authorisations. Access and passage can, thus, be reliably and conveniently controlled and documented.

GEZE SecuLogic Emergency exit systems

GEZE SecuLogic Emergency exit systems

When combined with emergency exit technology, access control systems ensure the best possible building safety. Emergency exit routes are an essential part of building safety and of the protection of people in the case of a fire, especially in large buildings; for in the case of emergency, the key issue is being able to leave a building in seconds with barrier-free access.



safety systems:

GEZE SecuLogic IQ Locks

For everything that a door needs to be able to do

With the variants of the IQ Lock family from GEZE, the complete requirements for a door can be implemented: Beginning with mechanical self-locking and the motor-driven release; the full panic function and the locking of the door in line with safety requirements; to the automation of the door leaves or the connection with an RWA, an emergency exit route or an access control system.

Reliable protection against break-ins, the rapid opening in the case of an emergency and controlled access: these are the strengths of the self-locking panic locks from GEZE. They are used in cases where a secure locking should provide protection from unauthorised access from outside and a rapid exit from the building needs to be secured in case of emergency.



Project solutions – Case studies



GEZE project solutions fulfil the highest requirements when it comes to functionality, quality and design. Products from GEZE can be found in renowned buildings across the world.

Hotels

- 1** | Kempinski Hotel, Antalya, Turkey
- 2** | The Great Wall Sheraton Hotel, Beijing, China
- 3** | Hotel Le Meridien Lav, Split, Croatia

Airports, train stations, ships

- 1** | Ankara Airport, Turkey
- 2** | Exterior view, train station, Minsk, Belarus
- 3** | AIDAdiva

Hospitals, care institutions

- 1** | Radcliffe Hospital, Oxford, England
- 2** | Robert Bosch Krankenhaus, Stuttgart, Germany
- 3** | Augustinum, Stuttgart, Germany

Shopping centres, office buildings

- 1** | Krämarens Shoppingcenter, Örebro, Sweden
- 2** | Kanyon Shopping Center, Istanbul, Turkey
- 3** | Weißer Wind office buildings, Riga, Latvia

Weißer Wind office buildings, Riga, Latvia

- 1** | Landwirtschaftliche Fachhochschule Winkelhof, Austria
- 2** | Ammerseegymnasium, Dießen, Germany
- 3** | German School, Beijing, China

Sport and leisure facilities

- 1** | O₂ Arena, Berlin, Germany
- 2** | Taida Football Stadium, Tianjin, China
- 3** | Žatika multi-purpose sports hall, Porec, Croatia

www.geze.com

www.geze.com

1303 Id. Nr. 143895 EN