

Technology

HIRT MOVING
ARCHITECTURE®

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Modern architecture in perfection

The concept of a vertical opening element, as pioneered by architect Ludwig Mies van der Rohe, perfectly implemented: HIRT kinetics bring the interior and exterior space together in an unparalleled way.

Watching a multi-ton window front sink smoothly into the ground and disappear completely is a breathtaking experience. Every single time.

This is made possible by the perfect balance of counterweights, which results in graceful and silent movement: the laws of physics deployed creatively.

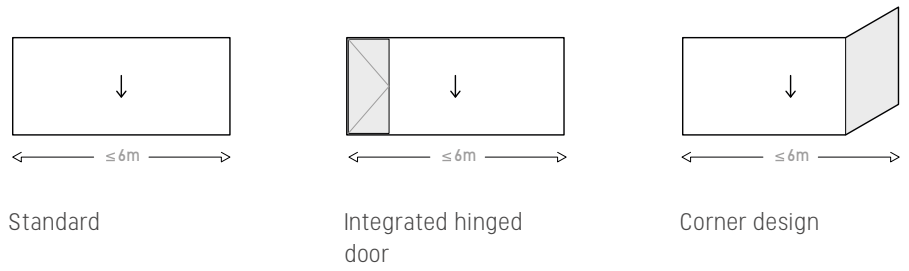
Moving architecture.

Stefan HIRT
CEO

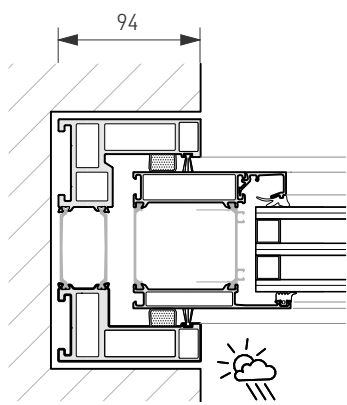
HIRT kinetics SF 90

Details

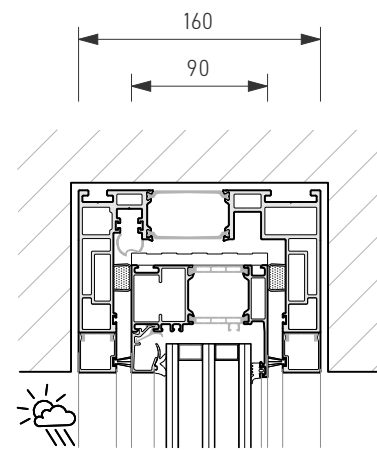
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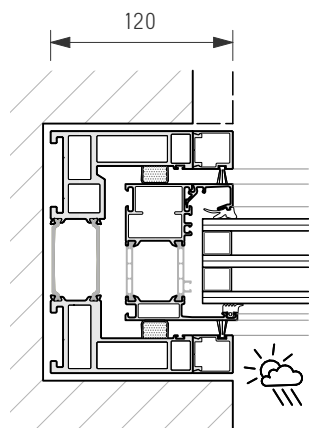
Sections



Standard horizontal section



Vertical section



Glass flush horizontal section

HIRT kinetics SF 90

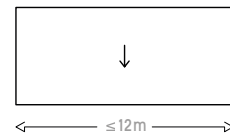
Merging the interior and exterior in perfection: HIRT kinetics SF 90 open elegantly and quietly until they disappear completely into the floor, opening the building in an incomparable way.

The impression of weightlessness is not just an illusion since the moving window front is perfectly balanced by a counterweight.

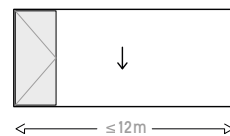
With our smart home integration, you can control the movement via smartphone or tablet.



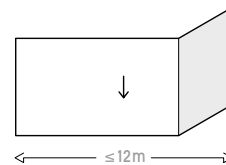
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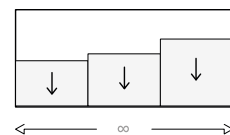
Standard



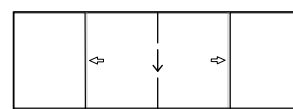
Integrated hinged door



Corner design

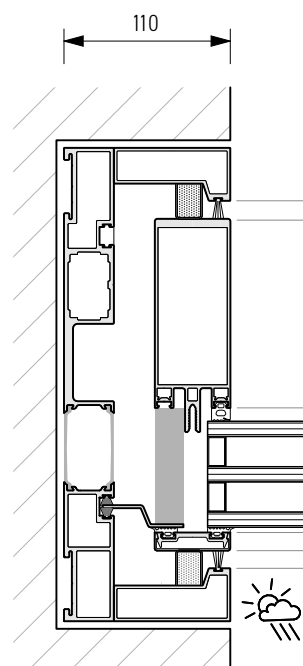


Postless design

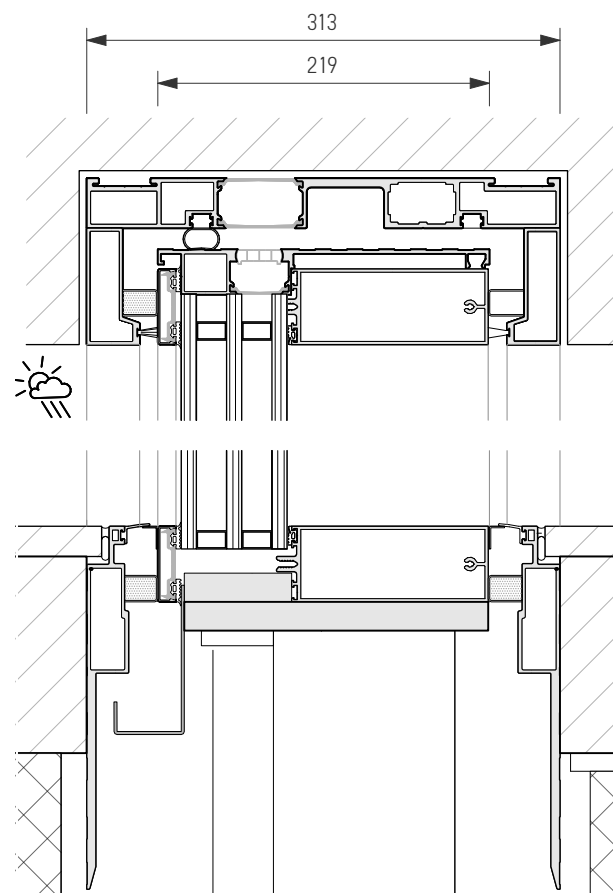


Integrated sliding doors

Sections



Horizontal section



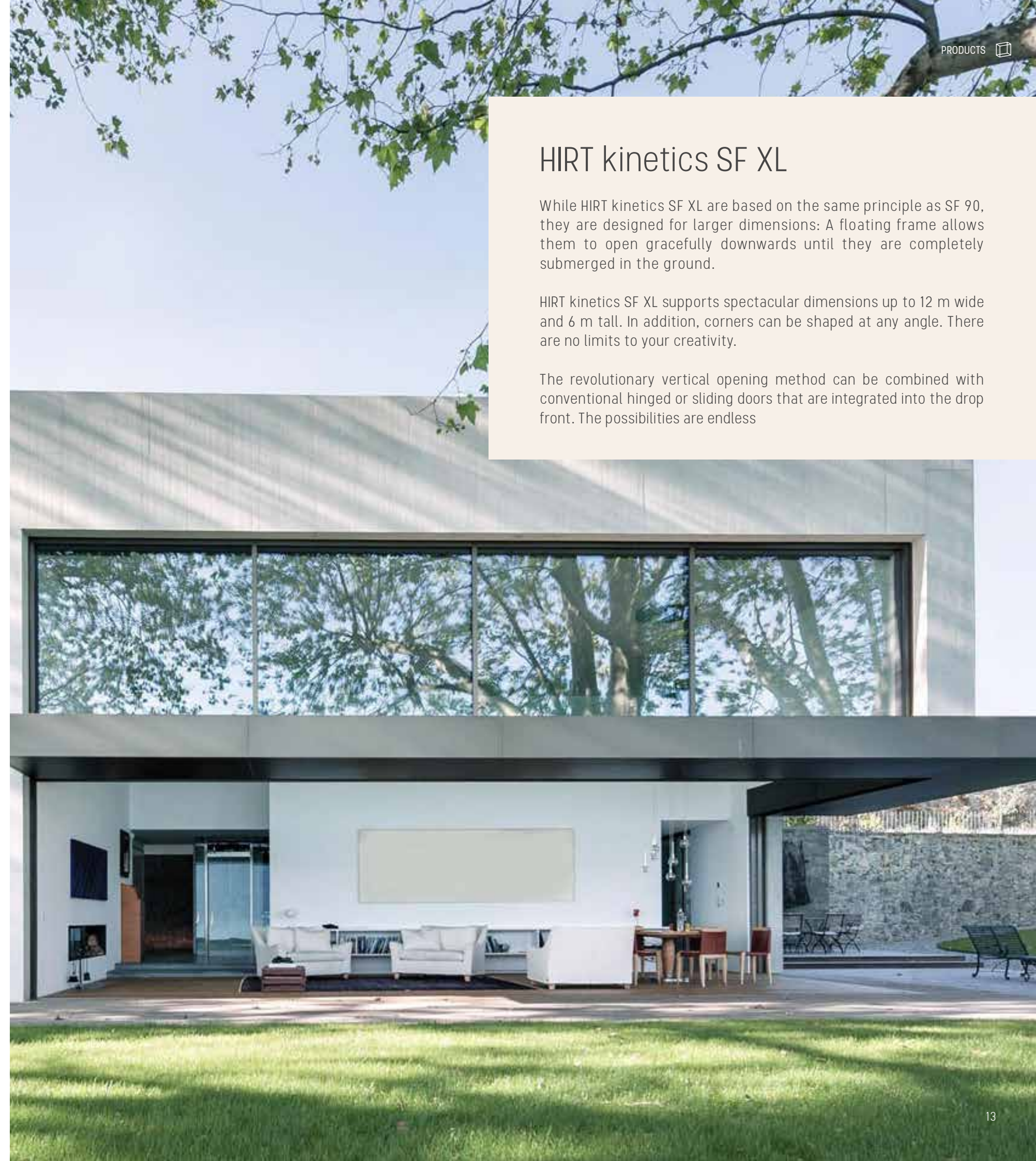
Vertical section

HIRT kinetics SF XL

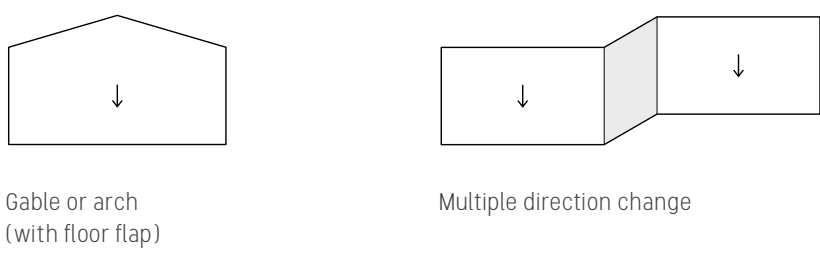
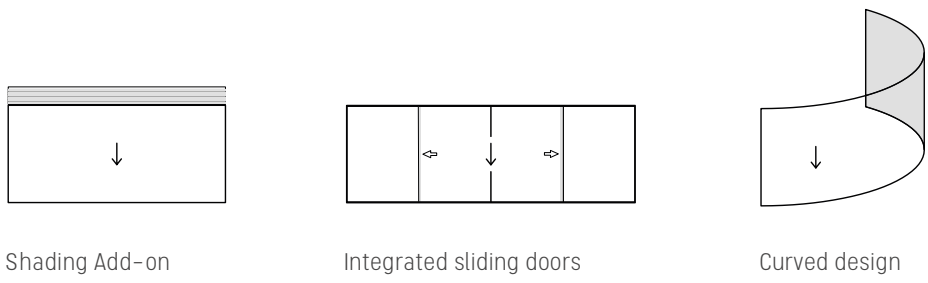
While HIRT kinetics SF XL are based on the same principle as SF 90, they are designed for larger dimensions: A floating frame allows them to open gracefully downwards until they are completely submerged in the ground.

HIRT kinetics SF XL supports spectacular dimensions up to 12 m wide and 6 m tall. In addition, corners can be shaped at any angle. There are no limits to your creativity.

The revolutionary vertical opening method can be combined with conventional hinged or sliding doors that are integrated into the drop front. The possibilities are endless



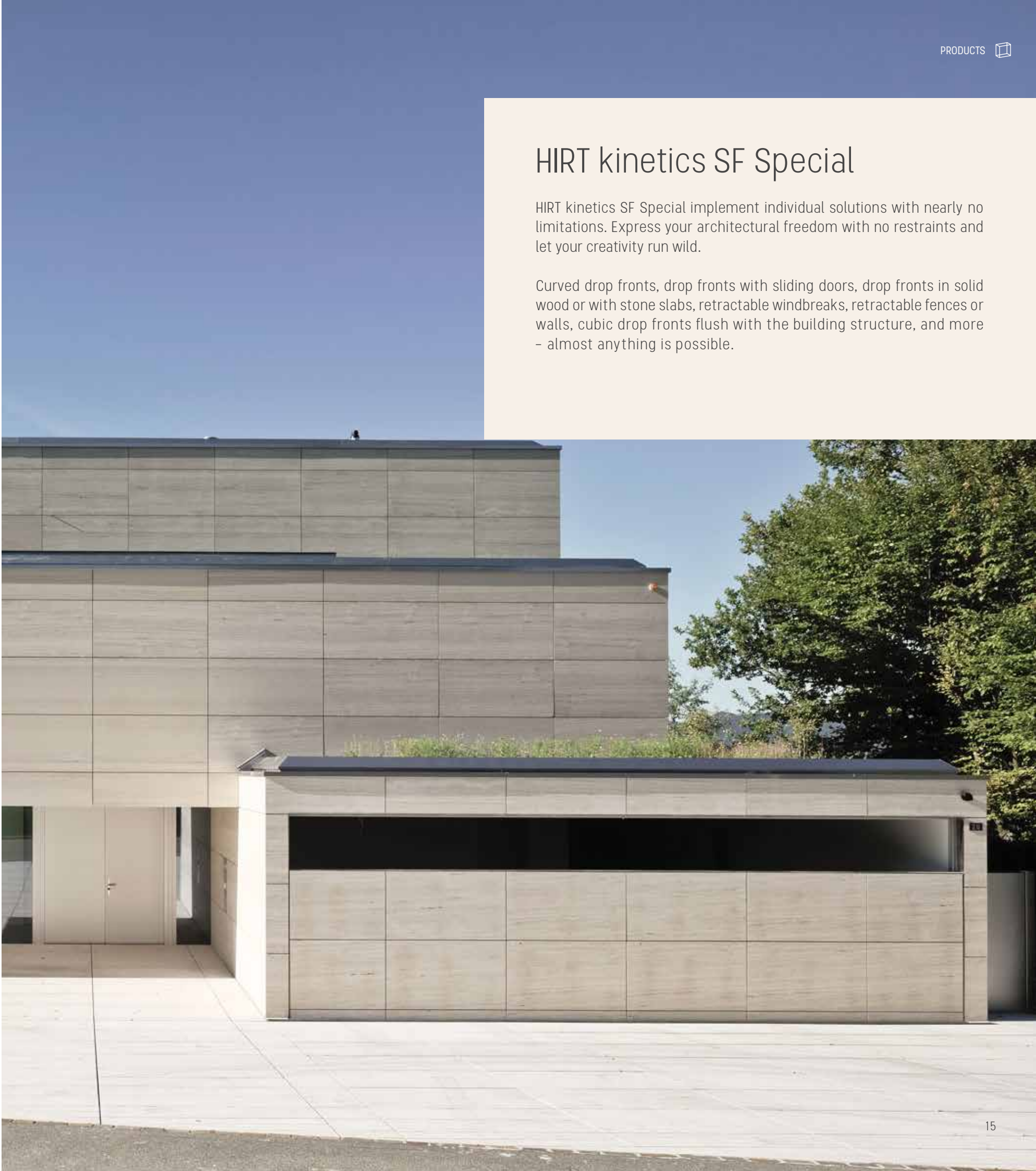
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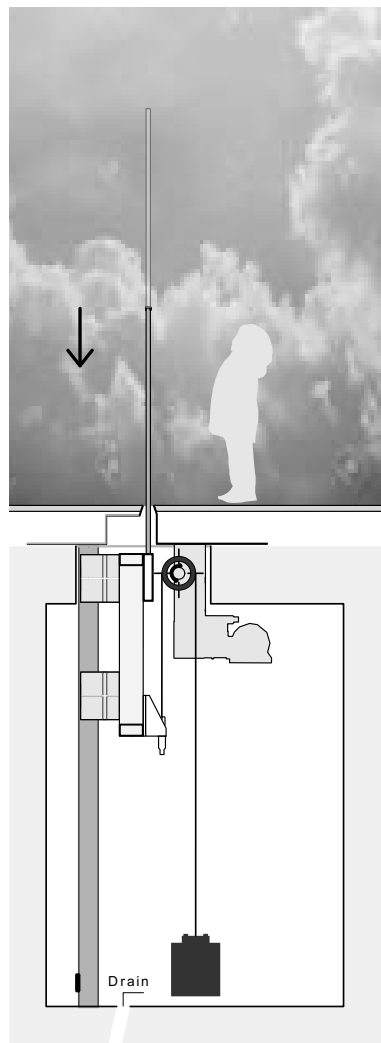
HIRT kinetics SF Special

HIRT kinetics SF Special implement individual solutions with nearly no limitations. Express your architectural freedom with no restraints and let your creativity run wild.

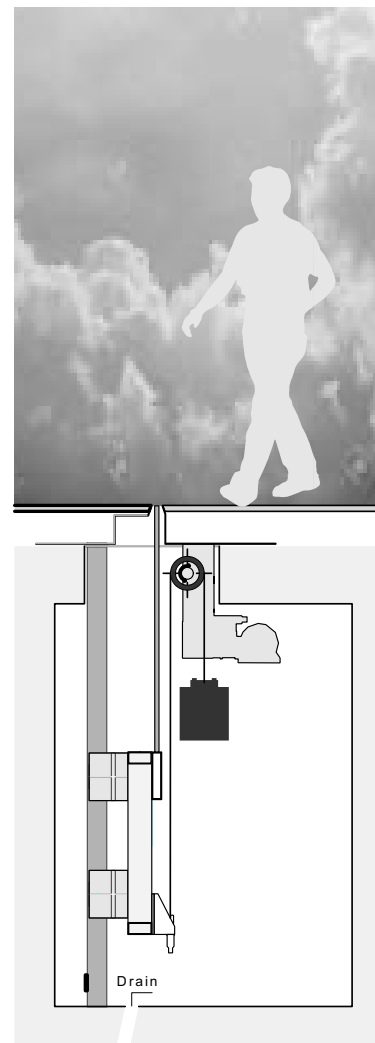
Curved drop fronts, drop fronts with sliding doors, drop fronts in solid wood or with stone slabs, retractable windbreaks, retractable fences or walls, cubic drop fronts flush with the building structure, and more – almost anything is possible.



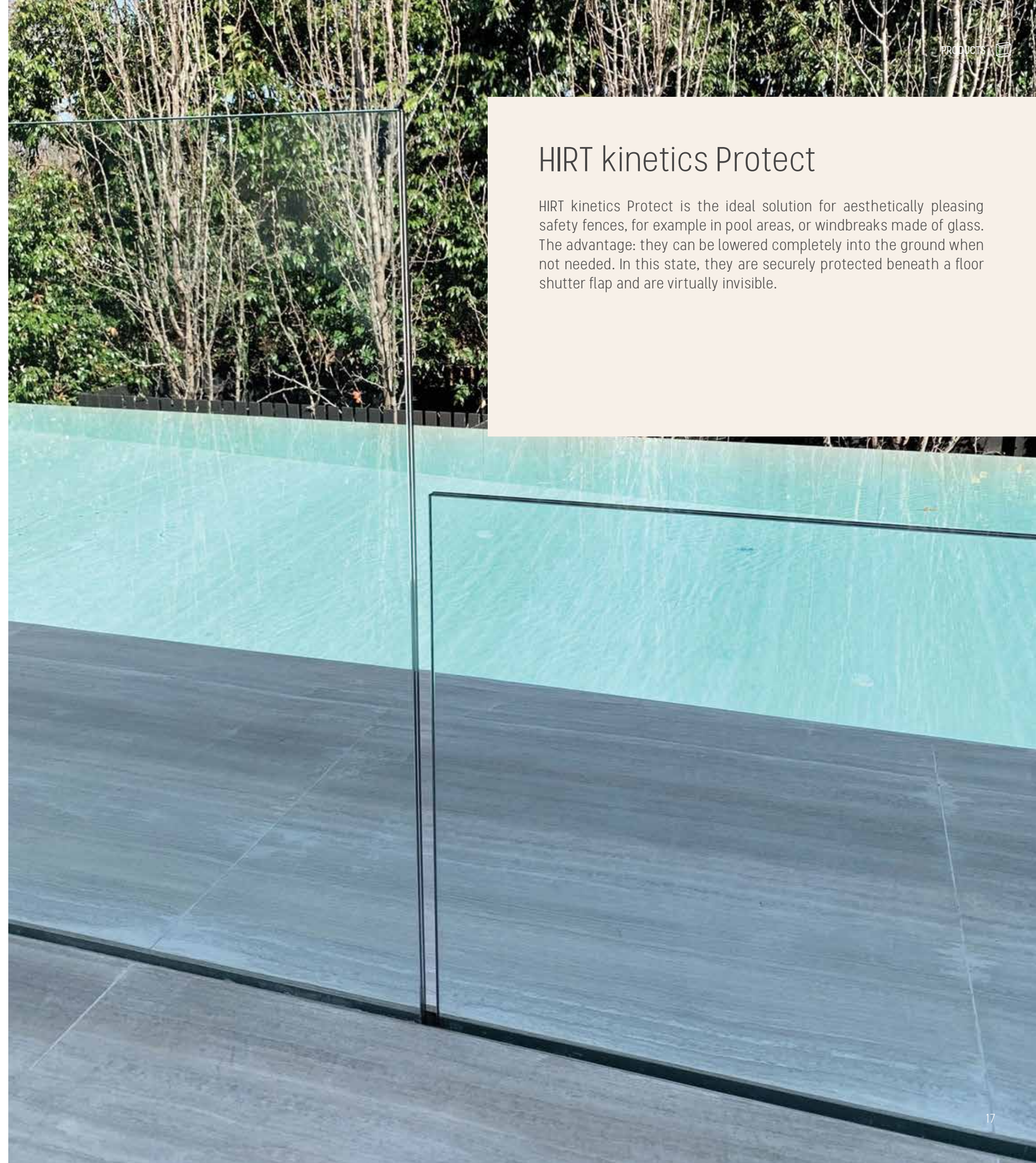
Sections



Vertical section
opened position



Vertical section
retracted position



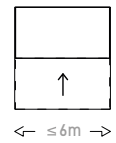
HIRT kinetics Protect

HIRT kinetics Protect is the ideal solution for aesthetically pleasing safety fences, for example in pool areas, or windbreaks made of glass. The advantage: they can be lowered completely into the ground when not needed. In this state, they are securely protected beneath a floor shutter flap and are virtually invisible.

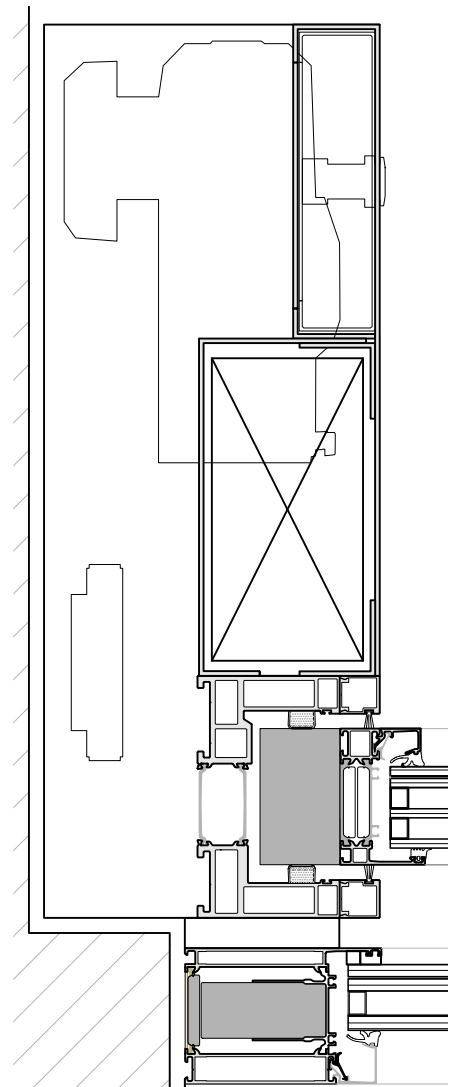
HIRT kinetics HF 90

Details

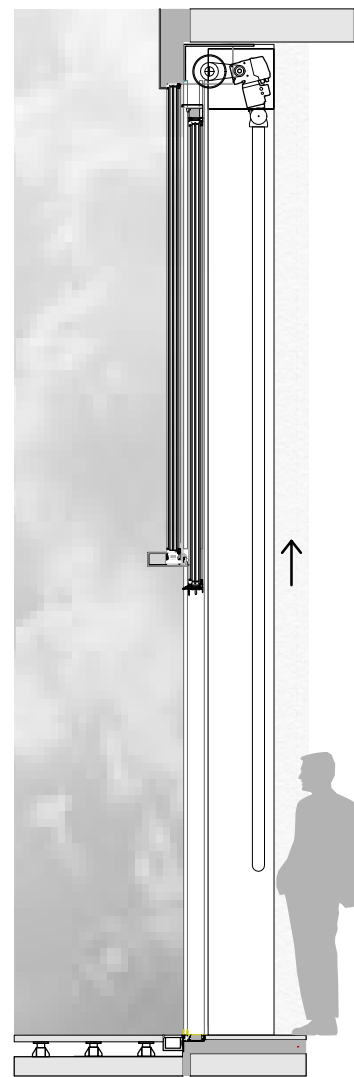
Options



Sections



Horizontal section



Vertical section
open sash

HIRT kinetics HF 90

HIRT kinetics HF 90 hoist fronts expand the spectrum of modern architecture by providing an opening method previously unthinkable in these dimensions, impressively bringing the choice of upward motion to the concept of vertical opening.

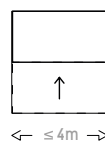
Based on the HIRT kinetics drop fronts, the perfect balance achieved with a counterweight in the HIRT kinetics hoist fronts enables smooth and silent vertical movement. HIRT kinetics HF 90 can move window surfaces up to 6m wide with a total weight of up to 1.5 t.



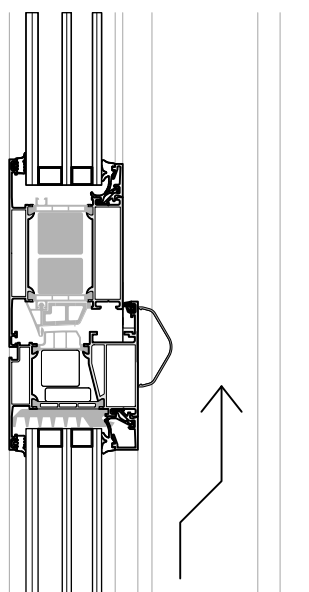
HIRT kinetics HF 75-Up

Details

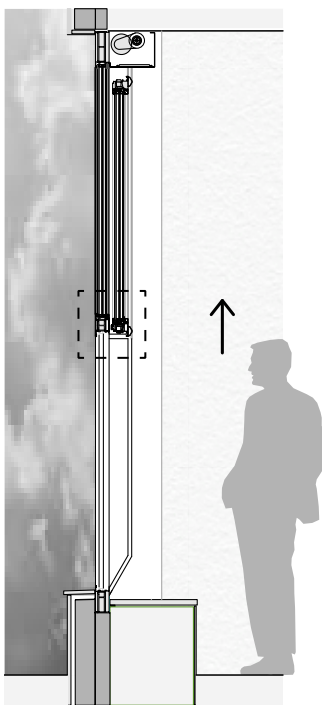
Options



Sections



Vertical section
closed sash



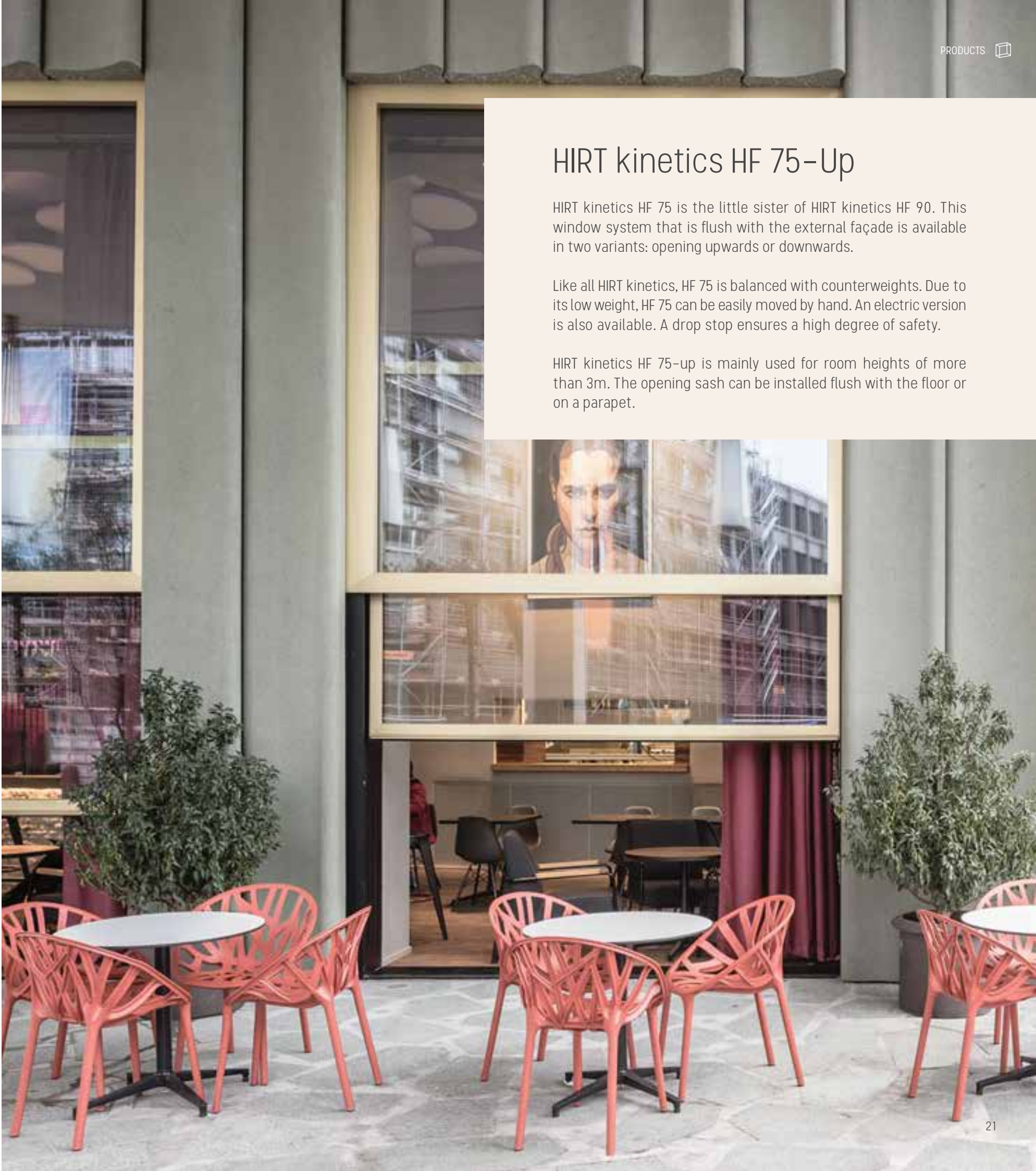
Vertical section
open sash

HIRT kinetics HF 75-Up

HIRT kinetics HF 75 is the little sister of HIRT kinetics HF 90. This window system that is flush with the external façade is available in two variants: opening upwards or downwards.

Like all HIRT kinetics, HF 75 is balanced with counterweights. Due to its low weight, HF 75 can be easily moved by hand. An electric version is also available. A drop stop ensures a high degree of safety.

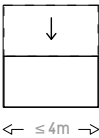
HIRT kinetics HF 75-up is mainly used for room heights of more than 3m. The opening sash can be installed flush with the floor or on a parapet.



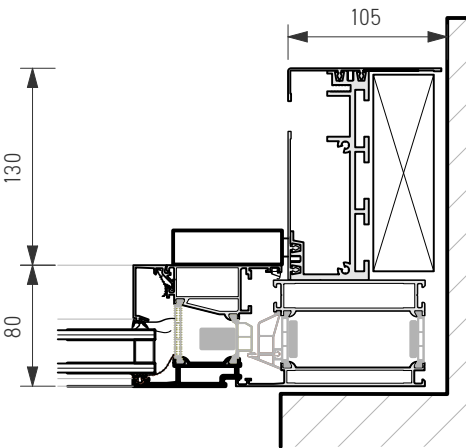
HIRT kinetics HF 75-Down

Details

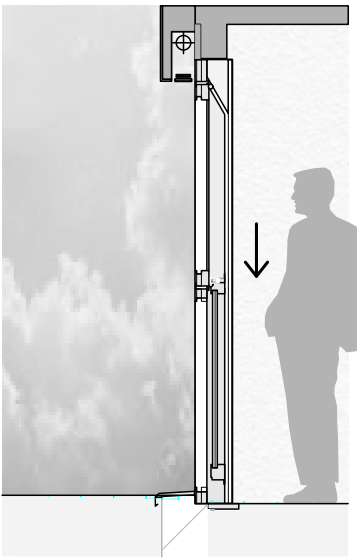
Options



Sections



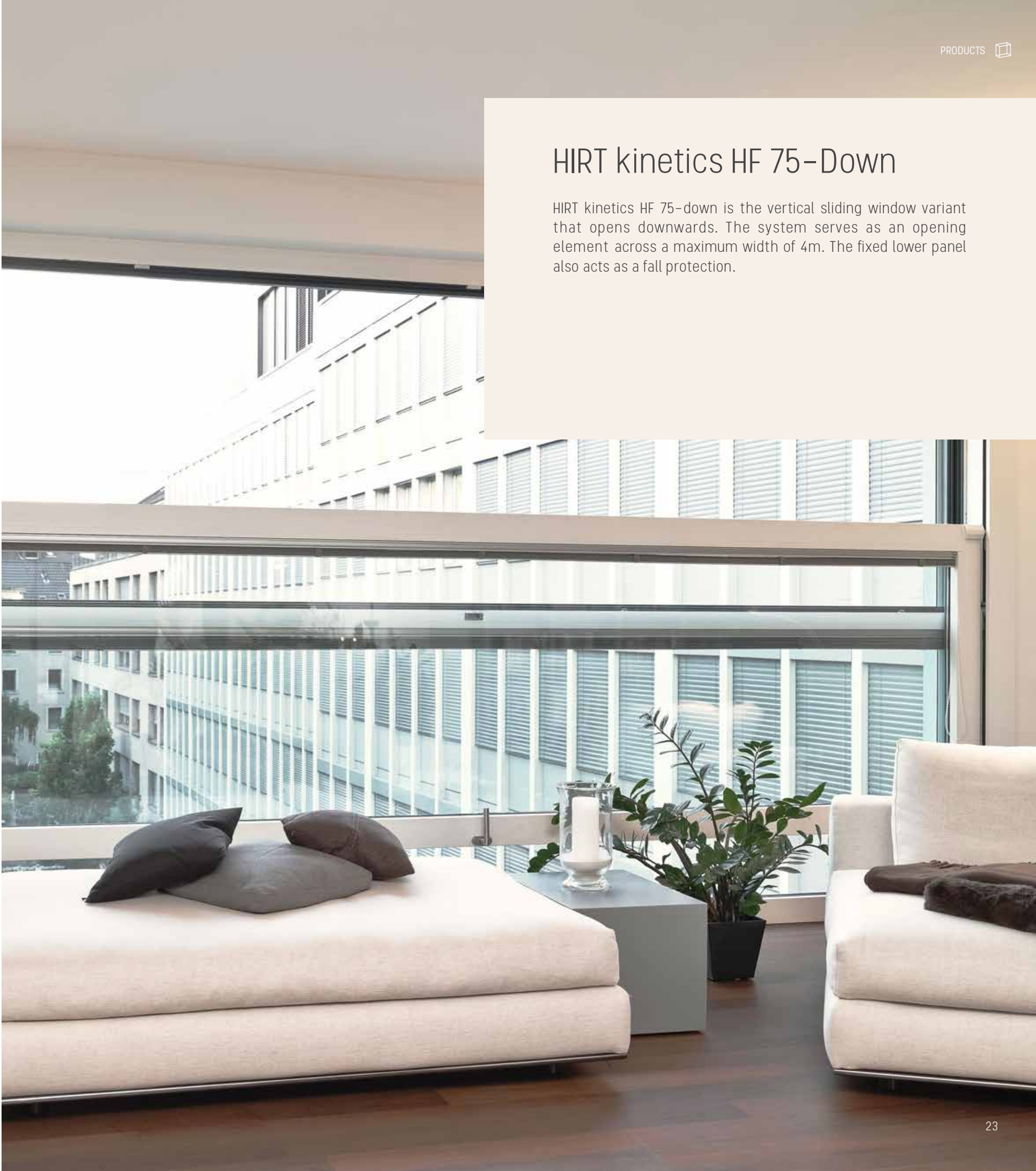
Horizontal section
recessed variant



Vertical section
open sash

HIRT kinetics HF 75-Down

HIRT kinetics HF 75-down is the vertical sliding window variant that opens downwards. The system serves as an opening element across a maximum width of 4m. The fixed lower panel also acts as a fall protection.

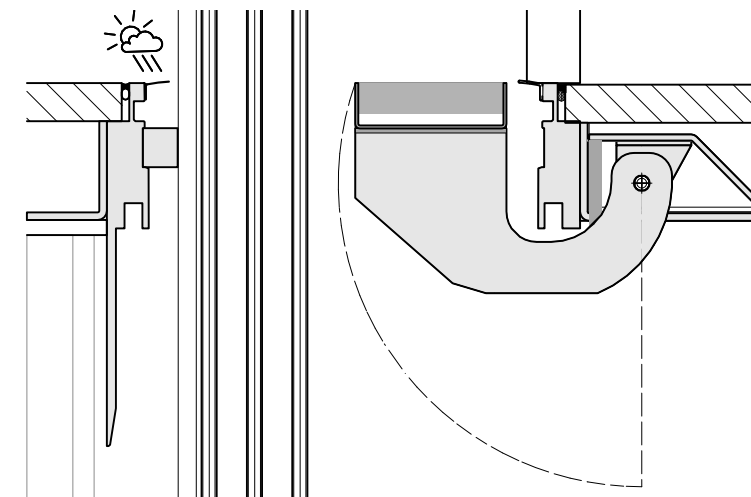


HIRT kinetics Flap

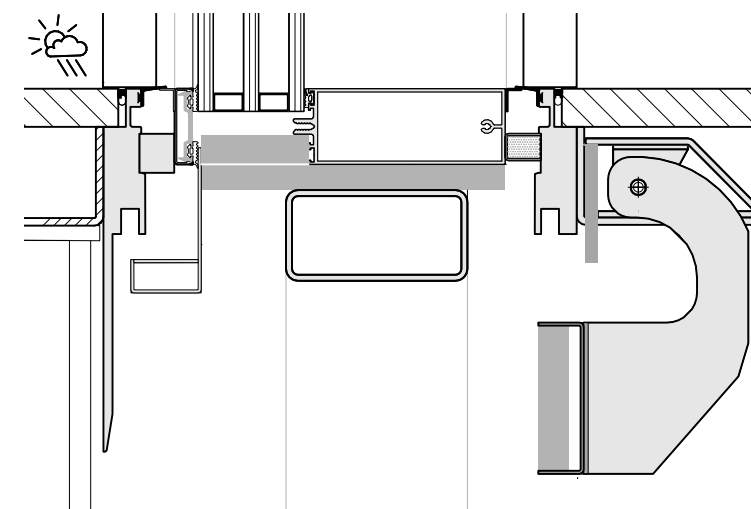
The optional HIRT kinetics Flap acts as a floor shutter or gap reduction flap.

Floor shutter flaps are used when the upper frame of HIRT kinetics drop fronts is not horizontal, for instance due to the shape of the roof. In this case, the frame itself cannot serve as a threshold that aligns with the floor. Other examples are retractable fences or windshields that are protected by the shutter flap when they are lowered.

Gap reduction flaps are available for SF XL or SF Special. When the drop front is in a semi-opened state, the flap increases safety by reducing the gap clearance.



Vertical section
flap closed



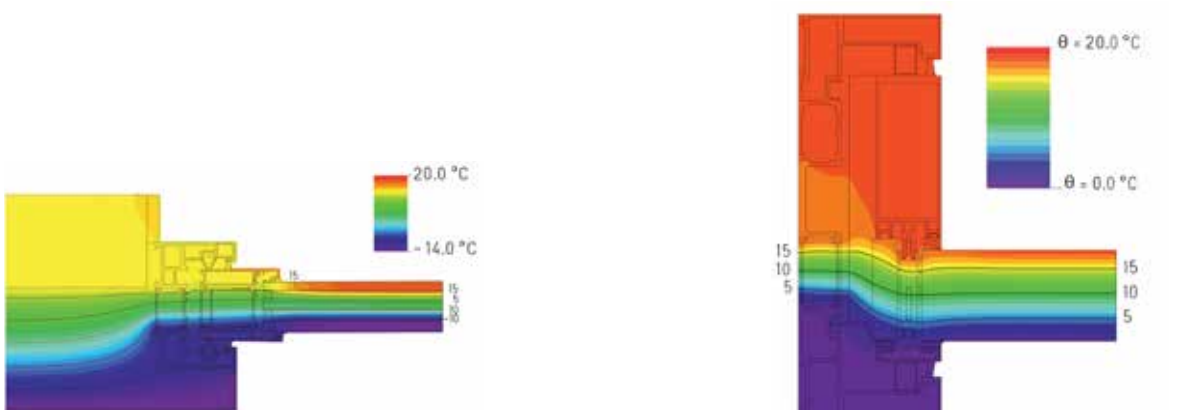
Vertical section
flap open

Quality and safety

Insulation

The profiles of the HIRT kinetics drop fronts are highly insulated and achieve excellent thermal insulation values. The large opening area enables highly efficient air circulation without cooling the room. All modern insulating glass types can be used.

Four sealing levels in the pneumatic seal ensure draught-free comfort. A sophisticated system consisting of the inner seal and the outer contact and labyrinth seals minimises heat dissipation.

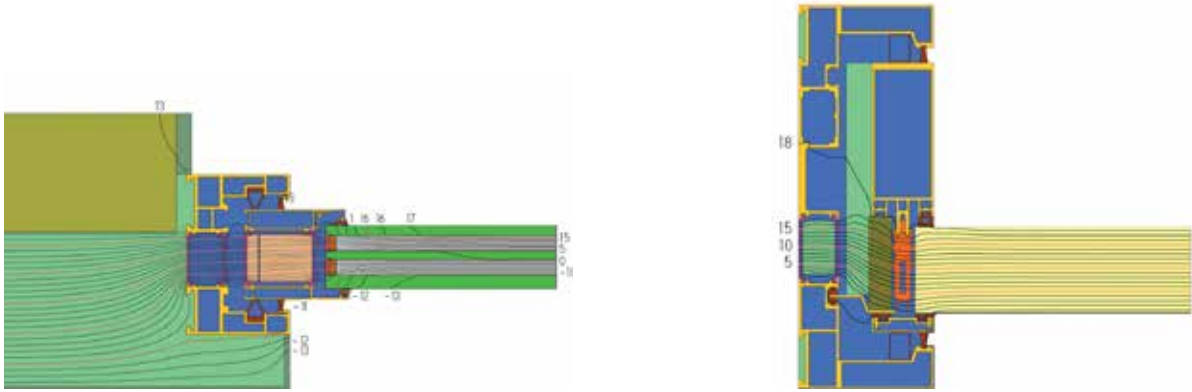


Temperature progression SF 90

Highly insulated aluminum profiles with 54mm insulation stays a U_i value of 1,364W/m²K. Function glasses up to max 63mm can be installed.

Temperature progression SF XL

Highly insulated aluminum profiles with 54mm insulation stays a U_i value of 1,418W/m²K. Function glasses up to max 70mm can be installed.



Isothermal curve SF 90

Isothermal curve SF XL

Certified Insulation

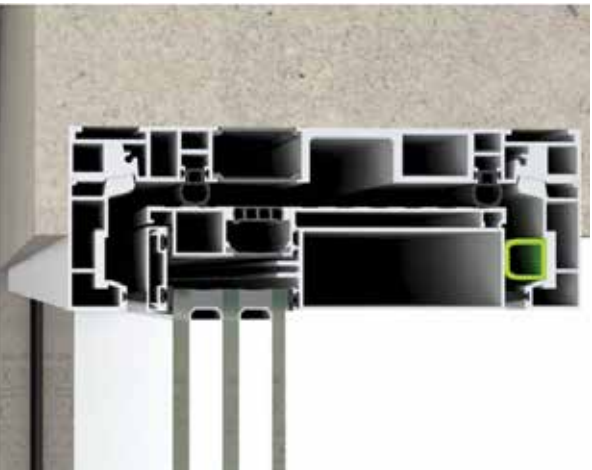
Air permeability in accordance with EN1026/EN12207	Class 4
Resistance to wind loads in accordance with EN12211/EN12210	Class C4
Rain impermeability in accordance with EN1027/EN12208	Class E1500

Pneumatic seal

All HIRT kinetics drop fronts are fitted with a continuous pneumatic seal by default. This technology was originally developed for clean rooms. After raising the front, a rubber seal is automatically inflated with air. Before opening, the air escapes silently within a few seconds.

The pneumatic seal not only prevents draught and heat dissipation, but it also provides excellent sound insulation.

SF 90 | SF XL | SF Special



Detail insulation concept

Safety and Security

Certified safety

HIRT kinetics are safe in operation thanks to strict compliance with EN standards and CE conformity. They meet the CE requirements of the EU for safety, health protection and environmental protection. Compliance with all applicable EU regulations has been certified by a type examination certificate from the Swiss Accident Insurance Fund Suva.

Burglary protection and security

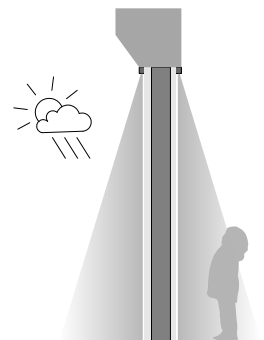
Drop fronts offer greater protection against burglary than windows or sliding doors since they cannot be pried open. Laminated safety glasses can be installed to further increase burglary resistance. Bullet proof panes can also be used in HIRT kinetics since they are balanced with a counterweight. This contrasts with conventional windows or sliders where bullet proof glass is often impractical due to its heavy weight.

Emergency closing

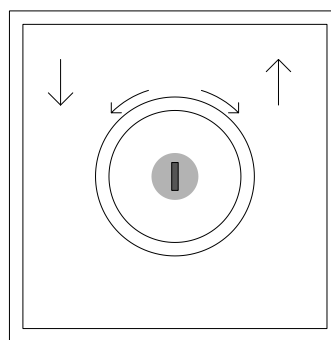
In the event of power failure or malfunction, all HIRT products can be operated manually. Emergency closing/opening ensures that the fronts can be easily raised and lowered by hand at any time and can only be carried out from the inside.

Durability

HIRT kinetics are robust and require little maintenance. The recommended maintenance interval for private properties is two years. Remote diagnosis is possible for all models.



Laser monitoring
for full automation



Dead-man switch



SUVA-Zertifikat. Conforms to Suva type
examination no. E 6961/2

Operating Safety

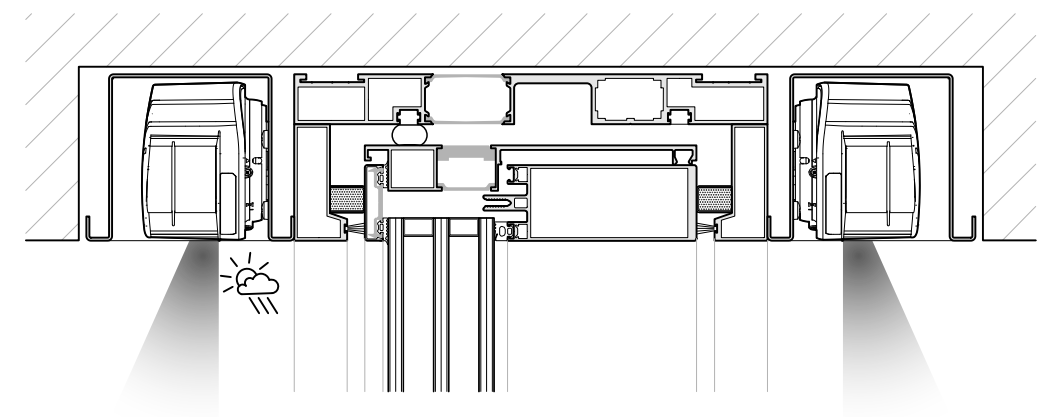
HIRT kinetics drop fronts can be operated in two ways in normal use: semi-automatically or fully automatically.

In semi-automatic operation, a so-called dead man's switch is used, which stops the movement of the window element as soon as it is released. The operator must be able to monitor the entire moving element. This is required to prevent other persons, animals or objects from being injured or damaged.

In fully automatic operation, monitoring is provided either by a light barrier or a laser scanner. Laser scanners have the advantage that they can cover corners and entire surfaces.

Fully automatic systems can also be connected to timers or smart home control systems of any manufacturer.

SF 90 | SF XL | SF Special



Vertical section
ceiling with recessed laser scanners














































Swiss Made

All HIRT kinetics are custom made for every single customer in our factory in Mollis, Switzerland. Committed to excellence “Made in Switzerland”, we emphasise quality, safety and reliability. No matter where in the world HIRT products are installed, you can rely on mechanics that are the result of Swiss precision engineering.

HIRT kinetics are in use all over the world – whether in California or Australia, Moscow or Jakarta, New York or Dubai, on Sardinia, Mallorca or Bermuda – and of course in Switzerland.

On-site installation is carried out either by HIRT specialists themselves or by long-term project partners specially trained by HIRT and committed to the high HIRT quality standards.

HIRT kinetics®

	SF 90	SF XL	SF Special	SF Protect	HF 90	H 75-Up/Down
Specifications						
Max. Height	 6 m	 6 m	 Unlimited	 2 m	 6 m	 4 m
Max. Width	 6 m	 12 m	 Unlimited	 5 m	 6 m	 4 m
Max. Surface Area	 18 m²	 40 m²	 Unlimited	 8 m²	 18 m²	 6 m²
Max. Weight	 1,5 t	 3,5 t	 Unlimited	 1,5 t	 1,5 t	 300 kg
Max. Glass Thickness	 63 mm	 70 mm	 Custom	 25 mm	 63 mm	 61 mm
Installation Depth Mounting Frame	 160 mm	 313 mm	 Custom	-	 450–590 mm	 Custom
Installation Depth Sash	 90 mm	 219 mm	 Custom	-	 90 mm	 75 mm
Openig direction	 Down	 Down	 Down	 Down	 Up	 Up/Down
Design options						
Postless design	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	-	-
Corner design	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Integrated hinged door	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Integrated sliding door	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Solid wall	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Curved design	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Threshold design	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	-	-
Structural glazing	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	-	<input checked="" type="radio"/>	
Pneumatic gasket	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	-	<input checked="" type="radio"/>	<input type="radio"/>
Traversable threshold	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	-	-	-
Integrated shading	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	-	<input type="radio"/>	<input type="radio"/>
Operation	Electric	Electric	Electric	Electric	Electric	Manual or electric
Material options	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	-	-	-
Security Options*						
Burglary protection glass according to DIN EN 356	P8B	P8B	Custom	Custom	P8B	P8B
Burglary protection resistance classes according to DIN EN 1627	RC 3	RC 3	Custom	Custom	RC 3	RC 3
Bullet proof glass according to EN 1063	BR7	BR7	Custom	Custom	BR7	BR 3

* Not all options can be combined with each other

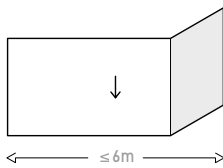


Corner design

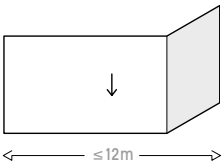
All HIRT kinetics drop fronts can be designed with corners, even including non-rectangular corners.

Limitations corner design	SF 90	SF XL
Side length without corner gear	5 m + 1 m	11 m + 1 m
Side length with corner gear	3 m + 3 m	6 m + 6 m

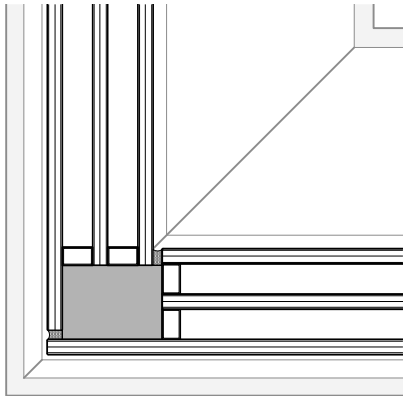
SF 90 | SF XL | SF Special



SF 90 Corner design



SF XL Corner design

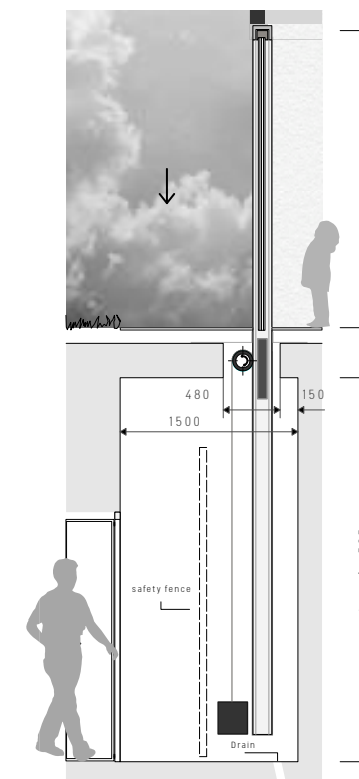


Horizontal section
glass corner

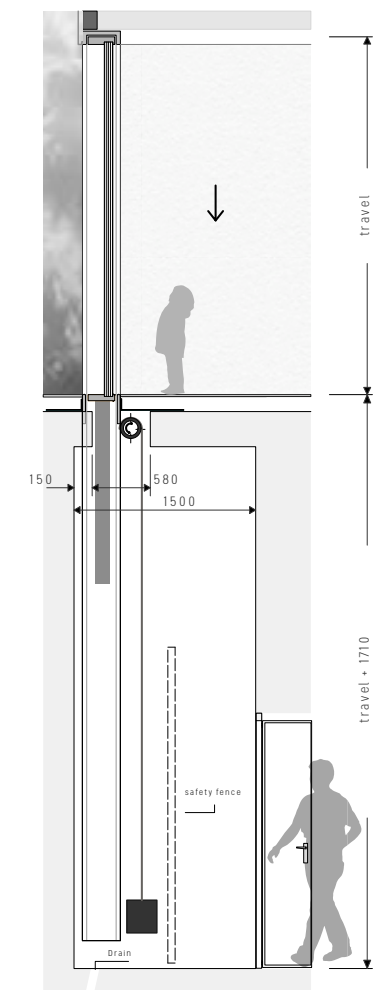
Integration of drop fronts into the building

When planning the integration of HIRT kinetics SF, an accessible mechanical room that complies with certain safety guidelines must be provided for. This mechanical room can be located within the building or outside. Either access through the cellar or vertical access through a shaft opening from the outside are possible.

SF 90 | SF XL | SF Special



Maintenance room SF 90,
outside variant



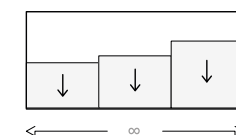
Maintenance room SF XL,
inside variant

Post-free design

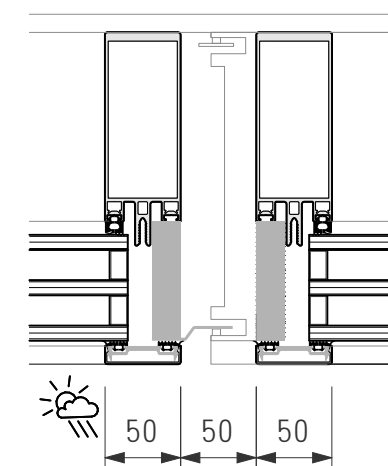
With the post-free design of HIRT kinetics drop fronts, no fixed vertical rail is needed between adjacent drop fronts. In the lowered state, the room opens up completely without any disruptive structural elements.

Adjacent elements can be moved independently of each other – even in opposite directions.

SF XL | SF Special



Postless design

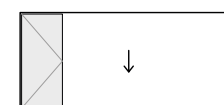


Horizontal section
SF XL Postless

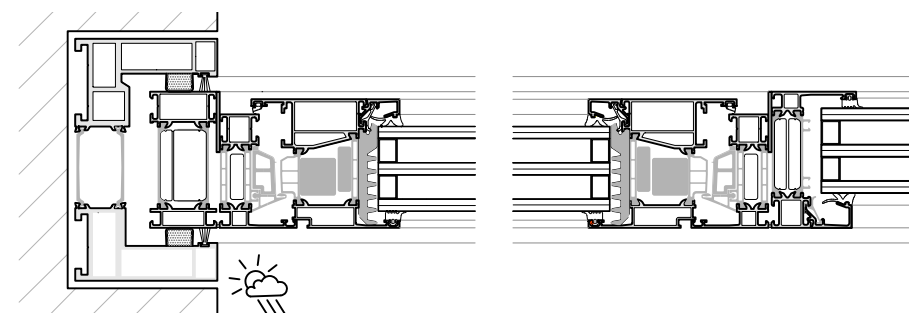
Integrated hinged doors

Hinged doors can be installed in all HIRT kinetics drop fronts. A sensor ensures that vertical movement can only take place when the door is closed.

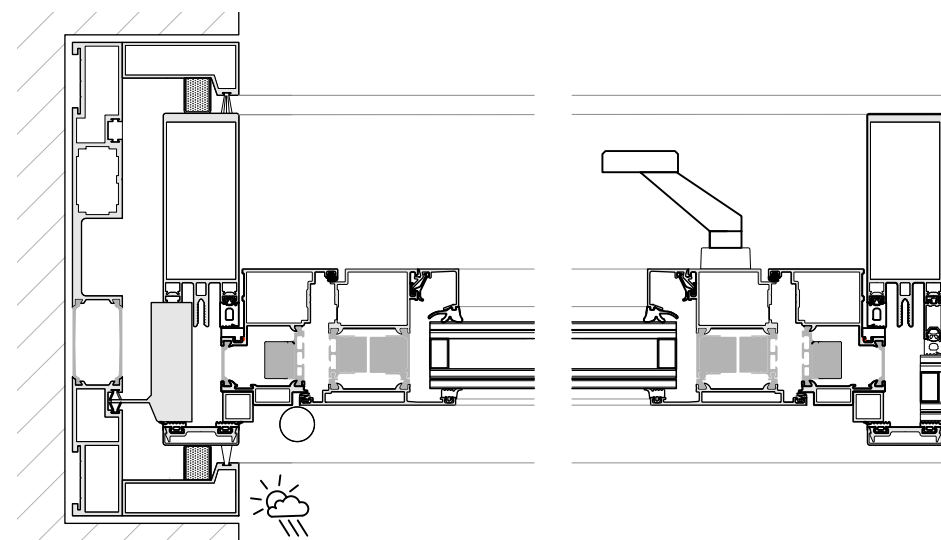
SF 90 | SF XL | SF Special



Integrated hinged doors



SF 90: Door opens to the inside only with a folding turn handle

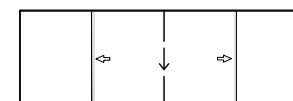


SF XL: doors open to inside or outside with standard handle on inside

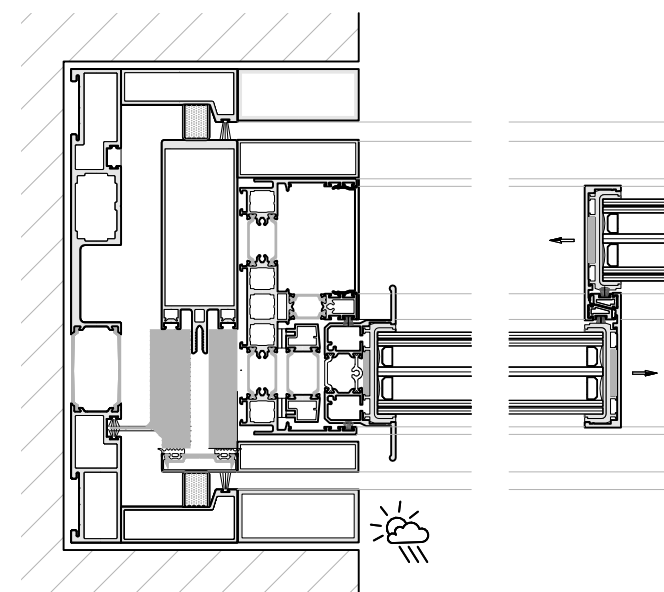
Integrated sliding doors

Sliding doors can be integrated into HIRT kinetics SF XL and SF Special. Since uniform weight distribution is required when lowering the drop front, vertical movement is only possible when the sliding door is closed. This is monitored by a sensor.

SF XL | SF Special



Integrated sliding doors

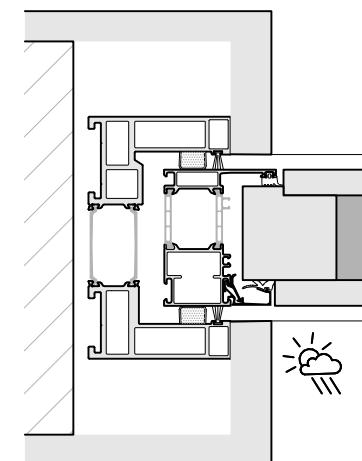


Horizontal section
Recessed wall with sliding door

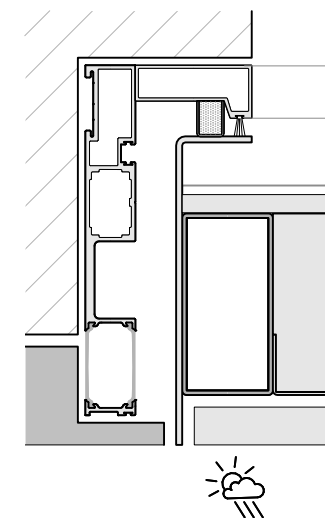
Solid walls

Making a solid stone wall disappear into the ground will never fail to impress. All HIRT kinetics can be implemented as solid walls, provided the weight limits are not exceeded. SF XL or SF Special are the preferred choices for stone walls since they can handle heavy weights and support the required sash depth.

SF 90 | SF XL | SF Special



Horizontal section
SF 90 with solid wall



Horizontal section
SF Special for garage

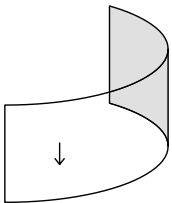


Curved design

Organic shapes make for special architecture. Curved glass supports this design language – the larger, the more spectacular. Often, this involves working at the limits of what is technically feasible. Technologies in glass manufacturing are constantly evolving, making shapes and dimensions possible that were unthinkable years ago.

With HIRT kinetics Spezial, we are guided by the available range of curved glass and can realise all possible dimensions as drop fronts.

SF Special



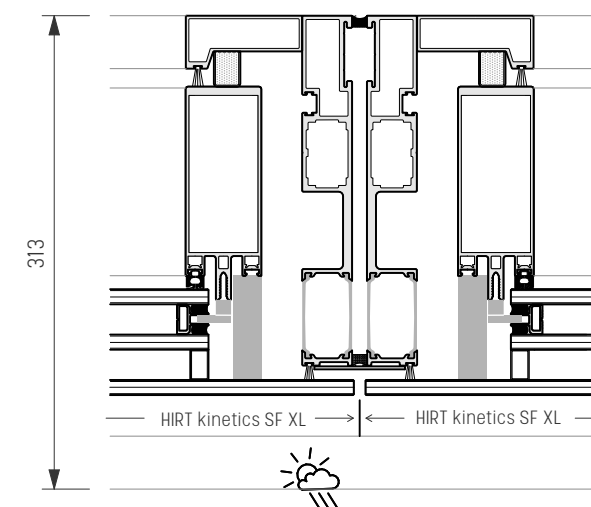
Curved design



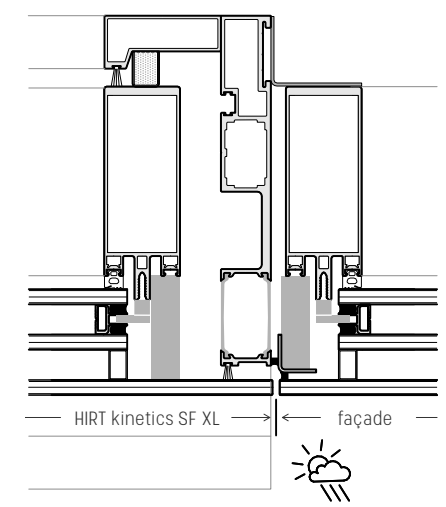
Structural glazing

Structural glazing design brings refined elegance to any building. This option eliminates visible external metal profiles and conveys a minimalist look characterized by clear lines.

SF 90 | SF XL | SF Special



Horizontal section
Boundary SF XL to SF XL



Horizontal section
Boundary SF XL to façade

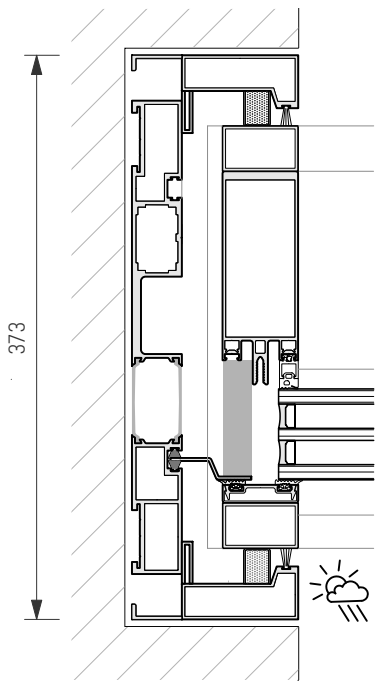


Traversable threshold

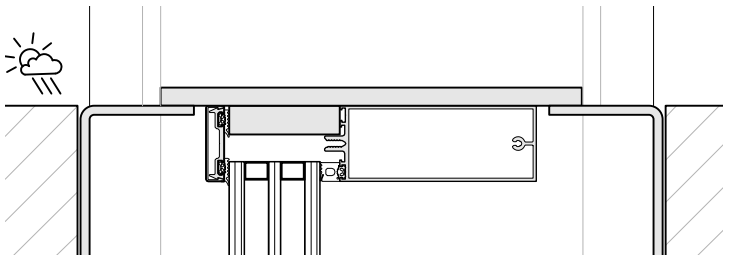
In garages or car showrooms, thresholds that support vehicles ensure that the mechanics of HIRT kinetics are not subject to strain when driven over in descended state.

This protection is provided by a cover plate that protrudes over the floor opening. The weight of the vehicle is diverted to the floor instead of acting on the threshold.

SF 90 | SF XL | SF Special



Horizontal section
Recessed wall SF XL
Installation depth 373 mm

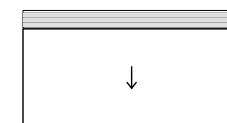


Vertical section
Retracted SF XL with
traversable threshold

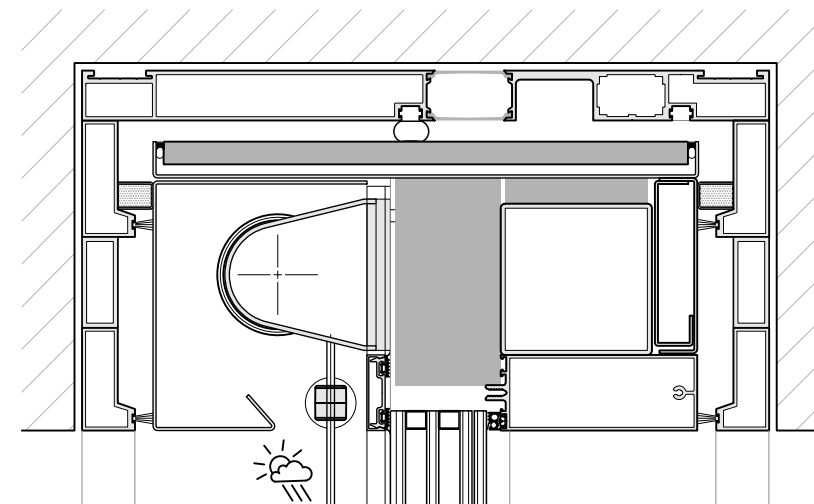
Integrated shading

Various conventional systems can be installed in the façade to provide external shading. If the dimensions of the window front exceed the maximum dimensions of commercially available systems, it is possible to attach vertical awnings or external venetian blinds directly to the HIRT kinetics drop fronts. This method ensures that no guides obstruct the space when the drop front is lowered. The required system depth increases according to the shading.

SF Special



Shading Add-on



Vertical section
Ceiling installation (installation depth depends on shading system)

Threshold designs

Even when moving elements weighing several tonnes, HIRT kinetics descend to the level of the surrounding floor with millimetre precision. This means that the threshold is more than just barrier-free – it's perfectly level.

The standard threshold of SF 90 made of groove-milled chrome-nickel steel conveys elegance and durability. The SF XL threshold impresses with an insulated aluminium profile that can be painted or anodised in any colour.

Custom designs can use the same covering as the surrounding floor for the threshold, making completely recessed window fronts virtually invisible.

SF 90 | SF XL | SF Special



Wood



Stone



Metal (standard variants)





Materials

HIRT kinetics drop fronts are normally constructed using fully insulated aluminium or steel structures. However, other variants such as solid wood are just as feasible. Moreover, customised design options and elegant materials can be used to implement special designs.

SF 90 | SF XL | SF Special



Stainless Steel



Bronze



Aluminium anodised



Wood



Stone



A long-term partnership

More than two decades ago, I had the opportunity to realize the first project together with Stefan Hirt in Austria, a project that subsequently developed into the HIRT kinetics product range.

The trusting partnership with HIRT kinetics has deepened over the years into an entrepreneurial participation. I am proud to represent HIRT kinetics now not only in Austria, but also in Turkey and the Middle East.

This close cooperation guarantees our customers direct access to the unique HIRT kinetics products.

Martin Kollegger
Member of the Board

Austria | Türkiye | Middle East

Projects Worldwide



Zurich | Gstaad | Geneva | Verbier | St. Moritz | Berlin | Munich | Cologne | Dusseldorf | Vienna | Salzburg | Kitzbuhel | London | Moscow | Oslo | Antwerp |
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San Francisco | Laguna Beach | Beverly Hills | Santa Monica | Fort Worth | Austin | Hawaii | Doha | Dubai | Jakarta | Melbourne | Sydney

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