Arkayu™

Transforming Spaces, Elevating Views

Every Space Has a Challenge.
We Engineer the Right Roof for It.

A curated guide to Retractable roofing solutions by ARKAYU

www.arkayu.com

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How ARKAYU works?

At ARKAYU, we do not sell a single roof type.

We study the site, usage pattern, climate, structure, and client expectations and then recommend the most suitable retractable roofing system.

Why multiple systems exist?

There is no one perfect retractable roof. A restaurant terrace, a home courtyard, a hotel atrium, a balcony and a pool enclosure all demand very different solutions.

That's why ARKAYU curates multiple world class retractable roofing systems each designed for a specific application.

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SYSTEM 1:
POLYCARBONATE RETRACTABLE ROOF

Polycarbonate retractable roofs are designed for spaces that require year round usability without permanently disconnecting from the outdoors.

The system combines lightweight strength, weather resistance, and design flexibility, making it suitable for residential and commercial environments alike.

With the ability to transition effortlessly between open sky and protected enclosure, this system enables controlled interaction with natural light, air, and climate while maintaining comfort and visual appeal.

Where This System Performs Best

- Spaces requiring all weather usability
- Projects with frequent or daily operation
- Applications demanding lightweight yet strong roofing
- Areas where natural light is desired with weather protection
- Sites requiring corrosion resistant construction

MATERIALS & CONSTRUCTION

The system is constructed using non corrosive aluminium alloy structural profiles, complemented by stainless steel fasteners and EPDM rubber sealing systems to ensure long term weather resistance.

Roofing panels are manufactured from high-performance polycarbonate sheets, engineered to be significantly stronger than glass while remaining lightweight. UV protective coatings on both sides enhance durability and user comfort.

Material Specifications

- Aluminium profiles: AL6060-T6 grade
- Polycarbonate sheets: UV-protected (50 microns on both sides)
- EPDM rubber liner: DIN 7863 grade
- Cast nylon wheels: Grade 66
- Fixing plates & fasteners: Stainless Steel SS304

Key Features

- Available in manual or automated operation
- Clear & diffused daylight options with multiple polycarbonate variants
- High strength with reduced structural load
- Corrosion resistant build ensure durability in outdoor environments
- Engineered drainage and EPDM sealing provide reliable weather protection
- Powder coated aluminium profiles available in custom colours to match architectural intent.

System configuration is customised based on span, exposure and usage requirements

Warranty & Assurance

Warranty durations mentioned are indicative and apply up to the stated period, subject to system configuration, material selection, usage conditions, and maintenance. Final warranty terms are confirmed as per applicable manufacturer and OEM documentation at the time of project execution.

APPLICATION PROOF

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SYSTEM 2:
PVDF FABRIC RETRACTABLE ROOF

PVDF fabric retractable roofs are designed for spaces that require complete sun and rain protection, controlled openness, and large unobstructed spans, while maintaining a refined architectural presence

PVDF fabric retractable roofs are designed for spaces that require complete sun and rain protection, controlled openness, and large unobstructed spans, while maintaining a refined architectural presence

This system allows seamless transition between outdoor and protected conditions, supporting comfort, climate control, and uninterrupted use across seasons

Where This System Performs Best

- Spaces requiring complete sun block and rain protection
- Large span areas with minimal structural intrusion
- Projects with frequent opening and closing cycles
- Applications demanding lightweight roofing with strong performance
- Luxury residential, hospitality, and public use spaces

MATERIALS & CONSTRUCTION

The PVDF fabric retractable roof system is constructed using engineered aluminium structural profiles, paired with integrated gutter and concealed drainage systems to ensure efficient water management and long term performance.

Roofing is formed using three layer PVDF coated technical fabric, designed to provide complete light block, weather resistance, and durability under continuous outdoor exposure. Motorised automation enables smooth and controlled operation.

Material Specifications

1. **Fabric**
   - Brand: Sioen (Belgium)
   - Construction: 3-layer PVDF coated fabric
   - Weight: 850 GSM
   - Texture options: 3D / Plain / Hairline
   - Light transmission: 100% blockout
   - Typical lifespan: ~20 years
2. **Motor & Automation**
   - Brand: Somfy (France)
   - Control: Single or multi-channel remote
   - Technology: RTS (Radio Technology Somfy)
   - Optional wind and rain sensors
3. **Structure**
   - Aluminium profile grade: 6063
   - Powder coating: Pulver brand

Key Features

- Motorised folding fabric system with controlled operation
- Integrated front gutter with concealed pillar drainage
- Complete light block for effective sun and heat control
- Customisable LED lighting with dimmer control
- Architectural design flexibility with Straight, Semi Curved, and Full Curved profiles
- Customisable fabric colours, textures, and frame finishes

System configuration is customised based on span, exposure and usage requirements

Warranty & Assurance

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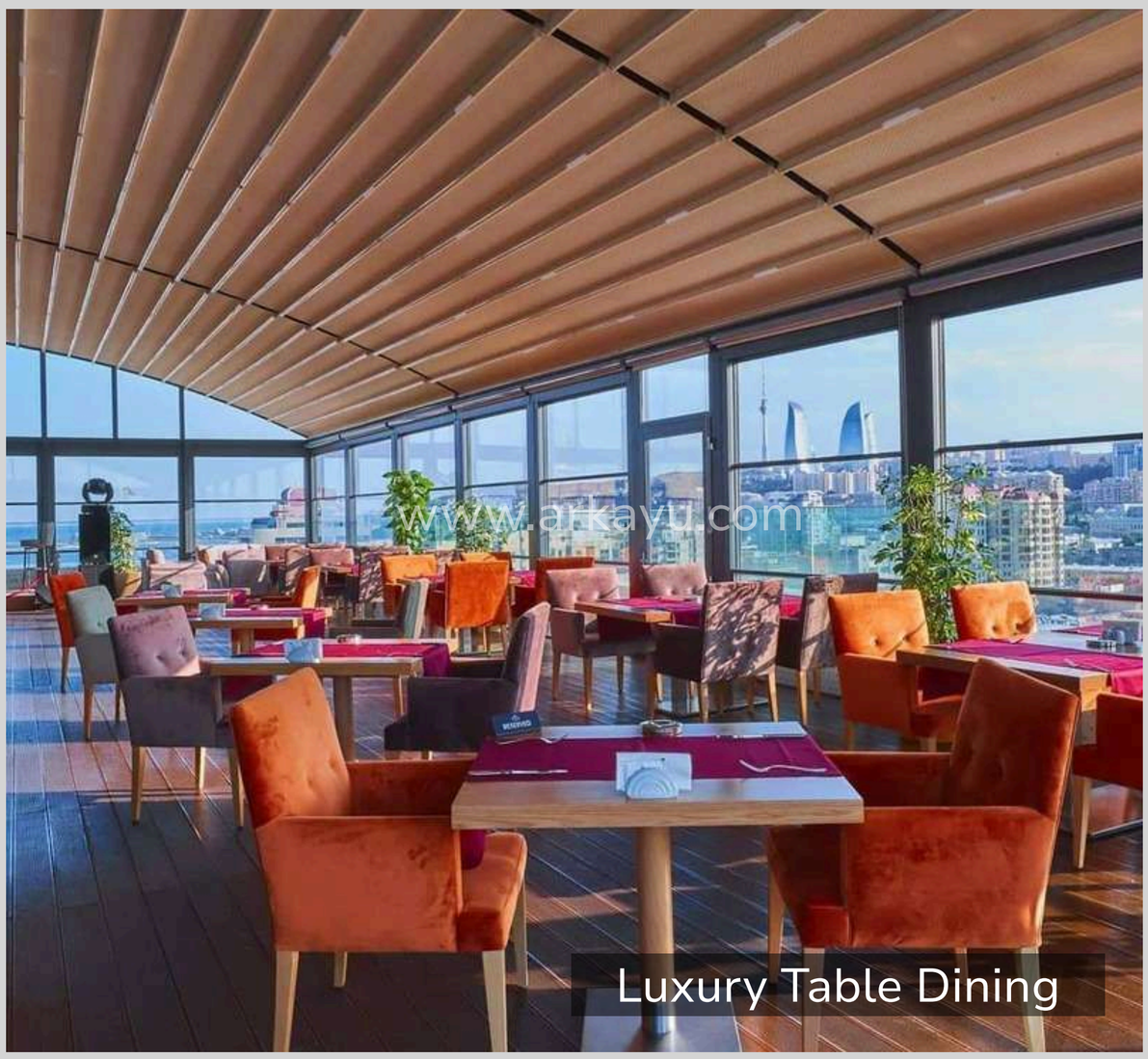
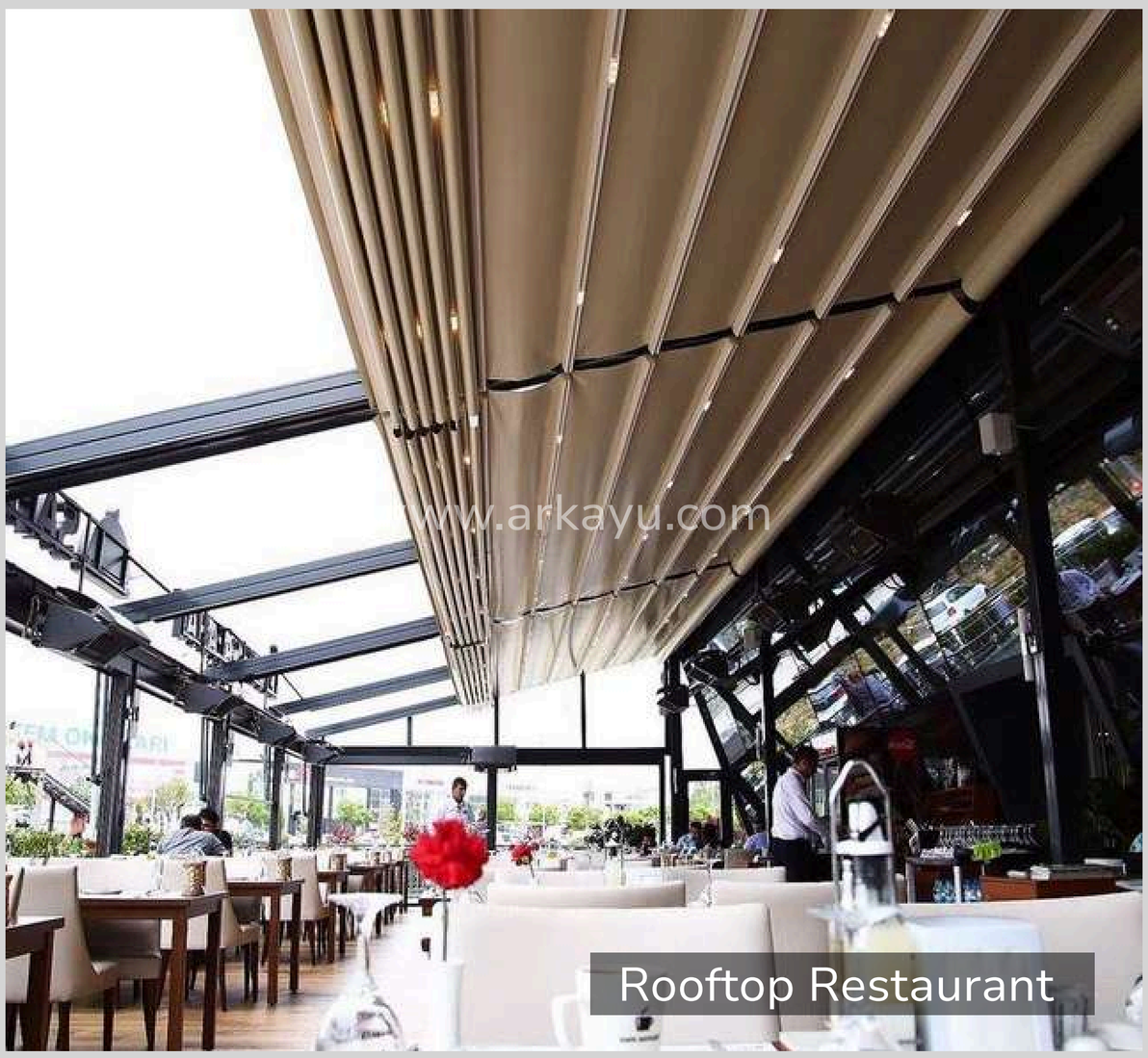
APPLICATION PROOF

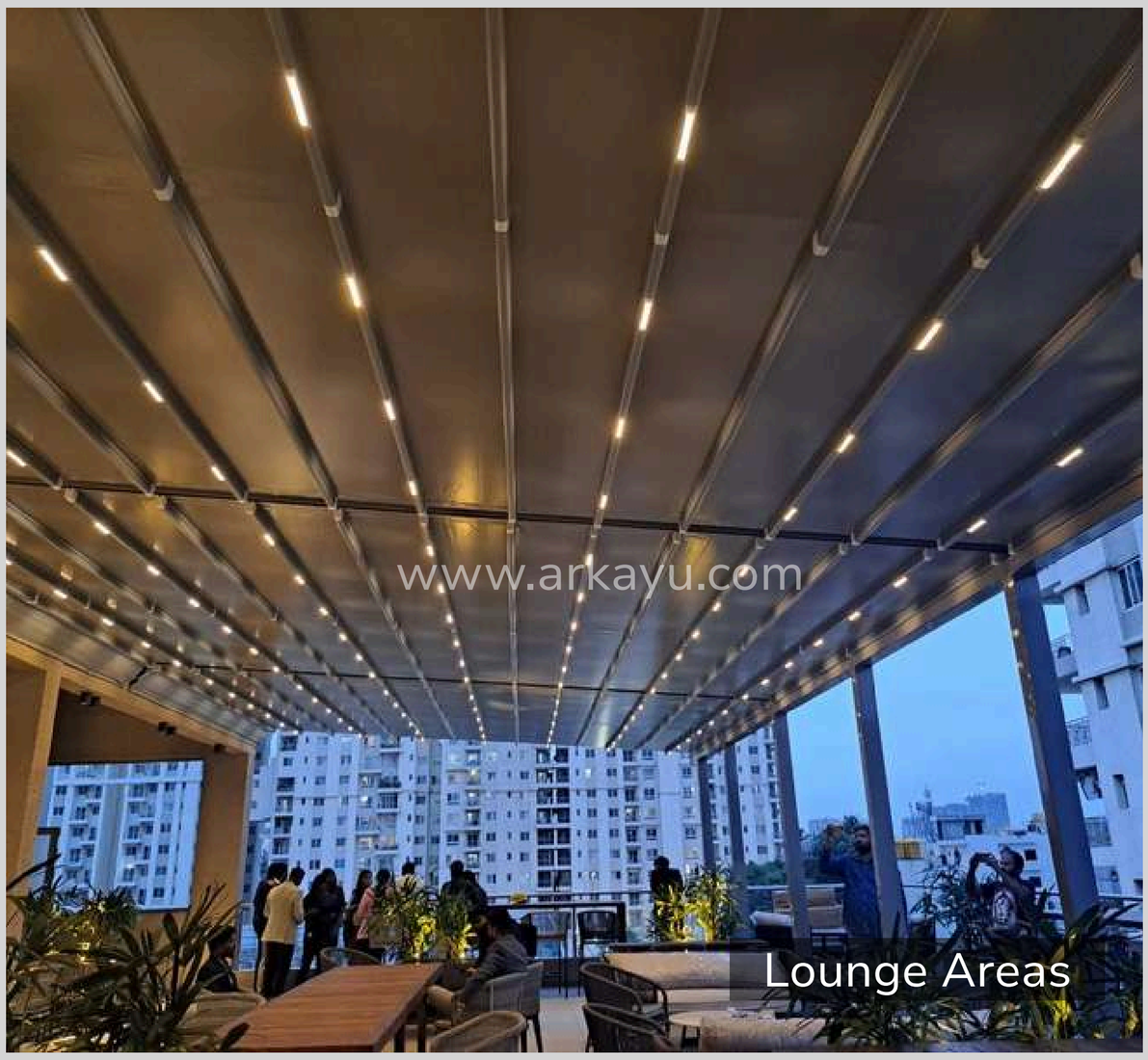
Rooftop Banquet Hall



Luxury Table Dining



Rooftop Restaurant



Lounge Areas

Pool Areas

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SYSTEM 3: GLASS RETRACTABLE ROOF

Glass retractable roof systems are designed for spaces that require maximum transparency, natural daylight, and year round weather protection, without compromising architectural purity.

The system uses precision engineered aluminium profiles combined with tempered or laminated glass panels to create adaptable environments that can transition smoothly between open sky and fully covered conditions. Retractable operation allows controlled interaction with light, sky views, and ventilation while maintaining comfort and enclosure when required.

This system is typically selected for projects where visual continuity, openness, and premium architectural expression are key drivers.

Where This System Performs Best

- Spaces requiring high transparency and unobstructed sky views
- Premium residential and hospitality environments
- Projects demanding weather protection without visual enclosure
- Applications with strong focus on daylight and architectural aesthetics
- Areas requiring controlled thermal and acoustic performance

MATERIALS & CONSTRUCTION

The glass retractable roof system is constructed using thermally broken aluminium profile systems, engineered to support glazing loads while maintaining energy efficiency and smooth operation.

Roofing panels are manufactured using high performance tempered or laminated glass, arranged in an offset glazing configuration to ensure flat surfaces, efficient water drainage, and watertight performance. Motorised automation enables controlled and quiet panel movement under varying weather conditions.

Key Features

- **Motorised Retractable Glass Panels**
  Panels retract smoothly to open up to approximately 90%, enabling unobstructed sky views.
- **Advanced Thermal & Acoustic Performance**
  Double glazed or triple glazed glass options provide improved insulation and sound reduction.
- **True Thermal Break Profiles**
  Thermally broken aluminium systems enhance energy efficiency and indoor comfort.
- **Offset Glazing System**
  Flat, overlapping glass arrangement prevents water accumulation and ensures reliable sealing.
- **Smooth & Secure Operation**
  Patented anti derailment mechanisms ensure safe and consistent panel movement.
- **Smart Automation Compatibility**
  Integrated automation with optional rain, wind, and sun sensors for weather-responsive operation.

System configuration is customised based on span, exposure and usage requirements

Warranty & Assurance

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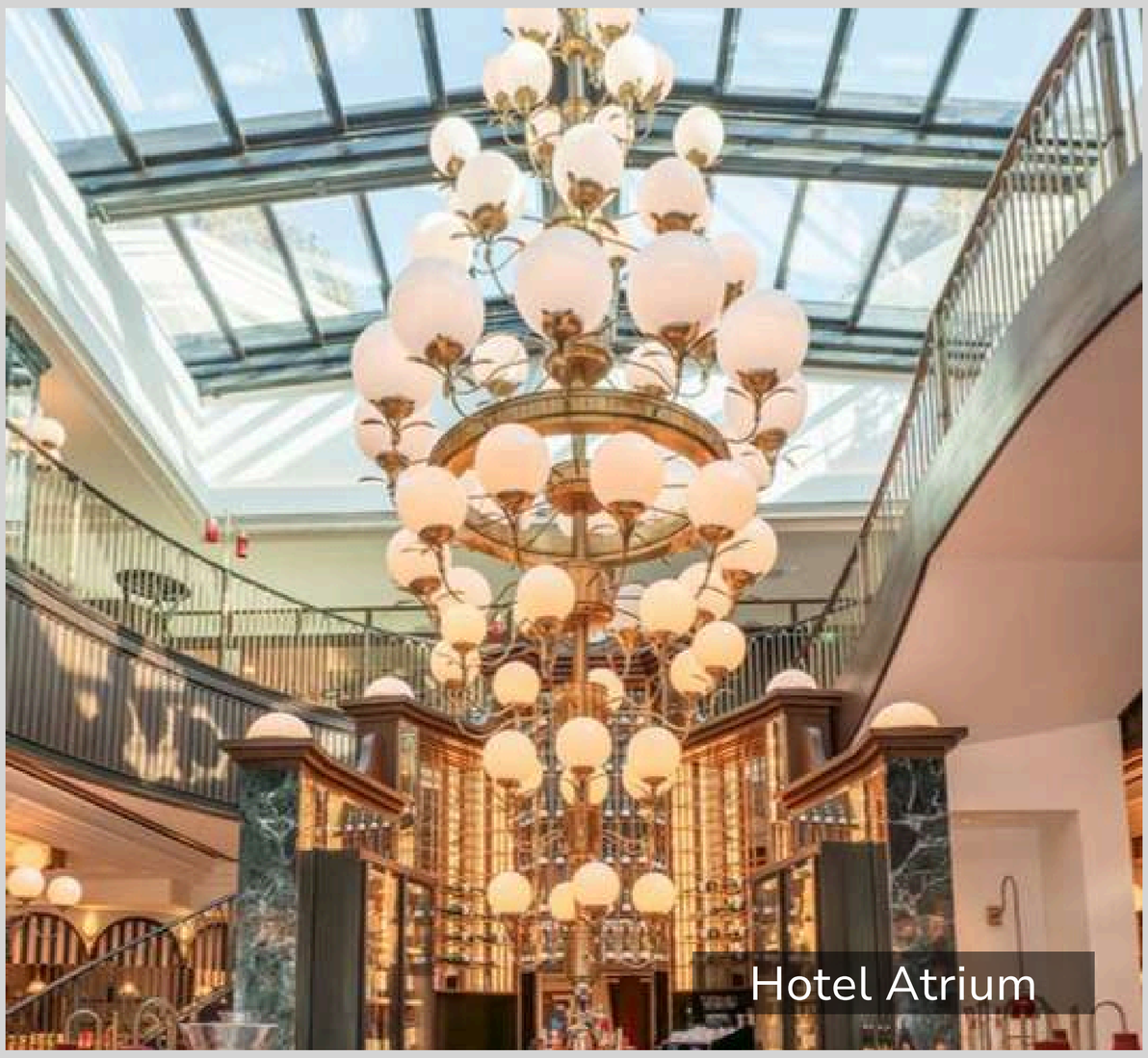
APPLICATION PROOF

Restaurant Dining

Club House


Hotel Atrium

Extended Backyard

Patio Dining

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SYSTEM 4: BIOCLIMATIC ALUMINIUM LOUVER RETRACTABLE ROOF

Bioclimatic aluminium louver retractable roofs are designed for spaces that require precise control over sunlight, ventilation, and shade, while retaining the ability to open fully to the sky when required.

The system uses automated pivoting aluminium louvers that can tilt to regulate light and airflow or retract completely to create an open to sky environment. This allows dynamic response to changing weather and occupancy conditions while maintaining architectural clarity and comfort.

Engineered entirely from aluminium and supported by motorised automation, this system is typically selected for projects where environmental control, design integration, and year round usability are key priorities.

Where This System Performs Best

- Spaces requiring adjustable daylight and natural ventilation
- Projects demanding fine control over thermal comfort
- Premium residential and hospitality environments
- Areas with frequent transition between open and covered conditions
- Applications where architectural expression is a key driver

MATERIALS & CONSTRUCTION

The bioclimatic louver roof system is constructed entirely from high-grade aluminium profiles, ensuring corrosion resistance, structural stability, and long-term outdoor performance.

Roofing consists of insulated aluminium louvers designed to pivot and retract through motorised mechanisms. Integrated drainage channels and concealed water management systems allow effective rain protection while preserving clean visual lines.

Powder coated finishes enhance durability and enable seamless integration with surrounding architecture.

Key Features

- **Automated Pivoting Louvers**
  Louvers tilt up to approximately 140°, enabling precise control of sunlight, shading, and airflow.
- **Full Retraction Capability**
  Louvers can retract completely to provide unobstructed sky views.
- **Motorised Operation**
  Smooth and quiet motorised operation with reliable performance for frequent use.
- **Integrated Lighting**
  Built in dimmable LED strip and spot lighting provides ambient illumination for evening and night time use.
- **All-Aluminium Construction**
  Provides durability, corrosion resistance, and consistent architectural appearance.
- **Weather-Responsive Design**
  Integrated drainage and airflow optimisation protect against rain while enhancing comfort.

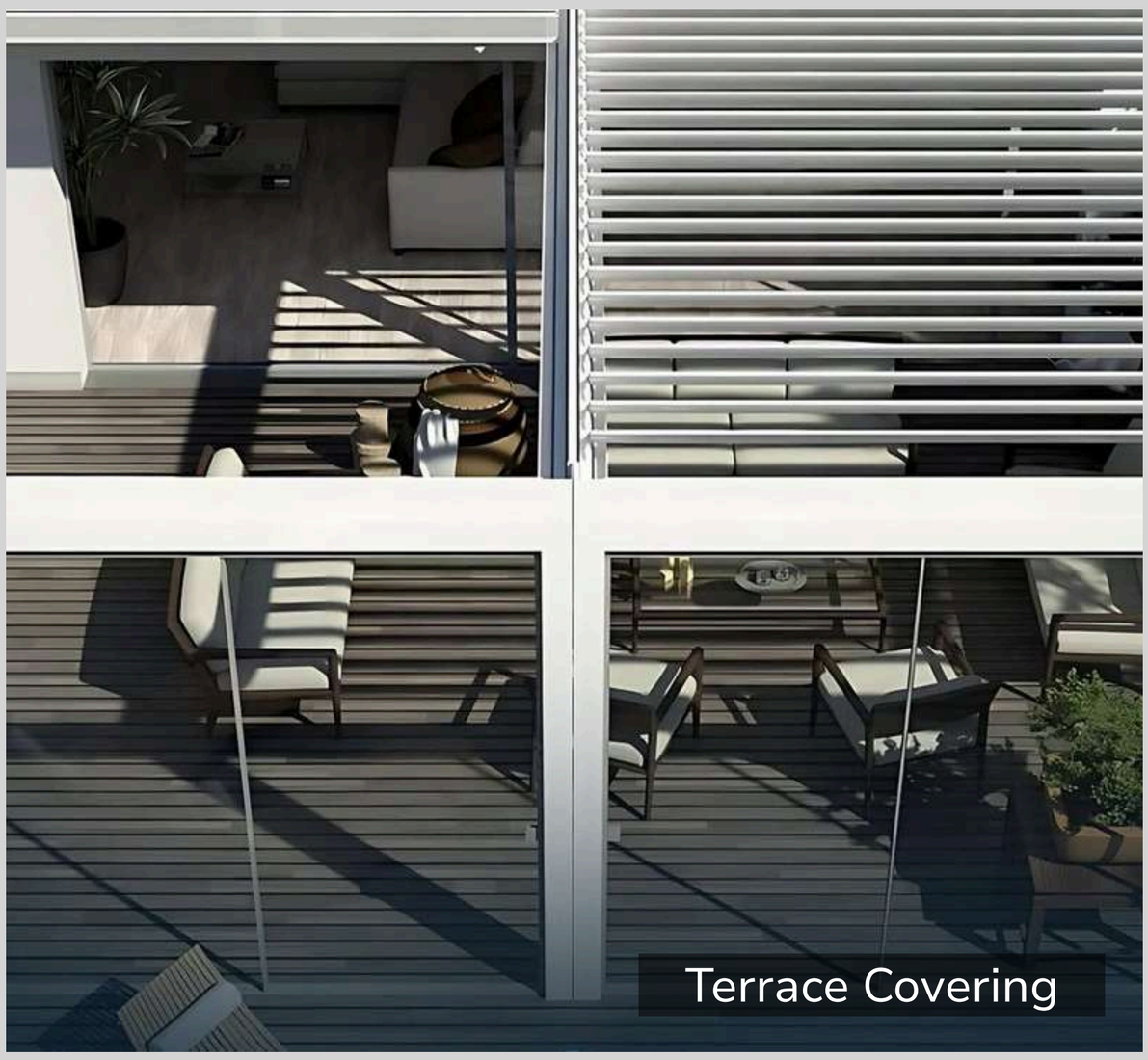
Warranty & Assurance

Warranty durations mentioned are indicative and apply up to the stated period, subject to system configuration, material selection, usage conditions, and maintenance. Final warranty terms are confirmed as per applicable manufacturer and OEM documentation at the time of project execution.

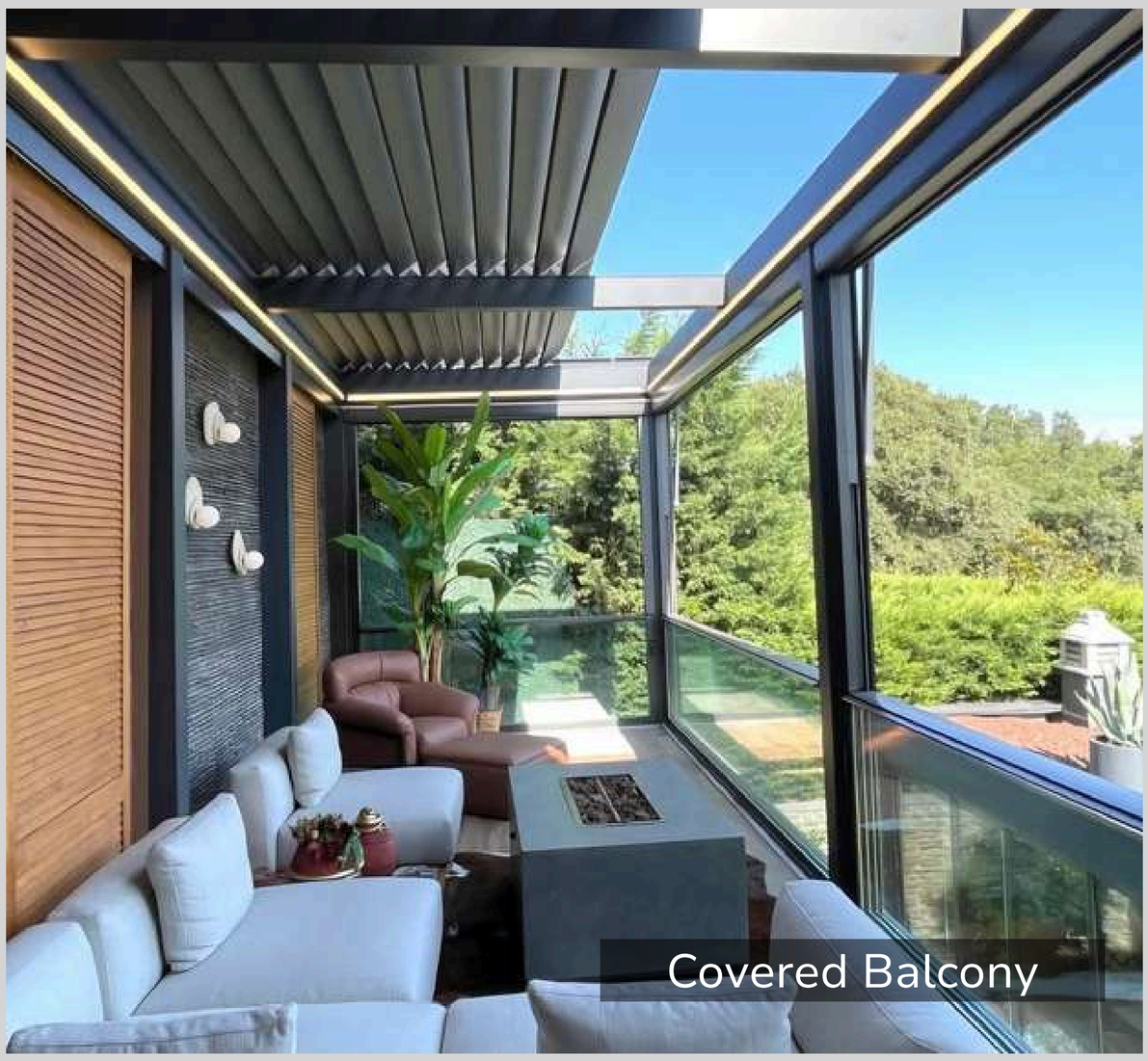
System configuration is customised based on span, exposure and usage requirements

APPLICATION PROOF

Residential Patio


Terrace Covering

Resort Project


Covered Balcony

Luxury Terrace Seating

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SYSTEM 5:
PATIO RETRACTABLE ENCLOSURE

Patio retractable enclosures are designed to transform open patios and sit out spaces into adaptive, all season environments while retaining visual connection with the outdoors

The system combines overhead polycarbonate roofing panels with toughened glass for verticals, allowing spaces to remain open, enclosed, or partially ventilated depending on weather and usage. This enables seamless transition between outdoor and indoor conditions without permanent structural alteration.

Where This System Performs Best

- Residential patios and sit out spaces
- Areas requiring protection from sun, wind, and rain
- Spaces where openness and enclosure need to coexist
- Projects prioritising low maintenance and durability
- Homes seeking extended use of outdoor spaces throughout the year

MATERIALS & CONSTRUCTION

The patio retractable enclosure system is constructed using engineered aluminium structural profiles, paired with stainless steel fasteners and EPDM rubber sealing systems to ensure long term outdoor performance.

Roofing panels are formed using UV protected polycarbonate sheets, providing weather protection and daylight ingress, while vertical enclosures utilise toughened glass panels to maintain transparency, privacy, and spatial continuity.

Material Specifications

- Aluminium profiles: AL6060-T6 grade
- Polycarbonate sheets: UV protected (50 microns on both sides)
- EPDM rubber liner: DIN 7863 grade
- Cast nylon wheels: Grade 66
- Fixing plates & fasteners: Stainless Steel SS304

Key Features

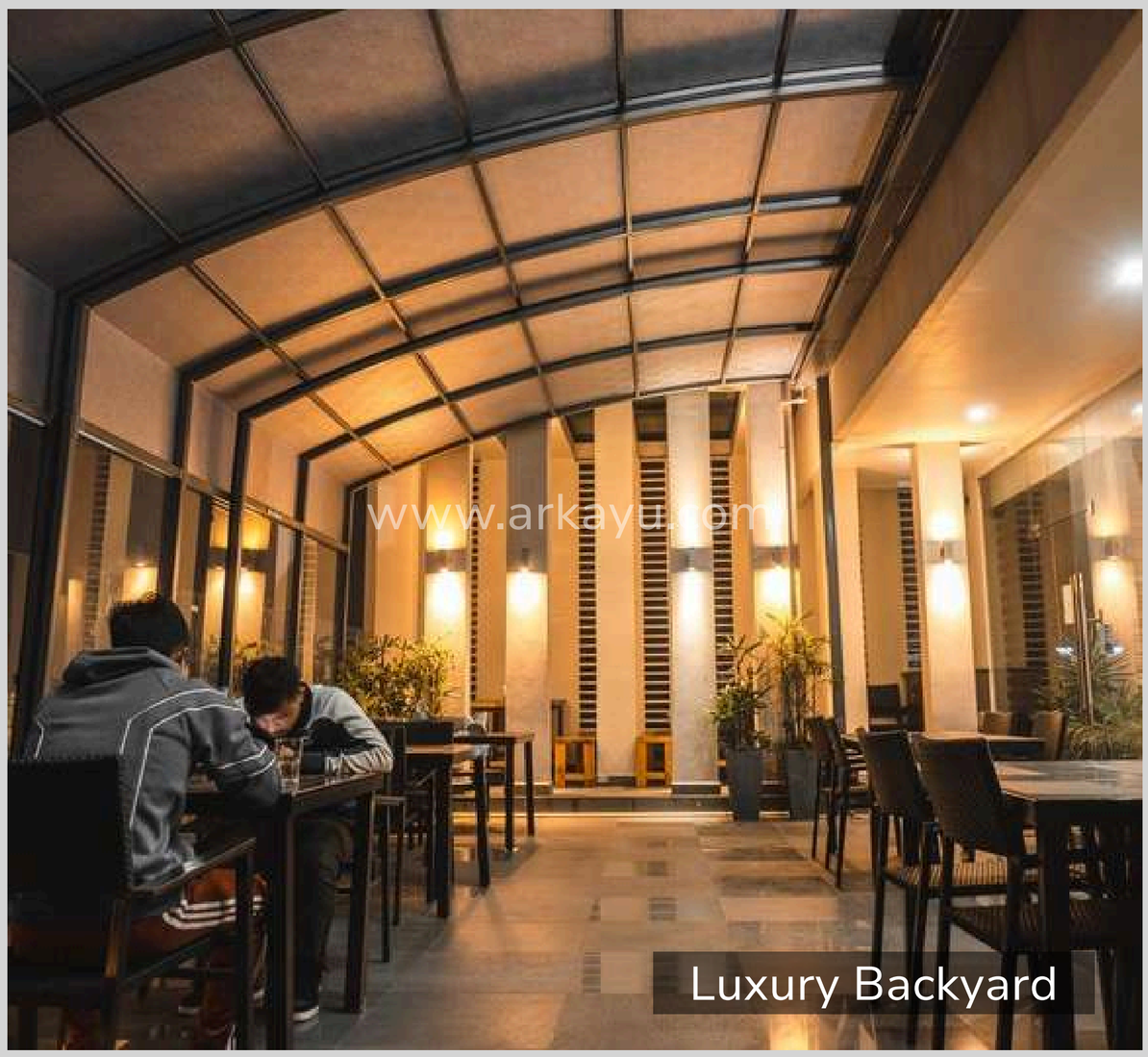
- **Hybrid Enclosure System**
  Combination of polycarbonate roofing with glass verticals for protection and transparency.
- **Operable Configuration**
  Retractable or sliding elements allow the space to transition between open, semi enclosed, and fully enclosed states.
- **All Weather Usability**
  Designed to provide protection from rain, wind, and harsh sunlight while maintaining comfort.
- **Corrosion Resistant Construction**
  Aluminium profiles, stainless steel components, and EPDM sealing ensure durability with low maintenance.
- **Design Integration**
  Customisable finishes and glazing options enable architectural alignment with residential façades.

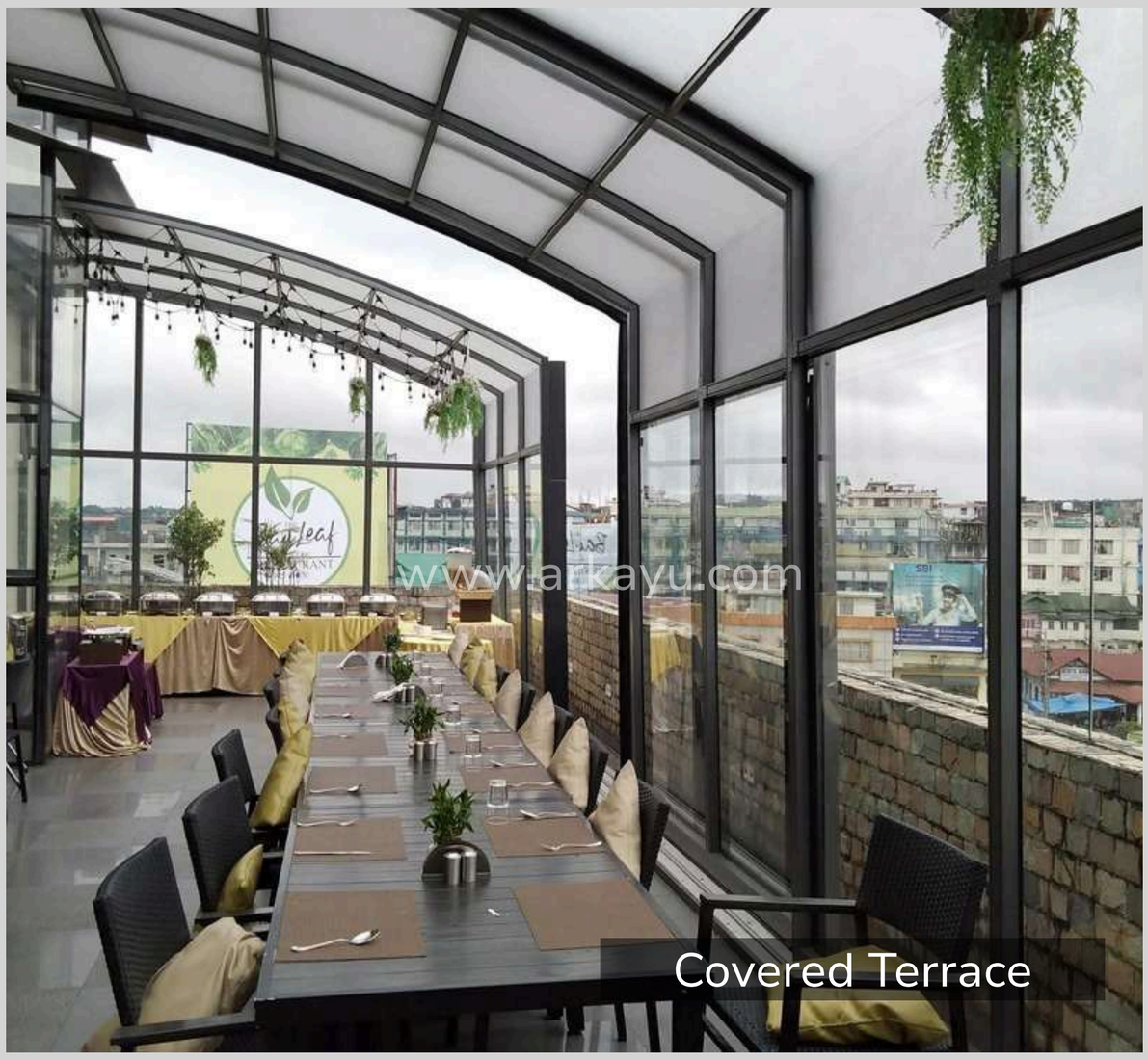
System configuration is customised based on span, exposure and usage requirements

Warranty & Assurance

Warranty durations mentioned are indicative and apply up to the stated period, subject to system configuration, material selection, usage conditions, and maintenance. Final warranty terms are confirmed as per applicable manufacturer and OEM documentation at the time of project execution.

APPLICATION PROOF





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SYSTEM 6: RETRACTABLE SWIMMING POOL ENCLOSURE

Swimming pool enclosures are designed to transform open pool areas into protected, climate moderated environments, enabling extended and year round pool usage without compromising openness or visual connection.

The system is constructed using non corrosive aluminium structural profiles combined with high strength polycarbonate panels, allowing the enclosure to open or close as required based on weather and usage conditions. This flexible configuration enables enjoyment of open sky during favourable weather while providing complete protection from wind, rain, and external elements when required.

Where This System Performs Best

- Where This System Performs Best
- Residential swimming pools requiring extended seasonal usability
- Projects demanding protection from weather, debris, and heat loss
- Pools where safety, cleanliness, and reduced maintenance are priorities
- Environments requiring corrosion resistant construction
- Private villas, resorts, and recreational facilities

MATERIALS & CONSTRUCTION

The swimming pool enclosure system is engineered using aluminium alloy structural profiles, selected for strength, corrosion resistance, and suitability in humid poolside environments. Structural members are paired with stainless steel fasteners and EPDM rubber sealing systems to ensure long term weather performance.

Enclosure panels are constructed from UV-protected polycarbonate sheets, offering high impact resistance, thermal insulation, and controlled natural light.

Material Specifications

- Aluminium profiles: AL6060-T6 grade
- Polycarbonate sheets: UV protected (50 microns on both sides)
- EPDM rubber liner: DIN 7863 grade
- Cast nylon wheels: Grade 66
- Fixing plates & fasteners: Stainless Steel SS304

Key Features

- Retractable enclosure system enabling open-air and protected pool usage
- Low-height and high-height configurations to suit different usage needs
- Corrosion-resistant construction suitable for humid pool environments
- High-strength polycarbonate panels providing daylight, UV protection, and insulation
- Customisable finishes and configurations for architectural integration

System configuration is customised based on span, exposure and usage requirements

Warranty & Assurance

Warranty durations mentioned are indicative and apply up to the stated period, subject to system configuration, material selection, usage conditions, and maintenance. Final warranty terms are confirmed as per applicable manufacturer and OEM documentation at the time of project execution.

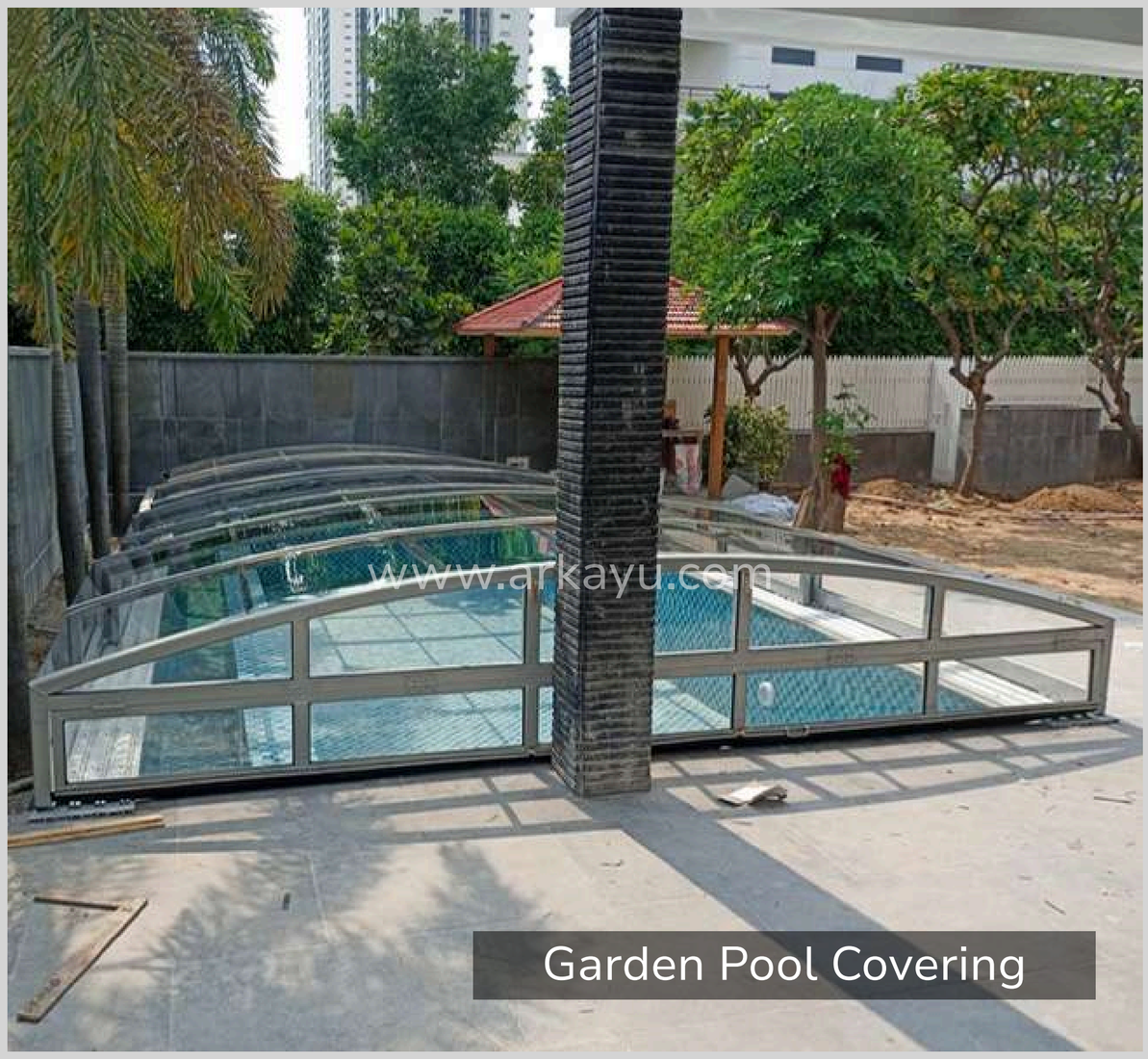
APPLICATION PROOF

Low Height Enclosure

Resort Pool Covering

Luxury Villa Pool

High Enclosure



Garden Pool Covering

SYSTEM 7: SKYZIP- FABRIC RETRACTABLE SUN SCREENS

SkyZip fabric retractable sun screens are designed for spaces that require controlled daylight, glare reduction, and thermal comfort, particularly over skylights and architectural glass roofs.

Installed above or below glazing, the system uses tensioned technical fabric guided by zipper tracks to regulate sunlight penetration without blocking natural light or views. Motorised operation allows smooth adjustment of shading levels in response to changing daylight and weather conditions.

Where This System Performs Best

- Skylights and glass roofs
- Atriums and climate controlled open spaces
- Residences with roof glazing or sunrooms
- Hospitality and commercial interiors with overhead glass
- Projects requiring glare and heat control without enclosure

MATERIALS & CONSTRUCTION

The SkyZip system is constructed using engineered aluminium framing with powder-coated finishes, supporting tensioned fabric panels guided by a zipper mechanism for stability and performance.
Shading fabric is sourced from technical textile manufacturers and selected for UV resistance, colour stability, and longevity.
Motorised operation ensures smooth, quiet, and precise movement under repeated daily use.
The system integrates seamlessly with architectural glazing without modifying the primary roof structure.

Material Specifications

1. **Fabric**
   - Brand: Serge Ferrari (France)
   - Material type: Acrylic / PVC technical textile
   - UV and colour resistance: High
   - Typical lifespan: ~15 years
   - Fabric warranty: Up to 5 years
2. **Motor & Automation**
   - Brand: Somfy (France)
   - Control: Single or multi-channel remote
   - Technology: RTS (Radio Technology Somfy)
   - Optional wind and rain sensors
3. **Structure**
   - Aluminium profiles: 6063-T6 grade
   - Powder coating: Pulver brand
   - Powder coating warranty: Up to 10 years

Key Features

- Retractable solar shading system for skylights and glass roofs
- Zipper-guided fabric movement ensuring stable, tensioned performance
- Glare and heat reduction while preserving daylight and openness
- Motorised, quiet operation suitable for residential and commercial spaces

System configuration is customised based on span, exposure and usage requirements

Warranty & Assurance

Warranty durations mentioned are indicative and apply up to the stated period, subject to system configuration, material selection, usage conditions, and maintenance. Final warranty terms are confirmed as per applicable manufacturer and OEM documentation at the time of project execution.

APPLICATION PROOF

Garden Pergola Covering

Luxury Skylight Shading

Hotel Skylight Covering

Backyard Glass Shade

Backyard Glass Shade

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SYSTEM 8: POLYCARBONATE DOME

Polycarbonate domes are designed as self contained enclosure systems that create immersive, weather protected environments while maintaining visual connection with the outdoors.

Constructed using impact resistant polycarbonate panels and non corrosive aluminium structural profiles, the dome provides panoramic views, controlled internal comfort, and year round usability. Its modular, aerodynamic form ensures stability under varying weather conditions while allowing flexibility in placement and relocation.

This system is typically selected for projects that require experiential spaces, temporary or modular construction, and high visual impact, without the need for permanent structures.

Where This System Performs Best

- Experiential dining and lounge spaces
- Resorts, hospitality, and glamping projects
- Terraces, gardens, and poolside areas
- Applications requiring relocatable or modular enclosures
- Projects prioritising weather protection with high transparency

MATERIALS & CONSTRUCTION

The polycarbonate dome system is engineered using aluminium alloy structural members, stainless steel fasteners, and sealed joint systems for outdoor durability.

The enclosure shell is formed using UV-protected polycarbonate panels, allowing high transparency, impact resistance, and controlled daylight. Modular assembly enables relocation, reinstallation, and design flexibility across different sites.

Interior systems can be configured to support lighting, shading, insulation, and climate control based on project requirements.

Material Specifications

- Aluminium profiles: AL6060-T6 grade
- Polycarbonate sheets: UV protected (50 microns on both sides)
- EPDM rubber liner: DIN 7863 grade
- Cast nylon wheels: Grade 66
- Fixing plates & fasteners: Stainless Steel SS304

Key Features

- 360° transparent enclosure creating immersive outdoor experiences
- Modular and relocatable construction suitable for temporary or semi permanent setups
- Weather resistant polycarbonate shell for year round usability
- Configurable interiors with lighting, shading, and insulation options

System configuration is customised based on span, exposure and usage requirements

Warranty & Assurance

Warranty durations mentioned are indicative and apply up to the stated period, subject to system configuration, material selection, usage conditions, and maintenance. Final warranty terms are confirmed as per applicable manufacturer and OEM documentation at the time of project execution.

APPLICATION PROOF

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SYSTEM 9: PERGOLA- FIXED POLYCARBONATE ROOF

Pergolas with fixed polycarbonate roofing are designed to provide permanent weather protection and shaded outdoor comfort, while preserving openness and visual connection with the outdoors.

The system utilises high strength aluminium structural profiles combined with UV protected polycarbonate roofing panels, creating a durable and low maintenance solution for outdoor living spaces. The translucent roofing allows controlled natural light while protecting against direct sun, rain, and environmental exposure.

This system is typically selected where simplicity, durability, and architectural integration are prioritised over operable mechanisms.

Where This System Performs Best

- Semi open residential outdoor spaces
- Areas requiring permanent shade and protection
- Terraces, patios, and poolside zones
- Projects prioritising low maintenance and longevity
- Applications seeking fixed architectural shading elements

MATERIALS & CONSTRUCTION

The pergola system is constructed using non corrosive aluminium alloy structural profiles, stainless steel fasteners, and EPDM sealing components to ensure long term outdoor durability.

Roofing is formed using UV protected polycarbonate sheets, offering impact resistance, weather protection, and controlled daylight transmission. The fixed roof configuration eliminates moving parts, resulting in consistent performance and minimal maintenance.

Material Specifications

- Aluminium profiles: AL6060-T6 grade
- Polycarbonate sheets: UV protected (50 microns on both sides)
- EPDM rubber liner: DIN 7863 grade
- Cast nylon wheels: Grade 66
- Fixing plates & fasteners: Stainless Steel SS304

Key Features

- Fixed polycarbonate roofing system providing permanent outdoor protection
- Controlled natural light with UV protection and reduced glare
- Corrosion-resistant aluminium construction for long service life
- Multiple polycarbonate and frame colour options for architectural integration

System configuration is customised based on span, exposure and usage requirements

Warranty & Assurance

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APPLICATION PROOF

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