

K^{STRONG}
UNRIVALED SAFETY.

CASE STUDY

GRANDE CENTRE POINT VOYAGE PATTAYA



ROOF HORIZONTAL LIFELINE FOR CANOPY ROOF

AFF4000 IMPAXX SERIES HORIZONTAL LIFELINE SYSTEM

PROJECT CASE STUDY

SCAN TO VIEW
PRODUCT



Client : Grande Centre Point Voyage Pattaya
Industry : Hotels, Resorts, Leisure Parks & Entertainment Centres
Project name : Roof Horizontal Lifeline Systems for the Leaf-Shaped Canopy Roof
Products used : AFF4000 IMPAXX Series Horizontal Lifeline System, IMPAXX standing seam configuration c/w guided-type fall arrester for roof access
Installed and Supervised By : KStrong Certified Installer - SP Group

Background

Grande Centre Point Voyage Pattaya is Thailand's newest five-star resort and the latest property in the Grande Centre Point Hotels Collection — 494 sea-view rooms and suites, a 20,000 m² water park, nine dining concepts including two rooftop venues on the 33rd floor, and fifteen event venues headed by the 1,596-seat Halo Hall. It opens on the Na Kluea beachfront in Chonburi on 1 October 2026.

The resort's signature architectural feature is its sweeping leaf-shaped canopy roof, finished in curved aluminium composite panel. It is a high-value, **highly visible surface** — and one that must be inspected, cleaned and maintained for the entire operating life of the building. It offers **no natural anchorage and no protected edge**.

What distinguishes this project is that the ownership and project team dealt with that obligation at design stage rather than after opening, specifying certified permanent fall protection as part of the building itself. That decision deserves recognition. It remains uncommon in the Thai hospitality sector, and it places Grande Centre Point Voyage Pattaya alongside the international airports, breweries and manufacturing plants that **treat working at height as an engineered, certified discipline rather than a procedural one**. **Safety here was designed in — not retrofitted after the first incident.**



Client Requirement

The client required certified permanent roof safety lifeline systems that would protect maintenance personnel for the operating life of the building without compromising the architecture or the roof envelope. The following constraints defined the design:

- **Continuously curved geometry** — the leaf-shaped roof turns through its entire length. The lifeline had to follow a constantly changing plan curve rather than a series of straight runs, while holding certified span limits throughout.
- **No roof penetrations permitted** — the standing seam metal roof beneath the finish could not be drilled or fixed through. Waterproofing integrity and the roof manufacturer's warranty had to remain fully intact.
- **High-value architectural finish** — the aluminium composite panel surface is the visible face of the building. **Neither the installation nor the day-to-day use of the system could be allowed to mark, abrade or damage it.**
- **Architectural sensitivity** — the roof is a signature design feature, seen from the approach road, from the guest tower above and from the grounds below. The systems **had to be visually discreet and consistent with the architect's intent.**
- **Coastal exposure** — a beachfront site in a permanent salt-laden atmosphere, requiring full marine-grade material specification throughout.
- **Simultaneous access** — roof cleaning, gutter, façade and lighting maintenance crews need to work the roof at the same time, at any point along the system.
- **100% continuous tie-off** — personnel had to remain attached from the moment they access the roof through to the far end of the run, passing intermediate brackets without ever disconnecting.



KStrong Solution

KStrong supplied the AFF4000 IMPAXX Series Horizontal Lifeline System in its IMPAXX standing seam configuration, engineered to the exact geometry of the canopy roof. Installation, load-proof testing and certification were carried out by SP Group, a KStrong Registered Installer, working to KStrong engineering design and under KStrong technical supervision.

System configuration

Two independent certified systems were installed across the canopy roof. Each is a single continuous line of three connected legs of approximately 30 m, 55 m and 10 m — 95 metres of protected travel per system, 190 metres in total.

- **190 metres of Ø 8 mm 7×19 grade 316 stainless steel wire rope** (34 kN minimum breaking load) forming the flexible anchor line, terminated with TFI-swaged fittings.
- **26 Impact base posts mounted on 52 non-penetrating 120 mm standing seam clamps** — two clamps per post, installed to controlled torque, with not a single hole made in the roof sheeting. Waterproofing and roof warranty preserved in full.
- **150 mm spacers raising each post clear of the aluminium composite panel finish**, so the anchor line and its fixings stand off the architectural surface rather than bearing on it — protecting the panel face from marking and abrasion in service.
- **A corner-dominant bracket layout.** The roof curves so continuously that variable-angle corner brackets outnumber straight intermediate brackets across the installation, with 120° corner units at the sharpest changes of direction. Each bracket is set to the true angle at its own post, so the line follows the curve rather than being forced into straight segments.
- **Shock-absorbing extremity anchors at every line end**, backed by a spring-type shock absorber on each system and shock-absorbing eyes at every intermediate post. Peak load transmitted to the structure is limited to 10 kN and the absorber dissipates up to 7,800 J — **protecting the worker and the roof alike.**
- **Grade 316 stainless steel throughout** — posts, brackets, corners, tensioners, terminations and travellers — specified for permanent coastal service.
- **IMPAXX travellers in SS316** that pass through the intermediate brackets without disconnection, so the user moves the full length of the roof under uninterrupted protection.
- **Guided-type fall arrester on a 20 m × 12 mm kernmantle lifeline with integral shock pack**, protecting the transition onto the roof so the worker is attached from the access point through to connection with the horizontal lifeline. There is no unprotected moment.

Why KStrong

KStrong was selected on product design, certified performance, whole-life value and local engineering support — including a Thailand-based installation partner certified and audited by KStrong, and a documented annual inspection and recertification regime that **keeps the systems compliant for the life of the building.**



Standards and Certification

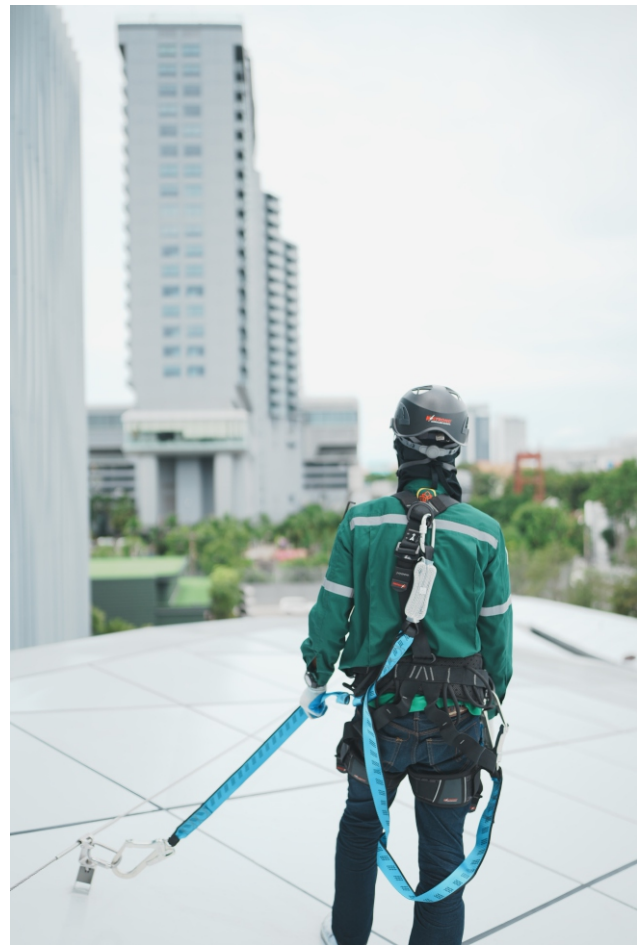
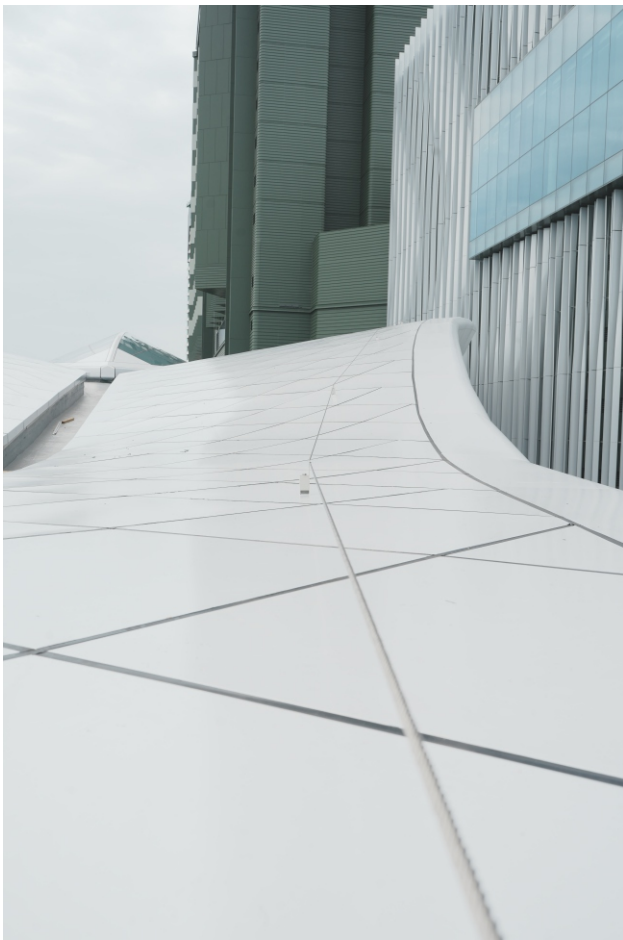
- EN 795:2012 Type C — flexible anchor line horizontal system
- CEN/TS 16415:2013 — certified for use by up to four users simultaneously, at any point along the system, including between anchor brackets
- EN 365:2004 — system labelling, instructions for use, periodic examination and recertification
- Certified span range of 5 m to 15 m between end, corner and intermediate brackets
- Maximum load transmitted to the supporting structure: 10 kN. Energy absorber capacity: 7,800 J
- **24-month product warranty, extendable to 20 years** subject to annual inspection in accordance with EN 365
- System design, installation, maintenance, annual inspection and certification undertaken only by KStrong Registered Installers

Project Outcome

- **190 metres of continuously protected roof access delivered across the leaf-shaped canopy roof** — two independent certified systems of 95 metres each.
- **Zero roof penetrations.** Not one hole was drilled in the roof sheeting. Waterproofing integrity and the roof manufacturer's warranty remain fully intact.
- **Uninterrupted travel end to end.** 26 posts, brackets and corners carry the line through every change of direction without the user disconnecting once — replacing what would otherwise have been a series of discrete anchor points requiring repeated unhooking at height.
- **Certified for up to four users simultaneously on each system**, at any point including between brackets, giving the property headroom to scale crew size as maintenance demands change.
- **The canopy roof is now safely accessible** for inspection and cleaning for the entire operating life of the building.
- **Handed over ahead of the hotel's opening on 1 October 2026** — fall protection in place from the first day of operation, not after the first incident.

About KStrong

The founders of KStrong have been successfully manufacturing personal protective equipment globally for over 25 years. With the support of a large team of highly experienced research and product development specialists along with global manufacturing facilities, KStrong is poised to become the preeminent brand of choice for personal protective safety products. KStrong takes pride in assuring careful measures to ensure all products meet applicable government codes and professional standards, such as EN, AS/NZS and ANSI. We look forward to helping your company protect its most valued possession, its workers!





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KS GROUP