



Case study

The Boulevard Club, Toronto

Client: The Boulevard Club

Architect: Teeple Architects

General Contractor: Bird Construction

Building Envelope Contractor:
Bothwell-Accurate

Kalzip Products: Kalzip® aluminium
standing seam roofing system

Year: 2016

Toronto's prestigious Boulevard Club resolved to further develop their already impressive range of sporting and leisure facilities by replacing an aging boathouse with a stylish new west wing extension.

As well as accommodating all the new facilities, the club was keen to ensure that the new two-storey building was aesthetically pleasing, especially when viewed from the lake. To give the whole development a unique and harmonious appearance, the extension also had to link seamlessly with the more traditional clubhouse.

Due to the site's exposed location on the shore of Lake Ontario, a highly durable, watertight building system capable of withstanding high wind uplift and severe weather conditions was obviously required for the project - and corrosion resistant Kalzip® aluminium standing seam system was considered to be the ideal solution.

Working in difficult weather conditions and restricted site space, long lengths of Kalzip® sheets were roll-formed onsite and smooth curved to bespoke shapes before being craned to roof level for installation.

BEAUTIFULLY FLOWING BUILDING ENVELOPE MINIMISES ENVIRONMENTAL IMPACT

Originally established as a canoe club in 1905, the Boulevard Club moved to its current, lakeside location on Toronto's western waterfront along the northern shore of Lake Ontario shortly afterwards. Growing steadily from its modest beginnings, the organisation has since developed to become one of Canada's most modern, dynamic and prestigious private multi-sports clubs.

Well-renowned for its year-round social and recreational programmes, dining facilities and numerous water-based activities such as rowing, canoeing, dragon boating and sailing, this recent west wing expansion has enabled the Boulevard Club to offer an extended range of fitness and sporting activities.

The challenge

Tight building footprint

The site of the Boulevard Club's impressive new two-story west wing expansion project was previously occupied by an aging boathouse. Over the years, this had become structurally compromised and was considered to have become beyond economic repair.

Having decided it was an appropriate time to make better use of this highly desirable lakeside space, the Boulevard Club engaged Teeple Architects to design an eye-catching new west wing that was not just functional and pleasing to the eye but also well insulated and able to withstand extreme weather conditions.

Perhaps the architect's most significant challenge was to organise and accommodate all the facilities required by the club - these included a multi-use gymnasium, five badminton courts, luxurious spa and wellness centre together with numerous locker rooms, small lounge areas and circulation routes.

As well as dealing with these creative and logistical challenges, the restricted job-site space also imposed significant operational constraints on the architect and main contractor, Bird Construction faced with the task of managing all the subcontractors, plant and building materials required to complete the project.



Aesthetic and environmental considerations

The architect was keen to ensure that the new west wing was aesthetically pleasing when viewed from all aspects, especially from on the water. The size of the structure is mitigated by the envelope's smooth, gracefully flowing profile and its light colour which help the new west wing to successfully blend in with its surroundings whilst at the same time maintaining neighbour's existing views of the lake.

At its easterly end, the new wing connects subtly at low level to the early twentieth century club house before sweeping seamlessly upwards over the upper floor badminton courts. An open roof terrace has also been incorporated to take full advantage of elevated views over the lake that were never afforded by the original building.

The club's exposed location and northerly latitude also posed a number of problems with hostile weather conditions including extremely low winter temperatures and unpredictable stormy conditions capable of lashing the coast at any time of year.

The solution

Standing seam system

After carefully considering the cladding options, Teeple Architects specified the Kalzip® aluminium standing seam system for the west wing's roof and significant parts of the external walls.

Strong, lightweight and ideal for large spans, the benefits of the maintenance-free Kalzip® system include its durability, corrosion resistance and flexibility. Equally important is the fact that the system can be precisely tailored to suit the individual layout, geometric, dimensional and high thermal performance requirements of the building. This unlimited creative design and application potential was vital for the architect as the Kalzip® structural standing seam system was able to be contoured to meet the tight convex radii required for this aesthetically pleasing and uniquely shaped building.



“We were really excited by the ability of Kalzip® to produce extremely long cladding sheets, each capable of being shaped to the precise profile of the building. This enabled us to design an elegant watertight structure able to withstand high wind loading and extreme temperatures whilst at the same time providing a clean, continuous and uninterrupted roofline that rolls seamlessly into the walls, creating a beautifully flowing building envelope.”

Martin Baron, Partner at Teeple Architects.

On-site manufacture

Kalzip® design services produced and supplied the shop drawings and sheet cutlist on this rather complicated structure. Valuable transportation and handling time was saved as the standing seam sheets were manufactured on-site by Kalzip® using a portable roll-former. The lightweight aluminium sheets were then craned up to roof level when needed for installation.

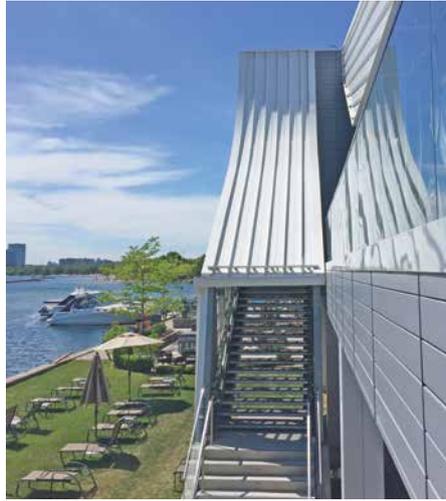
Over 2,600m² of 1.2mm gauge Kalzip® sheets to RAL 9010 (Pure White) with a ‘High Albedo’ reflective finish were manufactured and smooth curved onsite in lengths of up to 27 metres. The vast majority of this onsite manufacturing work was done in sub-zero temperatures and Kalzip® also supplied an additional 100m² of trough-perforated sheets that were used to form the ‘window’ areas designed to introduce natural daylight into the west wing’s external covered stairways.



Roof Installation

“We worked closely with Kalzip® at all times - and thanks to an early tender, they were able to deliver the aluminium coils well before they were needed. Due to the building’s complex geometry, we elected to use 3D measuring to determine sheet lengths, angles, radii and overall cladding area. By carefully monitoring the construction process, we were able to ensure that their portable roll-former was scheduled to meet our precise dates. Despite temperatures falling to as low as -35°C, the Kalzip® sheets were roll-formed and smooth curved onsite without any problems or issues.”

Trevor McGrath, Cladding Estimating Manager at Bothwell-Accurate.



Building envelope contractors, Bothwell-Accurate installed all the Kalzip® sheets further site-cutting them where necessary. As Kalzip® is a non-penetrative system, through fixings are not required - and being manufactured from aluminium allows the sheets to be on-roof welded around any obstructions and protrusions without the need for mastics or sealants. Some lap joints on the west wing were welded in situ but the cranked eaves were welded offsite in order to give them a really sharp, neat look and all the weld areas touched up to match the sheet finish perfectly.

The Future

Whilst the mechanical zipping of the Kalzip® seams produces a permanent, load-bearing connection - at the end of the west wing's life, the cladding sheets seams can be unzipped and the system reused or recycled - which helps to minimise the whole lifecycle costs of the project.

A fitting tribute to the architect is that the Boulevard Club's new west wing has already become an iconic landmark, especially when viewed from the water. Commendably, this

was also the first Kalzip® project undertaken by Bothwell-Accurate - and the success of the venture has already led to further collaboration between the parties on a number of other very high profile projects in Canada.

Kalzip products:

Kalzip® aluminium standing seam sheets (2,600m², 1.2mm gauge to RAL 9010 - Pure White with a 'High Albedo' reflective finish) were roll-formed, smooth curved and shaped on-site in lengths of up to 27 metres. A further 100m² of similarly specified sheets were also supplied but with trough-perforations. The Kalzip® sheets were installed to form the building's roof and part of the external wall cladding whilst the trough-perforated sheets form the external stairway 'windows'.

Photographs courtesy of:
Scott Norsworthy and Tony Mills

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