



Nethercot Prize 2026

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Alexandra Bridge Replacement Project

Since 2023, Knight Architects have been involved in the replacement of the Alexandra Bridge, a highly visible and important connection between Ottawa and Gatineau. As Architectural Project Lead, I led the architectural design development of the preferred option, working within an Arup-led Technical Advisor team appointed in May 2023 to support Public Services and Procurement Canada (PSPC), in partnership with the National Capital Commission (NCC).

In January 2025 the NCC Board of Directors granted an initial planning approval for the preferred design concept, this paper focuses on the activities following this milestone: how the preferred concept has been developed, and how the ambition to create a highly accessible, enduring and flexible connection has informed the design. At its heart is a simple question: how do you replace a much-loved and iconic structure while creating something that can become part of a city's future?



From three options to one - Developing Motion

The selection of a preferred concept from the three shortlisted options marked the beginning of a new phase of design development. Throughout 2024 and 2025, feedback gathered through public consultation, stakeholder engagement, indigenous engagement and NCC's Federal Land Use, Design and Transaction Approval (FLUDTA) process continued to inform the design. Each of the three proposals had generated different responses, with people identifying qualities they valued, as well as aspects they felt could be improved or were missing. This feedback was considered alongside the original rationale for selecting Motion, to identify opportunities to carry valued ideas from all three proposals into the development of the preferred concept.

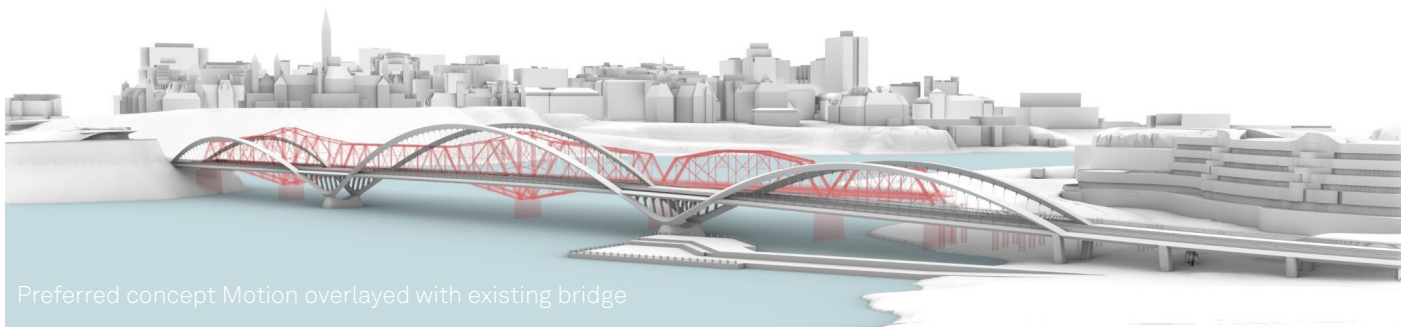
Key elements identified for further development included:

Echo: the separation of user groups and timber bracing beneath the truss, inspired by birch bark canoes.

Rendez vous: generous public space between the cycleway and pedestrian route, creating a focal point and celebrating the bridge as a destination.

Motion: flowing arches inspired by the Ottawa River and the native eel, or pimisi, creating two open public spaces above and below the deck.

Public consultation, stakeholder and indigenous engagement also highlighted where the concepts could be improved, providing a clear starting point for the next phase of design development. This allowed individual threads of feedback to be distilled and incorporated into the preferred concept, helping people who had favoured other options to see aspects of what they valued reflected in the emerging design.



Designing for everyone

Based on 78 Performance Criteria and established planning and design principles, the project aims to create an accessible connection serving Ottawa and Gatineau for the next 150 years. Designing for the slowest user became a guiding principle, ensuring that accessibility today supports changing patterns of use and potential future transport modes, including a tram.

Plan and vertical alignments were refined to respond to the bridge's end conditions and safeguard future tram provision, with gradients limited to 2.6%. Public feedback also reinforced the importance of safety, comfort and accessibility, informing a wide, shallow-gradient pedestrian path separated from cyclists and vehicles.

A generous timber lean rail provides a tactile, robust interface, allowing people to pause and appreciate the capital landscape while feeling secure high above the Ottawa River. The bridge is therefore designed not simply to be crossed, but to be experienced.

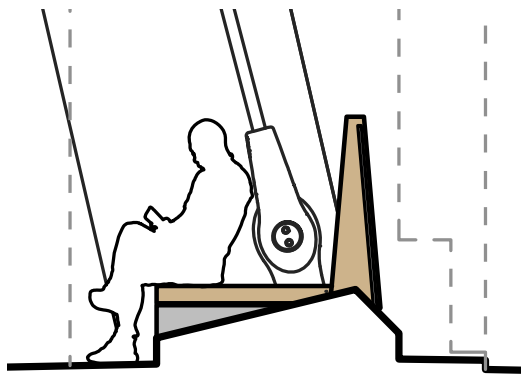


Designing for the climate

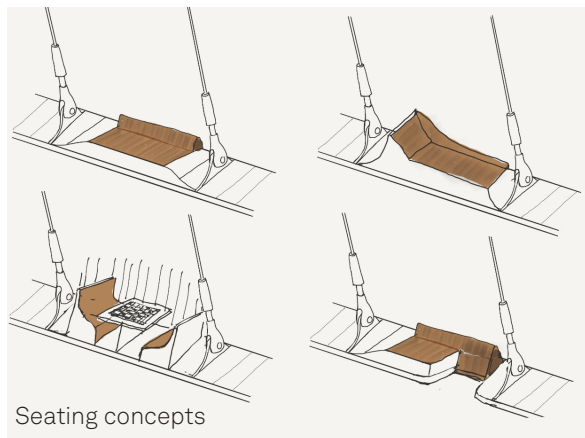
Ottawa experiences significant seasonal extremes, from winter temperatures around -30°C to summer highs above 30°C . Combined with the bridge's exposure, these conditions require consideration of user comfort, safety and year-round maintenance.

At the point where the upstream arch cables meet the deck, we have proposed a continuous, modular plinth. This separates pedestrians from cyclists while providing a protective barrier between cyclists and the cable anchorages. It also incorporates opportunities for seating and concealed services, and provides a robust upstand for snow-clearing vehicles to operate against during the winter months. Its modular construction offers further benefits through off-site fabrication and improved quality control.

However, the design also presents technical challenges that require further development. Adequate inspection of the connections between the cable anchor plates and longitudinal structural members must be ensured, while preventing water ingress at these critical interfaces. These details will be interrogated and refined during the next phase of detailed design. Additionally the integration of shading structures, either permanent or temporary, for the summer months need further consideration.



Plinth Seating

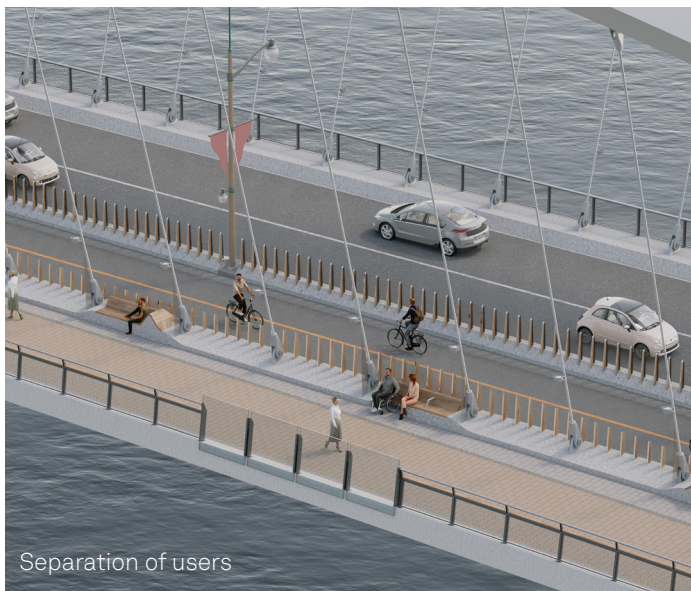


Seating concepts

Designing for the place

The bridge forms part of an established civic route through the capital, and its place in the Confederation Boulevard - a ceremonial loop in the capital realm, requires a balance between continuity and a distinct architectural identity.

The bridge's exposure presents a unique challenge along the route. Providing shelter from longitudinal winds along the pedestrian and cycle paths was important, yet no equivalent element existed within the established catalogue of Confederation Boulevard.



Separation of users

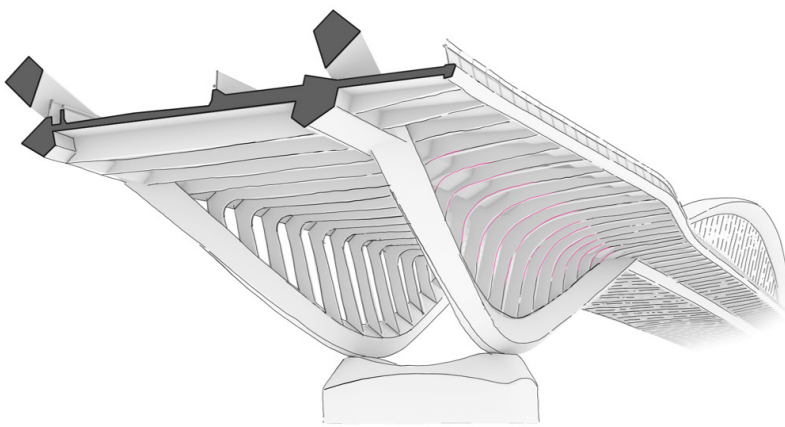


Timber lamellae

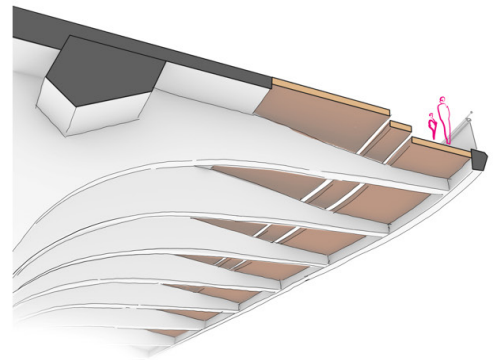
In response, timber fins, or lamellae, were developed as part of the architectural plinth separating pedestrians, cyclists and vehicles. These aim to break up longitudinal winds and reduce the wind-tunnel effect, while stainless steel mesh helps diffuse crosswinds without compromising transparency for river views. The fins also screen oncoming traffic from cyclists, reinforcing a feeling of safety and a more comfortable experience. Further computational fluid dynamics (CFD) and wind-tunnel analysis will be required to verify their performance.

Continuity with Confederation Boulevard is reinforced through noble materials - stone, timber and metal - and the retention of its recognisable lighting poles, integrated into the architectural plinth rather than appearing as additions.

The pedestrian deck's upstream edge curves inwards as the arches rise, expanding again as they return to deck level. This balances structural efficiency with spatial variation. A constant-width pink granite 'red carpet' defines the route, with contrasting margins alongside linear seating, including provision for wheelchair users. These areas may also incorporate wind shielding and shading.



Flowing curves above and below



Stepped lookouts

The bridge as a room in the city

The two public spaces are central to the Motion concept. Where the arches dip below the deck, the bridge opens to the sky and views across both sides of the river. At the river, the outer pedestrian path divides, with a lower path descending to a lookout. Here, the timber lean rail also lowers, enabling people with a lower eyeline to enjoy an uninterrupted panorama. Tiered timber and granite seating follows the flowing geometry, creating places to pause, look and gather. The shared plaza can accommodate a range of events, allowing the bridge to become more than a route between two places.



Dropped lookout lean rail

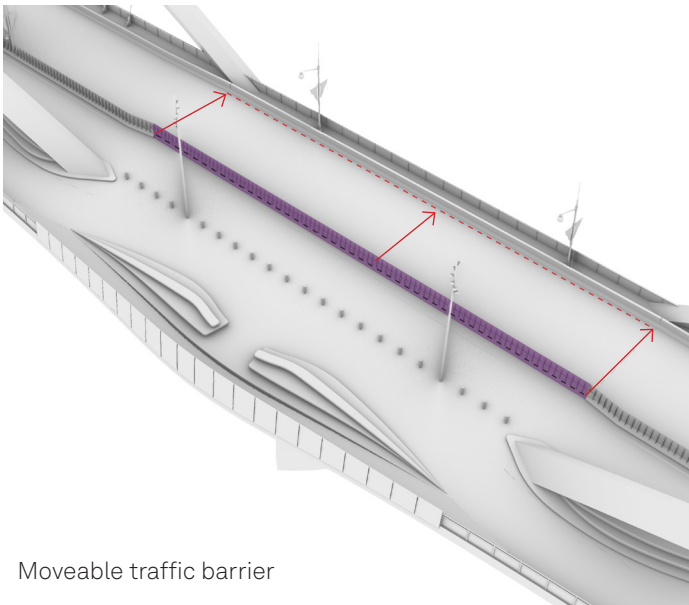


Public space lookout

Designing for what comes next

Flexibility extends beyond accommodating future transport modes. A compliant, movable traffic barrier is proposed at each lookout, allowing sections of roadway to be opened to the public when required. This would create larger, more connected public spaces and, during road closures, enable the full bridge width to be used for public activities. Events such as Canada Day could transform the bridge from transport infrastructure into a significant civic space.

Future-proofing is therefore not simply about accommodating new modes of transport; it is about enabling changing patterns of movement, occupation and public life. The question becomes not only what the bridge must do today, but what it might provide in the future.



Moveable traffic barrier



Seasonal events

Creating the conditions for tomorrow's heritage

There is still much to develop in this extraordinary opportunity. The groundwork established by the Technical Advisor team, PSPC and NCC provides a foundation for the bridge's continued evolution. While we cannot predict how the next 150 years will change its use, we can create conditions for adaptation: accommodating changing movement, supporting public life and remaining relevant as the city evolves.

The existing Alexandra Bridge became part of the cultural landscape through generations of use, association and memory. Its replacement cannot reproduce that history, but it can create the opportunity for its own. Tomorrow's heritage cannot be designed outright, it must be given the conditions to emerge. The ambition is to create a bridge that can become equally meaningful to future generations of Canadians.



FLUDTA Approved Reference Design

Client

Public Services and Procurement Canada (PSPC)

Technical Advisor

Knight Architects, Arup, CIMA+, Dillon, Provencher_Roy, Ray Gosselin Architect, ERA, Thurber