Since 2005, MAADI Group Inc. has specialized in structural design and building using hardwearing aluminum that lasts decades. Constantly innovating to maximize efficiency, our structures are maintenance-free and optimize aluminum’s sustainable benefits to create products that contribute to a more eco-friendly, healthy and attractive world.

To meet your project goals we provide full engineering, technical support and manufacturing services from planning through to installation. All MAADI Group structures are designed and manufactured according to American or Canadian codes and standards.
About Us

We provide our clients—municipalities, governments, construction, manufacturing, and more—with the best, most advanced structural designs and building solutions to fit your specific project. Using hardwearing aluminum that lasts decades, we are constantly innovating to maximize efficiency and lower our collective environmental footprint.

Our pedestrian bridges, maritime structures and other distinctive engineering products are maintenance-free and blend seamlessly into built or natural environments. Our first priority is to make sure that your vision and needs are top of mind as we work alongside you and your team throughout the design, planning, and implementation of aluminum pedestrian bridges and other distinctive MAADI-designed structures.

Who we are
MAADI Group stands for Most Advanced Aluminum Design & Innovation Group and is a Canada-based independent engineering design and building firm committed to providing its clients with the best and most durable aluminum structures to meet the needs of the sustainable development, construction and manufacturing industries. MAADI Group aluminum pedestrian bridges, maritime structures and other distinctive engineering products are designed by top-grade engineers experienced in pony truss bridge design and top chord stability criteria, utilizing elastic lateral restraints. We use cutting edge technologies in finite element analysis, CAD and 3D modeling to optimize our distinctive structures. Tailored to meet your needs, we draw on our award-winning designs, a commitment to quality and our fabrication systems to deliver projects that meet and exceed our clients’ expectations. MAADI Group works in America, Asia and Europe to provide engineering solutions that address rapidly shifting global needs in diverse communities.

What we do
Since 2005, MAADI Group has designed hundreds of structural aluminum projects. Using functional and sustainable design principles we deliver the highest caliber of engineering solutions to our national and global customers. Our vast backgrounds and technical expertise enable us to design innovative extruded aluminum products and infrastructure that reduce weight, simplify transport and lower total costs of ownership (TCO), while maximizing strength and durability. We offer the highest engineering and design standards on every project, meeting all local building and bridge codes.

Our mission
To provide planners, architects, builders, and developers with customized aluminum structures that are maintenance-free, durable, attractive, economical, and fully sustainable for generations to come.

Our values
MAADI Group is committed to the quality and success of every aluminum structure we design, build and install. We bring a high level of technical innovation, practical consideration and professional integrity to all that we do, while always mindful of the people who make use of, and enjoy, our structures each day.

Our story
Alexandre de la Chevrotière, IWE, P.E., established MAADI Group Inc. in 2005 and is currently the company’s president. He holds a Mechanical Engineering degree with emphasis on Naval Architecture, and began his career in 1991, working extensively with aluminum in the shipbuilding industry, retrofitting NATO destroyers. Since that time MAADI Group has grown its knowledge base in mechanical and structural engineering, specializing in designing aluminum bridges and maritime structures for the architectural and maritime industries throughout the U.S., Canada, Caribbean and Asia.

MAADI Group partners with Rio Tinto and Centre Quebecois de recherche et de développement de l’aluminium (CQRDA) to manufacture its award-winning bridge design for infrastructure, construction and sustainable development projects.

MAADI Group is the proud winner of the Extrusion Technology Foundation’s 2008 Design Competition Award in the structural category, and the 2009 Regional Innovation Award for New Technology. The company was also the 2013 Product Innovation Award winner for this patented bridge design. The company continues to push for innovation and excellence in all that it undertakes.

Our quality management system
For MAADI Group, the notion of quality is both a set of rigorous processes and a sustained policy of reliability that makes us go above and beyond the needs of our customers. Whether it’s the quality of our products and services or our competitive costs, our business culture is based on the following principles:

Active listening
MAADI Group remains attentive to its customers in order to offer personalized service and continuously increase its productivity. The company maintains its competitive position in the market while meeting or surpassing its customers’ requirements as well as the standards and laws in effect.

Compliance standards
To this end, MAADI Group adheres to the international standard ISO 9001:2015. The company’s philosophy is based on the adoption of quality objectives, action plans and preventive measures to continuously improve the quality of its products and services as well as its quality management system. The company is also committed to providing the necessary resources to implement and maintain this system. To this end, all personnel whose duties have an impact on quality benefit from a continuous training program.

Healthy relationships
MAADI Group is committed to its philosophy based on communication, service with integrity and fairness. The company places its employees at the heart of its operations, and respects its responsibilities to the communities where it operates. We are committed to optimizing our processes in order to reduce non-compliance and meet delivery deadlines.
MAADI Group Quality

MAADI Group delivers design excellence, production quality and dependability with each one of our engineering products.

Quality
We assert that all design specifications meet local, regional and national building codes and professional standards as required. MAADI Group works closely with our manufacturing partners to ensure that product quality standards are fully and consistently maintained throughout the design, production and installation process.

All of our structural aluminum designs and calculations bear the seal of one of our in-house registered professional engineers. MAADI Group is forthright and honest in all of its business dealings with our customers, suppliers and manufacturing partners, conducting each aspect of our projects professionally and with integrity. We do this to establish and maintain good working relationships and to deliver the best quality structural aluminum products to all our customers.

Certification
MAADI Group is certified in Division 1 for Fusion Welding of Aluminum per CSA Standard W47.2 (Certification of Companies for Fusion Welding of Aluminum). This means that MAADI Group employs a full-time basis a registered professional engineer recognised as an International Welding Engineer (IWE) responsible for all welding related activities specified by the company.

All our welders, welding operators and tack welders are tested by the independent body Canadian Welding Bureau (CWB) for the processes and positions of welding which they use in production. MAADI Group builds its welded structures per CSA Standard W59.2 (Welded Aluminum Construction) and AWS D1.2, Structural Welding Code – Aluminum.
Why Choose Aluminum?

MAADI Group uses corrosion-resistant and sustainable, top-grade aluminum to build pedestrian bridges and other engineered structures that are versatile and adaptable to many environments. Each of our designs is durable and requires little to no maintenance due to the unique qualities of aluminum. Long-lasting and reliable, aluminum is our first choice for commercial, industrial, institutional and recreational projects.
The Better Choice

When strength counts

Corrosion-resistant
Durable
Long lifespan

Using aluminum in construction has proven to be an excellent choice for atmospheric corrosion resistance, durability and high strength-to-weight ratio, compared to competing construction materials. Aluminum is longlasting, requires next to no upkeep, survives the most damaging weather, and integrates well into urbanized or natural environments.

Decision makers should no longer assume that steel is more cost-effective.

Advantages

Aluminum has excellent atmospheric corrosion resistance, durability, and high strength-to-weight ratio compared with competing construction materials. These are important considerations as pedestrian bridges are long-term infrastructure investments with an expected lifespan of at least 50 years. A recent total cost of ownership study shows that decision makers should no longer assume that steel is the best option economically when investing in civil engineering structures.

Aluminum’s economic benefits

- Aluminum is highly resistant to corrosion under the majority of service conditions, and no colored salts are formed to stain or discolor products it comes into contact with.
- Structural stiffness resists permanent deformation caused by live loads, climate or movement.
- High strength-to-weight ratio for construction, which means greater strength and easier to handle.
- Aluminum retains its strength at low temperatures and is often used for cryogenic applications.
- Over its life cycle, aluminum is proven to be almost maintenance-free with no costly galvanizing or painting.
- Easy-to-remove graffiti by simply brushing the bare metal.
- Aluminum has an attractive, natural finish, which can be soft or shiny. It can be virtually any color or texture.
- Natural mill finish aluminum forms its own protective coating.
- Easy to transport and install because of the reduced self-weight (60% of equivalent steel).
- Easy to fabricate and extrude into infinite shapes.
- Aluminum is recyclable. Aluminum has substantial scrap value and a well-established market for recycling, providing both economic and environmental benefits.

Sustainability

MAADI Group engineers incorporate sustainable design principles of energy conservation, use of recyclable materials, greater functionality and design flexibility into every structure we design and build. MAADI Group infrastructure enhances environmentally responsible buildings with durable aluminum bridges and structures that are cost-effective to build and use throughout their decades-long life cycle.

Sustainable advantages of aluminum structures

- 100% reusable and recyclable, with high resale scrap value at the end of their lifespan.
- Extruded truss sections use recycled aluminum content.
- Fully reusable when dismantled without any loss of strength or mechanical properties.
- Reduced energy use and reduced pollution during transport due to reduced self-weight (60% of equivalent steel).
- Natural material meets environmental responsibility requirements.
- Nontoxic unlike steel structures that require sandblasting above rivers or streams and will require harmful layers to protect against corrosion.
- Structures are environmentally compatible with adjacent structures and with natural surroundings.

It was only toward the end of the nineteenth century that aluminum began to be used in engineering applications. The prime reason was that it was challenging to extract it from its rock (ore). In 1886, Paul Héroult, a French engineer, and Charles Hall, an American student, both independently discovered a more cost-effective electrolytic production method, involving the reduction of molten aluminium oxide in cryolite. The process showed excellent results, but required an enormous amount of electric power. Then Karl Joseph Bayer, an Austrian chemist, invented a cheap and feasible aluminium (aluminum oxide) production method in 1889. The processes that we use today are based on the Bayer and Hall-Héroult processes.

Three inventions reliant on aluminum would change the course of history:

- Internal-engine-combustion vehicles
- Electricity which required lightweight conductive metal for transmission over great distances and also for construction of the cable towers that deliver electrical energy from power generation sites.
- Airplanes which grew in partnership with the aluminum industry for airframes, engines, missile bodies fuel cells and satellite components.

Modern life relies heavily on aluminum for a multitude of everyday items such as cooking utensils and foil. This is largely due to the fact that it’s nontoxic.
Welded Pedestrian Bridges and Structures

MAADI Group has a longstanding history of building durable and sustainable pedestrian bridges and other aluminum structures that last generations. We pride ourselves on making sure our engineering designs are versatile and customizable for many uses and environments.

Our project pages highlight the unlimited possibilities when designing structures in marine grade aluminum. Our structures bear the mark of excellence we pride ourselves on upholding for each and every project we undertake.
Building Durable and Sustainable Bridges

MAADI Group aluminum pedestrian bridges and structures are designed by top-grade professional engineers specialized in pony truss bridge design and top chord stability criteria, utilizing elastic lateral restraints. We use the latest technologies in finite element analysis, CAD and 3D modeling to optimize our structures.

Codes and standards
All MAADI Group bridges can conform to these codes and standards (or to others upon request), and bear the seal of one of our in-house registered professional engineers:

U.S.
- AASHTO Specifications for Design of Pedestrian Bridges
- AWS D1.2/D1.2M:2014 Structural Welding Code – Aluminum
- AS&D Aluminum Standards and Data

Canada
- CAN/CSA S157-05 (R2010) Strength Design in Aluminum
- CAN/CSA W47.2-11 (2011) Certification of Companies for Fusion Welding of Aluminum

Warranty
We offer a 10-Year Limited Warranty on aluminum against material failure, defects and corrosion.
Parks and Recreation

MAADI Group pedestrian and utility/service bridges integrate seamlessly into parks, natural corridors, maritime settings and more.

Our project pages demonstrate the unlimited possibilities when designing structures in hardwearing aluminum built to endure. Our engineering team tailors its designs for each structure according to specific project needs. We work with you to integrate our constructions into the natural or built surroundings so that they appear uniform, functional and embellish the overall environment.
Beauty
Strength
Function

MAADI Group pedestrian walkways, bicycle paths and bridges enhance the enjoyment of outdoor activities for families, groups and individuals, improving their overall quality of life. Our walkways are maintenance-free structures that stand up against all weather conditions and to heavy daily traffic in parks and other popular outdoor destinations. Walkways must be safe, resilient and easily accessible. Our engineered structures give visitors, residents and others, comfortable access to more areas of a park, natural corridor or other public space while encouraging greater efficiency, mobility and a high quality of life.

Parks and Recreation
Designs that enrich the landscape

Our outdoor bridges and other structures blend into built and natural environments, often linking up with existing pathways.

Image: Bike path bridge, Brossard, Quebec.
Image: Dame de Coeur Theatre retrofit bridge, Upton, Quebec.
White Street Bridge  
Vaudreuil-Dorion, Quebec

<table>
<thead>
<tr>
<th>Overall span</th>
<th>50'-1¾&quot; – 15.3 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear width</td>
<td>12'-1½&quot; – 3.7 m</td>
</tr>
<tr>
<td>Pedestrian loading</td>
<td>84 psf – 4.0 kPa</td>
</tr>
<tr>
<td>Vehicular load</td>
<td>13,420 lb – 6,100 kg</td>
</tr>
<tr>
<td>Bridge self-weight</td>
<td>15,620 lb – 7,100 kg</td>
</tr>
<tr>
<td>Wind pressure</td>
<td>8.4 psf – 400 Pa</td>
</tr>
<tr>
<td>Options</td>
<td>Ipe hardwood decking &amp; kick plates, aluminum vertical pickets, integrated LED lighting</td>
</tr>
</tbody>
</table>

Design/build of an aluminum arched pony truss style vehicle & pedestrian bridge
Dame de Cœur Theatre Retrofit Bridge
Upton, Quebec

Overall span
152'-0" – 46.3 m

Clear width
6'-1" – 1.83 m

Pedestrian loading
72 psf – 3.47 kPa

Vehicular load
2,500 lb – 1,134 kg

Bridge self-weight
34,760 lb – 15,800 kg

Wind pressure
7.2 psf – 345 Pa

Options
Aluminum “Grip Span” decking & horizontal railings

Modification of a special aluminum through-truss style pedestrian bridge
Dame de Cœur Theatre Access Bridge
Upton, Quebec

<table>
<thead>
<tr>
<th>Overall span</th>
<th>Pedestrian loading</th>
<th>Bridge self-weight</th>
<th>Wind pressure</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>36'-1¼&quot; – 11.0 m</td>
<td>72 psf – 3.47 kPa</td>
<td>3,575 lb – 1,625 kg</td>
<td>7.2 psf – 345 Pa</td>
<td>Aluminum anti-skid transition plates</td>
</tr>
<tr>
<td>Clear width</td>
<td>Vehicular load</td>
<td></td>
<td></td>
<td>Design/build of an aluminum access bridge</td>
</tr>
<tr>
<td>6'-0&quot; – 1.8 m</td>
<td>2,500 lb – 1,134 kg</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Elm Ave Bike Path Bridge
Beaconsfield, Quebec

Overall span
45'-3¼” – 13.8 m

Clear width
10'-0" – 3.1 m

Pedestrian loading
84 psf – 4.0 kPa

Vehicular load
7,480 lb – 3,400 kg

Bridge self-weight
12,100 lb – 5,500 kg

Wind pressure
8.4 psf – 400 Pa

Options
Ipe hardwood decking & kick plates, aluminum horizontal railings

Design/build of an aluminum pony truss style vehicle & pedestrian bridge
Stevens Bridge
Waterloo, Quebec

Design/build of an arched aluminum pony truss style vehicle & pedestrian bridge

<table>
<thead>
<tr>
<th>Overall span</th>
<th>98’-6” – 30.0 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestrian loading</td>
<td>84 psf – 4.0 kPa</td>
</tr>
<tr>
<td>Vehicular load</td>
<td>17,950 lb – 8,150 kg</td>
</tr>
<tr>
<td>Bridge self-weight</td>
<td>36,300 lb – 16,500 kg</td>
</tr>
<tr>
<td>Wind pressure</td>
<td>7.3 psf – 350 Pa</td>
</tr>
<tr>
<td>Options</td>
<td>Eastern hemlock wood decking &amp; kick plates, aluminium horizontal railings, integrated LED lighting</td>
</tr>
</tbody>
</table>

Watch the video
## Snowmobile Bridge
Coaticook, Quebec

Design/build of an arched aluminum pony truss style pedestrian & light vehicle bridge

<table>
<thead>
<tr>
<th>Overall span</th>
<th>Pedestrian loading</th>
<th>Bridge self-weight</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>95'-1¾&quot; ~ 29.0 m</td>
<td>84 psf ~ 4.0 kPa</td>
<td>16,808 lb ~ 7,640 kg</td>
<td>Ipe hardwood decking and kick plates, aluminum horizontal railings</td>
</tr>
<tr>
<td>Clear width</td>
<td>Vehicular load</td>
<td>Wind pressure</td>
<td></td>
</tr>
<tr>
<td>6'-0&quot; ~ 1.8 m</td>
<td>2,000 lb ~ 910 kg</td>
<td>7.8 psf ~ 375 Pa</td>
<td></td>
</tr>
</tbody>
</table>

Pedestrian loading

84 psf ~ 4.0 kPa

Vehicular load

2,000 lb ~ 910 kg

Bridge self-weight

16,808 lb ~ 7,640 kg

Wind pressure

7.8 psf ~ 375 Pa

Options

Ipe hardwood decking and kick plates, aluminum horizontal railings
Equestrian Park Bridge
Blainville, Quebec

<table>
<thead>
<tr>
<th>Overall span</th>
<th>Pedestrian loading</th>
<th>Bridge self-weight</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>59'-0&quot; – 18.0 m</td>
<td>84 psf – 4.0 kPa</td>
<td>15,211 lb – 6,900 kg</td>
<td>Ipe hardwood decking</td>
</tr>
<tr>
<td>Clear width</td>
<td>Vehicular load</td>
<td>Wind pressure</td>
<td>and kick plates, aluminum</td>
</tr>
<tr>
<td>10'-0&quot; – 3.0 m</td>
<td>7,700 lb – 3,500 kg</td>
<td>8.4 psf – 400 Pa</td>
<td>horizontal railings</td>
</tr>
</tbody>
</table>

Design/build of an arched aluminum pony truss style pedestrian and horse bridge
### All-Terrain Vehicle Bridges

**Baie d’Urfé, Québec**

<table>
<thead>
<tr>
<th>Overall span</th>
<th>Pedestrian loading</th>
<th>Bridge self-weight</th>
<th>Wind pressure</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>29’-10½” &amp; 25’-2½” – 9.1 m &amp; 7.6 m</td>
<td>100 psf – 4.8 kPa</td>
<td>3,705 lb &amp; 3,079 lb – 1,706 kg &amp; 1,400 kg</td>
<td>12.5 psf – 600 Pa</td>
<td>Ipe hardwood decking and kick plates, aluminum horizontal railings</td>
</tr>
</tbody>
</table>

- **Clear width**: 6’-5½” – 1.9 m
- **Pedestrian loading**: 100 psf – 4.8 kPa
- **Vehicular load**: 11,400 lb – 5,180 kg
- **Bridge self-weight**: 3,705 lb & 3,079 lb – 1,706 kg & 1,400 kg
- **Wind pressure**: 12.5 psf – 600 Pa

Design/build of two aluminum pony truss style ATV & pedestrian bridges

Watch the video
Kativik Government Bridges
Quaqtar, Quebec

Design/build of two aluminum pony truss style pedestrian bridges

<table>
<thead>
<tr>
<th>Overall span</th>
<th>60'-0&quot; &amp; 98'5/8&quot; – 18.0 m &amp; 30.0 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear width</td>
<td>6'-0&quot; – 1.8 m</td>
</tr>
<tr>
<td>Pedestrian loading</td>
<td>84 psf – 4.0 kPa</td>
</tr>
<tr>
<td>Vehicular load</td>
<td>N/A</td>
</tr>
<tr>
<td>Bridge self-weight</td>
<td>6,613 lb &amp; 13,558 lb – 3,000 kg &amp; 6,150 kg</td>
</tr>
<tr>
<td>Wind pressure</td>
<td>12.5 psf – 600 Pa</td>
</tr>
<tr>
<td>Options</td>
<td>Aluminum “Shur Grip” decking and horizontal railings</td>
</tr>
</tbody>
</table>
Lac-Jérôme Dam Bridge
Saint-Jérôme, Quebec

Design/build of an aluminum pony truss style pedestrian & occasional vehicle bridge

<table>
<thead>
<tr>
<th>Overall span</th>
<th>Pedestrian loading</th>
<th>Bridge self-weight</th>
<th>Wind pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>18'-101⁄8” – 5.7 m</td>
<td>84 psf – 4.0 kPa</td>
<td>7,722 lb – 3,510 kg</td>
<td>8.4 psf – 400 Pa</td>
</tr>
<tr>
<td>Clear width</td>
<td>Vehicular load</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13'-6½” – 4.1 m</td>
<td>18,700 lb – 8,500 kg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Options
Fire retardant treated Douglas fir decking & kickplates, aluminum horizontal railings & handrails
MAADI Group pedestrian and utility/service bridges work with—not against—the built environment. We respect the integrity of well-designed buildings and infrastructures. For that reason, we always strive to design our indoor and outdoor structures to the same level of design mastery. Working with the built and natural environments we create resilient and attractive structures that embellish the existing surroundings.

Our project pages highlight the many ways we've tailored our engineered products to coincide with both practicality and beauty.
Architecture
Bridges with beauty

MAADI Group indoor and outdoor aluminum walkways provide ways for people to travel with ease and safety between buildings or to access stunning natural vistas.

MAADI Group pedestrian walkways, bridges and other structures make moving from place to place effortless. Our indoor and outdoor bridges occupy the overall surroundings in a way that seems as though they’ve been there all along. Whether it’s to hike with friends to a local attraction or to walk from building to building, our engineering team carefully considers the purpose of each construction and tailors it to integrate seamlessly with nearby structures and surroundings. The capability we put into our bridges—from concept design to installation—ensures that your experience using our structures is both stress-free and enjoyable.
Alexandra Pier Bridge
Montreal, Quebec

<table>
<thead>
<tr>
<th>Overall span</th>
<th>106'-11” – 32.6 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear width</td>
<td>6'-7¾” – 2.0 m</td>
</tr>
<tr>
<td>Pedestrian loading</td>
<td>100 psf – 4.8 kPa</td>
</tr>
<tr>
<td>Vehicular load</td>
<td>2,200 lb – 1,000 kg</td>
</tr>
<tr>
<td>Bridge self-weight</td>
<td>19,800 lb – 9,000 kg</td>
</tr>
<tr>
<td>Wind pressure</td>
<td>8.4 psf – 400 Pa</td>
</tr>
</tbody>
</table>

Options
- Aluminium handrails, stainless steel “Lock-Tuck” mesh,
- Western red cedar decking,
- Integrated LED lighting

Design/build of an aluminum pony truss style pedestrian bridge
Bayview Skywalk Bridge
San Diego, California

Design of an aluminum pony truss style walkway

<table>
<thead>
<tr>
<th>Overall span</th>
<th>Pedestrian loading</th>
<th>Bridge self-weight</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>83'-3/8&quot; – 25.4 m</td>
<td>93 psf – 4.5 kPa</td>
<td>8,910 lb – 4,050 kg</td>
<td>Aluminum decking and glass panel guardrail</td>
</tr>
<tr>
<td>Clear width</td>
<td>Vehicular load</td>
<td>Wind pressure</td>
<td></td>
</tr>
<tr>
<td>6'-0&quot; – 1.8 m</td>
<td>N/A</td>
<td>35 psf – 1.7 kPa</td>
<td></td>
</tr>
</tbody>
</table>

Pedestrian loading: 93 psf – 4.5 kPa
Vehicular load: N/A
Bridge self-weight: 8,910 lb – 4,050 kg
Wind pressure: 35 psf – 1.7 kPa

Options: Aluminum decking and glass panel guardrail
# St-Martin School Bridge

**Laval, Quebec**

**Design/build**

of an aluminum bowstring truss style pedestrian bridge & guardrails

<table>
<thead>
<tr>
<th>Overall span</th>
<th>Pedestrian loading</th>
<th>Bridge self-weight</th>
<th>Wind pressure</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>30'-9½” – 9.4 m</td>
<td>100 psf – 4.8 kPa</td>
<td>8,580 lb – 3,900 kg</td>
<td>12.5 psf – 600 Pa</td>
<td>Polymer decking, aluminum vertical pickets and guardrails</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Clear width</th>
<th>Vehicular load</th>
</tr>
</thead>
<tbody>
<tr>
<td>8’-11½” – 2.7 m</td>
<td>N/A</td>
</tr>
</tbody>
</table>
TD Place Stadium Bridge
Ottawa, Ontario

Design/build of an arched aluminum pony truss style pedestrian & light vehicle bridge

<table>
<thead>
<tr>
<th>Overall span</th>
<th>Pedestrian loading</th>
<th>Bridge self-weight</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>98’5” – 30.0 m</td>
<td>100 psf – 4.8 kPa</td>
<td>17,435 lb – 7,925 kg</td>
<td>Ipe hardwood decking, aluminum vertical pickets, handrails and guardrails</td>
</tr>
<tr>
<td>Clear width</td>
<td>Vehicular load</td>
<td>Wind pressure</td>
<td></td>
</tr>
<tr>
<td>6’-0” – 1.8 m</td>
<td>2,000 lb – 910 kg</td>
<td>8.6 psf – 410 Pa</td>
<td></td>
</tr>
<tr>
<td>Pedestrian loading</td>
<td>Vehicular load</td>
<td>Wind pressure</td>
<td></td>
</tr>
<tr>
<td>Bridge self-weight</td>
<td>Wind pressure</td>
<td>Options</td>
<td></td>
</tr>
<tr>
<td>Wind pressure</td>
<td>Options</td>
<td>Ipe hardwood decking, aluminum vertical pickets, handrails and guardrails</td>
<td></td>
</tr>
<tr>
<td>8.6 psf – 410 Pa</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
MAADI Group is proud of its reputation for designing hardwearing aluminum marine-based systems that you can apply to either commercial or industrial scenarios.

When MAADI Group President Alexandre de la Chevrotière, IWE, P.E. first established the company in 2005, he brought with him his expertise in Mechanical Engineering with emphasis on Naval Architecture. Working extensively with aluminum in the shipbuilding industry retrofitting NATO destroyers, he made maritime systems a top priority for the company. For this reason, MAADI Group is committed to extending its offerings of maritime structures to serve the needs of both smaller and oceangoing vessels.

Marinas
Marinas

MAADI Group’s resilient commercial floating docks are engineered to be ultra-light, yet strong and durable to withstand storms and heavy pedestrian traffic from cruise ships year-round. Our floating docks provide safe and reliable marina access to boats, shoreline equipment and port areas.

Our commercial floating docks are designed for cruise ships and other pleasure craft where local and international ports welcome residents and visitors. For this reason we construct them to withstand the heaviest pedestrian traffic as well as repeated use from wheelchairs, carts and other light vehicles and equipment. Attractive and durable, our commercial floating docks provide a high level of safety and an enjoyable experience for all who use them.

MAADI Group commercial aluminum floating docks are built from custom marine alloy aluminum extrusions with slides and are anchored by chains, moorings, pilings, H-beams and guiderails, or with shoreline push arms. Aluminum, wood or composite decking systems allow easy access to electric wiring, plumbing and fire extinction systems.

Our exclusive self-locking slider system enables easy equipment attachment of mooring cleats, guardrails, safety ladders, and docking systems. The self-locking slider system prevents loosening over time caused by vibration of bolted parts, and permits continuous reconfiguration. Structures are designed for module placement and the adjustment of docking parts according to individual port operator needs.

**Advantages**

- Choose your configuration, size and custom options
- Precision made to your exact specifications
- Aluminum modules are corrosion-resistant, even in harsh maritime environments
- Suited to extreme cold, aluminum does not crack at low temperatures

### Modular dock particulars

<table>
<thead>
<tr>
<th>Width</th>
<th>3'-0&quot; to 13'-0&quot; – 0.9 to 4.0 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>15'-0&quot; to 42'-0&quot; – 4.5 to 12.8 m</td>
</tr>
<tr>
<td>Freeboard</td>
<td>14&quot; to 35&quot; – 356 to 900 mm</td>
</tr>
<tr>
<td>Buoyancy</td>
<td>15 to 60 psi – 0.71 to 2.88 kPa</td>
</tr>
</tbody>
</table>
Great Lakes and Tri Ocean Systems

We classify our docks into two categories: Great Lakes and Tri Ocean Systems. Although you can use either structural system for commercial or industrial purposes, the Great Lakes system is specific to smaller watercraft while the Tri Ocean system is designed for larger oceangoing vessels. View the adjacent page for specific details.

Our pedestrian gangways are designed and built to meet all international, Canadian and U.S. codes. Our structures are manufactured to the highest and most rigorous quality standards in our industry, and bear the seal of one of our in-house registered professional engineers.

Codes and standards
All MAADI Group maritime structures can conform to these codes and standards (or to others upon request), and bear the seal of one of our in-house registered professional engineers:

U.S.
- AWS D1.2/D1.2M:2014 Structural Welding Code – Aluminum
- AS&D Aluminum Standards and Data
- Americans with Disabilities Act (ADA)
- Environmental Engineering for Small Boat Basins, U.S. Army Corps of Engineers
- Planning and Design Guidelines for Small Craft Harbors
- Marinas 2020 of the Coasts, Oceans, Ports, and Rivers Institute of the American Society of Civil Engineers (ASCE)
- Marinas and Small Craft Harbors
- Layout and Design Guidelines for Marina Berthing Facilities - California Department of Boating and Waterways

Canada
- CAN/CSA S157-F17 Strength Design in Aluminum
- CAN/CSA W59.2-F18 Welded Aluminum Construction
- CAN/CSA W47.2-F11 Division 1 Certification of Companies for Fusion Welding of Aluminum

International
- AS 3962–2001 Australian Standard™ Guidelines for design of marinas
- BS 6349-6:2007 British Standards Maritime Structures
- BS 8118-1:1991 British Structural Use of Aluminum

Warranty
We offer a 12-Year Limited Warranty on aluminum against material failure, defects and corrosion.

System characteristics

<table>
<thead>
<tr>
<th></th>
<th>Great Lakes</th>
<th>Tri Ocean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boat dimensions</td>
<td>20’0” to 60’0” – 6.1 to 18 m</td>
<td>60’1” to 200’0” – 18.1 to 61 m</td>
</tr>
<tr>
<td>Dock width</td>
<td>3’0” to 11’6” – 0.9 to 3.5 m</td>
<td>4’0” to 13’0” – 1.2 to 4.0 m</td>
</tr>
<tr>
<td>Dock length</td>
<td>15’0” to 42’0” – 4.5 to 12.8 m</td>
<td>20’0” to 42’0” – 6.1 to 12.8 m</td>
</tr>
<tr>
<td>Standard freeboard</td>
<td>14” to 20” – 356 to 500 mm</td>
<td>18’’ to 35” – 450 to 900 mm</td>
</tr>
<tr>
<td>Reserve buoyancy</td>
<td>15 to 50 psf – 0.71 to 2.40 kPa</td>
<td>25 to 60 psf – 1.20 to 2.88 kPa</td>
</tr>
<tr>
<td>Cleats / bollards</td>
<td>Up to 5,170 lb – 23 kN</td>
<td>Up to 13,480 lb – 60 kN</td>
</tr>
<tr>
<td>Lateral extrusion with integrated rails</td>
<td>Yes, 2 rails</td>
<td>Yes, 3 rails</td>
</tr>
<tr>
<td>10 T neoprene section fittings</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Certified welding</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Unsinkable floats</td>
<td>Yes, 12-year warranty</td>
<td>Yes, 12-year warranty</td>
</tr>
</tbody>
</table>

Aluminum trough cover option
6” or 12” – 152 mm or 305 mm
(12” – 305 mm shown)

Full plank trough option
System Components

Made with thick-walled aluminum extruded sections

Easy to maintain and replace deck planks

Specifications
- Easy installation of deck planks
- Aluminum, wood or composite decking systems are available
- Structure made of marine grade aluminum

Easy access to services

Specifications
- Trough cover to allow easy passage of cables and pipes
- Available space: 12” x 6” (305 mm x 152 mm)

Unsinkable high density polyethylene floats

Specifications
- Expanded polystyrene (EPS) fill
- 12-Year warranty

Adjustable cleats and bollards

Specifications
- 25-Ton aluminum bollard
- 10-Ton aluminum cleat

Flexible connector and fender

Specifications
- Tapered D-shaped EPDM marine fender
- Horizontal 10-Ton flexible connectors to dissipate ocean energy

Adjustable fingers

Specifications
- Lateral loads on connectors to suit boat length for marinas and small draft harbors

Marinas

6160
Floating Wave Attenuators

Today's global environment demands shoreline and watercraft protection that is effective and environmentally responsible. MAADI Group uses innovative design and durable eco-friendly material to manufacture the most cost-effective wave attenuation solution: the Composite Floating Breakwater.

Our specialized aluminum maritime structures integrate the strength of extruded aluminum modules with a steel submerged frame and vinyl panels. Aluminum's low modulus of elasticity, critical energy absorption properties, resilience, and corrosion resistance prevent shoreline erosion, and protect marine vessels and floating docks from wave damage.

Tough and efficient
MAADI Group’s superior design and quality fabrication improves the performance and reliability of Floating Breakwaters by using custom hollow aluminum extrusion that combines internal links with increased torsional rigidity and high section modulus. Heavy-duty built-in tracks along the edges of each extrusion allow dockside accessories, such as cleats, bollards, ladders, and pedestals to be attached to extruded rails via fasteners.

MAADI Group Floating Breakwaters are efficient for up to 74 mile-per-hour winds that may generate three-foot wave heights. Our Floating Breakwaters resist pressures generated during storms that compromise flexible joints between each 40-foot section. This allows for hogging and sagging movements that release stress between the modules. In shallow waters, Floating Breakwaters use pilings to prevent swaying, allowing a free-heave motion.

Better, greener applications
MAADI Group’s Floating Breakwater design saves coastlines from devastating erosion, and protects harbors by sheltering berthed vessels in marinas from wave interaction and its resulting damage, even in hurricane-prone regions. Traditional breakwaters, with their stone rubble mounds or concrete slopes require massive sub-surface soil foundations, and have large ecological footprints that can obstruct water circulation and fish migration. Rubber tire breakwaters can cause fouling growth and litter entrapment, and have instability, inadequate buoyancy and anchoring problems.

Composite Floating Breakwaters like the ones designed by MAAPI Group successfully eliminate these adverse environmental effects. Throughout North America and the Caribbean, our breakthrough Composite Floating Breakwater design works with nature to dissipate waves and remain unscathed.

Safe harbor for vessels and shorelines
MAADI Group designs functionality into its aluminum maritime structures and is an industry leader in fabricating load-bearing aluminum welded structures for the maritime industry. We design and produce high-performance Floating Breakwaters to increase efficiency using piles instead of chains, and create additional boat slips and dockage areas.

Whether for a new construction, or a renovation project, aluminum Floating Breakwaters are an attractive solution that provides the ultimate in durability and corrosion resistance. Our custom-designed and built Floating Breakwaters protect valuable coastline, and luxury and industrial vessels without compromising the environment and beauty of the waterscape.
MAADI Group provides gangway and shoreline solutions for your dock and port structures. Our aluminum walkway systems are impervious to corrosion from salt water, chemicals or pollution for durability and long service life.

Our project pages highlight the many possibilities when designing maritime structures in high-strength aluminum. Each structure is maintenance-free, environmentally compatible and easy to install and transport. Our maritime structures are also customized by our team of engineers to meet all your needs.

Maritime
Maritime
Structures strong as the sea

<table>
<thead>
<tr>
<th>Eco-Friendly</th>
<th>Access</th>
<th>Resilience</th>
</tr>
</thead>
</table>

Our maritime gangway and shoreline solutions enhance the enjoyment of outdoor activities for visitors and facilitate mobility for dockside workers.

Our maritime products are maintenance-free structures that endure through the roughest shoreline weather and heavy daily use. MAADI Group’s resilient maritime structures are engineered to be ultra-light, yet strong and durable to provide safe and reliable access to boat docks and port/shipping areas.

Attractive and well-suited to modern structures and coastline environments, our maritime systems have a high strength-to-weight ratio. This added strength makes our gangways, docks, bridges, ferry landings and other structures last for decades with little or no maintenance costs.

Our custom-designed and built maritime structures resist corrosion and provide convenient and secure access for visitors arriving by cruise ship or for personnel and equipment at sea.
Ferry Landings

Arrive with confidence

MAADI Group has a proven history of designing and building aluminum maritime structures that last decades. Our ferry landings are engineered and built to withstand heavy pedestrian traffic as well as cars and other vehicles. Each project also demands that we consider the structural load between a vessel and ferry landing.

Mooring loads are imposed on a maritime structure when a vessel is tied up alongside, both through contact between the vessel and structure or its fendering system, and through mooring rope tension. Mooring loads in harbors and sheltered anchorages are mainly determined by winds and currents. MAADI Group designs your structure’s anchoring system to sustain any wind or current velocities in shallow or deep waters.

The berthing process generates loads between a vessel and its berthing structure from first contact until the vessel is at complete rest. Load magnitude depends on evaluating vessel size and velocity, the nature of the structure/fendering, and its degree of resilience under impact. Live loads are specified by maritime codes for various uses of restricted or unrestricted access and occupancies of a floating structure, covering occupants and movable equipment. Dead load is a structure’s weight, plus onboard services such as electrical cables and water supply. Minimum buoyance force allows a maritime structure to remain floating when fully loaded. The maritime structure is determined as stable when able to float upright in still water and return to its original position if deflected to either side by external forces.

Our team of in-house registered professional engineers undertakes a comprehensive assessment, working alongside you and your team to make sure that our recommendations match your project objectives.
Floating Bridges
Customized for every environment

Countries such as the US., Guyana and Norway are constructing floating bridges because they’re often better suited to local climates and land features. Pontoons allow the structure to move with the water rather than stay in one place and risk damage. Bracing components and anti-skid decking units add structural strength and increase safety.

Engineered using heavy-duty aluminum, the pontoons that we custom design and manufacture bend, shift and heave, preventing damage such as cracks to form and cause water leakage. Floating bridges take up less space than traditional bridges so visitors and residents can still take in a location’s natural features while maintaining a high level of safety and security.

MAADI Group floating bridges are created to the highest quality standard to withstand corrosion. They are likewise very well suited to extreme cold, and our pontoons contain watertight compartments to prevent water coming in.

MAADI Group offers custom integrated design options for you and your next project, such as anti-slip decking, aluminum handrails, midrail, guardrails and kick plates.
### Mingan Archipelago National Park Reserve Gangways

**Havre-Saint-Pierre, Quebec**

<table>
<thead>
<tr>
<th>Overall span</th>
<th>48'-5/&quot; – 14.8 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear width</td>
<td>4'-0&quot; – 1.2 m</td>
</tr>
<tr>
<td>Pedestrian loading</td>
<td>52 psf – 2.5 kPa</td>
</tr>
<tr>
<td>Vehicular load</td>
<td>N/A</td>
</tr>
<tr>
<td>Bridge self-weight</td>
<td>2,270 lb – 1,030 kg</td>
</tr>
<tr>
<td>Wind pressure</td>
<td>16.4 psf – 785 Pa</td>
</tr>
<tr>
<td>Options</td>
<td>Treated wood decking, aluminum horizontal railings</td>
</tr>
</tbody>
</table>

*Design/build of two aluminum pony truss style pedestrian gangways*
Port of Quebec Gangways

Quebec City, Quebec

Design of two aluminum pony truss style gangways

<table>
<thead>
<tr>
<th>Overall span</th>
<th>72' 2&quot; – 22.0 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear width</td>
<td>5' 7&quot; – 1.7 m</td>
</tr>
<tr>
<td>Pedestrian loading</td>
<td>100 psf – 4.8 kPa</td>
</tr>
<tr>
<td>Vehicular load</td>
<td>N/A</td>
</tr>
<tr>
<td>Bridge self-weight</td>
<td>6,600 lb – 3,000 kg</td>
</tr>
<tr>
<td>Wind pressure</td>
<td>12.6 psf – 604 Pa</td>
</tr>
<tr>
<td>Options</td>
<td>Aluminum handrails, midrail, horizontal railings, and swan necks</td>
</tr>
</tbody>
</table>
Davie Shipbuilder Gangways
Lévis, Quebec

Overall span
60'-0" et 50'-0" – 18.3 m et 15.2 m

Clear width
4'-0" – 1.2 m

Pedestrian loading
100 psf – 4.8 kPa

Vehicular load
N/A

Bridge self-weight
6,160 lb et 5,280 lb – 2,800 kg et 2,400 kg

Wind pressure
8.4 psf – 410 Pa

Options
Aluminum “Shur-Grip” decking, midrails & canopies, wooden treads

Design/build of four aluminum gangways for shipbuilder
La Baie International Cruise Ship Dock
La Baie, Quebec

Design/build of aluminum bridge, canopies & guardrails

<table>
<thead>
<tr>
<th>Overall span</th>
<th>Pedestrian loading</th>
<th>Self-weight</th>
<th>Wind pressure</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>11'-4&quot; – 3.5 m</td>
<td>N/A</td>
<td>14,610 lb – 6,640 kg</td>
<td>7.9 psf – 380 Pa</td>
<td>Composite decking, aluminum vertical pickets &amp; handrails, canopies</td>
</tr>
<tr>
<td>Clear width</td>
<td>Vehicular load</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9'-2&quot; – 2.8 m</td>
<td>N/A</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Maritime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Watch the video</td>
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</tbody>
</table>
Laurentian Pilotage Authority Gangway

Les Escoumins, Quebec

Design/build of an aluminum gangway with adjustable steps

<table>
<thead>
<tr>
<th>Overall span</th>
<th>Pedestrian loading</th>
<th>Bridge self-weight</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>35'-9&quot; – 10.9 m</td>
<td>50 psf – 2.4 kPa</td>
<td>1,520 lb – 690 kg</td>
<td>Aluminum “Grip Span”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>adjustable steps &amp;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>horizontal railings</td>
</tr>
<tr>
<td>Clear width</td>
<td>Vehicular load</td>
<td>Wind pressure</td>
<td></td>
</tr>
<tr>
<td>2'-0&quot; – 0.6 m</td>
<td>N/A</td>
<td>11.5 psf – 550 Pa</td>
<td></td>
</tr>
<tr>
<td>Pedestrian loading</td>
<td></td>
<td>Bridge self-weight</td>
<td></td>
</tr>
<tr>
<td>50 psf – 2.4 kPa</td>
<td></td>
<td>1,520 lb – 690 kg</td>
<td></td>
</tr>
<tr>
<td>Vehicular load</td>
<td></td>
<td>Wind pressure</td>
<td></td>
</tr>
<tr>
<td>N/A</td>
<td></td>
<td>11.5 psf – 550 Pa</td>
<td></td>
</tr>
<tr>
<td>Bridge self-weight</td>
<td></td>
<td>Wind pressure</td>
<td></td>
</tr>
<tr>
<td>1,520 lb – 690 kg</td>
<td></td>
<td>11.5 psf – 550 Pa</td>
<td></td>
</tr>
<tr>
<td>Wind pressure</td>
<td></td>
<td>Bridge self-weight</td>
<td></td>
</tr>
<tr>
<td>11.5 psf – 550 Pa</td>
<td></td>
<td>1,520 lb – 690 kg</td>
<td></td>
</tr>
</tbody>
</table>

Design/build of an aluminum gangway with adjustable steps
MAADI Group pedestrian and utility/service bridges and other structures are versatile and adaptable to a wide variety of industrial applications.

Our project pages highlight the unlimited possibilities when designing structures for industrial use. Each structure resists corrosion and is maintenance-free. Customized to meet specific industry requirements and standards, our heavy-duty aluminum structures have a high strength-to-weight ratio for maximum construction strength and resilience.
MAADI Group designs and builds high-strength aluminum gangways, bridges, offshore platforms and more for temporary or permanent projects. Our corrosion-free structures are made to endure extreme weather conditions and heavy, repeated use.

Our advanced aluminum structures are lightweight, yet ultra-strong to provide secure, reliable access even in extreme conditions such as cyclonic wind loading. Bracing components and anti-skid decking units add to structural strength and safety. A sliding bearing connection and a pinned bearing connection are available structure end-point options to ensure reliable connection points regardless of installation tolerances.

MAADI Group welded industrial bridges provide convenient, secure access for personnel and equipment in industrial plants.

Industrial
Captains of efficiency
Offshore Platform Bridge

Deep ocean

Design/build of a special aluminum through-truss style pedestrian bridge

<table>
<thead>
<tr>
<th>Overall span</th>
<th>152'-0&quot; – 46.3 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear width</td>
<td>4'-0&quot; – 1.2 m</td>
</tr>
<tr>
<td>Pedestrian loading</td>
<td>31 psf – 1.5 kPa</td>
</tr>
<tr>
<td>Vehicular load</td>
<td>N/A</td>
</tr>
<tr>
<td>Bridge self-weight</td>
<td>30,140 lb – 13,700 kg</td>
</tr>
<tr>
<td>Wind pressure</td>
<td>7.8 psf – 375 Pa</td>
</tr>
</tbody>
</table>

Options
Aluminum "Grip Span" decking, aluminum guardrails and kick plates

Watch the video
Semi-Trailer Snow Removal Platform

Montreal, Quebec

Design/build of an aluminum semi-trailer snow removal platform

Overall span
53'-0” – 16.2 m

Pedestrian loading
60 psf – 3.0 Pa

Bridge self-weight
3,620 lb – 1,650 kg

Vehicular load
N/A

Wind pressure
8.4 psf – 410 Pa

Options
Aluminum "Shur-Grip" decking, expanded mesh guardrails & kick plates
Mobile and Fix Work Platforms

Boucherville, Quebec

Overall span
40'-0", 20'-0" & 13'-0" – 12.2 m, 6.1 m & 4.0 m

Clear width
6'-0", 4'-0" & 2'-11" – 1.8 m, 1.2 m & 0.9 m

Pedestrian loading
50 psf – 2.4 Pa

Vehicular load
N/A

Bridge self-weight
6,120 lb – 2,780 kg

Wind pressure
N/A

Options
Aluminum “Shur-Grip” decking, midrails & kick plates

Design/build of a set of aluminum mobile & fix work platforms
Medical Center Bridge
New York, New York

Design/build of an aluminum pony truss style pedestrian bridge

<table>
<thead>
<tr>
<th>Overall span</th>
<th>Pedestrian loading</th>
<th>Bridge self-weight</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>36'8&quot; – 11.2 m</td>
<td>100 psf – 4.8 kPa</td>
<td>6,000 lb – 2,730 kg</td>
<td>Aluminum decking, square mesh guardrails &amp; handrails</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Clear width</th>
<th>Vehicular load</th>
<th>Wind pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>8'2¼&quot; – 2.5 m</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Rio Tinto Alcan Service Bridges
Jonquière, Quebec

Design/build of two special-access aluminum service/utility bridges

<table>
<thead>
<tr>
<th>Overall span</th>
<th>Pedestrian loading</th>
<th>Bridge self-weight</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>65’7” – 20.0 m</td>
<td>100 psf – 4.8 kPa</td>
<td>3,835 lb – 1,720 kg</td>
<td>Removable aluminum midrail and kick plates, aluminum extruded decking</td>
</tr>
<tr>
<td>Clear width</td>
<td>Vehicular load</td>
<td>Wind pressure</td>
<td></td>
</tr>
<tr>
<td>3’-6½” – 1.1 m</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Pedestrian loading</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Industrial 9594
Varied Structures

MAADI Group engineers design and manufacture standard and aluminum lift devices, bridge lanes, guardrails and more.

Tailored to fit a variety of different projects, these structures are corrosion-resistant, structurally strong and durable. Our engineering team adapts each design to your specific needs and technical requirements using advanced techniques to create a customized product that enables maximum efficiency, safety and practicality.
Whether you require guardrails for an outdoor stair project or a pedestrian bridge to make sure that pedestrians and cyclists have a safe route to travel, MAADI Group engineers and planners find solutions that fit your project.

Easy to shape and extrude into countless shapes, we work with heavy-duty aluminum that is versatile, resists corrosion and that we can develop into unlimited design combinations. From design to building, our work bears the seal of our in-house registered professional engineers.
Parc de la rivière Beauport Stair and Guardrail
Quebec City, Quebec

**Height**
50'-0" – 15 m

**Clear width**
6'-7¾" – 2.0 m

**Pedestrian loading**
100 psf – 4.8 kPa

**Vehicular load**
N/A

**Self-weight**
27,340 lb – 12,500 kg

**Wind pressure**
8.5 psf – 410 Pa

**Options**
Aluminum expanded mesh guardrails & handrails

*Design/build of a set of aluminum stairs & guardrails*
Centre Saint-Charles Display Panel
Montreal, Quebec

Design/build of aluminum display panel board for a mural
Bridge Widening Retrofit
Dedicated lanes enhance safety

When transportation engineers and planners need a safer bridge route for pedestrians and bicyclists to travel, the MAADI Group cantilevered bridge widening retrofit is an economical long-term option. MAADI Group’s aluminum pedestrian bridge lane solution enhances bridge functionality and promotes improved safety and traffic flow. MAADI Group designs and builds pre-engineered, maintenance-free pedestrian bridge systems that attach to existing highway bridge piles using the cantilever method.

A dedicated bridge lane for walking and biking frees the roadway bridge deck from additional loads. This vastly improves truck and vehicle traffic flow on the highway bridge. Existing roadway bridges augmented with cantilevered bike and walkways make for faster, less congested commuting on the main roadway bridge lanes and create a safer and separate pathway for pedestrians and bicyclists.

Bridge widening using MAADI Group’s retrofit solution offers a cost-saving alternative to total bridge redevelopment. MAADI Group delivers a high-strength aluminum pedestrian/bike bridge that is easy to install and is designed and built to last for decades.

Design/build of a pony truss pedestrian and bike bridge with aluminum horizontal railing

Tar River, Rocky Mount, North Carolina

### Bridge Widening Retrofit

<table>
<thead>
<tr>
<th>Overall span</th>
<th>Pedestrian loading</th>
<th>Bridge self-weight</th>
<th>Wind pressure</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>620’-0” – 189.0 m</td>
<td>90 psf – 4.3 kPa</td>
<td>73,780 lb – 33,535 kg</td>
<td>35 psf – 1.7 kPa</td>
<td>Aluminum decking, horizontal rails &amp; kick plates</td>
</tr>
<tr>
<td>8’-6” – 2.9 m</td>
<td>5,000 lb – 2,275 kg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>73 psf – 3.4 kPa</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Pedestrian loading</th>
<th>Vehicular load</th>
<th>Bridge self-weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 psf – 4.3 kPa</td>
<td>5,000 lb – 2,275 kg</td>
<td>73,780 lb – 33,535 kg</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Wind pressure</th>
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<tbody>
<tr>
<td>35 psf – 1.7 kPa</td>
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<table>
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<tr>
<th>Options</th>
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</thead>
<tbody>
<tr>
<td>Aluminum decking, horizontal rails &amp; kick plates</td>
</tr>
</tbody>
</table>

### Overall Span

- **Overall span**: 620’-0” – 189.0 m
- **Clear width**: 8’-6” – 2.9 m
- **Pedestrian loading**: 90 psf – 4.3 kPa
- **Vehicular load**: 5,000 lb – 2,275 kg
- **Bridge self-weight**: 73,780 lb – 33,535 kg
- **Wind pressure**: 35 psf – 1.7 kPa
- **Options**: Aluminum decking, horizontal rails & kick plates
Aerial Lifts

Custom aluminum lift equipment

MAADI Group provides tough, dependable lifting equipment to withstand heavy daily use by industrial plant and factory personnel. Our lifting equipment includes rugged mud buckets, spreader bars, lifting beams, material baskets, personnel platforms and lifters. Our engineering team adapts each design to your specific needs and technical requirements, using advanced techniques to create a customized product that enables maximum workplace efficiency, safety and productivity. MAADI Group aerial lifts are designed and manufactured to the most stringent structural and safety standards. We deliver cost-effective, top-quality lift equipment that adds exceptional durability and value to your work site. Every aspect of our lift equipment, including the work platform, basket and attachment parts are designed by our engineers and are fully certified in writing with a conformance certificate for each product. Fabrication and welding of our aerial lift equipment conforms to ANSI/AWS D1.2/D1.2M:2014 standards. MAADI Group is in full compliance with the structural welding code for aluminum, equivalent to CSA W47.2-11 certification of companies for fusion welding of aluminum, with all weldments performed by certified welders. MAADI Group structures and aerial lifts can conform to any of these codes and standards (or to others upon request), and bear the seal of one of our in-house registered professional engineers.
Customization

MAADI Group bridge design offers fully customized options to create a distinctive structure that is best suited for its purpose and integrates with its surroundings by design.
Pedestrian Bridge Styles

MAADI Group aluminum bridges include various styles and bridge spans for different needs and purposes. Our precision guardrail systems enhance practicality and aesthetics, whether for pedestrians, ATVs, golf carts, horses, or maintenance vehicles. All guardrail systems meet American and Canadian bridge codes and standards.

### Arched pony truss bridge
- **Spans**: Up to 150'-0" – 45.7 m
- **Widths**: 8'-0" to 12'-0" – 1.0 m to 3.7 m

### Pony truss bridge
- **Spans**: Up to 100'-0" – 30.5 m
- **Widths**: 3'-0" to 10'-0" – 1.0 m to 3.0 m

### H-section truss bridge
- **Spans**: Up to 150'-0" – 45.7 m
- **Widths**: 4'-0" to 12'-0" – 1.2 m to 3.7 m

### Bowstring truss bridge
- **Spans**: Up to 100'-0" – 30.5 m
- **Widths**: 6'-0" to 12'-0" – 1.8 m to 3.7 m

### Bow truss bridge
- **Spans**: Up to 175'-0" – 53.4 m
- **Widths**: 6'-0" to 10'-0" – 1.8 m to 3.0 m

### Box truss bridge
- **Spans**: Up to 175'-0" – 53.4 m
- **Widths**: 6'-0" to 10'-0" – 1.8 m to 3.0 m

### Bridge widening retrofit
- **Multiple single spans**: Up to 100'-0" – 30.5 m
- **Widths**: 5'-0" to 10'-0" – 1.5 m to 3.0 m

Cantilever bridge systems create a dedicated and safe foot/bike traffic lane on existing narrow road bridges.
Guardrail Systems

We offer custom guardrails and integrated handrails and kick plates for added safety and durability. MAADI Group precision guardrail systems offer practical solutions that are also attractive. Our bridges integrate well into natural or built environments and are custom-built for people, animals and a range of light or heavy equipment.

### Aluminum vertical pickets

**Specifications**
- Pickets are made of aluminum
- Less than 4” – 100 mm between pickets (Building codes)
- Less than 6” – 150 mm between pickets (Bridge codes)

**Applications**
- Bridges, building walkways

### Aluminum midrail

**Applications**
- Marina gangways, industrial walkways
- Trail bridges in remote sites

### Aluminum horizontal railings

**Applications**
- Pedestrian/bike and light vehicle bridges
- Not intended for buildings

**Specifications**
- Less than 6” – 150 mm between railings (Bridge codes)
Decking Materials

Choose bridge/gangway decking material based on how your structure will be used: for an architectural/outdoor application, or for a more industrial application. Wooden and extruded aluminum planks are ideal for heavy-duty daily wear in most outdoor environments.

IPE hardwood planks

Specifications
- Minimum 40-year lifespan
- Low maintenance, no treating or sealing required for durability (treating may be required to keep rich, red color)
- Medium grip surface
- Eco-friendly and naturally insect resistant
- Heavy use outdoor applications
- Economical over life of the bridge/structure

Pressure-treated pine wood planks

Specifications
- Average 15-year lifespan
- Maintenance required – treat with water repellent every 2 years
- Natural finish requires UV protection – apply a semi-transparent stain or clear sealer
- Medium grip surface
- Standard use outdoor applications
- Most economical initial material cost

High grip extruded aluminum planks

Specifications
- Unlimited lifespan with regular cleaning
- Maintenance-free – no treatment or sealer required
- Natural mill finish – no paint or coating required
- Transversal planks with high grip surface
- 100% recyclable and reusable
- Economical over life of the bridge/structure

High-grip metal planks are best suited for steeper inclines and industrial or marina applications where a non-slip surface is critical. Custom decking options and dimension specifications are available upon request.

Grip span planks

Specifications
- Optimal grip surface
- Low/no maintenance
- Safety grating planks have serrated edges
- Safety grating has diamond-shaped openings
- Planks have integral side channels
- Made from aluminum alloy
- Recommended for industrial applications

Shur grip planks

Specifications
- High grip surface
- Low/no maintenance
- Safety grating planks have debossed holes, each surrounded by 6 perforated buttons
- Safety grating planks have integral side channels
- Made from aluminum alloy
- Recommended for industrial applications

Bar grating

Specifications
- Low grip surface
- Low/no maintenance
- Safety bar gratings are single-unit construction
- Serrated Tru-weld available for extra grip on bearing bars
- Made from aluminum alloy
- Recommended for industrial applications
Decking Materials

Comparison charts

Consider maintenance, durability, adherence (non-slip surface), and sustainability when choosing the most suitable decking material for your project.

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<th>Low</th>
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<th>3</th>
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The Make-A-Bridge® modular system’s Meccano-style design approach optimizes bridge performance and aesthetics. MAADI Group’s patented bridge system offers a unique design solution that is customized to your specifications and needs. Design options offer versatility in a cost-effective and durable superstructure. MAADI Group works with your team, from design concept to final installation, bringing accessibility and sustainability together for your next project.
Make-A-Bridge®

Make-A-Bridge® is a weld-free aluminum pedestrian bridge system that is assembled "Meccano-style." We design, fabricate and manufacture our patented Make-A-Bridge® at our facilities in Boucherville, Quebec, to the highest engineering and design standards.

Design Innovation

The Make-A-Bridge® pedestrian bridge design is ideal for new construction or retrofits of existing bridges, and may be used in temporary or permanent applications for indoor or outdoor venues. The sleek, modular design is visually appealing, integrating well with any architectural style. Eliminating welding means each structure is completely free of thermally affected zones, which strengthens structural integrity.

MAADI Group’s patented, weld-free modular pedestrian bridge system is designed to assemble “Meccano style” into load-bearing spans of up to 60 feet via moment resisting tripod node joints. Our interlocking component design enables quick-ship bundles to be conveniently transported on standard-size trailers. Make-A-Bridge® delivery is 8 to 12 times faster than conventional welded bridges, transporting bundles to remote or difficult-to-access locations. On the job site, components are easily unloaded, assembled and installed with minimal labor and tools.

Awards Received

The Make-A-Bridge® modular pedestrian bridge system has received design and innovation awards since 2006. MAADI Group is honored to have our premier bridge product acknowledged for its innovation within the Design/Build community.

2013
Winner
Product innovation award: architectural products magazine

2010
Finalist
Génie Innovation

2009
New technology prize
Quebec Region, Canadian manufacturers & exporters and CNRC-PARI
Honorable mention
Contech innovation trophies
Finalist
Among 487 firms participating in the VoirGRAND.tv competition

2008
First International Prize
Extrusion technology for aluminum profiles (ET) foundation at the 9th International aluminium extrusion seminar & exposition

2006
Finalist
Les Anges financiers competition, Montreal
Makes It Better

The Make-A-Bridge® pre-fabricated system approach optimizes bridge performance and aesthetics. MAADI Group’s patented bridge system offers a unique design solution that is customized to your specifications and needs. Design options offer versatility in a cost-effective and durable superstructure.

**Design and materials**
- 100% recyclable aluminum structural components
- Integrates well with new construction and retrofits of existing structures
- Meets standards of North American and other Western nations
- Includes complete engineering services, eliminating all of the costly phases of design, customized production and approval generally required for conventional structures
- Corrosion-resistant. A permanent film of natural oxide makes the metal “passive” to the environment
- No welding – the aluminum maintains its full structural integrity
- Easy to add anodized or baked paint durable architectural finishes
- Fasteners in stainless steel 300 series

**Sustainable**
MAADI Group is committed to implementing the sustainable benefits of Make-A-Bridge® to improve the environment in every community where our pedestrian bridges are used.

**Typical footbridge (30’ – 9 m) assembly in about 5 hours**
- Requires a small crane with a capacity of approx. 3,500 lb – 1,600 kg
- Digital production and shipped in separate parts. Deployable in far less time than competitive products
- Requires a small crane with a capacity of approx. 3,500 lb – 1,600 kg
- Typical footbridge (30’ – 9 m) assembly in about 5 hours
- Assembled on site by 3 people with standard tools and equipment
- Much lower shipping costs than conventional structures
- Typical footbridge (30’ – 9 m) assembly in about 5 hours

**Easy shipping**
- Digitally produced and shipped in separate parts. Deployable in far less time than competitive products
- Much lower shipping costs than conventional structures
- Typical footbridge (30’ – 9 m) assembly in about 5 hours

**Fast assembly and installation**
- Lighter and easier to install than competitive steel, wood or concrete products
- Assembled on site by 3 people with standard tools and equipment
- Typical footbridge (30’ – 9 m) assembly in about 5 hours
- Requires a small crane with a capacity of approx. 3,500 lb – 1,600 kg

**Additional benefits**
- Standard off-the-shelf components available in 2 to 3 weeks, ready to be shipped flat anywhere in North America, and in 4 to 6 weeks anywhere worldwide
- Buil to international standards, including American and Canadian codes (AASHTO, ASCE and CSA)

**Guaranteed**
15-year manufacturer’s limited warranty against corrosion of the aluminum main load-bearing structure.

**Customization**
Enhances outdoor and indoor environments with a variety of colors, finishes and options to choose from such as:
- Anodized and baked paint
- Decking materials
- Bridge end configuration and guardrail
- LED lighting solutions available

**Maintenance**
- Maintenance-free structure is highly cost-effective, compared with steel when total cost of ownership (TCO) is considered
- Anti-theft/anti-vandalism fasteners and nodes
- Very easy to remove graffiti by brushing or sanding bare aluminum, compared to steel that has protective coating

**Vandalism**
- Anti-theft/anti-vandalism fasteners and nodes
- Very easy to remove graffiti by brushing or sanding bare aluminum, compared to steel that has protective coating

**Dead load**
- 9 to 15 lb/sq ft. – 44 to 73 kg/m²

**Live load**
- 2-ton vehicles (i.e., golf carts, ATVs, snowmobiles)
- Distributed 50 to 100 lb/sq ft. – 2.4 kPa to 4.8 kPa
- Deflection between L/500 and L/240

MAADI Group works with your team, from design concept through final installation to bring accessibility and sustainability together for your next project.
Technical Specifications

Our Make-A-Bridge® product exemplifies what can be achieved when a dedicated team of engineers design with hardwearing and versatile aluminum. Our rigorous attention to detail and dedication to quality and consistency are clearly demonstrated throughout the production, assembly, transport and installation of Make-A-Bridge®.
Live Load Capacity

<table>
<thead>
<tr>
<th>Height (in)</th>
<th>Width (ft)</th>
<th>Minimum Height</th>
<th>Clear Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>3' 0.9 m</td>
<td>35° 10.7 m</td>
<td>54&quot; 1,372 mm</td>
<td>42&quot; 1,067 mm</td>
</tr>
<tr>
<td>4' 1.2 m</td>
<td>35° 10.7 m</td>
<td>54&quot; 1,372 mm</td>
<td>42&quot; 1,067 mm</td>
</tr>
<tr>
<td>5' 1.5 m</td>
<td>40° 13.2 m</td>
<td>55&quot; 1,387 mm</td>
<td>45&quot; 1,168 mm</td>
</tr>
<tr>
<td>6' 1.8 m</td>
<td>50° 15.2 m</td>
<td>60&quot; 1,524 mm</td>
<td>50&quot; 1,262 mm</td>
</tr>
</tbody>
</table>

Minimum height 54" – 1,372 mm
Target use
Bicycles, pedestrians and lightweight vehicles

Minimum height 42" – 1,067 mm
Target use
Pedestrians and lightweight vehicles

Destructive Testing

On August 13, 2009, a destructive structural test was conducted at the University of Waterloo, Waterloo, Ontario, Canada (U of W) in the Department of Civil and Environmental Engineering Structures Laboratory to determine the maximum load capacity of a Make-A-Bridge® modular bridge system. Testing took place under the supervision of Professors, Dr. Scott Walbridge, P.Eng., and Dr. Sriram Narasimhan, P.Eng., along with Graduate Student researchers, Doctoral candidate Pampa Dey, and Master’s graduate student Ann Sychterz.

The specimen consisted of a 20’ long by 2’ wide aluminum pony-truss structure, fabricated using aluminum extruded sections and cast joints developed by MAADI Group, Inc. The size was reduced to fit the specimen in the U of W test frame.

The load was introduced via a “load tree” which consisted of two simply supported steel I-beams loaded to facilitate the splitting of the jack load (i.e., the total load) into three equal point loads, to be introduced at each of the three interior panel points of the truss. The three point loads were introduced via machined aluminum bearing pads. The specimen sat on two end supports, one pin and one roller.

Test Data
This curve shows the initial linear behavior. Softening of the specimen occurs very gradually, making it difficult to identify a load coinciding with the onset of non-linear behavior. The peak total load obtained was 183 kN (41.0 kips). At this load, vertical deflection at the mid-span was approximately 61 mm. The specimen exhibited some ductility beyond this peak load; final failure occurred at a total load of 157 kN (35.2 kips) and a mid-span deflection of approximately 80 mm.
Developments and Studies

Vibration was undertaken in 2014 and is ongoing at the University of Waterloo in Waterloo, Ontario, Canada, at the Department of Civil and Environmental Engineering Structures Laboratory.

Research on vibration behavior

In order to better understand the behavior of aluminum pedestrian bridges subjected to crowd-induced vibrations, a research project was recently undertaken at the University of Waterloo, with financial support provided by the AAC and the Natural Sciences and Engineering Research Council of Canada (NSERC). The industry partner for this project, MAADI Group, supplied a 75ft-long modular aluminum pedestrian bridge "specimen", which could be installed in the Waterloo Structural Testing Laboratory at any desired span between 10ft and 75ft.

The experimental setup offered a number of important benefits, which can be summarized as follows:

- In contrast to vibration studies performed on pedestrian bridges in the field, with the laboratory testing approach it was possible to install load cells under each of the four support points to capture the dynamic reaction loads in the vertical, lateral, and longitudinal directions, as pedestrians walked across the bridge, individually or in groups.
- With the employed modular bridge system, it was easy to investigate otherwise identical bridges, with a wide range of spans and stiffness.
- With the employed bridge system, it was possible to add/remove elements (e.g., lateral cross-bracing) to alter the dynamic bridge response.

About 30 repetitions were recorded for each test type

Load cell data

For each test type, acceleration and load cell data was collected. If possible, around 30 repetitions were recorded for each test type (specimen configuration, pedestrian volume, walking speed) to ensure statistical significance. Acceleration data was transformed into the frequency domain, so that critical frequencies could be identified. For further details on the full test program and data post-processing methods employed in this study, recently published journal papers by the research group can be referenced (e.g. Dey et al. 2016a, 2016b).

One of the main goals of this research has been to collect data for the purpose of assessing the suitability of the various available international pedestrian bridge design standards for application to aluminum structures.

Future research directions

Work in this area is ongoing, thanks to a new collaborative project between the University of Waterloo and MAADI Group. Among other things, this work is taking a critical look at the design provisions for pedestrian bridges using a probability framework, similar to the one structural engineers are more familiar with for the calibration of strength provisions in design codes.

While it must be recognized that there are many sources of uncertainty that come into play in predicting the vibration behaviour of a pedestrian bridge, this approach makes it possible to apply some degree of rigor to the process, and may provide a rationale for future design code modifications to ensure more consistent levels of safety against serviceability failures due to poor vibration performance under crowd loads.

Conclusions

In conclusion, aluminum, with its light weight and good durability characteristics is finding its place in pedestrian bridge applications. The confidence that can be placed in its use is growing at an accelerated pace, thanks to research projects such as the one highlighted in this article.
Projects

The Make-A-Bridge® pre-fabricated pedestrian bridge system may be used wherever footbridge access infrastructure is needed.

In the following pages, we present a wide variety of indoor and outdoor projects and applications where Make-A-Bridge® structures are fully customized to meet the needs of any given project.
Parks and Recreation
Argyll Path bridge, Brome Lake, Quebec

Make-A-Bridge® pre-fabricated modules are easy to install in recreational settings such as parks, golf courses, playgrounds, or nature preserves.

**Make-A-Bridge®** walkways enhance the enjoyment of outdoor activities for visitors and make it easier for maintenance workers to access all areas of a particular location. Make-A-Bridge® walkways are maintenance-free and attractive structures that endure through all weather conditions and heavy daily use. The Make-A-Bridge® modular walkway system is structurally strong and easy to assemble.

<table>
<thead>
<tr>
<th>Overall span</th>
<th>Pedestrian loading</th>
<th>Bridge self-weight</th>
<th>Wind pressure</th>
<th>Options</th>
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</thead>
<tbody>
<tr>
<td>55'-7&quot;, 48'-9&quot; &amp; 35'-0&quot; – 16.9 m, 14.9 m &amp; 10.7 m</td>
<td>84 psf – 4.0 kPa</td>
<td>4,290 lb, 3,850 lb &amp; 2,750 lb – 1,950 kg, 1,750 kg &amp; 1,250 kg</td>
<td>7.7 psf – 370 Pa</td>
<td>Aluminum decking, kick plates and horizontal railings</td>
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<tr>
<td>Clear width</td>
<td>Vehicular load</td>
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<tr>
<td>9'-10¾&quot; – 1.8 m</td>
<td>ATV: 2,510 lb – 1,140 kg</td>
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<td>Trailer: 1,500 lb – 680 kg</td>
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Parks and Recreation

Centennial Park bridge, Dollard-des-Ormeaux, Quebec

Make-A-Bridge® pre-fabricated pedestrian bridges encourage healthy living and play, while enhancing the natural terrain. Our footbridges help increase access to parks, golf courses and recreational venues, and integrate well with the natural surroundings.

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<tbody>
<tr>
<td>23'-1¾&quot; – 7.1 m</td>
<td>84 psf – 4.0 kPa</td>
<td>2,420 lb – 1,200 kg</td>
<td>Aluminum kick plates, Ipe hardwood decking and horizontal railings, faux-wood finish</td>
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<thead>
<tr>
<th>Clear width</th>
<th>Vehicular load</th>
<th>Wind pressure</th>
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</thead>
<tbody>
<tr>
<td>5'-10¾&quot; – 1.8 m</td>
<td>N/A</td>
<td>8.4 psf – 400 Pa</td>
</tr>
</tbody>
</table>

The weld-free Make-A-Bridge® modular walkway system uses extruded aluminum components that interlock into cast aluminum tripod nodes end-to-end, connecting side-to-side to form continuous truss sections across the entire span. This product withstands heavy daily use and severe weather occurrences and is safe, functional and pleasing to view. Make-A-Bridge® also integrates well with its surroundings, making it seem as though it belongs.
Parks and Recreation
Ruisseau Clair stream bridge, Mont-Tremblant, Quebec

Overall span
32'-11¾" – 10.0 m

Clear width
5'-10¾" – 1.8 m

Pedestrian loading
84 psf – 4.0 kPa

Vehicular load
1,100 lb – 500 kg

Bridge self-weight
3,300 lb – 1,500 kg

Wind pressure
18.8 psf – 900 Pa

Options
Ipe hardwood decking, aluminum vertical pickets and kick plates

Make-A-Bridge® pre-fabricated modules are easy to install in recreational settings such as parks, golf courses, playgrounds, or nature reserves.

Make-A-Bridge® walkways make it easier to keep active. Increasing access to natural settings, our bridges help people enjoy more of their community through participating in outdoor activities such as biking or walking.

This product inspires mobility while also creating spots for rest and relaxation. Resilient enough to withstand heavy storms and constant pedestrian traffic, our walkways are sure to last for generations to come.
Architecture

Hermel home port two gangways, Sept-Îles, Quebec

Overall span
20'-0" & 26'-0" – 6.1 m & 7.9 m
Clear width
3'-0" – 0.9 m
Pedestrian loading
100 psf – 4.8 kPa
Vehicular load
N/A
Bridge self-weight
1,500 lb & 1,150 lb – 680 kg & 520 kg
Wind pressure
11.3 psf – 540 Pa
Options
Aluminum decking, kick plates, midrails and handrails

Make-A-Bridge® is the structurally strong and practical way to incorporate access and mobility. Elegant, durable pedestrian walkways reflect modern and efficient architectural design.

Whether designing for renovation or new construction, Make-A-Bridge® provides a heavy foot traffic solution that allows open views and increased daylighting to enhance any building design with a cost-effective structure that adapts to your needs. Aluminum components are fully reusable, recyclable and maintenance-free, offering sustainable design benefits while meeting local and national building codes. Footbridge components are engineered to maximize load-bearing capacity with minimal structural weight. High-strength extruded aluminum members interlock into cast aluminum tripod nodes end-to-end, connecting side-to-side to form continuous truss sections across the entire bridge span. It is easy to assemble the structure inside a building, independently of the final size.
Architecture
Bota Bota Spa sur l’eau gangways, Montreal, Quebec

Make-A-Bridge® is designed to be quickly transported and easily assembled and installed for an all-weather access footbridge that is delivered on time and on budget.

Make-A-Bridge® weld-free modular extruded and cast aluminum components are maintenance-free and corrosion-resistant in year-round weather conditions. Even in extreme heat and cold, snow, ice, wind and rain, or when exposed to corrosive chemicals and pollutants.

The Make-A-Bridge® structure withstands environmental challenges using high-strength structural aluminum that is versatile, adaptable and durable. Customized bridge span lengths and options such as side panels, kick plates, handrails, non-slip decking and integrated LED lighting add value and resilience to form and function.

Overall span
45'-0", 20'-0" & 12'-0" – 13.7 m, 6.1 m & 3.7 m

Clear width
6'-0" & 4'-0" – 1.8 m & 1.2 m

Pedestrian loading
100 psf – 4.8 kPa

Vehicular load
N/A

Bridge self-weight
2,866 lb, 1,100 lb & 606 lb – 1,300 kg, 500 kg & 275 kg

Wind pressure
12.5 psf – 600 Pa

Options
Aluminum extruded decking and kick plates, integrated LED lighting
Maritime
Kegaska Quay gangway, Kegaska, Quebec

Our resilient structures are engineered to be ultra-light and strong, the ideal long-term infrastructure solution for sustainable "Green Marina" development.

Our patented modular extruded aluminum gangways provide secure access for new and renovated maritime facilities. High-strength aluminum parts interlock into cast aluminum tripod nodes end-to-end, connecting side-to-side to form continuous truss sections across the entire span. Components are bundled and ready to ship on standard size trailers and are easily assembled without special tools or training.

The Make-A-Bridge® design visually integrates with surrounding marina structures. Corrosion-resistant aluminum components are offered in a variety of colors in anodized or baked paint finishes. Customize your Make-A-Bridge® pedestrian bridge gangway by choosing from practical options such as non-slip decking, tension roof canopy, integrated handrails and kick plates, and built-in LED lighting to suit your needs.

<table>
<thead>
<tr>
<th>Overall span</th>
<th>Pedestrian loading</th>
<th>Bridge self-weight</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>28'-3/8&quot; – 8.6 m</td>
<td>84 psf – 4.0 kPa</td>
<td>2,420 lb – 1,100 kg</td>
<td>Aluminum decking, vertical pickets, cable tray, treads and kick plates, clear anodized finish</td>
</tr>
<tr>
<td>Clear width</td>
<td>Vehicular load</td>
<td>Wind pressure</td>
<td></td>
</tr>
<tr>
<td>3'-11&quot; – 1.2 m</td>
<td>N/A</td>
<td>13.6 psf – 650 Pa</td>
<td></td>
</tr>
</tbody>
</table>

Options:
- Aluminum decking,
- vertical pickets,
- cable tray,
- treads and kick plates,
- clear anodized finish.
Maritime

Mingan Archipelago National Park Reserve gangway, Havre-Saint-Pierre, Quebec

Make-A-Bridge® aluminum marina gangways provide safe and reliable access to docks, marinas and ports.
Maritime
Bota Bota Spa sur l’eau gangways, Montreal, Quebec

Extruded and cast aluminum components require no upkeep and are resistant to corrosion during extreme heat or cold temperatures. Similarly, these resilient materials don’t degrade when exposed to chemicals and pollutants. Make-A-Bridge® modular footbridge structures will also withstand repeated use by pedestrians and light vehicles for decades.

High-strength structural aluminum footbridges are versatile and adaptable, creating multiple routes in and out of your venue.

Maritime

<table>
<thead>
<tr>
<th>Overall span</th>
<th>Pedestrian loading</th>
<th>Bridge self-weight</th>
<th>Wind pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>25’-0” &amp; 11’-6/8”</td>
<td>100 psf – 4.8 kPa</td>
<td>1,320 lb &amp; 550 lb</td>
<td>12.5 psf – 600 Pa</td>
</tr>
<tr>
<td>7.6 m &amp; 3.5 m</td>
<td></td>
<td>600 kg &amp; 250 kg</td>
<td></td>
</tr>
</tbody>
</table>

Clear width

<table>
<thead>
<tr>
<th>Clear width</th>
<th>Pedestrian loading</th>
<th>Vehicular load</th>
<th>Bridge self-weight</th>
<th>Wind pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>3’-7” – 1.1 m</td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum decking and kick plates, clear anodized finish, LED lighting system</td>
</tr>
</tbody>
</table>

146 | MAADI Group – Aluminum Pedestrian Bridges and Structures | 2019 Catalogue | Make-A-Bridge® – Modular Pedestrian Bridge System | Maritime | 147
Military

Deploy on a dime

The Make-A-Bridge® weld-free system is structurally strong and easy to assemble, even on rough terrain in extreme temperature and weather conditions.

Made with high-strength, lightweight and corrosion-resistant aluminum, the Meccano-style Make-A-Bridge® modular design offers adaptable infrastructure that makes military forces more mobile, and gives operations personnel better access to equipment, supplies and strategic locations.

<table>
<thead>
<tr>
<th>Overall span</th>
<th>59'-6½&quot; – 18.1 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestrian loading</td>
<td>84 psf – 4.0 kPa</td>
</tr>
<tr>
<td>Vehicular load</td>
<td>1,100 lb – 500 kg</td>
</tr>
<tr>
<td>Bridge self-weight</td>
<td>4,270 lb – 1,940 kg</td>
</tr>
<tr>
<td>Wind pressure</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Options
- Aluminum anti-skid deck panels
- Roller launching system
- Powder-coated finish

Watch the video
Civil Security
Keeping communities prepared

With floods and forest fires on the rise, civil security becomes increasingly vital to communities preparing for unforeseen minor and major disasters. Our heavy-duty and quick-to-deploy modular aluminum bridge makes emergency preparedness planning by municipalities and governments easier.

The Make-A-Bridge weld-free system is lightweight, hardwearing and easily accessible for civilians and equipment. Our professional engineers design the bridges to be assembled without special tools or training.

### Overall span
59'-6½" – 18.1 m

### Clear width
5'-07¼" – 1.5 m

### Pedestrian loading
84 psf – 4.0 kPa

### Vehicular load
1,100 lb – 500 kg

### Bridge self-weight
4,270 lb – 1,940 kg

### Wind pressure
N/A

### Options
- Aluminum anti-skid deck panels
- Roller launching system
- Powder-coated finish

Watch the video

The parts are secure and easy to assemble. The system is designed to be heavy-duty and easy to deploy for emergency situations.
Industrial

Skelton hydro electric bridge, Dayton, Maine

Make-A-Bridge® pre-fabricated aluminum gangways provide convenient, secure access for personnel and equipment in industrial plants or manufacturing facilities.

These versatile Meccano-style footbridges are lightweight, strong and adaptable structures that handle foot and light vehicle traffic. These structures help workers to access goods or maintenance equipment, oversee operations and provide efficient connections between loading and storage areas, offices and control centers within your facility.

Make-A-Bridge® aluminum modular utility and service bridges are installed in place with existing fixtures and are structurally strong, low maintenance and corrosion resistant. It is easy to assemble the structure inside a building independently of the final size.

| Overall span | 22'-5" – 6.8 m |
| Pedestrian loading | 100 psf – 4.8 kPa |
| Clear width | 4'-0" – 1.2 m |
| Vehicular load | N/A |
| Bridge self-weight | 1,285 lb – 583 kg |
| Wind pressure | 8.3 psf – 400 Pa |

Options

Aluminum extruded decking, kick plates and midrail
Customization

Make-A-Bridge® spans may be constructed in lengths of up to 60’ (18.3 m), and may be customized to adapt to a wide variety of indoor or outdoor project applications.

Various configurations, including customized bridge ends, guardrails, side panels, decking materials, colors, anodized or baked paint finishes, and LED lighting options are available.
Bridge-End Configuration

Make-A-Bridge® railing designs offer two different bridge-end configurations to suit the aesthetic and practical needs of your project. Whether adjacent to other structures or freestanding, our bridges utilize railing end designs that feature strong, durable and maintenance-free aluminum components.

Length detail
Overall length is measured by length of bottom chord

Vertical end post
Applications
- Bridges
- Building walkways
- Marina gangways

Swan neck
Applications
- Bridges
- Walkways
- Marina gangways
Guardrail

Whether you use Make-A-Bridge® in an industrial plant, an office building, a park, or a marina, our high-strength aluminum alloy guardrail systems are corrosion-resistant and can be counted on for strength and long-term durability. All guardrails meet American and Canadian codes.

### Aluminum vertical pickets

**Applications**
- Bridges, building walkways

**Specifications**
- Less than 4” – 100 mm between pickets (Building codes)
- Less than 6” – 150 mm between pickets (Bridge codes)

### Aluminum midrail

**Applications**
- Marina gangways, industrial walkways
- Trail bridges in remote sites

### Aluminum horizontal railings

**Applications**
- Pedestrian/bike and light vehicle bridges
- Not intended for buildings

**Specifications**
- Openings are less than 6” – 150 mm between railings (Bridge codes)
Structure Connection

Five different structure connection systems are available to facilitate movements or specified amounts of expansion and contraction for your bridge installation. Each connection system will be best suited for a particular application, as specified by our engineers.

Anchor and bearing plates

Specifications
- Adaptable bearing plates designed to adjust on rough terrain, for either temporary or permanent use.
- Optional stainless steel anchors kit with adhesive cement included
- Isolators included

Roller and plate system

Specifications
- System allows lateral and vertical movement
- Usually required to link a chain anchored floating dock to land

Adaptable bearing plates

Specifications
- Bearing plates allow thermal expansion on one end of the bridge
- Stainless steel anchors kit with adhesive cement included
- Isolators included

Flexible connector

Specifications
- Connector allows small vertical movement
- Usually required to link a pile anchored floating dock to the land

Roller and rail system

Specifications
- Usually used in conjunction with roller and plate system or flexible connector on the land side
- Rails are made of aluminum
- Wheels are made of UHMW
- Easy to install
Decking Materials

Choose from a variety of decking materials, based on where and how you use your Make-A-Bridge®. Each type of material has specified levels of durability, slip and skid resistance, decay resistance, and degree of maintenance.

### IPE hardwood planks

**Specifications**
- Highly aesthetic
- Minimum 40-year lifespan
- Low maintenance, no treating or sealing required for durability (treating may be required to keep rich, red color)
- Medium grip surface
- Eco-friendly and naturally insect resistant
- Heavy use outdoor applications
- Economical over life of the bridge/structure

### Pressure-treated pine wood planks

**Specifications**
- Average 15-year lifespan
- Maintenance required – treat with water repellent every 2 years
- Natural finish requires UV protection – apply a semi-transparent stain or clear sealer
- Medium grip surface
- Standard use outdoor applications
- Most economical initial material cost

### High grip extruded aluminum planks

**Specifications**
- Unlimited lifespan with regular cleaning
- Maintenance-free – no treatments or sealers required
- Natural mill finish – no paints or coatings required
- Transversal planks with high grip surface
- 100% recyclable and reusable
- Corrosion-resistant – will not rust
- Economical over life of the bridge/structure

### High grip extruded aluminum planks

**Durable coating finish**

**Specifications**
- Unlimited lifespan with regular cleaning
- Maintenance-free – no treatments or sealers required
- Transversal planks with durable polyester powder coating for extra adherence
- 100% recyclable and reusable
- Compliant to AAMA 2604-10 & ASTM D3359

Our team can select the decking surface that best meets your needs for wear, safety, and maintenance according to your application.
Decking Materials

Comparison charts

Consider maintenance, durability, adherence (non-slip surface), and sustainability when choosing the most suitable decking material for your project.

<table>
<thead>
<tr>
<th>Decking Material</th>
<th>Maintenance</th>
<th>Adherence</th>
<th>Durability</th>
<th>Sustainability</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPE hardwood planks</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pressure-treated pine wood planks</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>High grip extruded aluminum planks</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>High grip extruded aluminum planks with durable coating finish</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

0 = Low, 1 = Medium, 2 = High, 3 = Very High, 4 = Extreme, 5 = Extreme High
Transition Plate

Curved or flat transition plates are designed to facilitate a smooth and slip-free surface from the footbridge to the adjacent surface. Tread patterns for each plate may be chosen to best suit the environment and application.

**Specifications**
- Aluminum diamond plate texture or plain with anti-slip tread bars
- Different tread patterns are available

**Anchor and bearing plate**

**Curved transition plate**

**Specifications**
- When using roller and plate system, transition plate comes with frictionless edge to protect decking surface
- Aluminum diamond plate texture or plain with anti-slip tread bars
- Different tread patterns are available

**Roller and plate system**

**Flat transition plate**

**Specifications**
- When using roller and rail system, transition plate comes with frictionless edge to protect decking surface
- Aluminum diamond plate texture or plain with anti-slip tread bars
- Different tread patterns are available

**Roller and rail system**
Options

Various options may be selected to enhance safety, security and aesthetic appearance. Aluminum kick plates, handrails, integrated LED lighting, and anodized or baked paint finish options are offered to further customize your Make-A-Bridge® to best suit the application and the surrounding environment.

Aluminum kick plate

**Specifications**
- The kick plate helps prevent objects from falling and adds a higher level of security
- Height of 4” (100 mm)

Aluminum handrail

**Specifications**
- Handrail diameter: 1.66” (43 mm)
- 2” (50 mm) hand clearance
- Height of handrail: 34” to 38” (863 mm to 965 mm)
- Option of a double handrail is available upon request

LED lighting system

**Specifications**
- RGB or white LED
- Programmable

Powder coat finish

**Specifications**
- Made of powdered polyester resin
- Baked as per specifications
- Uses RAL colors
- Can match any color or finish needed
- Not recommended for use on aluminum decking

Anodized finish

**Specifications**
- Meets all requirements of the Aluminum Association (AA) for the anodized architectural aluminum
- Meets American Architectural Manufacturers Association (AAMA) standards AAMA 611
- Meets Aluminum Association Designation system AAM10C21A41 for clear finish and AAM10C21A44 for Champagne, Light bronze, Architectural bronze and black finishes
- Only extruded parts can be anodized

Faux-wood finish

**Specifications**
- Made of polyurethane based thermosetting powder paint
- Baked as per specifications
- Meets American Architectural Manufacturers Association (AAMA) standards
- Compatible with natural surroundings
- Recommended for use with IPE hardwood horizontal railing and decking
Weld-Free Bridge Decking

MAADI Group specializes in aluminum bridge decking that is unmatched for durability and lasts several decades. Our registered professional engineers designed weld-free GuarDECK® for fast installation with minimal upkeep.
Deploys in Record Time

MAADI Group specializes in aluminum bridge decking that is unmatched for durability and lasts several decades. This engineer-designed product is ideal for new or existing bridge retrofit with quick installation and minimal disruption to people and traffic.

**Design innovation**
MAADI Group works with municipalities, developers, architects, construction companies, governments and other parties to offer innovative Accelerated Bridge Construction (ABC) that cuts down on traffic interruptions and costly traffic control. This game-changing aluminum bridge decking solution offers incredible advantages over traditional concrete and steel construction, such as lightweight structural aluminum to reduce dead load, and no maintenance or corrosion.

Whether replacing existing decking on an older bridge or building a new one, GuarDECK® saves time as the mechanical connections are fast and easy to install. A team can set-up a weld-free aluminum deck and open the bridge to traffic later that same day. The lightweight system is specially tailored for pedestrians, 15-ton vehicles or less, movable bridges, civil security, temporary bridges, military bridges, maritime structures, and construction platforms.

**Patents**
Patent pending

**Warranty**
We offer a One-Year Limited Warranty on aluminum against material failure, defects and corrosion.
Tailored Designs

GuarDECK® is a versatile and maintenance-free product that you and your team can easily adapt for your particular project.

Easy Installation and Handling

Our premium bridge decking product is designed for easy installation. Versatile and sturdy, GuarDECK® is also built to fit a range of different environments and applications.

Specifications

- **Fasteners**
  - Custom T-bolt fasteners in stainless steel 316 series
  - Extruded aluminum heavy-duty clamps
  - Optional anti-theft/anti-vandalism fasteners

- **Installation**
  - No on-site drilling or welding
  - Easy to install clamping system that bolts directly into the panels
  - Proper installation consists of applying the right torque to the T-bolts that hold the clamps

- **Customization**
  - Guardrail
    - Anodized or baked paint finishes with a choice of styles
  - Curb
    - Anodized or baked paint finishes
  - Lighting system
    - Integrated LED lighting system
  - Other options are available upon request

<table>
<thead>
<tr>
<th>Overall bridge span</th>
<th>Unlimited</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear width</td>
<td>Varies with t-beam spacing</td>
</tr>
<tr>
<td>Pedestrian loading</td>
<td>Up to 90 psf – 4.3 kPa</td>
</tr>
<tr>
<td>Vehicular load</td>
<td>Up to 33,000 lb – 15,000 kg</td>
</tr>
<tr>
<td>Decking self-weight</td>
<td>10 psf – 0.5 kPa</td>
</tr>
<tr>
<td>Wind pressure</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Specifications

**Design and materials**
- 100% recyclable aluminum structural components and energy-efficient recycling
- Integrates well with new construction and retrofits of existing structures
- Meets standards of North American and other Western nations
- Includes complete engineering services, eliminating all of the costly phases of design, customized production and approval generally required for conventional structures
- Resistant to salt water, chemicals, and pollution due to its permanent, natural oxide film that prevents corrosion of the aluminum by the environment
- No welding – the aluminum maintains its full structural integrity
- Custom T-bolts fasteners in stainless steel 316 series
- Built-in ribs to provide a mill finish anti-slip surface
- Includes dielectric and anti-slip coating between steel and aluminum components
- No on-site drilling

**Sustainable**
MAADI Group is committed to designing environmentally sustainable bridge solutions such as GuarDECK®. This product incorporates the sustainable design principles of energy conservation, use of recyclable materials, greater functionality and design flexibility. Enhancing the built environment, it offers durable solutions that last decades.

This product maximizes functionality and minimizes environmental impacts by providing safe access for pedestrians, bicyclists and up to 15-ton vehicles, and reducing traffic congestion.

GuarDECK® is cost-effective to build, install, maintain and use throughout its life cycle. Replacing or retrofitting existing bridges with this aluminum bridge deckking adds longevity to environmentally conscious development projects. Design flexibility and custom options enable GuarDECK® to be environmentally compatible with adjacent structures and with its natural surroundings.

**Vehicular load**
The vehicular load shall not be combined with pedestrian load.

**Codes and standards**
GuarDECK® can conform to any of these codes and standards (or to others upon request), and bears the seal of one of our in-house registered professional engineers.

**Easy shipping**
Standard off-the-shelf components available in four (4) weeks, ready to be shipped in bundles anywhere in North America, and in eight (8) weeks anywhere worldwide

**Fast assembly and installation**
- Lighter and easier to install than competitive steel, wood or concrete products
- A team can install a weld-free aluminum deck and open the bridge to traffic later that same day

**Partners**
Our renowned partners support the development of our new product.
A Cut Above

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### Durability

#### Longer bridge life
GuarDECK® represents a cut above in factory aluminum bridge decking. Consistent manufacturing and quality control mean that MAADI Group can deliver faster installation that’s also better quality than field-built decks.

This engineer-designed product is ideal for new or existing bridge retrofit with quick installation and minimal disruption to people and traffic. Whether permanent or temporary, this product fits well into most environments and situations where durability and rapid installation are top priority.

The following are examples of projects that can benefit from GuarDECK®:
- Pedestrian and up to 15-ton vehicle bridges
- Maritime Structures
- Civil Security Bridges
- Temporary Bridges
- Military Bridges
- Industrial Bridges
- Extend roadway bridge for cantilevered bike path

### Ease

#### Facts on aluminum decking
A North American study shows that older projects using aluminum decking instead of concrete, steel and wood have stood the test of time. Between 1946 and 1963, nine bridges were built with aluminum beams and girders and six still exist. Gradually more countries, such as Japan, Norway and Sweden are recognizing the benefits of aluminum versus steel construction, and are using aluminum extrusions in the repair and construction of bridge decks.

#### Versatility

- **Lighter than steel**
  Aluminum bridge decks are 70 to 80 percent lighter than concrete and most metal, (about 10 psf = 0.5 kPa), which makes it easier to handle and install. This lightweight, versatile material reduces dead load and offers increased bridge width and capacity without the need to strengthen supporting bridge elements. This is especially important for load-restricted bridges, historic bridges, movable bridges and bridges with narrow roadways requiring expansions for bicycle paths or walkways.

- **Versatile designs**
  Aluminum can be shaped into a myriad of designs. Attractive and heavy-duty deck surface also has built-in ribs to prevent slipping.

- **Hardwearing and resilient**
  Using marine grade aluminum, our bridge decks are virtually maintenance-free and require no chemical treatments that are harmful to human health and the environment, such as those used to protect steel and wood. Lasting up to 100 years, and naturally resistant to corrosion, this bridge deck type is better suited—than steel or concrete—to de-icing during colder months.

- **In-factory for faster turnaround**
  GuarDECK® is prefabricated in our factory and shipped ready to install with standard manual tools. This system uses custom aluminum hollow extrusions that attach easily to the main steel I-beams with special stainless steel fasteners and clamps. Prefabricated aluminum deck extrusions can be installed faster than other systems and require no on-site drilling or welding.

- **Reducing costs matters**
  Using GuarDECK® could mean decreasing costs for movable bridges and bridges with long spans where dead weight is considerable.

- **Accelerated Bridge Construction (ABC)**
  This unique type of construction allows for a quick-turnaround installation when compared to concrete which typically requires extensive formwork and curing time.

- **Stands up to cold**
  This product is ideal for bridges and other highway structures in colder climates. It eliminates concerns about brittle fracture, even in the most severe Arctic weather. The strength of aluminum increases with extremely low temperatures.

### Advantages

- **Aluminum: The eco-conscious metal**
  MAADI Group is sensitive to climate change. To that end we have designed GuarDECK® to reduce your project’s carbon footprint by using 20 percent recycled aluminum and renewable energy. And we use the most innovative, energy efficient technology to produce the remaining 80 percent of your bridge deck.

- **Versatile designs**
  Due to its lightweight and versatile nature aluminum can be shaped into a myriad of designs. Attractive and heavy-duty at the same time, this material creates bridge decking that integrates well into all built and natural environments. Our deck surface also has built-in ribs to prevent slipping.

- **Increased use**
  A wide variety of cross-sectional shapes of aluminum extrusion has led to the increased use of aluminum for bridge decks. This has signaled the potential in North America and worldwide for its use in other applications.

- **Aluminum’s time has come**
  Over the past decades, aluminum has seen improved properties and advances in knowledge concerning aluminum’s mechanical behavior, along with much improved alloys and tempers. The structural engineering community is already using this knowledge, which is gradually translating into more governments and municipalities recognizing the advantages of aluminum.

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1. Age of Public Infrastructure: A Provincial Perspective by Mychèle Gagnon, Valérie Gaudreault and Donald Overton, Investment and Capital Stock Division, Statistics Canada, February 2008
Existing Bridge Retrofit

Before

This off-the-shelf product is ideal for existing bridge retrofit with fast installation and little disturbance to pedestrians and vehicles.

After

Retrofit of existing bridge, Lake Brome, Quebec.
Îles-de-Boucherville National Park
Boucherville, Quebec

- Overall spans: 143'-2¼", 214'-3" & 420'-9" – 43.6 m, 65.3 m et 128.3 m
- Clear width: 11'-4½" – 3.5 m
- Pedestrian loading: 84 psf – 4.0 kPa
- Vehicular load: 33,000 lb – 15,000 kg
- Decking self-weight: 10 psf – 0.5 kPa
- Wind pressure: 52 psf – 2.48 kPa

Design/build of aluminum decking over a series of pedestrian & 15-ton vehicle bridges
Retrofit of Existing Bridge
Brome Lake, Quebec

<table>
<thead>
<tr>
<th>Overall span</th>
<th>Pedestrian loading</th>
<th>Decking self-weight</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>106’-3” – 32.4 m</td>
<td>84 psf – 4.0 kPa</td>
<td>10 psf – 0.5 kPa</td>
<td>Clear anodized aluminum guardrails with vertical pickets, integrated LED lighting</td>
</tr>
<tr>
<td>Clear width</td>
<td>Vehicular load</td>
<td>Wind pressure</td>
<td></td>
</tr>
<tr>
<td>8’-3” – 2.5 m</td>
<td>33,000 lb – 15,000 kg</td>
<td>52 psf – 2.48 kPa</td>
<td></td>
</tr>
</tbody>
</table>

Design/build of aluminum decking and guardrails over an existing pedestrian & 15-ton vehicle bridge

 Integrated LED lighting